REGULAR MEETING – PLANNING AND ZONING COMMISSION
AGENDA

JULY 16, 2025, 6:00 PM
BY ZOOM VIRTUAL MEETING

To allow public access, anyone may access a meeting by telephone and/or Zoom, or a recording in the City of Norwalk YouTube channel. Specific instructions and links can be found at norwalkct.gov/meetings.

Members of the public may call in to participate. Callers will not be able to see the meeting participants. All participants will be muted upon entering the meeting. To speak, dial *9 on the phone and you will be called on by the host of the meeting during the public comment section. All speakers must state their name and address. Comments must be on a topic on the agenda, and are limited to three minutes. Anyone disrupting the orderly conduct of the meeting, including by using threatening, hateful, or sexually-explicit language, will be removed. Please find the information using the link above.

Members of the public who wish to provide "live comments" may also use the Zoom meeting platform. All participants will be muted upon entering the meeting. To speak, click the “raise your hand indicator” and you will be called by the host of the meeting during the public comment section. All speakers must state their name and address. Comments must be on a topic on the agenda, and are limited to three minutes. Anyone disrupting the orderly conduct of the meeting, including by using threatening, hateful, or sexually-explicit language, will be removed. Please find the information using the link above.

Members of the public who wish to provide public comment are encouraged to submit those via email in advance of the meeting. For these comments to be included into the record, they must be submitted by 12:00 p.m. the day of the meeting. Please email Steve Kleppin, Director of Planning & Zoning, at skleppin@norwalkct.gov with the subject line “Public Comment” to provide written public comment prior to the meeting.

I. CALL TO ORDER

II. ROLL CALL

III. REVIEW AND ACTION ON APPLICATIONS

A. #2025-45 CAM - 38 SD, LLC - 38 South Beach Drive (District 6, Block 36, Lot 64) - Coastal site plan review to raise an existing single-family residence to be FEMA flood compliant and construct minor additions - Report & recommended action

B. #2025-50 SPR - Craig Hyland and Nancy Zindell - 315 Rowayton Avenue (District 6, Block 27, Lot 5) - Site plan review application for the construction of a detached accessory dwelling unit - Report & recommended action

C. #2025-51 SPR/CAM - Spinnaker Acquisitions LLC - 108 Water Street (District 2, Block 84, Lot 18) - Coastal site plan review application for the construction of a 4.5-story mixed-use development - Preliminary review

D. **#2025-53 CAM/SPR - BPC Capital Management VI, LLC c/o Bradford P. Craighead - 7 Park Street (District 1, Block 68, Lot 1) - Coastal site plan review for the construction of two additions to the existing historic structure for a total of 11 dwelling units - Approval of Village District Peer Review Expenditure (fee paid by applicant)**

IV. PUBLIC HEARINGS

A. **#2025-43 SP CAM – The Norwalk Country Club Company and Shore & Country Club, Inc. – 220 Gregory Boulevard (District 3, Block 73, Lot 2) – New pro shop and associated site improvements - Public hearing, report & recommended action**

B. **#2025-46 SP CAM – Lajoie Auto Wrecking Company, Inc. – 40 Meadow Street (District 2, Block 91, Lot 51) – Redevelopment of a recycling facility - Public hearing**

C. **#2025-41 R – Planning & Zoning Commission – Zoning regulation text amendment(s) to Articles 1 and 4 regarding the location of nonconforming parking, Commercial Recreation Establishment uses, and the permitting process for clustered Single-Family Dwellings in the Silvermine Tavern District - Public hearing, report & recommended action**

V. ACCEPTANCE OF MINUTES

A. **Regular Meeting: July 2, 2025**

VI. DISCUSSION

A. **Staff's Draft Legislative Changes per the Affordable Housing Plan's Recommendations**

VII. COMMENTS OF DIRECTOR

VIII. COMMENTS OF COMMISSIONERS

IX. ADJOURNMENT

Planning & Zoning Commission

APPLICATION FOR COASTAL SITE PLAN REVIEW

Application must be accompanied by two (2) printed and one (1) digital set of all documents, and appropriate filing fee. Filing Fee: $310.00 for single or two family use; $810.00 for all other uses.

Date Stamp

Application Completion Date: Official Receipt Date: Fee Paid:

1. **Property Address:** 38 South Beach Drive, Norwalk, CT 06853 **2.** D/B/L/U: 6/36/64

3. Proposed Work: See attached Schedule A **4.** Zone: CD-1S

5. Applicant Identification:

Applicant Name: 38SBD, LLC

Address: 1250 Lafayette Road, Gladwyne, PA 19035

Phone Number: c/o Elizabeth A.B. Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth A.B. Suchy, Esq. - esuchy@carmodylaw.com

Interest in Property: ☑ fee simple ☐ option ☐ lessee ☐ easement ☐ other (specify): _____

List primary contact for correspondence *if other than applicant* (Agent or Attorney):

Name: Elizabeth A.B. Suchy, Esq.

Address: Carmody Torrance Sandak & Hennessey LLP, 1055 Washington Boulevard, 4th Floor, Stamford, CT 06901

Business Phone: 203-252-2656 Email: esuchy@carmodylaw.com

6. Property Owner, if different than applicant:

Owner Name: Same as Applicant

Address: _____

Phone Number: _____ Email: _____

7. Project Information:

Please check the appropriate box to identify the plan or application that has resulted in this Coastal Site Plan Review:

- ◉ Coastal Site Plan for Zoning Compliance/Zoning Permit
- ○ Subdivision or Resubdivision Application
- ○ Special Permit or Special Exception Application
- ○ Site Plan Review Application
- ○ Variance Application
- ○ Municipal Project (CGS Section 8-24)

6. Project Site Plans:

Please provide project site plans that clearly and accurately depict the following information, and check the appropriate boxes to indicate that the plans are included in this application:

- ☑ Project location
- ☑ Existing and proposed conditions, including buildings and topography
- ☑ **All** coastal resources on and contiguous to the site
- ☑ High tide line [as defined in CGS Section 22a-359(c)] and mean high water mark elevation contours (for parcels abutting coastal waters and/or tidal wetlands only)
- ☑ Soil erosion and sediment controls
- ☑ Storm water management & treatment practices
- ☑ Ownership and type of use on adjacent properties
- ☑ Reference datum (i.e., National Geodetic Vertical Datum, Mean Sea Level, etc.)
- ☑ Landscaping and planting plan (existing & proposed)
- ☑ Utility Plan (existing & proposed: water, drainage, sanitary sewers, electric & gas lines)
- ☑ Easements (utility, sight preservation, conservation, pedestrian)

7. Site Information:

a) Street Address or Geographical Description:
38 South Beach Drive, Norwalk, CT 06853

b) Is project or activity proposed at a waterfront site (includes tidal wetlands frontage)? ○YES ◉NO

c) Name of on-site, adjacent, or downstream coastal, tidal, or navigable waters, if applicable:
Long Island Sound

d) Identify and describe the existing land use in and adjacent to the site. Include description of any existing structures and significant features on the project site:
See Schedule A attached hereto and made a part hereof.

e) Indicate the area of the project site: 0.26 acres **or** 11,378 square feet

f) Check the appropriate box below to indicate total land area of disturbance of the project or activity (please also see Question #9 regarding proposed stormwater best management practices):

- ○ Project or activity will disturb five (5) or more total acres of land area on the site. *Registration for CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities required.*
- ● Project or activity will disturb land, but less than five (5) total acres of land area would be disturbed. *A soil erosion and sedimentation control plan must be submitted.*
- ○ Project or activity will not disturb any land area.

g) Does the project include a shoreline flood and erosion control structure as defined in CGS section 22a-109(d)? ○Yes ◉No

8. Description of Proposed Project or Activity:

Describe the proposed project or activity including its purpose and related activities such as site clearing, grading, demolition, and other site preparations; percentage of increase or decrease in impervious cover over existing conditions resulting from the project; phasing, timing and method of proposed construction; and new uses and changes from existing uses (*attach additional pages if necessary*):

See Schedule A attached hereto and made a part hereof.

9. Description of Proposed Stormwater Best Management Practices:

Describe the stormwater best management practices that will be utilized to ensure that the volume of runoff generated by the first inch of rainfall is retained on-site, especially if the site or stormwater discharge is adjacent to tidal wetlands. If runoff cannot be retained on-site, describe the site limitations that prevent such retention and identify how stormwater will be treated before it is discharged from the site. Also demonstrate that the loadings of total suspended solids from the site will be reduced by 80 percent on an average annual basis, and that post-development stormwater runoff rates and volumes will not exceed pre-development runoff rates and volumes (*attach additional pages if necessary*):

See Schedule A and Coastal Area Management Application by Redniss & Mead attached hereto and made a part hereof.

10. Identification of Applicable Coastal Resources and Coastal Resource Policies:

Identify the coastal resources and associated policies that apply to the project by placing a check mark in the appropriate box(es) in the following table.

Coastal Resources	On-site	Adjacent	Off-site but within the influence of project	Not Applicable
General Coastal Resources* - Definition: CGS Section 22a-93(7); Policy: CGS Section 22a-92(a)(2)	☑	☐	☐	☐
Beaches & Dunes - Definition: CGS Section 22a-93(7)(C); Policies: CGS Sections 22a-92-(b)(2)(C) and 22a-92(c)(1)(K)	☐	☑	☐	☐
Bluffs & Escarpments - Definition: CGS Section 22a-93(7)(A); Policy: CGS Section 22a-92(b)(2)(A)	☐	☑	☐	☐
Coastal Hazard Area - Definition: CGS Section 22a-93(7)(H); Policies: CGS Sections 22a-92(a)(2), 22a-92(a)(5), 22a-92(b)(2)(F), 22a-92(b)(2)(J), and 22a-92(c)(2)(B)	☑	☐	☐	☐
Coastal Waters, Estuarine Embayments, Nearshore Waters, Offshore Waters - Definition: CGS Sections 22a-93(5), 22a-93(7)(G), and 22a-93(7)(K), and 22a-93(7)(L) respectively; Policies: CGS Sections 22a-92(a)(2) and 22a-92(c)(2)(A)	☐	☑	☐	☐
Developed Shorefront - Definition: CGS Section 22a-93(7)(I); Policy: 22a-92(b)(2)(G)	☑	☐	☐	☐
Freshwater Wetlands and Watercourses - Definition: CGS Section 22a-93(7)(F); Policy: CGS Section 22a-92(a)(2)	☐	☐	☐	☑
Intertidal Flats - Definition: CGS Section 22a-93(7)(D); Policies: 22a-92(b)(2)(D) and 22a-92(c)(1)(K)	☐	☐	☐	☑
Islands - Definition: CGS Section 22a-93(7)(J); Policy: CGS Section 22a-92(b)(2)(H)	☐	☐	☐	☑
Rocky Shorefront - Definition: CGS Section 22a-93(7)(B); Policy: CGS Section 22a-92(b)(2)(B)	☑	☐	☐	☐
Shellfish Concentration Areas - Definition: CGS Section 22a-93(7)(N); Policy: CGS Section 22a-92(c)(1)(I)	☐	☐	☐	☑
Shorelands - Definition: CGS Section 22a-93(7)(M); Policy: CGS Section 22a-92(b)(2)(I)	☐	☐	☐	☑
Tidal Wetlands - Definition: CGS Section 22a-93(7)(E); Policies: CGS Sections 22a-92(a)(2), 22a-92(b)(2)(E), and 22a-92(c)(1)(B)	☐	☐	☐	☑

* General Coastal Resource policy is applicable to all proposed activities

11. Consistency with Applicable Coastal Resource Policies and Standards:

Describe the location and condition of the coastal resources identified in Question #10 and explain how the proposed project or activity is consistent with all of the applicable coastal resource policies and standards; also see adverse impacts assessment in Question #14 below (*attach additional pages if necessary*):

See Schedule A and Coastal Area Management Application by Redniss & Mead, attached hereto and made a part hereof.

12. Identification of Applicable Coastal Use and Activity Policies and Standards:

Identify all coastal policies and standards in or referenced by CGS Section 22a-92 applicable to the proposed project or activity:

- [x] General Development* - CGS Sections 22a-92(a)(1), 22a-92(a)(2), and 22a-92(a)(9)
- [ ] Water-Dependent Uses** - CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A); Definition CGS Section 22a-93(16)
- [ ] Ports and Harbors - CGS Section 22a-92(b)(1)(C)
- [ ] Coastal Structures and Filling - CGS Section 22a-92(b)(1)(D)
- [ ] Dredging and Navigation - CGS Sections 22a-92(c)(1)(C) and 22a-92(c)(1)(D)
- [ ] Boating - CGS Section 22a-92(b)(1)(G)
- [ ] Fisheries - CGS Section 22a-92(c)(1)(I)
- [ ] Coastal Recreation and Access - CGS Sections 22a-92(a)(6), 22a-92(C)(1)(j) and 22a-92(c)(1)(K)
- [ ] Sewer and Water Lines - CGS Section 22a-92(b)(1)(B)
- [ ] Fuel, Chemicals and Hazardous Materials - CGS Sections 22a-92(b)(1)(C), 22a-92(b)(1)(E) and 22a-92(c)(1)(A)
- [ ] Transportation - CGS Sections 22a-92(b)(1)(F), 22a-92(c)(1)(F), 22a-92(c)(1)(G), and 22a-92(c)(1)(H)
- [ ] Solid Waste - CGS Section 22a-92(a)(2)
- [ ] Dams, Dikes and Reservoirs - CGS Section 22a-92(a)(2)
- [ ] Cultural Resources - CGS Section 22a-92(b)(1)(J)
- [ ] Open Space and Agricultural Lands - CGS Section 22a-92(a)(2)

* General Development policies are applicable to all proposed activities

** Water-dependent Use policies are applicable to all activities proposed at waterfront sites, including those with tidal wetlands frontage.

13. Consistency With Applicable Coastal Use Policies and Standards:

Explain how the proposed activity or use is consistent with all of the applicable coastal use and activity policies and standards identified in Question #12. **For projects proposed at waterfront sites (including those with tidal wetlands frontage)**, particular emphasis should be placed on the evaluation of the project's consistency with the water-dependent use policies and standards contained in CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A) -- also see adverse impacts assessment in Question #15 below (attach additional pages if necessary):

See Schedule A and Coastal Area Management Application by Redniss & Mead attached hereto and made a part hereof.

14. Identification of Potential Adverse Impacts on Coastal Resources: (*Must be completed for ALL projects.*)

Identify the adverse impact categories below that apply to the proposed project or activity.

The **'applicable'** column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(15). If an adverse impact **may result** from the proposed project or activity, please use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Coastal Resources	Applicable	Not Applicable
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☑
Degrading existing circulation patterns of coastal water through the significant alteration of patterns of tidal exchange or flushing rates, freshwater input, or existing basin characteristics and channel contours - CGS Section 22a-93(15)(B)	☐	☑
Degrading natural or existing drainage patterns through the significant alteration of groundwater flow and recharge and volume of runoff - CGS Section 22a-93(15)(D)	☐	☑
Degrading natural erosion patterns through the significant alteration of littoral transport of sediments in terms of deposition or source reduction - CGS Section 22a-93(15)(C)	☐	☑
Degrading visual quality through significant alteration of the natural features of vistas and view points - CGS Section 22a-93(15)(F)	☐	☑
Degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen or salinity - CGS Section 22a-93(15)(A)	☐	☑
Degrading or destroying essential wildlife, finfish, or shellfish habitat through significant alteration of the composition, migration patterns, distribution, breeding or other population characteristics of the natural species or significant alterations of the natural components of the habitat - CGS Section 22a-93(15)(G)	☐	☑
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☑

15. Identification of Potential Adverse Impacts on Water-dependent Uses: ***(Complete only if the project/activity is proposed at a waterfront site.)***

a) Identify the adverse impact categories below that apply to the proposed project or activity. The applicable column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(17). If an adverse impact **may result** from the proposed project or activity, use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Future Water-dependent Development Opportunities and Activities	Applicable	Not Applicable
Locating a non-water-dependent use at a site physically suited for or planned for location of a water-dependent use - CGS Section 22a-93(17)	☐	☑
Replacing an existing water-dependent use with a non-water-dependent use - CGS Section 22a-93(17)	☐	☑
Siting a non-water-dependent use which would substantially reduce or inhibit existing public access to marine or tidal waters - CGS Section 22a-93(17)	☐	☑

b) Identification of existing and/or proposed Water-dependent Uses:

Describe the features or characteristics of the proposed activity or project that qualify as water-dependent uses as defined in CGS Section 22a-93(16). If general public access to coastal waters is provided, please identify the legal mechanisms used to ensure public access in perpetuity, and describe any provisions for parking or other access to the site and proposed amenities associated with the access (e.g., boardwalk, benches, trash receptacles, interpretative signage, etc.) *:

See Schedule A attached hereto and made a part hereof.

*If there are no water-dependent use components, describe how the project site is not appropriate for the development of a water-dependent use.

16. Mitigation of Potential Adverse Impacts:

Explain how all potential adverse impacts on coastal resources and/or future water-dependent development opportunities and activities identified in Questions #14 & #15 have been avoided, eliminated, or minimized (*attach additional pages if necessary*):

See Schedule A attached hereto and Coastal Area Management Application by Redniss & Mead, attached hereto.

17. Remaining Adverse Impacts:

Explain why any remaining adverse impacts resulting from the proposed activity or use have not been mitigated and why the project as proposed is consistent with the Connecticut Coastal Management Act (*attach additional pages if necessary*):

By signing this application, the applicant or his/her agent certifies that they are familiar with the information provided in this application and are aware of the penalties for obtaining a permit through deception or by submission of inaccurate or misleading information.

By signing this application, permission is hereby given to necessary and proper inspection of the subject property by the Commissioners and designated staff of the Commission or consultants to the Commission, at reasonable times, during the pendency of the application.

38SBD, LLC

Applicant's Signature: Carmody Torrance Sandak & Hennessey, LLP **DATE:** 6/3/2025

By: Carmody Torrance Sandak & Hennessey LLP, Its Attorneys

Agent's Signature: Carmody Torrance Sandak & Hennessey, LLP **DATE:** 6/3/2025

By: Carmody Torrance Sandak & Hennessey LLP, Its Attorneys

38SBD LLC
38 SOUTH BEACH DRIVE, NORWALK, CONNECTICUT
APPLICATION FOR COASTAL SITE PLAN REVIEW
SCHEDULE A – NARRATIVE

I. BACKGROUND

38SBD LLC (hereinafter the "Applicant") is the owner of real property with the improvements thereon located at 38 South Beach Drive in the Bell Island section of Rowayton/Norwalk, Connecticut. Designated as Tax Lot 64 in Block 36 of the Sixth Taxing District (hereinafter the "Property"). The Property is approximately 11,378± sq. ft. (0.26± acres) and located in CD-1S zone. (Refer to "Zoning Location Survey Prepared for 38 SBD LLC 38 South Beach Drive, Norwalk, CT Plant Court LLC 46 South Beach Drive, Norwalk, CT Scale: 1"=10' Date: May 25, 2025, revised to 05/27/2025" prepared by James A. Dennison, L.S, attached hereto and made a part hereof). The Property is improved with a single-family dwelling with a detached two-car garage all located within the front setback. There are also existing walks, decks and other site improvements. The Property is bounded by Long Island Sound to the south, South Beach Drive to the north, Golden Court to the west, and other residentially developed properties to the east. Along the southern property line, there is an existing seawall. The Property and existing dwelling are within the boundary of the Coastal Area Management (CAM) zone and the VE (15') and AE (15') flood line bisects the property and dwelling.

Bell Island had originally been developed as a summer beach colony with small seasonal-use dwellings. Generally, the dwellings on lots in this neighborhood are larger than permitted under current zoning regulations, and often do not conform to one or more of the zone's height and bulk requirement. Further, many do not meet the minimum flood elevations for habitable space established and required by Federal Emergency Management Agency (hereinafter "FEMA"). As property values of land along the water increased, many of the dwellings were converted into year-round residences. Today, Bell Island is a popular and desirable section of Norwalk.

There have been a number of variances granted to the predecessors-in-title over the years in order to accommodate additions and alterations to the structure.

II. PROPOSAL

The Applicant proposes various changes to the existing single-family dwelling, including removal of some sections of the dwelling and construction of modest additions. These improvements exceed 25% of the appraised value of the structure, so they are considered significant improvements, and as a result, the dwelling must be elevated to comply with both FEMA requirements and the City of Norwalk Zoning Regulations. Per the plans, there will be a reduction in overall coverage and improved sight lines at the intersection of Golden Court and South Beach Drive since the proposed new garage that will be set back nearly eight (8') feet from the property line on South Beach Drive. (Refer to plans by Oliver Cope, attached hereto and made a part hereof).

Further, and most significantly, the Applicant plans to elevate the structure by just over six (6') feet[1] so that the first floor, ductwork, and joists meet or exceed the minimum 15' flood elevation established by FEMA plus two (2') feet, as required by the zoning regulations. Lastly, new landscaping and stormwater management features are proposed. On May 15, 2025, the City of Norwalk Zoning Board of Appeals granted several variances necessitated by the proposed elevation of the structure to meet the FEMA and zoning regulations relating to flood compliance.

This coastal site plan review application is submitted pursuant Sec. 6.10.3.1c (coastal overlay), Table 4.3.1-C (District Standards), and Table 4.3.1-C (Building Lot & Building Site Accessory Uses) of the zoning regulations. Moreover, this application is submitted within the 30 days required by Sec. 116-9B of the City Code, so it is timely filed.

The Applicant hereby submits that the proposed site plan revisions and modifications to the existing single-family dwelling comply with the zoning regulations and standards of review for coastal site plan applications set forth in Sec. 6.10.2B.3b as follows:

1. The characteristics of the site, including location and condition of all coastal resources. The site is located adjacent to Long Island Sound. The single-family use of the Property is consistent with the neighborhood, which is composed almost exclusively of single-family dwellings. Coastal resources adjacent to the site include modified bluffs and escarpments, beaches and rocky shorefronts, which will be unaffected by the Applicant's proposal.

2. The potential effects, both beneficial and adverse of the proposed activity on adjacent coastal systems and coastal resources. There are no adverse impacts anticipated by the proposed activity. All work proposed is landward of the existing seawall and therefore will have no impact on shorefront resources. Most significantly, the project proposes to elevate the existing single-family dwelling to exceed the minimum FEMA and City of Norwalk zoning regulation standards. (Refer to "Coastal Area Management Application" dated March 11, 2025 prepared by Redniss & Mead, attached hereto and made a part hereof).

3. The potential effects, both beneficial and adverse, of the proposed activity on future water-dependent development opportunities. There will be no impact to future water-dependent development opportunities. No changes to the existing seawall are proposed.

4. The potential impact of a rise in sea level, coastal flooding and erosion patterns on both coastal resources and coastal development. The finished floor of the proposed building will be at 19.0 feet, which is above the 15.0 feet minimum FEMA flood elevation for the Property, plus two (2') feet. "Raising the elevation of the existing residence will bring the structure into compliance with respect to the base flood elevation (BFE) and will therefore minimize the potential for loss or property and/or life." (Coastal Area

[1]The finished first floor is located at Elevation 12.2± feet and complied with the minimum flood elevation at the time of construction. Subsequently, the area was remapped by FEMA resulting in an increase of the minimum flood elevation to 15 feet on the site.

Management Application p. 8). Moreover, "[b]ased upon our wave impact analysis and review of the site development design, RACE confirms that the proposed site improvements are in compliance with Article 6.9.5 of the Norwalk Zoning Code and will not cause an increase in the effective FEMA designated BFE at the site or cause adverse impacts with respect to flooding or environmental resources." (Refer to p. 3 of "Flood Zone Compliance Review" dated March 11, 2025 by RACE Coastal Engineering, LLC, attached hereto and made a part hereof).

5. Preservation of the dynamic form and integrity of coastal resource systems, including but not limited to minimization of alteration of current flows, depth, slope, natural erosion and sedimentation, biological communities and habitat. The proposed project will not impact any of these systems or conditions. Further, the proposed site improvements will not create adverse impacts with respect to flood on the site or adjacent properties. (Refer to Coastal Area Management Application and report by RACE Coastal Engineering, attached hereto and made a part hereof).

6. The goals and policies of the Connecticut Coastal Management Act, as amended, and identification of any conflicts between the proposed Development, Use or activity and any goal or policy of the Act. The proposed project meets the requirements of the CAM Act and is adequately protective of the interests of the Act and Norwalk's coastal resources. The proposal centers on elevating the existing dwelling to achieve minimum zoning and FEMA compliance, removal of some massing, construction of minor additions, and a reduction in overall building coverage. The Project is consistent with the general development goals referenced in C.G.S Sec. 22a-92.

PRIVATE RESIDENCE

38 SOUTH BEACH DRIVE NORWALK, CT 06853

ISSUE FOR ZONING REVIEW:
MAY 22, 2025

ABBREVIATIONS

ABV	ABOVE	FHS	FIRE HOSE STATION
AFF	ABOVE FINISHED FLOOR	FLG	FLASHING
ASC	ABOVE SUSPENDED CEILING	FLR	FLOOR (ING)
ACFL	ACCESS FLOOR	FND	FOUNDATION
AP	ACCESS PANEL	FOM	FACE OF MASONRY
AC	ACOUSTICAL	FOS	FACE OF STUD
ACPL	ACOUSTICAL PLASTER	FPSC	FIRE PROOF SELF CLOSING
ACT	ACOUSTICAL TILE	FRA	FRESH AIR
ADJ	ADJACENT	FS-#	FLOOR SYSTEM TYPE
AFF	ABOVE FINISH FLOOR	GA	GAUGE
AL	ALUMINUM	GV	GALVANIZED
ACG	AGCGREGATE	GC	GENERAL CONTRACT (OR)
A/C	AIR CONDITIONING	GL	GLAZING
ANOD	ANODIZED	GLB	GLASS BLOCK
AD	AREA DRAIN	GWB	GYPSUM WALL BOARD
BSMT	BASEMENT	GD	GRADE
BM	BENCH MARK	HDW	HARDWARE
BIT	BITUMINOUS	HWD	HARDWOOD
BLK	BLOCKING	HTG	HEATING
BD	BOARD	HVAC	HEATING/VENTILATING & A/C
BO	BOTTOM OF	HT	HEIGHT
BRK	BRICK	HC	HOLLOW CORE
BLDG	BUILDING	HM	HOLLOW METAL
CAB	CABINET	HOR	HORIZONTAL
CSMT	CASEMENT	HB	HOSE BIB
CI	CAST IRON	HWH	HOT WATER HEATER
CB	CATCH BASIN	ID	INSIDE DIAMETER
CLG	CEILING	INS	INSULATE
CH	CEILING HEIGHT	INS-#	INSULATION TYPE
CTV	CABLE TELEVISION	INT	INTER
CLR	CLEARANCE	JT	JOINT
CJT	CONTROL JOINT	KIT	KITCHEN
CORR	CORRUGATED	LA	LANDSCAPE ARCHITECTURE
DTL	DETAIL	LAV	LAVATORY
DIAG	DIAGONAL	LCC	LEAD COATED COPPER
DIA	DIAMETER	LH	LEFT HAND
DIM	DIMENSION	L	LENGTH
DH	DOUBLE-HUNG	MH	MANHOLE
D	DOOR	MFR	MANUFACTURE(R)
DS	DOWNSPOUT	MO	MASONRY OPENING
DWG	DRAWING	MAX	MAXIMUM
E	EAST	MMB	MEMBRANE
ELEC	ELECTRIC	MECH	MECHANICAL
EL	ELEVATION	MET	METAL
ELEV	ELEVATOR	MIN	MINIMUM
ENC	ENCLOSURE	MT	MOUNTING
EQ	EQUAL	NOM	NOMINAL
EQP	EQUIPMENT	N	NORTH
EXIST	EXISTING	NIC	NOT IN CONTRACT
EB	EXPANSION BOLT	NTS	NOT TO SCALE
EXP	EXPOSED	OC	ON CENTER
EXT	EXTERIOR	OPG	OPENING
FBO	FURNISHED BY OTHERS	OPP	OPPOSITE
FCU	FAN COIL UNIT	OPH	OPPOSITE HAND
FGL	FIBERGLASS	OD	OUTSIDE DIAMETER
FIN	FINISHED	PTD	PAINTED
FFE	FINISHED FLOOR ELEVATION	PTN	PARTITION
FFL	FINISHED FLOOR LINE	PERF	PERFORATED
FA	FIRE ALARM	PLAS	PLASTER
FE	FIRE EXTINGUISHER	PLAM	PLASTIC LAMINATE
FEC	FIRE EXTINGUISHER CABINET	PL	PLATE

PWD	PLYWOOD		
PT	POINT		
POLY	POLYETHELENE		
PVC	POLYVINYL CHLORIDE		
PSF	POUNDS PER SQUARE FOOT		
PSI	POUNDS PER SQUARE INCH		
PL	PROPERTY LINE		
QT	QUARRY TILE		
RAD	RADIUS		
REF	XREFERENCE		
REF	REFRIGERATOR		
REQ'D	REQUIRED		
REV	REVISION		
RH	RIGHT HAND		
R	RISER		
RD	ROOF DRAIN		
RFG	ROOFING		
RM	ROOM		
RO	ROUGH OPENING		
RB	RUBBER BASE		
SEC	SECTION		
SHTH	SHEATHING		
SHT	SHEET		
SIM	SIMILAR		
SC	SOLID CORE		
S	SOUTH		
SPEC	SPECIFICATION (S)		
SQ	SQUARE		
SS	STAINLESS STEEL		
STD	STANDARD		
STL	STEEL		
STO	STORAGE		
SD	STORM DRAIN		
STR	STRUCTURAL		
SUS	SUSPENDED		
SYM	SYMMETRY		
TEL	TELEPHONE		
TV	TELEVISION		
TC	TERRA COTTA		
TZ	TERRAZZO		
THK	THICKNESS		
T & G	TONGUE AND GROOVE		
TW	TOP OF WALL		
T	TREAD		
TYP	TYPICAL		
UON	UNLESS OTHERWISE NOTED		
VB	VAPOR BARRIER		
V	VINYL		
VCT	VINYL COMPOSITE		
WC	WATER CLOSET		
WP	WATERPROOFING		
WWF	WELDED WIRE FABRIC		
W	WEST		
W	WIDTH, WIDE		
WG	WIRE GLASS		
W/	WITH		
WD	WOOD		
WI	WROUGHT IRON		

MATERIALS LEGEND

- EARTH / COMPACT FILL
- POROUS FILL / GRAVEL
- CAST-IN-PLACE CONCRETE
- SAND / MORTAR / PLASTER
- CONCRETE BLOCK
- FACE BRICK
- FIRE BRICK
- LIMESTONE
- BLUESTONE / SLATE
- MARBLE
- STEEL
- ALUMINUM
- BRASS / BRONZE
- METAL FLASHING-ELEVATION
- FINISH WOOD
- ROUGH DIMENSIONAL LUMBER
- WOOD BLOCKING
- PLYWOOD
- GLASS
- BATT INSULATION
- RIGID INSULATION
- CERAMIC TILE
- GYPSUM WALL BOARD
- METAL LATH & PLASTER

SYMBOLS LEGEND

- BUILDING SECTION/WALL SECTION DRAWING REFERENCE NUMBER
- ELEVATION/DRAWING REFERENCE NUMBER
- DETAIL/DRAWING REFERENCE NUMBER
- A — EXTERIOR DOOR / WINDOW TYPE
- D1 — INTERIOR DOOR NUMBER
- 101 — INTERIOR FINISHED OPENING NUMBER
- 1 — REVISION
- DATUM ELEVATION
- 17.0' — SPOT ELEVATION

ZONING 38 SOUTH BEACH DR.

DISTRICT:	6
BLOCK:	36
TAX LOT(S):	64
ZONING DISTRICT:	CD-1S
CONSTRUCTION:	ALTERATION
NUMBER OF STORIES:	2 1/4

LOT

LOT AREA	0.27 ACRES (11,988 SF)

CONSULTANT LIST

Surveyor
JAMES A. DENNISON, L.S.
382 Huntington Road
Stratford, CT 06614
(203) 377-2091

Landscape Architect
HOLLANDER DESIGN
200 Park Avenue South, Suit 1200
New York, NY 1003
Melissa Reavis
(212) 473-0620
mreavis@hollanderdesign.com

Coastal Engineer
RACE Coastal Engineering
611 Access Road
Stratford, CT 06615
Azure Dee Sleicher
(203) 377-0663

Civil Engineer
Redniss & Mead
22 1st Street
Stamford, CT 06905
Melissa Lumpkin
(203) 327-0500 x15169
m.lumpkin@rednissmead.com

LIST OF DRAWINGS:

ARCHITECTURE - O.C.A.

A-000	COVERSHEET
Z-100	AREA PLAN DIAGRAMS
Z-101	ELEVATIONS AND SECTIONS AT WEST GARAGE
A-100	PROPOSED LOWER LEVEL PLAN
A-101	PROPOSED FIRST FLOOR PLAN
A-102	PROPOSED SECOND FLOOR PLAN
A-103	PROPOSED ATTIC PLAN
A-104	PROPOSED ROOF PLAN
A-200	PROPOSED AND EXISTING NORTH ELEVATIONS
A-201	PROPOSED AND EXISTING EAST ELEVATIONS
A-202	PROPOSED AND EXISTING SOUTH ELEVATIONS
A-203	PROPOSED AND EXISTING WEST ELEVATIONS
A-204	PROPOSED AND EXISTING BUILDING SECTIONS
A-205	PROPOSED AND EXISTING BUILDING SECTIONS

SURVEY - J. DENNISON

ZONING LOCATION SURVEY

CIVIL ENGINEERING - REDNISS & MEAD

SEE CIVIL ENGINEER DRAWING SET

LANDSCAPE ARCHITECTURE - HOLLANDER DESIGN

SEE LANDSCAPE ARCHITECT DRAWING SET

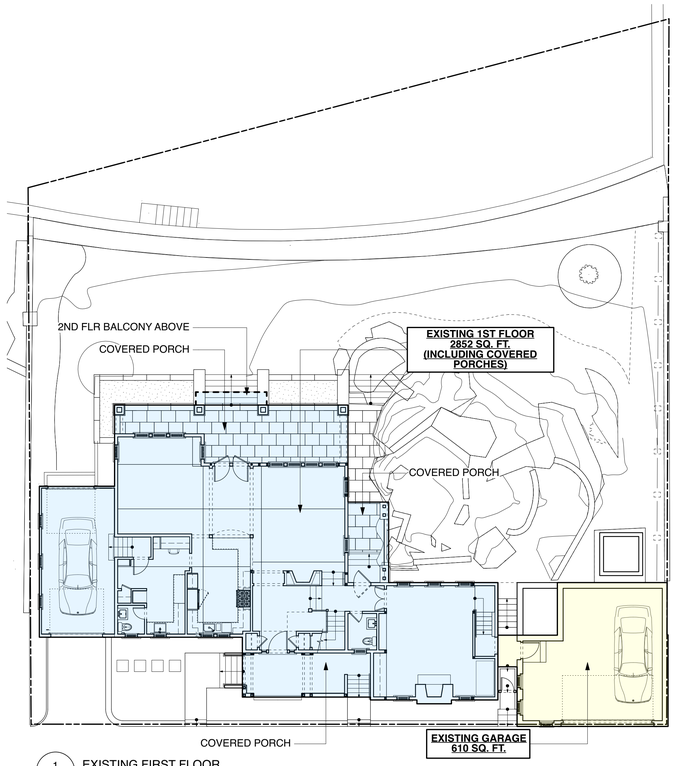
LOCATION MAP



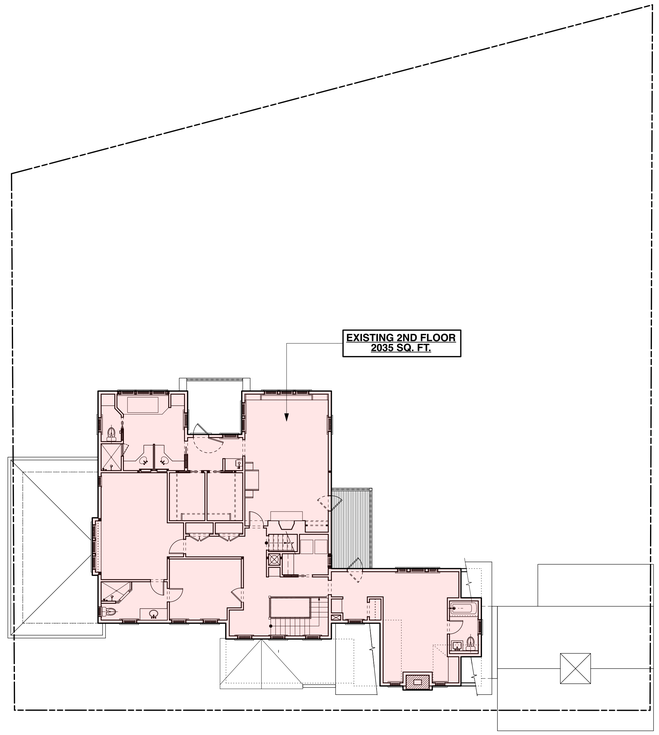
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

STATE OF CONNECTICUT
OLIVER COPE
No. 7405
LICENSED ARCHITECT

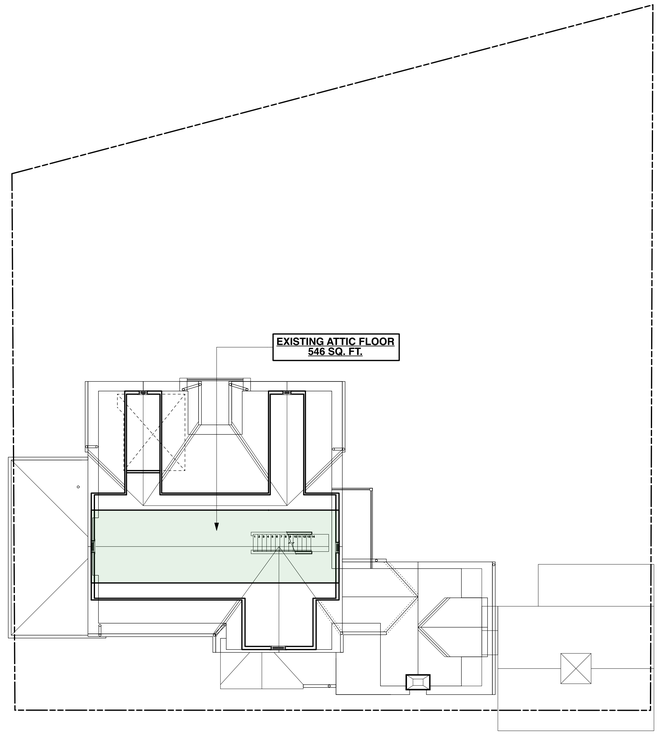
OLIVER COPE • ARCHITECT 135 WEST 26 ST. 5TH FLOOR NEW YORK, NY 10001 TEL: (212) 727 . 1225



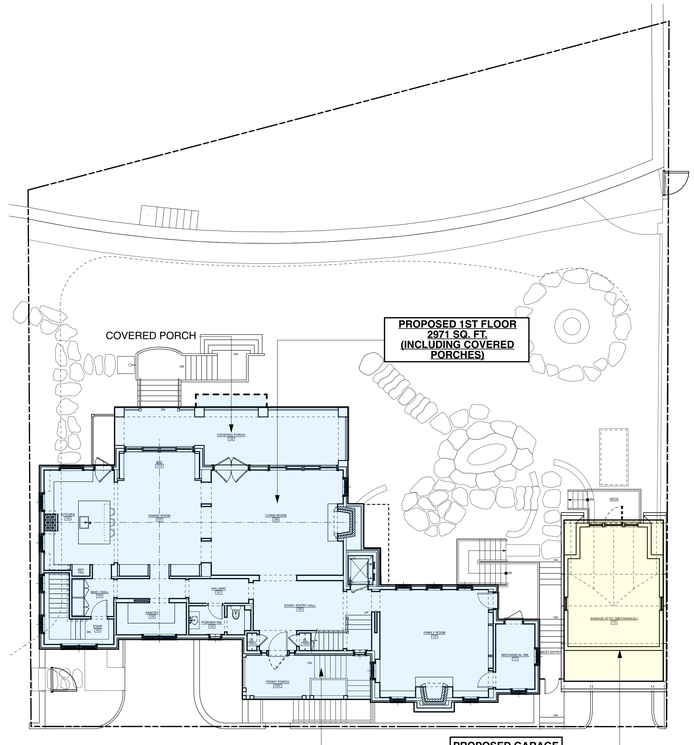
1 Z-101 EXISTING FIRST FLOOR
Scale: 3/32" = 1'-0"



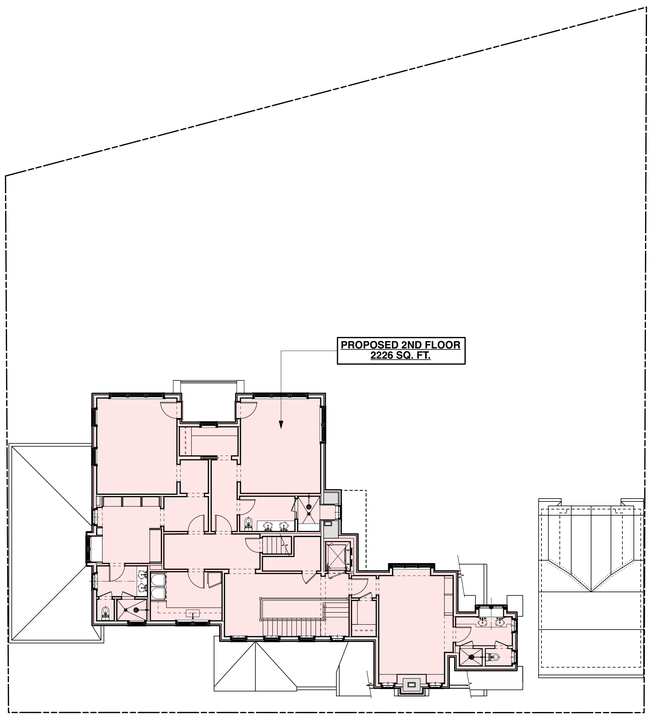
2 Z-101 EXISTING SECOND FLOOR
Scale: 3/32" = 1'-0"



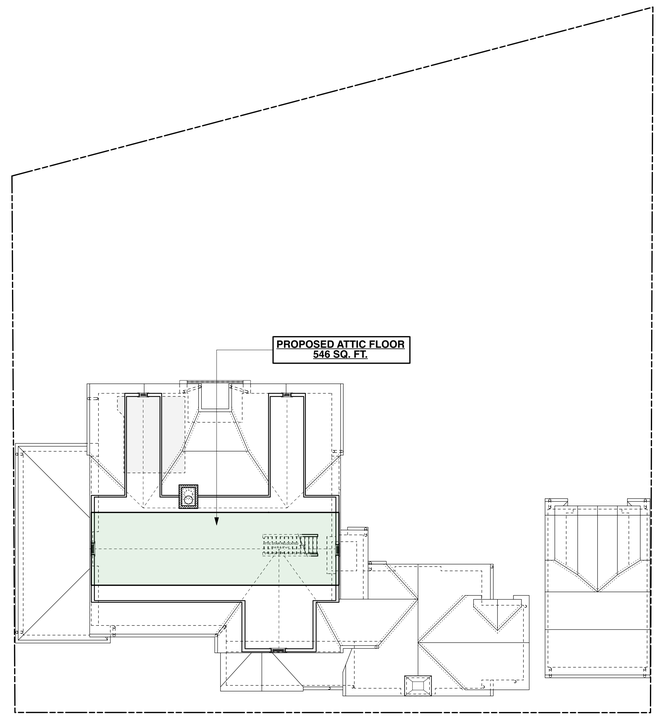
3 Z-101 EXISTING ATTIC FLOOR
Scale: 3/32" = 1'-0"



1.1 Z-101 PROPOSED FIRST FLOOR
Scale: 3/32" = 1'-0"



2.1 Z-101 PROPOSED SECOND FLOOR
Scale: 3/32" = 1'-0"



3.1 Z-101 PROPOSED ATTIC FLOOR
Scale: 3/32" = 1'-0"

N

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25 ISSUED TO ZBA

COPYRIGHT © 2023 OLIVER COPE • ARCHITECT ALL RIGHTS RESERVED

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

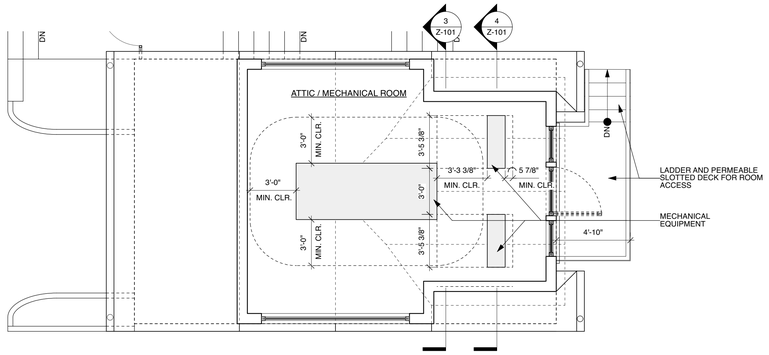
JOB NO.:	DRAWN:
2304	MM
DATE: See Above	**CHECKED:**

SCALE: As Noted

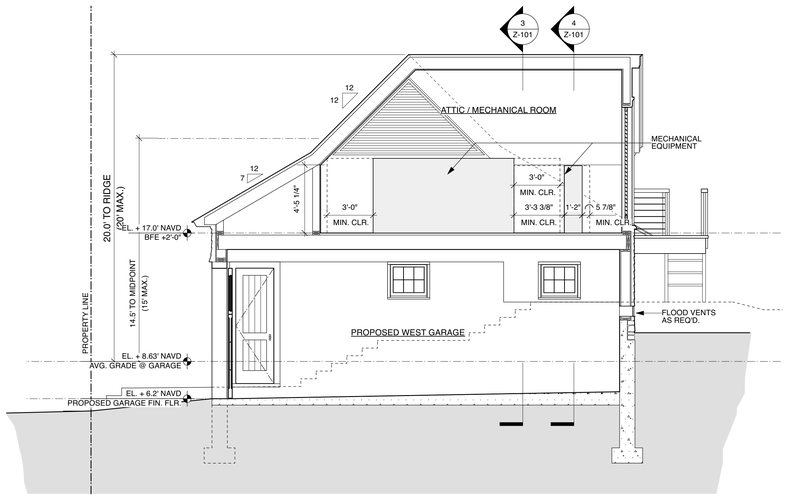
TITLE: EXISTING AND PROPOSED AREA PLANS

STATE OF CONNECTICUT · OLIVER COPE · No. 7405 · LICENSED ARCHITECT

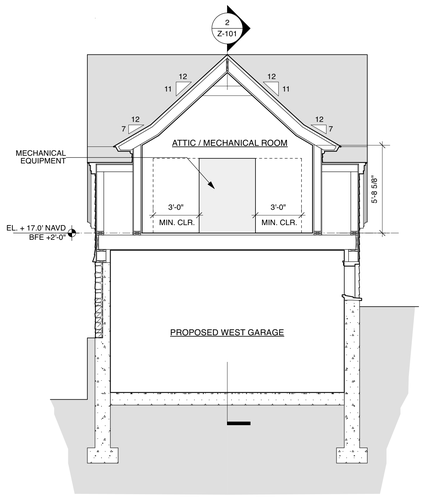
Z-100



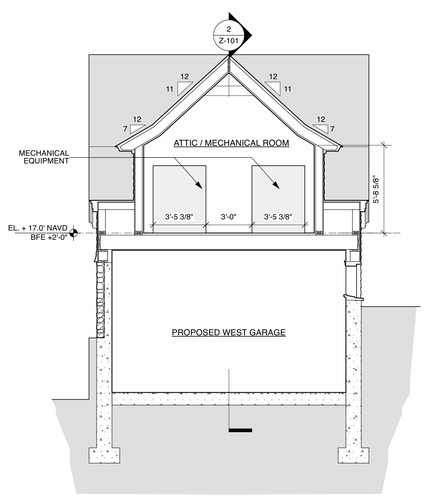
1 Z-101 PROPOSED GARAGE ATTIC PLAN (MECHANICAL ROOM)
Scale: 1/4" = 1'-0"



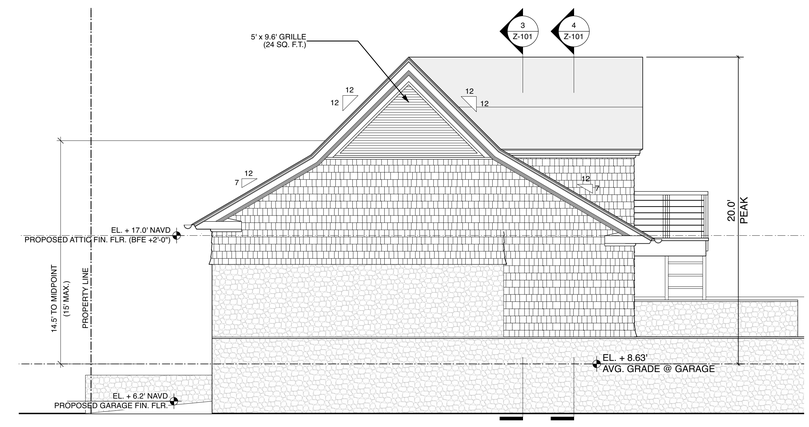
2 Z-101 SECTION THRU PROPOSED WEST GARAGE FACING EAST
Scale: 1/4" = 1'-0"



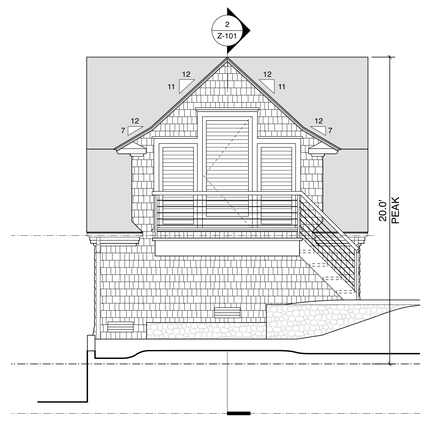
3 Z-101 SECTION THRU PROPOSED WEST GARAGE FACING NORTH
Scale: 1/4" = 1'-0"



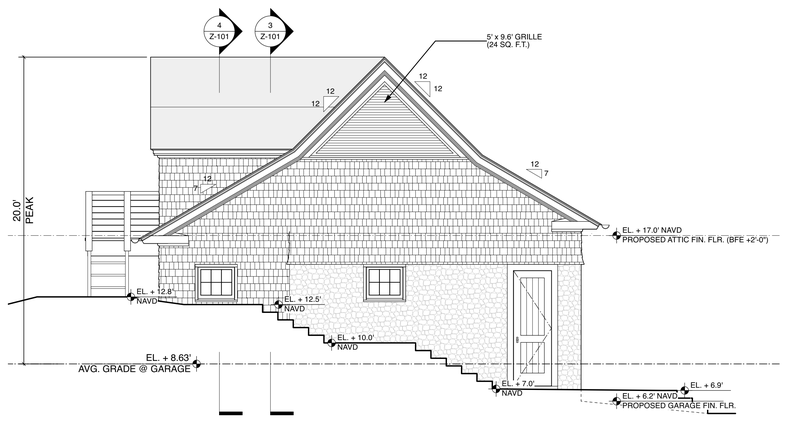
4 Z-101 SECTION THRU PROPOSED WEST GARAGE FACING NORTH
Scale: 1/4" = 1'-0"



5 Z-101 PROPOSED WEST ELEVATION (WEST GARAGE)
Scale: 1/4" = 1'-0"



6 Z-101 PROPOSED SOUTH ELEVATION (WEST GARAGE)
Scale: 1/4" = 1'-0"



7 Z-101 PROPOSED EAST ELEVATION (WEST GARAGE)
Scale: 1/4" = 1'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

05/02/25 ISSUE FOR ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
236 NETTLETON HOLLOW RD
WASHINGTON, CT 06793

JOB NO.: 2304	**DRAWN:** MM
DATE: See Above	**CHECKED:**

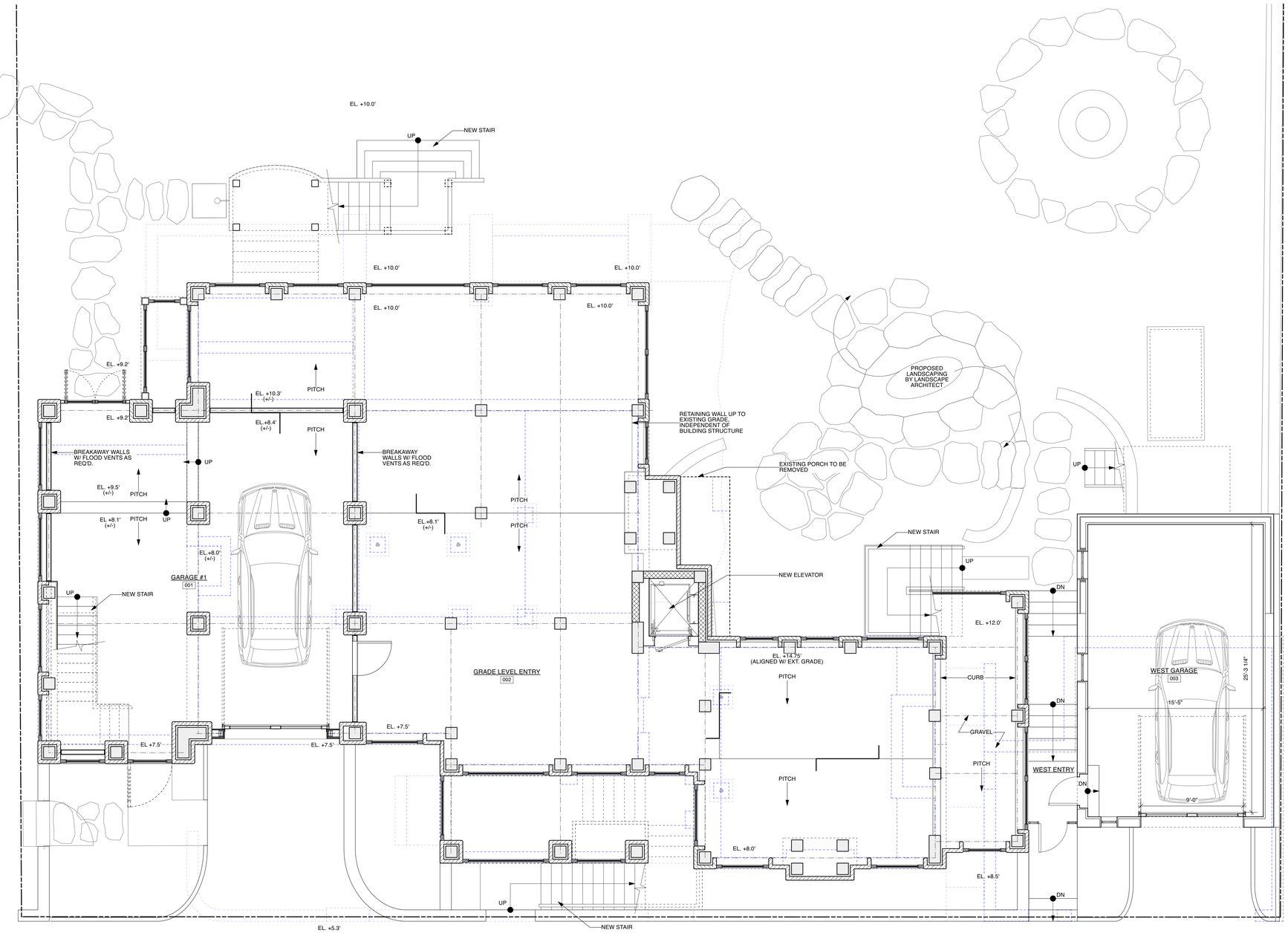
SCALE: As Noted

TITLE: PROPOSED WEST GARAGE ELEVATIONS AND SECTIONS

STATE OF CONNECTICUT
OLIVER COPE
No. 7405
LICENSED ARCHITECT

Z-101

COPYRIGHT © 2023 OLIVER COPE • ARCHITECT ALL RIGHTS RESERVED



1 A-100 PROPOSED LOWER LEVEL / PIER PLAN
Scale: 1/4" = 1'-0"
0' 6" 1'-0" 2'-0" 4'-0" 8'-0"

N

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

LEGEND:

EXISTING FOUNDATION PLAN

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.:	DRAWN:
2304	JPW
DATE: See Above	**CHECKED:**

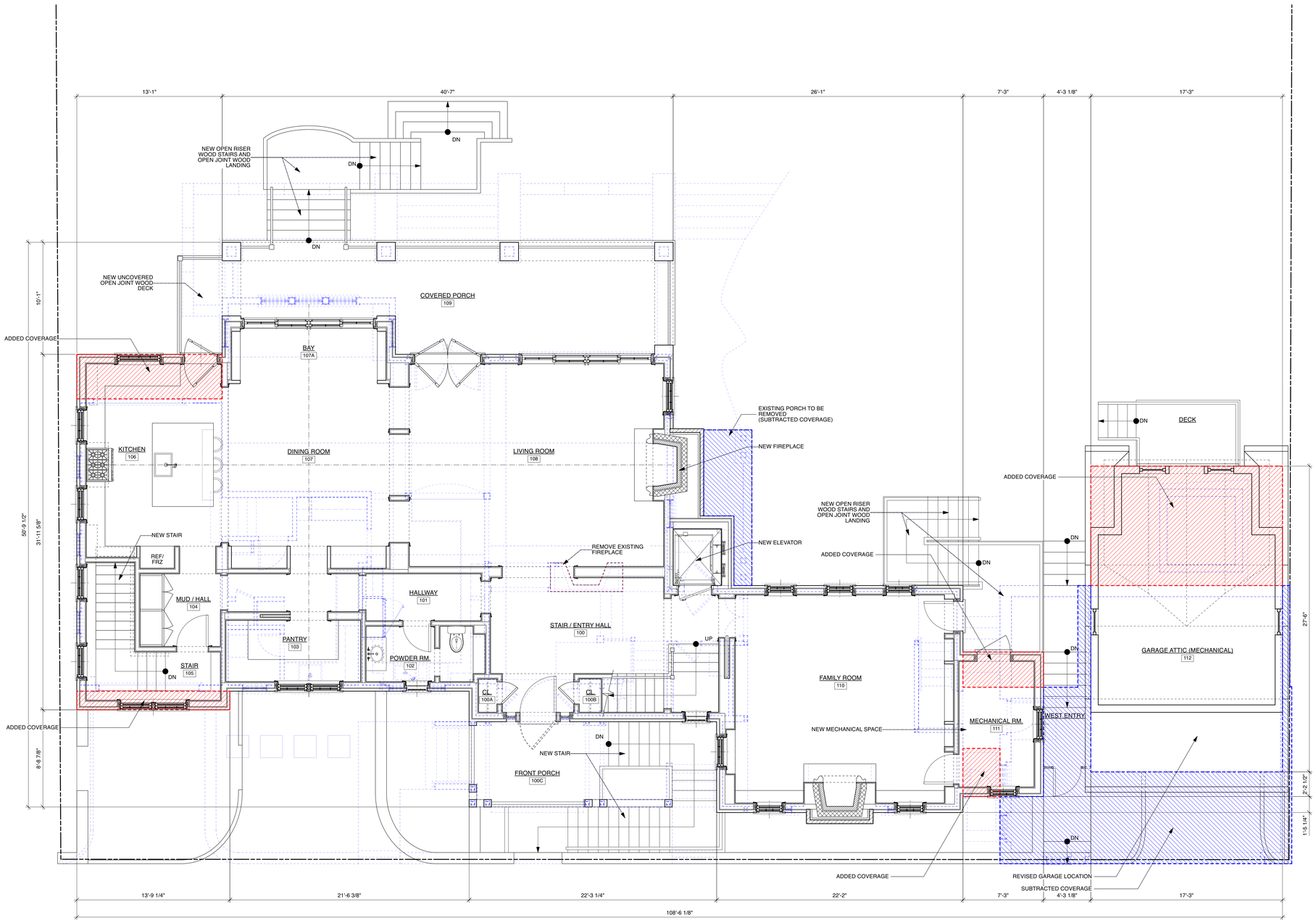
SCALE: As Noted

TITLE:
PROPOSED
LOWER LEVEL PLAN
WITH EXISTING OVERLAY

STATE OF CONNECTICUT OLIVER COPE No. 7405 LICENSED ARCHITECT

A-100

COPYRIGHT © 2023 OLIVER COPE • ARCHITECT ALL RIGHTS RESERVED



1 A-101 PROPOSED FIRST FLOOR PLAN
Scale: 1/4" = 1'-0"
0 6" 1'-0" 2'-0" 4'-0" 8'-0"

BUILDING COVERAGE:

EXISTING	**3462 SQ.FT.**
PROPOSED	**3455 SQ.FT.**
MAX. ALLOWED	**3212 SQ.FT.**

N

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

LEGEND:

- EXISTING FIRST FLOOR PLAN
- ADDITIONAL BUILDING COVERAGE
- EXISTING BUILDING COVERAGE (REMOVED)

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.: 2304	**DRAWN:** MM
DATE: See Above	**CHECKED:**

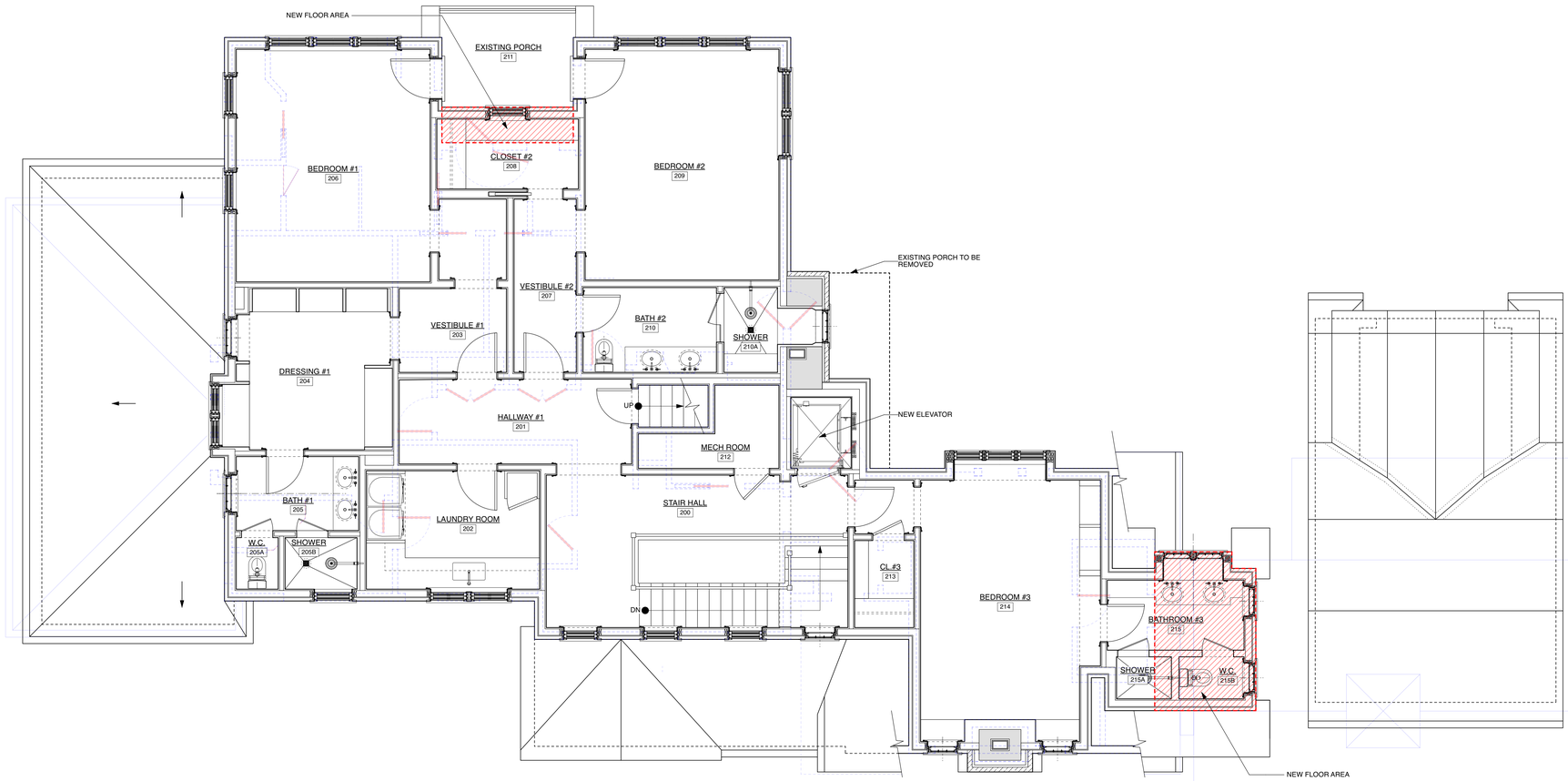
SCALE: As Noted

TITLE:
PROPOSED
FIRST FLOOR PLAN
WITH EXISTING OVERLAY

STATE OF CONNECTICUT OLIVER COPE No. 7405 LICENSED ARCHITECT

A-101

COPYRIGHT © 2023 OLIVER COPE - ARCHITECT ALL RIGHTS RESERVED



1 A-102 PROPOSED SECOND FLOOR PLAN
Scale: 1/4" = 1'-0"
0 8" 1'-0" 2'-0" 4'-0" 8'-0"

N

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

LEGEND:

EXISTING SECOND FLOOR PLAN

ADDITIONAL FLOOR AREA

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.:	DRAWN:
2304	KK
DATE: See Above	**CHECKED:**

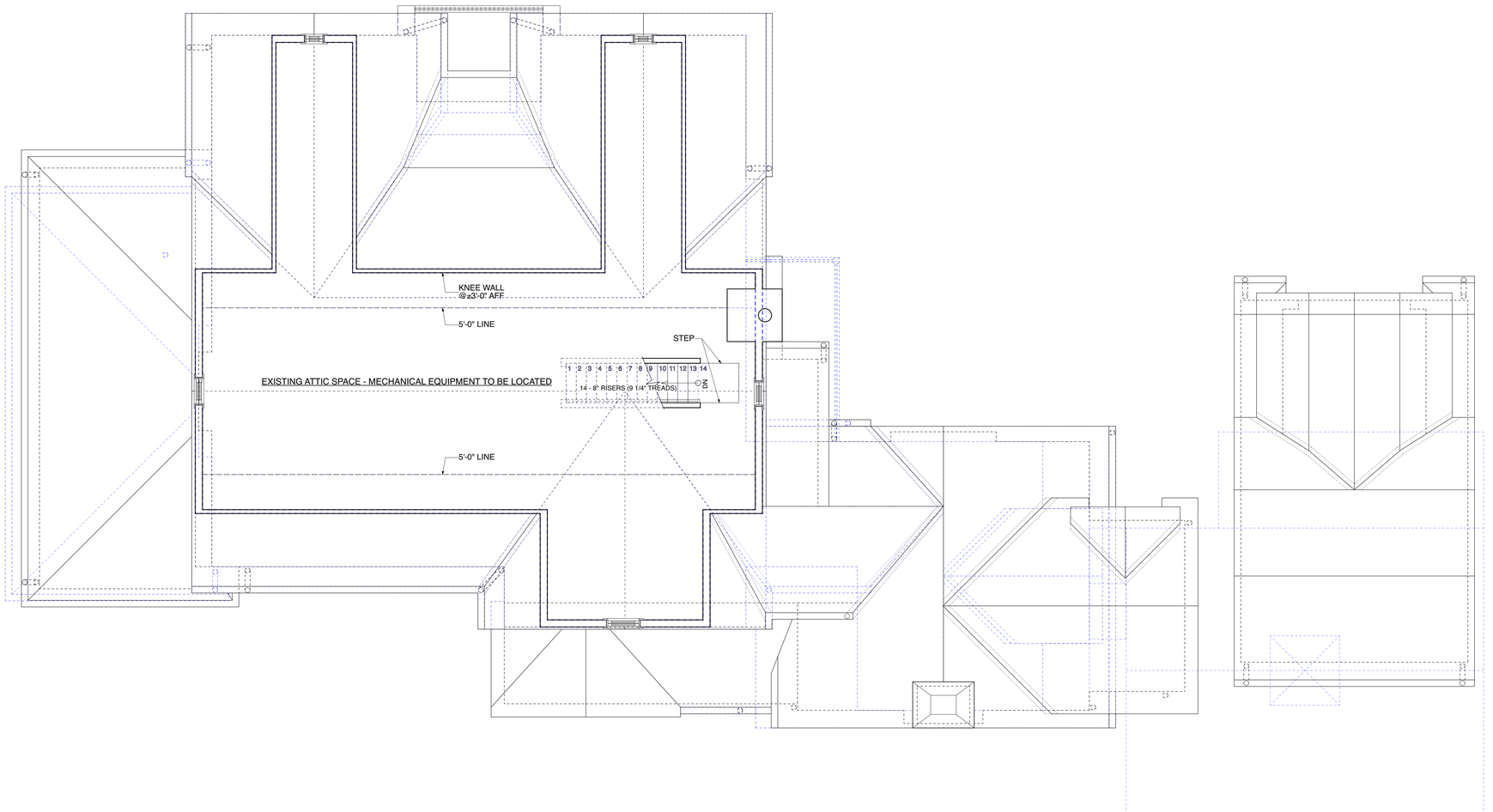
SCALE: As Noted

TITLE:
PROPOSED
SECOND FLOOR PLAN
WITH EXISTING OVERLAY

STATE OF CONNECTICUT OLIVER COPE No. 7405 LICENSED ARCHITECT

A-102

COPYRIGHT © 2025 OLIVER COPE • ARCHITECT ALL RIGHTS RESERVED



1 A-103 PROPOSED ATTIC PLAN
Scale: 1/4" = 1'-0"
0' 8" 1'-0" 2'-0" 4'-0" 8'-0"

N

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

LEGEND:

EXISTING ATTIC PLAN

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.:	DRAWN:
2304	MM
DATE: See Above	**CHECKED:**

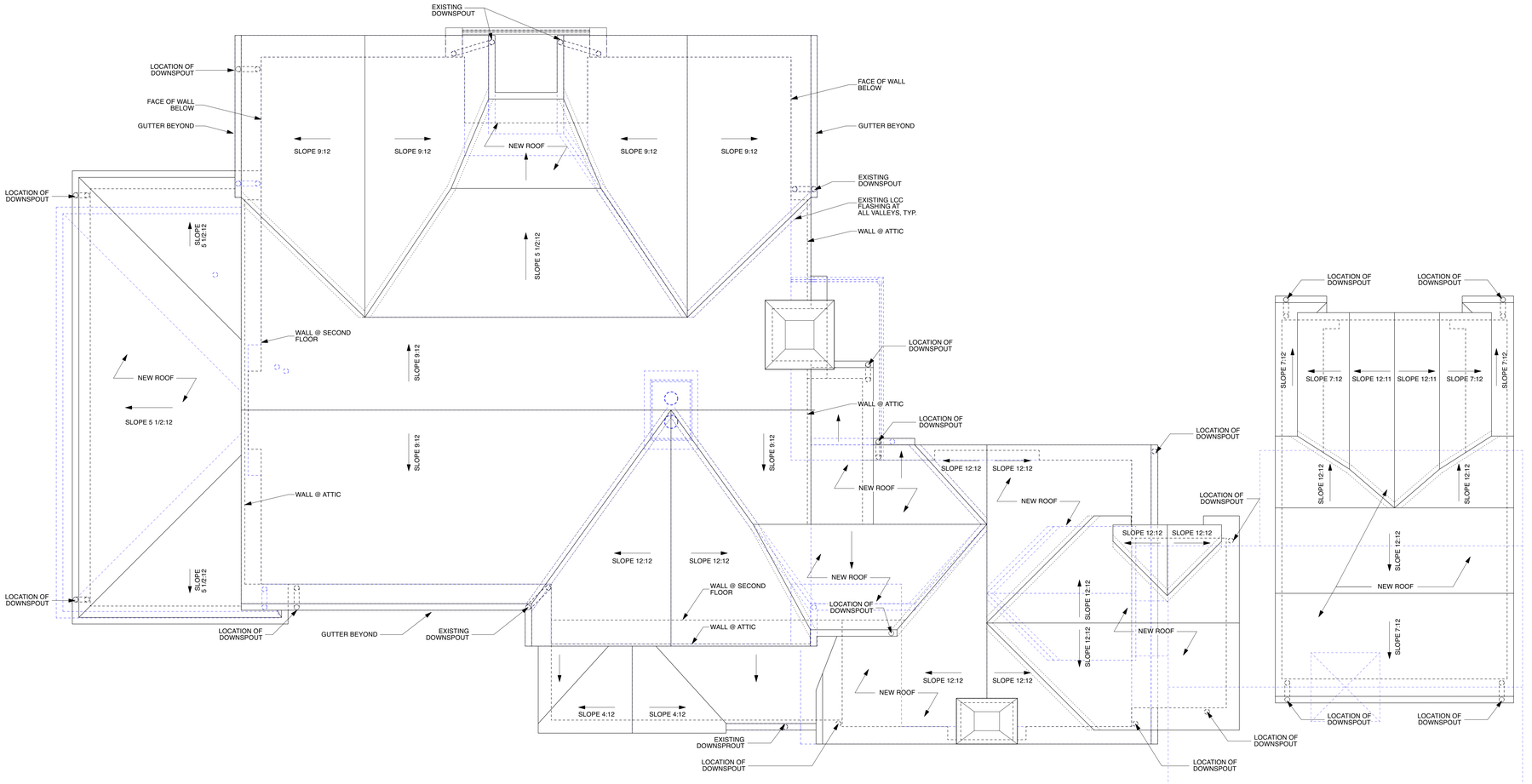
SCALE: As Noted

TITLE:
PROPOSED
ATTIC PLAN
WITH EXISTING OVERLAY

STATE OF CONNECTICUT OLIVER COPE REGISTERED No. 7405 LICENSED ARCHITECT

A-103

COPYRIGHT © 2023 OLIVER COPE • ARCHITECT ALL RIGHTS RESERVED



1 A-104 PROPOSED ROOF PLAN
Scale: 1/4" = 1'-0"
0' 6" 1'-0" 2'-0" 4'-0" 8'-0"

N

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

LEGEND:

EXISTING ROOF PLAN

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.: 2304	DRAWN: MM
DATE: See Above	CHECKED:

SCALE: As Noted

TITLE: PROPOSED ROOF PLAN WITH EXISTING OVERLAY

STATE OF CONNECTICUT OLIVER COPE No. 7405 LICENSED ARCHITECT

A-104

COPYRIGHT © 2023 OLIVER COPE - ARCHITECT ALL RIGHTS RESERVED



1 / A-200 PROPOSED NORTH ELEVATION
Scale: 1/4" = 1'-0"
0 6" 1'-0" 2'-0" 4'-0" 8'-0"



2 / A-200 EXISTING NORTH ELEVATION
Scale: 1/4" = 1'-0"
0 6" 1'-0" 2'-0" 4'-0" 8'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA
05/02/25 RE-ISSUE FOR ZBA

COPYRIGHT © 2023 OLIVER COPE - ARCHITECT ALL RIGHTS RESERVED

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.:	DRAWN:
2304	MM
DATE: See Above	**CHECKED:**

SCALE: As Noted

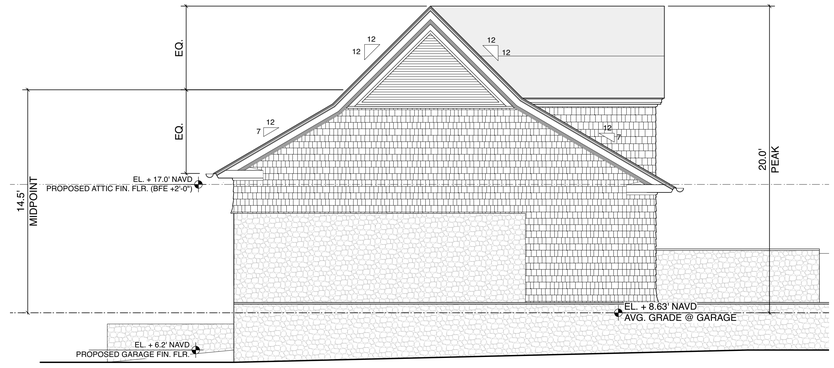
TITLE: PROPOSED AND EXISTING NORTH ELEVATIONS

STATE OF CONNECTICUT · OLIVER COPE · No. 7405 · LICENSED ARCHITECT

A-200



1 A-201 PROPOSED WEST ELEVATION
Scale: 1/4" = 1'-0"



3 A-201 PROPOSED WEST ELEVATION (WEST GARAGE)
Scale: 1/4" = 1'-0"



2 A-201 EXISTING WEST ELEVATION
Scale: 1/4" = 1'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA
05/02/25 RE-ISSUE FOR ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.:	DRAWN:
2304	MM
DATE:	**CHECKED:**
See Above	OR

SCALE: As Noted

TITLE:
PROPOSED AND EXISTING WEST ELEVATIONS

STATE OF CONNECTICUT · OLIVER COPE · No. 7408 · LICENSED ARCHITECT

A-201

COPYRIGHT © 2025 OLIVER COPE - ARCHITECT ALL RIGHTS RESERVED



1 A-202 PROPOSED SOUTH ELEVATION
Scale: 1/4" = 1'-0"



2 A-202 EXISTING SOUTH ELEVATION
Scale: 1/4" = 1'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA
05/02/25 RE-ISSUE FOR ZBA

COPYRIGHT © 2023 OLIVER COPE - ARCHITECT ALL RIGHTS RESERVED

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.:	DRAWN:
2304	MM
DATE:	**CHECKED:**
See Above	OR

SCALE: As Noted

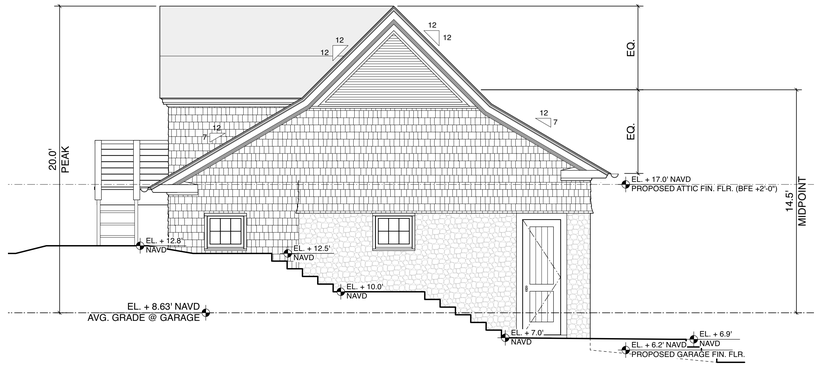
TITLE: PROPOSED AND EXISTING SOUTH ELEVATIONS

STATE OF CONNECTICUT · OLIVER COPE · No. 7405 · LICENSED ARCHITECT

A-202



1 A-203 PROPOSED EAST ELEVATION
Scale: 1/4" = 1'-0"



3 A-203 PROPOSED EAST ELEVATION (WEST GARAGE)
Scale: 1/4" = 1'-0"



2 A-203 EXISTING EAST ELEVATION
Scale: 1/4" = 1'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA
05/02/25 RE-ISSUE FOR ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.:	DRAWN:
2304	MM
DATE:	**CHECKED:**
See Above	OR

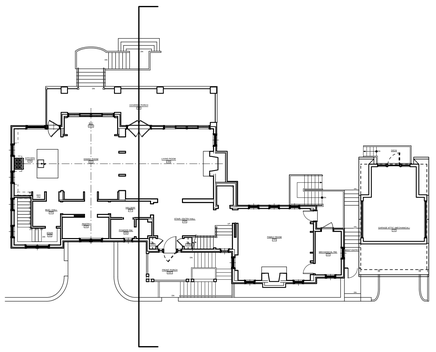
SCALE: As Noted

TITLE: PROPOSED AND EXISTING EAST ELEVATIONS

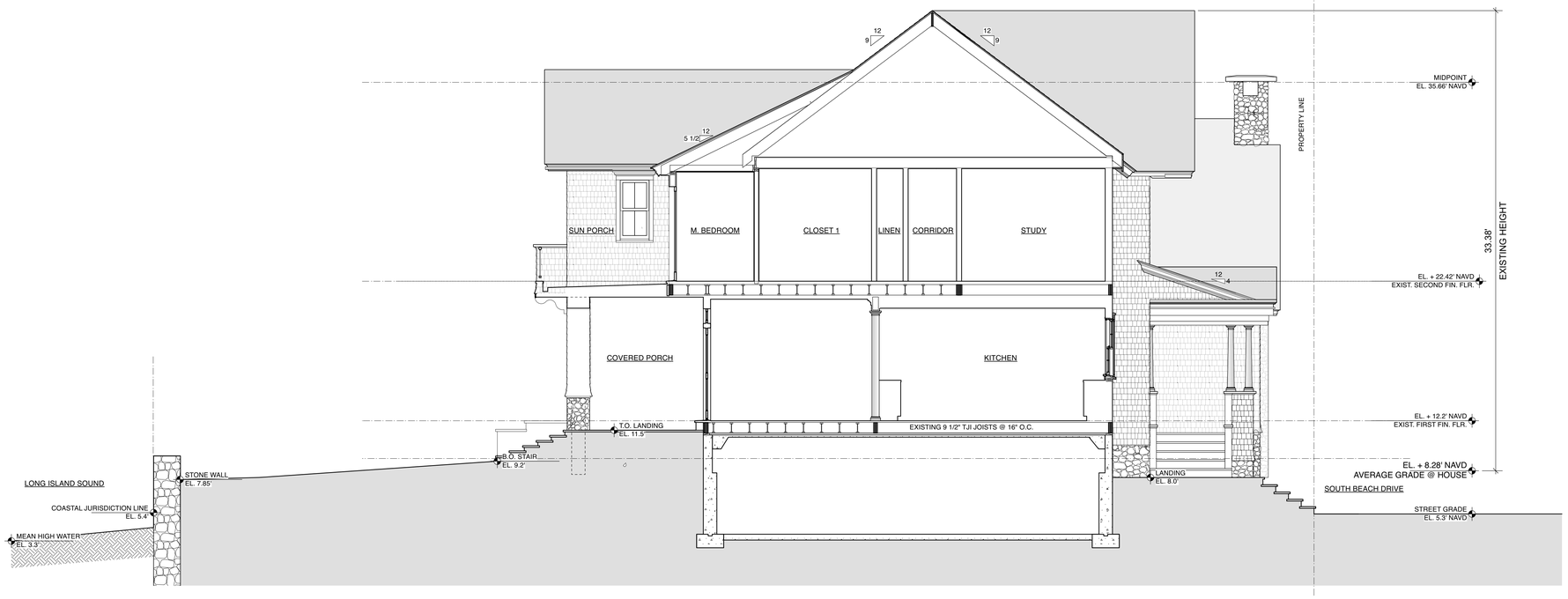
STATE OF CONNECTICUT OLIVER COPE No. 7405 LICENSED ARCHITECT

A-203

COPYRIGHT © 2023 OLIVER COPE - ARCHITECT ALL RIGHTS RESERVED



2 A-204 PROPOSED BUILDING SECTION FACING WEST
Scale: 1/4" = 1'-0"



1 A-204 EXISTING BUILDING SECTION FACING WEST
Scale: 1/4" = 1'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25	ISSUE TO ZBA
05/02/25	RE-ISSUE TO ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.: 2304	**DRAWN:** JPW
DATE: See Above	**CHECKED:**

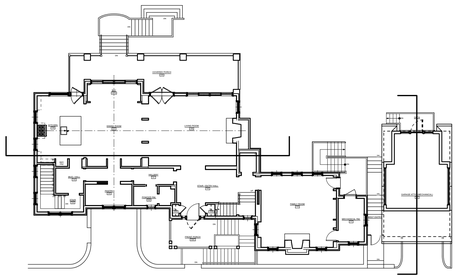
SCALE: As Noted

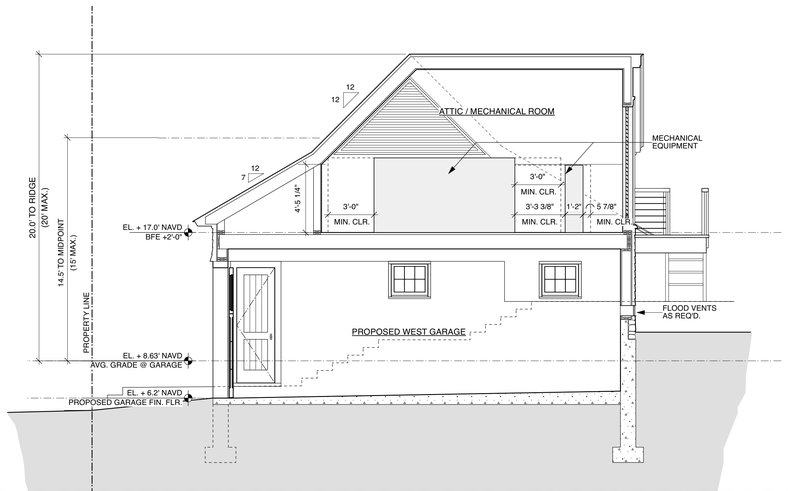
TITLE:
EXISTING AND PROPOSED SECTIONS

COPYRIGHT ©2024 OLIVER COPE • ARCHITECT ALL RIGHTS RESERVED

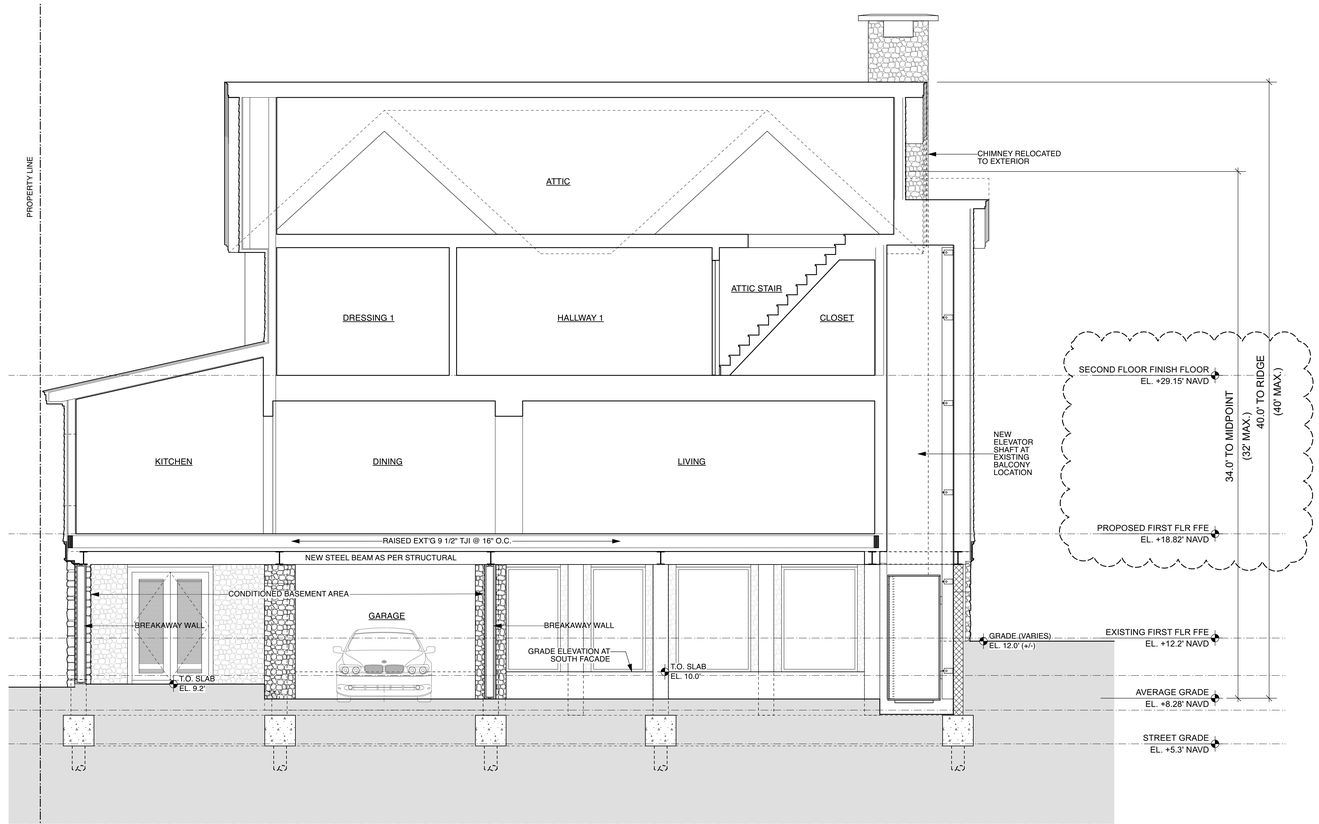
STATE OF CONNECTICUT OLIVER COPE No. 7405 LICENSED ARCHITECT

A-204

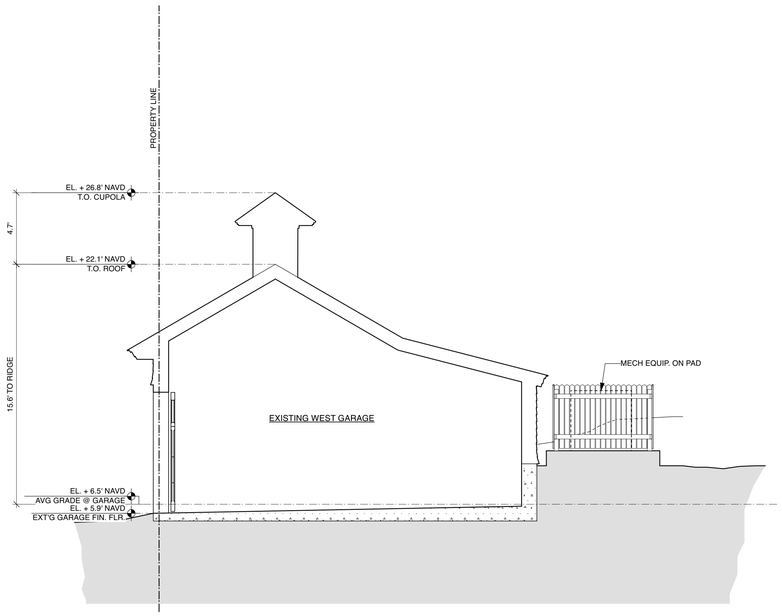




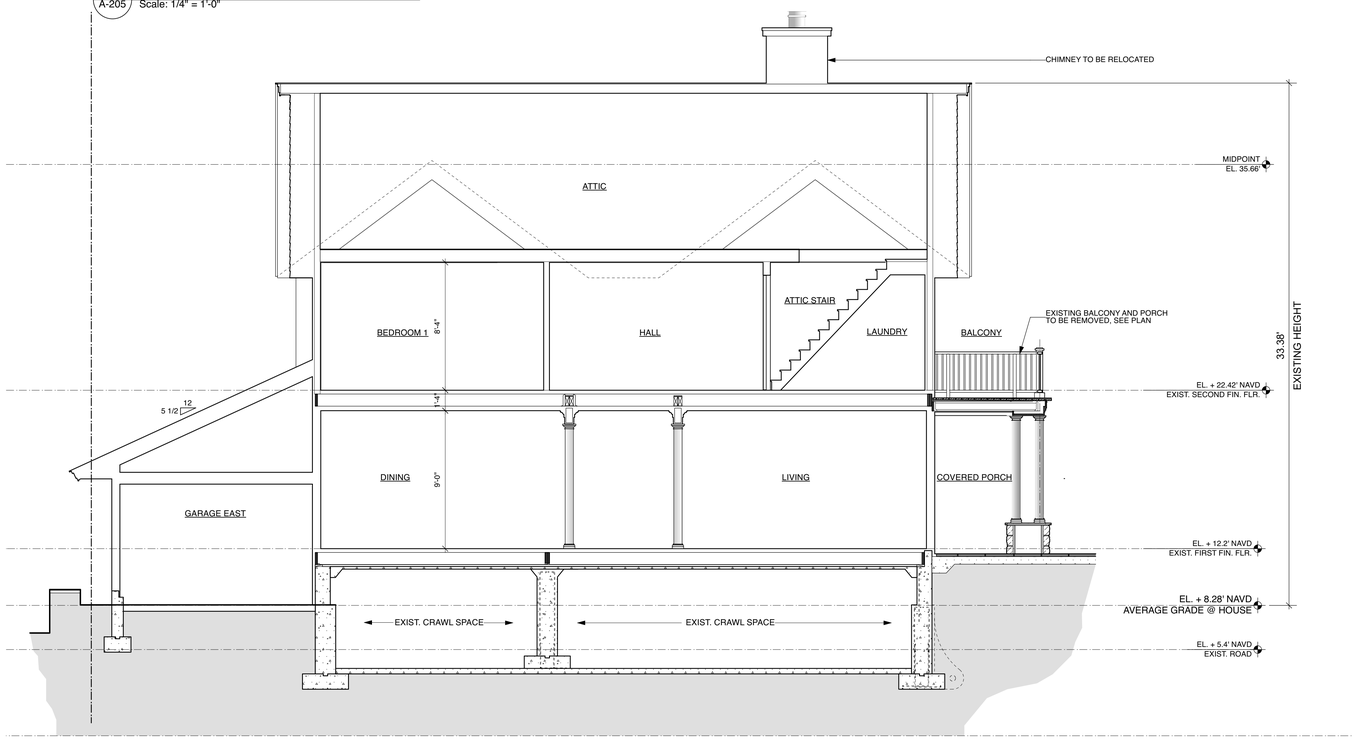
4 A-205 PROPOSED GARAGE SECTION FACING EAST
Scale: 1/4" = 1'-0"



2 A-205 PROPOSED BUILDING SECTION FACING SOUTH
Scale: 1/4" = 1'-0"



3 A-205 EXISTING GARAGE SECTION FACING EAST
Scale: 1/4" = 1'-0"



1 A-205 EXISTING BUILDING SECTION FACING SOUTH
Scale: 1/4" = 1'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25	ISSUE TO ZBA
05/02/25	RE-ISSUE TO ZBA

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.: 2304	**DRAWN:** JPW
DATE: See Above	**CHECKED:**

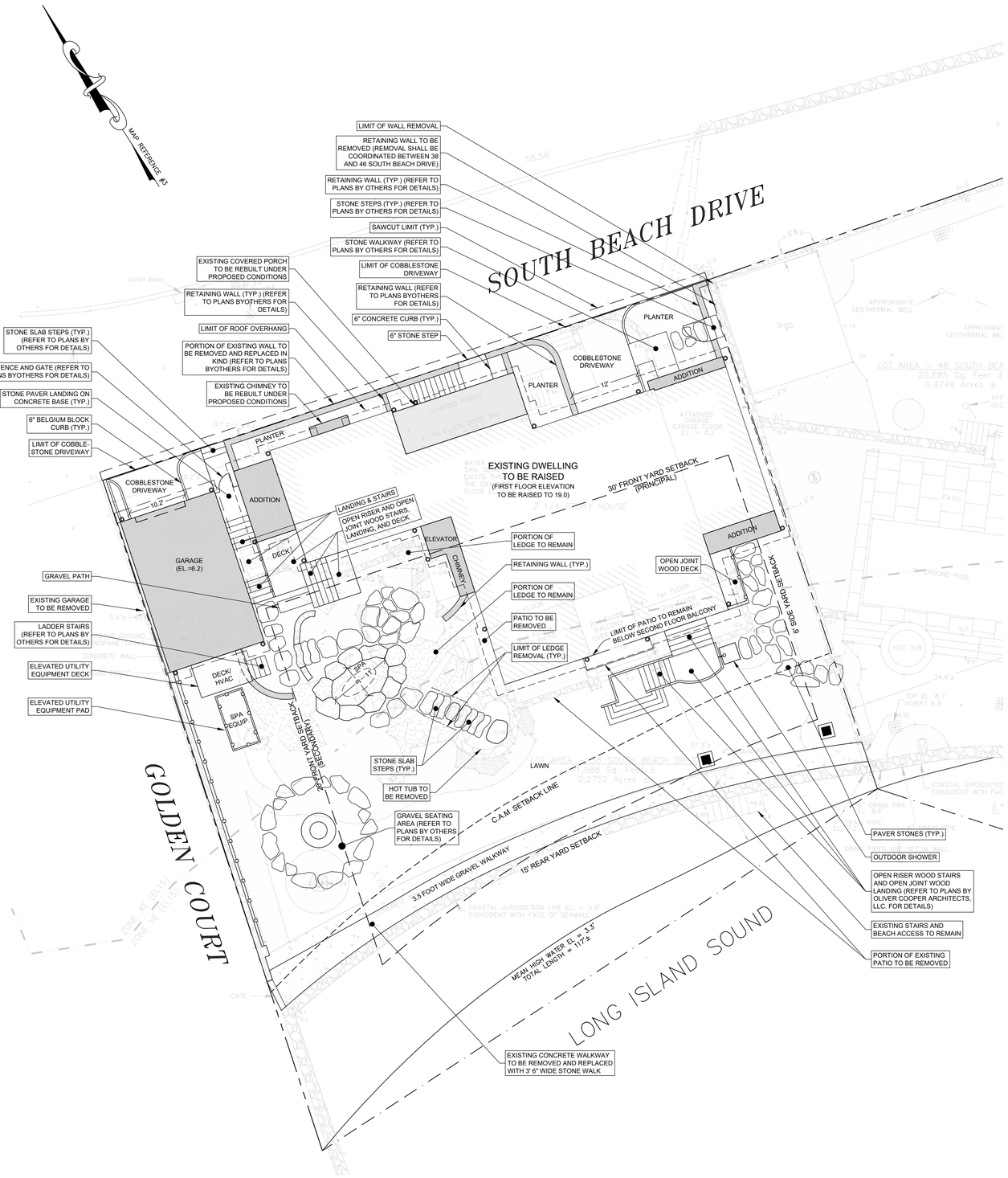
SCALE: As Noted

TITLE:
EXISTING AND PROPOSED SECTIONS

COPYRIGHT © 2024 OLIVER COPE • ARCHITECT ALL RIGHTS RESERVED

STATE OF CONNECTICUT OLIVER COPE No. 7405 LICENSED ARCHITECT

A-205



GENERAL NOTES:

1. These drawings are intended only to depict the design of site grading, drainage, sanitary, utilities, and sediment & erosion controls. These drawings are for approval purposes only. No construction may begin prior to obtaining all necessary permits and approvals.
2. All survey data, boundary lines, topography, building locations and area calculations are from a survey prepared by James Dennison L.S. entitled Topographic Survey dated January 15, 2025. Elevations depicted or labeled are based on NAVD-88.
3. No Wetlands are dipicted hereon.
4. Refer to drawings by Hollander Design Landscape Architect for information and design of the proposed landscaping. These drawings depict site plans corresponding to the latest landscape architect plans received from Hollander Design Landscape Architect received on 1/30/2025.
5. Refer to plans prepared by Architect for information and design of the proposed buildings. These drawings depict site plans corresponding to the latest architectural plans received from Oliver Cope Architect, LLC received on 1/30/2025.
6. Property lies in a CD-1S zone.
7. The property lies within the FEMA AE-15 and VE-15 Flood Zones (NAVD-88). Flood zones as shown on the Flood Insurance Rate Map Community No. C090012 Panel 0541 Suffix G, effective date July 8, 2013.
8. All construction shall comply with the City of Norwalk requirements, the State of Connecticut Basic Building Code, Americans with Disabilities Act (ADA), the Connecticut Guidelines for Soil and Erosion and Sediment Control, OSHA, CT DOT Form 819 (latest edition), and FEMA Flood Regulations.
9. All development activities to be undertaken within the street right-of-way and other public lands shall comply fully with City standards unless approved deviation is specifically set forth as part of this application. All work within the State right-of-way will comply with the CT DOT Form 819 with the latest special Provisions and Typical State Standard Details.
10. Contractor shall supply complete shop drawings including manufacturer's product data sheets to the Site Engineer, for all construction material used in conjunction with these drawings. Contractor shall allow a 5 day review period, prior to fabrication and installation.
11. Information on existing utilities has been compiled from various sources including utility company records, municipal record maps and field survey and is not guaranteed to be correct or complete. The contractor is solely responsible for determining actual locations and elevations of all utilities including underground services.
12. The property is served by public water and sewers.
13. Prior to any excavation the Contractor and/or Applicant, in accordance with Public Act 77-350, shall be required to contact "Call Before You Dig" at 1-800-922-4455 for mark-out of underground utilities. Dig test pit(s) at utility crossing(s) to check actual clearances with new utilities prior to construction. If conflicts are found the contractor shall notify the engineer, at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid the conflict. Such relocation shall be done with knowledge of and in accordance with the owner of the utility.
14. It shall be the responsibility of the contractor to provide any excavation safeguards, necessary barricades, flagmen, etc., for traffic control and site safety. All work shall be done in accordance with OSHA requirements. The contractor shall be responsible for compliance with OSHA requirements.
15. When preparing the existing site for the proposed development, all materials removed shall be disposed of in conformance with all governing agencies.
16. Remove stumps and brush from site, or chip and use during landscaping. Do not bury stumps on site.
17. Building elevations are subject to change and shall be finalized prior to building permit.
18. Special attention of the contractor is called to the required type and compaction of pipe bedding and backfill specified on these drawings. These requirements will be strictly enforced.
19. Prior to issuance of a Certificate of Occupancy, the Engineering Bureau may require a certification letter stating that the development was constructed in accordance to the approved plans, and an "as-built" drawing shall be submitted
20. The Contractor is responsible for coordinating with a licensed surveyor to prepare an "as-built" plan. The Contractor is responsible to coordinate with a site engineer 48 hours prior to any inspections.
21. The Engineering Division of the Department of Public Works and the inspecting engineer shall be notified by the contractor three (3) days prior to the commencement of each phase of construction.
22. The work shall be done in conformance with the contract documents/plans unless changes have been approved in writing by the design engineer prior to the work being done.

PAVEMENT AND PAVEMENT MARKINGS:

23. Areas of new asphalt shall follow the details on Sheet SE-5.
24. Areas of asphalt pavement that are disturbed by the construction of this project shall be replaced in accordance with the asphalt pavement repair detail. The finished grade of asphalt paving shall blend to existing grade and the edge of the concrete pavement smoothly with no slopes exceeding 4%.
25. Existing features such as but not limited to walks, curbs, and pavement damaged by construction activities shall be repaired at no additional cost to the owner.
26. Bituminous curbs damaged by the project shall be replaced with the new bituminous curbing machine laid Class 3 as described in Sections 8.15 and M.04 of the CT DOT Form 819.
27. Saw cut perimeter of area to be excavated. Saw cut shall be straight and vertical.
28. Contractor shall engage a testing lab who shall verify the base course material by means of a sieve analysis and perform compaction testing of the base and each course of pavement. Site Engineer shall review with the contractor the required testing at the preconstruction meeting. Site Engineer shall approve base course prior to placement of each layer of pavement.
29. The Contractor shall engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from specified requirements.
30. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements as directed by the Site Engineer.
31. Contractor is responsible to place the hot-mix asphalt mix as required in the drawings, details and the applicable Section of the CT DOT FORM 819 (latest edition).
32. Compaction shall be constructed as specified in the CT DOT FORM 819 (latest edition), Section 4.06 specification, the drawings and the details. Testing lab shall verify compaction of each course of pavement as directed by the Site Engineer.
33. After the asphalt pavement has cured sufficiently to support the weight of a water truck without marking the newly installed pavement, it shall be water tested for low spots, areas of little or no drainage, etc. A water truck shall spray a sufficient amount of water on all pavement sections to observe the drainage of water. There shall be positive drainage on all areas of the pavement. Any visible low spots where significant water (greater than or equal to 3/16" in depth) is left standing, shall be clearly marked for the Contractor to repair prior to final acceptance. These areas must be sawcut and removed down to the base course prior to replacement with asphalt mixture as per the original approved design. The base course and edges of sawcut asphalt must be treated with tack oil prior to new section of asphalt being installed. The Contractor's Representative or inspecting A/E shall be notified 48 hours in advance of water test so that he may be present during the test.
34. The inspecting engineer and contractor will review the testing requirements at the preconstruction meeting. At this meeting, samples to be tested and compaction testing protocol will be discussed. Testing and approval of the subgrade, base course and asphalt layers prior to the installation of the next layer to determine if the work complies or deviates from the specified requirements. Prior to installation of the base course, contractor shall contact inspecting engineer to determine the suitability of the subgrade material, base course and asphalt. Additional excavation or base course may be required.
35. Finished paving shall be free of ``bird baths" and be smooth at the slopes specified on the plans.
36. Finished grade shall be within 1/2 inch of that noted on the drawings.
37. The pavement shall be protected from vehicular traffic of any kind with the use of barricades, etc. for a minimum period of 24 hours after final rolling. Maintain and protect asphalt surface from scrapes, sears, spills, hydraulic leaks, and any other construction damage for the remainder of construction until Owner's Representative acceptance. Contractor is responsible for clearing, repairing, seal coating, patching, and re-striping as necessary to obtain Owner's Representative's final approval/acceptance.
38. Thicknesses of all layers shown are after compaction. Compact all layers to 95% per ASTM D 1557 (Modified Proctor Method).

No.	Date	Revision
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

SITE DEVELOPMENT PLAN
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

SCALE: 1"=10' (0, 10, 20)

DRAWN BY: MW | CHECKED BY: VJH

STATE OF CONNECTICUT · VINCENT J. HYNES · REG. No. 0032100 · REGISTERED PROFESSIONAL ENGINEER

VINCENT J. HYNES, CT. REG. 32100

May 27, 2025
DATE

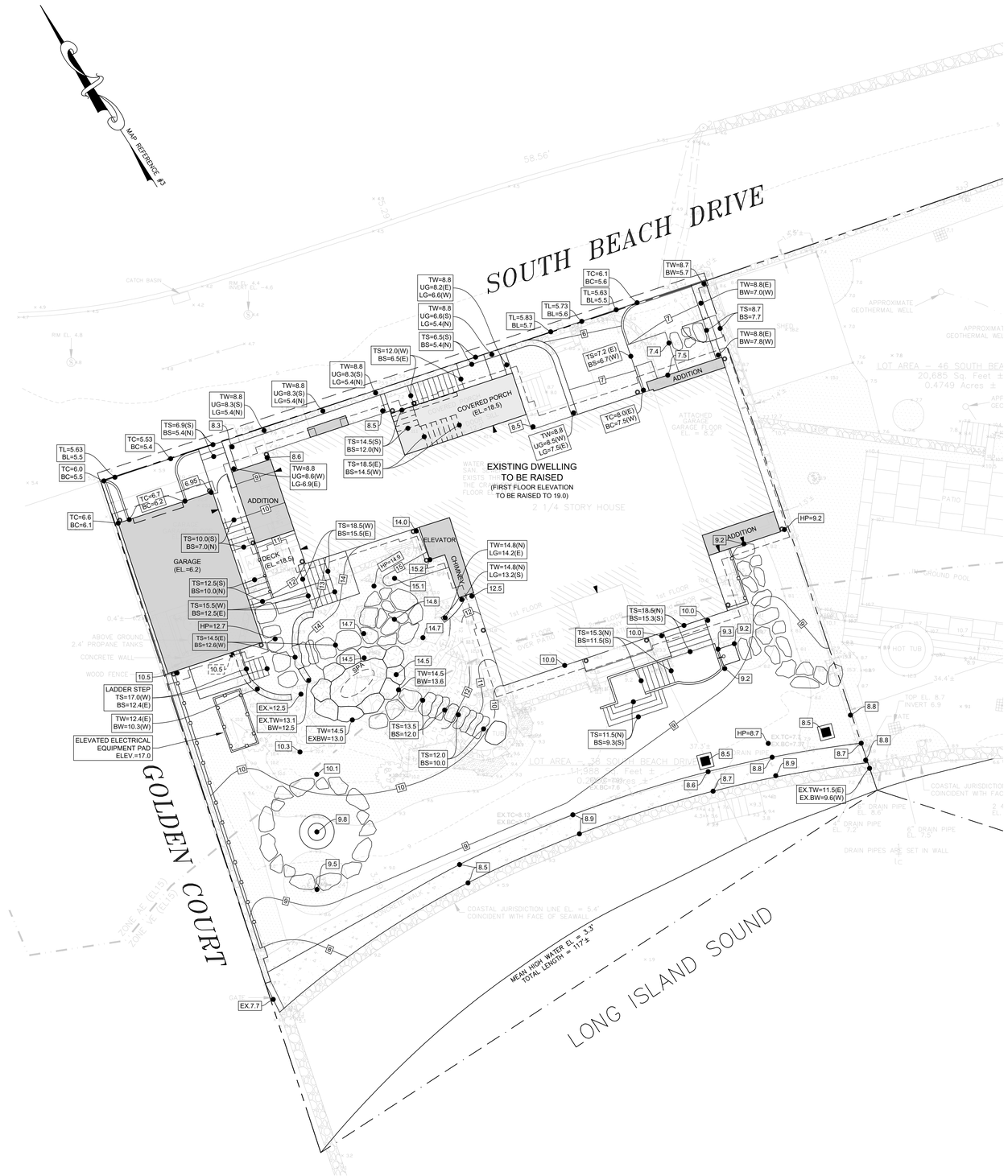
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaratrion hereon null & void.

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SHEET No: SE-1

Comm. No.: 10993

5/28/2025 12:00 PM M:\Jobfiles2\10000\10900\10993\Dwg\10993 - 38 SB Master 1.dwg



EARTHWORK & GRADING:

1. Grade away from building walls at 2% minimum (typical).
2. Earth slopes shall be no steeper than 2:1 (horz.:vert.)
3. No work shall commence until erosion controls have been inspected and approved by the IWWA or their designee(s).
4. General fill beyond paved areas shall be free of brush rubbish, stumps and stones larger than 8". Fill shall be placed in compacted layers not to exceed 8" in thickness. The dry density after compaction shall not be less than 95% of the Standard Proctor Test and done in accordance with the requirements of ASTM D698. After compacting, the fill shall be 4" below the required grade as shown on the plan.
5. General fill may be till, loam, sand or gravel mixture classified as SP, SW, SM, GP, GM, ML per the United Soil Classification System. It shall have not more than 40% fines passing the #100 sieve, not more than 8% passing the #200 sieve, and no stones larger than 8".
6. Subgrade and fill shall be uniformly compacted by the use of equipment manufactured for that purpose. Rollers shall deliver a ground pressure of not less than 300 pounds per linear inch of contact width and weigh not less than 10 tons. Vibratory units shall have a static weight of not less than 4 tons. The amount of compactive effort shall be as directed by the Engineer, but in no case shall be less than 4 complete passes of the compacting equipment being used.
7. Disturbed areas shall be top soiled, seeded with grass and mulched in a manner conforming to the recommendations of the "Guidelines for Soil Erosion and Sediment Control", published by The Connecticut Council on Soil and Water Conservation, May 2002.
8. After the areas to be topsoiled have been brought to grade, the subgrade shall be loosened by scarifying to a depth of at least 2" to ensure bonding of the topsoil and subsoil.
9. Topsoil shall be friable and loamy with high organic content. It shall be free of debris, rocks larger than 2" and roots. Topsoil shall have at least 1.5 percent by weight of fine textured stable organic material and no greater than 6 percent. Topsoil shall not have less than 20% fine textured material (passing the No. 200 sieve) and not more than 15% clay. pH range shall be 6.0-7.5 and soluble salts shall not exceed 500ppm.
10. Fill or topsoil shall not be placed nor compacted while in a frozen or muddy condition or while subgrade is frozen.
11. Excavation for pipes or concrete pavement repair may require either a braced excavation or open cut designed according to the requirements of OSHA, 29 CFR Part 1926. The lateral support systems and slopes should also be designed such that building footings, slabs on grade, adjacent pavement and existing ut ilities are protected and supported and not allowed to settle. The contractor shall be responsible for having a Professional Engineer, registered in the State of Connecticut design the excavation support method. The designs shall be submitted to the owner or his geotechnical engineer for review. The contractor shall submit plans showing the type, limits, design and sequence of construction for the lateral support system.
12. During the excavation, it is anticipated that existing utilities and sewers may be exposed. The contractor shall provide protection and support of these facilities and repair any damage caused by the work in a manner satisfactory to the owner. The condition of the existing facilities shall be observed by the owner's representative who shall determine if the facilities shall be replaced. Replacement of the facilities shall be done in a manner satisfactory to the owner and in compliance with applicable Codes.

RETAINING WALLS:

13. All retaining walls greater than three feet are required to be designed, and inspected during construction by a Professional Engineer registered in the State of Connecticut.
14. Retaining walls with a grade difference equal to or greater than 2.5 feet may require a safety barrier on the top of the wall. Retaining walls and barriers are to be designed by others.
15. Retaining walls are shown for schematic purposes only, and shall be designed by the structural engineer. All structural work shall conform to the requirements of the basic building code of the State of Connecticut, latest edition and the City of Norwalk requirements.

FLOOD PROTECTION:

16. The property lies within Special Flood Hazard Area Zone AE and VE. Base Flood Elevation (BFE) (100 year storm) is 15.0 NAVD-88 as depicted on FEMA Flood Insurance Rate Map, Panel 0541 of 626, dated July 8, 2013.
17. The construction of this development must follow the requirements set forth in the Federal Emergency Management Administration (FEMA) regulations for flood protection.
18. Refer to plans prepared by Oliver Cope Architect, LLC for information regarding flood protection and flood opening information.
19. All utilities shall be installed per FEMA regulations for flood protection. All utilities (i.e., meters, etc.) must be set one foot above the BFE or waterproofed.

No.	Date	Revision
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

GRADING PLAN
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: 1"=10' (0, 10, 20)

DRAWN BY: MSL CHECKED BY: VJH

STATE OF CONNECTICUT — VINCENT J. HYNES — No. 0032100 — REGISTERED PROFESSIONAL ENGINEER

VINCENT J. HYNES CT. REG. 32100

May 27, 2025
DATE

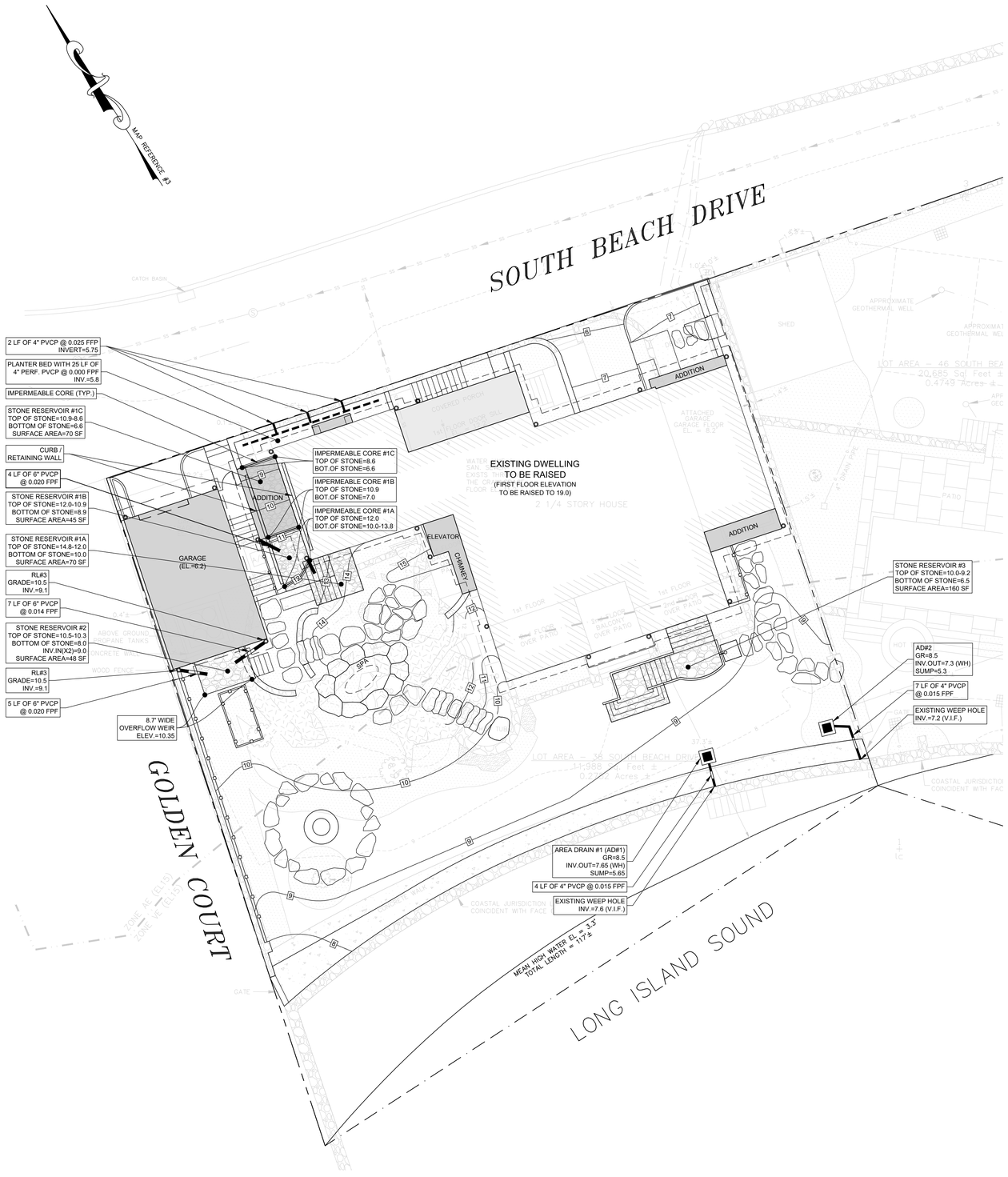
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:

SE-2

Comm. No.: 10993

5/28/2025 12:20 PM H:\odfiles2\10000\10900\10993\Dwg\10993 - 38 SB Master 1.dwg



STORM AND SANITARY SEWER SYSTEMS:

1. All pipe shall be installed straight and at the vertical and horizontal alignment shown. Pipes shall have a uniform slope as specified.
2. Minimum cover on all pipes shall be two feet (2') unless otherwise noted.
3. All storm pipe specified as Poly Vinyl Chloride Pipe (PVCP) shall be SDR 35 with rubber gasketed joints and meet the requirements of ASTM D3034 and D3212.
4. Dig test pits at utility and sewer crossings to check actual clearances with these facilities prior to construction. Dig test pits at the connection points to existing sanitary sewer pipes to confirm that the elevation of the proposed gravity sewer is appropriate. If conflicts are found the contractor shall notify the engineer at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid conflict.
5. All area drains shall have a two foot (2') sump with bell traps or 90° PVC elbows.
6. All existing and proposed catch basins, manhole rims and utility facilities shall be raised or lowered to be flush with finished grade.
7. When connecting new pipes to existing structures such as manholes and catch basins, the structure shall be completely cleaned out. The hole made in the structure shall be made as small as possible. The structure shall be repaired to match its original type of construction. The joint between the structure and the pipe shall be made watertight by filling the joint with mortar.
8. Flow in existing sewer system must not be interrupted. Any temporary routing of this sewer flow must be done in conformance with all applicable rules and regulations.
9. Under no circumstances shall trench water be allowed to drain off through sanitary sewer lines.
10. All crushed stone shall be Gradation No. 4 as per CT DOT Form 819, Article M.01.02. Stone shall consist of sound, tough, durable particles free from soft, thin, elongated, laminated, friable, micaceous, or disintegrated pieces of mud, dirt or other deleterious material.
11. The storm and sanitary sewer shall be encased in concrete for a distance of 10 feet on either side of any intersection between the sanitary sewer and storm sewer. Where concrete encasement is required, temporarily support the pipes in place. Use sufficient concrete to encase piping not less than 6 inches at all points. The encasement shall be adequately supported with a stone base and shall be keyed into the foundation wall to prevent damage from settlement.
12. At the end of construction, after the site has be fully stabilized, all new and previously existing storm sewer facilities including, but not limited to, catch basins, area drains, manholes, junction boxes, flow control structures, pipes, oil grit separators, permeable pavers and porous pavement shall be fully cleaned with equipment designed for that purpose to the satisfaction of the inspecting engineer.

UTILITIES:

13. Utilities shown on these plans are "not guaranteed" to be complete or correct. Prior to any site activities, the contractor shall be responsible for verification of clearances of proposed utilities from existing utilities. This verification shall include physical observation by means of test pits of the locations of affected utilities. The contractor shall notify the site engineer immediately of any conflict.
14. Easements may be required in favor of the various utility companies.
15. Electric, telephone, cable, gas, and water services shall be installed in conformance to the requirements of the governing utility companies.
16. It is the contractor's responsibility to install utilities as shown on this sheet. The contractor shall work with the utility companies and site engineer to insure the installation is in conformance to the requirements of the governing utility company. All conduits shall be concrete encased as may be required by the governing utility company. Proposed electric, telephone, cable, gas and water services are shown for schematic purposes only and are subject to change pending utility company review. These utilities shall be designed by others and installed in conformance to the requirements of the governing utility companies.
17. All proposed utility facilities shall be raised or lowered to be flush with finished grade.
18. Where necessary, existing utilities shall be reinstalled to meet all minimum coverage requirements.
19. Utility connections at building face shall be coordinated with the building contractors.
20. In general, each utility shall have a minimum clearance of three feet to any other underground utility.
21. Any and all utilities abandoned shall be capped or removed in accordance with utility companies' requirements.
22. The electric generator shall be located to meet all applicable Zoning setbacks.
23. All utilities shall be installed per FEMA regulations for flood protection. All utilities (i.e., HVAC condensers, electric transformers, etc.) must be set one foot above the Base Flood Elevation (BFE) or waterproofed.
24. Electric, telephone, cable, gas and water services shall be compliant with the City of[Norwalk Zoning Regulations Flood Prone Area Regulations Section [SECTION ID] and shall be installed in conformance to the requirements of the governing utility companies. Gas and electric meters shall be located inside the structures on foot above the BFE.
25. Detectable Tape shall be used to mark piping listed below. The identification tape shall be buried at least 6-inches to 10-inches below final grade but no closer than 12-inches to the buried utility piping or service.

Electric	Red	Caution Electric Line Buried Below
Water Systems	Blue	Caution Water Line Buried Below
System	Green	Caution Sewer Line Buried Below

26. Underground-Type Plastic Line Marker: Manufacturer's standard permanent, bright-colored detectable tape, continuous-printed plastic tape, intended for direct-burial service; not less than 6" wide X 4 mils thick.

No.	Date	Revision
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

DRAINAGE PLAN
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel. 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: 1"=10' (0, 10, 20)

DRAWN BY: MJS CHECKED BY: VJH

STATE OF CONNECTICUT · VINCENT J. HYNES · No. 0032100 · REGISTERED PROFESSIONAL ENGINEER

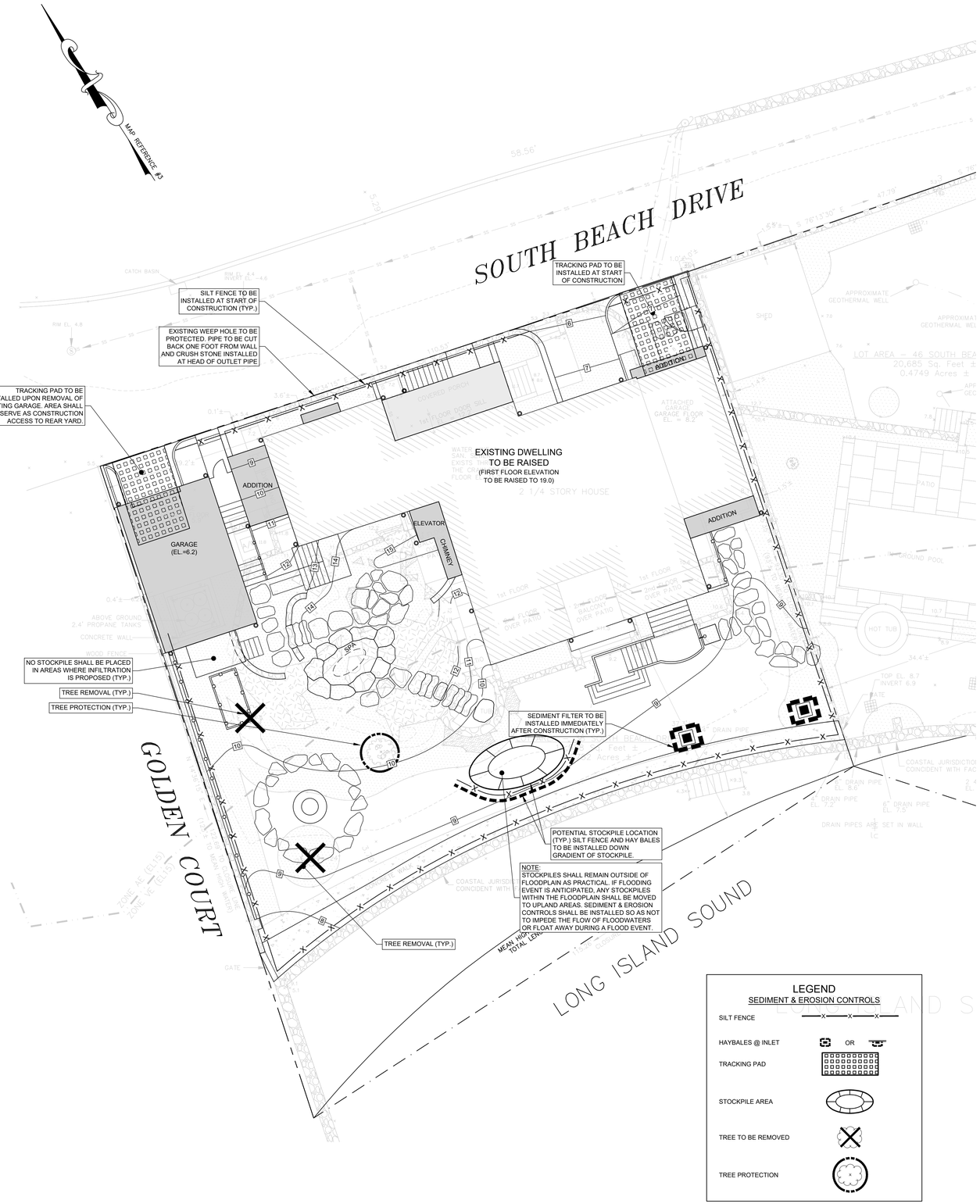
DATE: May 27, 2025

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No: SE-3

Comm. No.: 10993

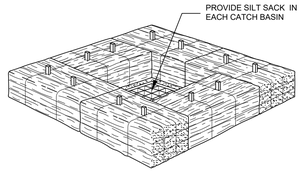
5/28/2025 12:01 PM\\ Ldoffice2\10000\10900\10993\Dwg\10993 - 38 SB Master 1.dwg



LEGEND

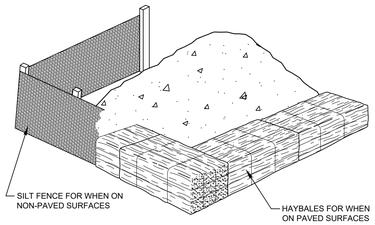
SEDIMENT & EROSION CONTROLS

- SILT FENCE —X—X—X—
- HAYBALES @ INLET OR
- TRACKING PAD
- STOCKPILE AREA
- TREE TO BE REMOVED
- TREE PROTECTION



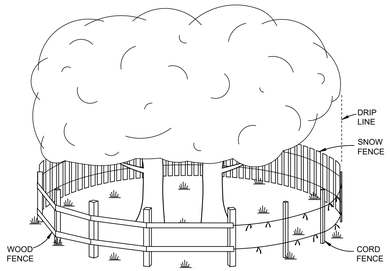
SEDIMENT FILTER FOR CATCH BASINS

N.T.S.



SEDIMENT FILTER FOR STOCK PILE

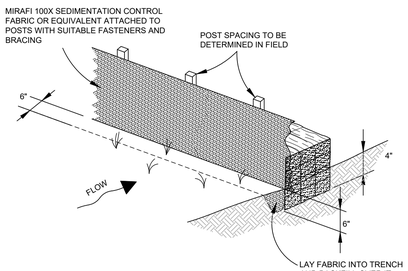
N.T.S.



TREE PROTECTION

(SHOWING ACCEPTABLE TYPES OF FENCING)

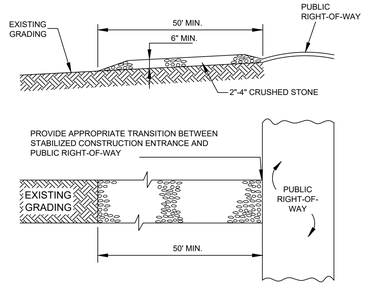
N.T.S.



FABRIC & POST SILTATION BARRIER W/ HAY BALES

(SILT FENCE)

N.T.S.



STABILIZED CONSTRUCTION ENTRANCE

(TRACKING PAD)

N.T.S.

SEDIMENT AND EROSION CONTROL NOTES:

1. Sheet SE-4 is intended to describe the soil sediment and erosion control treatment of this site only. For other details with respect to construction, see appropriate drawings.
2. All sediment and erosion controls shall be done in conformance with the "Connecticut Guidelines for Soil Erosion and Sediment Control" dated May 2002 prepared by The Connecticut Council on Soil and Water Conservation.
3. The contractor is assigned the responsibility for implementing this sediment and erosion control plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan notifying the Zoning Department of any transfer of this responsibility, and Inland Wetlands and Water Courses Agency that construction is to begin three (3) days prior to commencing work.
4. Temporary sediment control measures and tree protection must be installed in accordance with drawings and manufacturer recommendations prior to work in any upland areas.
5. No construction or construction equipment or storage of materials will be allowed on the downhill side of the silt fence or within fenced off areas, except during construction of the proposed facilities shown beyond the fences.
6. Where existing trees are to be saved, trees shall be protected with trunk armoring where shown. Tree limbs shall be trimmed as needed to protect the trees from damage by construction operations. Such trimming shall be minimized. Armoring and any limb trimming should be done before construction begins. Tree protection should be maintained during construction. Equipment Trafficking and materials storage over the tree roots shall be avoided.
7. Anti-tracking pads shall be installed at start of construction and maintained in an effective condition throughout the duration of construction. Pads consist of 2" - 4" crushed stone, 6" minimum thickness and extend the width of the construction access. The length of the access shall be sufficient to prevent dirt from being tracked onto off site roads (minimum length of 50').
8. The location of each stockpile will vary throughout the construction period. Excavated silt and earth stockpiles shall be stored on site. Silt fence shall be placed at the base of the stockpile to prevent sediment from leaving the site and to protect storm drains, wetlands and watercourses.
9. Silt fence shall be Mirafi envirofence, Amoco siltstop or equivalent approved by Site Engineer. Filter fabric used shall be Mirafi 100x or equivalent. Install silt fence according to manufacturer's instruction, particularly, bury lower edge of fabric into ground.
10. All roof leader downspouts shall temporarily discharge onto splash pads measuring at least 8" wide by 18" long, or approved equal.
11. Land disturbance shall be kept to a minimum. All disturbed area shall be planted in where permanent plantings are called for as soon as practicable. Seed and mulch disturbed areas with grass seed where permanent plantings are not called for, as soon as practicable. Prepare seedbed (4" thick minimum) with topsoil. Seed, rake, roll, water and mulch areas according to mixes below. Water as often as necessary (up to 3 times per day) to establish cover. Mulch seeded areas at 1 to 2 tons/acre with salt hay. Maintain mulch and watering until grass is 3" high with 85% cover. Reseed or overseed if necessary.

Temporary Seed Mix:		
Perennial ryegrass	40 lbs/ac.	(1 lb/1000 sf.)
Permanent Lawns:		
Kentucky Bluegrass	20 lbs/ac.	
Creeping Red Fescue	20 lbs/ac.	
Perennial Ryegrass	5 lbs/ac.	
	45 lbs/ac.	(1 lb/1000 sf.)

Optimum Seeding Dates:
April 15 through June 15
August 15 through October 1

12. Any disturbed area shall be restored to the preconstruction condition. Existing shrubs shall be carefully dug up, stored in a temporary nursery during the project and replanted as directed by the Owner. The time during which these bushes are out of the ground must be minimized. The contractor shall keep the shrubs watered and out of the direct sun during this time.
13. If disturbed areas can not be seeded immediately due to the time of year, mulch area until seeding can occur; remove mulch and seed and remulch when season permits.
14. Mulch shall be replaced with erosion control blankets where specified on the plan. Blankets shall be jute netting installed as per the details. Additional areas may have to be covered with blankets as directed by the Site Engineer. Other blankets and methods may be used if approved by the site engineer.
15. If excavation dewatering is required, all dewatering pumping must have sediment and erosion control provisions to maintain clear water discharge (not muddy). Such provisions shall be approved by governing agencies. All pump discharge from dewatering shall be clear at the point where it flows off the property.
16. Upon installation of each area drain, immediately surround it with haybales as per sediment filter detail.
17. Haybales shall be new and are to be replaced whenever their condition deteriorates beyond reasonable usability.
18. Pavement and curbing should be placed as soon as possible after drainage is installed.
19. Loaded trucks shall be covered as required to keep down dust.
20. Affected portions of off site roads and sidewalks must be swept clean when required to keep down dust and prevent safety hazards or at least once a week during construction and as directed by Site Engineer.
21. Dust control to be achieved with watering down disturbed areas as required.
22. After each storm event or once bi-weekly, all sediment and erosion controls shall be inspected. Any corrective actions to mitigate environmental concerns will be ordered by the site engineer or environmental engineer. It is the Owner's responsibility to retain such consultant.
23. Additional sediment and erosion control measures may be installed during the construction period if found necessary by the inspecting engineer or any Governing Agency.
24. All permanent and temporary sediment control devices will be maintained in effective condition throughout the construction period until upland disturbed areas are thoroughly stabilized. Upon completion of work and stabilization of all upland areas, all temporary sediment control devices and tree protection should be removed from the site and any silt disposed of legally.
25. Periodically and upon completion of the job, clean silt from any effected storm sewer systems including pipes and inlets. Use silt during final landscaping or dispose off-site legally.

No.	Date	Revision
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

SEDIMENT & EROSION CONTROL PLAN

DEPICTING

38 SOUTH BEACH DRIVE

NORWALK, CT

PREPARED FOR

38SBD LLC

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: 0 10 20
1"=10'

DRAWN BY: MM CHECKED BY: VJH

STATE OF CONNECTICUT VINCENT J. HYNES LICENSED PROFESSIONAL ENGINEER

No. 0026100
VINCENT J. HYNES CT. P.E. 32100

May 27, 2025
DATE

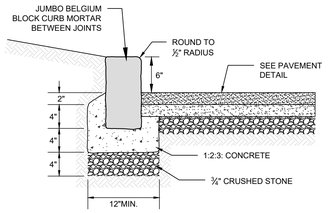
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:

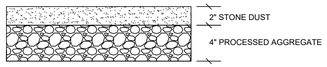
SE-4

Comm. No.: 10993

5/28/2025 12:02 PM P:\Jobfiles\2100\00\10900\10993\Dwg\10993 - 38 SB Master 1.dwg



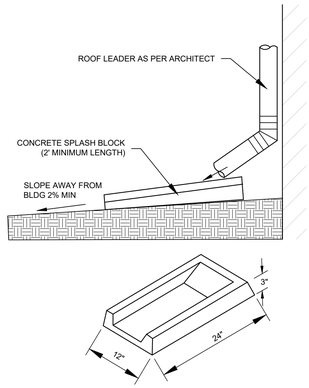
JUMBO BELGIUM BLOCK CURB
N.T.S.



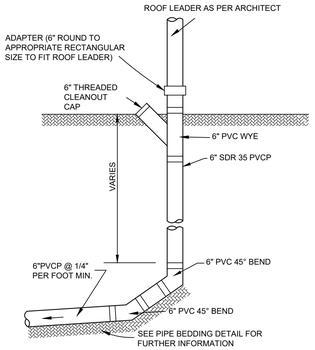
NOTES:

1. Processed aggregate shall conform to Section M.05.01 of CT DOT Form 819.
2. It should be noted that although the surface material of the gravel path is somewhat pervious, the drainage calculations have assumed a fully impervious surface.

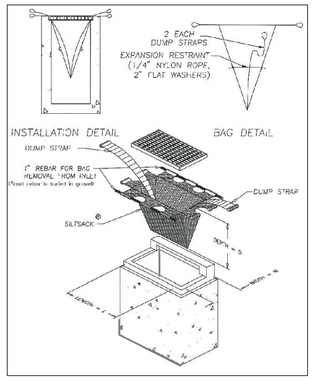
GRAVEL PATH DETAIL
N.T.S.



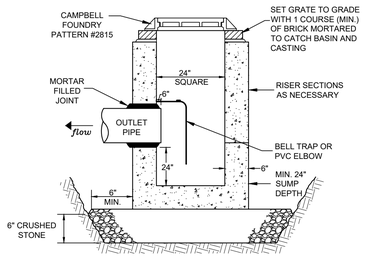
ROOF LEADER SPLASH PAD
N.T.S.



ROOF LEADER CLEANOUT DETAIL
N.T.S.



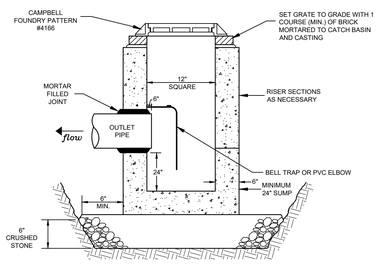
INLET SEDIMENT CONTROL DEVICE
(SILT SACK)
N.T.S.



NOTES:

1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. AREA DRAIN SHALL CONFORM TO ASTM C478.
4. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT D.O.T. FORM 819, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

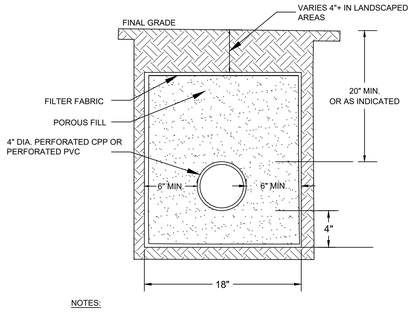
24" AREA DRAIN
N.T.S.



NOTES:

1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. AREA DRAIN SHALL CONFORM TO ASTM C478.
4. PLACE AREA DRAIN ON A 6" LAYER OF CRUSHED STONE. ALL CRUSHED STONE SHALL BE GRADATION 3A AS PER NYS DOT STANDARD SPECIFICATION SECTION 703. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

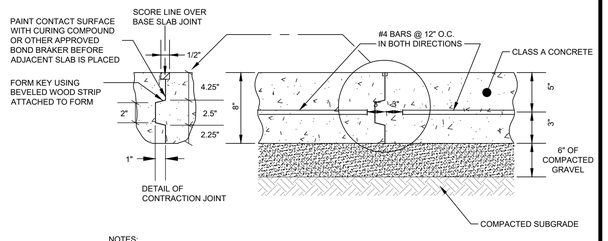
12" AREA DRAIN
N.T.S.



NOTES:

1. ON SITE PLAN, OR AS REQUIRED MODIFICATION DURING CONSTRUCTION.
2. PIPE SHALL BE CORRUGATED POLYETHYLENE MANUFACT. IN ACCORDANCE WITH ASTM F 405 & INSTALLED PER ASTM F 449. PIPE IN CURTAIN DRAIN TO OUTLET IS SOLID.
3. POROUS FILL SHALL BE CRUSHED STONE. CRUSHED STONE SHALL BE GRADATION NO. 67 PER CT DOT FORM 819, ARTICLE M.01.01.
4. FILTER FABRIC SHALL BE MIRAFI 140N OR EQUIVALENT.

UNDER DRAIN
N.T.S.



NOTES:

1. CONCRETE TO BE CLASS 'A' CONFORMING TO CONNDOT FORM 819 SECTION M.03.02.
2. GRAVEL BASE SHALL CONFORM TO GRADATION A AS DEFINED IN CONNDOT FORM 818 SECTION M. 02.01.
3. INSTALL AS PER THE AMERICAN CONCRETE INSTITUTE CODE.
4. THE AREA SHALL BE COMPACTED TO AT LEAST 95% OF THE DRY DENSITY ACHIEVED BY AASHTO T180, METHOD D.
5. CONTRACTION JOINT TO BE PLACED SO REMAINING SECTIONS OF CONCRETE ARE GENERALLY SQUARE OR AT LEAST EVERY 10'.
6. EDGES OF CONCRETE TO BE TOOLED TO A 1/2" RADIUS.
7. SIZE OF PAD TO BE VERIFIED PRIOR TO CONSTRUCTION.

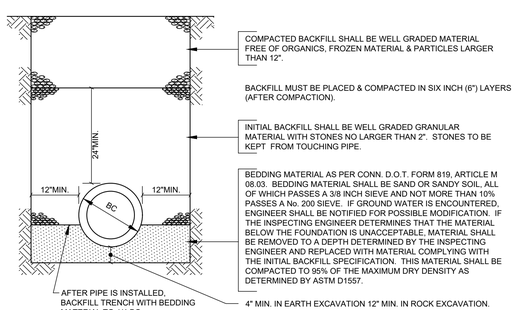
CONCRETE PAD DETAIL
N.T.S.

WATER STOP: 10' UPSTREAM OF STRUCTURES AND WHERE SHOWN, FOUNDATION MATERIAL, BEDDING, HAUNCHING, INITIAL BACKFILL, AND THE BOTTOM FOOT OF GENERAL BACKFILL TO BE REPLACED WITH SM, SC, OR ML SOIL AS PER UNIFIED SOIL CLASSIFICATION SYSTEM" WITH MAXIMUM PARTICLE SIZE OF 1-1/2", FOR 3 LINEAR FEET OF TRENCH. WATER STOP TO BE KEYED INTO TRENCH BOTTOM AND WALLS A MINIMUM OF ONE FOOT. NO STONES LARGER THAN 6" SHALL BE WITHIN 12" OF THE PIPE.

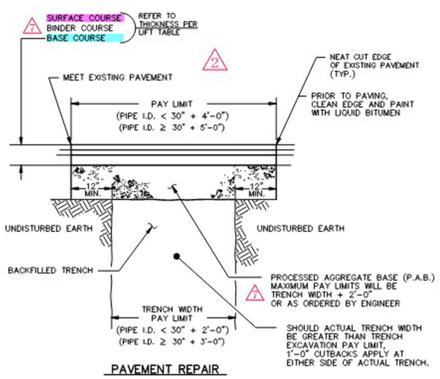
ALL FOUNDATION, INITIAL BACKFILL & BACKFILL MATERIAL TO BE APPROVED BY THE INSPECTING ENGINEER.

ANY DEVIATION FROM THESE METHODS & MATERIALS MUST BE APPROVED IN WRITING BY THE INSPECTING ENGINEER.

ALL MATERIAL TO BE COMPACTED TO 95% OF THE MAX. DRY DENSITY AS DETERMINED BY ASTM D1557, EXCEPT COMPACTED BACKFILL" NOT UNDER PAVEMENT WHICH SHALL BE COMPACTED TO A DENSITY AT LEAST EQUAL TO THAT OF THE ADJACENT UNDISTURBED MATERIAL.



HDPE PIPE TRENCH BEDDING DETAIL
(48" DIA. & UNDER)
N.T.S.

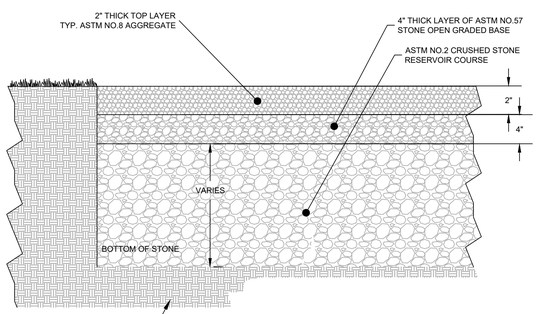


PAVEMENT REPAIR

ASPHALT PAVEMENT REPAIR DETAIL
N.T.S.

STONE RESERVOIR GENERAL NOTES:

1. The ASTM No. 2 stone subbase material should be spread in minimum 6 in. lifts. Compaction is done with a 10 ton steel vibratory roller or a 13,500 lbf plate compactor. Greater lift thicknesses are normal (i.e. 12 in.) when using either of these compactors. When using a roller, the first two passes are in vibratory mode and the last two are in static mode. Compaction is completed when no visible movement can be seen in the base when rolled by the compactor. Plate compactors with compaction indicators should be used to determine when compaction is completed. Stones will compact more completely if moistened during compaction. Aggregates shall not be crushed by the compactor.
2. The ASTM No. 57 base layer is spread and compacted as one 4 in. lift. The stone material should be moist during compaction for better consolidation. Like the subbase aggregate, the initial passes with the roller can be with vibration to consolidate the base material. The final passes should be without vibration. A 13,500 lbf plate compactor also can be used to compact the ASTM No. 57 base layer.
3. When subbase and base lifts are compacted the surface should then be topped with 2 in. thick layer of moist ASTM No. 8 crushed stone bedding layer. This layer is screened and leveled over the ASTM No. 57 base. Metal rails are placed on the compacted ASTM No. 57 layer and are used to guide screeding elevations. Various sizes of screeding equipment can be used ranging from hand tools, bucket screeds powered manually or by machine, or a modified asphalt spread that uses a laser guidance system to maintain elevations. The surface tolerance of the screeded ASTM No. 8 bedding material should be ± 3/8 in. over 10 ft. Construction equipment and foot traffic should be kept off the screeded layer.



STONE RESERVOIR DETAIL
N.T.S.

No.	Date	Revision
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

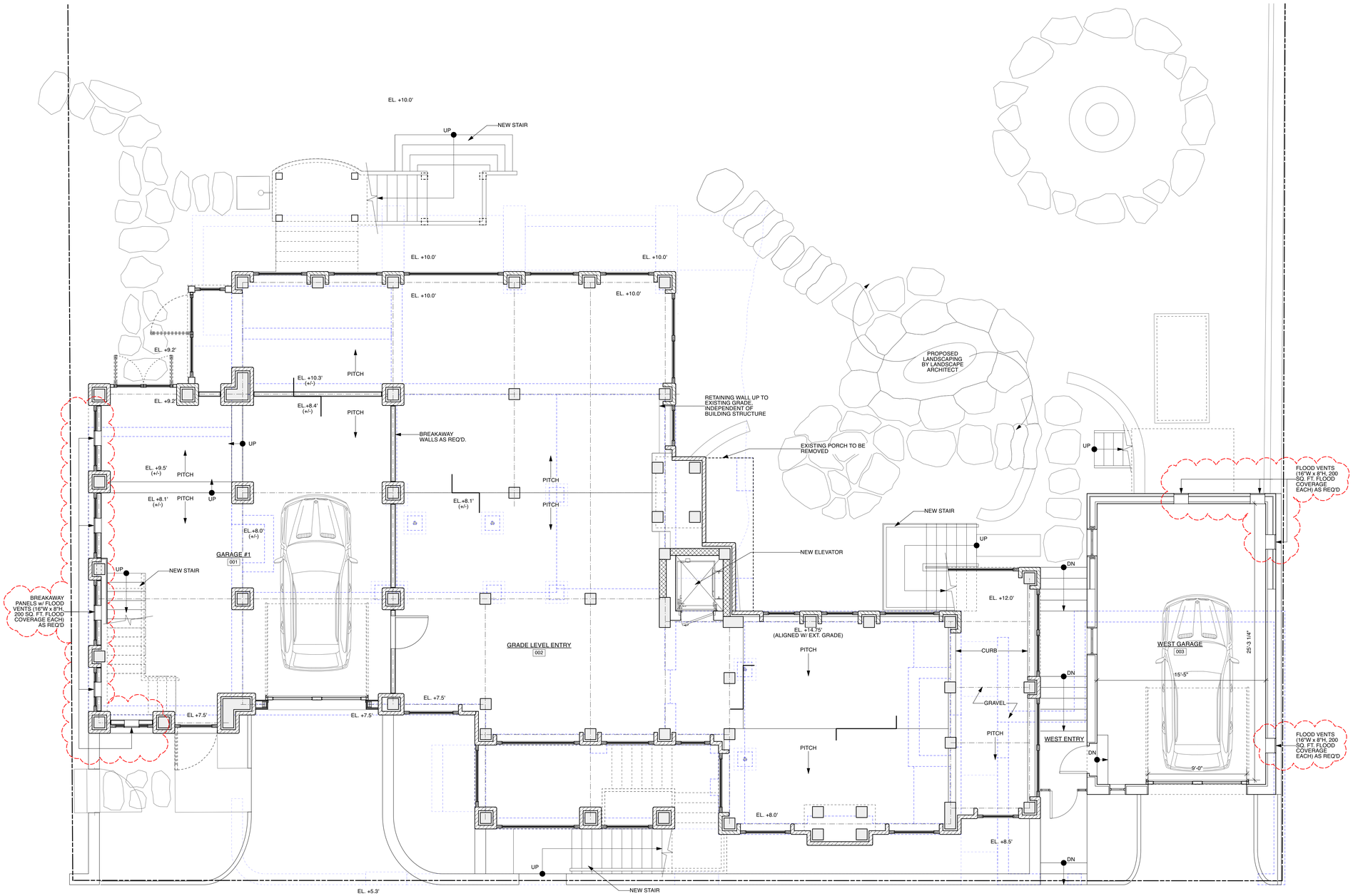
REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: N.T.S.
DRAWN BY: MW CHECKED BY: VJH
LICENSED PROFESSIONAL ENGINEER
No. 0032100
VINCENT J. HYNES, CT LIC. 32100
STATE OF CONNECTICUT
May 27, 2025
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No: SE-5
Comm. No.: 10993

5/28/2025 12:03 PM\\ Udsfiles2\10000\10900\10993\Dwg\10993 -38 SB Master 1.dwg



1 A-100 PROPOSED LOWER LEVEL / PIER PLAN
Scale: 1/4" = 1'-0"
0' 6" 1'-0" 2'-0" 4'-0" 8'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

LEGEND:

EXISTING FOUNDATION PLAN

ISSUE DATES & REVISIONS

03/11/25	ISSUE FOR ZBA
06/10/25	RE-ISSUE FOR COASTAL SITE PLAN APPLICATION

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.: 2304	**DRAWN:** JPW
DATE: See Above	**CHECKED:**

SCALE: As Noted

TITLE:
PROPOSED
LOWER LEVEL PLAN
WITH EXISTING OVERLAY

STATE OF CONNECTICUT OLIVER COPE No. 7405 LICENSED ARCHITECT

A-100

COPYRIGHT © 2023 OLIVER COPE • ARCHITECT ALL RIGHTS RESERVED



1 / A-200 PROPOSED NORTH ELEVATION
Scale: 1/4" = 1'-0"
0 6" 1'-0" 2'-0" 4'-0" 8'-0"



2 / A-200 EXISTING NORTH ELEVATION
Scale: 1/4" = 1'-0"
0 6" 1'-0" 2'-0" 4'-0" 8'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25	ISSUE FOR ZBA
05/02/25	RE-ISSUE FOR ZBA
06/10/25	RE-ISSUE FOR COASTAL SITE PLAN APPLICATION

COPYRIGHT © 2023 OLIVER COPE - ARCHITECT ALL RIGHTS RESERVED

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.: 2304	**DRAWN:** MM
DATE: See Above	**CHECKED:**

SCALE: As Noted

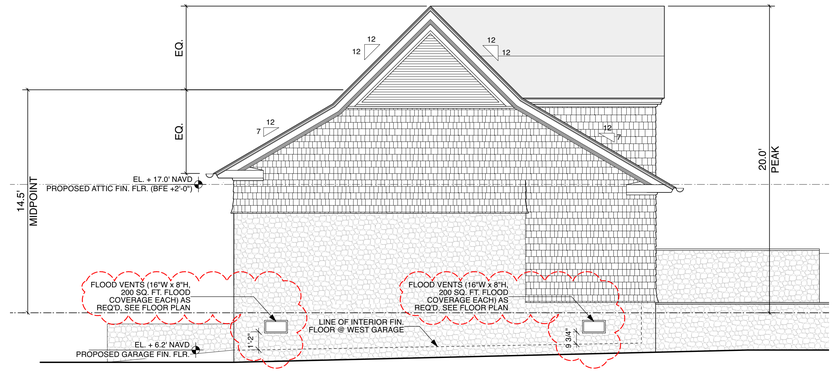
TITLE: PROPOSED AND EXISTING NORTH ELEVATIONS

STATE OF CONNECTICUT · OLIVER COPE · No. 7405 · LICENSED ARCHITECT

A-200



1 A-201 PROPOSED WEST ELEVATION
Scale: 1/4" = 1'-0"



3 A-201 PROPOSED WEST ELEVATION (WEST GARAGE)
Scale: 1/4" = 1'-0"



2 A-201 EXISTING WEST ELEVATION
Scale: 1/4" = 1'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25	ISSUE FOR ZBA
05/02/25	RE-ISSUE FOR ZBA
06/10/25	RE-ISSUE FOR COASTAL SITE PLAN APPLICATION

COPYRIGHT © 2025 OLIVER COPE - ARCHITECT ALL RIGHTS RESERVED

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT

135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:

PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.: 2304	**DRAWN:** MM
DATE: See Above	**CHECKED:** OR

SCALE: As Noted

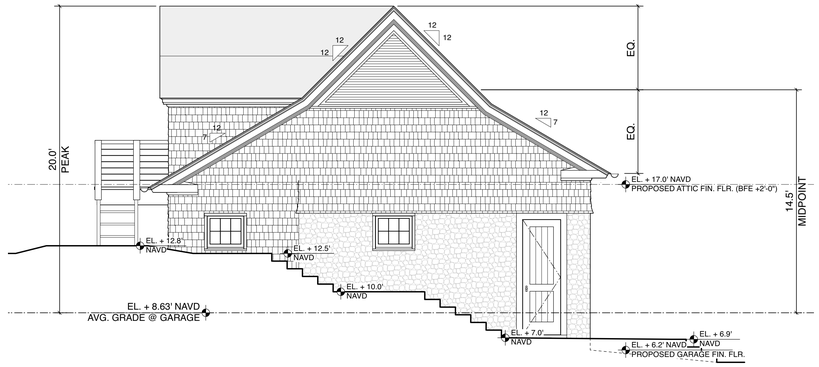
TITLE:
PROPOSED AND EXISTING WEST ELEVATIONS

STATE OF CONNECTICUT OLIVER COPE No. 7405 LICENSED ARCHITECT

A-201



1 A-203 PROPOSED EAST ELEVATION
Scale: 1/4" = 1'-0"



3 A-203 PROPOSED EAST ELEVATION (WEST GARAGE)
Scale: 1/4" = 1'-0"



2 A-203 EXISTING EAST ELEVATION
Scale: 1/4" = 1'-0"

SYMBOLS AND NOTES

PLEASE NOTE, TYPICAL DRAWINGS SHEETS ARE REPRODUCED FULL SCALE AT 30" X 42". IF THE DRAWING IS NOT OF THIS SIZE THEN THERE IS A POSSIBILITY THAT IT HAS BEEN REDUCED IN SIZE AND THE SCALE HAS BEEN ALTERED. PLEASE REFER TO THE GRAPHIC SCALE ON THIS SHEET TO CONFIRM DRAWING SCALE.

ISSUE DATES & REVISIONS

03/11/25 ISSUE FOR ZBA
05/02/25 RE-ISSUE FOR ZBA
06/10/25 RE-ISSUE FOR COASTAL SITE PLAN APPLICATION

CONSULTANTS:
SEE COVER SHEET FOR CONSULTANT LIST

OLIVER COPE . ARCHITECT
135 WEST TWENTY-SIXTH STREET 5TH FL.
NEW YORK , NEW YORK 10001 (212)727-1225

PROJECT:
PRIVATE RESIDENCE
38 SOUTH BEACH DRIVE
NORWALK, CT 06853

JOB NO.:	DRAWN:
2304	MM
DATE:	**CHECKED:**
See Above	OR

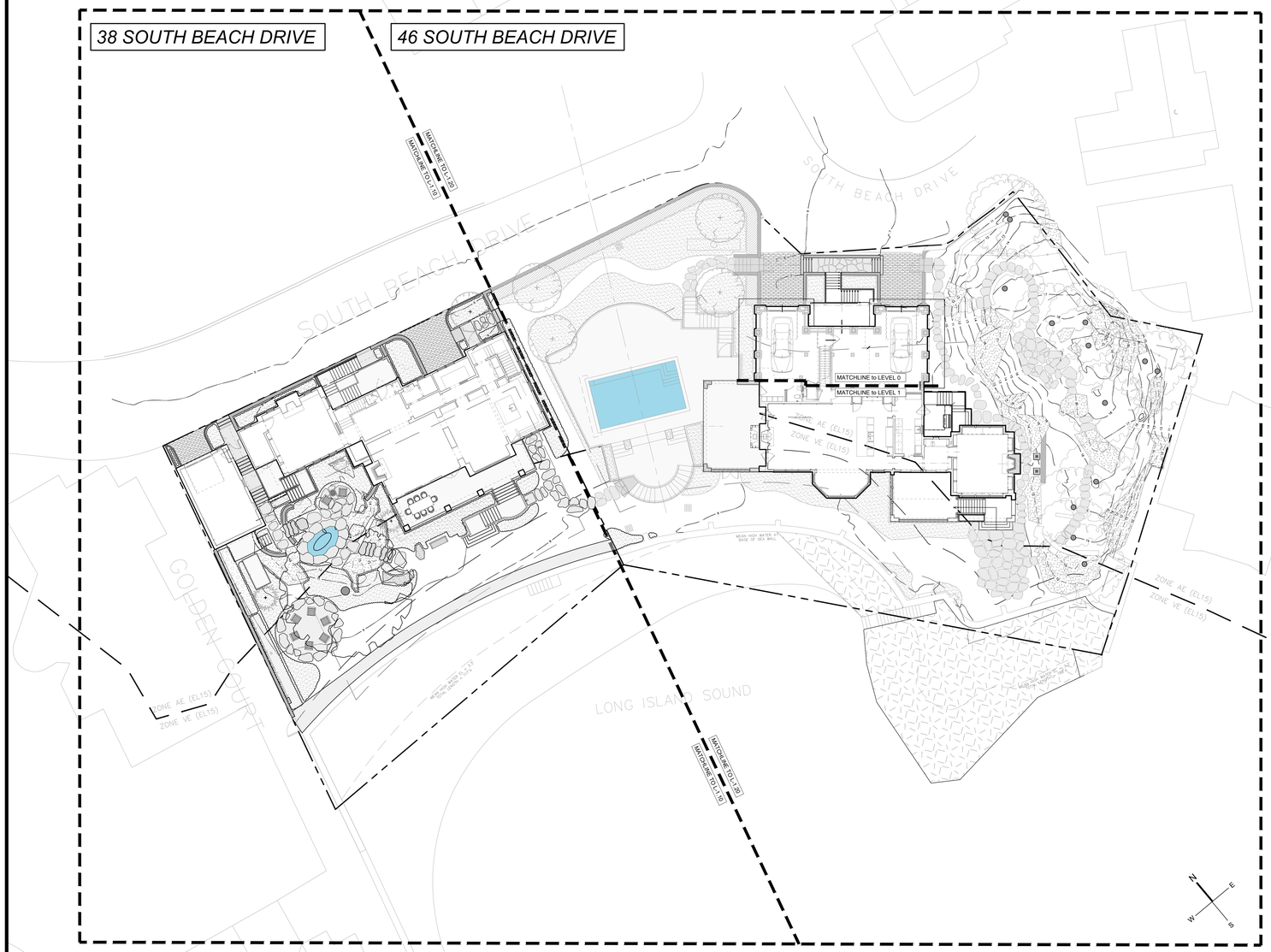
SCALE: As Noted

TITLE: PROPOSED AND EXISTING EAST ELEVATIONS

STATE OF CONNECTICUT · OLIVER COPE · No. 7405 · LICENSED ARCHITECT

A-203

COPYRIGHT © 2023 OLIVER COPE - ARCHITECT ALL RIGHTS RESERVED



38 SOUTH BEACH DRIVE

38 SOUTH BEACH DRIVE
NORWALK, CT

LANDSCAPE PERMITTING DRAWINGS

ISSUED: 05.27.2025

LIST OF DRAWINGS:

DEMOLITION & REMOVALS PLANS
L-0.10 - DEMOLITION & REMOVALS PLAN - 38

LAYOUT & MATERIALS PLANS
L-1.10 - MATERIALS PLAN - 38

PLANTING PLANS
L-4.10 - PLANTING PLAN - 38

HOLLANDER design
Landscape Architects
200 Park Avenue South, Suite 1200, New York, New York
• phone : 212-473-0020 • projects@hollanderdesign.com

PRELIMINARY SET
NOT FOR CONSTRUCTION

NO.	PURPOSE	DATE
2	CAM SUBMISSION	05.27.2025
1	ZBA SUBMISSION	03.11.2025

RELEASES

SEAL

THESE DRAWINGS ARE THE PROPERTY OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C. THE DESIGN SHOWN AND DESCRIBED HEREIN, INCLUDING ALL TECHNICAL DRAWINGS, ARE PROPRIETARY AND CANNOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED EXCEPT WITH WRITTEN AUTHORIZATION FROM THE ARCHITECT AND MAY NOT BE USED BY THE OWNER FOR OTHER PROJECTS, FOR ADDITIONS TO THE PROJECT, OR FOR COMPLETION OF THE PROJECT BY OTHERS. THE OWNER AGREES TO HOLD HARMLESS, INDEMNIFY AND DEFEND THE ARCHITECT AGAINST ANY CLAIMS, SUITS, JUDGMENTS, AND LOSSES, INCLUDING DEFENSE COSTS, ARISING OUT OF ANY REUSE OF THE PLANS AND SPECIFICATIONS WITHOUT WRITTEN AUTHORIZATION OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C.

COPYRIGHT ©2002 ALL RIGHTS RESERVED

PREPARED BY:

EDMUND D. HOLLANDER
LANDSCAPE ARCHITECT DESIGN, P.C.

200 PARK AVENUE SOUTH SUITE 1200
NEW YORK, NY 10003
PHONE: 212.473.0020
FAX: 212.473.1104
EMAIL: projects@hollanderdesign.com

PROJECT:

38 SOUTH BEACH DRIVE

38 SOUTH BEACH DRIVE
NORWALK, CT

DRAWING NAME:

LIST OF DRAWINGS & LOCATION PLAN - 38

DRAWN BY: CD, SP, & LTD
CHECKED BY: EDH
SCALE: 1/16" = 1'-0"
CURRENT ISSUE DATE: 05.27.2025

SET: CD
SHEET: L-C

38 SOUTH BEACH DRIVE

DEMOLITION & REMOVALS- 38 SOUTH BEACH DRIVE
see ENLARGED PLAN L-0.10

46 SOUTH BEACH DRIVE

DEMOLITION & REMOVALS- 46 SOUTH BEACH DRIVE
see ENLARGED PLAN L-0.20

MATCHLINE TO L-0.20
MATCHLINE TO L-0.10

EX. DRIVEWAY
to be RELOCATED see L-1.10

EX. WALLS to be REMOVED

EX. STAIRS and WALKWAYS
to be RELOCATED see L-1.10

EX. LANDSCAPE WALL
and STAIR to be REMOVED

EX. UTILITITES
to be RELOCATED
see ARCH. PLANS

EX. LEDGE,
typ.

EX. LANDSCAPE
WALLS to be
REMOVED

EX. PATIO to be
REMOVED

EX.
GARAGE

EX. LANDSCAPE
WALL to REMAIN

EX. LANDSCAPE WALL
REPLACED with STEPS

EX. LANDSCAPE WALL to
be REMOVED to MEET
NEW GARAGE; see L-1.10

EX. 12" MAPLE (B) to be
REMOVED

EX. 39" OAK (A) to REMAIN
and PROTECT

EX. 24" BEECH (C) to be
REMOVED

EX. PLANTER
to be REMOVED

EX. STEPS
to be REMOVED

EX. PLANTER
to be REMOVED

EX. HOT TUB
to be REMOVED

EX. CONCRETE WALK
to be REMOVED

SOUTH BEACH DRIVE

PROPERTY LINE

LOT AREA - 46 SOUTH BEACH DRIVE
20,685 Sq. Feet ±
0.4749 Acres ±

LOT AREA - 38 SOUTH BEACH DRIVE
17,672 Sq. Feet ±
0.4057 Acres ±

EX. GARAGE

ATTACHED GARAGE
GARAGE FLOOR
EL. = 8.2'

COVERED PORCH

1st FLOOR DOOR SILL
EL. = 13.1'

WATER LINE & SAN. SEWER EXISTS THROUGH THE CRAWLSPACE
FLOOR EL. 11.2'

2 1/4 STORY HOUSE

3 1/2 STORY HOUSE

UNDERGROUND PROPANE TANK

DRIVEWAY

GARAGE FLOOR
EL. = 8.0'

WATER LINE & SAN. SEWER EXISTS THROUGH THE CRAWLSPACE
FLOOR EL. 8.7'

GARAGE FLOOR
EL. = 8.1'

2nd FLOOR BALCONY OVER PATIO

GUNITE POOL

CHIMNEY

2nd FLOOR BALCONY OVER DECK

1st FLOOR DECK

ELECTRIC BOX

ROCK POINT ROAD

N/F
ROBERT H. BAYNE, III

N/F
DAVID KEELEN

A/C DECK OVER PROPERTY LINE
BY 0.7'±

YARD DRAIN

GATE

ABOVE GROUND PROPANE TANKS

CONCRETE WALL

WOOD FENCE

PATIO

MEAN HIGH WATER AT BASE OF SEA WALL

COASTAL JURISDICTION LINE EL. = 5.4'
CONSIDENT WITH FACE OF SEAWALL

HIGH WATER ELEV. = 11.7'
VERTICAL DATUM = NAVD 88

MEAN HIGH WATER (MHW)
ELEV. = 5.4'

MEAN LOW WATER (MLW)
ELEV. = 0.0'

ZONE AE (EL15)
ZONE VE (EL15)

LONG ISLAND SOUND

MATCHLINE TO L-0.20
MATCHLINE TO L-0.10

38 SBD PROPOSED TREE PROTECTION:

(A) Quercus spp. (Oak) Tree to be protected.
- See Civil Drawings for Tree Protection Detail.

38 SBD PROPOSED TREE REMOVALS

(B) Acer platanoides (Norway Maple) Tree limits opportunities to screen the raised utility platform with plantings or create a clean neighborly hedge along Golden Court.
- While not prohibited, Acer platanoides is considered an invasive tree in CT and NY and is known to out compete native Acer saccharum (Sugar Maples) in woodlands and forests.
- Given the invasive potential of this tree and the design limitations it poses, it is our recommendation to remove this tree.

(C) Fagus spp. (Beech) Tree shows extensive damage to the lower trunk and is exhibiting symptoms of Beech Leaf Disease (BLD).
- There are no cures for BLD, and the best management options include twice annual heavy feedings of potassium phosphite and potassium polyphosphite fertilizers which are not ideal for sensitive coastal ecosystems.
- Given the condition of this tree and the risk BLD poses to Native and Ornamental Beech trees in the region, it is our recommendation to remove this tree.



(A) Quercus spp. (Oak) Tree to be protected.
- See Civil Drawings for Tree Protection Detail.



(B) Acer platanoides (Norway Maple) Tree limits opportunities to screen the raised utility platform with plantings or create a clean neighborly hedge along Golden Court.



(C) Fagus spp. (Beech) Tree shows extensive damage to the lower trunk and is exhibiting symptoms of Beech Leaf Disease (BLD).

HOLLANDER design
Landscape Architects
200 Park Avenue South, Suite 1200, New York, New York
phone - 212-473-0620 ● projects@hollanderdesign.com

PRELIMINARY SET
NOT FOR CONSTRUCTION

NO.	PURPOSE	DATE
2	CAM SUBMISSION	05.27.2025
1	ZBA SUBMISSION	03.11.2025

RELEASES

SEAL



THESE DRAWINGS ARE THE PROPERTY OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C. THE DESIGN SHOWN AND DESCRIBED HEREIN, INCLUDING ALL TECHNICAL DRAWINGS, SPECIFICATIONS AND COMPUTER FILES, ARE NOT TO BE USED OR REPRODUCED, WHOLLY EXPLOITED, IN WHOLE OR IN PART. THE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY THE OWNER FOR OTHER PROJECTS, FOR ADDITIONS TO THE PROJECT, OR FOR COMPLETION OF THE PROJECT BY OTHERS UNLESS WITH THE PRIOR WRITTEN AGREEMENT, INDEMNIFY, AND DEFEND THE LANDSCAPE ARCHITECT AGAINST ALL DAMAGES, CLAIMS, AND LOSSES, INCLUDING DEFENSE COSTS, ARISING OUT OF ANY REUSE OF THE PLANS AND SPECIFICATIONS WITHOUT WRITTEN AUTHORIZATION OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C.

COPYRIGHT ©2000 ALL RIGHTS RESERVED

PREPARED BY:

EDMUND D. HOLLANDER
LANDSCAPE ARCHITECT DESIGN, P.C.

200 PARK AVENUE SOUTH SUITE 1200
NEW YORK, NY 10003
PHONE: 212.473.0620
FAX: 212.473.1104
EMAIL: projects@hollanderdesign.com

PROJECT:

38 SOUTH BEACH DRIVE

38 SOUTH BEACH DRIVE
NORWALK, CT

DRAWING NAME:

DEMOLITION & REMOVALS PLAN - 38

DRAWN BY: CD, SP, & LTD
CHECKED BY: EDH
SCALE: 1" = 10'-0"
CURRENT ISSUE DATE: 05.27.2025

SET: CD
SHEET: L-0.10

38 SOUTH BEACH DRIVE

MATERIALS- 38 SOUTH BEACH DRIVE
see ENLARGED PLAN L-1.10

46 SOUTH BEACH DRIVE

MATERIALS- 46 SOUTH BEACH DRIVE
see ENLARGED PLAN L-1.20

MATCHLINE TO L-1.20
MATCHLINE TO L-1.10

PROPERTY LINE

SOUTH BEACH DRIVE

PROPOSED WALL to MATCH EX.
PROPOSED STONE CURB
PROPOSED STONE STEPS
PROPOSED COBBLE DRIVEWAY
PROPOSED STONE STEP

EXISTING STONE WALL to BE REPLACED in KIND.
PROPOSED STONE STEPS
PROPOSED COBBLE DRIVEWAY
EX. EXPOSED LEDGE to REMAIN, TYP.
PROPOSED LANDSCAPE WALL
PROPOSED GRAVEL WALK
STONE PAVERS with PLANTED JOINTS
PROPOSED 6' X 11' SPA
PROPOSED STONE WALL to MATCH EXISTING, TYP.
PROPOSED UTILITY DECK (+17)
PROPOSED HEDGE to SCREEN UTILITY DECK
PROPOSED GRAVEL with STONE BORDER SEATING AREA
PROPOSED GRAVEL WALK
PROPOSED GARDEN BED, TYP.

PROPOSED OUTDOOR SHOWER
STEPSTONES with PLANTED JOINTS
PROPOSED STEPS (see ARCH. DWGS.)
PROPOSED STONE SLAB STEPS
LAWN

MATCHLINE to LEVEL 0
MATCHLINE to LEVEL 1

ZONE AE (EL15)
ZONE VE (EL15)

MEAN HIGH WATER AT BASE OF SEA WALL
COASTAL JURISDICTION LINE EL. = 5.4' COINCIDENT WITH FACE OF SEAWALL
MEAN HIGH WATER AT TOTAL LENGTH = 11'-5"
COASTAL JURISDICTION LINE EL. = 5.4'

LONG ISLAND SOUND

LEGEND

- PROPERTY LINE
- AE/VE ZONE
- EXISTING TREE
- NEW STONE PAVER
- WALLS (EXISTING)
- NEW STONE STAIR
- NEW DECKING
- NEW GRAVEL
- NEW COBBLE DRIVEWAY
- NEW SPA
- EX. HEDGE TO REMAIN
- PROPOSED HEDGE
- NEW PLANTING
- NEW GATE

N E W S

HOLLANDER design
Landscape Architects
200 Park Avenue South, Suite 1200, New York, New York
phone - 212-473-0620 ● projects@hollanderdesign.com

PRELIMINARY SET
NOT FOR CONSTRUCTION

NO.	PURPOSE	DATE
2	CAM SUBMISSION	05.27.2025
1	ZBA SUBMISSION	03.11.2025

RELEASES

SEAL

STATE OF CONNECTICUT · REGISTERED · EDMUND D. HOLLANDER · LANDSCAPE ARCHITECT · 000

THESE DRAWINGS ARE THE PROPERTY OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C. THE DESIGN SHOWN AND DESCRIBED HEREIN, INCLUDING ALL TECHNICAL DRAWINGS, ARE RESERVED AND CANNOT BE COPIED, PUBLISHED, OR COMMERCIALLY EXPLOITED, IN WHOLE OR IN PART. THE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY THE OWNER FOR OTHER PROJECTS, FOR ADDITIONS TO THE PROJECT, OR FOR COMPLETION OF THE PROJECT BY OTHERS UNLESS AGREED TO IN WRITING BY THE LANDSCAPE ARCHITECT. OWNER SHALL INDEMNIFY AND DEFEND THE LANDSCAPE ARCHITECT AGAINST ALL DAMAGES, CLAIMS, AND LOSSES, INCLUDING DEFENSE COSTS, ARISING OUT OF ANY REUSE OF THE PLANS AND SPECIFICATIONS WITHOUT WRITTEN AUTHORIZATION OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C.

COPYRIGHT ©2022 ALL RIGHTS RESERVED

PREPARED BY:

EDMUND D. HOLLANDER
LANDSCAPE ARCHITECT DESIGN, P.C.

200 PARK AVENUE SOUTH SUITE 1200
NEW YORK, NY. 10003
PHONE: 212.473.0620
FAX: 212.473.1104
EMAIL: projects@hollanderdesign.com

PROJECT:

38 SOUTH BEACH DRIVE

38 SOUTH BEACH DRIVE
NORWALK, CT

DRAWING NAME:

MATERIALS PLAN - 38

DRAWN BY: CD, SP, & LTD
CHECKED BY: EDH
SCALE: 1" = 10'-0"
CURRENT ISSUE DATE: 05.27.2025

SET: CD
SHEET: L-1.10

38 SOUTH BEACH DRIVE

PLANTING- 38 SOUTH BEACH DRIVE
see ENLARGED PLAN L-4.10

46 SOUTH BEACH DRIVE

PLANTING- 46 SOUTH BEACH DRIVE
see ENLARGED PLAN L-4.20

38 SBD LANDSCAPE NARRATIVE:

The proposed landscape design of 38 South Beach Drive has been developed to protect and highlight a mature *Quercus spp.* (Oak) Tree. The proposed design maintains the current program but relocates the spa to work with the raised home.
The planting palette is a mix of native and non-invasive, non-native plants that have been selected to thrive in the challenging coastal environment. While the majority of plants are native varieties, the selected plants reflect the Rowayton coastal community vernacular including trimmed hedges, architectural evergreens and summer flowering shrubs.
The exact location of proposed plantings and species types may vary from this plan based on site plan revisions, actual field locations and/ or availability.

PLANTING PALETTE ORIGIN DEFINITIONS

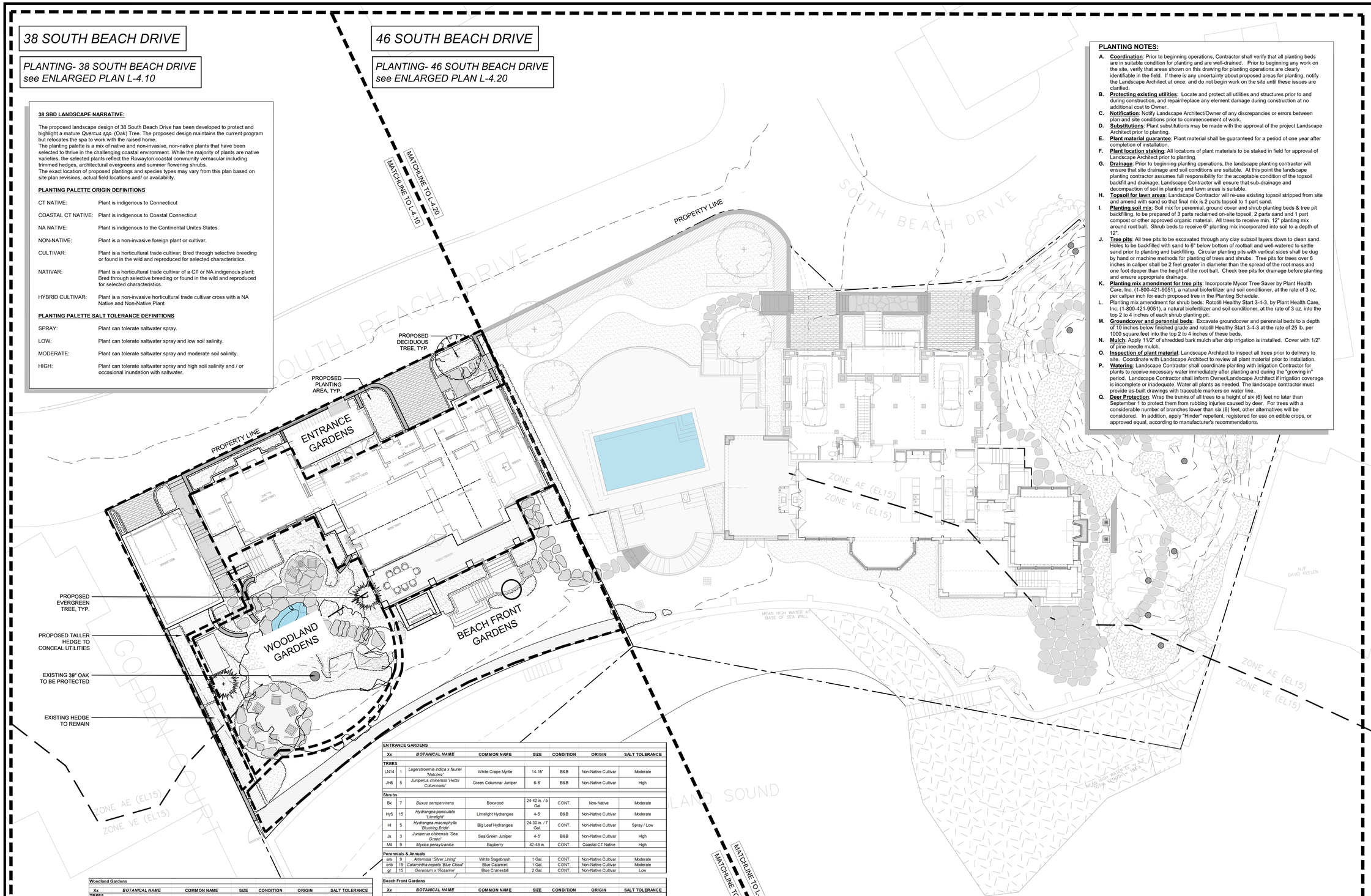
CT NATIVE:	Plant is indigenous to Connecticut
COASTAL CT NATIVE:	Plant is indigenous to Coastal Connecticut
NA NATIVE:	Plant is indigenous to the Continental Unites States.
NON-NATIVE:	Plant is a non-invasive foreign plant or cultivar.
CULTIVAR:	Plant is a horticultural trade cultivar; Bred through selective breeding or found in the wild and reproduced for selected characteristics.
NATIVAR:	Plant is a horticultural trade cultivar of a CT or NA indigenous plant; Bred through selective breeding or found in the wild and reproduced for selected characteristics.
HYBRID CULTIVAR:	Plant is a non-invasive horticultural trade cultivar cross with a NA Native and Non-Native Plant

PLANTING PALETTE SALT TOLERANCE DEFINITIONS

SPRAY:	Plant can tolerate saltwater spray.
LOW:	Plant can tolerate saltwater spray and low soil salinity.
MODERATE:	Plant can tolerate saltwater spray and moderate soil salinity.
HIGH:	Plant can tolerate saltwater spray and high soil salinity and / or occasional inundation with saltwater.

PLANTING NOTES:

A. **Coordination**: Prior to beginning operations, Contractor shall verify that all planting beds are in suitable condition for planting and are well-drained. Prior to beginning any work on the site, verify that areas shown on this drawing for planting operations are clearly identifiable in the field. If there is any uncertainty about proposed areas for planting, notify the Landscape Architect at once, and do not begin work on the site until these issues are clarified.
B. **Protecting existing utilities**: Locate and protect all utilities and structures prior to and during construction, and repair/replace any element damage during construction at no additional cost to Owner.
C. **Notification**: Notify Landscape Architect/Owner of any discrepancies or errors between plan and site conditions prior to commencement of work.
D. **Substitutions**: Plant substitutions may be made with the approval of the project Landscape Architect prior to planting.
E. **Plant material guarantee**: Plant material shall be guaranteed for a period of one year after completion of installation.
F. **Plant location staking**: All locations of plant materials to be staked in field for approval of Landscape Architect prior to planting.
G. **Drainage**: Prior to beginning planting operations, the landscape planting contractor will ensure that site drainage and soil conditions are suitable. At this point the landscape planting contractor assumes full responsibility for the acceptable condition of the topsoil backfill and drainage. Landscape Contractor will ensure that sub-drainage and decompaction of soil in planting and lawn areas is suitable.
H. **Topsoil for lawn areas**: Landscape Contractor will re-use existing topsoil stripped from site and amend with sand so that final mix is 2 parts topsoil to 1 part sand.
I. **Planting soil mix**: Soil mix for perennial, ground cover and shrub planting beds & tree pit backfilling, to be prepared of 3 parts reclaimed on-site topsoil, 2 parts sand and 1 part compost or other approved organic material. All trees to receive min. 12" planting mix around root ball. Shrub beds to receive 6" planting mix incorporated into soil to a depth of 12".
J. **Tree pits**: All tree pits to be excavated through any clay subsoil layers down to clean sand. Holes to be backfilled with sand to 6" below bottom of rootball and well-watered to settle sand prior to planting and backfilling. Circular planting pits with vertical sides shall be dug by hand or machine methods for planting of trees and shrubs. Tree pits for trees over 6 inches in caliper shall be 2 feet greater in diameter than the spread of the root mass and one foot deeper than the height of the root ball. Check tree pits for drainage before planting and ensure appropriate drainage.
K. **Planting mix amendment for tree pits**: Incorporate Mycor Tree Saver by Plant Health Care, Inc. (1-800-421-9051), a natural biofertilizer and soil conditioner, at the rate of 3 oz. per caliper inch for each proposed tree in the Planting Schedule.
L. Planting mix amendment for shrub beds: Rototill Healthy Start 3-4-3, by Plant Health Care, Inc. (1-800-421-9051), a natural biofertilizer and soil conditioner, at the rate of 3 oz. into the top 2 to 4 inches of each shrub planting pit.
M. **Groundcover and perennial beds**: Excavate groundcover and perennial beds to a depth of 10 inches below finished grade and rototill Healthy Start 3-4-3 at the rate of 25 lb. per 1000 square feet into the top 2 to 4 inches of these beds.
N. **Mulch**: Apply 11/2" of shredded bark mulch after drip irrigation is installed. Cover with 1/2" of pine needle mulch.
O. **Inspection of plant material**: Landscape Architect to inspect all trees prior to delivery to site. Coordinate with Landscape Architect to review all plant material prior to installation.
P. **Watering**: Landscape Contractor shall coordinate planting with irrigation Contractor for plants to receive necessary water immediately after planting and during the "growing in" period. Landscape Contractor shall inform Owner/Landscape Architect if irrigation coverage is incomplete or inadequate. Water all plants as needed. The landscape contractor must provide as-built drawings with traceable markers on water line.
Q. **Deer Protection**: Wrap the trunks of all trees to a height of six (6) feet no later than September 1 to protect them from rubbing injuries caused by deer. For trees with a considerable number of branches lower than six (6) feet, other alternatives will be considered. In addition, apply "Hinder" repellent, registered for use on edible crops, or approved equal, according to manufacturer's recommendations.



ENTRANCE GARDENS

Xx		BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	ORIGIN	SALT TOLERANCE
TREES							
LN14	1	*Lagerstroemia indica x fauriei 'Natchez'*	White Crape Myrtle	14-16'	B&B	Non-Native Cultivar	Moderate
JHB	5	*Juniperus chinensis 'Hetzii Columnaris'*	Green Columnar Juniper	6-8'	B&B	Non-Native Cultivar	High
Shrubs							
Bx	7	*Buxus sempervirens*	Boxwood	24-42 in. / 5 Gal	CONT.	Non-Native	Moderate
Hy5	15	*Hydrangea paniculata 'Limelight'*	Limelight Hydrangea	4-5'	B&B	Non-Native Cultivar	Moderate
Hl	5	*Hydrangea macrophylla 'Blushing Bride'*	Big Leaf Hydrangea	24-30 in. / 7 Gal.	CONT.	Non-Native Cultivar	Spray / Low
Js	3	*Juniperus chinensis 'Sea Green'*	Sea Green Juniper	4-5'	B&B	Non-Native Cultivar	High
Ml	9	*Myrica pensylvanica*	Bayberry	42-48 in.	CONT.	Coastal CT Native	High
Perennials & Annuals							
ars	9	*Artemisia 'Silver Lining'*	White Sagebrush	1 Gal.	CONT.	Non-Native Cultivar	Moderate
cnb	15	*Calamintha nepeta 'Blue Cloud'*	Blue Calamint	1 Gal.	CONT.	Non-Native Cultivar	Moderate
gr	15	*Geranium x 'Rozanne'*	Blue Cranesbill	2 Gal.	CONT.	Non-Native Cultivar	Low

Woodland Gardens

Xx		BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	ORIGIN	SALT TOLERANCE
TREES							
JHB	15	*Juniperus chinensis 'Hetzii Columnaris'*	Green Columnar Juniper	6-8'	B&B	Non-Native Cultivar	High
SHRUBS							
Cl	5	*Clethra alnifolia 'Hummingbird'*	Hummingbird Summersweet	24-30 in. / 7 Gal.	CONT.	Coastal CT Nativar	Moderate
Hqr	3	*Hydrangea quercifolia 'Ruby Slippers'*	Ruby Oakleaf Hydrangea	24-30 in. / 5 Gal.	CONT.	NA Nativar	Low / None
Hqpw	3	*Hydrangea quercifolia 'Pee Wee'*	Compact Oakleaf Hydrangea	24-30 in. / 5 Gal.	CONT.	NA Nativar	Low / None
Ml	12	*Myrica pensylvanica*	Bayberry	42-48 in.	CONT.	Coastal CT Native	High
Rhb	3	*Rhododendron catawbiense 'Roseum Elegans'*	Roseum Elegans Rhododendron	3-3.5'	B&B	CT Native	Low / None
PERENNIALS							
auu	5	*Arctostaphylos uva-ursi 'Massachusetts'*	Red Bearberry	1 Gal.	CONT.	Coastal CT Native	High
he3	19	*Hemerocallis "Sundry Gloves'*	Pale Yellow/White Daylily	1 Gal.	CONT.	Non-Native	Moderate
hua	15	*Heuchera villosa 'Autumn Bride'*	Green Coral Bells	1 Gal.	CONT.	NA Nativar	Moderate
tap	9	*Tiarella x 'Pink Skyrocket'*	Foam Flower	1 Gal.	CONT.	CT Nativar	Low / None
FERNS & GRASSES							
g10	9	*Deschampsia cespitosa 'Pixie Fountain'*	Pixie Fountain Tufted Hair Grass	1 Gal.	CONT.	CT Nativar	Low / None
f06	5	*Dryopteris goldiana*	Goldy's Wood Fern	1 Gal.	CONT.	CT Native	Low / None
f12	7	*Dryopteris marginalis*	Evergreen Wood Fern	1 Gal.	CONT.	CT Native	Low / None
F13	5	*Dennstaedtia punctilobula*	Hayscented Fern	1 Gal.	CONT.	CT Native	Low / None

NOTE ON SALT TOLERANCE:

- Plants with Salt Tolerance of "LOW / NONE" are proposed for protected/ upland areas and include plants that have been observed to be existing and thriving on site.

Beach Front Gardens

Xx		BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	ORIGIN	SALT TOLERANCE
TREES							
JT10	3	*Juniperus chinensis 'Torulosa'*	Hollywood Juniper	9-10'	B&B	Non-Native Cultivar	High
JV12	3	*Juniperus virginiana*	Eastern Red Cedar	10-12'	B&B	Coastal CT Native	Moderate
SHRUBS							
Cls	7	*Clethra alnifolia 'Vanilla Spice'*	Vanilla Spice Summersweet	18-24 in. / 7 Gal.	CONT.	Coastal CT Nativar	Moderate
He	5	*Hydrangea macrophylla 'Balmer'*	Endless Summer Big Leaf Hydrangea	30-36 in. / 7 Gal.	CONT.	Non-Native Cultivar	Spray
Hph	9	*Hypericum patulum 'Hidcote'*	Hidcote St. John's Wort	3 Gal.	CONT.	Non-Native Cultivar	High
Igd3	5	*Ilex glabra 'Densa'*	Densa Inkberry	30-36 in.	B&B	Coastal CT Nativar	Moderate / High
Igb2	7	*Ilex glabra 'Gem Box'*	Gem Box Inkberry	18-24 in. / 5 Gal.	CONT.	Coastal CT Nativar	Moderate / High
Igs3	5	*Ilex glabra 'Shamrock'*	Inkberry	30-36 in.	B&B	Coastal CT Nativar	Moderate / High
Ml	19	*Myrica pensylvanica*	Bayberry	42-48 in.	CONT.	Coastal CT Native	High
PERENNIALS							
abf	5	*Agastache 'Blue Fortune'*	Blue Anise Hyssop	2 Gal.	CONT.	Hybrid Cultivar	Moderate
auu	15	*Arctostaphylos uva-ursi 'Massachusetts'*	Red Bearberry	1 Gal.	CONT.	Coastal CT Nativar	High
asc	9	*Asclepias incarnata*	Swamp Milkweed	1 Gal.	CONT.	Coastal CT Native	Moderate
hm	5	*Hibiscus moscheutos*	Swamp Rose Mallow	2 Gal.	CONT.	Coastal CT Native	Low
hib	7	*Hibiscus moscheutos 'Blue River II'*	White Hibiscus	1 Gal.	CONT.	Coastal CT Nativar	Low
scb	5	*Salvia nemorosa 'Crystal Blue'*	Color Spires Blue Salvia	1 Gal.	CONT.	Non-Native Cultivar	Moderate
GRASSES							
g23	12	*Muhlenbergia capillaris*	Pink Muhly Grass	2 Gal.	CONT.	CT Native	High
g35a	7	*Pennisetum alopecuroides 'Elouffee'*	Infertile Pink Foxtail Grass	2 Gal.	CONT.	Non-Native	High

HOLLANDER design
Landscape Architects
200 Park Avenue South, Suite 1200, New York, New York
phone - 212-473-0020 ● projects@hollanderdesign.com

PRELIMINARY SET
NOT FOR CONSTRUCTION

NO.	PURPOSE	DATE
2	CAM SUBMISSION	05.27.2025
1	ZBA SUBMISSION	03.11.2025

RELEASES

SEAL

THESE DRAWINGS ARE THE PROPERTY OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C. THE DESIGN SHOWN AND DESCRIBED HEREIN, INCLUDING ALL TECHNICAL DRAWINGS, ARE PROPRIETARY AND CANNOT BE COPIED, DUPLICATED, OR COMMERCIALLY USED IN WHOLE OR IN PART. THESE DRAWINGS AND SPECIFICATIONS ARE NOT TO BE USED BY THE OWNER FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT, OR FOR COMPLETION OF THE PROJECT BY OTHERS. THE OWNER AGREES TO HOLD HARMLESS, INDEMNIFY, AND DEFEND EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C. AND LOSSES, INCLUDING DEFENSE COSTS, ARISING OUT OF ANY REUSE OF THE PLANS AND SPECIFICATIONS WITHOUT WRITTEN AUTHORIZATION OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C.

COPYRIGHT ©2002 ALL RIGHTS RESERVED

PREPARED BY:

EDMUND D. HOLLANDER
LANDSCAPE ARCHITECT DESIGN, P.C.

200 PARK AVENUE SOUTH SUITE 1200
NEW YORK, NY 10003
PHONE: 212.473.0020
FAX: 212.473.1104
EMAIL: projects@hollanderdesign.com

PROJECT:

38 SOUTH BEACH DRIVE

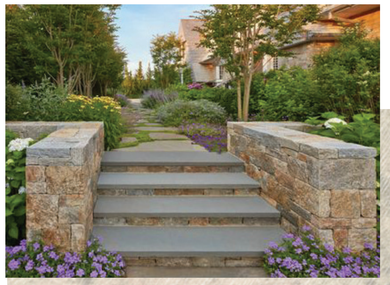
38 SOUTH BEACH DRIVE
NORWALK, CT

DRAWING NAME:

PLANTING PLAN - 38

DRAWN BY: CD, SP, & LTD
CHECKED BY: EDH
SCALE: 1" = 10'-0"
CURRENT ISSUE DATE: 05.27.2025

SET: CD
SHEET: L-4.10



1 STEPS TO FRONT GARDEN



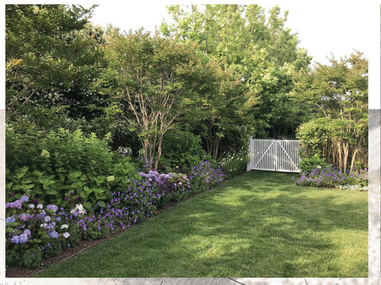
2 STEPSTONE PATH



3 FRONT GARDEN



4 FRONT GARDEN PLANTINGS



5 FRONT YARD PLANTINGS



6 SOUTH BEACH DRIVE PLANT STYLING



7 GARDEN STAIR



8 SPA IN WOODLAND LEDGE

9 ACCESS at LOWER LEVEL

10 SEAWALL GARDEN WALK

11 REAR TERRACE at MAIN HOUSE

THESE DRAWINGS ARE THE PROPERTY OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C. THE DESIGN SHOWN AND DESCRIBED HEREIN, INCLUDING ALL TECHNICAL DRAWINGS, ARE PROPRIETARY AND CANNOT BE COPIED, DUPLICATED, OR COMMERCIALLY EXPLOITED, IN WHOLE OR IN PART. THE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY THE OWNER FOR OTHER PROJECTS, FOR ADDITIONS TO THE PROJECT, OR FOR COMPLETION OF THE PROJECT BY OTHERS. THE OWNER AGREES TO HOLD HARMLESS, INDEMNIFY, AND DEFEND THE LANDSCAPE ARCHITECT AGAINST ALL DAMAGES, CLAIMS, AND LOSSES, INCLUDING DEFENSE COSTS, ARISING OUT OF ANY REUSE OF THE PLANS AND SPECIFICATIONS WITHOUT WRITTEN AUTHORIZATION OF EDMUND D. HOLLANDER LANDSCAPE ARCHITECT DESIGN, P.C.

COPYRIGHT © 2014 ALL RIGHTS RESERVED

SITE MASTER PLAN

38/46 SOUTH BEACH DRIVE

NORWALK, CT

DRAWN BY:	CMD | SP | LTD
CHECKED BY:	EDH
SCALE:	1/8" = 1'-0"
DATE:	05.27.2025

SET: SD

SHEET: L1

March 11, 2025

City of Norwalk
125 East Avenue
Norwalk, CT 06851

Attention: Bryan Baker, Principal Planner
Norwalk Planning and Zoning Commission

Reference: Flood Zone Compliance Review
38 South Beach Drive
RACE Project No. 2024097

Dear Mr. Baker:

RACE COASTAL ENGINEERING ("**RACE**") has performed an engineering assessment of the potential impacts upon coastal flood conditions that could result from the proposed site improvements at 38 South Beach Drive, Norwalk, CT. **RACE** reviewed the proposed site improvements for flood zone compliance with respect to FEMA guidelines and requirements. **RACE** also reviewed that the proposed work would not result in an increase in the Base Flood Elevations (BFEs) at the site or on adjacent properties, in compliance with the City of Norwalk Zoning Regulations – Article 6.9.5 Provisions for Flood Hazard Reduction. The proposed site improvements include renovations to the existing dwelling, elevated patio areas and associated stairs, at-grade patios, spa, at-grade planter beds and other landscape features which are depicted on the following project plans:

- "Site Development Plan Depicting 38 South Beach Drive Norwalk CT" Prepared by Redniss & Mead dated March 11, 2025.
- "Private Residence 38 South Beach Drive Norwalk CT 06853" Issued for Zoning Review dated March 11, 2025 by Oliver Cope Architect.
- "38 South Beach Drive Landscape Permitting Drawings" Issued March 11, 2025 by Edmund D. Hollander Landscape Architect Design, P.C.

The site, as well as the adjacent properties, are located in the Special Flood Hazard Area (SFHA) on FEMA Flood Insurance Rate Map (FIRM) No.09001C0541G effective July 8, 2013. The flood zone designations include a Zone VE with a BFE of +15 feet (NAVD 88) and Zone AE with a BFE of +15 feet (NAVD 88). The Zone VE designation represents a Coastal High Hazard Area. The existing dwelling to be modified, the elevated patio areas and associated stairs, and at-grade patios and planter beds will be partially or wholly located in Zone VE. The other site improvements, particularly the detached garage, utility deck and spa are to be located entirely within Zone AE.

To document that the proposed improvements would not adversely impact the effective FEMA Base Flood Elevation or cause increased flood impacts to adjacent properties, **RACE** performed the following analyses of the potential flooding impacts of the proposed improvements:

1. A wave crest analysis of proposed site conditions relative to the effective FEMA Base Flood Elevation.
2. A wave runup analysis of proposed site conditions relative to the effective FEMA Base Flood Elevation.
3. A wave reflection analysis of proposed site conditions relative to the effective FEMA Base Flood Elevation.

RACE utilized starting wave data from Transect 23 (H = 9.42 ft, T = 4.81 seconds, Wave set-up = 2.1 ft) of FEMA's FIS due to its proximity to the site. **RACE** employed FEMA's Coastal Hazard Analysis Modeling Program (CHAMP)'s Wave Height Analysis for Flood Insurance Studies (WHAFIS) model to calculate the wave crest elevations on site. One cross-sectional transect across the center of the property was analyzed for the proposed site condition and compared to the effective FEMA Base Flood Elevation. The WHAFIS results show that the proposed work does not increase the wave crest elevations on the site or adjacent properties.

Wave runup was analyzed for the proposed conditions using ACES's *Wave Runup and Overtopping on Impermeable Structures* application. The analysis demonstrated that there would be no increase in the effective FEMA BFE as a result of wave runup elevations on the site or adjacent properties.

Wave reflection was analyzed using ACES's *Combined Reflection and Diffraction by a Vertical Wedge* Application. The reflection analysis showed the effective FEMA BFE will not be increased at the site or adjacent sites due to reflected waves.

Based on our review, it is **RACE's** professional opinion that the proposed site improvements will not create adverse impacts with respect to flooding at the site or adjacent properties when compared to the effective FEMA BFE. **RACE** certifies that the proposed improvements will:

1. Not increase wave crest elevations on the site or adjacent properties.
2. Not increase wave runup elevations on the site or adjacent properties.
3. Not increase wave crest elevations on the site or adjacent properties due to reflected waves.

In addition to analysis of the proposed improvements relative to impacts to the flooding characteristics of the site, **RACE** reviewed the proposed dwelling modifications and additional site improvements for compliance with the NFIP and Article 6.9.5 of the Norwalk Zoning Code. The proposed dwelling will be partially located in the Zone VE with a BFE of +15 feet. The dwelling meets the code requirements for first floor and utility elevations. Foundation elements of the dwelling below the BFE will consist of columns and will be appropriately designed and anchored to resist flood loads. Enclosed spaces in the Zone VE below the BFE will be utilized for storage and building access and will be enclosed with breakaway walls equipped with adequate flood vents. Enclosed areas located completely in the Zone AE with a BFE of +15

feet will be utilized for parking, storage, and building access and will have adequate flood vents and will be unfinished.

Based on our wave impact analyses and review of the site development design, **RACE** confirms that the proposed site improvements are in compliance with Article 6.9.5 of the Norwalk Zoning Code and will not cause an increase in the effective FEMA designated BFE at the site or cause adverse impacts with respect to flooding or environmental resources.

It is anticipated that this document is acceptable for your records. Should you have any questions, please contact the undersigned at 203-377-0663.

Very truly yours,

RACE COASTAL ENGINEERING

Azure Dee Sleicher, PE
Vice President – Coastal Engineering
CT PE License No. 23744



38-46 South Beach Drive

ROWAYTON, CT

Planting Palette











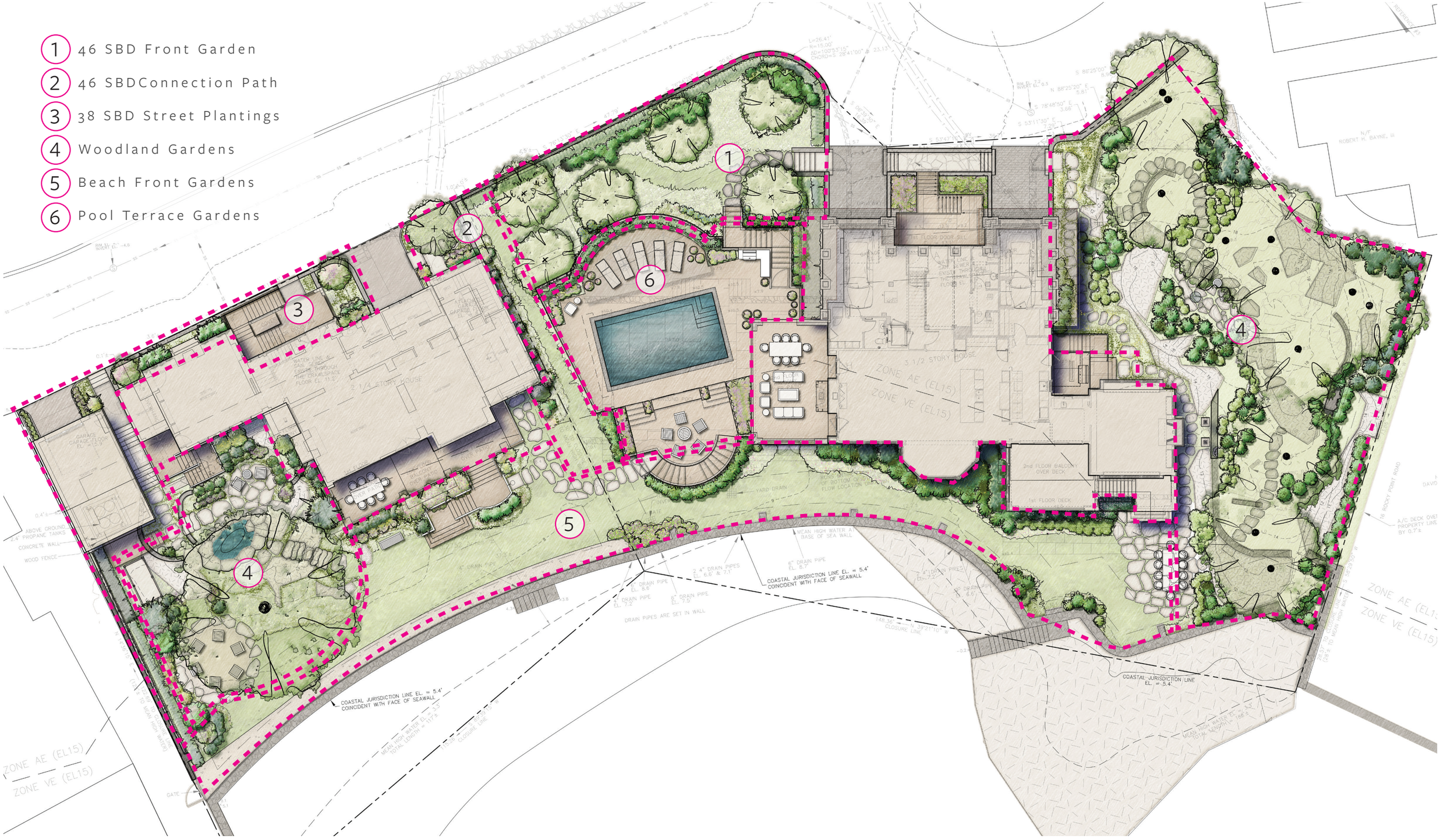






38-46 SOUTH BEACH DRIVE GARDEN AREAS

1. 46 SBD Front Garden
2. 46 SBDConnection Path
3. 38 SBD Street Plantings
4. Woodland Gardens
5. Beach Front Gardens
6. Pool Terrace Gardens



46 SBD FRONT GARDEN PROPOSED **GINKGO BILOBA** TREES











Ginkgo biloba
Maidenhair Tree

GB10
30-50' H, 20-30' W

46 SBD FRONT GARDEN PROPOSED PLANTING



Buxus sempervirens **B30, B36, B42, B48, B54, B60**
Boxwood 2.5-3' H, Varies W



Hydrangea paniculata 'Phantom' **Hpp**
Phantom Panicle Hydrangea 6-8' H, 6-8' W



Prunus laurocerasus 'Schipkaensis' **Ps6, Ps7**
Skip Cherry Laurel 8-10' H, 4-6' W



Ligustrum ovalifolium **L6, L8**
California Privet 10-15' H, 4-10' W



Hydrangea paniculata 'Bombshell' **Hpb**
Bombshell Panicle Hydrangea 2-3' H, 3-4' W



Hydrangea macrophylla 'Let's Dance Starlight' **Hld**
Dwarf Blue Lace Rebloomer 2-3' H, 2-3' W



Aronia melanocarpa 'Low Scape Snowfire' **Als**
Black Chokeberry 3-4' H, 3-4' W

46 SBD FRONT GARDEN & CONNECTION PATH PROPOSED PLANT-



Astilbe x arendsii 'Diamant' **ase**
White Diamond Summer Astilbe 24-36" H, 15-18" W



Astilbe japonica 'Peach Blossom' **ast**
Peach Astilbe 24-28" H, 12-18" W



Myrica pensylvanica **M2, M3, M4. M5, M6, M30**
Bayberry 6-8' H, 3-4' W



Hydrangea macrophylla 'Wedding Gown' **Hdw**
Re-Blooming White Lacecap Hydrangea 2-3' H, 3-4' W



Deschampsia cespitosa 'Pixie Fountain' **g10**
Pixie FountainTufted Hair Grass 18-24" H, 18-24" W



Geranium x 'Rozanne' **gr**
Blue Cranesbill 12-24" H, 15-20" W



Heuchera villosa 'Autumn Bride' **hua**
Green Coral Bells 15-24" H, 12-18" W



Tiarella x 'Pink Skyrocket' **tap**
Foam Flower 6-12" H, 10-12" W



Hydrangea macrophylla 'Bailmer' **He**
Endless Summer Big Leaf Hydrangea 3-5' H, 3-5' W



Aronia melanocarpa 'Ground Hug' **Alg**
Black Chokeberry 1' H, 1-3' W

38 SBD STREET PROPOSED PLANTING





Buxus sempervirens **B30, B36, B42, B48, B54, B60**
Boxwood 2.5-3' H, Varies W



Hydrangea macrophylla 'Blushing Bride' **Hl**
Big Leaf Hydrangea 3-6' H, 3-6' W

38 SBD STREET PROPOSED PLANTING







Hydrangea paniculata 'Limelight' **Hy**
Limelight Panicle Hydrangea 6-8' H, 6-8' W



Geranium x 'Rozanne' **gr**
Blue Cranesbill 12-24" H, 15-20" W



Juniperus chinensis 'Sea Green' **Js**
Sea Green Juniper 4-6' H, 6-8' W



Artemisia 'Silver Lining' **ars**
White Sagebrush H, W



Lagerstroemia indica x fauriei 'Natchez' **LN14, LN16, LN18**
White Crape Myrtle 15-20' H, 15-20' W





Calamintha nepeta 'Blue Cloud' **cnb**
Blue Calamint 8-12" H, 12-18" W

38 & 46 SBD WOODLAND GARDENS PROPOSED PLANTING





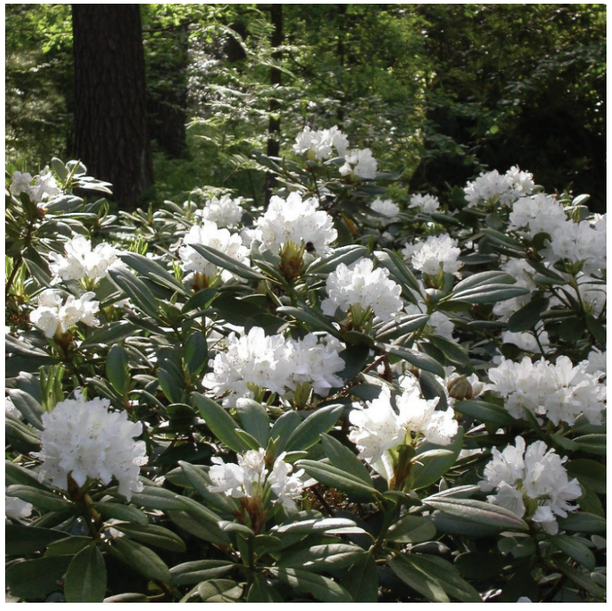
Juniperus chinensis 'Hetzii Columnaris'
Green Columnar Juniper

JH8
15-20' H, 4-6' W

38 & 46 SBD WOODLAND GARDENS PROPOSED PLANTING



Rhododendron maximum **Rm4, Rm5, Rm6**
Rosebay Rhododendron 5-12' H, 5-10' W



Rhododendron 'Boule de Neige' **Rhb**
White Catawba Hybrid Rhododendron 3-4' H, 3-4' W



Rhododendron catawbiense 'Roseum Elegans' **Rg, Rg4, Rg5**
Roseum Elegans Rhododendron 6-10' H, 6-8' W



Clethra alnifolia 'Hummingbird' **Cl, Clh**
Hummingbird Summersweet 2-4' H, 3-4' W



Hydrangea quercifolia 'Pee Wee' **Hqpw**
Compact Oakleaf Hydrange 3-5' H, 3-5' W



Hydrangea quercifolia 'Ruby Slippers' **Hqr**
Ruby Oakleaf Hydrangea 3-4' H, 4-5' W



Hydrangea quercifolia 'Snow Queen' **Hq**
Snow Queen Oakleaf Hydrangea 4-6' H, 5-7' W



Aronia melanocarpa 'Viking' ***Av***
Black Chokeberry ***4-6' H, 4-6' W***

38 & 46 SBD WOODLAND GARDENS PROPOSED PLANTING



Heuchera villosa 'Autumn Bride' **hua**
Green Coral Bells 15-24" H, 12-18" W



Astilbe japonica 'Peach Blossom' **ast**
Peach Astilbe 24-28" H, 12-18" W



Hemerocallis 'Sunday Gloves' **he3**
Pale Yellow/White Daylily 24-30" H, 18-24" W



Deschampsia cespitosa 'Pixie Fountain' **g10**
Pixie FountainTufted Hair Grass 18-24" H, 18-24" W



Gaultheria procumbens **gp**
Wintergreen 4-6" H, 8-12" W



Tiarella x 'Pink Skyrocket' **tap**
Foam Flower 6-12" H, 10-12" W



Arctostaphylos uva-ursi 'Massachusetts' **auu, auv**
Red Bearberry 6-12" H, 12-36" W



Dryopteris erythrosora 'Brilliance' **fo5**
Autumn Fern 12-24" H, 12-24" W



Dryopteris goldiana **fo6**
Goldy's Wood Fern 36-48" H, 24-36" W



Dryopteris marginalis **f12**
Evergreen Wood Fern 15-18" H, 15-18" W



Dennstaedtia punctilobula **f13**
Hayscented Fern 12-24" H, 18-24" W

38 & 46 SBD BEACH FRONT GARDENS STYLING





38 & 46 SBD BEACH FRONT GARDENS PROPOSED PLANTING



Juniperus chinensis 'Torulosa'
Hollywood Juniper

JT10
10-15' H, 6-15' W





Juniperus virginiana
Eastern Red Cedar



JV12
40-50' H, 8-20' W

38 & 46 SBD BEACH FRONT GARDENS PROPOSED PLANTING



Clethra alnifolia 'Vanilla Spice' **Cls**
Vanilla Spice Summersweet 3-6' H, 3-5' W



Hydrangea macrophylla 'Bailmer' **He**
Endless Summer Big Leaf Hydrangea 3-5' H, 3-5' W



Hypericum patulum 'Hidcote' **Hph**
Hidcote St. John's Wort 2-4' H, 2-4' W



Ilex verticillata 'Red Sprite' ***Ivs***
Red Winterberry ***3-5' H, 3-4' W***



Myrica pensylvanica **M2, M3, M4. M5, M6, M30**
Bayberry 6-8' H, 3-4' W



Ilex glabra 'Gem Box' **Igb2**
Gem Box Inkberry 2-3' H, 2-3' W



Ilex glabra 'Densa' **Igd2, Igd3**
Densa Inkberry 3-4' H, 2-3' W



Ilex glabra 'Shamrock' **Igs2, Igs3**
Inkberry 3-4' H, 3-4' W

38 & 46 SBD BEACH FRONT GARDENS PROPOSED PLANTING



Agastache 'Blue Fortune' **abf**
Blue Anise Hyssop 24-36" H, 24-36" W



Asclepias incarnata **asi**
Swamp Milkweed 36-60" H, 24-36" W



Hibiscus moscheutos 'Blue River II' **hib**
White Hibiscus 48-60" H, 36-48" W



Arctostaphylos uva-ursi 'Massachusetts' **auu, auv**
Red Bearberry 6-12" H, 12-36" W



Salvia nemorosa 'Crystal Blue' **scb**
Ice Blue Salvia 24-26" H, 18-20" W



Hibiscus moscheutos **him**
Swamp Rose Mallow 36-84" H, 24-48" W



Muhlenbergia capillaris **g23**
Pink Muhly Grass 24-36" H, 30-36" W



Pennisetum alopecuroides 'Etouffee' **g35a**
Infertile Pink Foxtail Grass 30-36" H, 30-36" W

46 SBD POOL TERRACE GARDENS PROPOSED PLANTING



Prunus laurocerasus 'Schipkaensis' **Ps6, Ps7**
Skip Cherry Laurel 8-10' H, 4-6' W



Hydrangea paniculata 'Sweet Summer' **Hps**
Sweet Summer Panicle Hydrangea 5-6' H, 4-6' W



Phlox paniculata 'David' **ph**
White Phlox 36-60" H, 18-24" W



Perovskia a. 'Blue Jean Baby' **paj**
Compact Russian Sage 30-34" H, 24-36" W



Artemisia stelleriana 'Silver Brocade' **asn**
Wormwood 6-12" H, 15-18" W



Achillea millefolium 'Pink Grapefruit' **amg**
Pink Yarrow 12-24" H, 12-24" W



Hydrangea macrophylla 'Blushing Bride' **Hl**
Big Leaf Hydrangea 3-6' H, 3-6' W



Buxus 'Green Velvet' **Bg18, Bg24, Bg30, Bg36**
Green Velvet Boxwood 2.5-3' H, 2.5-3' W



Salvia nemorosa 'Crystal Blue' **scb**
Color Spires Blue Salvia 24-26" H, 18-20" W



Allium 'Summer Beauty' **ais**
Pale Purple Summer Allium 12-18" H, 12-18" W

TYLin

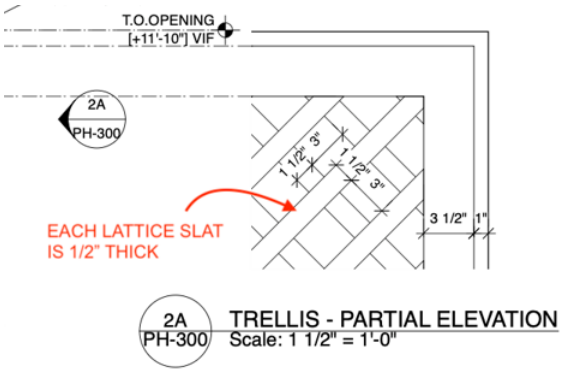
MEMORANDUM

Date:	June 12, 2025	Project Name:	38 South Beach Drive
Attention:	Olivia Rowan	TYLin Project #:	3010.0102134.000
Company:	Oliver Cope Architect, LLC	RE:	Lattice Breakaway Walls
From:	Nat Oppenheimer	cc:	Design Team

Olivia,

TYLin has reviewed the breakaway lattice (trellis) details within the design documents and can confirm that the lattice will break away and collapse due to water loads that are less than that which will occur during the Base Flood event [FEMA Hazard AE El. 15] as specified in the City of Norwalk, Connecticut Zoning Regulations Article 6, Section 6.9.5.D. During the Base Flood event [FEMA Hazard AE El. 15], the Building above and supporting foundation system will not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all components prior to or during the collapse of the lattice wall.

See the below detail of the lattice wall, each of the members is less that ½" thick and the opening area consists of more than 40% of the overall area of the lattice wall.



If you have any further questions, please do not hesitate to reach out to our team.

Thank you,

Nat Oppenheimer

STATE OF CONNECTICUT ★ NATHANIEL E. OPPENHEIMER ★ No. 23860 ★ LICENSED PROFESSIONAL ENGINEER

COASTAL AREA MANAGEMENT APPLICATION

Prepared For
38 South Beach Drive
38 SBD LLC
1250 Lafayette Rd
Gladwyne, PA 19035

Prepared by
Redniss & Mead, Inc.
22 First Street
Stamford, CT
(203) 327-0500

Issued on
March 11, 2025

TABLE OF CONTENTS

1.0 - INTRODUCTION 3
1.1 - Project Purpose
1.3 Existing Site Conditions

2.0 - COASTAL AND ENVIRONMENTAL RESOURCES 5
2.1 - Consistency with General Goals and Policies
2.2 - Potential Effects on Coastal Resources
2.3 - Identification of Significant Natural Features 8
2.4 - Identification of Significant Historical and Cultural Resources
2.5 - Identification of Applicable Coastal Policies Affected by Project

3.0 - SUMMARY AND CLOSING 9

4.0 - LIMITATIONS 10

5.0 - SIGNATURES OF REPORT AUTHORS 11

1.0 - INTRODUCTION

Redniss & Mead, Inc. has prepared this Coastal Area Management (CAM) application on behalf of 38 SBD LLC in support of a site plan approval process for the proposed development at 38 South Beach Drive in Norwalk, Connecticut. The property is located within the CD-1S zoning district and is bound by South Beach Drive to the north, residential properties to the east and west, and Long Island Sound to the south. The CAM Application is required as the site is located within the Coastal Area Management (CAM) zone of the City of Norwalk. The following sections of this document present a project narrative and provide information required by the CAM application.

1.1 - Project Purpose

The applicant is proposing to raise the elevation of the existing dwelling structure and construct additions to the same, demolish the existing garage, construct a new garage structure, and construct associated site improvements. Reference is made to the site and utility plans by Redniss & Mead, Inc. as well as a Site Engineering Report by Redniss & Mead, Inc.

1.2 - Existing Site Conditions

The property at 38 South Beach Drive is approximately 11,378 sf (0.26 acres) in size. The site is developed with a single-family residence, a detached garage, a driveway, a hot tub, and decks, walks and other ancillary improvements typically found on single-family properties. The topography is such that the site stormwater runoff sheet flows from the site in three directions (north, south, and west). The northern stormwater runoff is tributary to existing City-owned stormwater infrastructure within South Beach Drive which ultimately discharges to Long Island Sound via piped discharge at 28 South Beach Drive (beach parcel). The western stormwater runoff discharges into Golden Court before discharging via weep holes into Long Island Sound. The southern stormwater runoff discharges directly to Long Island Sound via weep holes in the sea wall.

The image on the following page illustrates the location of the project site in relation to the Long Island Sound, which is to the immediate south of the site. The dashed line in the image below is the approximate location of the coastal zone boundary.

Location of Site in relation to the Coastal Boundary
Norwalk, CT



REDNISS & MEAD

2.0 - COASTAL AND ENVIRONMENTAL RESOURCES

Redniss & Mead, Inc. conducted a review of coastal and environmental resources at the site and adjacent areas as required by the Coastal Area Management (CAM) application. This review was conducted to determine the potential for impacts associated with the proposed project and to ensure that the project design is consistent with applicable regulations and policies.

2.1 - Consistency with General Goals and Policies

The proposed project is consistent with the general goals and policies outlined in C.G.S. 22a-92(a), as follows:

(1) To insure that the development, preservation or use of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water resources to support development, preservation or use without significantly disrupting either the natural environment or sound economic growth.

The proposed project is consistent with the existing use of the site and therefore there will be no long-term disruption to the natural environment or sound economic growth of the area.

(2) To preserve and enhance coastal resources in accordance with the policies established by chapters 439, 440, 446i, 446k, 447, 474 and 477.

The proposed project will preserve and enhance the coastal resources in accordance with the policies established by the aforementioned chapters. The proposed project is consistent with the existing use of the site and work is landward of the existing seawall.

(3) To give high priority and preference to uses and facilities which are dependent upon proximity to the water or the shorelands immediately adjacent to marine and tidal waters.

The proposed project is consistent with the existing use of the site and will not interfere with existing waterfront uses adjacent to the site.

(4) To resolve conflicts between competing uses on the shorelands adjacent to marine and tidal waters by giving preference to uses that minimize adverse impacts on natural coastal resources while providing long term and stable economic benefits.

Given the existing use of the site, the proposed project will not create conflicts with competing coastal uses.

(5) To consider in the planning process the potential impact of coastal flooding and erosion patterns on coastal development so as to minimize damage to and destruction of life and property and reduce the necessity of public expenditure to protect future development from such hazards.

The proposed project includes raising the elevation of the existing dwelling to meet the BFE requirements of the City of Norwalk, which elevates the livable space above the flood zone elevations. Further reference is made to the Flood Zone Compliance Review memo prepared by RACE Coastal Engineering which indicates that the proposed site improvements will not create adverse impacts with respect to flooding at the site or adjacent properties when compared to the effective FEMA BFE.

(6) To encourage public access to the waters of Long Island Sound by expansion, development and effective utilization of state-owned recreational facilities within the coastal area that are consistent with sound resource conservation procedures and constitutionally protected rights of private property owners.

The proposed development will be located on private property and therefore will not adversely affect state-owned recreational facilities.

(7) To conduct, sponsor and assist research in coastal matters to improve the data base upon which coastal land and water use decisions are made.

The proposed development will not impede the goals of the State or efforts of third parties to conduct, sponsor or assist in research into coastal matters.

(8) To coordinate the activities of public agencies to insure that state expenditures enhance development while affording maximum protection to natural coastal resources and processes in a manner consistent with the state plan for conservation and development adopted pursuant to part I of chapter 297.

State funding is not proposed.

(9) To coordinate planning and regulatory activities of public agencies at all levels of government to insure maximum protection of coastal resources while minimizing conflicts and disruption of economic development.

The proposed development will not impede the duties of planning and regulatory activities of public agencies.

(10) To insure that the state and the coastal municipalities provide adequate planning for facilities and resources which are in the national interest as defined in section 22a-93 and to insure that any restrictions or exclusions of such facilities or uses are reasonable.

The proposed project will not adversely affect any facilities which are defined as 'in the national interest" in accordance with 22a-93.

2.2 - Potential Effects on Coastal Resources

The subject site is located in a developed residential neighborhood that is adjacent to Long Island Sound. The residence is separated from Long Island Sound only by an existing sea wall; note, no work is proposed seaward of the sea wall. Based on a review of the City of Norwalk's Building Zone Map, the site is located within the Coastal Area Management Boundary. As part of this evaluation, Redniss & Mead, Inc. has reviewed available information regarding coastal resources in the vicinity of the site to determine whether they would be affected by the proposed project. In general, coastal resources include:

A. General Resources
B. Bluffs & Escarpments
C. Rocky Shorefronts
D. Beaches & Dunes
E. Intertidal Flats
F. Tidal Wetlands
G. Freshwater Wetlands
H. Coastal Hazard Areas
I. Developed Shorefront
J. Islands
K. Shorelands
L. Shellfish Concentrations
M. Coastal Waters & Embayments
N. Air Resources & Quality

Based on the Connecticut Department of Environmental Protection (CTDEP) Coastal Resources Map (dated 1979), coastal resources identified at or adjacent to the site include modified bluffs & escarpments, beaches, and rocky shorefronts and the site is located within the regulatory floodplain of Long Island Sound; the site lies within two flood zones including AE (El. 15) and VE (El. 15) as depicted on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 09001C0541G dated July 8, 2013. Based on the City of Norwalk Inland Wetlands and Watercourses Map (dated 2009), there are no mapped inland wetlands within 50 feet of the proposed activity.

The proposal will not have an adverse impact on the above identified resources. The work proposed is landward of the existing sea wall and will not have impact on the shorefront resources.

Raising the elevation of the existing residence will bring the structure into compliance with respect to the base flood elevation (BFE) and will therefore minimize the potential for loss of property and/or life.

2.3 - Identification of Significant Natural Features

Given the existing development of the site and that proposed activities are landward of the existing sea wall, no significant natural features will be affected by the proposed development.

2.4 - Identification of Significant Historical and Cultural Resources

No significant cultural resources have been identified at the site.

2.5 - Identification of Applicable Coastal Policies Affected by Project

Redniss & Mead, Inc. has reviewed applicable coastal use policies which could be affected by the project, including:

A. General Development
B. Water and Dependent Use
C. Ports & Harbors
D. Coastal Structures & Filling
E. Dredging & Navigation
F. Boating
G. Fisheries
H. Coastal Recreation & Access
I. Sewer and Water Lines
J. Energy Facilities
K. Fuels, Chemicals, & Hazardous Material
L. Transportation
M. Solid Waste
N. Dams, Dikes & Reservoirs
O. Cultural Resources
P. Open Space & Agricultural

Given the proposed work on site is landward of the existing sea wall, most of these policies are not affected by the project. However, the following may be affected:

A. General Development - The proposed project is consistent with the existing use of the site and therefore there will be no long-term disruption to the natural environment or sound economic growth of the area.

   The temporary activities of construction have the potential to produce noise, odor, fumes, and dust which will be mitigated via the prepared Sediment & Erosion Control Plan. The plan provides guidance for erosion control, dust control, and tree protection.

   The proposed development will provide additional long term Water Quality benefits as described in the Site Engineering Report prepared by Redniss & Mead, Inc.

3.0 - SUMMARY AND CLOSING

Based on a review of the proposed development of 38 South Beach Drive, as well as information concerning coastal resources in the site vicinity and proper sediment and erosion control during construction no adverse coastal impacts are anticipated with the project. Activities will be conducted in accordance with all local, state, and federal requirements, including those for environmental remediation and management of stormwater. For these reasons and other stated above, the proposed use is consistent with state goals and policies for coastal management and should be acceptable to the City of Norwalk.

4.0 - LIMITATIONS

In completing this application, Redniss & Mead, Inc. has relied upon information provided by 38 SBD LLC, its subcontractors, information contained in previously prepared documents and resource maps prepared by others.

This application was prepared specifically for the City of Norwalk on behalf of 38 SBD LLC. No person or other body shall be entitled to rely upon or use information presented in this report without written consent of 38 SBD LLC and Redniss & Mead, Inc.

5.0 - SIGNATURES OF REPORT AUTHORS

This report has been prepared by Redniss & Mead, Inc. The names listed below are the principal authors of this report. Requests for information regarding the content of this report should be directed to those individuals.



Vincent J. Hynes, P.E.
Senior Engineer

38 South Beach Drive

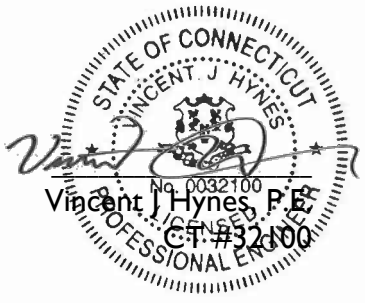
SITE ENGINEERING REPORT

Prepared For
38 SBD LLC
1250 Lafayette Rd
Gladwyne, PA 19035

Prepared by
Redniss & Mead, Inc.
22 First Street
Stamford, CT
(203) 327-0500

Issued on:

March 11, 2025



Vincent J Hynes, P.E.
CT #32100

TABLE OF CONTENTS

Orientation.....1

Drainage Narrative.....2

APPENDICES

Drainage:

Appendix 1: Existing and Proposed Drainage Basin Exhibits

Appendix 2: WQV Calculations

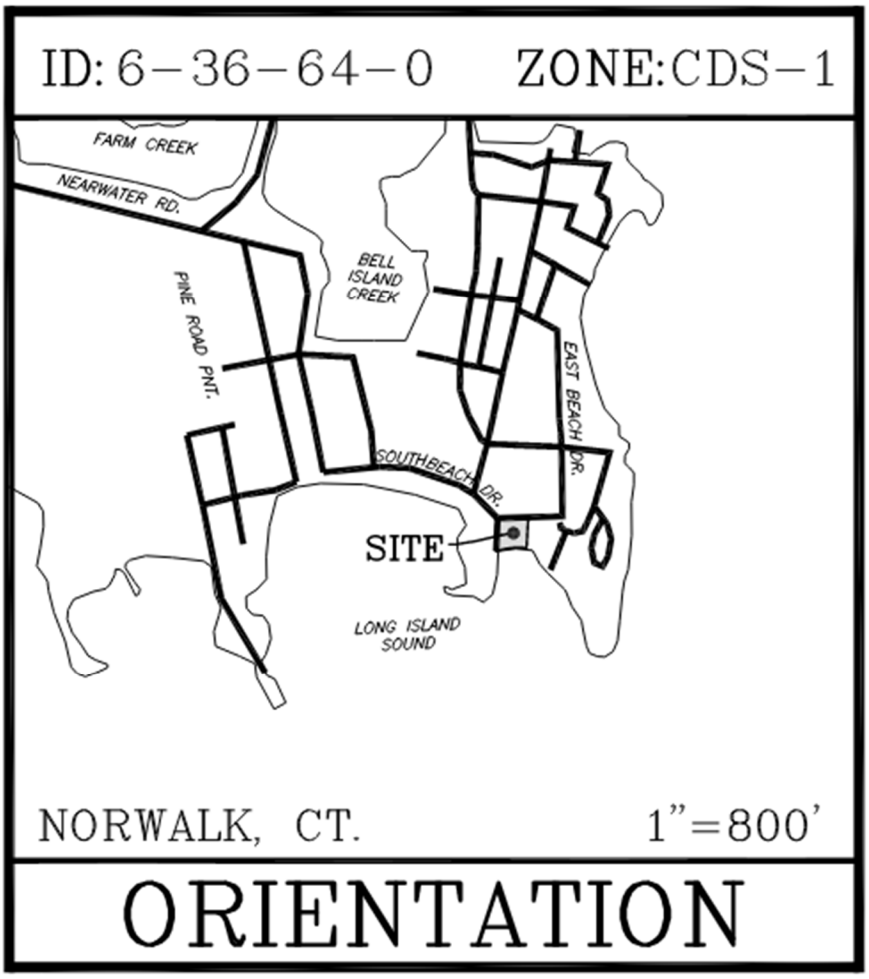
Appendix 3: HydroCAD Report

Appendix 4: Rainfall Intensity Data
NRCS Web Soil Survey

Appendix 5: FEMA Flood Insurance Map

Appendix 6: Draft Stormwater Maintenance Plan

ORIENTATION



DRAINAGE SUMMARY NARRATIVE

Introduction

The applicant is proposing construction activities for the property located at 38 South Beach Drive in Norwalk, CT. The project includes raising the elevation of the dwelling structure, constructing additions to the same, demolition of the existing detached garage, construction of a new garage structure, and associated site improvements.

The site is 11,378 square feet (sf) and is bounded by South Beach Drive to the north, residential properties to the east and west, and Long Island Sound to the south. The site lies within the CD-1S zoning district and is within the Coastal Area Management (CAM) zone. The parcel is located within the regulatory floodplain of Long Island Sound as established by FEMA and depicted on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 09001C0541G dated July 8, 2013; the site lies within two flood zones including AE (Elev. 15) and VE (Elev. 15). This report compares existing site characteristics and proposed site development and the effect on the storm water runoff from the site. Reference is made to the accompanying site development plans prepared by Redniss & Mead, Inc.

Existing Conditions

The property is currently developed with a single-family residence, driveway, and hot tub, along with decks, walks and other ancillary improvements typically found on single family properties. Existing landscaping includes mature trees, accent plants and shrubs, and manicured lawns. Note, this report focuses on site area landward of the existing sea wall and coverages do not include the sea wall or the shorefront. As such, the total impervious coverage within the study area is 5,681± sf.

There are no formal stormwater facilities currently on the property except for pipes that discharge roof runoff and footing drain discharge at-grade away from the residence. The site generally slopes in three directions, from south to north onto South Beach Drive (North Basin study area), from east to west onto Golden Court (West Basin study area), and from north to south towards Long Island Sound (South Basin study area). Reference is made to the Existing Drainage Basin Map within Appendix I.

Tributary area to the north and west basins includes off-site area from the existing garage rooftop, therefore the total area studied is 9,783± sf (0.225 ac.). The North basin tributary area is 2,929± sf (2,828 sf onsite area), of which 2,502± sf is impervious coverage (2,401± sf onsite impervious coverage). Impervious coverage within the basin consists of a portion of the residence and garage rooftops, driveways, walks, retaining walls, and surface ledge. Stormwater runoff from this basin sheet flows into the stormwater infrastructure within South Beach Drive.

The West basin tributary area is 4,117± sf (4,107 sf onsite area), of which 1,822± sf is impervious coverage (1,812± sf onsite impervious coverage). Impervious coverage within the basins consists of a portion of the residence and garage rooftops, a hot tub, and surface ledge. Stormwater runoff from this basin sheets flow onto Golden Court before ultimately discharging into Long Island Sound.

The South basin tributary area is 2,737± sf in size, of which 1,468± sf is impervious coverage. Impervious coverage within the basin consists of a portion of the residence rooftops and patio area. Stormwater runoff from this basin discharges into Long Island Sound via weep holes at the sea wall.

Proposed Conditions

The project includes the raising of the existing building, the construction of building additions, the demolition of the existing garage, the construction of a new garage and deck, as well as driveway and other associated improvements. The improvements will result in a decrease in impervious coverage of 164 sf compared to existing conditions. Water Quality improvements are provided, and peak rates of runoff will be reduced to each study point. Reference is made to the site and utility plans prepared by Redniss & Mead, Inc. and to the Proposed Drainage Basin Map within Appendix I.

The North basin is split into two sub-basins under proposed conditions: the North Bypass basin and an interconnected stone reservoir infiltration system (Stone Reservoir #1A, SR#1B, and SR#1C basin). Each basin is ultimately tributary to the existing stormwater infrastructure within South Beach Drive. The North Bypass basin is 2,733± sf in size, of which 2,379± sf is impervious coverage. Impervious area includes a portion of the residence and garage rooftops, driveways, walks, and retaining walls. Stormwater runoff from this basin will sheet flow into the right-of-way before being collected via the stormwater infrastructure within South Beach Drive.

Stone Reservoir #1A is 377± sf in size, of which 200± sf is impervious coverage. Tributary area to Stone Reservoir #1A basin includes a portion of the residence rooftop, open jointed deck stairway and a portion of the landscaped yard. SR#1A is sized to retain 48± cubic feet (cf) at its lowest outlet accommodating the water quality volume of 23± cf. The system overflows via a 6.5-foot-long rectangular weir set at elevation 12.0.

Stone Reservoir #1B is 83± sf in size, of which 40± sf is impervious coverage. Tributary area to Stone Reservoir #1B basin includes a portion of the residence rooftop, and open jointed deck as well as overflow from SR1#A. SR#1B is sized to retain 70± cf at its lowest outlet accommodating the water quality volume of 4± cf. The system overflows via a 6-foot-long rectangular weir set at elevation 10.9.

Stone Reservoir #1C basin provides additional treatment to the overflow from SR#1A and SR#1B. SR#1C is sized to retain 56± cf at its lowest outlet providing additional retention volume for the upstream tributary areas. The system overflows via a 6-foot-long rectangular weir set at elevation 8.6.

The West basin is split into two sub-basins under proposed conditions: the West Bypass basin and a stone reservoir infiltration system, Stone Reservoir #2 (SR#2). Each basin is ultimately tributary to Golden Court. The West Bypass basin is 3,296± sf in size, of which 1,212± sf is impervious coverage. Impervious area includes a portion of the garage rooftop, the open jointed deck, stone steps, and ledge surfaces. Stormwater runoff from this basin will sheet flow onto Golden Court before ultimately discharging into Long Island Sound.

Stone Reservoir #2 is 340± sf in size, of which 338± sf is impervious coverage. Tributary area to this basin includes a portion of the garage rooftop and the open jointed deck. SR#2 is sized to retain 45 cf of runoff at its lowest outlet accommodating the water quality volume of 27± cf. The system overflows via overland sheet flow at the south edge of the system.

The South basin is split into two sub-basins under proposed conditions: the South Bypass basin and a stone reservoir infiltration system, Stone Reservoir #3 (SR#3). Each basin is ultimately tributary to Long Island Sound. The South Bypass basin is 1,637± sf in size, of which 352± sf is impervious coverage. Impervious coverage consists of a portion of the residence rooftop, open jointed deck, and stone steps. Stormwater runoff is primarily collected via proposed area drains within the yard which are connected to existing weep holes at the sea wall which discharge to Long Island Sound.

Stone Reservoir #3 is 1,206± sf in size, of which 996± sf is impervious coverage. Tributary area to this basin includes a portion of the garage rooftop and landscaped yard, and the open jointed stairs and landing. SR#3 is sized to retain 97 cf of runoff at its lowest outlet accommodating the water quality volume of 92± cf. The system overflows via overland sheet flow at the south edge of the system.

Calculations were prepared using the methodologies provided in Technical Release 55: Urban Hydrology for Small Watersheds, published by the United States Department of Agriculture National Resources Conservation Service and HydroCAD software (Appendix 3). Note that the rainfall rates used are based upon the National Oceanic and Atmospheric Administration (NOAA) National Weather Service Hydrometeorological Design Studies Center Precipitation Frequency Data Server (PFDS) for the area (Appendix 2). The following tables depict the existing and proposed peak flows leaving each sub-basin of the site and their associated runoff volumes:

Table 1. North Basin – Existing vs. Proposed Peak Flow and Runoff Volume

Return Period (yrs)	Existing Peak Flow Rate (cfs)	Proposed Peak Flow Rate (cfs)	Change from Existing (cfs)	Change from Existing (%)	Existing Runoff Volume (cf)	Proposed Runoff Volume (cf)	Change from Existing (cf)	Change from Existing (%)
1	0.17	0.16	-0.01	-5.9	517	495	-22	-4.3
2	0.21	0.20	-0.01	-4.8	634	605	-29	-4.6
5	0.27	0.26	-0.01	-3.7	846	804	-42	-5.0
10	0.33	0.31	-0.02	-6.1	1,037	983	-54	-5.2
25	0.42	0.39	-0.03	-7.1	1,349	1,291	-58	-4.3
50	0.50	0.47	-0.03	-6.0	1,639	1,606	-33	-2.0
100	0.61	0.57	-0.04	-6.6	2,002	2,002	0	0.0

Table 2. West Basin – Existing vs. Proposed Peak Flow and Runoff Volume

Return Period (yrs)	Existing Peak Flow Rate (cfs)	Proposed Peak Flow Rate (cfs)	Change from Existing (cfs)	Change from Existing (%)	Existing Runoff Volume (cf)	Proposed Runoff Volume (cf)	Change from Existing (cf)	Change from Existing (%)
1	0.11	0.09	-0.02	-18.2	351	319	-32	-9.1
2	0.16	0.13	-0.03	-18.8	474	432	-42	-8.9
5	0.24	0.23	-0.01	-4.2	713	651	-62	-8.7
10	0.32	0.30	-0.02	-6.3	940	857	-83	-8.8
25	0.44	0.41	-0.03	-6.8	1,327	1,205	-122	-9.2
50	0.57	0.52	-0.05	-8.8	1,698	1,538	-160	-9.4
100	0.72	0.65	-0.07	-9.7	2,174	1,962	-212	-9.8

Table 3. South Basin – Existing vs. Proposed Peak Flow and Runoff Volume

Return Period (yrs)	Existing Peak Flow Rate (cfs)	Proposed Peak Flow Rate (cfs)	Change from Existing (cfs)	Existing Runoff Volume (cf)	Proposed Runoff Volume (cf)	Change from Existing (cf)	Change from Existing (%)	Change from Existing (%)
1	0.14	0.11	-0.03	-21.43	426	247	-179	-42.0
2	0.18	0.14	-0.04	-22.22	530	338	-192	-36.2
5	0.24	0.19	-0.05	-20.83	723	512	-211	-29.2
10	0.29	0.24	-0.05	-17.24	898	675	-223	-24.8
25	0.38	0.33	-0.05	-13.16	1,186	948	-238	-20.1
50	0.46	0.41	-0.05	-10.87	1,453	1,208	-245	-16.9
100	0.56	0.52	-0.04	-7.14	1,790	1,540	-250	-14.0

Water Quality:

Water quality from the proposed development will be improved as compared to existing conditions. This is accomplished as follows:

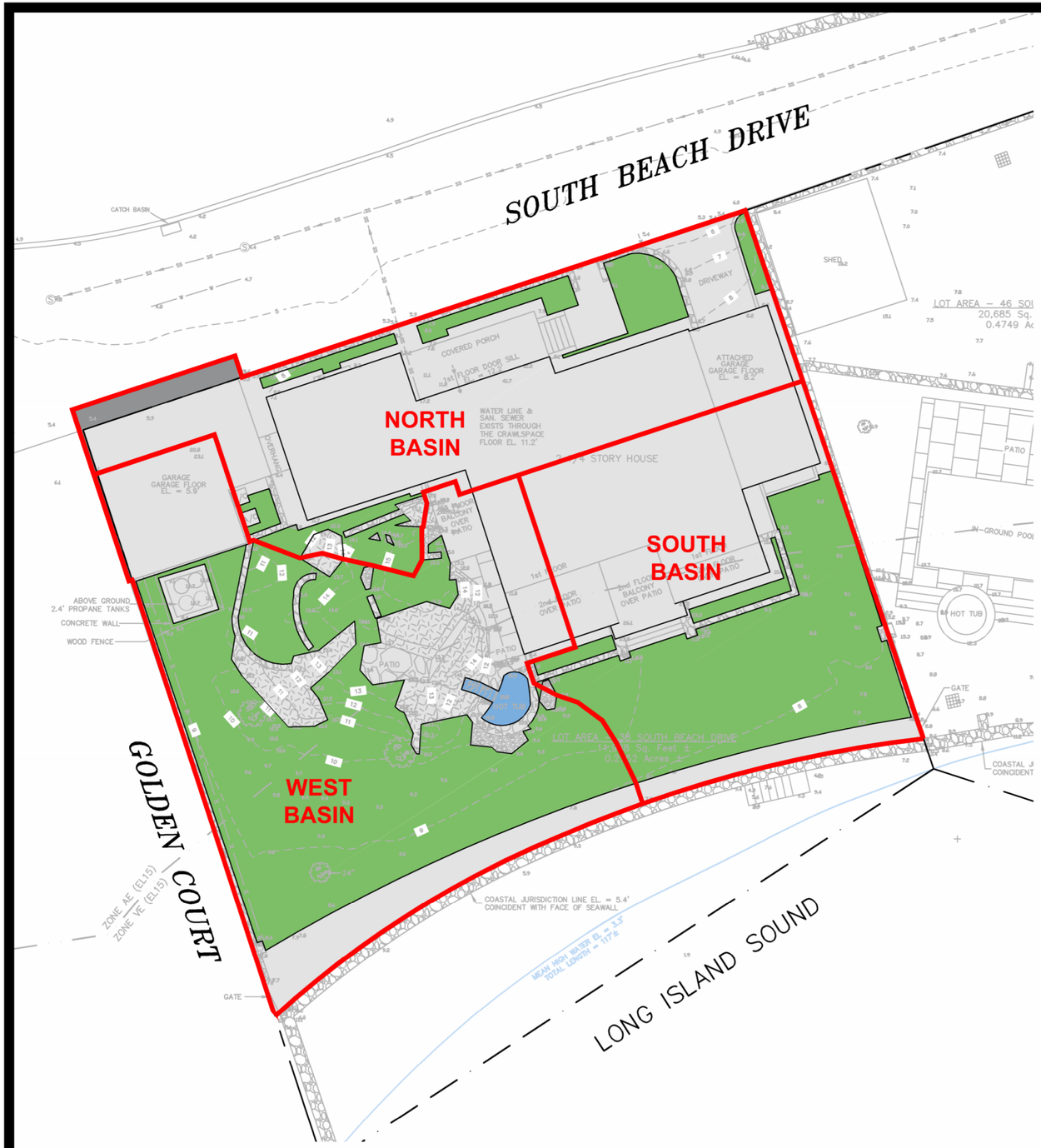
1. Porous systems, in the form of crushed stone reservoirs below open jointed decks, are proposed to collect a portion of the disturbed impervious coverage. The overflow elevation is set to provide 100% of the tributary water quality volume.
2. In addition, impervious areas will be reduced and pervious areas, such as landscaping and gravel sitting areas, will be increased
3. A detailed Sediment and Erosion Control Plan, including a system of controls both temporary and permanent, is designed to minimize erosion, and contain and properly dispose of any accumulation of sediment during construction.

Conclusion:

Based on the above information and with proper implementation of the design drawings and proper sediment and erosion controls, the proposed development will not adversely impact adjacent or downstream properties or City owned drainage facilities. Furthermore, water quality will be significantly improved with the installation of the permeable surfaces and landscaping improvements.

Appendix I

Existing & Proposed Drainage Basin Maps





EXISTING DRAINAGE BASIN					
BASIN	ONSITE AREA (SF)	OFFSITE AREA (SF)	TOTAL AREA (AC)	WEIGHTED CN	TC (MIN.)
NORTH	2,828	111	0.067	92.6	5
WEST	4,107	0	0.094	76.9	5
SOUTH	2,737	0	0.063	89.7	5

LEGEND

- PERVIOUS AREA (B-TYPE SOIL)
- IMPERVIOUS AREA
- WATER
- OFFSITE IMPERVIOUS AREA

EXISTING DRAINAGE BASIN MAP

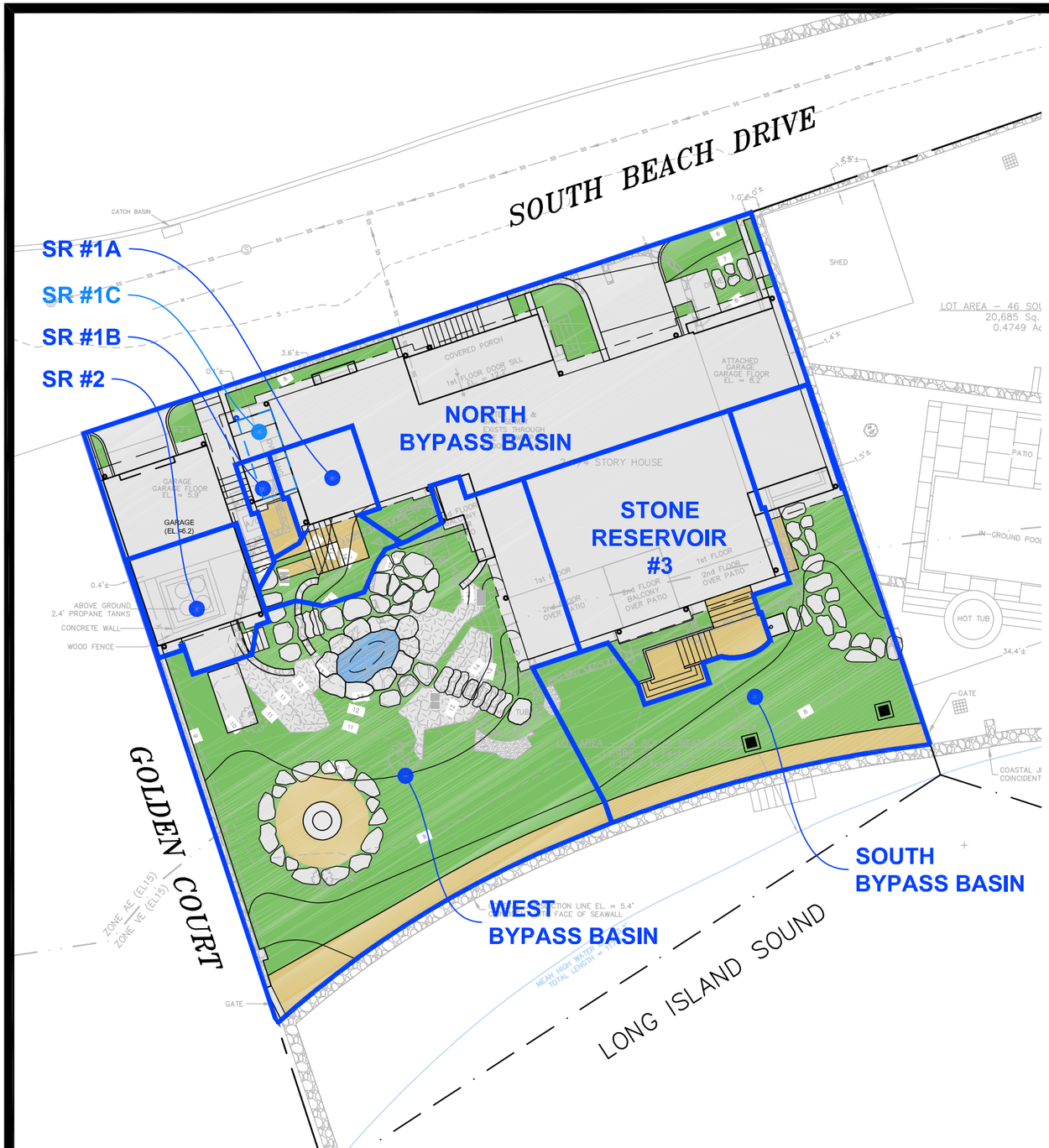
38 SOUTH BEACH DRIVE

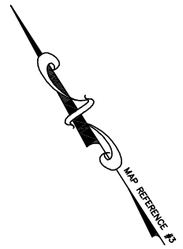
NORWALK, CT

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.: 10993
DATE: 3-11--2025
SCALE: 1"=20'

2/24/2025 10:53 AM H:\Jobfiles2\10000\10900\10993\Dwg\10993 - 38 SB Master 1.dwg





PROPOSED DRAINAGE BASIN				
BASIN	ONSITE AREA (SF)	TOTAL AREA (AC)	WEIGHTED CN	TC (MIN.)
NORTH BYPASS	2,733	0.063	93.2	5
STONE RESERVOIR #1A	377	0.009	86.4	5
STONE RESERVOIR #1B	83	0.002	93.7	5
STONE RESERVOIR #1C	-	-	-	-
WEST BYPASS	3,296	0.076	77.9	5
STONE RESERVOIR #2	340	0.008	97.8	5
SOUTH BYPASS	1,637	0.038	72.4	5
STONE RESERVOIR #3	1,206	0.028	95.3	5

LEGEND

- PERVIOUS AREA (B-TYPE SOIL)
- IMPERVIOUS AREA
- OPEN JOINTED / GRAVEL AREA
- WATER

PROPOSED DRAINAGE BASIN MAP

38 SOUTH BEACH DRIVE

NORWALK, CT

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
10993	3-11-2025
	SCALE: 1"=20'

2/24/2025 10:54 AM H:\Jobfiles2\10000\10900\10993\Dwg\10993 - 38 SB Master 1.dwg

Appendix 2

Water Quality Volume (WQV) Calculations

Water Quality Volume Calculations

Project: *38 South Beach Drive*	**Project #:** *10993*	**Date:** *3/11/2025*
Location: *38 South Beach Drive, Norwalk*	**By:** *MJL*	**Checked:** *VJH*

Stone Reservoir (SR#1A) - North Basin

Area=	0.009	acres
Impervious Area=	0.006	acres
I=	0.737	[a]
R=	0.714	[b]
WQV=	0.001	ac. ft. [c]

WQV Required=	**22.42 ft.^{3}**
WQV Provided=	**48.00 ft.^{3}**

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

[c] WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

NOTE: The lowest outlet from SR#1A is set at elevation 12.0 which provides 48 ft^3 of infiltration before overflowing to SR#1B.

Water Quality Volume Calculations

Project: *38 South Beach Drive*	**Project #:** *10993*	**Date:** *3/11/2025*
Location: *38 South Beach Drive, Norwalk*	**By:** *MJL*	**Checked:** *VJH*

Stone Reservoir (SR#1B) - North Basin

Area=	0.002	acres
Impervious Area=	0.001	acres
I=	0.518	[a]
R=	0.516	[b]
WQV=	0.000	ac. ft. [c]

WQV Required=	**3.57 ft.^{3}**
WQV Provided=	**70.00 ft.^{3}**

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

[c] WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

NOTE: The lowest outlet from SR#1B is set at elevation 10.9 which provides 36 ft^3 of infiltration before overflowing to SR#1C. Stone withing SR#1C provides an additional 56 ft^3 of infiltration before overflowing toward the South Beach Drive Right-of-Way.

Water Quality Volume Calculations

Project: *38 South Beach Drive*	**Project #:** *10993*	**Date:** *3/11/2025*
Location: *38 South Beach Drive, Norwalk*	**By:** *MJL*	**Checked:** *VJH*

Stone Reservoir (SR#2) - West Basin

Area=	0.008	acres
Impervious Area=	0.008	acres
I=	0.994	[a]
R=	0.945	[b]
WQV=	0.001	ac. ft. [c]

WQV Required=	**26.77 ft.^{3}**
WQV Provided=	**45.00 ft.^{3}**

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

[c] WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

NOTE: The lowest outlet from SR#2 is set at elevation 10.3 which provides 45 ft^3 of infiltration before flowing out of the system.

Water Quality Volume Calculations

Project: *38 South Beach Drive*	**Project #:** *10993*	**Date:** *3/11/2025*
Location: *38 South Beach Drive, Norwalk*	**By:** *MJL*	**Checked:** *VJH*

Stone Reservoir (SR#3) - South Basin

Area=	0.028	acres
Impervious Area=	0.027	acres
I=	0.959	[a]
R=	0.913	[b]
WQV=	0.002	ac. ft. [c]

WQV Required=	**91.65 ft.^{3}**
WQV Provided=	**97.00 ft.^{3}**

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

[c] WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

NOTE: The lowest outlet from SR#3 is set at elevation 9.2 which provides 97 ft^3 of infiltration before flowing out of the system.

Appendix 3

HydroCAD Report


38 South Beach
(Existing)
1S
Ex North Basin
2S
Ex West Basin
3S
Ex South Basin
1L
Ex North Outfall
2L
Ex West Outfall
3L
Ex South Outfall
38 South Beach
(Proposed)
4S
Pr North Bypass Basin
8S
Pr Stone Storage #2
7S
Pr West Bypass Basin
9S
Pr South Bypass Basin
10S
Pr Stone Reservoir #3
5S
Pr Stone Storage #1A
1P
SR#1A
6S
Pr Stone Storage #1B
2P
SR#1B
3P
SR#1C
4L
Pr North Outfall
4P
SR#2
5L
Pr West Outfall
6L
Pr South Outfall
5P
SR#3
Subcat
Reach
Pond
Link
Routing Diagram for 10993-38SB EX PR HydroCAD Model
Prepared by Redniss & Mead, Inc, Printed 2/24/2025
HydroCAD® 10.20-6a s/n 08721 © 2024 HydroCAD Software Solutions LLC

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Ex North Basin Runoff Area=2,929 sf 85.42% Impervious Runoff Depth>2.12"
Tc=5.0 min CN=92.6 Runoff=0.17 cfs 517 cf

Subcatchment 2S: Ex West Basin Runoff Area=4,117 sf 44.26% Impervious Runoff Depth>1.02"
Tc=5.0 min CN=77.4 Runoff=0.11 cfs 351 cf

Subcatchment 3S: Ex South Basin Runoff Area=2,737 sf 53.64% Impervious Runoff Depth>1.87"
Tc=5.0 min CN=89.7 Runoff=0.14 cfs 426 cf

Subcatchment 4S: Pr North Bypass Basin Runoff Area=2,733 sf 87.05% Impervious Runoff Depth>2.18"
Tc=5.0 min CN=93.2 Runoff=0.16 cfs 495 cf

Subcatchment 5S: Pr Stone Storage #1A Runoff Area=377 sf 53.05% Impervious Runoff Depth>1.61"
Tc=5.0 min CN=86.4 Runoff=0.02 cfs 50 cf

Subcatchment 6S: Pr Stone Storage #1B Runoff Area=83 sf 51.81% Impervious Runoff Depth>2.22"
Tc=5.0 min CN=93.7 Runoff=0.00 cfs 15 cf

Subcatchment 7S: Pr West Bypass Basin Runoff Area=3,296 sf 36.77% Impervious Runoff Depth>1.05"
Tc=5.0 min CN=77.9 Runoff=0.09 cfs 289 cf

Subcatchment 8S: Pr Stone Storage #2 Runoff Area=340 sf 99.41% Impervious Runoff Depth>2.64"
Tc=5.0 min CN=97.8 Runoff=0.02 cfs 75 cf

Subcatchment 9S: Pr South Bypass Basin Runoff Area=1,637 sf 21.50% Impervious Runoff Depth>0.77"
Tc=5.0 min CN=72.4 Runoff=0.03 cfs 105 cf

Subcatchment 10S: Pr Stone Reservoir #3 Runoff Area=1,206 sf 82.59% Impervious Runoff Depth>2.38"
Tc=5.0 min CN=95.3 Runoff=0.08 cfs 239 cf

Pond 1P: SR#1A Peak Elev=12.00' Storage=48 cf Inflow=0.02 cfs 50 cf
Outflow=0.00 cfs 2 cf

Pond 2P: SR#1B Peak Elev=7.99' Storage=18 cf Inflow=0.00 cfs 18 cf
Outflow=0.00 cfs 0 cf

Pond 3P: SR#1C Peak Elev=6.60' Storage=0 cf Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Pond 4P: SR#2 Peak Elev=10.35' Storage=45 cf Inflow=0.02 cfs 75 cf
Outflow=0.01 cfs 30 cf

Pond 5P: SR#3 Peak Elev=9.23' Storage=98 cf Inflow=0.08 cfs 239 cf
Outflow=0.08 cfs 142 cf

Link 1L: Ex North Outfall Inflow=0.17 cfs 517 cf
Primary=0.17 cfs 517 cf

Link 2L: Ex West Outfall Inflow=0.11 cfs 351 cf
Primary=0.11 cfs 351 cf

Link 3L: Ex South Outfall Inflow=0.14 cfs 426 cf
Primary=0.14 cfs 426 cf

Link 4L: Pr North Outfall Inflow=0.16 cfs 495 cf
Primary=0.16 cfs 495 cf

Link 5L: Pr West Outfall Inflow=0.09 cfs 319 cf
Primary=0.09 cfs 319 cf

Link 6L: Pr South Outfall Inflow=0.11 cfs 247 cf
Primary=0.11 cfs 247 cf

Total Runoff Area = 19,455 sf Runoff Volume = 2,563 cf Average Runoff Depth = 1.58"
41.86% Pervious = 8,143 sf 58.14% Impervious = 11,312 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Ex North Basin Runoff Area=2,929 sf 85.42% Impervious Runoff Depth>2.60"
Tc=5.0 min CN=92.6 Runoff=0.21 cfs 634 cf

Subcatchment 2S: Ex West Basin Runoff Area=4,117 sf 44.26% Impervious Runoff Depth>1.38"
Tc=5.0 min CN=77.4 Runoff=0.16 cfs 474 cf

Subcatchment 3S: Ex South Basin Runoff Area=2,737 sf 53.64% Impervious Runoff Depth>2.33"
Tc=5.0 min CN=89.7 Runoff=0.18 cfs 530 cf

Subcatchment 4S: Pr North Bypass Basin Runoff Area=2,733 sf 87.05% Impervious Runoff Depth>2.66"
Tc=5.0 min CN=93.2 Runoff=0.20 cfs 605 cf

Subcatchment 5S: Pr Stone Storage #1A Runoff Area=377 sf 53.05% Impervious Runoff Depth>2.04"
Tc=5.0 min CN=86.4 Runoff=0.02 cfs 64 cf

Subcatchment 6S: Pr Stone Storage #1B Runoff Area=83 sf 51.81% Impervious Runoff Depth>2.71"
Tc=5.0 min CN=93.7 Runoff=0.01 cfs 19 cf

Subcatchment 7S: Pr West Bypass Basin Runoff Area=3,296 sf 36.77% Impervious Runoff Depth>1.41"
Tc=5.0 min CN=77.9 Runoff=0.13 cfs 388 cf

Subcatchment 8S: Pr Stone Storage #2 Runoff Area=340 sf 99.41% Impervious Runoff Depth>3.14"
Tc=5.0 min CN=97.8 Runoff=0.03 cfs 89 cf

Subcatchment 9S: Pr South Bypass Basin Runoff Area=1,637 sf 21.50% Impervious Runoff Depth>1.08"
Tc=5.0 min CN=72.4 Runoff=0.05 cfs 147 cf

Subcatchment 10S: Pr Stone Reservoir #3 Runoff Area=1,206 sf 82.59% Impervious Runoff Depth>2.87"
Tc=5.0 min CN=95.3 Runoff=0.09 cfs 288 cf

Pond 1P: SR#1A Peak Elev=12.00' Storage=48 cf Inflow=0.02 cfs 64 cf
Outflow=0.00 cfs 16 cf

Pond 2P: SR#1B Peak Elev=8.94' Storage=35 cf Inflow=0.01 cfs 35 cf
Outflow=0.00 cfs 0 cf

Pond 3P: SR#1C Peak Elev=6.60' Storage=0 cf Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Pond 4P: SR#2 Peak Elev=10.36' Storage=45 cf Inflow=0.03 cfs 89 cf
Outflow=0.02 cfs 44 cf

Pond 5P: SR#3 Peak Elev=9.23' Storage=98 cf Inflow=0.09 cfs 288 cf
Outflow=0.09 cfs 191 cf

Link 1L: Ex North Outfall Inflow=0.21 cfs 634 cf
Primary=0.21 cfs 634 cf

Link 2L: Ex West Outfall Inflow=0.16 cfs 474 cf
Primary=0.16 cfs 474 cf

Link 3L: Ex South Outfall Inflow=0.18 cfs 530 cf
Primary=0.18 cfs 530 cf

Link 4L: Pr North Outfall Inflow=0.20 cfs 605 cf
Primary=0.20 cfs 605 cf

Link 5L: Pr West Outfall Inflow=0.13 cfs 432 cf
Primary=0.13 cfs 432 cf

Link 6L: Pr South Outfall Inflow=0.14 cfs 338 cf
Primary=0.14 cfs 338 cf

Total Runoff Area = 19,455 sf Runoff Volume = 3,238 cf Average Runoff Depth = 2.00"
41.86% Pervious = 8,143 sf 58.14% Impervious = 11,312 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Ex North Basin Runoff Area=2,929 sf 85.42% Impervious Runoff Depth>3.47"
Tc=5.0 min CN=92.6 Runoff=0.27 cfs 846 cf

Subcatchment 2S: Ex West Basin Runoff Area=4,117 sf 44.26% Impervious Runoff Depth>2.08"
Tc=5.0 min CN=77.4 Runoff=0.24 cfs 713 cf

Subcatchment 3S: Ex South Basin Runoff Area=2,737 sf 53.64% Impervious Runoff Depth>3.17"
Tc=5.0 min CN=89.7 Runoff=0.24 cfs 723 cf

Subcatchment 4S: Pr North Bypass Basin Runoff Area=2,733 sf 87.05% Impervious Runoff Depth>3.53"
Tc=5.0 min CN=93.2 Runoff=0.26 cfs 804 cf

Subcatchment 5S: Pr Stone Storage #1A Runoff Area=377 sf 53.05% Impervious Runoff Depth>2.85"
Tc=5.0 min CN=86.4 Runoff=0.03 cfs 90 cf

Subcatchment 6S: Pr Stone Storage #1B Runoff Area=83 sf 51.81% Impervious Runoff Depth>3.58"
Tc=5.0 min CN=93.7 Runoff=0.01 cfs 25 cf

Subcatchment 7S: Pr West Bypass Basin Runoff Area=3,296 sf 36.77% Impervious Runoff Depth>2.12"
Tc=5.0 min CN=77.9 Runoff=0.19 cfs 582 cf

Subcatchment 8S: Pr Stone Storage #2 Runoff Area=340 sf 99.41% Impervious Runoff Depth>4.04"
Tc=5.0 min CN=97.8 Runoff=0.03 cfs 114 cf

Subcatchment 9S: Pr South Bypass Basin Runoff Area=1,637 sf 21.50% Impervious Runoff Depth>1.70"
Tc=5.0 min CN=72.4 Runoff=0.08 cfs 232 cf

Subcatchment 10S: Pr Stone Reservoir #3 Runoff Area=1,206 sf 82.59% Impervious Runoff Depth>3.76"
Tc=5.0 min CN=95.3 Runoff=0.12 cfs 378 cf

Pond 1P: SR#1A Peak Elev=12.00' Storage=48 cf Inflow=0.03 cfs 90 cf
Outflow=0.01 cfs 42 cf

Pond 2P: SR#1B Peak Elev=10.69' Storage=66 cf Inflow=0.01 cfs 66 cf
Outflow=0.00 cfs 0 cf

Pond 3P: SR#1C Peak Elev=6.60' Storage=0 cf Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Pond 4P: SR#2 Peak Elev=10.36' Storage=45 cf Inflow=0.03 cfs 114 cf
Outflow=0.03 cfs 69 cf

Pond 5P: SR#3 Peak Elev=9.24' Storage=99 cf Inflow=0.12 cfs 378 cf
Outflow=0.12 cfs 280 cf

Link 1L: Ex North Outfall Inflow=0.27 cfs 846 cf
Primary=0.27 cfs 846 cf

Link 2L: Ex West Outfall Inflow=0.24 cfs 713 cf
Primary=0.24 cfs 713 cf

Link 3L: Ex South Outfall Inflow=0.24 cfs 723 cf
Primary=0.24 cfs 723 cf

Link 4L: Pr North Outfall Inflow=0.26 cfs 804 cf
Primary=0.26 cfs 804 cf

Link 5L: Pr West Outfall Inflow=0.23 cfs 651 cf
Primary=0.23 cfs 651 cf

Link 6L: Pr South Outfall Inflow=0.19 cfs 512 cf
Primary=0.19 cfs 512 cf

Total Runoff Area = 19,455 sf Runoff Volume = 4,507 cf Average Runoff Depth = 2.78"
41.86% Pervious = 8,143 sf 58.14% Impervious = 11,312 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Ex North Basin Runoff Area=2,929 sf 85.42% Impervious Runoff Depth>4.25"
Tc=5.0 min CN=92.6 Runoff=0.33 cfs 1,037 cf

Subcatchment 2S: Ex West Basin Runoff Area=4,117 sf 44.26% Impervious Runoff Depth>2.74"
Tc=5.0 min CN=77.4 Runoff=0.32 cfs 940 cf

Subcatchment 3S: Ex South Basin Runoff Area=2,737 sf 53.64% Impervious Runoff Depth>3.94"
Tc=5.0 min CN=89.7 Runoff=0.29 cfs 898 cf

Subcatchment 4S: Pr North Bypass Basin Runoff Area=2,733 sf 87.05% Impervious Runoff Depth>4.31"
Tc=5.0 min CN=93.2 Runoff=0.31 cfs 983 cf

Subcatchment 5S: Pr Stone Storage #1A Runoff Area=377 sf 53.05% Impervious Runoff Depth>3.60"
Tc=5.0 min CN=86.4 Runoff=0.04 cfs 113 cf

Subcatchment 6S: Pr Stone Storage #1B Runoff Area=83 sf 51.81% Impervious Runoff Depth>4.37"
Tc=5.0 min CN=93.7 Runoff=0.01 cfs 30 cf

Subcatchment 7S: Pr West Bypass Basin Runoff Area=3,296 sf 36.77% Impervious Runoff Depth>2.78"
Tc=5.0 min CN=77.9 Runoff=0.26 cfs 765 cf

Subcatchment 8S: Pr Stone Storage #2 Runoff Area=340 sf 99.41% Impervious Runoff Depth>4.84"
Tc=5.0 min CN=97.8 Runoff=0.04 cfs 137 cf

Subcatchment 9S: Pr South Bypass Basin Runoff Area=1,637 sf 21.50% Impervious Runoff Depth>2.31"
Tc=5.0 min CN=72.4 Runoff=0.10 cfs 315 cf

Subcatchment 10S: Pr Stone Reservoir #3 Runoff Area=1,206 sf 82.59% Impervious Runoff Depth>4.55"
Tc=5.0 min CN=95.3 Runoff=0.14 cfs 457 cf

Pond 1P: SR#1A Peak Elev=12.01' Storage=48 cf Inflow=0.04 cfs 113 cf
Outflow=0.03 cfs 65 cf

Pond 2P: SR#1B Peak Elev=10.90' Storage=70 cf Inflow=0.03 cfs 95 cf
Outflow=0.00 cfs 25 cf

Pond 3P: SR#1C Peak Elev=7.49' Storage=25 cf Inflow=0.00 cfs 25 cf
Outflow=0.00 cfs 0 cf

Pond 4P: SR#2 Peak Elev=10.36' Storage=45 cf Inflow=0.04 cfs 137 cf
Outflow=0.04 cfs 92 cf

Pond 5P: SR#3 Peak Elev=9.24' Storage=99 cf Inflow=0.14 cfs 457 cf
Outflow=0.14 cfs 360 cf

Link 1L: Ex North Outfall Inflow=0.33 cfs 1,037 cf
Primary=0.33 cfs 1,037 cf

Link 2L: Ex West Outfall Inflow=0.32 cfs 940 cf
Primary=0.32 cfs 940 cf

Link 3L: Ex South Outfall Inflow=0.29 cfs 898 cf
Primary=0.29 cfs 898 cf

Link 4L: Pr North Outfall Inflow=0.31 cfs 983 cf
Primary=0.31 cfs 983 cf

Link 5L: Pr West Outfall Inflow=0.30 cfs 857 cf
Primary=0.30 cfs 857 cf

Link 6L: Pr South Outfall Inflow=0.24 cfs 675 cf
Primary=0.24 cfs 675 cf

Total Runoff Area = 19,455 sf Runoff Volume = 5,675 cf Average Runoff Depth = 3.50"
41.86% Pervious = 8,143 sf 58.14% Impervious = 11,312 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Ex North Basin Runoff Area=2,929 sf 85.42% Impervious Runoff Depth>5.53"
Tc=5.0 min CN=92.6 Runoff=0.42 cfs 1,349 cf

Subcatchment 2S: Ex West Basin Runoff Area=4,117 sf 44.26% Impervious Runoff Depth>3.87"
Tc=5.0 min CN=77.4 Runoff=0.44 cfs 1,327 cf

Subcatchment 3S: Ex South Basin Runoff Area=2,737 sf 53.64% Impervious Runoff Depth>5.20"
Tc=5.0 min CN=89.7 Runoff=0.38 cfs 1,186 cf

Subcatchment 4S: Pr North Bypass Basin Runoff Area=2,733 sf 87.05% Impervious Runoff Depth>5.60"
Tc=5.0 min CN=93.2 Runoff=0.39 cfs 1,275 cf

Subcatchment 5S: Pr Stone Storage #1A Runoff Area=377 sf 53.05% Impervious Runoff Depth>4.83"
Tc=5.0 min CN=86.4 Runoff=0.05 cfs 152 cf

Subcatchment 6S: Pr Stone Storage #1B Runoff Area=83 sf 51.81% Impervious Runoff Depth>5.65"
Tc=5.0 min CN=93.7 Runoff=0.01 cfs 39 cf

Subcatchment 7S: Pr West Bypass Basin Runoff Area=3,296 sf 36.77% Impervious Runoff Depth>3.92"
Tc=5.0 min CN=77.9 Runoff=0.36 cfs 1,077 cf

Subcatchment 8S: Pr Stone Storage #2 Runoff Area=340 sf 99.41% Impervious Runoff Depth>6.13"
Tc=5.0 min CN=97.8 Runoff=0.05 cfs 174 cf

Subcatchment 9S: Pr South Bypass Basin Runoff Area=1,637 sf 21.50% Impervious Runoff Depth>3.36"
Tc=5.0 min CN=72.4 Runoff=0.15 cfs 458 cf

Subcatchment 10S: Pr Stone Reservoir #3 Runoff Area=1,206 sf 82.59% Impervious Runoff Depth>5.84"
Tc=5.0 min CN=95.3 Runoff=0.18 cfs 587 cf

Pond 1P: SR#1A Peak Elev=12.02' Storage=48 cf Inflow=0.05 cfs 152 cf
Outflow=0.05 cfs 104 cf

Pond 2P: SR#1B Peak Elev=10.90' Storage=70 cf Inflow=0.06 cfs 143 cf
Outflow=0.01 cfs 73 cf

Pond 3P: SR#1C Peak Elev=8.60' Storage=56 cf Inflow=0.01 cfs 73 cf
Outflow=0.00 cfs 17 cf

Pond 4P: SR#2 Peak Elev=10.36' Storage=45 cf Inflow=0.05 cfs 174 cf
Outflow=0.05 cfs 129 cf

Pond 5P: SR#3 Peak Elev=9.24' Storage=99 cf Inflow=0.18 cfs 587 cf
Outflow=0.18 cfs 490 cf

Link 1L: Ex North Outfall Inflow=0.42 cfs 1,349 cf
Primary=0.42 cfs 1,349 cf

Link 2L: Ex West Outfall Inflow=0.44 cfs 1,327 cf
Primary=0.44 cfs 1,327 cf

Link 3L: Ex South Outfall Inflow=0.38 cfs 1,186 cf
Primary=0.38 cfs 1,186 cf

Link 4L: Pr North Outfall Inflow=0.39 cfs 1,291 cf
Primary=0.39 cfs 1,291 cf

Link 5L: Pr West Outfall Inflow=0.41 cfs 1,205 cf
Primary=0.41 cfs 1,205 cf

Link 6L: Pr South Outfall Inflow=0.33 cfs 948 cf
Primary=0.33 cfs 948 cf

Total Runoff Area = 19,455 sf Runoff Volume = 7,623 cf Average Runoff Depth = 4.70"
41.86% Pervious = 8,143 sf 58.14% Impervious = 11,312 sf

Summary for Subcatchment 1S: Ex North Basin

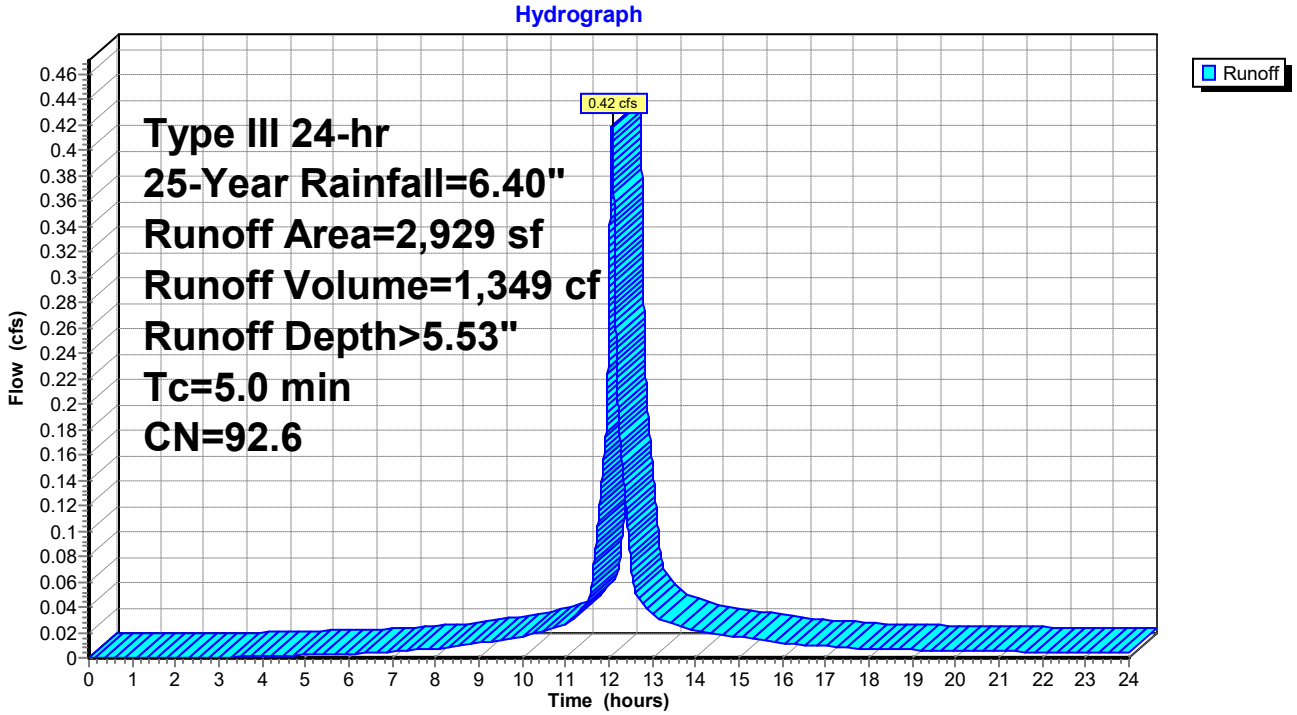
Runoff = 0.42 cfs @ 12.07 hrs, Volume= 1,349 cf, Depth> 5.53"
Routed to Link 1L : Ex North Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

Area (sf)	CN	Description
427	61.0	>75% Grass cover, Good, HSG B
2,401	98.0	Paved parking, HSG B
101	98.0	Offsite - Paved parking, HSG B
2,929	92.6	Weighted Average
427		14.58% Pervious Area
2,502		85.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 1S: Ex North Basin



Summary for Subcatchment 2S: Ex West Basin

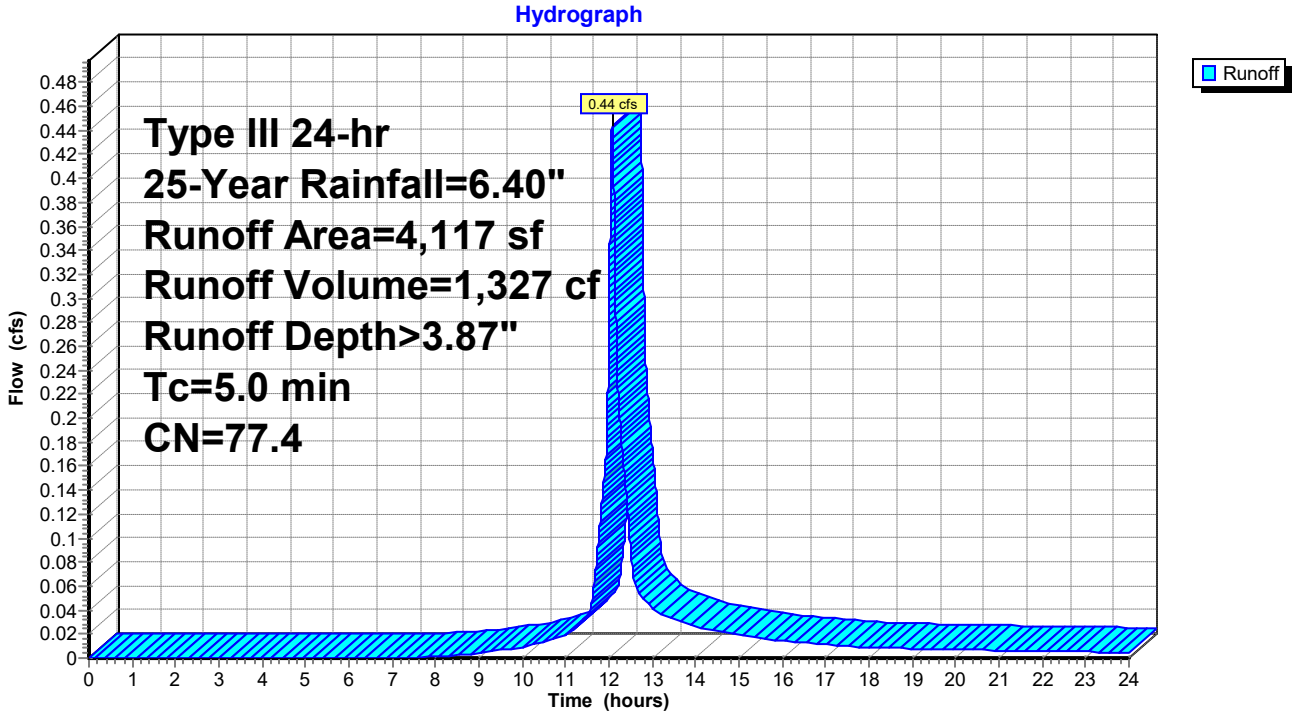
Runoff = 0.44 cfs @ 12.07 hrs, Volume= 1,327 cf, Depth> 3.87"
Routed to Link 2L : Ex West Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
	2,241	61.0	>75% Grass cover, Good, HSG B
	1,812	98.0	Paved parking, HSG B
*	10	98.0	Offsite - Paved parking, HSG B
*	54	61.0	Water
	4,117	77.4	Weighted Average
	2,295		55.74% Pervious Area
	1,822		44.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 2S: Ex West Basin



Summary for Subcatchment 3S: Ex South Basin

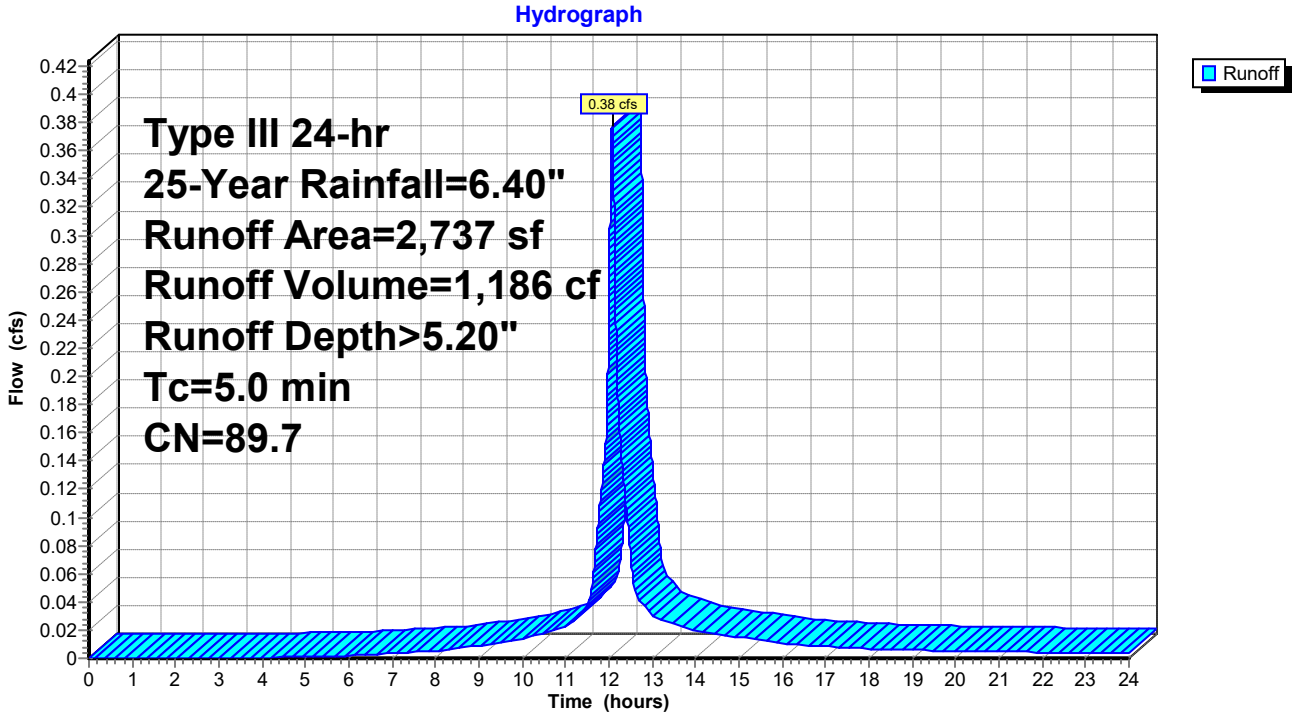
Runoff = 0.38 cfs @ 12.07 hrs, Volume= 1,186 cf, Depth> 5.20"
Routed to Link 3L : Ex South Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

Area (sf)	CN	Description
1,269	80.0	>75% Grass cover, Good, HSG D
1,468	98.0	Paved parking, HSG B
2,737	89.7	Weighted Average
1,269		46.36% Pervious Area
1,468		53.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 3S: Ex South Basin



Summary for Subcatchment 4S: Pr North Bypass Basin

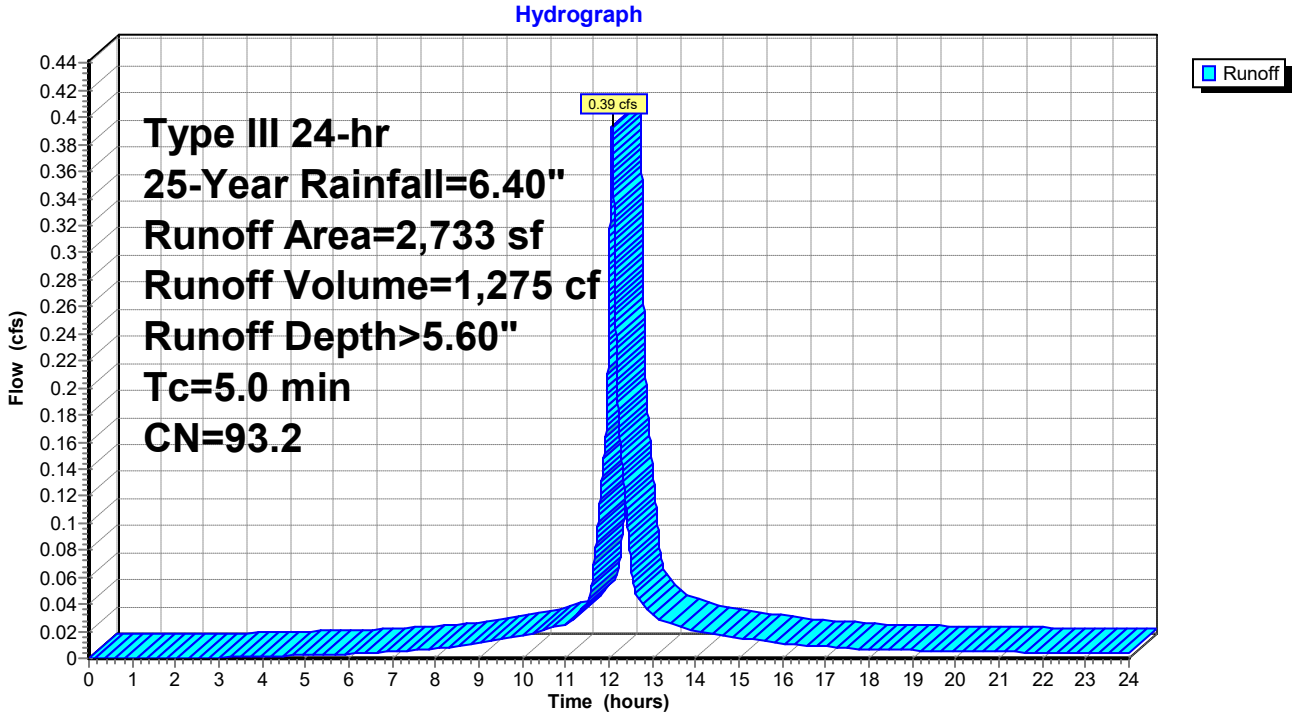
Runoff = 0.39 cfs @ 12.07 hrs, Volume= 1,275 cf, Depth> 5.60"
Routed to Link 4L : Pr North Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

Area (sf)	CN	Description
354	61.0	>75% Grass cover, Good, HSG B
2,379	98.0	Paved parking, HSG B
2,733	93.2	Weighted Average
354		12.95% Pervious Area
2,379		87.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 4S: Pr North Bypass Basin



Summary for Subcatchment 5S: Pr Stone Storage #1A

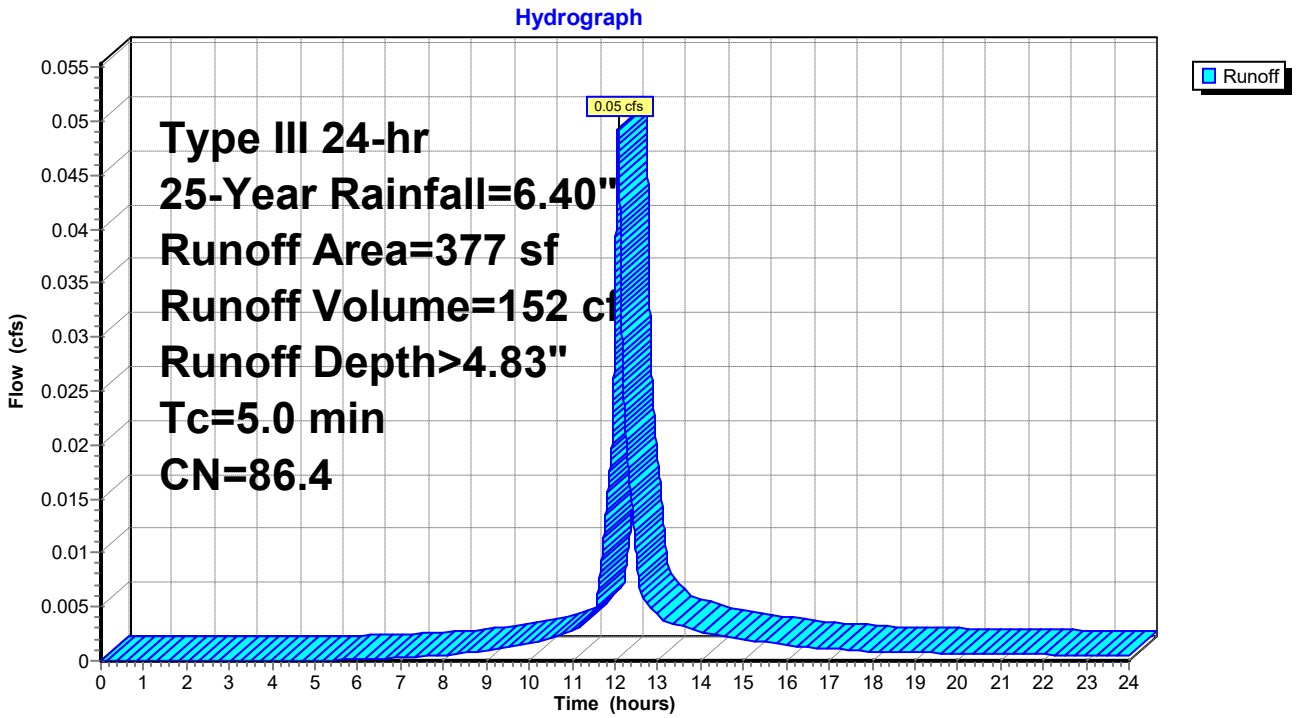
Runoff = 0.05 cfs @ 12.07 hrs, Volume= 152 cf, Depth> 4.83"
Routed to Pond 1P : SR#1A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
	99	61.0	>75% Grass cover, Good, HSG B
	200	98.0	Paved parking, HSG B
*	78	89.0	Open Jointed Surface, HSG B
	377	86.4	Weighted Average
	177		46.95% Pervious Area
	200		53.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 5S: Pr Stone Storage #1A



Summary for Subcatchment 6S: Pr Stone Storage #1B

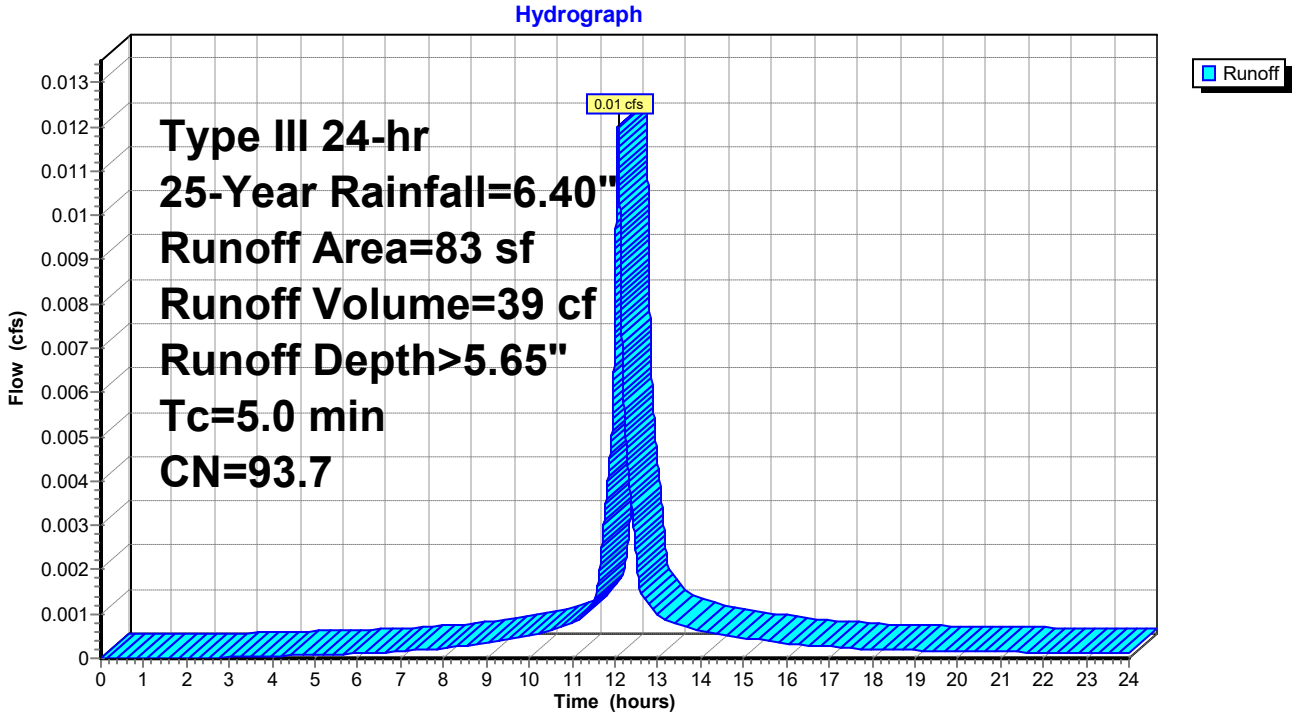
Runoff = 0.01 cfs @ 12.07 hrs, Volume= 39 cf, Depth> 5.65"
Routed to Pond 2P : SR#1B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
	43	98.0	Paved parking, HSG B
*	40	89.0	Open Jointed Surface, HSG B
	83	93.7	Weighted Average
	40		48.19% Pervious Area
	43		51.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 6S: Pr Stone Storage #1B



Summary for Subcatchment 7S: Pr West Bypass Basin

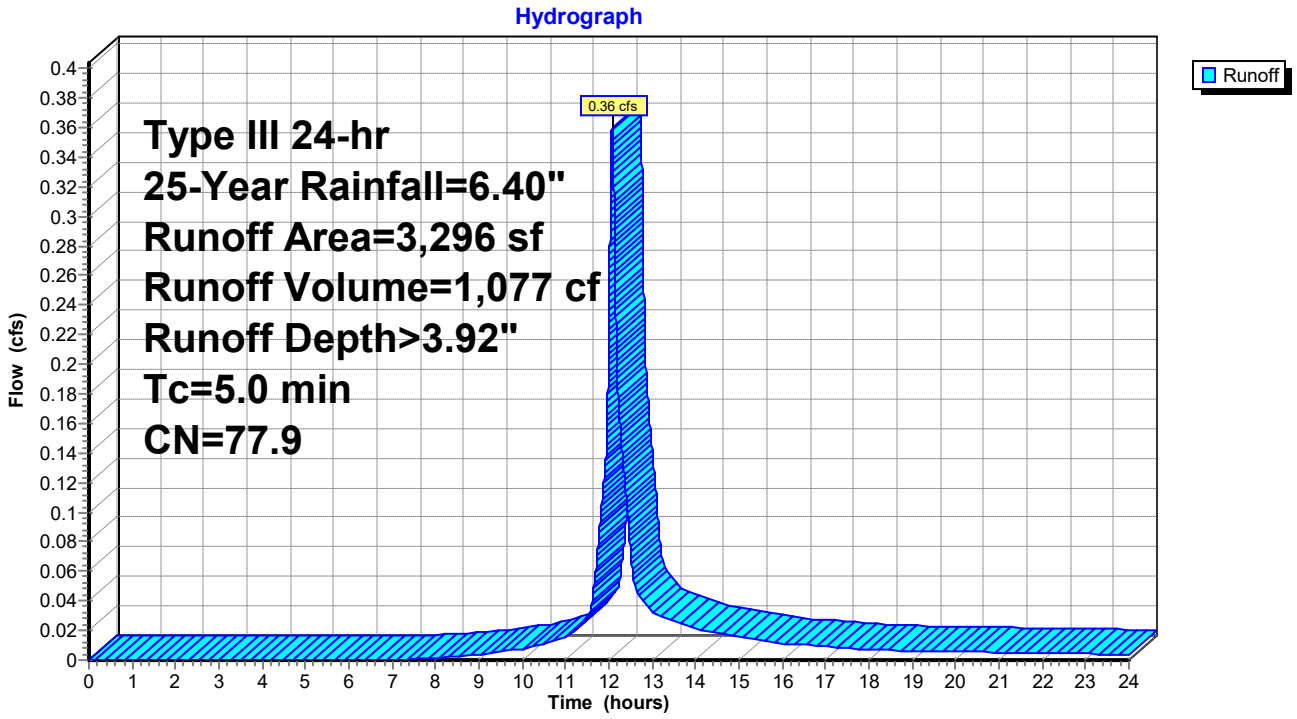
Runoff = 0.36 cfs @ 12.07 hrs, Volume= 1,077 cf, Depth> 3.92"
Routed to Link 5L : Pr West Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
	1,644	61.0	>75% Grass cover, Good, HSG B
	1,212	98.0	Paved parking, HSG B
*	384	89.0	Gravel, HSG B
*	56	61.0	Water, HSG B
	3,296	77.9	Weighted Average
	2,084		63.23% Pervious Area
	1,212		36.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 7S: Pr West Bypass Basin



Summary for Subcatchment 8S: Pr Stone Storage #2

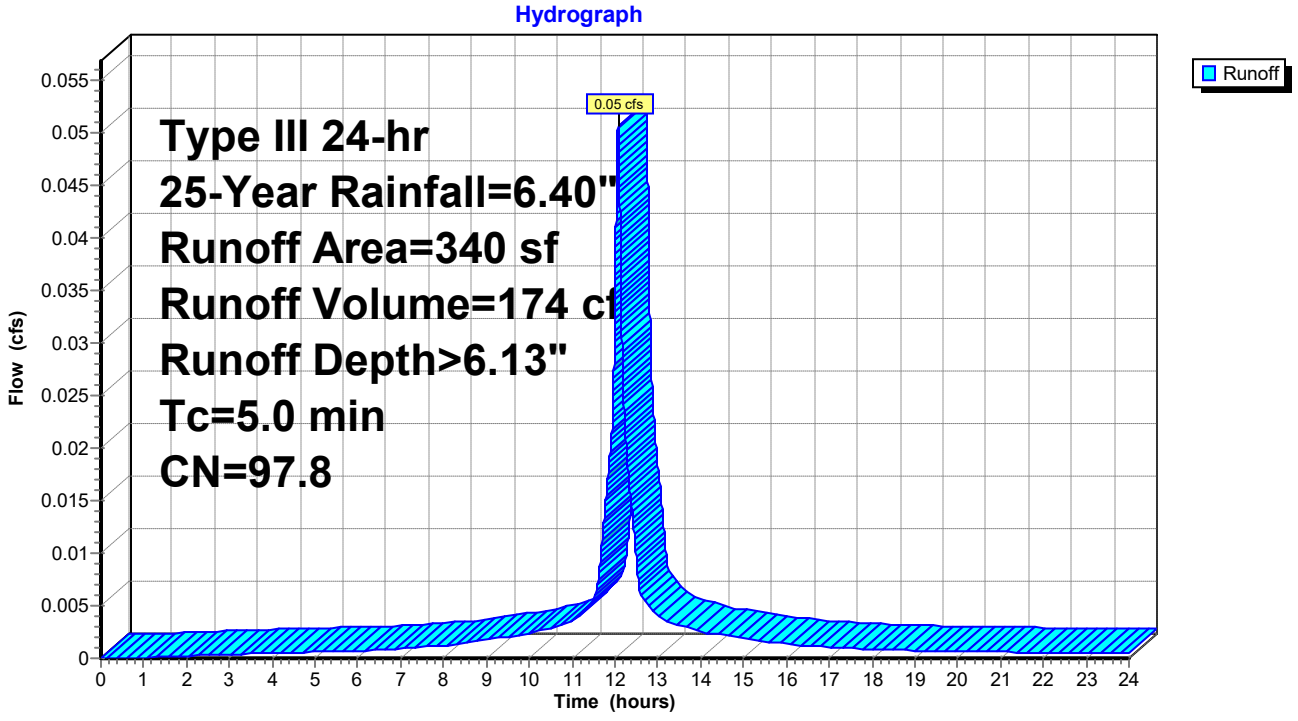
Runoff = 0.05 cfs @ 12.07 hrs, Volume= 174 cf, Depth> 6.13"
Routed to Pond 4P : SR#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

Area (sf)	CN	Description
2	61.0	>75% Grass cover, Good, HSG B
338	98.0	Paved parking, HSG B
340	97.8	Weighted Average
2		0.59% Pervious Area
338		99.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 8S: Pr Stone Storage #2



Summary for Subcatchment 9S: Pr South Bypass Basin

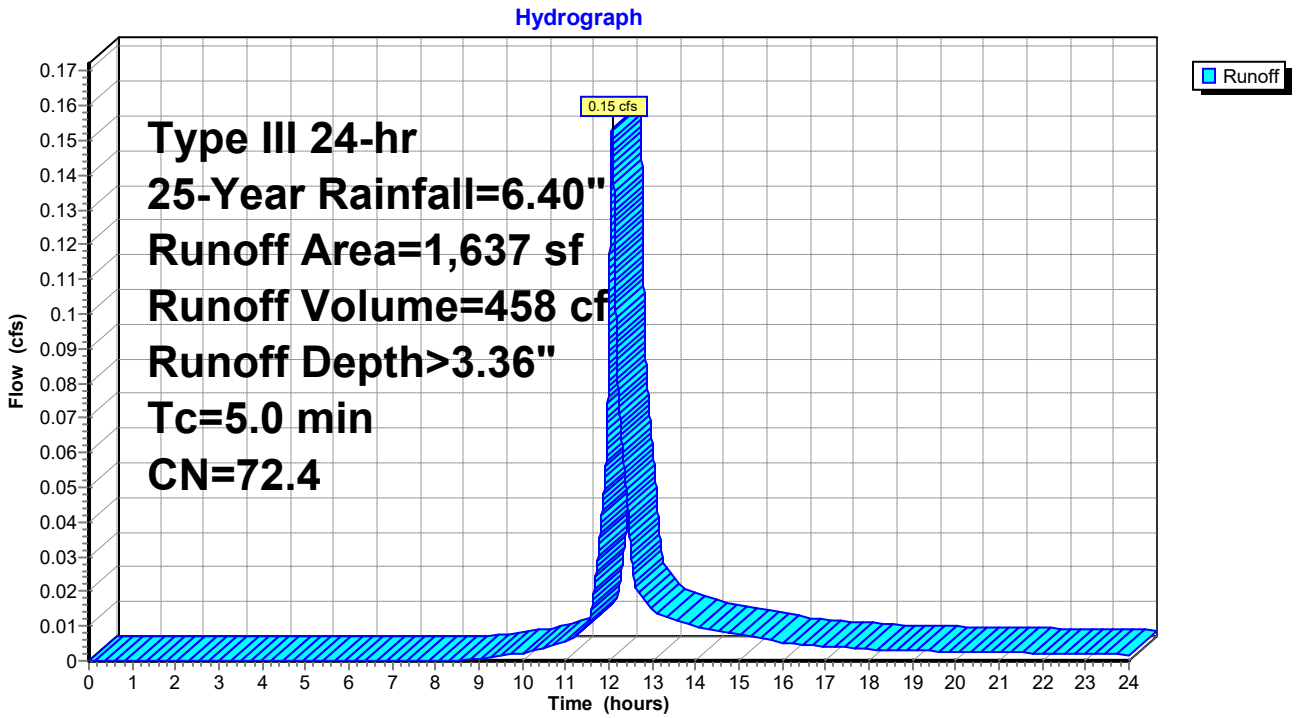
Runoff = 0.15 cfs @ 12.07 hrs, Volume= 458 cf, Depth> 3.36"
Routed to Link 6L : Pr South Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
	1,086	61.0	>75% Grass cover, Good, HSG B
	352	98.0	Paved parking, HSG B
*	199	89.0	Open Jointed Surface, HSG B
	1,637	72.4	Weighted Average
	1,285		78.50% Pervious Area
	352		21.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 9S: Pr South Bypass Basin



Summary for Subcatchment 10S: Pr Stone Reservoir #3

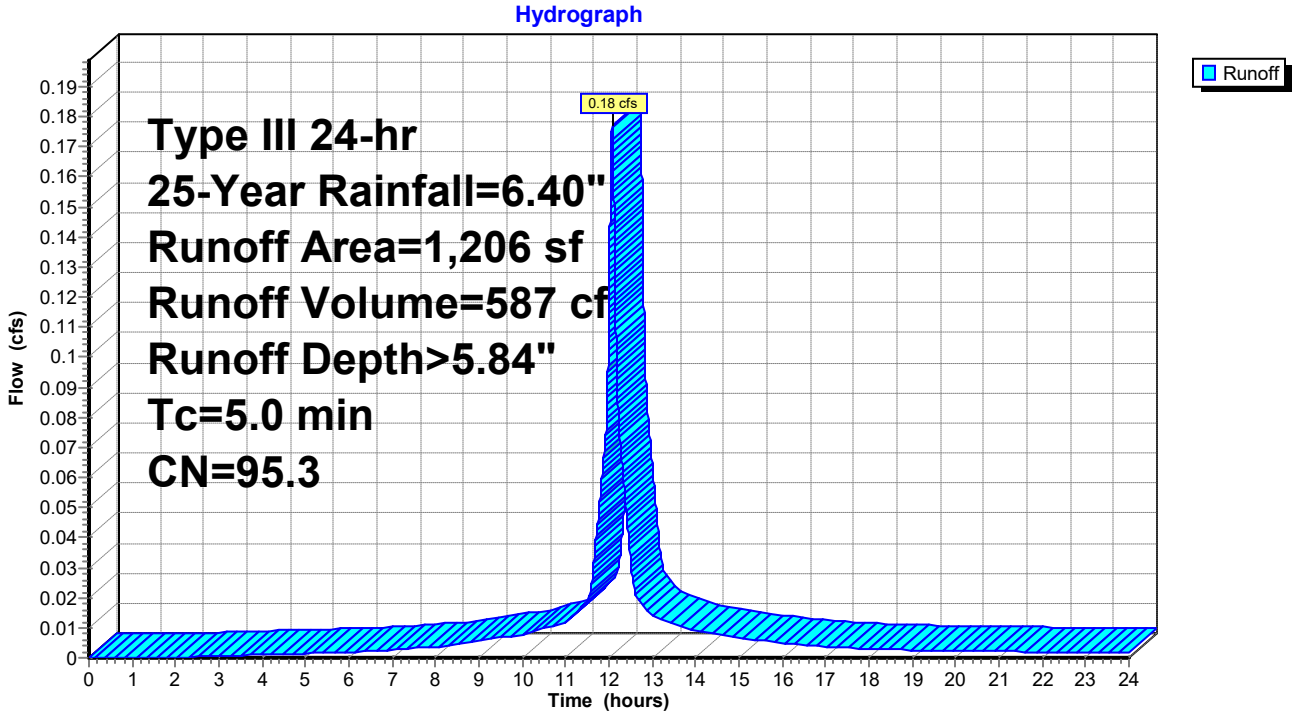
Runoff = 0.18 cfs @ 12.07 hrs, Volume= 587 cf, Depth> 5.84"
Routed to Pond 5P : SR#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
	50	61.0	>75% Grass cover, Good, HSG B
	996	98.0	Paved parking, HSG B
*	160	89.0	Open Jointed Surface, HSG B
	1,206	95.3	Weighted Average
	210		17.41% Pervious Area
	996		82.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, User Defined**

Subcatchment 10S: Pr Stone Reservoir #3



Summary for Pond 1P: SR#1A

Inflow Area = 377 sf, 53.05% Impervious, Inflow Depth > 4.83" for 25-Year event
Inflow = 0.05 cfs @ 12.07 hrs, Volume= 152 cf
Outflow = 0.05 cfs @ 12.07 hrs, Volume= 104 cf, Atten= 0%, Lag= 0.1 min
Primary = 0.05 cfs @ 12.07 hrs, Volume= 104 cf
Routed to Pond 2P : SR#1B

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Peak Elev= 12.02' @ 12.07 hrs Surf.Area= 60 sf Storage= 48 cf

Plug-Flow detention time= 158.4 min calculated for 104 cf (68% of inflow)
Center-of-Mass det. time= 64.5 min (857.2 - 792.7)

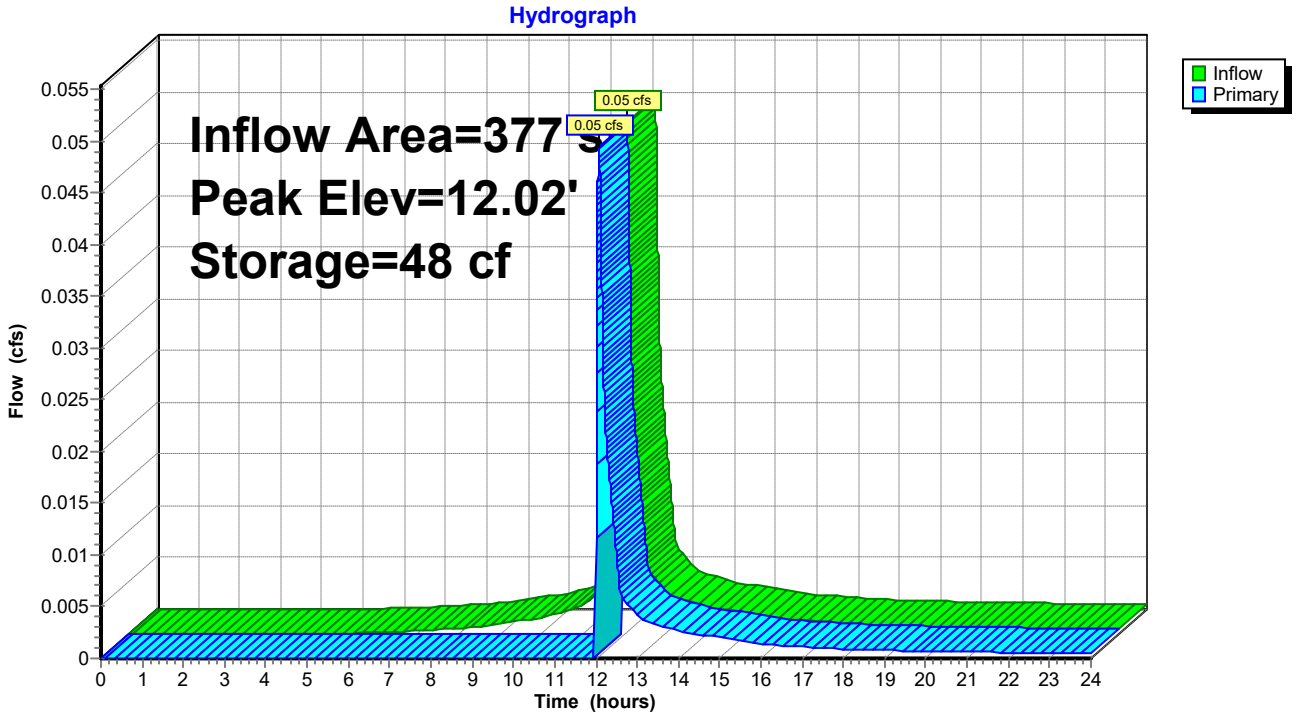
Volume	Invert	Avail.Storage	Storage Description
#1	10.00'	98 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 244 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
10.00	60	0	0
12.00	60	120	120
13.80	50	99	219
14.80	0	25	244

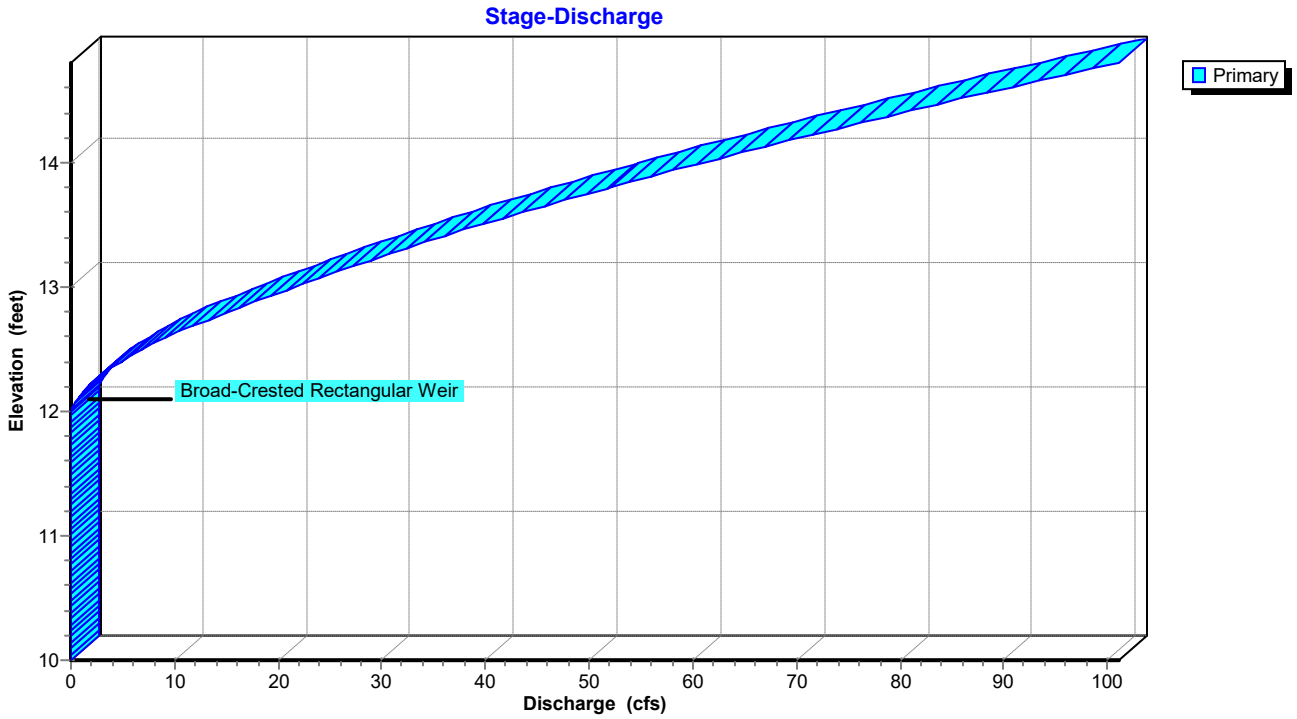
Device	Routing	Invert	Outlet Devices
#1	Primary	12.00'	**6.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.05 cfs @ 12.07 hrs HW=12.02' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.38 fps)

Pond 1P: SR#1A



Pond 1P: SR#1A



Stage-Area-Storage for Pond 1P: SR#1A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
10.00	**60**	0
10.05	60	1
10.10	60	2
10.15	60	4
10.20	60	5
10.25	60	6
10.30	60	7
10.35	60	8
10.40	60	10
10.45	60	11
10.50	60	12
10.55	60	13
10.60	60	14
10.65	60	16
10.70	60	17
10.75	60	18
10.80	60	19
10.85	60	20
10.90	60	22
10.95	60	23
11.00	60	24
11.05	60	25
11.10	60	26
11.15	60	28
11.20	60	29
11.25	60	30
11.30	60	31
11.35	60	32
11.40	60	34
11.45	60	35
11.50	60	36
11.55	60	37
11.60	60	38
11.65	60	40
11.70	60	41
11.75	60	42
11.80	60	43
11.85	60	44
11.90	60	46
11.95	60	47
12.00	60	48
12.05	60	49
12.10	59	50
12.15	59	52
12.20	59	53
12.25	59	54
12.30	58	55
12.35	58	56
12.40	58	57
12.45	58	59
12.50	57	60
12.55	57	61
12.60	57	62
12.65	56	63
12.70	56	64
12.75	56	65
12.80	56	66
12.85	55	68
12.90	55	69
12.95	55	70
13.00	54	71
13.05	54	72
13.10	54	73
13.15	54	74
13.20	53	75
13.25	53	76
13.30	53	77
13.35	53	78
13.40	52	79
13.45	52	80
13.50	52	82
13.55	51	83
13.60	51	84
13.65	51	85
13.70	51	86
13.75	50	87
13.80	50	88
13.85	48	89
13.90	45	90
13.95	43	90
14.00	40	91
14.05	38	92
14.10	35	93
14.15	33	93
14.20	30	94
14.25	28	95
14.30	25	95
14.35	23	96
14.40	20	96
14.45	18	96
14.50	15	97
14.55	13	97
14.60	10	97
14.65	8	97
14.70	5	98
14.75	3	98
14.80	0	**98**

Summary for Pond 2P: SR#1B

Inflow Area = 460 sf, 52.83% Impervious, Inflow Depth > 3.73" for 25-Year event
Inflow = 0.06 cfs @ 12.07 hrs, Volume= 143 cf
Outflow = 0.01 cfs @ 12.50 hrs, Volume= 73 cf, Atten= 80%, Lag= 25.6 min
Primary = 0.01 cfs @ 12.50 hrs, Volume= 73 cf
Routed to Pond 3P : SR#1C

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Peak Elev= 10.90' @ 12.50 hrs Surf.Area= 45 sf Storage= 70 cf

Plug-Flow detention time= 242.3 min calculated for 73 cf (51% of inflow)
Center-of-Mass det. time= 119.8 min (952.3 - 832.4)

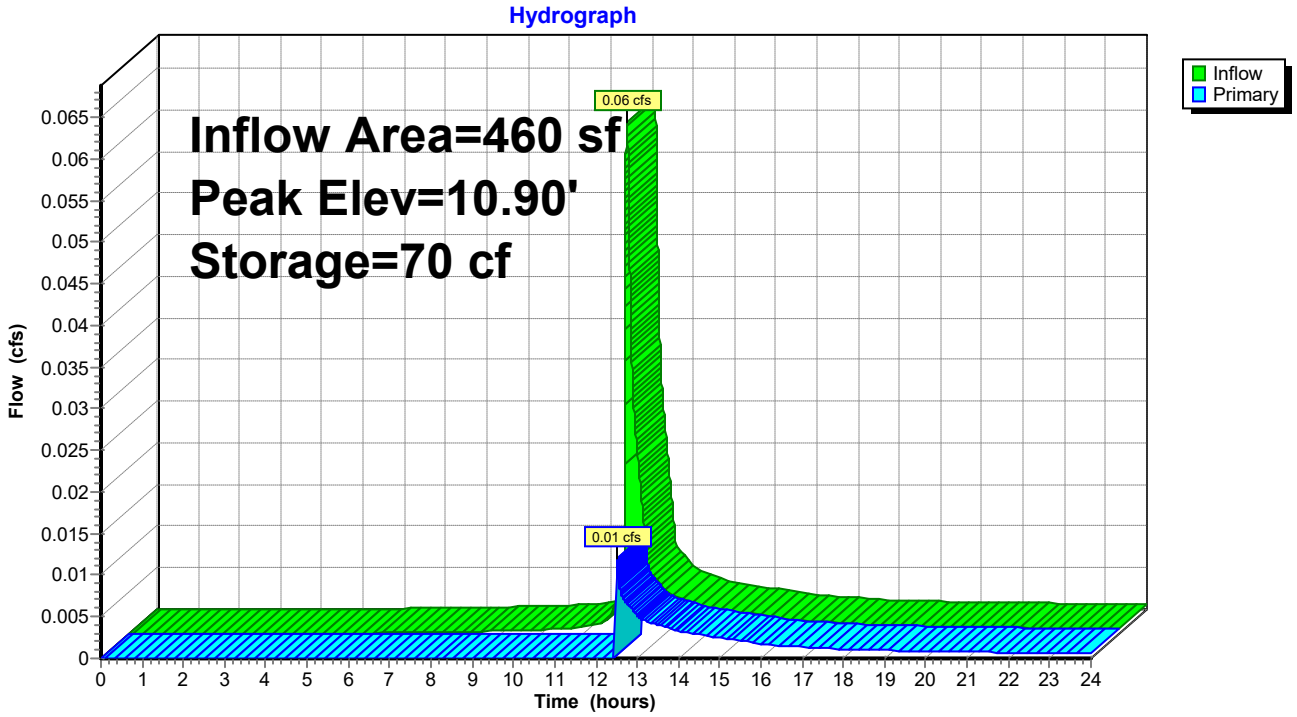
Volume	Invert	Avail.Storage	Storage Description
#1	7.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
7.00	45	0	0
10.90	45	176	176
12.00	0	25	200

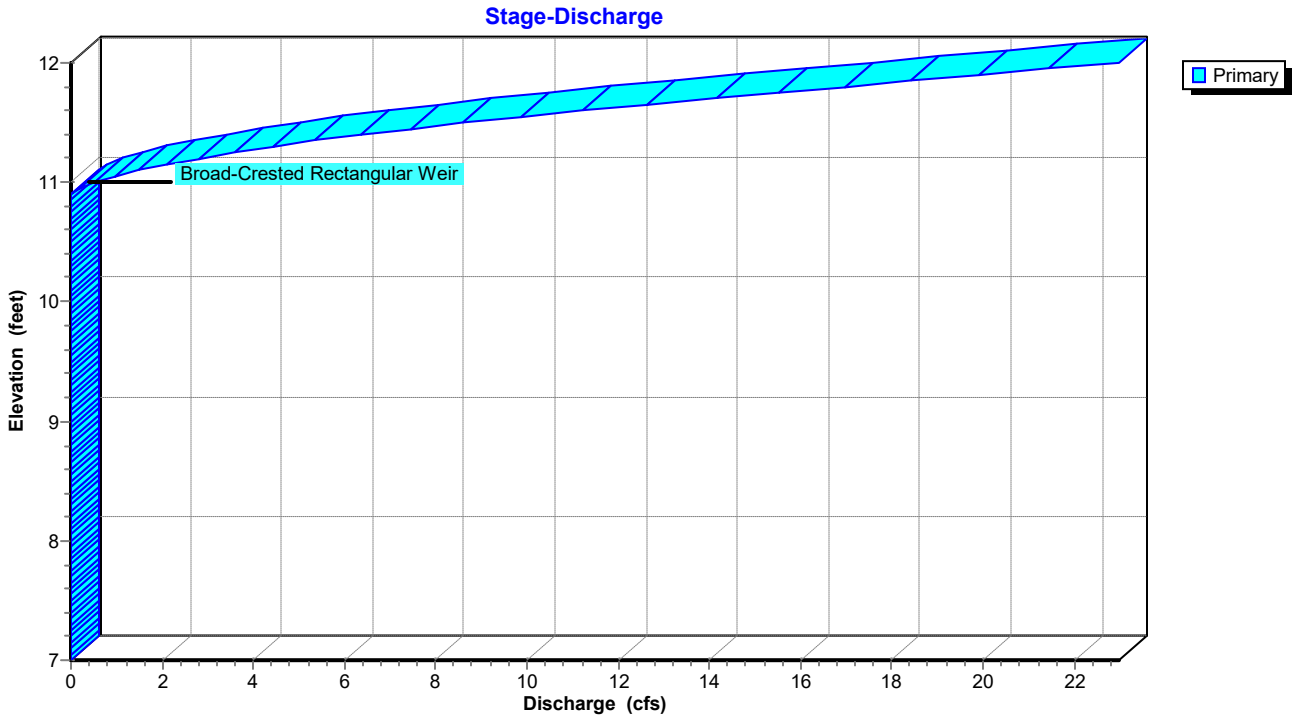
Device	Routing	Invert	Outlet Devices
#1	Primary	10.90'	**6.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.00 cfs @ 12.50 hrs HW=10.90' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.00 cfs @ 0.16 fps)

Pond 2P: SR#1B



Pond 2P: SR#1B



Stage-Area-Storage for Pond 2P: SR#1B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
7.00	**45**	0
7.05	45	1
7.10	45	2
7.15	45	3
7.20	45	4
7.25	45	5
7.30	45	5
7.35	45	6
7.40	45	7
7.45	45	8
7.50	45	9
7.55	45	10
7.60	45	11
7.65	45	12
7.70	45	13
7.75	45	14
7.80	45	14
7.85	45	15
7.90	45	16
7.95	45	17
8.00	45	18
8.05	45	19
8.10	45	20
8.15	45	21
8.20	45	22
8.25	45	23
8.30	45	23
8.35	45	24
8.40	45	25
8.45	45	26
8.50	45	27
8.55	45	28
8.60	45	29
8.65	45	30
8.70	45	31
8.75	45	32
8.80	45	32
8.85	45	33
8.90	45	34
8.95	45	35
9.00	45	36
9.05	45	37
9.10	45	38
9.15	45	39
9.20	45	40
9.25	45	41
9.30	45	41
9.35	45	42
9.40	45	43
9.45	45	44
9.50	45	45
9.55	45	46
9.60	45	47
9.65	45	48
9.70	45	49
9.75	45	50
9.80	45	50
9.85	45	51
9.90	45	52
9.95	45	53
10.00	45	54
10.05	45	55
10.10	45	56
10.15	45	57
10.20	45	58
10.25	45	59
10.30	45	59
10.35	45	60
10.40	45	61
10.45	45	62
10.50	45	63
10.55	45	64
10.60	45	65
10.65	45	66
10.70	45	67
10.75	45	68
10.80	45	68
10.85	45	69
10.90	45	70
10.95	43	71
11.00	41	72
11.05	39	73
11.10	37	73
11.15	35	74
11.20	33	75
11.25	31	75
11.30	29	76
11.35	27	77
11.40	25	77
11.45	23	78
11.50	20	78
11.55	18	78
11.60	16	79
11.65	14	79
11.70	12	79
11.75	10	80
11.80	8	80
11.85	6	80
11.90	4	80
11.95	2	80
12.00	0	**80**

Summary for Pond 3P: SR#1C

Inflow Area = 460 sf, 52.83% Impervious, Inflow Depth > 1.90" for 25-Year event
Inflow = 0.01 cfs @ 12.50 hrs, Volume= 73 cf
Outflow = 0.00 cfs @ 18.15 hrs, Volume= 17 cf, Atten= 91%, Lag= 338.8 min
Primary = 0.00 cfs @ 18.15 hrs, Volume= 17 cf
Routed to Link 4L : Pr North Outfall

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Peak Elev= 8.60' @ 18.15 hrs Surf.Area= 70 sf Storage= 56 cf

Plug-Flow detention time= 478.0 min calculated for 17 cf (23% of inflow)
Center-of-Mass det. time= 294.1 min (1,246.4 - 952.3)

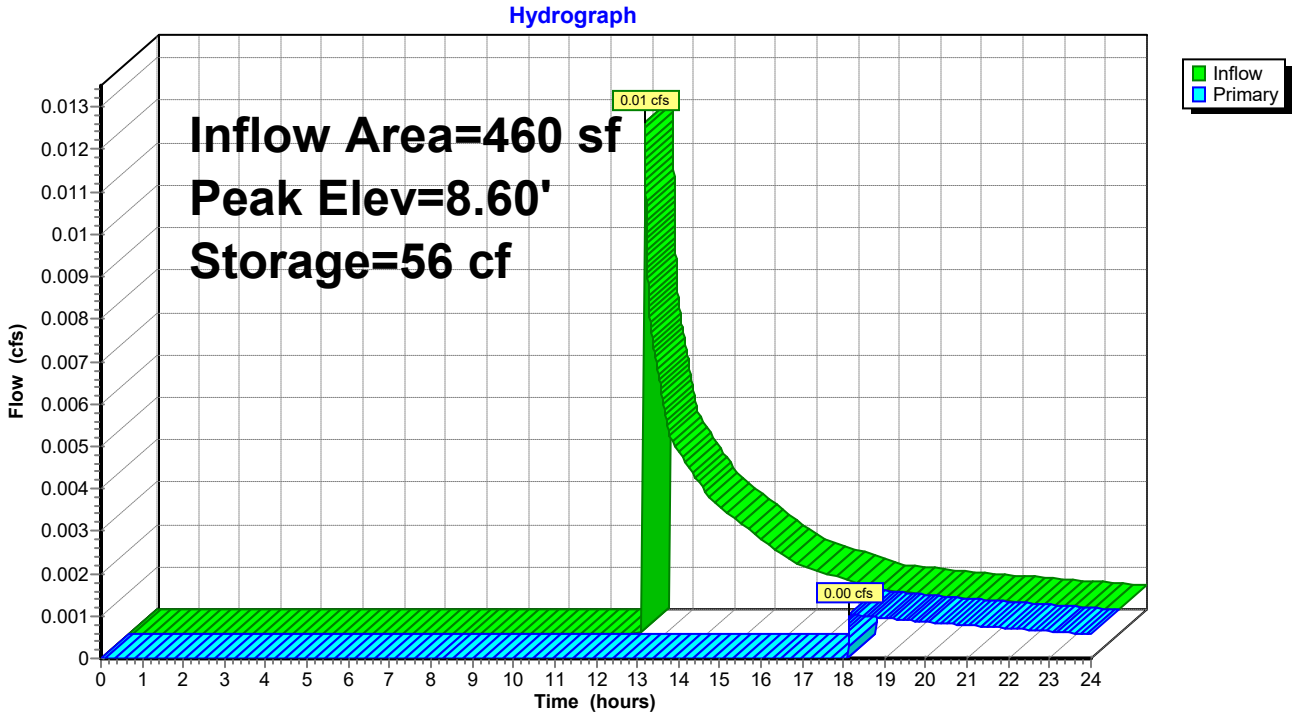
Volume	Invert	Avail.Storage	Storage Description
#1	6.60'	88 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 221 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
6.60	70	0	0
8.60	70	140	140
10.90	0	81	221

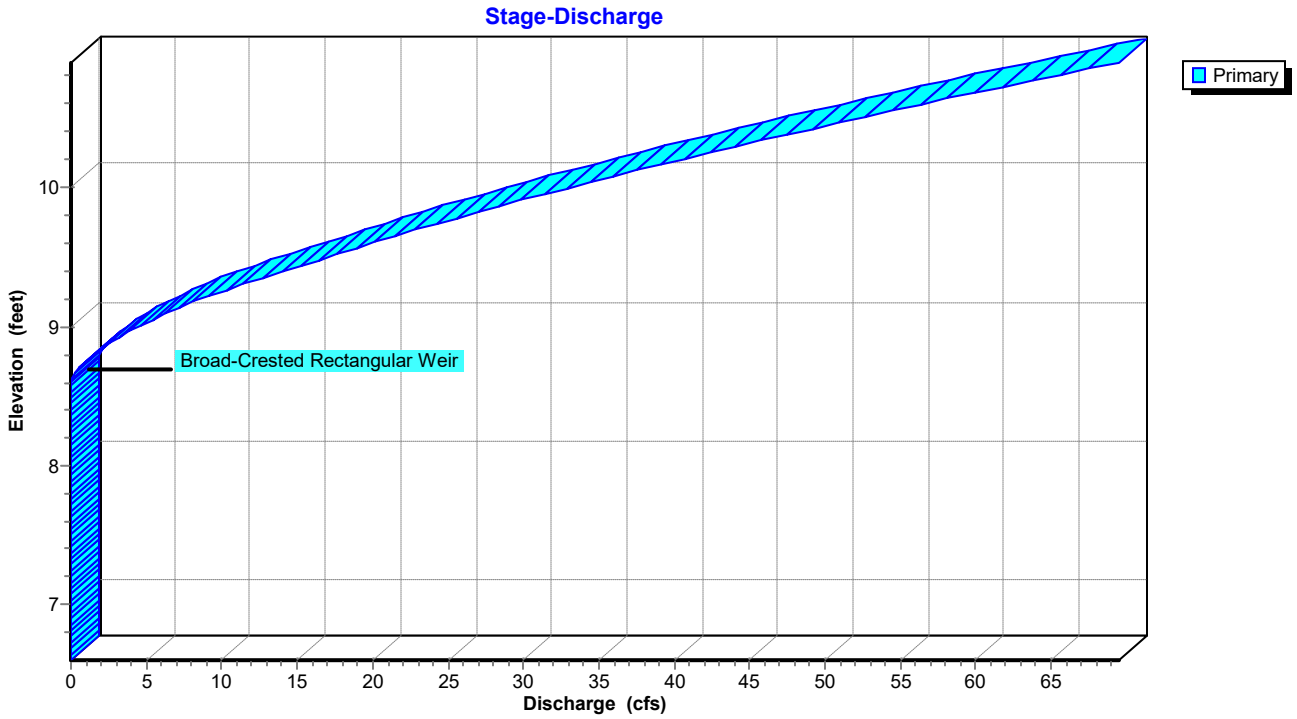
Device	Routing	Invert	Outlet Devices
#1	Primary	8.60'	**6.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.00 cfs @ 18.15 hrs HW=8.60' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.00 cfs @ 0.06 fps)

Pond 3P: SR#1C



Pond 3P: SR#1C



Stage-Area-Storage for Pond 3P: SR#1C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
6.60	**70**	0
6.65	70	1
6.70	70	3
6.75	70	4
6.80	70	6
6.85	70	7
6.90	70	8
6.95	70	10
7.00	70	11
7.05	70	13
7.10	70	14
7.15	70	15
7.20	70	17
7.25	70	18
7.30	70	20
7.35	70	21
7.40	70	22
7.45	70	24
7.50	70	25
7.55	70	27
7.60	70	28
7.65	70	29
7.70	70	31
7.75	70	32
7.80	70	34
7.85	70	35
7.90	70	36
7.95	70	38
8.00	70	39
8.05	70	41
8.10	70	42
8.15	70	43
8.20	70	45
8.25	70	46
8.30	70	48
8.35	70	49
8.40	70	50
8.45	70	52
8.50	70	53
8.55	70	55
8.60	70	56
8.65	68	57
8.70	67	59
8.75	65	60
8.80	64	61
8.85	62	63
8.90	61	64
8.95	59	65
9.00	58	66
9.05	56	67
9.10	55	68
9.15	53	70
9.20	52	71
9.25	50	72
9.30	49	73
9.35	47	74
9.40	46	75
9.45	44	75
9.50	43	76
9.55	41	77
9.60	40	78
9.65	38	79
9.70	37	79
9.75	35	80
9.80	33	81
9.85	32	81
9.90	30	82
9.95	29	83
10.00	27	83
10.05	26	84
10.10	24	84
10.15	23	85
10.20	21	85
10.25	20	86
10.30	18	86
10.35	17	86
10.40	15	87
10.45	14	87
10.50	12	87
10.55	11	87
10.60	9	88
10.65	8	88
10.70	6	88
10.75	5	88
10.80	3	88
10.85	2	88
10.90	0	**88**

Summary for Pond 4P: SR#2

Inflow Area = 340 sf, 99.41% Impervious, Inflow Depth > 6.13" for 25-Year event
Inflow = 0.05 cfs @ 12.07 hrs, Volume= 174 cf
Outflow = 0.05 cfs @ 12.07 hrs, Volume= 129 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.05 cfs @ 12.07 hrs, Volume= 129 cf
Routed to Link 5L : Pr West Outfall

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Peak Elev= 10.36' @ 12.07 hrs Surf.Area= 44 sf Storage= 45 cf

Plug-Flow detention time= 167.2 min calculated for 129 cf (74% of inflow)
Center-of-Mass det. time= 78.5 min (822.7 - 744.2)

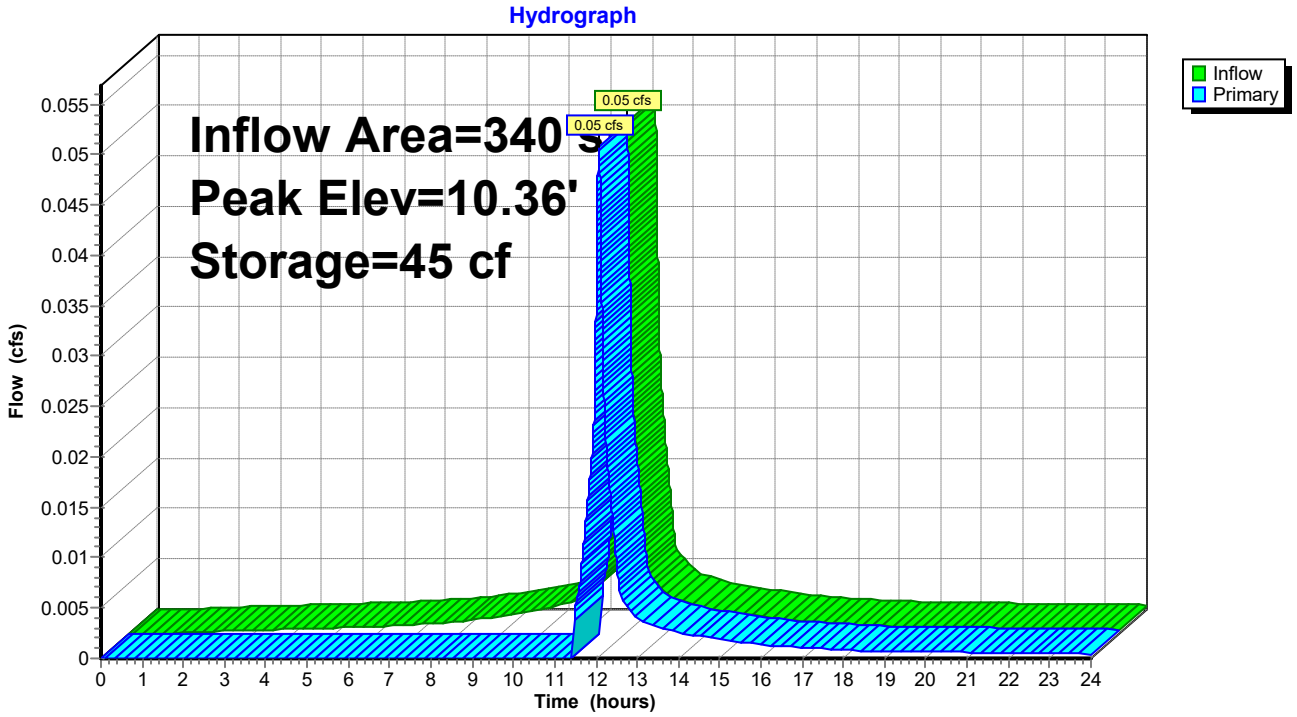
Volume	Invert	Avail.Storage	Storage Description
#1	8.00'	47 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 116 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.00	48	0	0
10.35	48	113	113
10.50	0	4	116

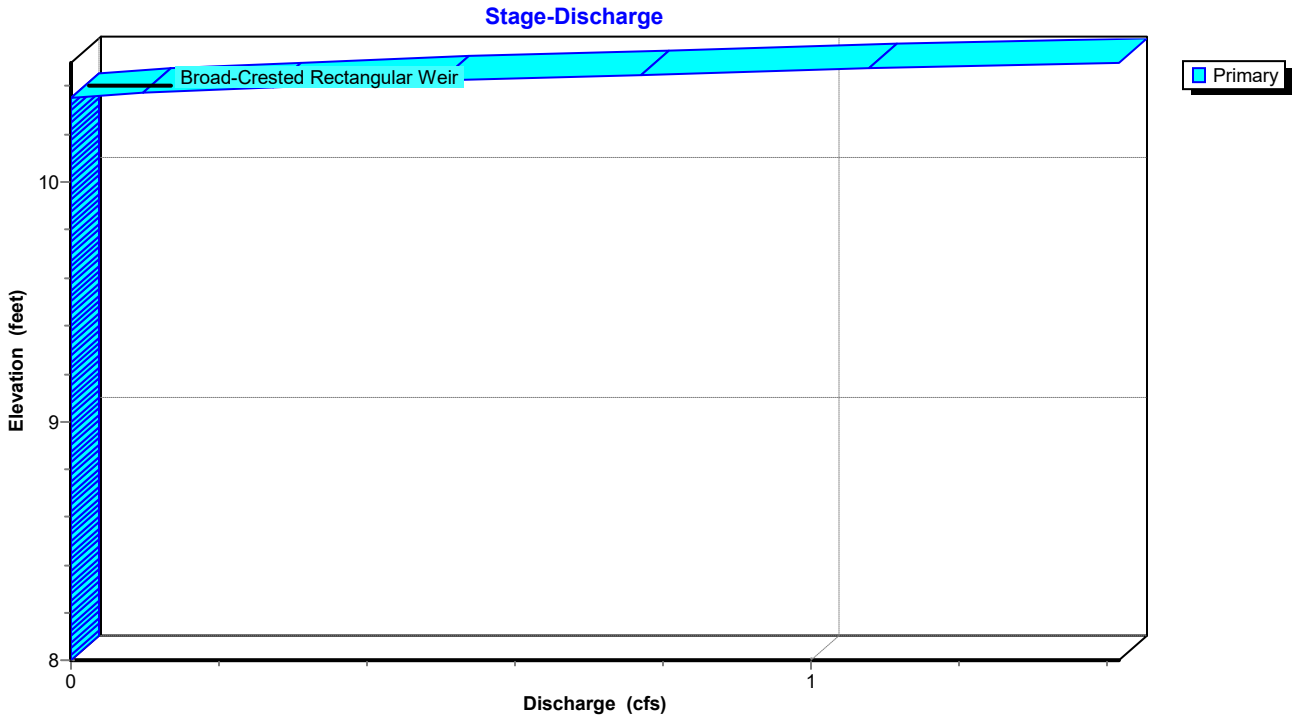
Device	Routing	Invert	Outlet Devices
#1	Primary	10.35'	**8.7' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.04 cfs @ 12.07 hrs HW=10.36' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.04 cfs @ 0.32 fps)

Pond 4P: SR#2



Pond 4P: SR#2



Stage-Area-Storage for Pond 4P: SR#2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
8.00	**48**	0
8.05	48	1
8.10	48	2
8.15	48	3
8.20	48	4
8.25	48	5
8.30	48	6
8.35	48	7
8.40	48	8
8.45	48	9
8.50	48	10
8.55	48	11
8.60	48	12
8.65	48	12
8.70	48	13
8.75	48	14
8.80	48	15
8.85	48	16
8.90	48	17
8.95	48	18
9.00	48	19
9.05	48	20
9.10	48	21
9.15	48	22
9.20	48	23
9.25	48	24
9.30	48	25
9.35	48	26
9.40	48	27
9.45	48	28
9.50	48	29
9.55	48	30
9.60	48	31
9.65	48	32
9.70	48	33
9.75	48	34
9.80	48	35
9.85	48	36
9.90	48	36
9.95	48	37
10.00	48	38
10.05	48	39
10.10	48	40
10.15	48	41
10.20	48	42
10.25	48	43
10.30	48	44
10.35	48	45
10.40	32	46
10.45	16	46
10.50	0	**47**

Summary for Pond 5P: SR#3

Inflow Area = 1,206 sf, 82.59% Impervious, Inflow Depth > 5.84" for 25-Year event
Inflow = 0.18 cfs @ 12.07 hrs, Volume= 587 cf
Outflow = 0.18 cfs @ 12.07 hrs, Volume= 490 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.07 hrs, Volume= 490 cf
Routed to Link 6L : Pr South Outfall

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Peak Elev= 9.24' @ 12.07 hrs Surf.Area= 84 sf Storage= 99 cf

Plug-Flow detention time= 120.1 min calculated for 490 cf (83% of inflow)
Center-of-Mass det. time= 52.2 min (811.3 - 759.1)

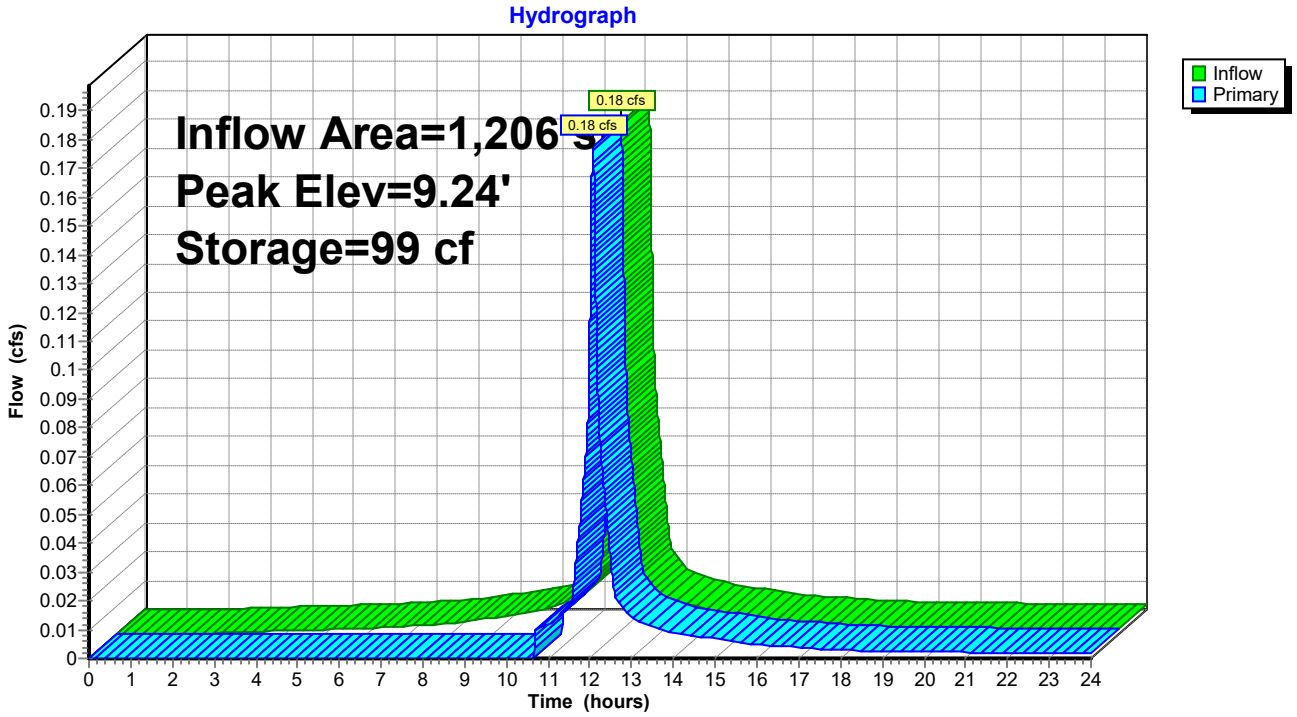
Volume	Invert	Avail.Storage	Storage Description
#1	6.50'	110 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 275 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
6.50	90	0	0
9.20	90	243	243
9.60	35	25	268
10.00	0	7	275

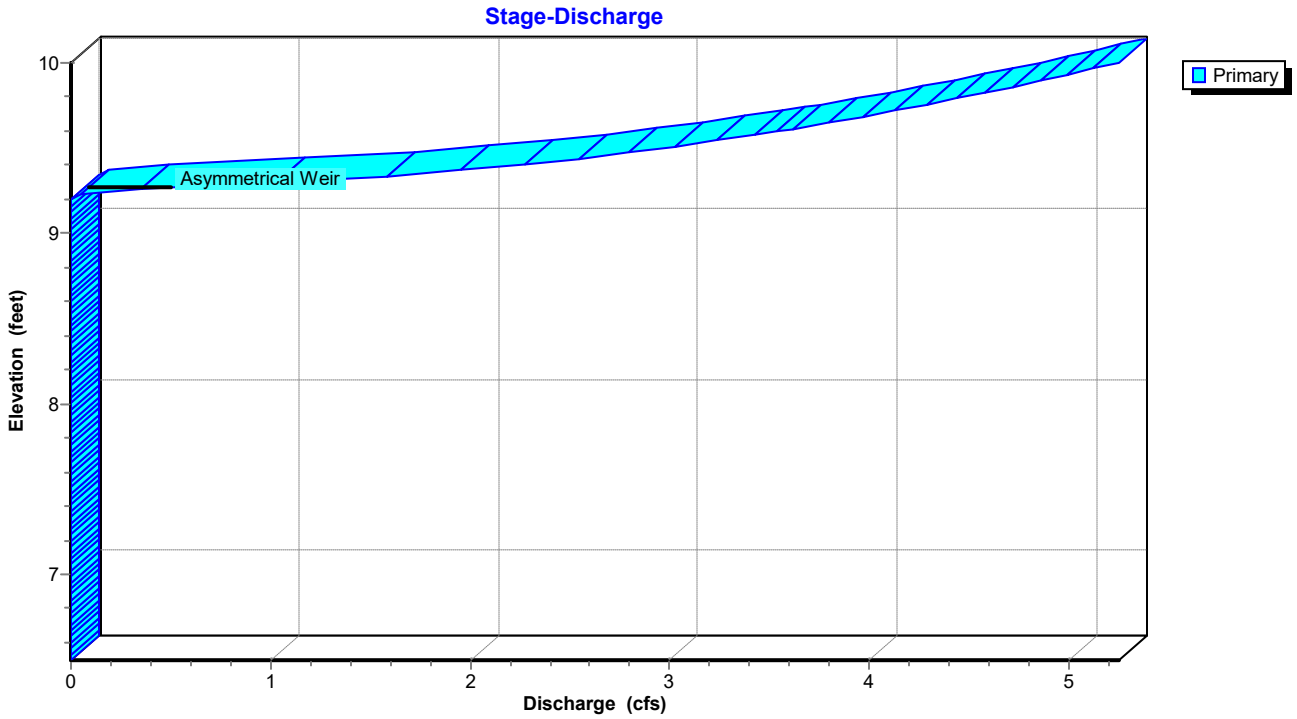
Device	Routing	Invert	Outlet Devices
#1	Primary	9.20'	**Asymmetrical Weir, C= 3.27** Offset (feet) 0.00 25.00 25.00 Height (feet) 0.10 0.00 0.10

Primary OutFlow Max=0.14 cfs @ 12.07 hrs HW=9.24' (Free Discharge)
↑—**1=Asymmetrical Weir** (Weir Controls 0.14 cfs @ 0.28 fps)

Pond 5P: SR#3



Pond 5P: SR#3



Stage-Area-Storage for Pond 5P: SR#3

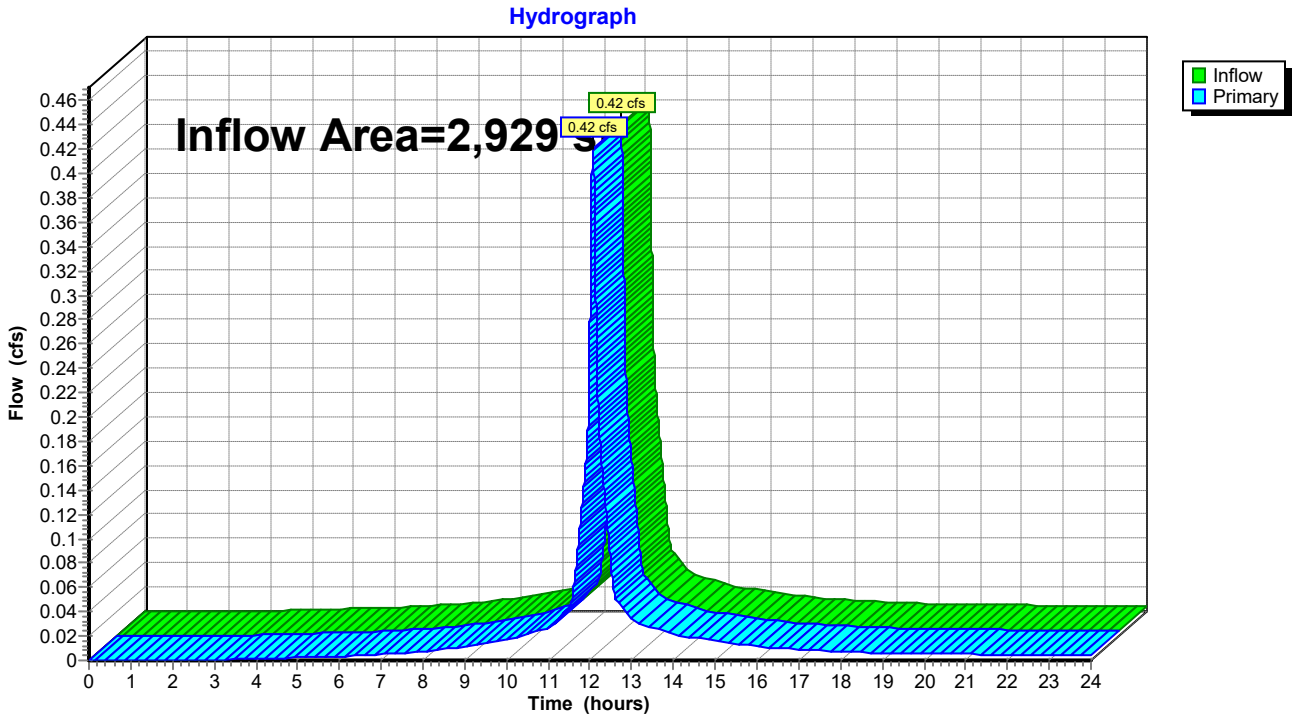
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
6.50	**90**	0
6.55	90	2
6.60	90	4
6.65	90	5
6.70	90	7
6.75	90	9
6.80	90	11
6.85	90	13
6.90	90	14
6.95	90	16
7.00	90	18
7.05	90	20
7.10	90	22
7.15	90	23
7.20	90	25
7.25	90	27
7.30	90	29
7.35	90	31
7.40	90	32
7.45	90	34
7.50	90	36
7.55	90	38
7.60	90	40
7.65	90	41
7.70	90	43
7.75	90	45
7.80	90	47
7.85	90	49
7.90	90	50
7.95	90	52
8.00	90	54
8.05	90	56
8.10	90	58
8.15	90	59
8.20	90	61
8.25	90	63
8.30	90	65
8.35	90	67
8.40	90	68
8.45	90	70
8.50	90	72
8.55	90	74
8.60	90	76
8.65	90	77
8.70	90	79
8.75	90	81
8.80	90	83
8.85	90	85
8.90	90	86
8.95	90	88
9.00	90	90
9.05	90	92
9.10	90	94
9.15	90	95
9.20	90	97
9.25	83	99
9.30	76	101
9.35	69	102
9.40	62	103
9.45	56	104
9.50	49	106
9.55	42	106
9.60	35	107
9.65	31	108
9.70	26	108
9.75	22	109
9.80	17	109
9.85	13	110
9.90	9	110
9.95	4	110
10.00	0	**110**

Summary for Link 1L: Ex North Outfall

Inflow Area = 2,929 sf, 85.42% Impervious, Inflow Depth > 5.53" for 25-Year event
Inflow = 0.42 cfs @ 12.07 hrs, Volume= 1,349 cf
Primary = 0.42 cfs @ 12.07 hrs, Volume= 1,349 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 1L: Ex North Outfall

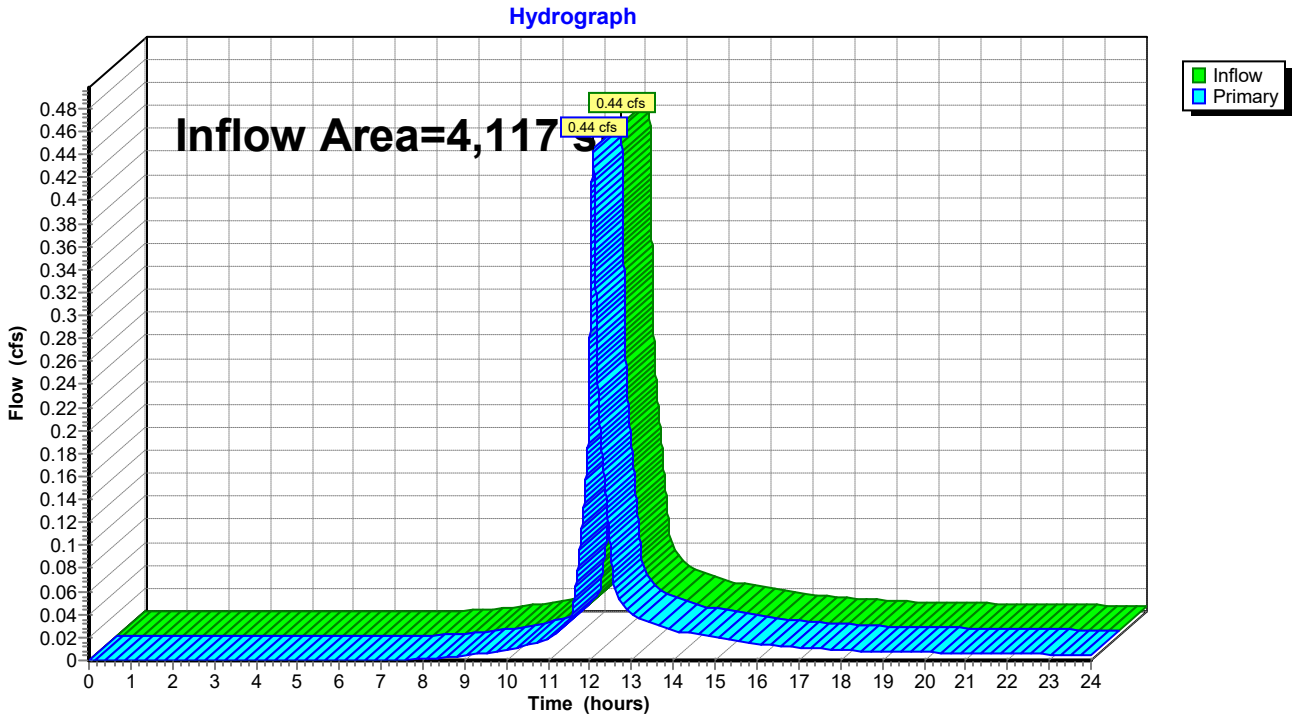


Summary for Link 2L: Ex West Outfall

Inflow Area = 4,117 sf, 44.26% Impervious, Inflow Depth > 3.87" for 25-Year event
Inflow = 0.44 cfs @ 12.07 hrs, Volume= 1,327 cf
Primary = 0.44 cfs @ 12.07 hrs, Volume= 1,327 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 2L: Ex West Outfall

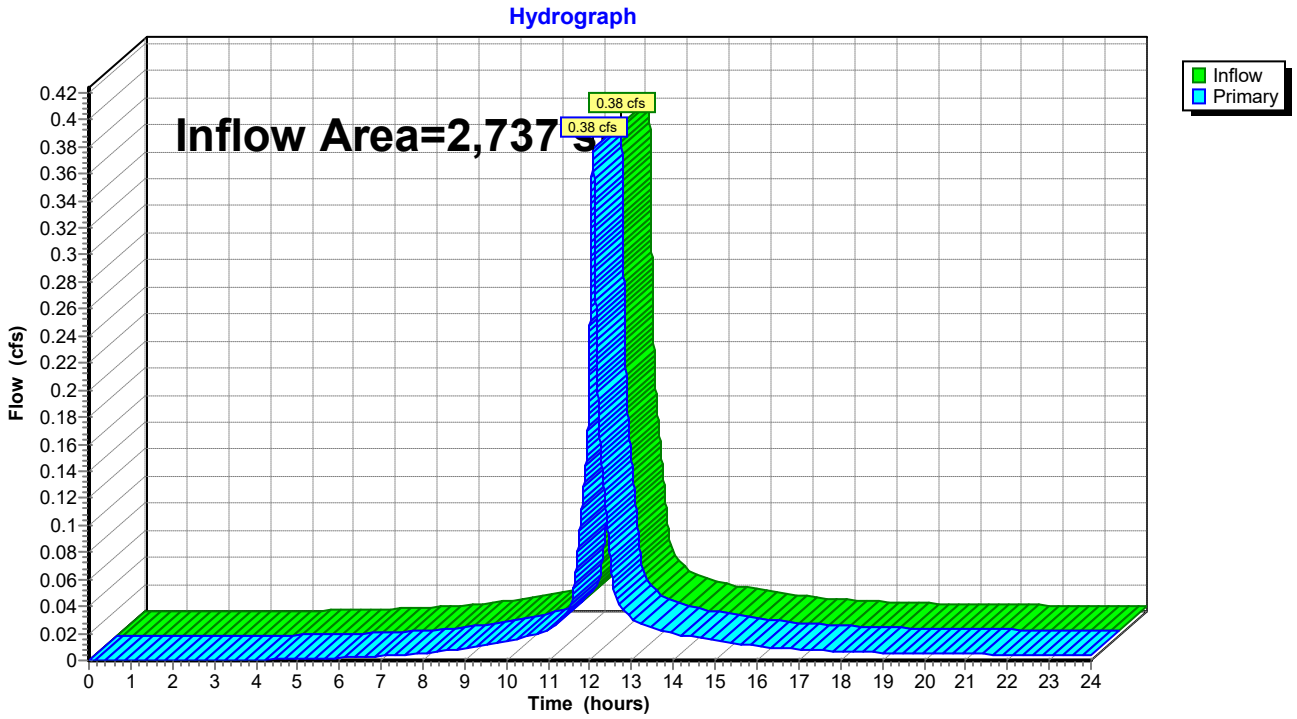


Summary for Link 3L: Ex South Outfall

Inflow Area = 2,737 sf, 53.64% Impervious, Inflow Depth > 5.20" for 25-Year event
Inflow = 0.38 cfs @ 12.07 hrs, Volume= 1,186 cf
Primary = 0.38 cfs @ 12.07 hrs, Volume= 1,186 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 3L: Ex South Outfall

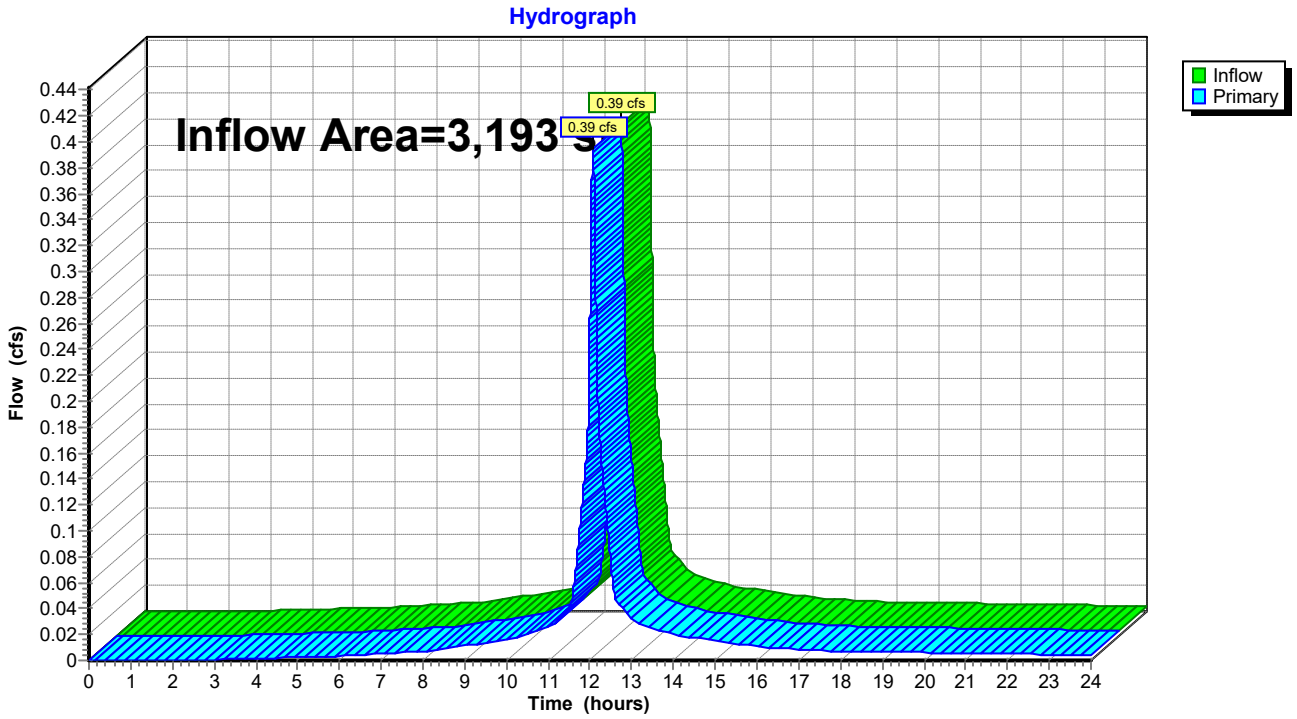


Summary for Link 4L: Pr North Outfall

Inflow Area = 3,193 sf, 82.12% Impervious, Inflow Depth > 4.85" for 25-Year event
Inflow = 0.39 cfs @ 12.07 hrs, Volume= 1,291 cf
Primary = 0.39 cfs @ 12.07 hrs, Volume= 1,291 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 4L: Pr North Outfall

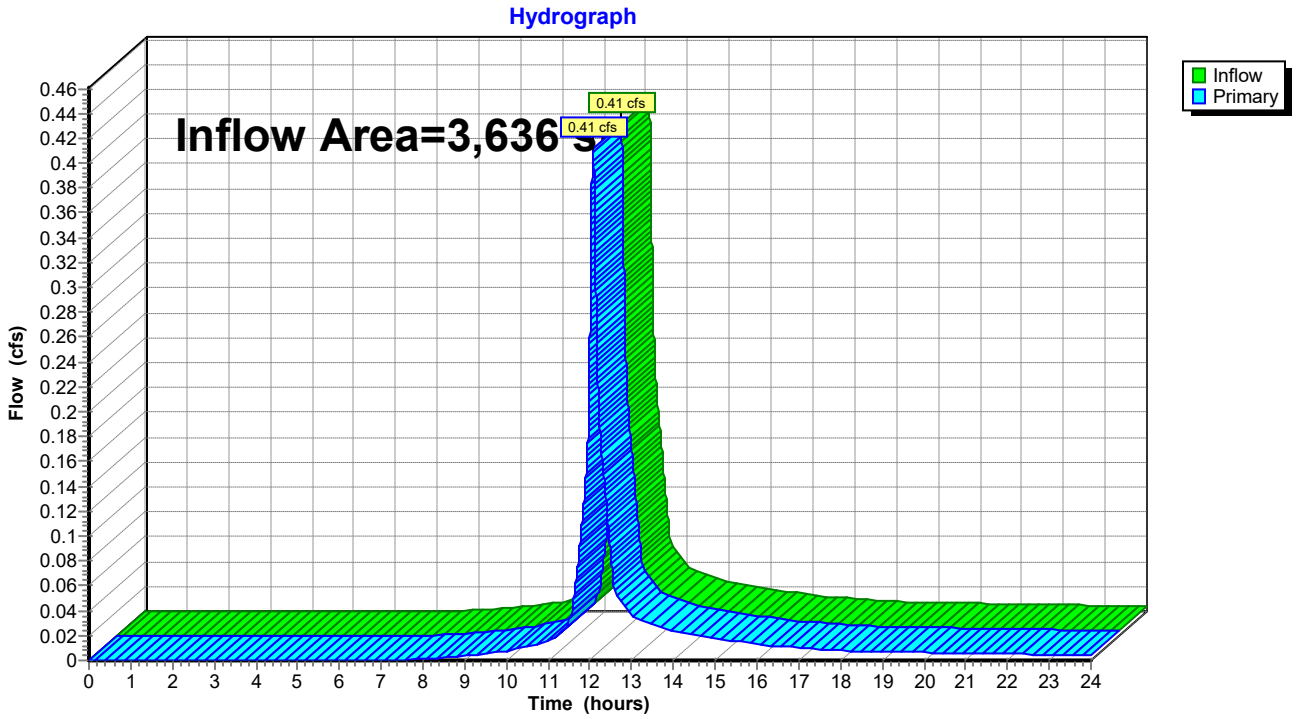


Summary for Link 5L: Pr West Outfall

Inflow Area = 3,636 sf, 42.63% Impervious, Inflow Depth > 3.98" for 25-Year event
Inflow = 0.41 cfs @ 12.07 hrs, Volume= 1,205 cf
Primary = 0.41 cfs @ 12.07 hrs, Volume= 1,205 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 5L: Pr West Outfall

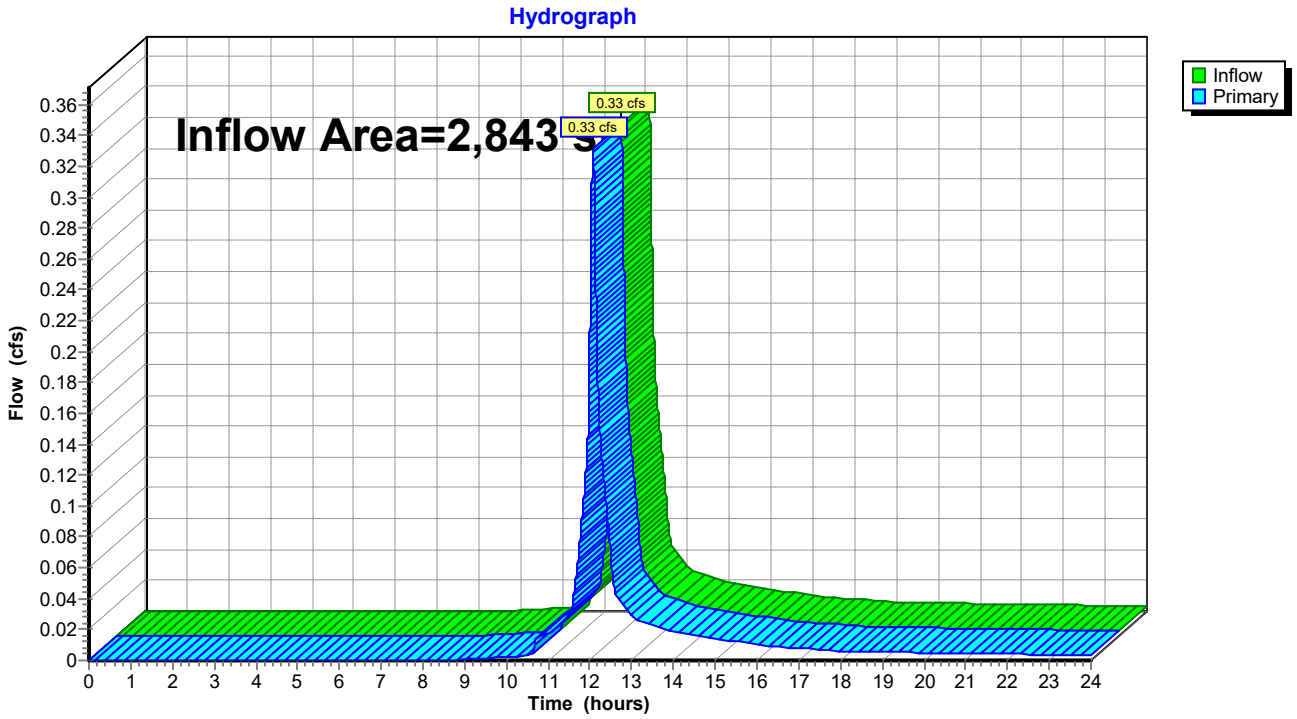


Summary for Link 6L: Pr South Outfall

Inflow Area = 2,843 sf, 47.41% Impervious, Inflow Depth > 4.00" for 25-Year event
Inflow = 0.33 cfs @ 12.07 hrs, Volume= 948 cf
Primary = 0.33 cfs @ 12.07 hrs, Volume= 948 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 6L: Pr South Outfall



Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Ex North Basin Runoff Area=2,929 sf 85.42% Impervious Runoff Depth>6.71"
Tc=5.0 min CN=92.6 Runoff=0.50 cfs 1,639 cf

Subcatchment 2S: Ex West Basin Runoff Area=4,117 sf 44.26% Impervious Runoff Depth>4.95"
Tc=5.0 min CN=77.4 Runoff=0.57 cfs 1,698 cf

Subcatchment 3S: Ex South Basin Runoff Area=2,737 sf 53.64% Impervious Runoff Depth>6.37"
Tc=5.0 min CN=89.7 Runoff=0.46 cfs 1,453 cf

Subcatchment 4S: Pr North Bypass Basin Runoff Area=2,733 sf 87.05% Impervious Runoff Depth>6.78"
Tc=5.0 min CN=93.2 Runoff=0.47 cfs 1,545 cf

Subcatchment 5S: Pr Stone Storage #1A Runoff Area=377 sf 53.05% Impervious Runoff Depth>5.99"
Tc=5.0 min CN=86.4 Runoff=0.06 cfs 188 cf

Subcatchment 6S: Pr Stone Storage #1B Runoff Area=83 sf 51.81% Impervious Runoff Depth>6.84"
Tc=5.0 min CN=93.7 Runoff=0.01 cfs 47 cf

Subcatchment 7S: Pr West Bypass Basin Runoff Area=3,296 sf 36.77% Impervious Runoff Depth>5.01"
Tc=5.0 min CN=77.9 Runoff=0.46 cfs 1,375 cf

Subcatchment 8S: Pr Stone Storage #2 Runoff Area=340 sf 99.41% Impervious Runoff Depth>7.33"
Tc=5.0 min CN=97.8 Runoff=0.06 cfs 208 cf

Subcatchment 9S: Pr South Bypass Basin Runoff Area=1,637 sf 21.50% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=72.4 Runoff=0.20 cfs 598 cf

Subcatchment 10S: Pr Stone Reservoir #3 Runoff Area=1,206 sf 82.59% Impervious Runoff Depth>7.03"
Tc=5.0 min CN=95.3 Runoff=0.21 cfs 707 cf

Pond 1P: SR#1A Peak Elev=12.02' Storage=48 cf Inflow=0.06 cfs 188 cf
Outflow=0.06 cfs 140 cf

Pond 2P: SR#1B Peak Elev=10.91' Storage=70 cf Inflow=0.07 cfs 187 cf
Outflow=0.04 cfs 117 cf

Pond 3P: SR#1C Peak Elev=8.60' Storage=56 cf Inflow=0.04 cfs 117 cf
Outflow=0.00 cfs 61 cf

Pond 4P: SR#2 Peak Elev=10.37' Storage=45 cf Inflow=0.06 cfs 208 cf
Outflow=0.06 cfs 163 cf

Pond 5P: SR#3 Peak Elev=9.25' Storage=99 cf Inflow=0.21 cfs 707 cf
Outflow=0.21 cfs 610 cf

Link 1L: Ex North Outfall Inflow=0.50 cfs 1,639 cf
Primary=0.50 cfs 1,639 cf

Link 2L: Ex West Outfall Inflow=0.57 cfs 1,698 cf
Primary=0.57 cfs 1,698 cf

Link 3L: Ex South Outfall Inflow=0.46 cfs 1,453 cf
Primary=0.46 cfs 1,453 cf

Link 4L: Pr North Outfall Inflow=0.47 cfs 1,606 cf
Primary=0.47 cfs 1,606 cf

Link 5L: Pr West Outfall Inflow=0.52 cfs 1,538 cf
Primary=0.52 cfs 1,538 cf

Link 6L: Pr South Outfall Inflow=0.41 cfs 1,208 cf
Primary=0.41 cfs 1,208 cf

Total Runoff Area = 19,455 sf Runoff Volume = 9,459 cf Average Runoff Depth = 5.83"
41.86% Pervious = 8,143 sf 58.14% Impervious = 11,312 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Ex North Basin Runoff Area=2,929 sf 85.42% Impervious Runoff Depth>8.20"
Tc=5.0 min CN=92.6 Runoff=0.61 cfs 2,002 cf

Subcatchment 2S: Ex West Basin Runoff Area=4,117 sf 44.26% Impervious Runoff Depth>6.34"
Tc=5.0 min CN=77.4 Runoff=0.72 cfs 2,174 cf

Subcatchment 3S: Ex South Basin Runoff Area=2,737 sf 53.64% Impervious Runoff Depth>7.85"
Tc=5.0 min CN=89.7 Runoff=0.56 cfs 1,790 cf

Subcatchment 4S: Pr North Bypass Basin Runoff Area=2,733 sf 87.05% Impervious Runoff Depth>8.27"
Tc=5.0 min CN=93.2 Runoff=0.57 cfs 1,884 cf

Subcatchment 5S: Pr Stone Storage #1A Runoff Area=377 sf 53.05% Impervious Runoff Depth>7.44"
Tc=5.0 min CN=86.4 Runoff=0.07 cfs 234 cf

Subcatchment 6S: Pr Stone Storage #1B Runoff Area=83 sf 51.81% Impervious Runoff Depth>8.33"
Tc=5.0 min CN=93.7 Runoff=0.02 cfs 58 cf

Subcatchment 7S: Pr West Bypass Basin Runoff Area=3,296 sf 36.77% Impervious Runoff Depth>6.40"
Tc=5.0 min CN=77.9 Runoff=0.58 cfs 1,757 cf

Subcatchment 8S: Pr Stone Storage #2 Runoff Area=340 sf 99.41% Impervious Runoff Depth>8.83"
Tc=5.0 min CN=97.8 Runoff=0.07 cfs 250 cf

Subcatchment 9S: Pr South Bypass Basin Runoff Area=1,637 sf 21.50% Impervious Runoff Depth>5.72"
Tc=5.0 min CN=72.4 Runoff=0.26 cfs 780 cf

Subcatchment 10S: Pr Stone Reservoir #3 Runoff Area=1,206 sf 82.59% Impervious Runoff Depth>8.53"
Tc=5.0 min CN=95.3 Runoff=0.25 cfs 857 cf

Pond 1P: SR#1A Peak Elev=12.02' Storage=49 cf Inflow=0.07 cfs 234 cf
Outflow=0.07 cfs 186 cf

Pond 2P: SR#1B Peak Elev=10.92' Storage=71 cf Inflow=0.09 cfs 244 cf
Outflow=0.09 cfs 173 cf

Pond 3P: SR#1C Peak Elev=8.61' Storage=56 cf Inflow=0.09 cfs 173 cf
Outflow=0.03 cfs 117 cf

Pond 4P: SR#2 Peak Elev=10.37' Storage=45 cf Inflow=0.07 cfs 250 cf
Outflow=0.07 cfs 205 cf

Pond 5P: SR#3 Peak Elev=9.25' Storage=99 cf Inflow=0.25 cfs 857 cf
Outflow=0.25 cfs 760 cf

Link 1L: Ex North Outfall Inflow=0.61 cfs 2,002 cf
Primary=0.61 cfs 2,002 cf

Link 2L: Ex West Outfall Inflow=0.72 cfs 2,174 cf
Primary=0.72 cfs 2,174 cf

Link 3L: Ex South Outfall Inflow=0.56 cfs 1,790 cf
Primary=0.56 cfs 1,790 cf

Link 4L: Pr North Outfall Inflow=0.57 cfs 2,002 cf
Primary=0.57 cfs 2,002 cf

Link 5L: Pr West Outfall Inflow=0.65 cfs 1,962 cf
Primary=0.65 cfs 1,962 cf

Link 6L: Pr South Outfall Inflow=0.52 cfs 1,540 cf
Primary=0.52 cfs 1,540 cf

Total Runoff Area = 19,455 sf Runoff Volume = 11,785 cf Average Runoff Depth = 7.27"
41.86% Pervious = 8,143 sf 58.14% Impervious = 11,312 sf

Appendix 4

Rainfall Intensity Data
NRCS Web Soil Survey

NOAA Atlas 14, Volume 10, Version 3
Location name: Norwalk, Connecticut, USA*
Latitude: 41.0567°, Longitude: -73.4348°
Elevation: 15 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

Highlighted Value's Below Utilized in Project HydroCAD Model (App.3)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.364 (0.289-0.456)	0.425 (0.337-0.533)	0.525 (0.415-0.660)	0.607 (0.477-0.768)	0.721 (0.546-0.950)	0.807 (0.597-1.09)	0.896 (0.640-1.25)	0.992 (0.672-1.42)	1.13 (0.733-1.67)	1.23 (0.781-1.87)
10-min	0.516 (0.410-0.646)	0.602 (0.478-0.755)	0.743 (0.587-0.935)	0.860 (0.676-1.09)	1.02 (0.773-1.35)	1.14 (0.846-1.54)	1.27 (0.907-1.77)	1.41 (0.953-2.01)	1.60 (1.04-2.37)	1.75 (1.11-2.65)
15-min	0.607 (0.482-0.760)	0.708 (0.562-0.888)	0.874 (0.691-1.10)	1.01 (0.795-1.28)	1.20 (0.910-1.58)	1.34 (0.995-1.81)	1.49 (1.07-2.08)	1.65 (1.12-2.37)	1.88 (1.22-2.78)	2.06 (1.30-3.11)
30-min	0.845 (0.672-1.06)	0.988 (0.784-1.24)	1.22 (0.965-1.54)	1.41 (1.11-1.79)	1.68 (1.27-2.21)	1.88 (1.39-2.53)	2.09 (1.49-2.90)	2.31 (1.57-3.31)	2.61 (1.70-3.87)	2.84 (1.80-4.30)
60-min	1.08 (0.861-1.36)	1.27 (1.00-1.59)	1.57 (1.24-1.97)	1.82 (1.43-2.30)	2.16 (1.63-2.84)	2.42 (1.79-3.25)	2.69 (1.91-3.72)	2.96 (2.01-4.24)	3.34 (2.17-4.95)	3.63 (2.30-5.50)
2-hr	1.39 (1.11-1.73)	1.65 (1.32-2.05)	2.07 (1.65-2.58)	2.42 (1.91-3.04)	2.90 (2.21-3.80)	3.26 (2.43-4.37)	3.64 (2.62-5.05)	4.06 (2.76-5.78)	4.64 (3.03-6.84)	5.12 (3.25-7.70)
3-hr	1.59 (1.28-1.98)	1.90 (1.53-2.36)	2.41 (1.92-3.00)	2.83 (2.24-3.54)	3.40 (2.60-4.45)	3.84 (2.87-5.12)	4.29 (3.10-5.95)	4.80 (3.27-6.81)	5.53 (3.61-8.12)	6.13 (3.90-9.18)
6-hr	2.01 (1.62-2.47)	2.41 (1.94-2.97)	3.06 (2.46-3.79)	3.61 (2.88-4.48)	4.36 (3.36-5.67)	4.92 (3.70-6.54)	5.51 (4.02-7.62)	6.19 (4.24-8.73)	7.19 (4.71-10.5)	8.01 (5.11-11.9)
12-hr	2.48 (2.02-3.03)	2.98 (2.42-3.64)	3.80 (3.07-4.66)	4.47 (3.60-5.52)	5.41 (4.19-6.99)	6.11 (4.62-8.07)	6.85 (5.02-9.41)	7.71 (5.30-10.8)	8.98 (5.90-13.0)	10.0 (6.42-14.8)
24-hr	2.88 (2.36-3.50)	3.50 (2.86-4.26)	4.51 (3.68-5.50)	5.35 (4.33-6.56)	6.51 (5.08-8.37)	7.37 (5.62-9.69)	8.29 (6.12-11.3)	9.37 (6.46-13.0)	11.0 (7.25-15.8)	12.4 (7.93-18.2)
2-day	3.17 (2.62-3.82)	3.93 (3.24-4.74)	5.17 (4.24-6.26)	6.20 (5.05-7.55)	7.61 (5.98-9.74)	8.66 (6.65-11.4)	9.79 (7.29-13.4)	11.2 (7.72-15.4)	13.2 (8.75-18.9)	15.0 (9.65-21.9)
3-day	3.40 (2.81-4.08)	4.23 (3.50-5.08)	5.59 (4.60-6.74)	6.71 (5.49-8.15)	8.27 (6.52-10.5)	9.42 (7.25-12.3)	10.7 (7.96-14.5)	12.2 (8.43-16.7)	14.4 (9.57-20.6)	16.4 (10.6-23.8)
4-day	3.62 (3.01-4.34)	4.50 (3.73-5.39)	5.93 (4.90-7.13)	7.11 (5.84-8.61)	8.75 (6.91-11.1)	9.96 (7.69-13.0)	11.3 (8.42-15.3)	12.8 (8.92-17.6)	15.2 (10.1-21.6)	17.3 (11.2-25.0)
7-day	4.29 (3.58-5.11)	5.24 (4.37-6.24)	6.78 (5.63-8.11)	8.06 (6.65-9.70)	9.82 (7.79-12.4)	11.1 (8.62-14.4)	12.5 (9.39-16.8)	14.2 (9.90-19.4)	16.7 (11.1-23.6)	18.8 (12.2-27.0)
10-day	4.96 (4.16-5.88)	5.95 (4.98-7.06)	7.56 (6.30-9.01)	8.90 (7.37-10.7)	10.7 (8.55-13.5)	12.1 (9.41-15.6)	13.6 (10.2-18.1)	15.3 (10.7-20.8)	17.8 (11.8-25.0)	19.8 (12.8-28.4)
20-day	6.98 (5.89-8.22)	8.08 (6.82-9.54)	9.89 (8.30-11.7)	11.4 (9.49-13.6)	13.4 (10.7-16.7)	15.0 (11.7-19.0)	16.6 (12.4-21.8)	18.4 (12.9-24.7)	20.7 (13.9-28.9)	22.6 (14.7-32.3)
30-day	8.67 (7.35-10.2)	9.86 (8.35-11.6)	11.8 (9.95-13.9)	13.4 (11.2-15.9)	15.6 (12.5-19.2)	17.4 (13.5-21.8)	19.1 (14.2-24.7)	20.8 (14.7-27.9)	23.2 (15.6-32.2)	24.9 (16.2-35.4)
45-day	10.8 (9.17-12.6)	12.1 (10.3-14.1)	14.2 (12.0-16.6)	15.9 (13.4-18.8)	18.3 (14.7-22.4)	20.2 (15.8-25.2)	22.0 (16.4-28.3)	23.8 (16.9-31.8)	26.1 (17.6-36.1)	27.8 (18.2-39.3)
60-day	12.5 (10.7-14.6)	13.9 (11.9-16.2)	16.1 (13.7-18.9)	18.0 (15.2-21.2)	20.6 (16.6-25.0)	22.6 (17.6-28.0)	24.5 (18.3-31.3)	26.3 (18.7-35.0)	28.6 (19.4-39.4)	30.2 (19.8-42.6)

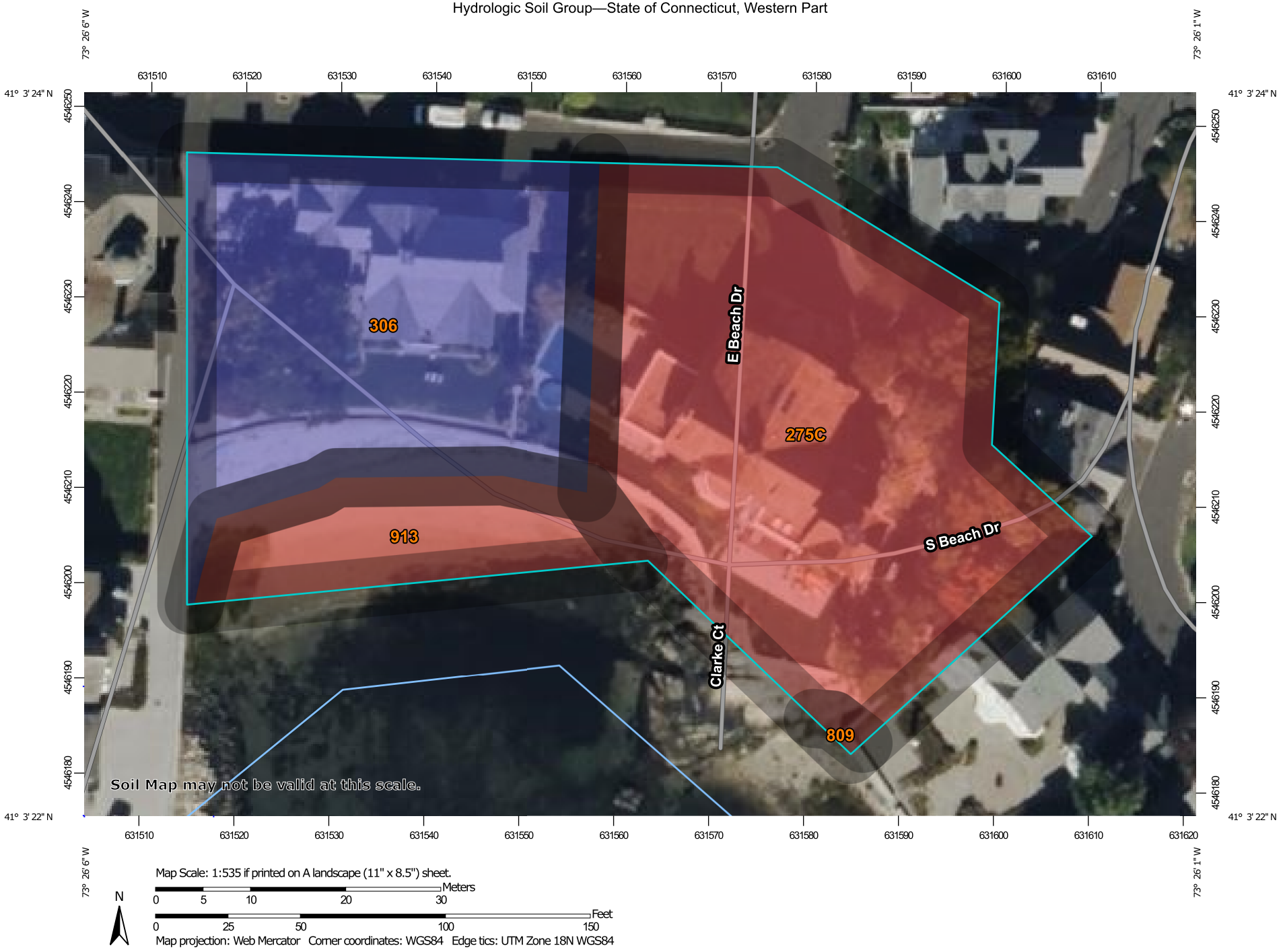
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical


73° 26' 6" W
73° 26' 1" W
631510
631520
631530
631540
631550
631560
631570
631580
631590
631600
631610
631620
41° 3' 24" N
41° 3' 22" N
4546250
4546240
4546230
4546220
4546210
4546200
4546190
4546180
306
913
275C
809
E Beach Dr
S Beach Dr
Clarke Ct
Soil Map may not be valid at this scale.
Map Scale: 1:535 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 5 10 20 30
Feet
0 25 50 100 150
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
275C	Urban land-Chatfield complex, rocky, 3 to 15 percent slopes	D	0.5	51.8%
306	Udorthents-Urban land complex	B	0.4	37.3%
809	Napatree gravelly fine sandy loam, intertidal, very bouldery	D	0.0	0.2%
913	Niantic sand, intertidal	D	0.1	10.7%
Totals for Area of Interest			**1.0**	**100.0%**

Appendix 5

FEMA Flood Insurance Map

National Flood Hazard Layer FIRMette

FEMA

73°26'24"W 41°3'38"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

73°25'47"W 41°3'11"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/4/2024 at 2:29 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix 6

Draft Stormwater Maintenance Plan

STORMWATER OPERATIONS AND MAINTENANCE PLAN

38 South Beach Drive
March 11, 2025

The purpose of this Operations and Maintenance plan is to ensure that the drainage facilities proposed on site at 38 South Beach Drive (the "Property") shall be maintained in operational condition. While some normal wear is expected over time, the facilities must be properly maintained in order to function as designed. Please refer to the Site Utility Plan for the location of proposed drainage facilities.

38 SBD LLC and their successors or assigns agree to maintain the drainage facilities in a functioning condition by following the maintenance plan described below.

Storm Drainage Maintenance and Inspection Requirements: The storm drainage system shall be inspected on a semi-annual basis for the first year to ensure that the system is functioning properly. If these inspections show that debris and sediment have accumulated, then more frequent inspections will be scheduled. Inspections should be scheduled following major storm events. If after one year there is little sediment accumulation, then inspections shall be performed on an annual basis.

Area Drains & Drainage Inlets:

- Area drains and drainage inlets shall be completely cleaned of accumulated debris and sediments at the completion of construction.
- For the first year, area drains and drainage inlets shall be inspected on a quarterly basis.
- Any accumulated debris within the catch basins/inlets shall be removed and any repairs as required.
- From the second year onward, visual inspections shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
- Accumulated debris within the area drains/inlets shall be removed and repairs made as required.
- Accumulated sediments shall be removed at which time they are within 12 inches of the invert of the outlet pipe.
- Any additional maintenance required per the manufacturer's specifications shall also be completed.

Storm Drainage Piping: Pipes are located beneath the surface and are used for piping stormwater out of the site.

- All piping shall be completely cleaned of debris and accumulated sediment at the completion of constriction.
- Video inspection of the storm drainage piping shall occur once every 10 years, unless the system performance indicates an issue.
- Any additional maintenance required per the manufacturer's specifications shall also be completed.

DRAFT

Gravel Edging: Gravel is located at the perimeter of the asphalt driveway and is used for stormwater storage for driveway runoff.

- Gravel shall be visually inspected and leaf debris removed periodically.
- Snow melt material shall be avoided if possible, to reduce risk of clogging within the gravel.
- Replace sections of gravel should they become clogged from sediment or debris.

Roof Gutters:

- Remove accumulated debris and inspect for damage. Any damage should be repaired as required.

Disposal of Debris and Sediment: All debris and sediment removed from the storm water structures shall be disposed of legally. There shall be no dumping of silt or debris into or in proximity to any inland or tidal wetlands or the abutting river.

Maintenance Arrangements: The names of the person or party responsible for completing routine inspection and maintenance activities, pet waste management, and proper management of de-icing chemicals and snow shall be filed with the Norwalk Department of Public Works annually.

DRAFT

Declaration: The Owner(s) listed below agrees to the following statements. The statements are intended to ensure that the owner agrees to install and maintain stormwater management practices on the subject property in accordance with approved plans and conditions, and to further ensure that the management practices serve the intended function in perpetuity.

1. The Owner(s) shall be solely responsible for the inspection, maintenance, and repair of the postconstruction storm water management system identified in the above sections.

2. The Owner(s) agrees in the event that the Property is sold, transferred, or leased to provide information to the new owner, operator, or lessee regarding proper inspection, maintenance and repair of the storm water management practice(s). The information shall accompany the first deed transfer and include this "Drainage Facilities Operations and Maintenance Plan" and "Operations & Maintenance Exhibit A". The transfer of this information shall also be required with any subsequent sale, transfer or lease of the Property.

3. The City of Norwalk or its designee is authorized to access the property as necessary to conduct inspections of the storm water management practices to ascertain compliance with the intent of this Operations and Maintenance Plan. Upon written notification by the City of Norwalk or their designee of required maintenance or repairs, the Owner(s) shall complete the specified maintenance or repairs within a reasonable time frame determined by the City of Norwalk. The Owner(s) shall be liable for the failure to undertake any maintenance or repairs so that the public health, safety, general welfare or the environment shall not be endangered.

By: _____ _____
[Owner(s)] [Date]

By: _____ _____
[Owner(s)] [Date]

DRAFT

CITY OF NORWALK
Planning & Zoning Commission
Norwalk City Hall, Room 129
125 East Avenue,
Norwalk, CT 06856-5125

MEMORANDUM July 9th, 2025

TO: Planning and Zoning Commission – Galen Wells, Chair

FROM: Amelia Williams, Land Use Planner

SUBJECT: #2025 - 45 CAM – 38SBD, LLC – 38 South Beach Drive – Raise an existing single family residence to be FEMA flood compliant and construct minor additions.

District: 6 **Block:** 36 **Lot:** 64 **Zone:** CD-1S **Flood Zone:** VE (EL.15) and AE (EL.15)

ZONING HISTORY:
The .26-acre property currently consists of an existing non-conforming two and a half story single-family residence with an integral and a detached garage. Given the numerous non-conformities on the property, the applicant has already gone to the ZBA to obtain the necessary variances for the project. There is an existing seawall along the Southern property line that separates the property from a beach. No stormwater management system currently exists on site. Almost half of the property is within the Limit of Moderate Wave Action (LiMWA) and a high velocity flood zone.

PROPOSED USE/STRUCTURE:
The applicant is proposing to raise the existing residence and reconfigure the locations of accessory structures, including the detached garage and spa. There will be minor additions to the house, and it will be compliant with VE flood zone standards; the house will be built on piers with breakaway panels and the detached garage will be flood vented (it is entirely within the AE flood zone). Building and impervious surface coverage are non-conforming and proposed to decrease by seven (7) and seventy-six (76) square feet, respectively. The applicant has obtained sign-off from the Department of Public Works. The existing walkways, driveway, and covered porch are proposed to remain with minor changes.

STAFF COMMENTS:
- The applicant sufficiently addressed Staff comments that pertained to determining flood compliance.
- The Harbor Management Commission found this scope of work consistent with the Harbor Management Plan.
- Staff do not think this proposal will cause any adverse impacts to coastal resources and find it consistent with the goals and policies of the Connecticut Coastal Management act.

ZONING BOARD OF APPEALS: A variance application (#V25-0417-02) was approved in May of this year. The ZBA granted variances (front yard setback 30’ required, 3.6’ existing/proposed; Building Height 32’ required, 34.18’; Total Height 40’ required, 40.18’

proposed) to elevate and alter an existing SFR, relocate and reconstruct an existing detached garage (principal front setback 50' required, 7.9' proposed; secondary front setback 20' required, .6' proposed), vary parking in front setback (30' required, 7.9' proposed) and add a spa (50' required, 44' proposed).

SIGN-OFFS: Department approvals/comments have been received from the Fire Marshal, SNEW, TMP, Department of Public Works, and Harbor Management Commission.

VIOLATIONS: There are no zoning violations currently on the property.

The following resolutions are offered:

DRAFT RESOLUTION TO APPROVE

BE IT RESOLVED that application #2025 - 45 CAM – 38SBD, LLC – 38 South Beach Drive – Raise an existing single family residence to be FEMA flood compliant and construct minor additions be **APPROVED** subject to the following conditions:

1. That the building and site be developed in accordance with the following plans:
    a. Per site plans dated 3/11/2025 and revised 5/27/2025 prepared by Redniss & Mead, Stamford, CT
    b. Per architectural plans dated 3/11/2025 and revised 6/10/2025 prepared by Oliver Cope • Architect, New York, NY
    c. Per landscape plans dated 3/11/2025 and revised 6/10/2025 prepared by Hollander Design, New York, NY
    d. Per zoning location survey dated 5/27/2025 and revised 5/29/2025 prepared by James A Dennison, L.S., Stratford, CT
2. That all department sign-offs are obtained prior to issuance of any Zoning Permit; and
3. That all required soil sedimentation and erosion controls are in place prior to the start of any construction; and
4. That any additional needed soil sedimentation and erosion controls be installed at the direction of Staff; and
5. That any changes to the plans be reviewed by Staff prior to implementation; and
6. That any utilities comply with setbacks and flood regulations; and
7. That flood certifications be submitted prior to issuance of a zoning permit and prior to obtaining a Certificate of Zoning Compliance (COZC), prepared by a CT licensed engineer or architect; and

8. That flood compliance be achieved and demonstrated with a FEMA elevation certificate prior to COZC; and

9. That all plantings be implemented prior to COZC; and

10. That all plantings be maintained, and any dead plantings must be replaced in accordance with the approved planting plan; and

11. That no changes to the seawall are permitted without City review and DEEP approval; and

12. Nothing in this permit shall obviate the requirements for the applicant to obtain any other assents, permits or licenses required by law or regulation by the City of Norwalk, State of Connecticut, or the Government of the United States, including any approval required by the Connecticut Department of Environmental Protection and U.S. Army Corps of Engineers- obtaining such assents, permits or licenses is the sole responsibility of the applicant; and

BE IT FURTHER RESOLVED that this proposal complies with all applicable coastal resource and use policies and with all applicable sections of the Zoning Regulations for the City of Norwalk; and

BE IT FURTHER RESOLVED that this the preceding conditions and modifications of this application are integral to the Commission's approval because, if not for those conditions and modifications, the Commission would have denied this application.

BE IT FURTHER RESOLVED that the effective date of this approval shall be July 25th, 2025.

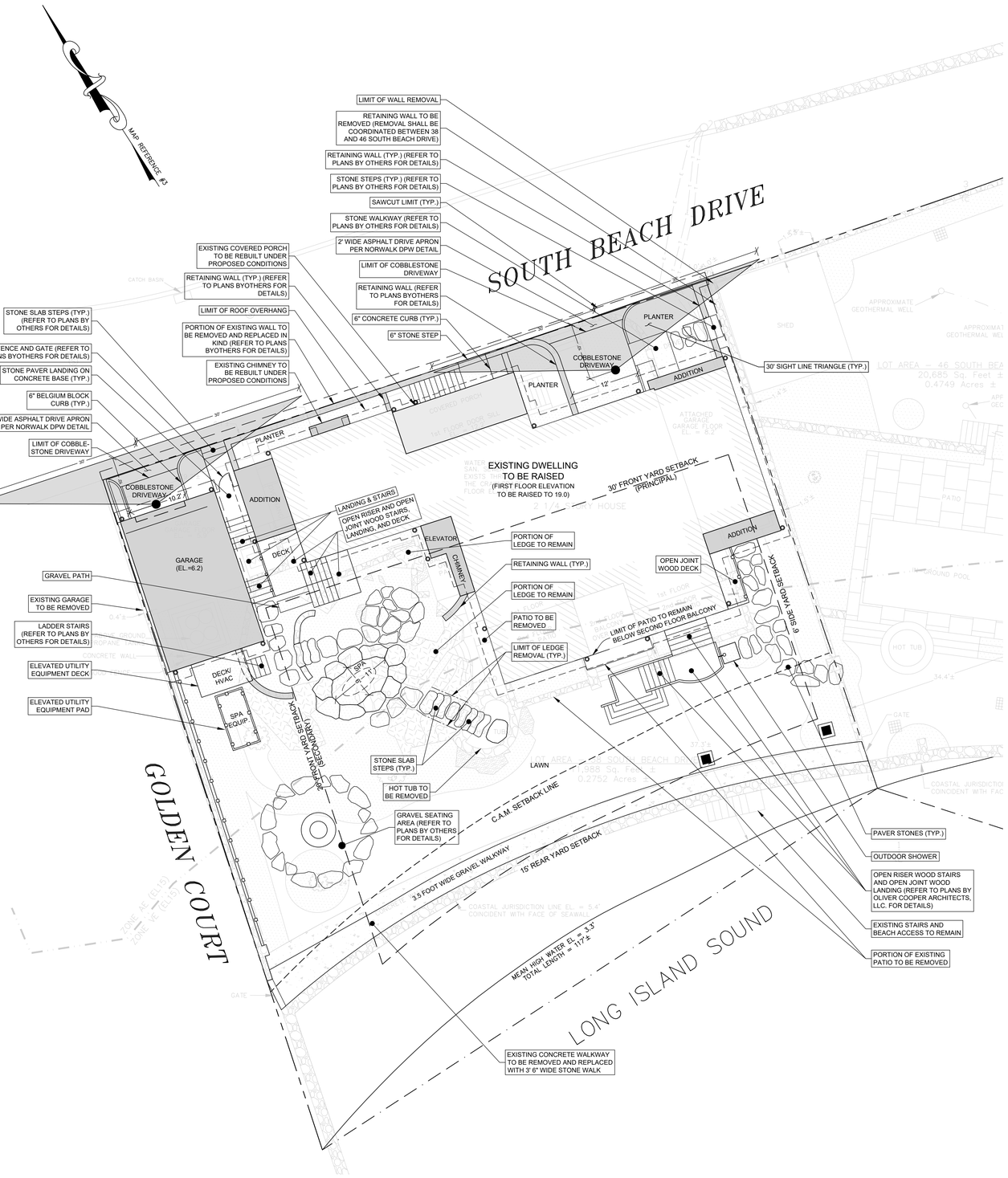
You must obtain a zoning approval and a building permit prior to any work on the site.

DRAFT RESOLUTION TO DENY

BE IT RESOLVED that application #2025 - 45 CAM – 38SBD, LLC – 38 South Beach Drive – Raise an existing single family residence to be FEMA flood compliant and construct minor additions as shown on site plans dated 3/11/2025 and revised 5/27/2025 prepared by Redniss & Mead, Stamford, CT, architectural plans dated 3/11/2025 and revised 6/10/2025 prepared by Oliver Cope • Architect, New York, NY, landscape plans dated 3/11/2025 and revised 6/10/2025 prepared by Hollander Design, New York, NY, and zoning location survey dated 5/27/2025 and revised 5/29/2025 prepared by James A Dennison, L.S., Stratford, CT, be **DENIED** subject to the following reasons:

1.
2.

BE IT FURTHER RESOLVED that the effective date of this denial shall be July 25th, 2025.



GENERAL NOTES:

1. These drawings are intended only to depict the design of site grading, drainage, sanitary, utilities, and sediment & erosion controls. These drawings are for approval purposes only. No construction may begin prior to obtaining all necessary permits and approvals.
2. All survey data, boundary lines, topography, building locations and area calculations are from a survey prepared by James Dennison L.S. entitled Topographic Survey dated January 15, 2025. Elevations depicted or labeled are based on NAVD-88.
3. No Wetlands are dipicted hereon.
4. Refer to drawings by Hollander Design Landscape Architect for information and design of the proposed landscaping. These drawings depict site plans corresponding to the latest landscape architect plans received from Hollander Design Landscape Architect received on 1/30/2025.
5. Refer to plans prepared by Architect for information and design of the proposed buildings. These drawings depict site plans corresponding to the latest architectural plans received from Oliver Cope Architect, LLC received on 1/30/2025.
6. Property lies in a CD-1S zone.
7. The property lies within the FEMA AE-15 and VE-15 Flood Zones (NAVD-88). Flood zones as shown on the Flood Insurance Rate Map Community No. C090012 Panel 0541 Suffix G, effective date July 8, 2013.
8. All construction shall comply with the City of Norwalk requirements, the State of Connecticut Basic Building Code, Americans with Disabilities Act (ADA), the Connecticut Guidelines for Soil and Erosion and Sediment Control, OSHA, CT DOT Form 819 (latest edition), and FEMA Flood Regulations.
9. All development activities to be undertaken within the street right-of-way and other public lands shall comply fully with City standards unless approved deviation is specifically set forth as part of this application. All work within the State right-of-way will comply with the CT DOT Form 819 with the latest special Provisions and Typical State Standard Details.
10. Contractor shall supply complete shop drawings including manufacturer's product data sheets to the Site Engineer, for all construction material used in conjunction with these drawings. Contractor shall allow a 5 day review period, prior to fabrication and installation.
11. Information on existing utilities has been compiled from various sources including utility company records, municipal record maps and field survey and is not guaranteed to be correct or complete. The contractor is solely responsible for determining actual locations and elevations of all utilities including underground services.
12. The property is served by public water and sewers.
13. Prior to any excavation the Contractor and/or Applicant, in accordance with Public Act 77-350, shall be required to contact "Call Before You Dig" at 1-800-922-4455 for mark-out of underground utilities. Dig test pit(s) at utility crossing(s) to check actual clearances with new utilities prior to construction. If conflicts are found the contractor shall notify the engineer, at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid the conflict. Such relocation shall be done with knowledge of and in accordance with the owner of the utility.
14. It shall be the responsibility of the contractor to provide any excavation safeguards, necessary barricades, flagmen, etc., for traffic control and site safety. All work shall be done in accordance with OSHA requirements. The contractor shall be responsible for compliance with OSHA requirements.
15. When preparing the existing site for the proposed development, all materials removed shall be disposed of in conformance with all governing agencies.
16. Remove stumps and brush from site, or chip and use during landscaping. Do not bury stumps on site.
17. Building elevations are subject to change and shall be finalized prior to building permit.
18. Special attention of the contractor is called to the required type and compaction of pipe bedding and backfill specified on these drawings. These requirements will be strictly enforced.
19. Prior to issuance of a Certificate of Occupancy, the Engineering Bureau may require a certification letter stating that the development was constructed in accordance to the approved plans, and an "as-built" drawing shall be submitted
20. The Contractor is responsible for coordinating with a licensed surveyor to prepare an "as-built" plan. The Contractor is responsible to coordinate with a site engineer 48 hours prior to any inspections.
21. The Engineering Division of the Department of Public Works and the inspecting engineer shall be notified by the contractor three (3) days prior to the commencement of each phase of construction.
22. The work shall be done in conformance with the contract documents/plans unless changes have been approved in writing by the design engineer prior to the work being done.

PAVEMENT AND PAVEMENT MARKINGS:

23. Areas of new asphalt shall follow the details on Sheet SE-5.
24. Areas of asphalt pavement that are disturbed by the construction of this project shall be replaced in accordance with the asphalt pavement repair detail. The finished grade of asphalt paving shall blend to existing grade and the edge of the concrete pavement smoothly with no slopes exceeding 4%.
25. Existing features such as but not limited to walks, curbs, and pavement damaged by construction activities shall be repaired at no additional cost to the owner.
26. Bituminous curbs damaged by the project shall be replaced with the new bituminous curbing machine laid Class 3 as described in Sections 8.15 and M.04 of the CT DOT Form 819.
27. Saw cut perimeter of area to be excavated. Saw cut shall be straight and vertical.
28. Contractor shall engage a testing lab who shall verify the base course material by means of a sieve analysis and perform compaction testing of the base and each course of pavement. Site Engineer shall review with the contractor the required testing at the preconstruction meeting. Site Engineer shall approve base course prior to placement of each layer of pavement.
29. The Contractor shall engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from specified requirements.
30. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements as directed by the Site Engineer.
31. Contractor is responsible to place the hot-mix asphalt mix as required in the drawings, details and the applicable Section of the CT DOT FORM 819 (latest edition).
32. Compaction shall be constructed as specified in the CT DOT FORM 819 (latest edition), Section 4.06 specification, the drawings and the details. Testing lab shall verify compaction of each course of pavement as directed by the Site Engineer.
33. After the asphalt pavement has cured sufficiently to support the weight of a water truck without marking the newly installed pavement, it shall be water tested for low spots, areas of little or no drainage, etc. A water truck shall spray a sufficient amount of water on all pavement sections to observe the drainage of water. There shall be positive drainage on all areas of the pavement. Any visible low spots where significant water (greater than or equal to 3/16" in depth) is left standing, shall be clearly marked for the Contractor to repair prior to final acceptance. These areas must be sawcut and removed down to the base course prior to replacement with asphalt mixture as per the original approved design. The base course and edges of sawcut asphalt must be treated with tack oil prior to new section of asphalt being installed. The Owner's Representative or inspecting A/E shall be notified 48 hours in advance of water test so that he may be present during the test.
34. The inspecting engineer and contractor will review the testing requirements at the preconstruction meeting. At this meeting, samples to be tested and compaction testing protocol will be discussed. Testing and approval of the subgrade, base course and asphalt layers prior to the installation of the next layer to determine if the work complies or deviates from the specified requirements. Prior to installation of the base course, contractor shall contact inspecting engineer to determine the suitability of the subgrade material, base course and asphalt. Additional excavation or base course may be required.
35. Finished paving shall be free of ``bird baths" and be smooth at the slopes specified on the plans.
36. Finished grade shall be within 1/2 inch of that noted on the drawings.
37. The pavement shall be protected from vehicular traffic of any kind with the use of barricades, etc. for a minimum period of 24 hours after final rolling. Maintain and protect asphalt surface from scrapes, sears, spills, hydraulic leaks, and any other construction damage for the remainder of construction until Owner's Representative acceptance. Contractor is responsible for clearing, repairing, seal coating, patching, and re-striping as necessary to obtain Owner's Representative's final approval/acceptance.
38. Thicknesses of all layers shown are after compaction. Compact all layers to 95% per ASTM D 1557 (Modified Proctor Method).

No.	Date	Revision
3	06/25/2025	REVISED PER DPW COMMENTS
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

SITE DEVELOPMENT PLAN
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: 1"=10' (0, 10, 20)

DRAWN BY: MJL CHECKED BY: VJH

STATE OF CONNECTICUT · VINCENT J. HYNES · No. 0032100 · REGISTERED PROFESSIONAL ENGINEER

VINCENT J. HYNES CT P.E. #0032100

June 25, 2025
DATE

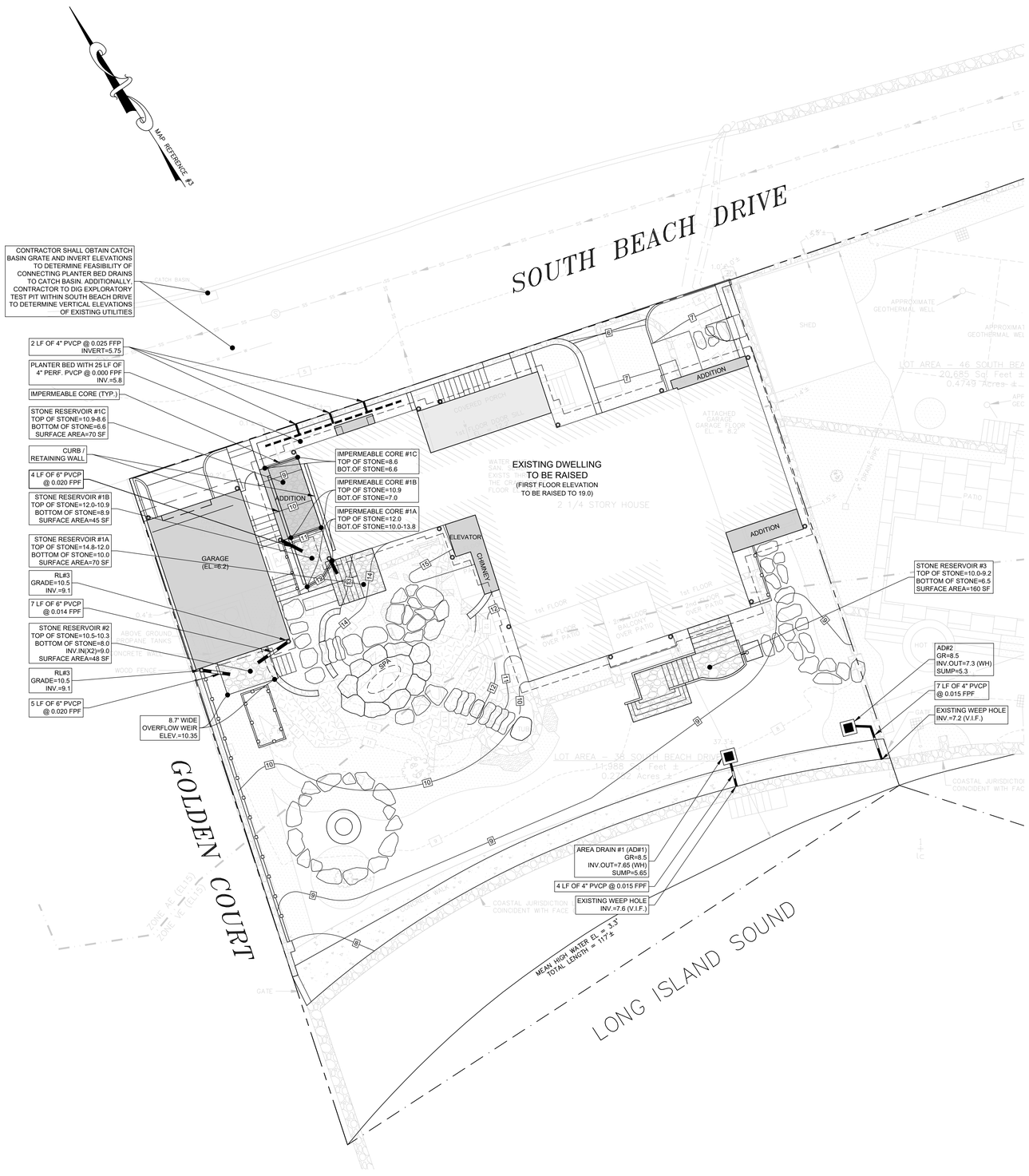
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaratios hereon null & void.

SHEET No:

SE-1

Comm. No.: 10993

6/24/2025 12:09 PM P:\Jobfiles2\10000\10900\10993\Dwg\10993 - 38 SB Master 1.dwg



STORM AND SANITARY SEWER SYSTEMS:

1. All pipe shall be installed straight and at the vertical and horizontal alignment shown. Pipes shall have a uniform slope as specified.
2. Minimum cover on all pipes shall be two feet (2') unless otherwise noted.
3. All storm pipe specified as Poly Vinyl Chloride Pipe (PVCP) shall be SDR 35 with rubber gasketed joints and meet the requirements of ASTM D3034 and D3212.
4. Dig test pits at utility and sewer crossings to check actual clearances with these facilities prior to construction. Dig test pits at the connection points to existing sanitary sewer pipes to confirm that the elevation of the proposed gravity sewer is appropriate. If conflicts are found the contractor shall notify the engineer at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid conflict.
5. All area drains shall have a two foot (2') sump with bell traps or 90° PVC elbows.
6. All existing and proposed catch basins, manhole rims and utility facilities shall be raised or lowered to be flush with finished grade.
7. When connecting new pipes to existing structures such as manholes and catch basins, the structure shall be completely cleaned out. The hole made in the structure shall be made as small as possible. The structure shall be repaired to match its original type of construction. The joint between the structure and the pipe shall be made watertight by filling the joint with mortar.
8. Flow in existing sewer system must not be interrupted. Any temporary routing of this sewer flow must be done in conformance with all applicable rules and regulations.
9. Under no circumstances shall trench water be allowed to drain off through sanitary sewer lines.
10. All crushed stone shall be Gradation No. 4 as per CT DOT Form 819, Article M.01.02. Stone shall consist of sound, tough, durable particles free from soft, thin, elongated, laminated, friable, micaceous, or disintegrated pieces of mud, dirt or other deleterious material.
11. The storm and sanitary sewer shall be encased in concrete for a distance of 10 feet on either side of any intersection between the sanitary sewer and storm sewer. Where concrete encasement is required, temporarily support the pipes in place. Use sufficient concrete to encase piping not less than 6 inches at all points. The encasement shall be adequately supported with a stone base and shall be keyed into the foundation wall to prevent damage from settlement.
12. At the end of construction, after the site has be fully stabilized, all new and previously existing storm sewer facilities including, but not limited to, catch basins, area drains, manholes, junction boxes, flow control structures, pipes, oil grit separators, permeable pavers and porous pavement shall be fully cleaned with equipment designed for that purpose to the satisfaction of the inspecting engineer.

UTILITIES:

13. Utilities shown on these plans are "not guaranteed" to be complete or correct. Prior to any site activities, the contractor shall be responsible for verification of clearances of proposed utilities from existing utilities. This verification shall include physical observation by means of test pits of the locations of affected utilities. The contractor shall notify the site engineer immediately of any conflict.
14. Easements may be required in favor of the various utility companies.
15. Electric, telephone, cable, gas, and water services shall be installed in conformance to the requirements of the governing utility companies.
16. It is the contractor's responsibility to install utilities as shown on this sheet. The contractor shall work with the utility companies and site engineer to insure the installation is in conformance to the requirements of the governing utility company. All conduits shall be concrete encased as may be required by the governing utility company. Proposed electric, telephone, cable, gas and water services are shown for schematic purposes only and are subject to change pending utility company review. These utilities shall be designed by others and installed in conformance to the requirements of the governing utility companies.
17. All proposed utility facilities shall be raised or lowered to be flush with finished grade.
18. Where necessary, existing utilities shall be reinstalled to meet all minimum coverage requirements.
19. Utility connections at building face shall be coordinated with the building contractors.
20. In general, each utility shall have a minimum clearance of three feet to any other underground utility.
21. Any and all utilities abandoned shall be capped or removed in accordance with utility companies' requirements.
22. The electric generator shall be located to meet all applicable Zoning setbacks.
23. All utilities shall be installed per FEMA regulations for flood protection. All utilities (i.e., HVAC condensers, electric transformers, etc.) must be set one foot above the Base Flood Elevation (BFE) or waterproofed.
24. Electric, telephone, cable, gas and water services shall be compliant with the City of[Norwalk Zoning Regulations Flood Prone Area Regulations Section [SECTION ID] and shall be installed in conformance to the requirements of the governing utility companies. Gas and electric meters shall be located inside the structures on foot above the BFE.
25. Detectable Tape shall be used to mark piping listed below. The identification tape shall be buried at least 6-inches to 10-inches below final grade but no closer than 12-inches to the buried utility piping or service.

Electric	Red	Caution Electric Line Buried Below
Water Systems	Blue	Caution Water Line Buried Below
System	Green	Caution Sewer Line Buried Below

26. Underground-Type Plastic Line Marker: Manufacturer's standard permanent, bright-colored detectable tape, continuous-printed plastic tape, intended for direct-burial service; not less than 6" wide X 4 mils thick.

No.	Date	Revision
3	06/25/2025	REVISED PER DPW COMMENTS
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

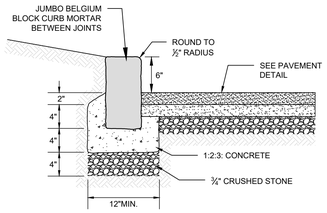
DRAINAGE PLAN
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

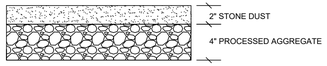
SCALE: 1"=10' (0 10 20)
DRAWN BY: MJ CHECKED BY: VJH
STATE OF CONNECTICUT VINCENT J. HYMES REG. No. 0032100 LICENSED PROFESSIONAL ENGINEER
REG. No. 0032100
VINCENT J. HYMES REG. P.E. #32100
June 25, 2025
DATE
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-3
Comm. No.: 10993

6/25/2025 1:27 PM H:\Jobfiles2\10000\10900\10993\Dwg\10993 - SB Master 1.dwg



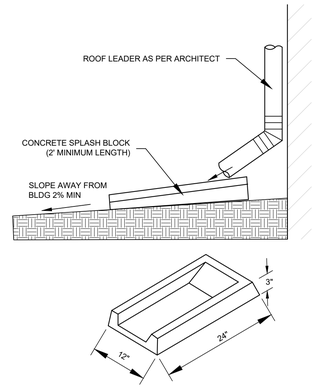
JUMBO BELGIUM BLOCK CURB
N.T.S.



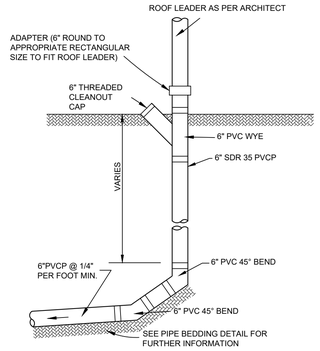
NOTES:

1. Processed aggregate shall conform to Section M.05.01 of CT DOT Form 819.
2. It should be noted that although the surface material of the gravel path is somewhat pervious, the drainage calculations have assumed a fully impervious surface.

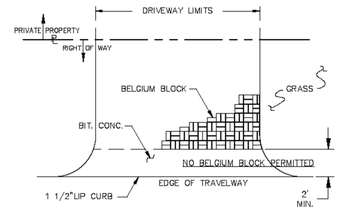
GRAVEL PATH DETAIL
N.T.S.



ROOF LEADER SPLASH PAD
N.T.S.



ROOF LEADER CLEANOUT DETAIL
N.T.S.

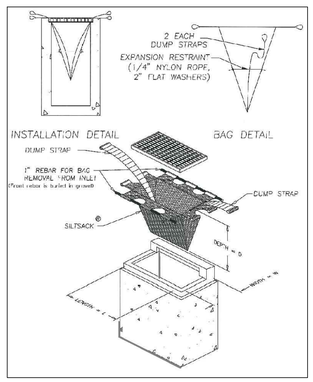


PLAN
N.T.S.

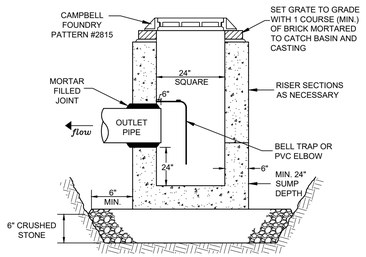
BIT. CONC. DRIVE APRON W/ BELGIUM BLOCK

NO SIDEWALK OR CURB

ASPHALT DRIVE APRON W/ BELGIUM BLOCK DETAIL
N.T.S.



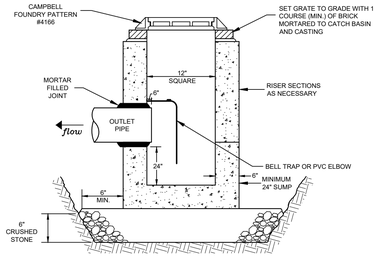
INLET SEDIMENT CONTROL DEVICE
(SILT SACK)
N.T.S.



NOTES:

1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. AREA DRAIN SHALL CONFORM TO ASTM C478.
4. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT D.O.T. FORM 819, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

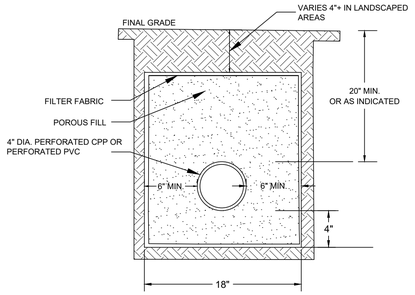
24" AREA DRAIN
N.T.S.



NOTES:

1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. AREA DRAIN SHALL CONFORM TO ASTM C478.
4. PLACE AREA DRAIN ON A 6" LAYER OF CRUSHED STONE. ALL CRUSHED STONE SHALL BE GRADATION 3A AS PER NYS DOT STANDARD SPECIFICATION SECTION 703. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

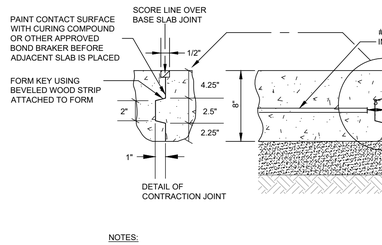
12" AREA DRAIN
N.T.S.



NOTES:

1. ON SITE PLAN, OR AS REQUIRED MODIFICATION DURING CONSTRUCTION.
2. PIPE SHALL BE CORRUGATED POLYETHYLENE MANUFACT. IN ACCORDANCE WITH ASTM F 405 & INSTALLED PER ASTM F 449. PIPE IN CURTAIN DRAIN TO OUTLET IS SOLID.
3. POROUS FILL SHALL BE CRUSHED STONE. CRUSHED STONE SHALL BE GRADATION NO. 67 PER CT DOT FORM 819, ARTICLE M.01.01.
4. FILTER FABRIC SHALL BE MIRAFI 140N OR EQUIVALENT.

UNDER DRAIN
N.T.S.



NOTES:

1. CONCRETE TO BE CLASS 'A' CONFORMING TO CONNDOT FORM 819 SECTION M.03.02.
2. GRAVEL BASE SHALL CONFORM TO GRADATION A AS DEFINED IN CONNDOT FORM 818 SECTION M. 02.01.
3. INSTALL AS PER THE AMERICAN CONCRETE INSTITUTE CODE.
4. THE AREA SHALL BE COMPACTED TO AT LEAST 95% OF THE DRY DENSITY ACHIEVED BY AASHTO T180, METHOD D.
5. CONTRACTION JOINT TO BE PLACED SO REMAINING SECTIONS OF CONCRETE ARE GENERALLY SQUARE OR AT LEAST EVERY 10'.
6. EDGES OF CONCRETE TO BE TOOLED TO A 1/2" RADIUS.
7. SIZE OF PAD TO BE VERIFIED PRIOR TO CONSTRUCTION.

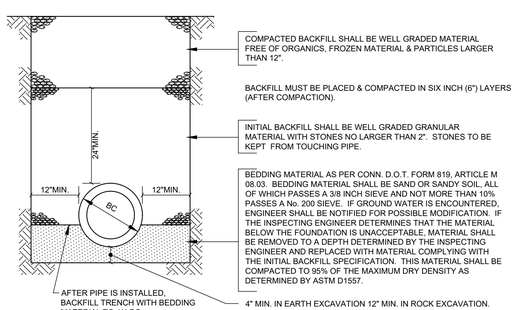
CONCRETE PAD DETAIL
N.T.S.

WATER STOP: 10' UPSTREAM OF STRUCTURES AND WHERE SHOWN, FOUNDATION MATERIAL, BEDDING, HAUNCHING, INITIAL BACKFILL, AND THE BOTTOM FOOT OF GENERAL BACKFILL TO BE REPLACED WITH SM, SC, OR ML SOIL AS PER UNIFIED SOIL CLASSIFICATION SYSTEM" WITH MAXIMUM PARTICLE SIZE OF 1-1/2", FOR 3 LINEAR FEET OF TRENCH. WATER STOP TO BE KEYED INTO TRENCH BOTTOM AND WALLS A MINIMUM OF ONE FOOT. NO STONES LARGER THAN 6" SHALL BE WITHIN 12" OF THE PIPE.

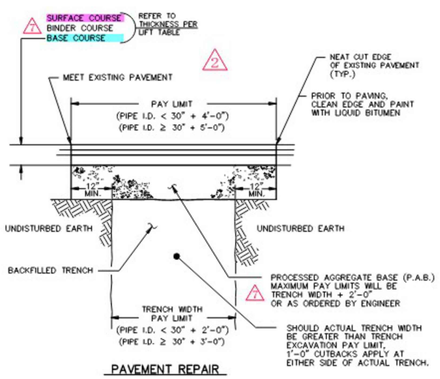
ALL FOUNDATION, INITIAL BACKFILL & BACKFILL MATERIAL TO BE APPROVED BY THE INSPECTING ENGINEER.

ANY DEVIATION FROM THESE METHODS & MATERIALS MUST BE APPROVED IN WRITING BY THE INSPECTING ENGINEER.

ALL MATERIAL TO BE COMPACTED TO 95% OF THE MAX. DRY DENSITY AS DETERMINED BY ASTM D1557, EXCEPT COMPACTED BACKFILL" NOT UNDER PAVEMENT WHICH SHALL BE COMPACTED TO A DENSITY AT LEAST EQUAL TO THAT OF THE ADJACENT UNDISTURBED MATERIAL.



HDPE PIPE TRENCH BEDDING DETAIL
(48" DIA. & UNDER)
N.T.S.

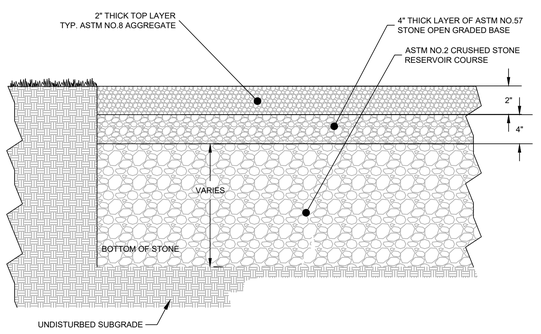


PAVEMENT REPAIR

ASPHALT PAVEMENT REPAIR DETAIL
N.T.S.

STONE RESERVOIR GENERAL NOTES:

1. The ASTM No. 2 stone subbase material should be spread in minimum 6 in. lifts. Compaction is done with a 10 ton steel vibratory roller or a 13,500 lbf plate compactor. Greater lift thicknesses are normal (i.e. 12 in.) when using either of these compactors. When using a roller, the first two passes are in vibratory mode and the last two are in static mode. Compaction is completed when no visible movement can be seen in the base when rolled by the compactor. Plate compactors with compaction indicators should be used to determine when compaction is completed. Stones will compact more completely if moistened during compaction. Aggregates shall not be crushed by the compactor.
2. The ASTM No. 57 base layer is spread and compacted as one 4 in. lift. The stone material should be moist during compaction for better consolidation. Like the subbase aggregate, the initial passes with the roller can be with vibration to consolidate the base material. The final passes should be without vibration. A 13,500 lbf plate compactor also can be used to compact the ASTM No. 57 base layer.
3. When subbase and base lifts are compacted the surface should then be topped with 2 in. thick layer of moist ASTM No. 8 crushed stone bedding layer. This layer is screened and leveled over the ASTM No. 57 base. Metal rails are placed on the compacted ASTM No. 57 layer and are used to guide screeding elevations. Various sizes of screeding equipment can be used ranging from hand tools, bucket screeds powered manually or by machine, or a modified asphalt spread that uses a laser guidance system to maintain elevations. The surface tolerance of the screeded ASTM No. 8 bedding material should be ± 3/8 in. over 10 ft. Construction equipment and foot traffic should be kept off the screeded layer.



STONE RESERVOIR DETAIL
N.T.S.

No.	Date	Revision
3	06/25/2025	REVISED PER DPW COMMENTS
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: N.T.S.

DRAWN BY: MJL CHECKED BY: VJH

STATE OF CONNECTICUT — VINCENT J. HYNES — No. 0032100 — REGISTERED LAND SURVEYOR

DATE: June 25, 2025

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No: SE-5

Comm. No.: 10993

6/24/2025 12:08 PM H:\Jobfiles\10000\10900\10993\Dwg\10993 - 38 SB Master 1.dwg

MEMORANDUM **June 25, 2025**

TO: Christine Cardascia, P.E., Assistant Engineer - DPW
FROM: Vincent J. Hynes, P.E., Redniss & Mead
CC: Elizabeth A.B. Suchy – Carmody Torrance Sandak & Hennessey, LLP
RE: **38 South Beach Drive: District 6, Block 36, Lot 64**
Proposed Single-Family Residence Improvements
DPW Plan Review Comments

This memorandum is in response to comments received via your memo sent on June 20, 2025 regarding the recent submission of the plans for 38 South Beach Drive. Below are responses to each of the comments received.

Review comments are indicated in black italics.
Response items are indicated in blue, standard type.

1 – Water should not be directly discharged to the City right-of-way. The applicant shall consider alternatives to the proposed weep hole that would otherwise drain onto the ROW.

As discussed with staff, the proposed wall is being replaced in kind along the property frontage. The existing series of walls has a series of weep holes either at the roadway level or slightly elevated to allow for the discharge of runoff that would otherwise be trapped between the existing residence and the existing wall, including runoff from both roof and landscaped areas. We are seeking to allow a similar condition while minimizing the amount of weep holes.

With the above stated, if a piped connection to the City system in South Beach Drive is amenable, we can revise the plans accordingly to remove the weep hole condition. Our recommendation is to, prior to a building permit request, obtain the nearby catch basin grate and invert elevation to confirm that a piped connection is feasible. An exploratory test pit shall then be excavated within South Beach Drive to confirm vertical elevations of existing utility infrastructure. Callouts to this affect are included on revised site plan sheet SE-3.

2 – A 2' asphalt strip from the edge of road before the cobblestone driveway must be installed per the City Standards.

Please refer to revised site plan sheet SE-1 which indicates a modification to the limits of the cobblestone driveway and introduces a 2' asphalt apron strip. The City of Norwalk standard detail for asphalt driveway aprons with belgium block is provided on site plan sheet SE-5.

3 – Please clarify the roof leader layout and clearly show the discharge direction on the plans. It must be confirmed that runoff is not being redirected to areas that did not receive drainage under existing conditions.

The roof leader layout will remain as is under existing conditions and drainage patterns will remain the same. The exception to this is where roof leaders will be reconnected to proposed stone reservoirs for water quality improvements on-site; the overflow of the stone reservoirs will discharge within the same drainage basins as the existing conditions.

4 – *Please confirm if any exterior utility work is proposed as part of the development. Should utility work be proposed, the plan shall be revised to include all existing and proposed utility information (i.e. pipe size, material, inverts, etc.) and proposed connection locations and abandonments along with the corresponding details.*

It is anticipated that electrical and gas services will require upgrades as part of this project. A project MEP has been consulted and the existing and proposed services will be indicated on the plan ahead of the request for a building permit. The routing of the services will follow the existing conditions.

5 – The plan shall be revised to include the driveway sight line distance to ensure no obstruction in excess of two (2) feet high are within the sight line triangle, in conformance with the City's Roadway Standards.

Please refer to revised site plan sheet SE-1 which indicates the standard 30' sight triangle at each driveway location. It is noted that the sight triangle for the eastern driveway location includes portions of walls in excess of 2 feet high within the triangle but that the condition is the same as existing conditions. An improvement to the eastern driveway location includes widening the driveway. Although the sight triangle for the western driveway includes portions of walls in excess of 2 feet high within the triangle, it is an improvement over existing conditions as the existing garage is located at the property line, providing no sight triangle.

6 – Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.

a. *City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.*

This project does not include the removal of any trees within the City's right-of-way.

CITY OF NORWALK
Transportation Mobility & Parking
P: 203-854-7335
Norwalk City Hall
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

Sent via email to: esuchy@carmodylaw.com

To: Elizabeth A.B. Suchy, Esq. – Carmody Torrance Sandak & Hennessey LLP
From: Benjamin Yeung, P.E. – Senior Traffic Engineer, TMP
Date: June 20, 2025
Subject: 38 South Beach Drive – Single-Family Home Renovations – TMP Signoff

---

The City of Norwalk Transportation, Mobility, and Parking (TMP) Department has completed a substantive review of the following documents related to the Coastal Area Management Application for the proposed site improvements at 38 South Beach Drive:

- "Site Development Plans depicting 38 South Beach Drive, Norwalk, CT", prepared by Redniss & Mead Inc., revised May 27, 2025;
- "Landscape Permitting Drawings" for 38 South Beach Drive, Norwalk, CT, prepared by Hollander Design Landscape Architects, revised May 27, 2025; and,
- Zoning Location Survey prepared for 38 SBD LLC (38 South Beach Drive, Norwalk, CT)", prepared by James A. Dennison L.S., dated May 27, 2025.

The aforementioned documents are in compliance with the current City Standards in relation to transportation, mobility, and parking. TMP takes no exception to the project moving forward.

This letter signifies final departmental sign-off from TMP. Should you have any questions, please do not hesitate to contact me.

Sincerely,

Benjamin Yeung

Benjamin Yeung, P.E., Senior Traffic Engineer – TMP

Cc: DPW Permits
Jay Habansky – Chief of Economic and Community Development
James Travers, Director – TMP
Garrett Bolella, P.E., PTOE, RSP1, Assistant Director – TMP
Nathan Fankhanel, E.I.T., Junior Engineer – TMP
Vanessa Valadares, P.E., Chief of Department of Public Works
Wilber Giron, P.E., Permit Engineer – Department of Public Works
Christine Cardascia, PE, Assistant Engineer – Department of Public Works
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Land Use Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement
Ralph Kolb, P.E., Sr. Environmental Engineer – WPCA
Christopher Cavaliere, Junior Engineer – WPCA
Alexis Cherichetti, Senior Environmental Officer – Conservation Office
William Mooney, Assistant Director of Health – Health Department
Troy Donohue, Deputy Fire Marshal – Fire Department

W:\Roads\CityRoads\S\SouthBeachDr\DevelopmentReview\38_SBeachDr\Correspondence\20250613_TMPComments\20250620_38SBeachDr_TMP-Signoff.docx

DEPARTMENT OF ENGINEERING

CITY OF NORWALK
Christine Cardascia, P.E.
Assistant Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Office: (203) 854-7873
Permits: (203) 854-4161
www.norwalkct.gov
ccardascia@norwalkct.gov
dpwpermits@norwalkct.gov

June 20, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 38 south Beach Drive (District 06, Block 36, Lot 64)
Proposed Single-Family Residence Improvements (Raising of Existing Building, Additions, etc.)
Department of Engineering's Plan Review Comments

Dear Ms. Suchy:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Site Plan titled "Site Development Plan Depicting 38 South Beach Drive Norwalk, CT Prepared for 38SBD L.L.C.," prepared by Redniess and Mead, Inc., dated 03/27/2025 and last revised 0/27/2025
- Engineering Report titled "38 South Beach Drive Site Engineering Report," prepared by Redniess and Mead, Inc., dated 03/11/2025

The following are the Department of Engineering's review comments highlighting sections that will require revision or additional information prior to our departmental sign-off:

1. Water should not be directly discharged to the City right-of-way. The applicant shall consider alternatives to the proposed weep hole that would otherwise drain onto the ROW.
2. A 2' asphalt strip from the edge of road before the cobblestone driveway must be installed per the City Standards.
3. Please clarify the roof leader layout and clearly show the discharge direction on the plans. It must be confirmed that runoff is not being redirected to areas that did not receive drainage under existing conditions.
4. Please confirm if any exterior utility work is proposed as part of the development. Should utility work be proposed, the plan shall be revised to include all existing and proposed utility information

(i.e. pipe size, material, inverts, etc.) and proposed connection locations and abandonments along with the corresponding details.

5. The plan shall be revised to include the driveway sight line distance to ensure no obstruction in excess of two (2) feet high are within the sight line triangle, in conformance with the City's Roadway Standards.
6. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
    a. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.

Please note this is a preliminary review of the submitted documents. Additional comments may be forthcoming once the requested information is received.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Christine Cardascia

Christine Cardascia, P.E.
Assistant Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Wilber Giron, P.E., Permit Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Mario Pizighelli, P.E., Stormwater Systems Manager – Water Pollution Control Authority
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Tammy Maldonado, Zoning Enforcement Officer – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer/Assistant Director – Conservation and Planning and Zoning

DEPARTMENT OF ENGINEERING

CITY OF NORWALK
Wilber Giron, P.E.
Permit Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Office: (203) 854-7801
Permits: (203) 854-4161
www.norwalkct.gov
wgiron@norwalkct.gov
dpwpermits@norwalkct.gov

July 9, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 38 South Beach Drive (District 06, Block 36, Lot 64)
Proposed Single-Family Residence Improvements (Raising of Existing Building, Additions, etc.)
Department of Engineering's Plan Review Sign-Off

Dear Ms. Suchy:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Site Plan titled "Site Development Plan Depicting 38 South Beach Drive Norwalk, CT Prepared for 38SBD L.L.C.," prepared by Redniss and Mead, Inc., dated 03/27/2025 and last revised 06/25/2025
- Engineering Report titled "38 South Beach Drive Site Engineering Report," prepared by Redniss and Mead, Inc., dated 03/11/2025
- Response Letter prepared by Redniss and Mead, Inc., dated 06/25/2025

The aforementioned documents are in compliance with the City's current standards and Drainage Manual. Therefore, the Department of Engineering has no objection to the project moving forward with the following condition(s):

1. **An investigation shall be conducted to determine the feasibility of connecting wall weep holes directly to the catch basins within the right-of-way, as all efforts must be made to avoid direct discharge to the ROW.**
2. A DPW Encroachment and Driveway Permit, in conformance with DPW's Permit Provisions, is required for the proposed work. The contractor shall email DPWpermits@norwalkct.gov to obtain the required permit(s) prior to the commencement of the work.
    a. Road restoration requirements shall be determined at the time of permitting.

b. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
    i. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.

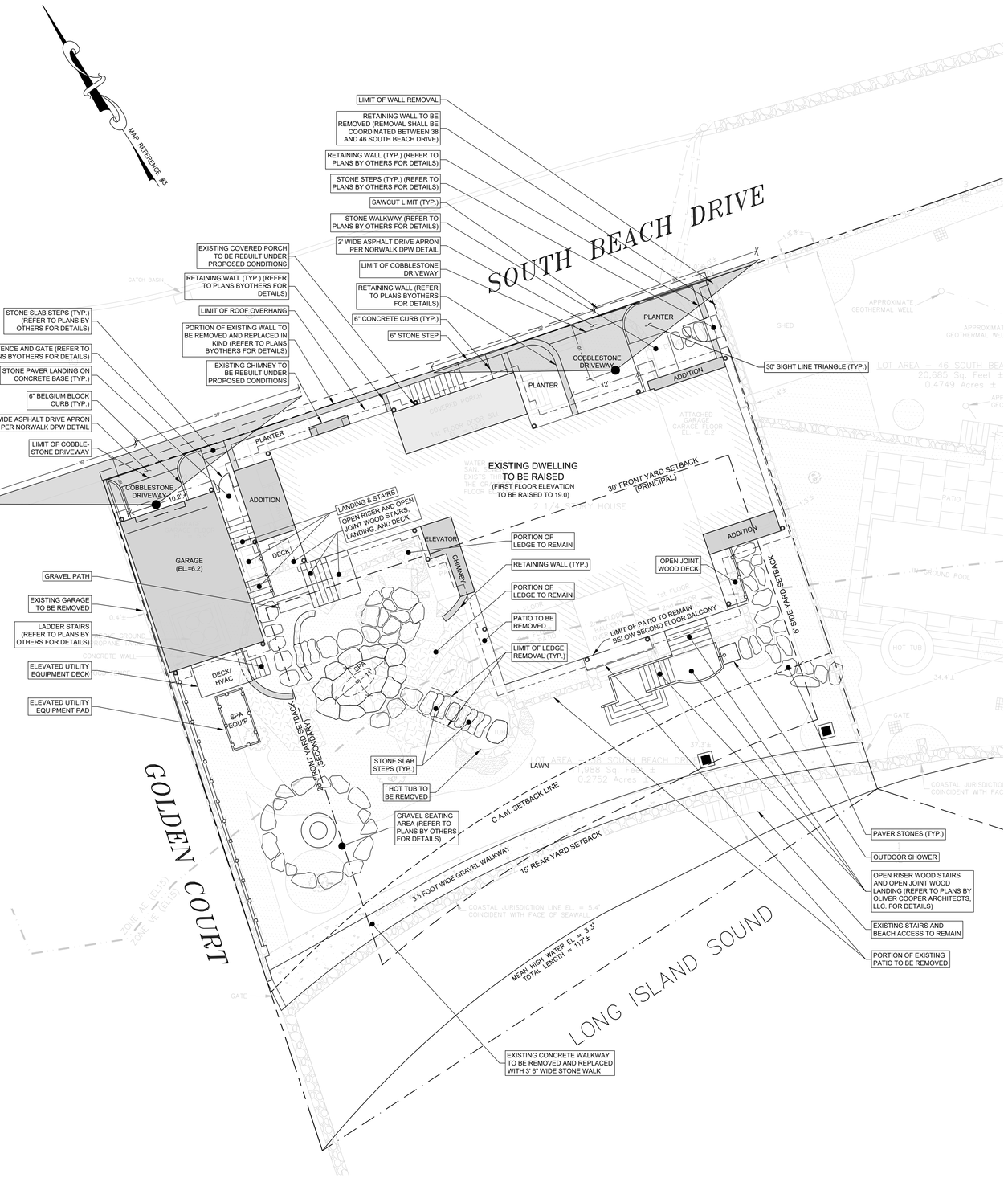
3. The property owner is responsible for confirming with each City department if approval is required prior to the commencement of work.
4. The following must be submitted prior to the issuance of a Certificate of Occupancy/Compliance.
    a. A set of as-built plans shall be submitted along with a certificate from a licensed professional stating that the construction has been built according to City standards.
    b. The size and quantity of existing/proposed water meter(s) for the project.
5. This sign-off shall be valid for a period of 12-months from the date stamped on the plan. Any permit issued on the basis of this sign-off must be issued within such 12-month period. Any renewal of the plan sign-off will be based on the then existing conditions and current applicable regulations, ordinances and standards of practice in effect at the time of the renewal.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Wilber Giron, P.E.
Permit Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Christine Cardascia, P.E., Assistant Civil Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Mario Pizighelli, P.E., Stormwater Systems Manager – Water Pollution Control Authority
Garrett Bolella, P.E., Assistant Director – Transportation, Mobility and Parking
Benjamin Yeung, P.E., Senior Traffic Engineer – Transportation, Mobility and Parking
Nathan Fankhanel, Junior Engineer – Transportation, Mobility and Parking
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Tammy Maldonado, Zoning Enforcement Officer – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer/Assistant Director – Conservation and Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement



GENERAL NOTES:

1. These drawings are intended only to depict the design of site grading, drainage, sanitary, utilities, and sediment & erosion controls. These drawings are for approval purposes only. No construction may begin prior to obtaining all necessary permits and approvals.
2. All survey data, boundary lines, topography, building locations and area calculations are from a survey prepared by James Dennison L.S. entitled Topographic Survey dated January 15, 2025. Elevations depicted or labeled are based on NAVD-88.
3. No Wetlands are dipicted hereon.
4. Refer to drawings by Hollander Design Landscape Architect for information and design of the proposed landscaping. These drawings depict site plans corresponding to the latest landscape architect plans received from Hollander Design Landscape Architect received on 1/30/2025.
5. Refer to plans prepared by Architect for information and design of the proposed buildings. These drawings depict site plans corresponding to the latest architectural plans received from Oliver Cope Architect, LLC received on 1/30/2025.
6. Property lies in a CD-1S zone.
7. The property lies within the FEMA AE-15 and VE-15 Flood Zones (NAVD-88). Flood zones as shown on the Flood Insurance Rate Map Community No. C090012 Panel 0541 Suffix G, effective date July 8, 2013.
8. All construction shall comply with the City of Norwalk requirements, the State of Connecticut Basic Building Code, Americans with Disabilities Act (ADA), the Connecticut Guidelines for Soil and Erosion and Sediment Control, OSHA, CT DOT Form 819 (latest edition), and FEMA Flood Regulations.
9. All development activities to be undertaken within the street right-of-way and other public lands shall comply fully with City standards unless approved deviation is specifically set forth as part of this application. All work within the State right-of-way will comply with the CT DOT Form 819 with the latest special Provisions and Typical State Standard Details.
10. Contractor shall supply complete shop drawings including manufacturer's product data sheets to the Site Engineer, for all construction material used in conjunction with these drawings. Contractor shall allow a 5 day review period, prior to fabrication and installation.
11. Information on existing utilities has been compiled from various sources including utility company records, municipal record maps and field survey and is not guaranteed to be correct or complete. The contractor is solely responsible for determining actual locations and elevations of all utilities including underground services.
12. The property is served by public water and sewers.
13. Prior to any excavation the Contractor and/or Applicant, in accordance with Public Act 77-350, shall be required to contact "Call Before You Dig" at 1-800-922-4455 for mark-out of underground utilities. Dig test pit(s) at utility crossing(s) to check actual clearances with new utilities prior to construction. If conflicts are found the contractor shall notify the engineer, at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid the conflict. Such relocation shall be done with knowledge of and in accordance with the owner of the utility.
14. It shall be the responsibility of the contractor to provide any excavation safeguards, necessary barricades, flagmen, etc., for traffic control and site safety. All work shall be done in accordance with OSHA requirements. The contractor shall be responsible for compliance with OSHA requirements.
15. When preparing the existing site for the proposed development, all materials removed shall be disposed of in conformance with all governing agencies.
16. Remove stumps and brush from site, or chip and use during landscaping. Do not bury stumps on site.
17. Building elevations are subject to change and shall be finalized prior to building permit.
18. Special attention of the contractor is called to the required type and compaction of pipe bedding and backfill specified on these drawings. These requirements will be strictly enforced.
19. Prior to issuance of a Certificate of Occupancy, the Engineering Bureau may require a certification letter stating that the development was constructed in accordance to the approved plans, and an "as-built" drawing shall be submitted
20. The Contractor is responsible for coordinating with a licensed surveyor to prepare an "as-built" plan. The Contractor is responsible to coordinate with a site engineer 48 hours prior to any inspections.
21. The Engineering Division of the Department of Public Works and the inspecting engineer shall be notified by the contractor three (3) days prior to the commencement of each phase of construction.
22. The work shall be done in conformance with the contract documents/plans unless changes have been approved in writing by the design engineer prior to the work being done.

PAVEMENT AND PAVEMENT MARKINGS:

23. Areas of new asphalt shall follow the details on Sheet SE-5.
24. Areas of asphalt pavement that are disturbed by the construction of this project shall be replaced in accordance with the asphalt pavement repair detail. The finished grade of asphalt paving shall blend to existing grade and the edge of the concrete pavement smoothly with no slopes exceeding 4%.
25. Existing features such as but not limited to walks, curbs, and pavement damaged by construction activities shall be repaired at no additional cost to the owner.
26. Bituminous curbs damaged by the project shall be replaced with the new bituminous curbing machine laid Class 3 as described in Sections 8.15 and M.04 of the CT DOT Form 819.
27. Saw cut perimeter of area to be excavated. Saw cut shall be straight and vertical.
28. Contractor shall engage a testing lab who shall verify the base course material by means of a sieve analysis and perform compaction testing of the base and each course of pavement. Site Engineer shall review with the contractor the required testing at the preconstruction meeting. Site Engineer shall approve base course prior to placement of each layer of pavement.
29. The Contractor shall engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from specified requirements.
30. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements as directed by the Site Engineer.
31. Contractor is responsible to place the hot-mix asphalt mix as required in the drawings, details and the applicable Section of the CT DOT FORM 819 (latest edition).
32. Compaction shall be constructed as specified in the CT DOT FORM 819 (latest edition), Section 4.06 specification, the drawings and the details. Testing lab shall verify compaction of each course of pavement as directed by the Site Engineer.
33. After the asphalt pavement has cured sufficiently to support the weight of a water truck without marking the newly installed pavement, it shall be water tested for low spots, areas of little or no drainage, etc. A water truck shall spray a sufficient amount of water on all pavement sections to observe the drainage of water. There shall be positive drainage on all areas of the pavement. Any visible low spots where significant water (greater than or equal to 3/16" in depth) is left standing, shall be clearly marked for the Contractor to repair prior to final acceptance. These areas must be sawcut and removed down to the base course prior to replacement with asphalt mixture as per the original approved design. The base course and edges of sawcut asphalt must be treated with tack oil prior to new section of asphalt being installed. The Owner's Representative or inspecting A/E shall be notified 48 hours in advance of water test so that he may be present during the test.
34. The inspecting engineer and contractor will review the testing requirements at the preconstruction meeting. At this meeting, samples to be tested and compaction testing protocol will be discussed. Testing and approval of the subgrade, base course and asphalt layers prior to the installation of the next layer to determine if the work complies or deviates from the specified requirements. Prior to installation of the base course, contractor shall contact inspecting engineer to determine the suitability of the subgrade material, base course and asphalt. Additional excavation or base course may be required.
35. Finished paving shall be free of ``bird baths" and be smooth at the slopes specified on the plans.
36. Finished grade shall be within 1/2 inch of that noted on the drawings.
37. The pavement shall be protected from vehicular traffic of any kind with the use of barricades, etc. for a minimum period of 24 hours after final rolling. Maintain and protect asphalt surface from scrapes, sears, spills, hydraulic leaks, and any other construction damage for the remainder of construction until Owner's Representative acceptance. Contractor is responsible for clearing, repairing, seal coating, patching, and re-striping as necessary to obtain Owner's Representative's final approval/acceptance.
38. Thicknesses of all layers shown are after compaction. Compact all layers to 95% per ASTM D 1557 (Modified Proctor Method).

APPROVED

7/9/2025

CHIEF OF OPERATIONS
& PUBLIC WORKS

Public Works Driveway
Permit Required

CITY OF NORWALK
ENCROACHMENR PERMIT &
PUBLIC WORKS INSPECTION REQUIRED

This sign-off shall be valid for a period of 12 months from the date stamped. Any permit issued on the basis of this sign-off must be issued within such 12 month period. Any renewal of the plan sign-off will be based on the then existing conditions and current applicable regulations, ordinances and standards of practice in effect at the time of the renewal request.

No.	Date	Revision
3	06/25/2025	REVISED PER DPW COMMENTS
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

SITE DEVELOPMENT PLAN
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: 1"=10' (0, 10, 20)

DRAWN BY: MJL CHECKED BY: VJH

STATE OF CONNECTICUT · VINCENT J. HYNES · No. 0032100 · REGISTERED PROFESSIONAL ENGINEER

VINCENT J. HYNES CT P.E. #0032100

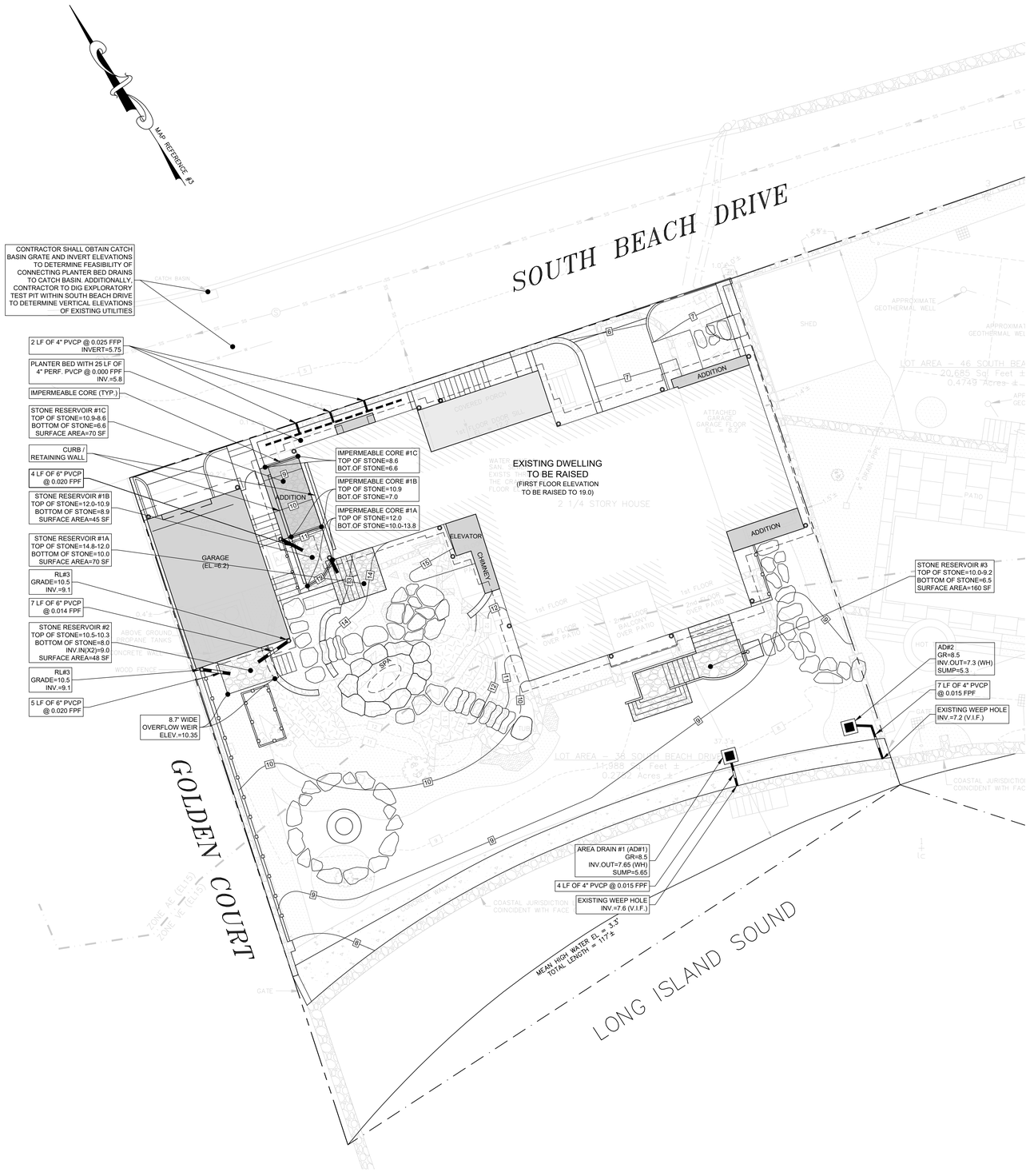
DATE June 25, 2025

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaratrion hereon null & void.

SHEET No: SE-1

Comm. No.: 10993

6/24/2025 12:09 PM H:\Jobfiles2100\10900\10993\Dwg\10993 - 38 SB Master 1.dwg



STORM AND SANITARY SEWER SYSTEMS:

1. All pipe shall be installed straight and at the vertical and horizontal alignment shown. Pipes shall have a uniform slope as specified.
2. Minimum cover on all pipes shall be two feet (2') unless otherwise noted.
3. All storm pipe specified as Poly Vinyl Chloride Pipe (PVCP) shall be SDR 35 with rubber gasketed joints and meet the requirements of ASTM D3034 and D3212.
4. Dig test pits at utility and sewer crossings to check actual clearances with these facilities prior to construction. Dig test pits at the connection points to existing sanitary sewer pipes to confirm that the elevation of the proposed gravity sewer is appropriate. If conflicts are found the contractor shall notify the engineer at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid conflict.
5. All area drains shall have a two foot (2') sump with bell traps or 90° PVC elbows.
6. All existing and proposed catch basins, manhole rims and utility facilities shall be raised or lowered to be flush with finished grade.
7. When connecting new pipes to existing structures such as manholes and catch basins, the structure shall be completely cleaned out. The hole made in the structure shall be made as small as possible. The structure shall be repaired to match its original type of construction. The joint between the structure and the pipe shall be made watertight by filling the joint with mortar.
8. Flow in existing sewer system must not be interrupted. Any temporary routing of this sewer flow must be done in conformance with all applicable rules and regulations.
9. Under no circumstances shall trench water be allowed to drain off through sanitary sewer lines.
10. All crushed stone shall be Gradation No. 4 as per CT DOT Form 819, Article M.01.02. Stone shall consist of sound, tough, durable particles free from soft, thin, elongated, laminated, friable, micaceous, or disintegrated pieces of mud, dirt or other deleterious material.
11. The storm and sanitary sewer shall be encased in concrete for a distance of 10 feet on either side of any intersection between the sanitary sewer and storm sewer. Where concrete encasement is required, temporarily support the pipes in place. Use sufficient concrete to encase piping not less than 6 inches at all points. The encasement shall be adequately supported with a stone base and shall be keyed into the foundation wall to prevent damage from settlement.
12. At the end of construction, after the site has be fully stabilized, all new and previously existing storm sewer facilities including, but not limited to, catch basins, area drains, manholes, junction boxes, flow control structures, pipes, oil grit separators, permeable pavers and porous pavement shall be fully cleaned with equipment designed for that purpose to the satisfaction of the inspecting engineer.

UTILITIES:

13. Utilities shown on these plans are "not guaranteed" to be complete or correct. Prior to any site activities, the contractor shall be responsible for verification of clearances of proposed utilities from existing utilities. This verification shall include physical observation by means of test pits of the locations of affected utilities. The contractor shall notify the site engineer immediately of any conflict.
14. Easements may be required in favor of the various utility companies.
15. Electric, telephone, cable, gas, and water services shall be installed in conformance to the requirements of the governing utility companies.
16. It is the contractor's responsibility to install utilities as shown on this sheet. The contractor shall work with the utility companies and site engineer to insure the installation is in conformance to the requirements of the governing utility company. All conduits shall be concrete encased as may be required by the governing utility company. Proposed electric, telephone, cable, gas and water services are shown for schematic purposes only and are subject to change pending utility company review. These utilities shall be designed by others and installed in conformance to the requirements of the governing utility companies.
17. All proposed utility facilities shall be raised or lowered to be flush with finished grade.
18. Where necessary, existing utilities shall be reinstalled to meet all minimum coverage requirements.
19. Utility connections at building face shall be coordinated with the building contractors.
20. In general, each utility shall have a minimum clearance of three feet to any other underground utility.
21. Any and all utilities abandoned shall be capped or removed in accordance with utility companies' requirements.
22. The electric generator shall be located to meet all applicable Zoning setbacks.
23. All utilities shall be installed per FEMA regulations for flood protection. All utilities (i.e., HVAC condensers, electric transformers, etc.) must be set one foot above the Base Flood Elevation (BFE) or waterproofed.
24. Electric, telephone, cable, gas and water services shall be compliant with the City of[Norwalk Zoning Regulations Flood Prone Area Regulations Section [SECTION ID] and shall be installed in conformance to the requirements of the governing utility companies. Gas and electric meters shall be located inside the structures on foot above the BFE.
25. Detectable Tape shall be used to mark piping listed below. The identification tape shall be buried at least 6-inches to 10-inches below final grade but no closer than 12-inches to the buried utility piping or service.

Electric	Red	Caution Electric Line Buried Below
Water Systems	Blue	Caution Water Line Buried Below
System	Green	Caution Sewer Line Buried Below

26. Underground-Type Plastic Line Marker: Manufacturer's standard permanent, bright-colored detectable tape, continuous-printed plastic tape, intended for direct-burial service; not less than 6" wide X 4 mils thick.

No.	Date	Revision
3	06/25/2025	REVISED PER DPW COMMENTS
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

DRAINAGE PLAN
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

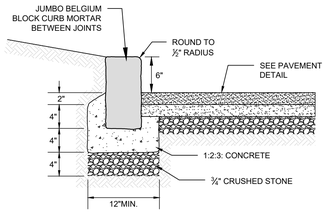
SCALE: 1"=10' (0 10 20)
DRAWN BY: MJ CHECKED BY: VJH

STATE OF CONNECTICUT VINCENT J. HYMES REG. No. 0032100 REGISTERED PROFESSIONAL ENGINEER
No. 0032100
VINCENT J. HYMES REG. P.E. #32100
June 25, 2025
DATE

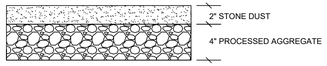
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-3
Comm. No.: 10993

6/25/2025 1:27 PM H:\Jobfiles2\10000\10900\10993\Dwg\10993 - SB Master 1.dwg



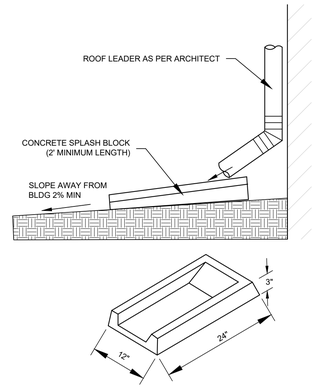
JUMBO BELGIUM BLOCK CURB
N.T.S.



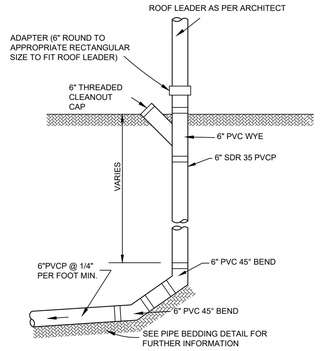
NOTES:

1. Processed aggregate shall conform to Section M.05.01 of CT DOT Form 819.
2. It should be noted that although the surface material of the gravel path is somewhat pervious, the drainage calculations have assumed a fully impervious surface.

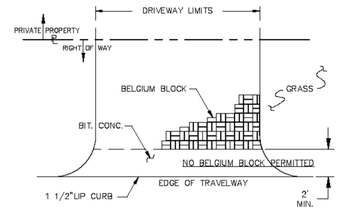
GRAVEL PATH DETAIL
N.T.S.



ROOF LEADER SPLASH PAD
N.T.S.



ROOF LEADER CLEANOUT DETAIL
N.T.S.

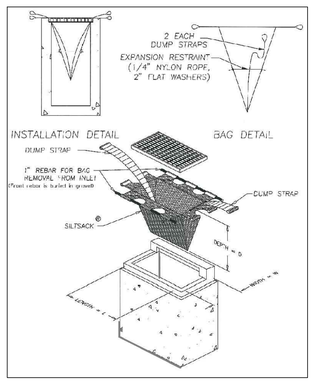


PLAN
N.T.S.

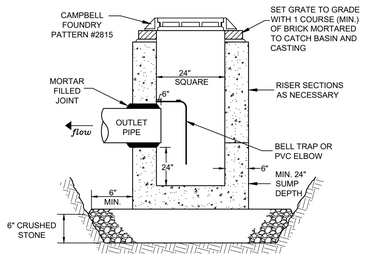
BIT. CONC. DRIVE APRON W/ BELGIUM BLOCK

NO SIDEWALK OR CURB

ASPHALT DRIVE APRON W/ BELGIUM BLOCK DETAIL
N.T.S.



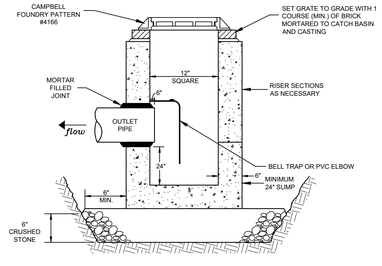
INLET SEDIMENT CONTROL DEVICE
(SILT SACK)
N.T.S.



NOTES:

1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. AREA DRAIN SHALL CONFORM TO ASTM C478.
4. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT D.O.T. FORM 819, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

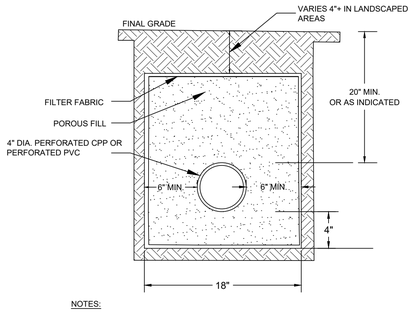
24" AREA DRAIN
N.T.S.



NOTES:

1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. AREA DRAIN SHALL CONFORM TO ASTM C478.
4. PLACE AREA DRAIN ON A 6" LAYER OF CRUSHED STONE. ALL CRUSHED STONE SHALL BE GRADATION 3A AS PER NYS DOT STANDARD SPECIFICATION SECTION 703. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

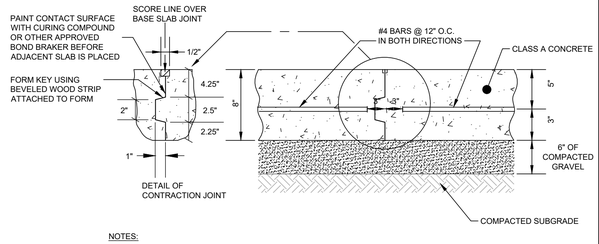
12" AREA DRAIN
N.T.S.



NOTES:

1. ON SITE PLAN, OR AS REQUIRED MODIFICATION DURING CONSTRUCTION.
2. PIPE SHALL BE CORRUGATED POLYETHYLENE MANUFACT. IN ACCORDANCE WITH ASTM F 405 & INSTALLED PER ASTM F 449. PIPE IN CURTAIN DRAIN TO OUTLET IS SOLID.
3. POROUS FILL SHALL BE CRUSHED STONE. CRUSHED STONE SHALL BE GRADATION NO. 67 PER CT DOT FORM 819, ARTICLE M.01.01.
4. FILTER FABRIC SHALL BE MIRAFI 140N OR EQUIVALENT.

UNDER DRAIN
N.T.S.



NOTES:

1. CONCRETE TO BE CLASS 'A' CONFORMING TO CONNDOT FORM 819 SECTION M.03.02.
2. GRAVEL BASE SHALL CONFORM TO GRADATION A AS DEFINED IN CONNDOT FORM 818 SECTION M. 02.01.
3. INSTALL AS PER THE AMERICAN CONCRETE INSTITUTE CODE.
4. THE AREA SHALL BE COMPACTED TO AT LEAST 95% OF THE DRY DENSITY ACHIEVED BY AASHTO T180, METHOD D.
5. CONTRACTION JOINT TO BE PLACED SO REMAINING SECTIONS OF CONCRETE ARE GENERALLY SQUARE OR AT LEAST EVERY 10'.
6. EDGES OF CONCRETE TO BE TOOLED TO A 1/2" RADIUS.
7. SIZE OF PAD TO BE VERIFIED PRIOR TO CONSTRUCTION.

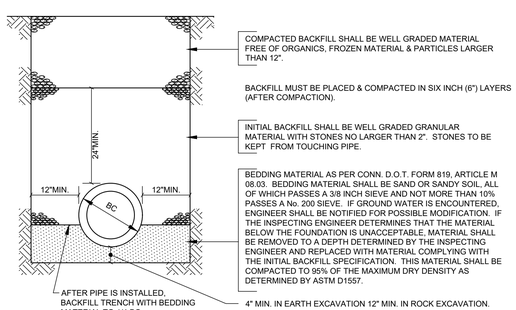
CONCRETE PAD DETAIL
N.T.S.

WATER STOP: 10' UPSTREAM OF STRUCTURES AND WHERE SHOWN, FOUNDATION MATERIAL, BEDDING, HAUNCHING, INITIAL BACKFILL, AND THE BOTTOM FOOT OF GENERAL BACKFILL TO BE REPLACED WITH SM, SC, OR ML SOIL AS PER UNIFIED SOIL CLASSIFICATION SYSTEM" WITH MAXIMUM PARTICLE SIZE OF 1-1/2", FOR 3 LINEAR FEET OF TRENCH. WATER STOP TO BE KEYED INTO TRENCH BOTTOM AND WALLS A MINIMUM OF ONE FOOT. NO STONES LARGER THAN 6" SHALL BE WITHIN 12" OF THE PIPE.

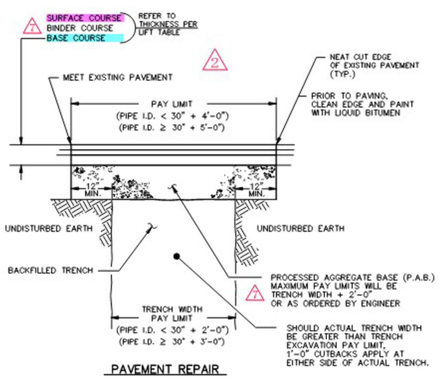
ALL FOUNDATION, INITIAL BACKFILL & BACKFILL MATERIAL TO BE APPROVED BY THE INSPECTING ENGINEER.

ANY DEVIATION FROM THESE METHODS & MATERIALS MUST BE APPROVED IN WRITING BY THE INSPECTING ENGINEER.

ALL MATERIAL TO BE COMPACTED TO 95% OF THE MAX. DRY DENSITY AS DETERMINED BY ASTM D1557, EXCEPT COMPACTED BACKFILL" NOT UNDER PAVEMENT WHICH SHALL BE COMPACTED TO A DENSITY AT LEAST EQUAL TO THAT OF THE ADJACENT UNDISTURBED MATERIAL.



HDPE PIPE TRENCH BEDDING DETAIL
(48" DIA. & UNDER)
N.T.S.

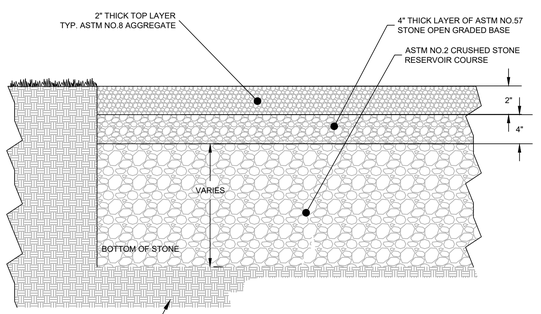


PAVEMENT REPAIR

ASPHALT PAVEMENT REPAIR DETAIL
N.T.S.

STONE RESERVOIR GENERAL NOTES:

1. The ASTM No. 2 stone subbase material should be spread in minimum 6 in. lifts. Compaction is done with a 10 ton steel vibratory roller or a 13,500 lbf plate compactor. Greater lift thicknesses are normal (i.e. 12 in.) when using either of these compactors. When using a roller, the first two passes are in vibratory mode and the last two are in static mode. Compaction is completed when no visible movement can be seen in the base when rolled by the compactor. Plate compactors with compaction indicators should be used to determine when compaction is completed. Stones will compact more completely if moistened during compaction. Aggregates shall not be crushed by the compactor.
2. The ASTM No. 57 base layer is spread and compacted as one 4 in. lift. The stone material should be moist during compaction for better consolidation. Like the subbase aggregate, the initial passes with the roller can be with vibration to consolidate the base material. The final passes should be without vibration. A 13,500 lbf plate compactor also can be used to compact the ASTM No. 57 base layer.
3. When subbase and base lifts are compacted the surface should then be topped with 2 in. thick layer of moist ASTM No. 8 crushed stone bedding layer. This layer is screened and leveled over the ASTM No. 57 base. Metal rails are placed on the compacted ASTM No. 57 layer and are used to guide screeding elevations. Various sizes of screeding equipment can be used ranging from hand tools, bucket screeds powered manually or by machine, or a modified asphalt spread that uses a laser guidance system to maintain elevations. The surface tolerance of the screeded ASTM No. 8 bedding material should be ± 3/8 in. over 10 ft. Construction equipment and foot traffic should be kept off the screeded layer.



STONE RESERVOIR DETAIL
N.T.S.

No.	Date	Revision
3	06/25/2025	REVISED PER DPW COMMENTS
2	05/27/2025	CAM SUBMISSION
1	03/11/2025	ORIGINAL ISSUE DATE

DETAILS
DEPICTING
38 SOUTH BEACH DRIVE
NORWALK, CT
PREPARED FOR
38SBD LLC

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: N.T.S.

DRAWN BY: MJL CHECKED BY: VJH

STATE OF CONNECTICUT — VINCENT J. HYNES — No. 0032100 — REGISTERED PROFESSIONAL ENGINEER

DATE: June 25, 2025

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No: SE-5

Comm. No.: 10993

6/24/2025 12:08 PM H:\Jobfiles\10000\10900\10993\Dwg\10993 - 38 SB Master 1.dwg

CITY OF NORWALK
Harbor Management Commission

www.norwalkct.gov

Norwalk City Hall
Room 129
125 East Avenue, PO Box 5125
Norwalk, CT 06851

VIA EMAIL
Amelia.williams@norwalkct.gov

July 9, 2025

Ms. Amelia Williams
Land-Use Planner
City of Norwalk
Conservation and Planning & Zoning Department
125 East Ave.
Norwalk, CT 06851

Subject: Coastal Area Management Application by 38 SBD, LLC for work at 38 South Beach Dr., Norwalk CT.

Dear Ms. Williams:

The Norwalk Harbor Management Commission (NHMC) has reviewed the above-referenced application for Coastal Site Plan Review submitted to the Planning and Zoning Commission by 38 SBD, LLC (the Applicant), 1250 Lafayette Rd., Gladwyne, PA. The Applicant seeks approval to raise the elevation of the existing dwelling structure, construct additions to the same, demolish the existing garage, construct a new garage, and construct associated site improvements on property located at 38 South Beach Drive, Norwalk, CT.

As the proposed project is located within the coastal boundary and affects property on, in, or contiguous to the Norwalk Harbor Management Area, it is subject to review by the NHMC to determine its consistency with the Norwalk Harbor Management Plan. The requirements of this review are specified in Sec. 22a-113p of the Connecticut General Statutes and the Harbor Management Plan.

The NHMC discussed the proposed project during its meeting on June 25, 2025 with the understanding, based on information provided by the Applicant's representatives, that the proposed project meets all FEMA requirements for flood zone construction and all City requirements for storm water management. Following discussion, the NHMC approved a motion finding the Applicant's proposal is **consistent with the Norwalk Harbor Management Plan** insofar as the project is expected to reduce the vulnerability of existing development to coastal flood hazards.

In addition, on behalf of the NHMC, I herewith transmit the following comments and recommendations pertinent to review of the Applicant's proposed project.

Comments and Recommendations:

1. The Applicant should be required to employ appropriate Best Management Practices during construction to ensure that the proposed work, including removal of debris, does not cause any significant adverse impacts on environmental quality, including water quality, in the Harbor Management Area.

2. The NHMC is concerned about the potential adverse impacts of storm water runoff from impervious areas draining into the Harbor Management Area. The Harbor Management Plan calls for protection and improvement of water quality in the Harbor Management Area and encourages and supports appropriate Best Management Practices to avoid or otherwise mitigate nonpoint source (storm water) pollution.

3. The NHMC encourages and supports runoff reduction and low impact development practices in all coastal area development projects, including new development and significant site improvement projects, pursuant to the City's National Pollutant Discharge Elimination System (NPDES) permit issued by the State of Connecticut.

Please be advised that the NHMC reserves its right to continue to review and comment on the Applicant's proposed project at such time as it may be modified, additional information may be available, or the proposal is the subject of a public hearing.

If you have any questions, please contact me (203) 984-5339 or pintoj@optonline.net.

Sincerely,

John Thomas Pinto

John Thomas Pinto, Ph.D.
Chairman, NHMC Application Review Committee

cc:
Steve Bartush, Chairman, Norwalk Shellfish Commission
Mary-Beth Hart, CT DEEP
William Ireland, Norwalk Building Department
Alan Kibbe, Chairman, Norwalk Harbor Management Commission
Elizabeth A.B. Suchy, Esq., Carmody Torrance Sandak & Hennessey LLP.

South Norwalk Electric and Water
A Municipal Utility System
Serving the Needs of the Community

ALAN E HUTH, General Manager

ELIZABETH BURNS, Director of Water Operations
SCOTT MURPHY, Director of Electric Operations

Justin Andriopoulos
Water Technical Specialist
South Norwalk Electric and Water
164 Water Street, Norwalk CT 06854
(203) 866-3366 Ext. 256

June 18, 2025

Norwalk Department of Planning & Zoning
125 East Avenue
Room 129
Norwalk, CT. 06856

Re: Utility Signoff for –**38 South Beach Drive**

To whom it may concern:

This letter shall be considered confirmation that I have reviewed the Coastal Site Plan for the various modifications to the existing dwelling. In doing so, SNEW will want to see the metering system for water to be re-located outside of the house inside of a meter pit. That meter pit is to be supplied by the homeowner and installed by their contractor. A SNEW representative will come to inspect the installation and install the new meter/ reader module. SNEW has no objections for the project moving forward. Should you have any questions or concerns, feel free to contact me at the number above.

Sincere Regards,

Justin Andriopoulos

Justin Andriopoulos

Site Plan Review Application

City of Norwalk Planning & Zoning Commission
Phone: 203-854-7780
www.norwalkct.gov

Date Received:

Per Section 8.4.5 of the Norwalk Zoning Regulations, the purpose of Site Plan Reviews is to aid in determining the conformity of proposals related to Development, Buildings, Structures, Uses, and other matters with the Zoning Regulations.

1. **Address of Subject Property(s):**

315 Rowayton Avenue, Norwalk, CT

2. District: 6, Block: 27, Lot(s): 5 **3.** Zone: CD-1M, Overlay/Village District: N/A

4. Historic Structure(s): ☐ No ☑ Yes **5.** Flood Hazard Zone: ☑ No ☐ Yes, Flood Zone(s) _____

6. Coastal Area Management Zone: ☑ No ☐ Yes If yes, include application for Coastal Site Plan Review or specify Section allowing exemption: 6.10.3.1.b

7. Existing Use of Property:

Single-family dwelling, driveway. See Schedule A attached hereto.

8. Proposed Use of Property as Identified per **Table 4.3.9.A** Building, Lot & Building Site Principal Uses:

Accessory dwelling unit to be added to property. See Schedule A attached hereto.

Applicant Information

Applicant Name: Craig Hyland and Nancy Zindell

Billing Address: 315 Rowayton Avenue, Norwalk, CT 06853

Phone Number: c/o Elizabeth Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth Suchy, Esq. - esuchy@carmodylaw.com

Signature: _____
By: Carmody Torrance Sandak & Hennessey LLP, Their Attorneys

Property Owner Information and Authorization

Owner of Record: Craig Hyland and Nancy Zindell

Billing Address: 315 Rowayton Avenue, Norwalk, CT 06853

Phone Number: c/o Elizabeth Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth Suchy, Esq. - esuchy@carmodylaw.com

Signature: Carmody Torrance Sandak & Hennessey, LLP
By: Carmody Torrance Sandak & Hennessey LLP, Their Attorneys

**By signing, the property owner confirms that the Applicant has been authorized to apply for Planning & Zoning approval, and attests that all information provided is true and accurate.*

CRAIG HYLAND AND NANCY ZINDELL
315 ROWAYTON AVENUE, NORWALK, CT
APPLICATION FOR SITE PLAN REVIEW
NARRATIVE
SCHEDULE A

BACKGROUND

Craig Hyland and Nancy Zindell (hereinafter, the "Applicants") are the owners of real property with the improvements thereon located at 315 Rowayton Avenue in Norwalk, CT. Designated as Tax Lot 5 in Block 27 of the Sixth Taxing District (the "Property"), the Property is 0.91 acres and is located on the west side of Rowayton Avenue, approximately 300 feet from the intersection with Arnold Lane. The New Haven line of the Metro-North Railroad abuts the property to the south.

The Property is zoned CD-1M. The minimum flood elevation for the Property as established by the Federal Emergency Management Agency (FEMA) is Zone X. The Property is improved with an existing single-family dwelling, accessed by an existing driveway from Rowayton Avenue. (Refer to "Zoning Location & Topographic Survey Depicting Proposed Conditions 315 Rowayton Avenue Norwalk, Connecticut prepared for Craig T. Hyland and Nancy J. Zindell Scale: 1" = 30'" ("ZLS") dated January 24, 2025, revised to June 10, 2025 prepared by Seymour Surveying, attached hereto and made a part hereof).

PROPOSAL

The Applicants propose the construction, use, and occupancy of a detached, 696± sq.ft.[1] accessory dwelling unit ("ADU") on the Property, which includes two (2) interior parking spaces in a garage accessed at grade. (Refer to ZLS, "Drainage Plan (Sheet 1 of 2)" dated 5-1-25 ("Drainage Plan") prepared by Fairfield County Engineering, L.L.C., and "Sheet Number A.1" and "Sheet Number A.3" dated 2-10-25 prepared by Nicholas A. Sajda, attached hereto and made a part hereof). The proposed detached accessory dwelling unit complies with all other requirements for ADUs including building height and maximum square footage. The owners will continue to reside in the principal dwelling.

Furthermore, runoff from the roof of the proposed ADU and existing house will be retained on-site in a retention system including a Cultec retention chamber. (Refer to "Drainage Plan (Sheet 1 of 2)" dated 5-1-25 prepared by Fairfield County Engineering, L.L.C., attached hereto and made a part hereof). The proposed retention system will decrease net peak runoff during various storm events, therefore "[t]he proposed improvements will have no adverse impact on surrounding properties." (Refer to "Drainage Report Prepared for Existing and Proposed Site Conditions Located at 315 Rowayton Avenue Lot 5 Norwalk, Connecticut" dated December 28, 2024 ("Drainage Report") prepared by Fairfield County Engineering, L.L.C., attached hereto and made a part hereof).

STANDARDS OF REVIEW

This site plan review application is submitted pursuant Sec. 8.4.5.N (site plan review), Table 4.3.1-B (District Standards), and Table 4.3.9.D (Building Lot & Building Site Accessory Uses) of the City of Norwalk Zoning Regulations ("zoning regulations"). The proposed accessory dwelling unit complies with the zoning regulations and standards of review for site plan applications set forth in Sec.

[1]Detached accessory dwelling units cannot be larger than 700 sq.ft.

8.4.5.N. including appropriateness of design and intensity of development, adequacy of proposed access and circulation with respect to traffic patterns, traffic control measures, and street pavement areas, sufficiency of stormwater facilities, water supply, sanitary sewer service, fire protection, street signs and street lighting, among other requirements set forth in Articles 1-5 and 7 of the zoning regulations.

The Applicant submits that the proposal complies with all standards of review for site plan applications as follows:

a. The development complies with Sec. 4.3.5 (Building Standards); Sec. 4.3.16 (Private Landscape Standards); Sec. 6.2 (Grading, Tree Removal and Drainage); Sec. 6.3 (Import/Export of Earth Materials); Sec. 6.4 (Soil Erosion & Sediment Control); Sec. 6.9 (Flood Hazard Overlay). The proposal complies with all of the foregoing standards. (Refer to Drainage Plan and architectural sheets A.1, A.2, and A.3).
b. The proposed access and circulation are adequate with respect to traffic patterns, traffic control measures and street pavement areas, with provisions for maintaining traffic flows and reducing any negative effects of traffic on nearby properties. The project provides proper and adequate access to and from the Property and internal circulation to maintain traffic flows and reduce negative impacts on nearby properties and roadways. (Refer to ZLS, Drainage Plan, and architectural sheets A.1, A.2, and A.3)
c. The Development complies with all applicable Development and site construction requirements. (Refer to ZLS, Drainage Plan, and architectural sheets A.1, A.2, and A.3).
d. Adequacy of stormwater facilities, water supply, sanitary sewer service, fire protection, street signs, and street lighting as evidenced by conformance with City standards, specifications and guidelines. The site is and will continue to be served by all utilities. (Refer to Drainage Plan and Drainage Report).
e. Compliance with requirements for Easements or dedications. The development does not propose any new easements or dedications; the existing 15' drainage easement will not be impacted by the proposed development. (Refer to ZLS).
f. Proper ingress and egress to the site which does not adversely impact the normal flow of traffic or normal safe conditions of the roadways. Site plans shall be referred to each applicable reviewing authority for review and recommendations. This proposal does not impact traffic or roadway safety; the existing driveway will be used for access to the main dwelling and the ADU. This application and supporting documentation will be referred to the Department of Public Works and Transportation/Mobility/Parking for review and comment.
g. Reasonable improvements as may be necessary to accommodate traffic increases caused by the proposed development to maintain existing levels of service and to improve traffic safety. A Traffic Impact Analysis, as specified below, may be required from the applicant to determine the extent of necessary improvements. Since the proposed use will generate far less than 500 trips per day and far less than 50 vehicle trips at any peak hour, a traffic impact analysis is not required.

June , 2025

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: ***Craig Hyland & Nancy Zindell – 315 Rowayton Avenue, Rowayton, CT***
Application for Site Plan Review – detached accessory dwelling unit

Dear Chairwoman Wells:

This letter is to advise you that the applicants, Craig Hyland and Nancy Zindell, hereby consent to the preparation, filing and presentation of an application for coastal site plan review by Carmody Torrance Sandak & Hennessey LLP for the construction, use and occupancy of a detached accessory dwelling unit, with associated site improvements.

Should you have any questions, please do not hesitate to contact me.

Very truly yours,

Craig Hyland

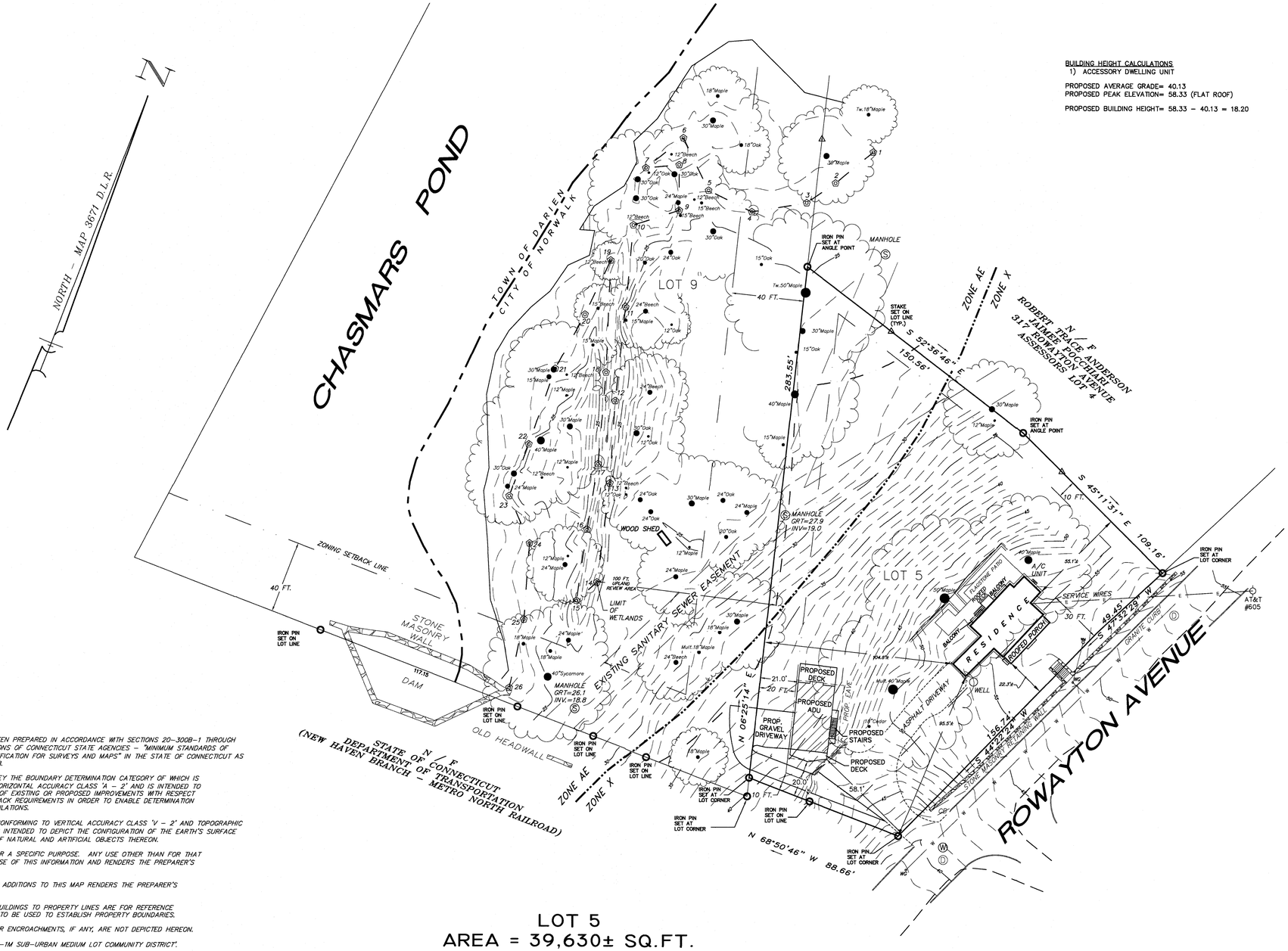
Craig Hyland

Nancy Zindell

Nancy Zindell

{S7640929}

DISTRICT 6, BLOCK 27, LOT 5 & DISTRICT 6, BLOCK 27, LOT 9



BUILDING HEIGHT CALCULATIONS
1) ACCESSORY DWELLING UNIT

PROPOSED AVERAGE GRADE= 40.13
PROPOSED PEAK ELEVATION= 58.33 (FLAT ROOF)

PROPOSED BUILDING HEIGHT= 58.33 - 40.13 = 18.20

ZONING DATA CHART 'CD-1M SUB-URBAN MEDIUM LOT COMMUNITY DISTRICT'

LOT 5

	REQUIRED / ALLOWED	EXISTING	PROPOSED
LOT AREA	12,500 SQ. FT.	39,630± SQ. FT.	NO CHANGE
LOT WIDTH	100 FT. MIN.	>100 FT.	NO CHANGE
FRONT YARD, PRINCIPAL	30 FT. MIN.	22.3± FT.	58.1 FT. (1)
FRONT YARD, SECONDARY	30 FT. MIN.	N/A	N/A
SIDE YARD	10 FT. MIN.	55.1± FT.	20.0 FT. (1)
REAR YARD	20 FT. MIN.	108.4± FT.	21.0 FT. (1)
BUILDING HEIGHT (STORIES)	2 1/2 MAX.	NOT MEASURED	SEE ARCHITECTURALS
BUILDING HEIGHT (FEET)	35 FT. MAX. 40 FT. MAX. (TOTAL)	NOT MEASURED	18.20 FT. (FROM ARCHITECT)
BUILDING COVERAGE LOTS <6,250 SQ. FT.	35% MAX.	N/A	N/A
IMPERVIOUS COVERAGE LOTS <6,250 SQ. FT.	50% MAX.	N/A	N/A
BUILDING COVERAGE LOTS 6,251-12,499 SQ. FT.	2,187 SQ. FT. +20% OF EVERY ADDITIONAL 400 SQ. FT. OF LOT OR BUILDING SITE AREA UP TO 12,499 SQ. FT.	N/A	N/A
IMPERVIOUS COVERAGE LOTS 6,251-12,499 SQ. FT.	50% MINUS 1% OF EVERY ADDITIONAL 400 SQ. FT. OF LOT OR BUILDING SITE AREA UP TO 12,499 SQ. FT.	N/A	N/A
BUILDING COVERAGE LOTS >12,500 SQ. FT.	25% MAX. (9,907 SQ. FT.)	3.56%± (1,400± SQ. FT.)	5.46%± (2,165± SQ. FT.)
IMPERVIOUS COVERAGE LOTS >12,500 SQ. FT.	35% MAX. (13,870 SQ. FT.)	11.07%± (4,358± SQ. FT.)	13.90%±(5,508± SQ. FT.)

(1) ACCESSORY DWELLING UNIT

THIS SURVEY AND MAP HAVE BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS OF ACCURACY, CONTENT AND CERTIFICATION FOR SURVEYS AND MAPS" IN THE STATE OF CONNECTICUT AS AMENDED ON OCTOBER 26, 2018.

IT IS A ZONING LOCATION SURVEY THE BOUNDARY DETERMINATION CATEGORY OF WHICH IS A RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS 'A - 2' AND IS INTENDED TO DEPICT OR NOTE THE POSITION OF EXISTING OR PROPOSED IMPROVEMENTS WITH RESPECT TO APPLICABLE MUNICIPAL SETBACK REQUIREMENTS IN ORDER TO ENABLE DETERMINATION OF COMPLIANCE WITH SAID REGULATIONS.

IT IS A TOPOGRAPHIC SURVEY CONFORMING TO VERTICAL ACCURACY CLASS 'V - 2' AND TOPOGRAPHIC ACCURACY CLASS 'T - 2'. IT IS INTENDED TO DEPICT THE CONFIGURATION OF THE EARTH'S SURFACE (GROUND) AND THE LOCATION OF NATURAL AND ARTIFICIAL OBJECTS THEREON.

THIS SURVEY WAS PREPARED FOR A SPECIFIC PURPOSE. ANY USE OTHER THAN FOR THAT WHICH WAS INTENDED IS A MISUSE OF THIS INFORMATION AND RENDERS THE PREPARER'S DECLARATION NULL AND VOID.

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS MAP RENDERS THE PREPARER'S DECLARATION NULL AND VOID.

DISTANCES NOTED +/- FROM BUILDINGS TO PROPERTY LINES ARE FOR REFERENCE PURPOSES ONLY AND ARE NOT TO BE USED TO ESTABLISH PROPERTY BOUNDARIES.

UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS, IF ANY, ARE NOT DEPICTED HEREON.

PROPERTY IS LOCATED IN A 'CD-1M SUB-URBAN MEDIUM LOT COMMUNITY DISTRICT'.

REFER TO MAP 489 OF THE NORWALK LAND RECORDS & MAP 3671 OF THE DARIEN LAND RECORDS.

REFER TO EXECUTOR'S DEEDS RECORDED IN BK. 7924, PG. 67 & BK. 7928, PG. 33 OF THE NORWALK LAND RECORDS.

REFER TO RIGHT OF WAY TO THE NEW YORK, NEW HAVEN AND HARTFORD RAILROAD COMPANY RECORDED IN BK. 82, PG. 11 OF THE NORWALK LAND RECORDS.

REFER TO DRAINAGE CONDITIONS AND AGREEMENTS RECORDED IN BK. 369, PG. 222 OF THE NORWALK LAND RECORDS AND BK. 160, PG. 312 OF THE DARIEN LAND RECORDS.

REFER TO EASEMENT TO THE CONNECTICUT LIGHT AND POWER COMPANY RECORDED IN BK. 87, PG. 112 OF THE DARIEN LAND RECORDS.

REFER TO RIGHTS OF WAY AND EASEMENTS TO THE CITY OF NORWALK RECORDED IN BK. 1187, PG. 279 OF THE NORWALK LAND RECORDS.

REFER TO EASEMENTS SET FORTH IN A CERTIFICATE OF CONDEMNATION RECORDED IN BK. 7820, PG. 299 OF THE NORWALK LAND RECORDS.

INLAND WETLANDS NOTED HEREON WERE FIELD IDENTIFIED ON APRIL 25, 2005 BY SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC. AND FIELD LOCATED BY THIS OFFICE ON MAY 4, 2005.

THE 1% ANNUAL CHANCE FLOOD ZONE BOUNDARIES DEPICTED HEREON HAS BEEN GRAPHICALLY TRANSCRIBED FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP 09001C0529G EFFECTIVE ON JULY 8, 2013.
THIS INFORMATION IS PROVIDED FOR REFERENCE PURPOSES ONLY AND DOES NOT NECESSARILY REPRESENT THE ACTUAL POTENTIAL FOR FLOOD DAMAGE TO ANY EXISTING OR PROPOSED STRUCTURES OR IMPROVEMENTS LOCATED ON THIS PROPERTY.

LOT 5
AREA = 39,630± SQ.FT.
OR 0.9098± ACRE

LOT 9
AREA = 491,202± SQ.FT.
OR 11.2764± ACRES

TOTAL NORWALK AREA = 201,001± SQ.FT.
OR 4.6143± ACRES

TOTAL NORWALK LAND AREA = 87,488± SQ.FT.
OR 2.0084± ACRES

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

VERTICAL DATUM: N.G.V.D. 1929

ZONING LOCATION & TOPOGRAPHIC SURVEY
DEPICTING PROPOSED CONDITIONS
315 ROWAYTON AVENUE
NORWALK, CONNECTICUT
PREPARED FOR

CRAIG T. HYLAND
NANCY J. ZINDELL

SCALE: 1" = 30' DATE: JANUARY 24, 2025
REVISED - PROPOSED CONDITIONS REVISED - MARCH 21, 2025
REVISED - PROPOSED CONDITIONS REVISED - JUNE 10, 2025

SEYMOUR
SURVEYING
LAND SURVEYORS ~ ZONING & LAND USE CONSULTANTS
199 WEST AVENUE ~ 203-655-3331 ~ DARIEN, CONN. ©
WWW.WWS-LS.COM ~ INFO@SEYMOURSURVEYING.COM

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON

Paul A. Brautigam CT LLS #15166

DRAWN BY: DAW CHECKED BY: PAB DWG. NO: 15-13748_ZLS-TP-AP_ADU

RETENTION CHAMBERS TO BE INSTALLED NO LOWER THAN ELEVATION SHOWN.

ALL PIPES ARE TO BE 6" PVC (S=0.01 MIN.) UNLESS OTHERWISE INDICATED.

UPLAND REVIEW AREA 32,817 SF

UPLAND REVIEW AREA DISTURBED 366 SF

CHASMARS POND

TOWN OF DARIEN
CITY OF NORWALK

LOT 9

LOT 5

ROWAYTON AVENUE

ZONE AE

ZONE X

40 FT.

100 FT. UPLAND REVIEW AREA

10 UNITS CULTEC R-330XLHD RETENTION CHAMBERS BOTTOM ELEV. CULTECS 37.0 INV. 37.0

6" PVC INSPECTION PORT CAPPED AT GRADE

AREA OF ROOF ROUTED TO RETENTION (GREEN HATCHING)

SILT FENCE DURING CONSTRUCTION

TEMPORARY MATERIAL STOCKPILE AND STAGING AREA

STONE MASONRY WALL

DAM

OLD HEADWALL

PROPOSED GRAVEL DRIVEWAY

PROPOSED ADU

MANHOLE GRT=27.9 INV=19.0

MANHOLE GRT=26.1 INV.=18.8

MANHOLE

IRON PIN SET AT ANGLE POINT

IRON PIN SET ON LOT LINE

IRON PIN SET AT LOT CORNER

STAKE SET ON LOT LINE (TYP.)

TH-1 RL=45"

TH-2 RL>60"

TH-3 RL>60"

TH-4 RL>62"

WOOD SHED

FLAGSTONE PATIO

ROOFED DECK

ROOFED PORCH

A/C UNIT

SERVICE WIRES

ZONING SETBACK LINE

AT&T #605

ASPHALT DRIVEWAY

STONE MASONRY RETAINING WALL

GRANITE CURB

JUNCTION BOX 2 INV. IN/OUT 37.2

JUNCTION BOX 1 INV. IN/OUT 37.1

MUD ANTI TRACKING PAD DURING CONSTRUCTION

N / F ROBERT TRACE ANDERSON JAIMEE POCCHIARI 317 ROWAYTON AVENUE ASSESSORS LOT 4

N / F STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION (NEW HAVEN BRANCH – METRO NORTH RAILROAD)

S 52°36'46" E 150.56'

S 45°11'31" E 109.16'

N 68°50'46" W 88.66'

283.55'

21.0'

20 FT.

10 FT.

30.0'

58.1'

GRAPHIC SCALE

20 0 20 40

1 inch = 20 feet

GENERAL CONSTRUCTION NOTES:

1. CONSTRUCTION AND STRUCTURES SHALL COMPLY WITH ALL MUNICIPAL OR STATE REQUIREMENTS. ALL WORK SHALL BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER, TO THE SATISFACTION OF THE ENGINEERING BUREAU, THAT CONSTRUCTION IS IN ACCORDANCE WITH THESE PLANS.
2. THE ENGINEERING BUREAU OF THE DEPARTMENT OF PUBLIC WORKS AND THE ENGINEER OF RECORD SHALL BE NOTIFIED THREE DAYS PRIOR TO THE COMMENCEMENT OF EACH PHASE OF CONSTRUCTION.
3. NO CERTIFICATE OF CONFORMANCE TO STANDARDS SHALL BE ISSUED BY THE DESIGN ENGINEER IF PROPER NOTICE IS NOT PROVIDED FOR INSPECTIONS OR IF INSPECTIONS ARE NOT MADE PRIOR TO BACKFILLING OF BELOW GROUND STRUCTURES AND APPURTENANCES. A DETAILED AS BUILT FROM A LICENSED SURVEYOR OF ALL DRAINAGE ITEMS' LOCATION AND ELEVATIONS WILL BE REQUIRED.
4. SUBSURFACE STRUCTURES AND UTILITIES HAVE BEEN DETERMINED FROM EXISTING RECORDS AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. IN ORDER TO AVOID CONFLICT OF THE PROPOSED WORK AND EXISTING UTILITIES, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES BY EXCAVATING TEST HOLES. IF THE CONTRACTOR DETERMINES THAT A CONFLICT EXISTS, HE SHALL IMMEDIATLEY NOTIFY THE ENGINEER, WHO WILL MAKE THE NECESSARY ADJUSTMENTS.
5. EXISTING PROPERTY AND UTILITY INFORMATION WAS TAKEN FROM A SURVEY BY SEYMOUR SURVEYING TITLED "ZONING LOCATION SURVEY PREPARED FOR CRAIG HYLAND AND NANCY ZINDELL", DATED JANUARY 24, 2025.
6. ALL SANITARY SEWER PIPE SHALL BE EITHER SDR-35 P.V.C. (ASTM D-3034) OR CLASS 52 DUCTILE IRON (ANSI A 21-51), AS INDICATED ON THE PLANS, UNLESS OTHERWISE INDICATED. ALL SANITARY SEWER PIPE SHALL HAVE RUBBER GASKET SLIP-TYPE JOINTS. INFILTRATION INTO SANITARY SEWERS SHALL NOT EXCEED 150 GALLONS PER INCH OF PIPE DIAMETER PER MILE OF PIPE IN 24 HOURS.
7. THESE PLANS ARE FOR MUNICIPAL OR STATE AGENCY APPROVAL ONLY. NOT FOR CONSTRUCTION.
8. NO PIPE SHALL HAVE A BEND OF GREATER THAN 45 DEGREES.
9. THE CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" AT 1-800-922-4455, OR OTHER APPROPRIATE CONTACT POINT PRIOR TO START OF CONSTRUCTION.
10. ALL UTILITY LOCATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THE LOCATION OF THE UTILITIES IN THE FIELD BY WHATEVER MEANS HE DEEMS PRUDENT.
11. THIS DESIGN CONFORMS TO APPLICABLE CODES AND ACCEPTED PRACTICE, NO OTHER WARRANTY IS EXPRESSED OR IMPLIED.
12. TOTAL SITE AREA LOT 5 = 0.910 ACRES
    TOTAL SITE AREA LOT 9 = 11.276 ACRES

SEDIMENTATION AND EROSION CONTROL NOTES

1. LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM. PERMANENT STABILIZATION SHALL BE SCHEDULED AS SOON AS FINAL GRADES ARE ESTABLISHED.
2. ALL DISTURBED AREAS SHALL BE FINE GRADED AND SEEDED WITH AN APPROVED SEED MIXTURE. COVER NEWLY SEEDED AREAS WITH MULCH HAY OR SALT HAY.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE 2023 CONNECTICUT 'GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL' HANDBOOK.
4. ALL CONTROL MEASURES SHALL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. CHECK AFTER EACH STORM EVENT.
5. ADDITIONAL CONTROL MEASURES SHALL BE INSTALLED DURING THE CONSTRUCTION PERIOD, IF REQUIRED BY TOWN AUTHORITIES.
6. SEDIMENT DEPOSITS REMOVED FROM FILTER BARRIERS SHALL BE PLACED IN FILL AREAS OR SPREAD WHERE THERE IS PROPOSED VEGETATIVE COVER. ANY SEDIMENT DEPOSITS REMAINING AFTER THE FILTER BARRIER IS REMOVED SHALL BE FINE GRADED AND PLANTED ACCORDING TO PLAN.
7. THE SITE CONSTRUCTION CONTRACTOR IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFYING THE PLANNING AND ZONING OFFICE (AND/OR THE CONSERVATION COMMISSION) OF ANY TRANSFER OF THIS RESPONSIBILITY AND CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED TO A NEW OWNER.

LOCATION MAP



STATE OF CONNECTICUT
WAYNE J. D'AURIA
No. 24877
LICENSED PROFESSIONAL ENGINEER

5-1-25
date

Fairfield County Engineering LLC

CRAIG HYLAND

315 ROWAYTON AVENUE NORWALK, CONNECTICUT

DRAINAGE PLAN

CIVIL ENGINEERS

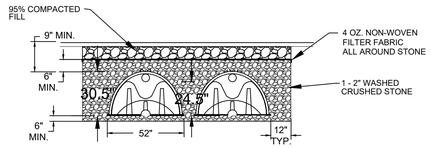
2450 project

1 OF 2 sheet

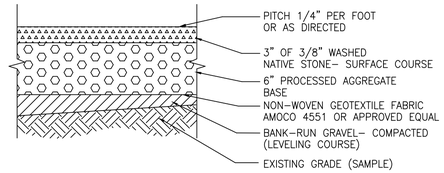
FAIRFIELD COUNTY ENGINEERING L.L.C.
60 WINFIELD STREET, NORWALK, CONNECTICUT 06855 PH: (203) 831-8005 wayne@fairfieldce.com

FCE Project #	2450	**Date Performed:**	1/7/2025
Client:	Craig Hyland		
Location:	315 Rowayton Avenue, Norwalk		
Observed by:	Wayne D'Avanzo		

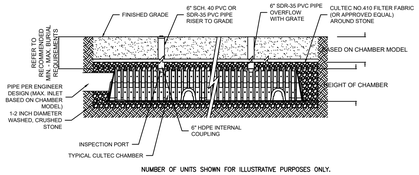
Test Hole 1:		
	0-7"	Topsoil
	7-32"	Brown Silty Loam
	32- 57"	Light Brown Sand with Gravel, stony
	Ground Water @ 45"	
	No Mottling	
	No Ledge	
	Roots to 26"	
Test Hole 2:		
	0-7"	Topsoil
	7- 60"	Light Brown Sand with Gravel, stony
	No Ground Water	
	No Mottling	
	No Ledge	
	Roots to 36"	
Test Hole 3:		
	0-9"	Topsoil
	9- 60"	Light Brown Sand with Gravel, stony
	No Ground Water	
	No Mottling	
	No Ledge	
	Roots to 32"	
Test Hole 4:		
	0-9"	Topsoil
	9- 62"	Light Brown Sand with Gravel, stony
	No Ground Water	
	No Mottling	
	No Ledge	
	Roots to 14"	



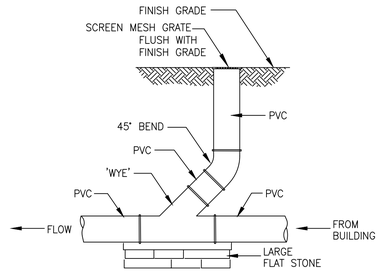
CULTEC RECHARGER 330XLHD
TYPICAL CROSS SECTION



GRAVEL DRIVEWAY
NOT TO SCALE

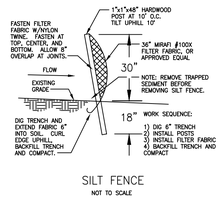


CULTEC INSPECTION PORT AND OVERFLOW
(AS APPLICABLE)

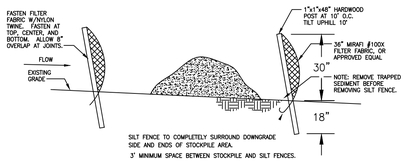


TYPICAL CLEANOUT
NOT TO SCALE

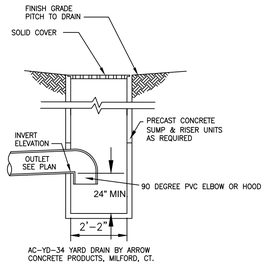
MUD–TRACKING BED
NOT TO SCALE



SILT FENCE
NOT TO SCALE



STOCKPILE PROTECTION
NOT TO SCALE



JUNCTION BOX
NOT TO SCALE

STATE OF CONNECTICUT
WAYNE J. D'AVANZO
No. 24877
LICENSED PROFESSIONAL ENGINEER

5–1–25
date

CRAIG HYLAND
315 ROWAYTON AVENUE NORWALK, CONNECTICUT

DETAIL SHEET

CIVIL ENGINEERS

2450
project

2 OF 2
sheet

FAIRFIELD COUNTY ENGINEERING L.L.C.
60 WINFIELD STREET, NORWALK, CONNECTICUT 06855 PH: (203) 831–8005 FAX: (203) 831–8006

Stormwater Facilities Maintenance Plan

Craig Hyland

315 Rowayton Avenue, Lot 5, Norwalk, CT

Scope:

The purpose of the Stormwater Facility Maintenance Plan is to ensure that the proposed stormwater components to be installed at 315 Rowayton Avenue, Lot 5 are maintained in operational condition throughout the life of the project.

Recommended Frequency of Service:

All of the stormwater components installed for this property should be checked periodically by the Owner and kept in full working order. Ultimately, the frequency of inspection and service cleaning depends on the amount of runoff, pollutant loading and interference from debris (leaves, vegetation, trash, etc.); however it is recommended that the facility be inspected and cleaned a minimum of four times a year. The guidelines for the timing of service include early spring, after the last snowfall, and late fall after the leaves have fallen from the trees.

Service Procedures:

1. Cultec retention chambers: The maintenance of the Cultec chambers shall be in accordance with the aforementioned schedule. The units shall be inspected via the inspection port and removed of sediment and debris as needed. The overflow grate shall be cleared of any accumulated debris.

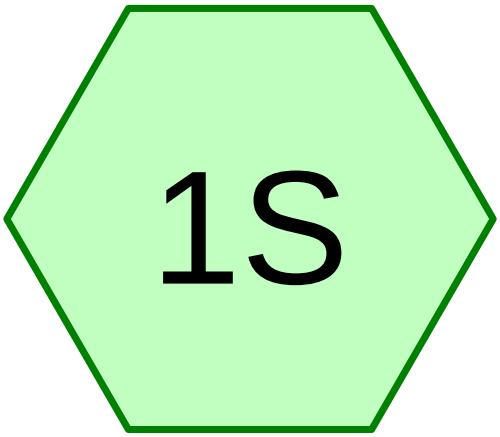
2. Roof gutters: The roof gutters of the house shall be inspected and cleared of any leaves, twigs, debris, etc. This shall be done at in the early spring, and late fall after all of the leaves have fallen from trees.

3. Roof Leader: The maintenance of the roof leaders shall be in accordance with the aforementioned schedule and shall include the inspection of the leaders via the cleanouts and removal of any debris, obstruction and sediment.

4. Junction box: The maintenance of the junction box shall be in accordance with the aforementioned schedule and shall include the inspection of the structure's integrity. Debris shall be removed from the inlet and outlet pipes. The sump shall be cleaned of any silt or other debris or sediment.

Reporting:

A maintenance log shall be kept by the Owner of each inspection outlining the items inspected and the maintenance performed. These logs should be kept on file by the Owner, and must be shared with the City upon request.



Existing Conditions

Subcat Reach Pond Link

Routing Diagram for 2450Existing
Prepared by Fairfield County Engineering LLC, Printed 3/10/2025
HydroCAD® 10.00-26 s/n 06020 © 2020 HydroCAD Software Solutions LLC

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 1S: Existing Conditions

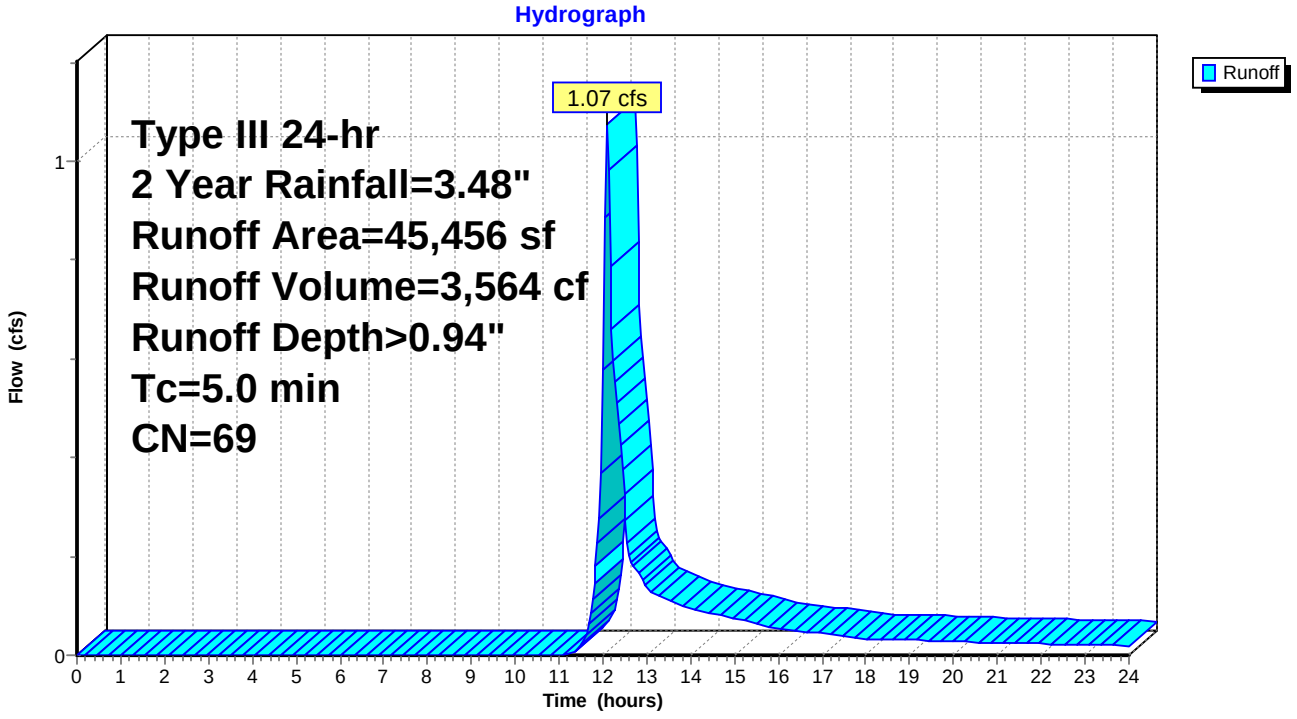
Runoff = 1.07 cfs @ 12.09 hrs, Volume= 3,564 cf, Depth> 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.48"

	Area (sf)	CN	Description
*	27	98	Shed
	45,429	69	50-75% Grass cover, Fair, HSG B
	45,456	69	Weighted Average
	45,429		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 1S: Existing Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 1S: Existing Conditions

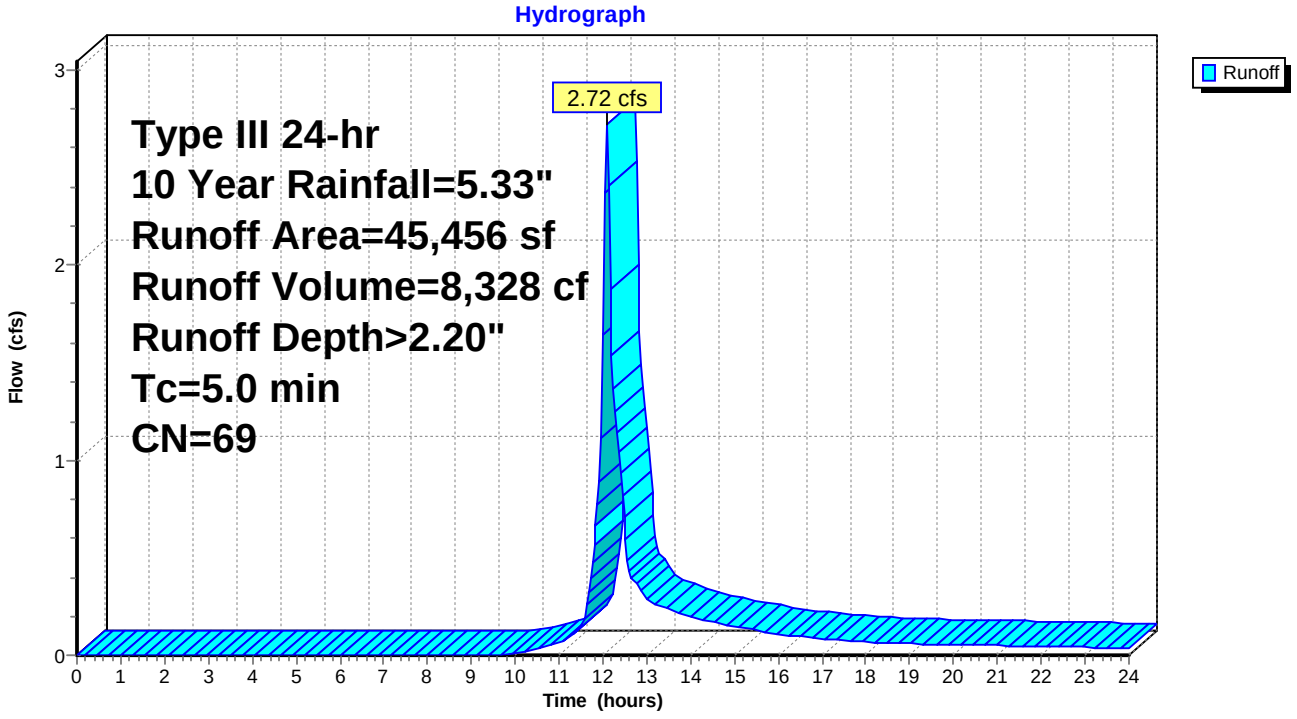
Runoff = 2.72 cfs @ 12.08 hrs, Volume= 8,328 cf, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=5.33"

	Area (sf)	CN	Description
*	27	98	Shed
	45,429	69	50-75% Grass cover, Fair, HSG B
	45,456	69	Weighted Average
	45,429		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 1S: Existing Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 1S: Existing Conditions

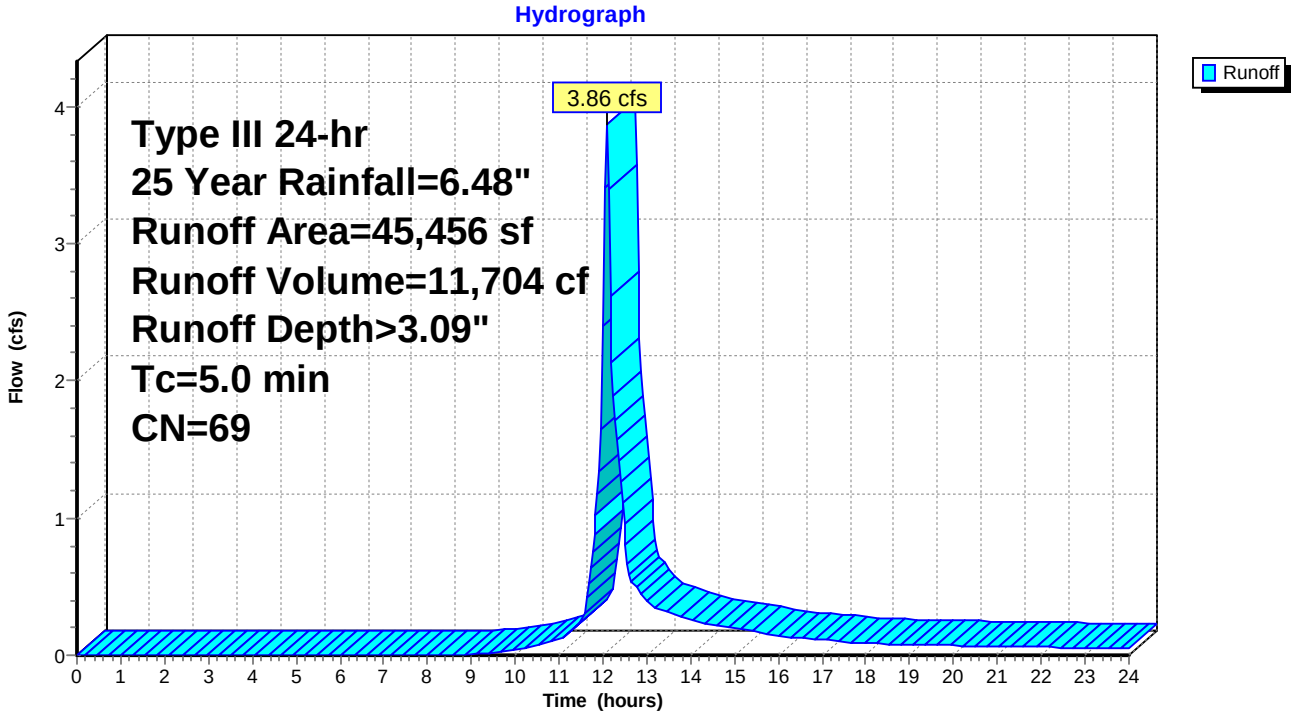
Runoff = 3.86 cfs @ 12.08 hrs, Volume= 11,704 cf, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=6.48"

	Area (sf)	CN	Description
*	27	98	Shed
	45,429	69	50-75% Grass cover, Fair, HSG B
	45,456	69	Weighted Average
	45,429		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 1S: Existing Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 1S: Existing Conditions

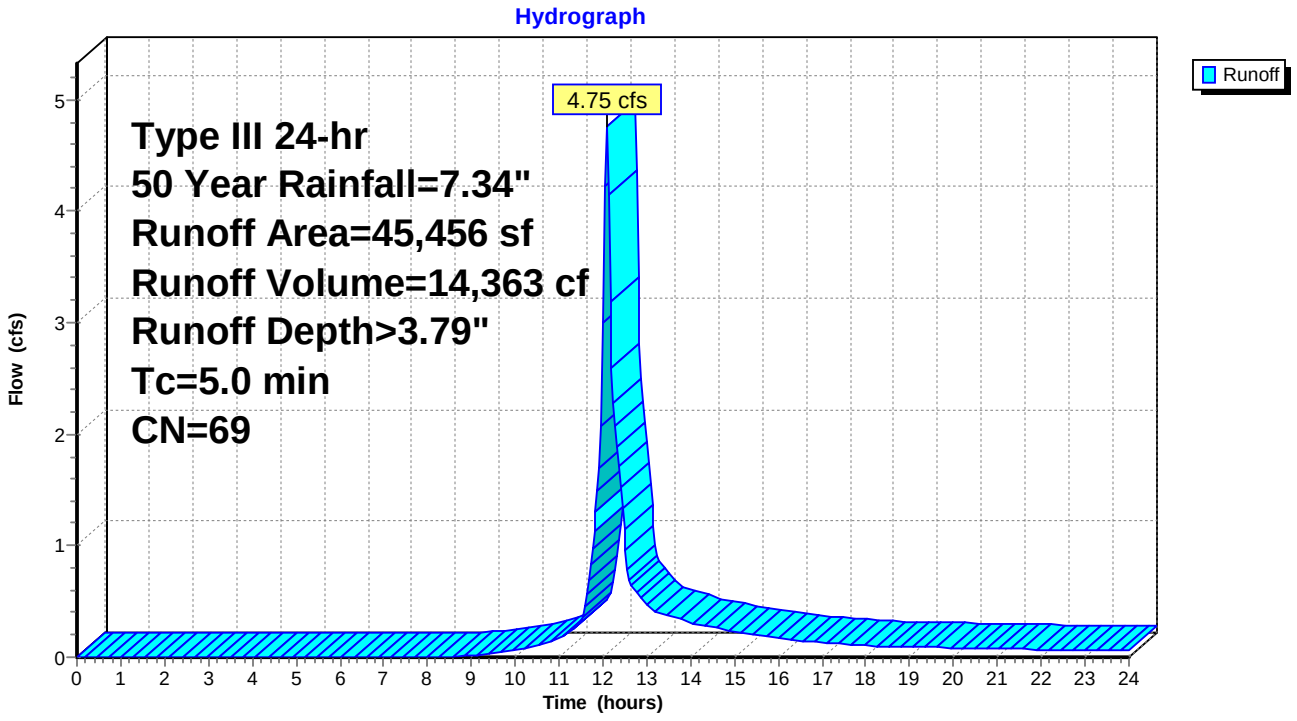
Runoff = 4.75 cfs @ 12.08 hrs, Volume= 14,363 cf, Depth> 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 Year Rainfall=7.34"

	Area (sf)	CN	Description
*	27	98	Shed
	45,429	69	50-75% Grass cover, Fair, HSG B
	45,456	69	Weighted Average
	45,429		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 1S: Existing Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 1S: Existing Conditions

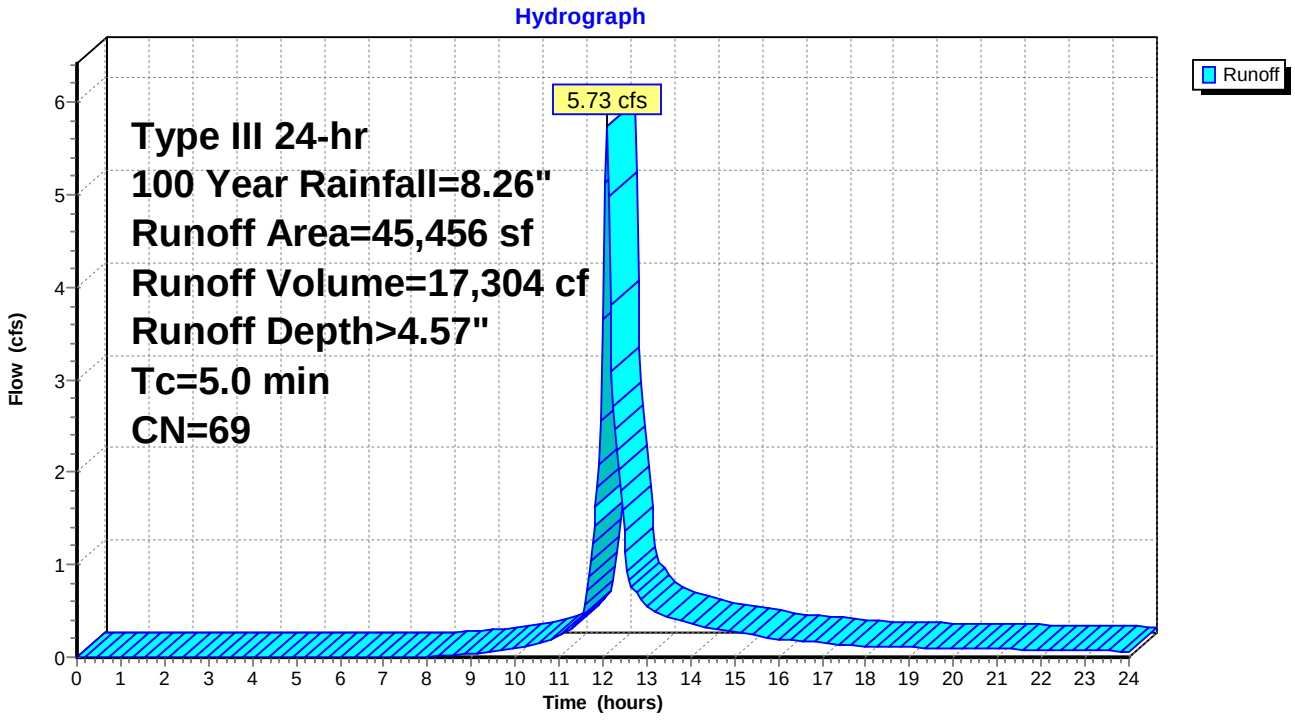
Runoff = 5.73 cfs @ 12.08 hrs, Volume= 17,304 cf, Depth> 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=8.26"

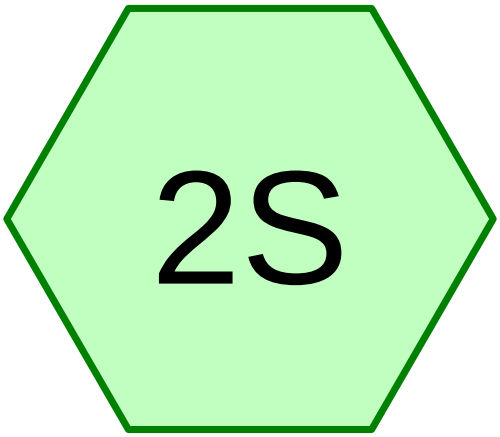
	Area (sf)	CN	Description
*	27	98	Shed
	45,429	69	50-75% Grass cover, Fair, HSG B
	45,456	69	Weighted Average
	45,429		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 1S: Existing Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Proposed Conditions

Subcat Reach Pond Link

Routing Diagram for 2450Proposed
Prepared by Fairfield County Engineering LLC, Printed 3/10/2025
HydroCAD® 10.00-26 s/n 06020 © 2020 HydroCAD Software Solutions LLC

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 2S: Proposed Conditions

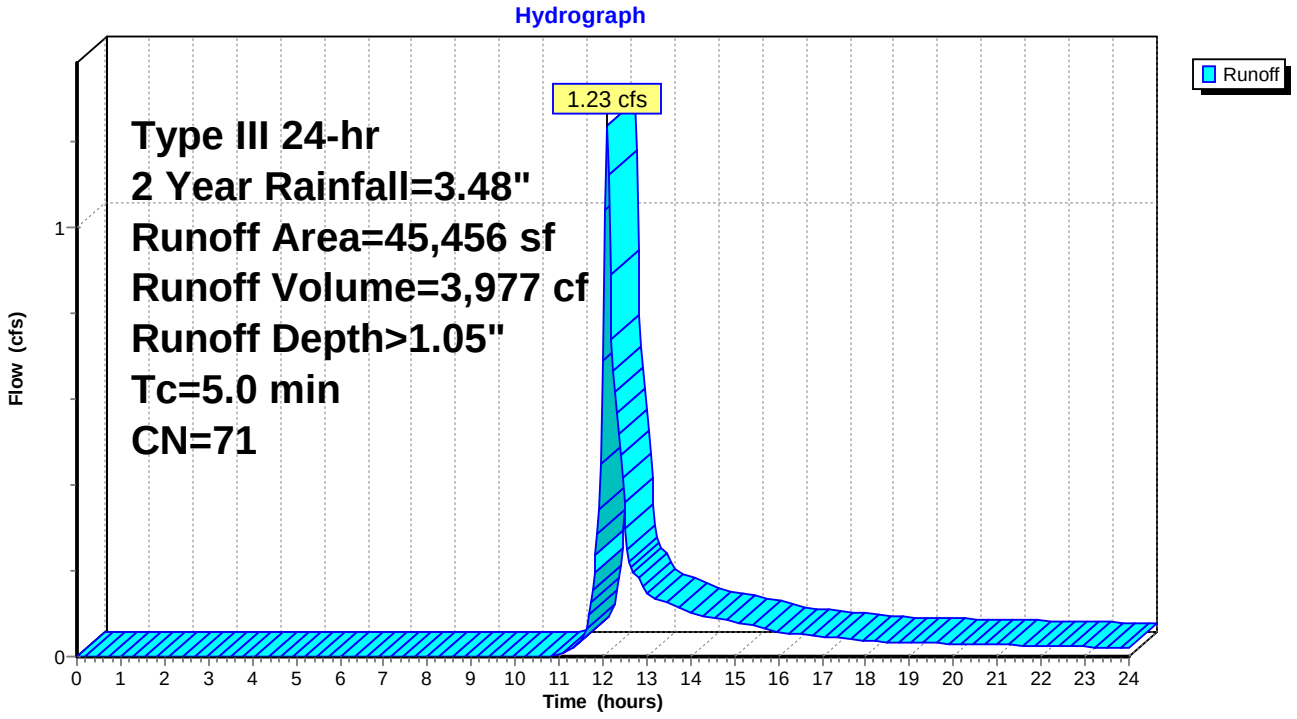
Runoff = 1.23 cfs @ 12.09 hrs, Volume= 3,977 cf, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.48"

	Area (sf)	CN	Description
*	2,236	98	House
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	40,845	69	50-75% Grass cover, Fair, HSG B
	45,456	71	Weighted Average
	43,193		95.02% Pervious Area
	2,263		4.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 2S: Proposed Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 2S: Proposed Conditions

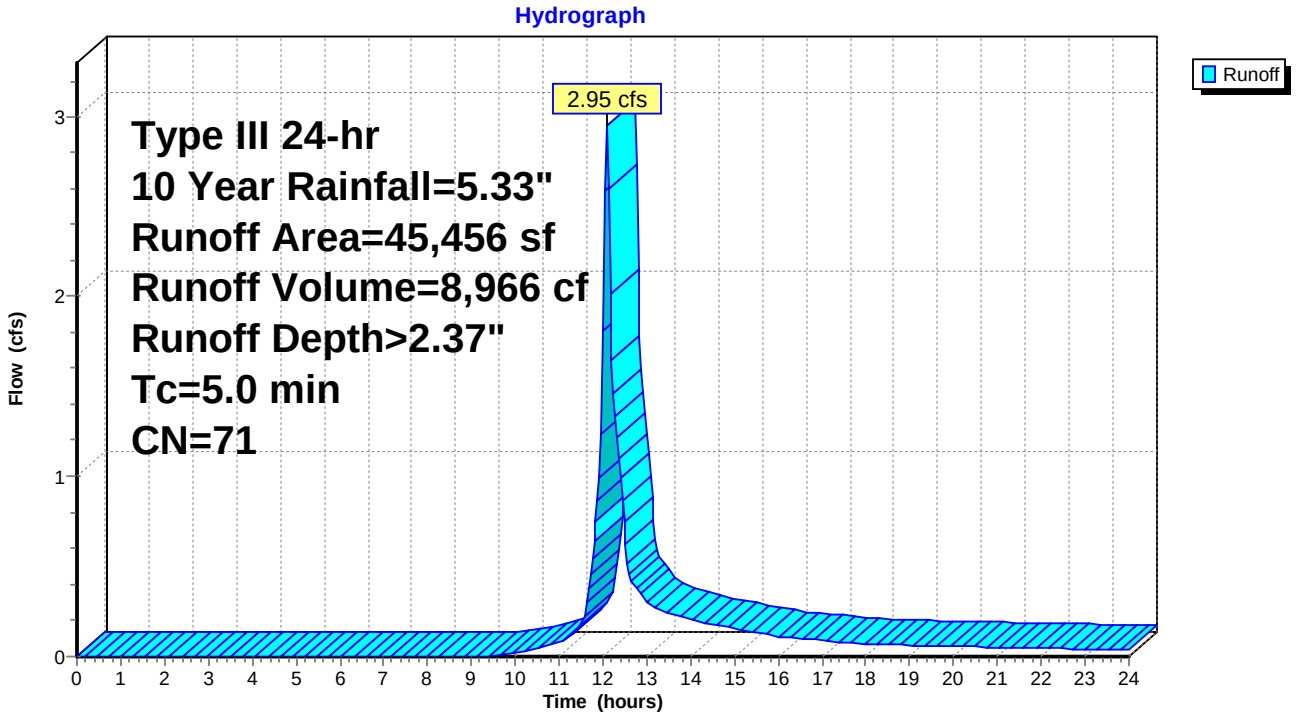
Runoff = 2.95 cfs @ 12.08 hrs, Volume= 8,966 cf, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=5.33"

	Area (sf)	CN	Description
*	2,236	98	House
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	40,845	69	50-75% Grass cover, Fair, HSG B
	45,456	71	Weighted Average
	43,193		95.02% Pervious Area
	2,263		4.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 2S: Proposed Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 2S: Proposed Conditions

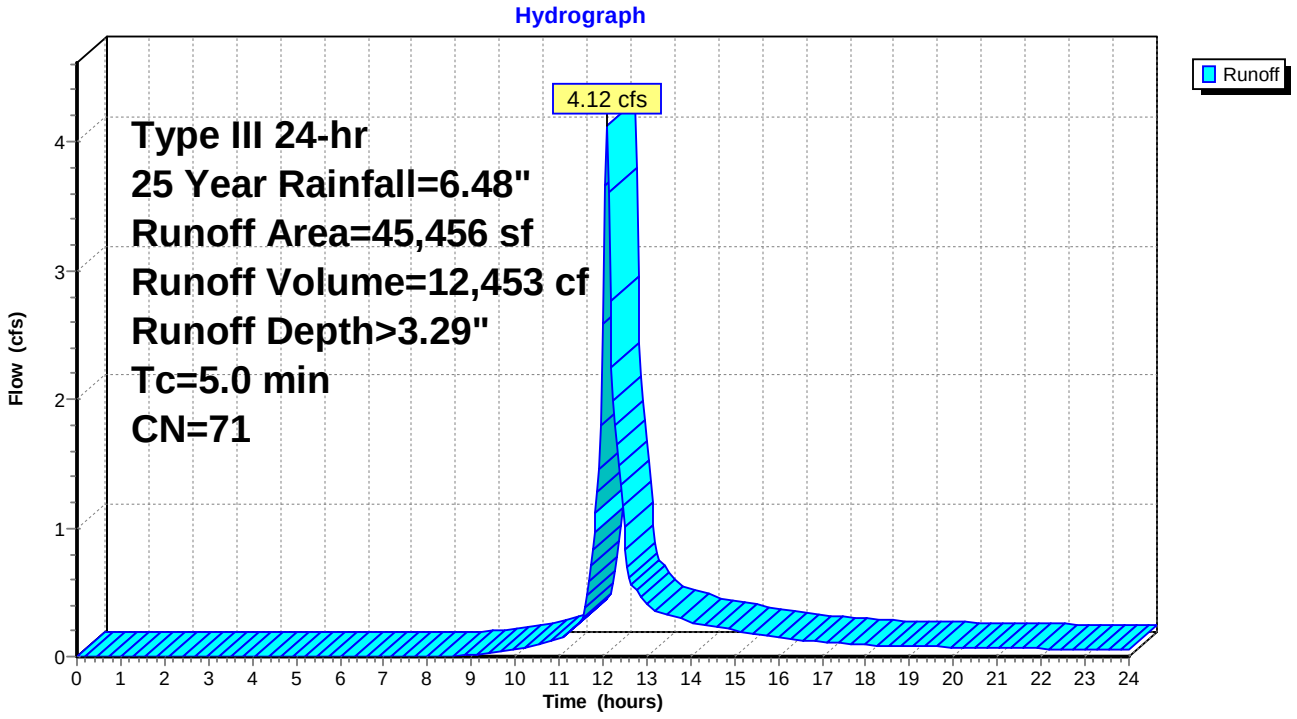
Runoff = 4.12 cfs @ 12.08 hrs, Volume= 12,453 cf, Depth> 3.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=6.48"

	Area (sf)	CN	Description
*	2,236	98	House
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	40,845	69	50-75% Grass cover, Fair, HSG B
	45,456	71	Weighted Average
	43,193		95.02% Pervious Area
	2,263		4.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 2S: Proposed Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 2S: Proposed Conditions

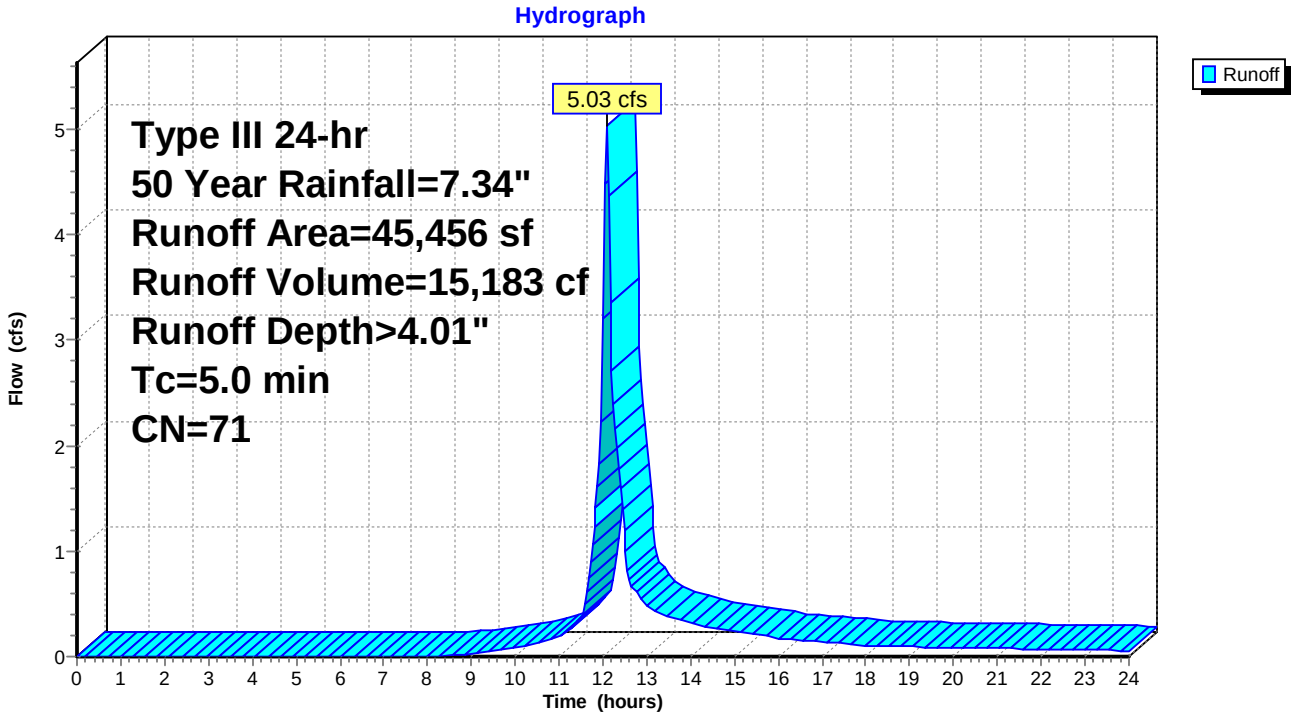
Runoff = 5.03 cfs @ 12.08 hrs, Volume= 15,183 cf, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 Year Rainfall=7.34"

	Area (sf)	CN	Description
*	2,236	98	House
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	40,845	69	50-75% Grass cover, Fair, HSG B
	45,456	71	Weighted Average
	43,193		95.02% Pervious Area
	2,263		4.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 2S: Proposed Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 2S: Proposed Conditions

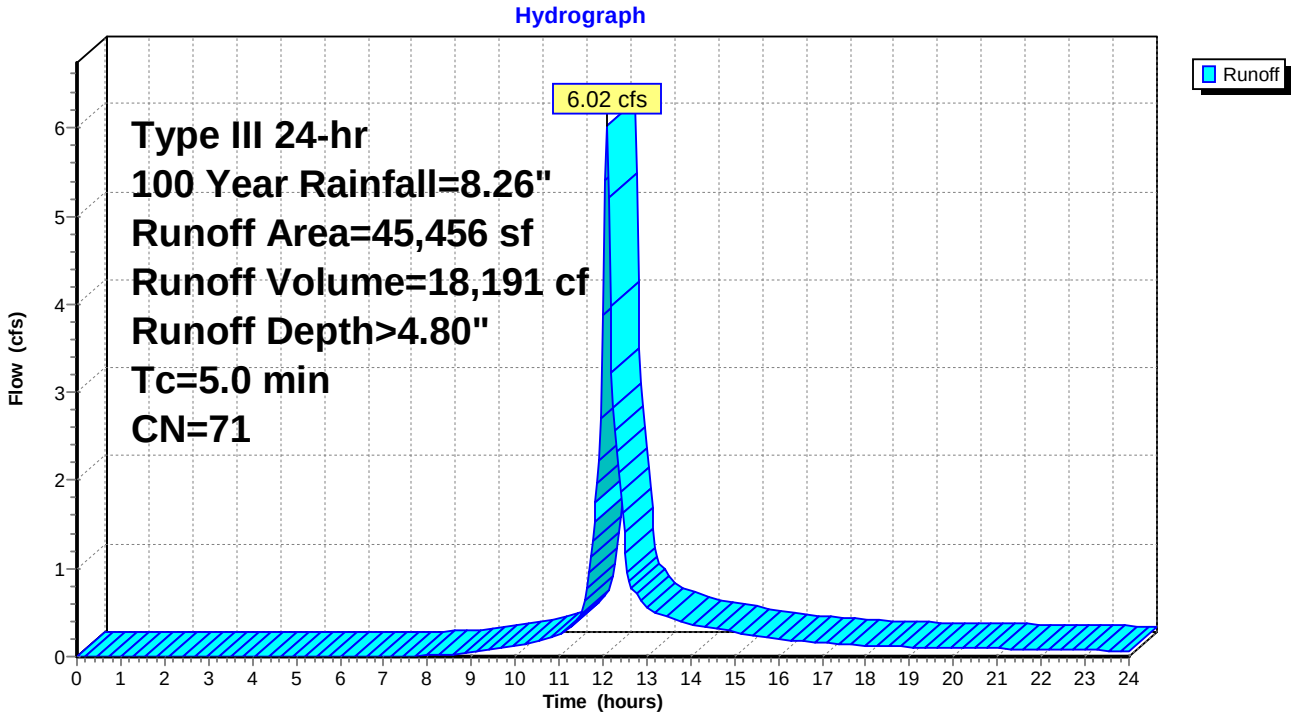
Runoff = 6.02 cfs @ 12.08 hrs, Volume= 18,191 cf, Depth> 4.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=8.26"

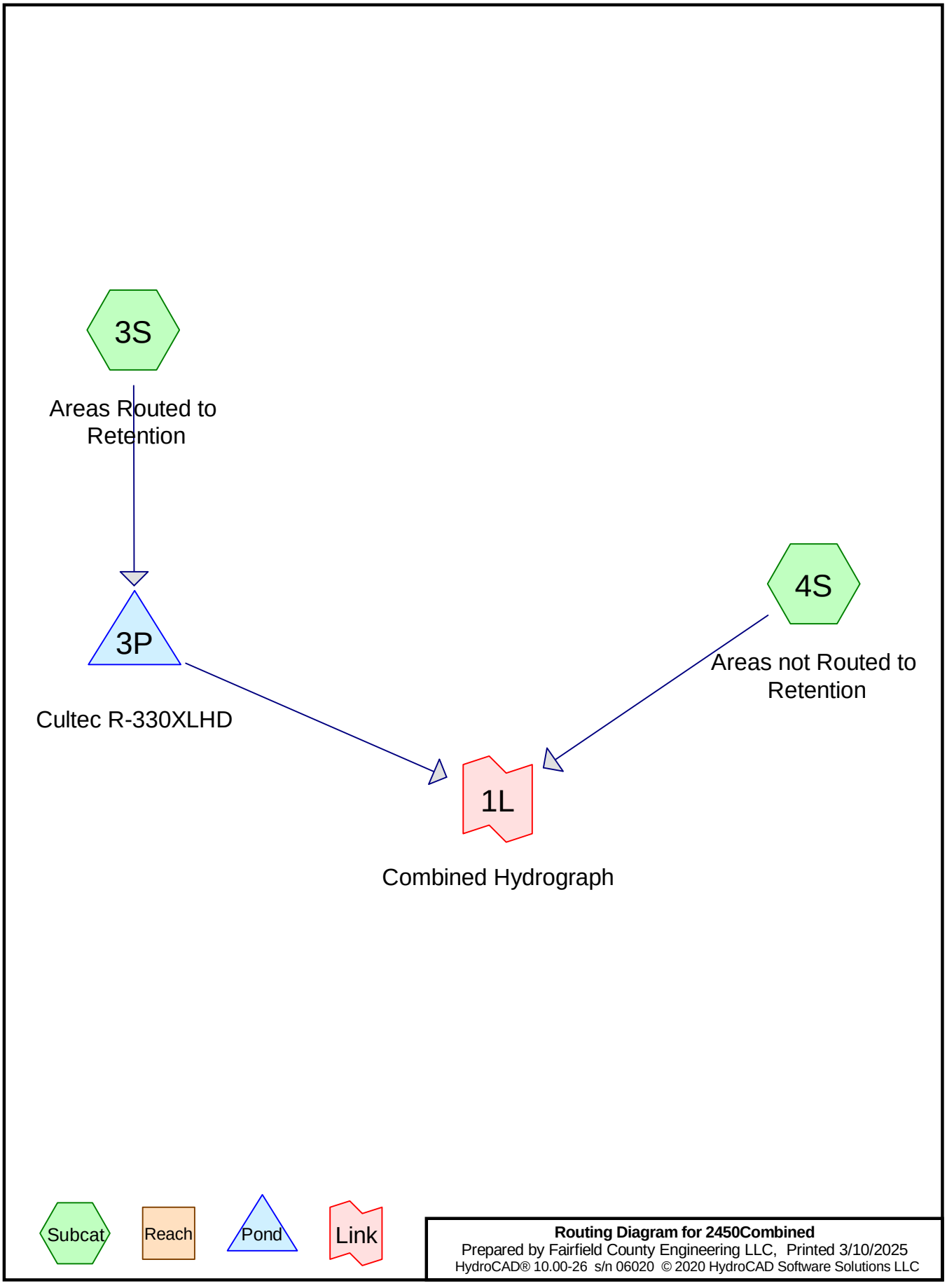
	Area (sf)	CN	Description
*	2,236	98	House
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	40,845	69	50-75% Grass cover, Fair, HSG B
	45,456	71	Weighted Average
	43,193		95.02% Pervious Area
	2,263		4.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 2S: Proposed Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Routing Diagram for 2450Combined
Prepared by Fairfield County Engineering LLC, Printed 3/10/2025
HydroCAD® 10.00-26 s/n 06020 © 2020 HydroCAD Software Solutions LLC

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 3S: Areas Routed to Retention

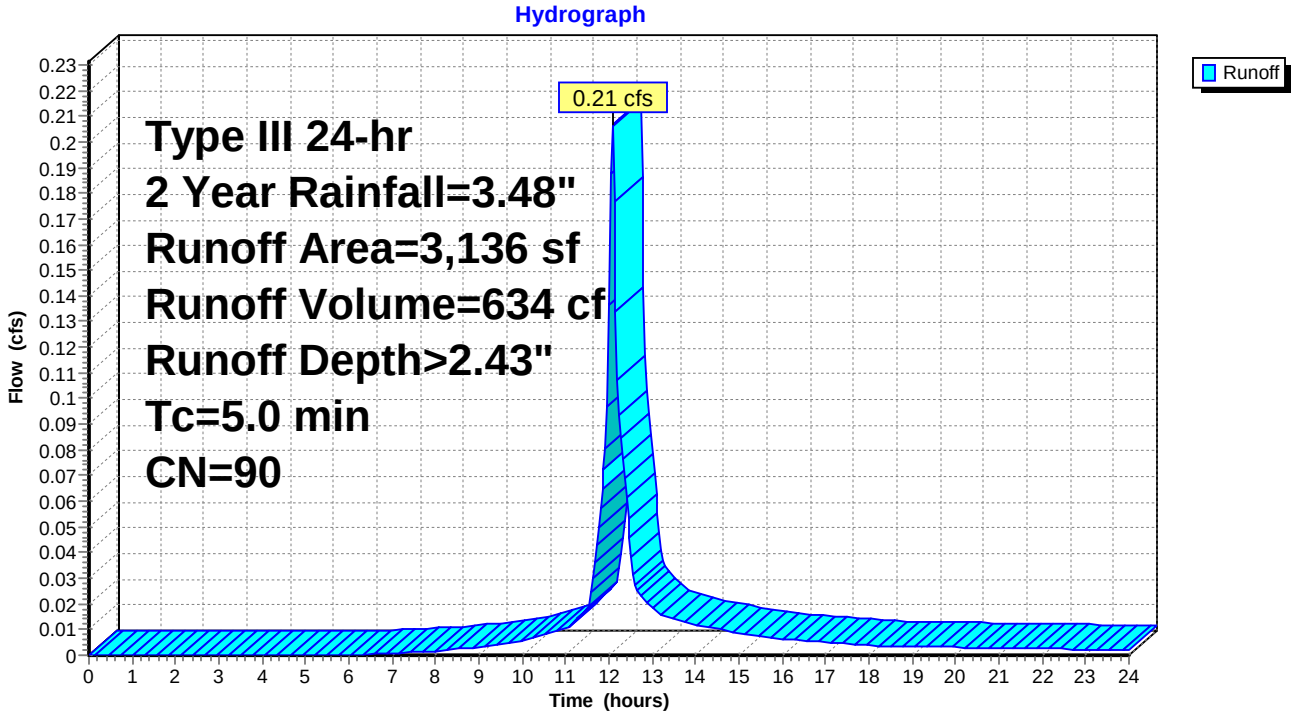
Runoff = 0.21 cfs @ 12.08 hrs, Volume= 634 cf, Depth> 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.48"

	Area (sf)	CN	Description
*	2,236	98	House
	900	69	50-75% Grass cover, Fair, HSG B
	3,136	90	Weighted Average
	900		28.70% Pervious Area
	2,236		71.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 3S: Areas Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 4S: Areas not Routed to Retention

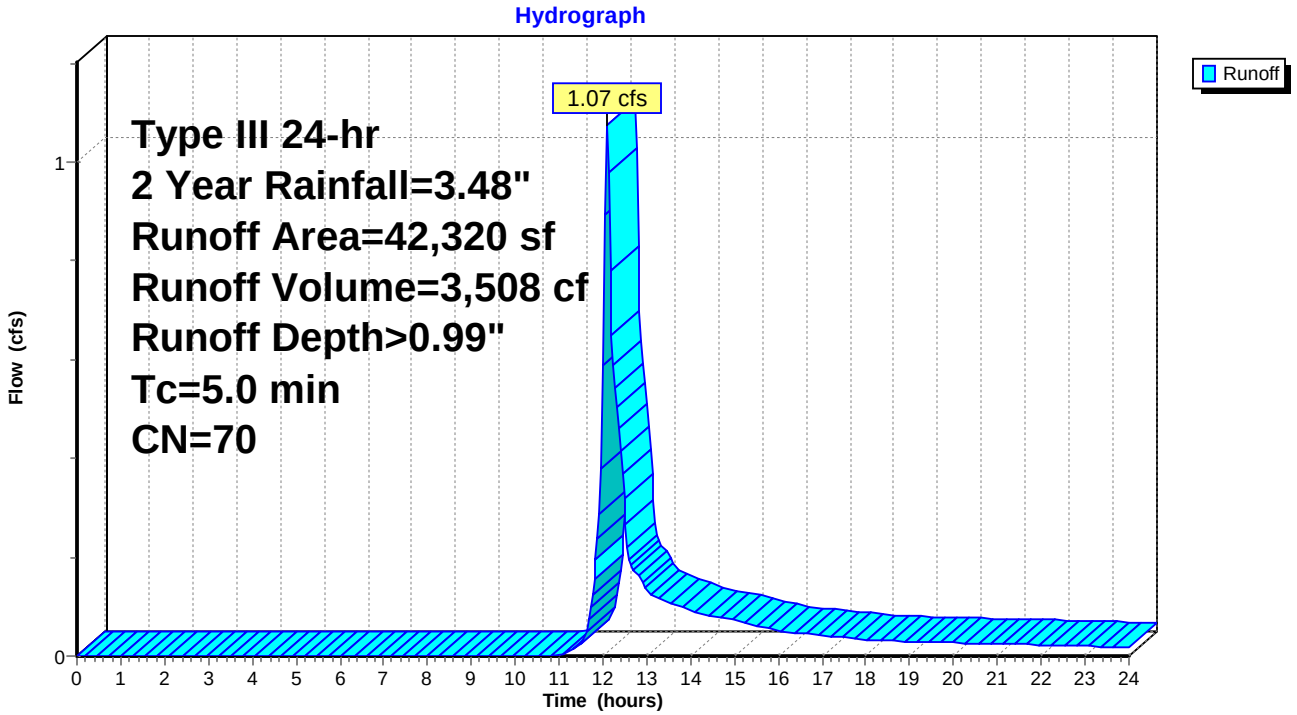
Runoff = 1.07 cfs @ 12.09 hrs, Volume= 3,508 cf, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.48"

	Area (sf)	CN	Description
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	39,945	69	50-75% Grass cover, Fair, HSG B
	42,320	70	Weighted Average
	42,293		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 4S: Areas not Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Pond 3P: Cultec R-330XLHD

Inflow Area = 3,136 sf, 71.30% Impervious, Inflow Depth > 2.43" for 2 Year event
Inflow = 0.21 cfs @ 12.08 hrs, Volume= 634 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 24.05' @ 24.00 hrs Surf.Area= 609 sf Storage= 634 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.80'	267 cf	**19.33'W x 31.50'L x 2.54'H Field A** 1,548 cf Overall - 879 cf Embedded = 669 cf x 40.0% Voids
#2A	22.80'	879 cf	**Cultec R-330XLHD** x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		1,147 cf	Total Available Storage

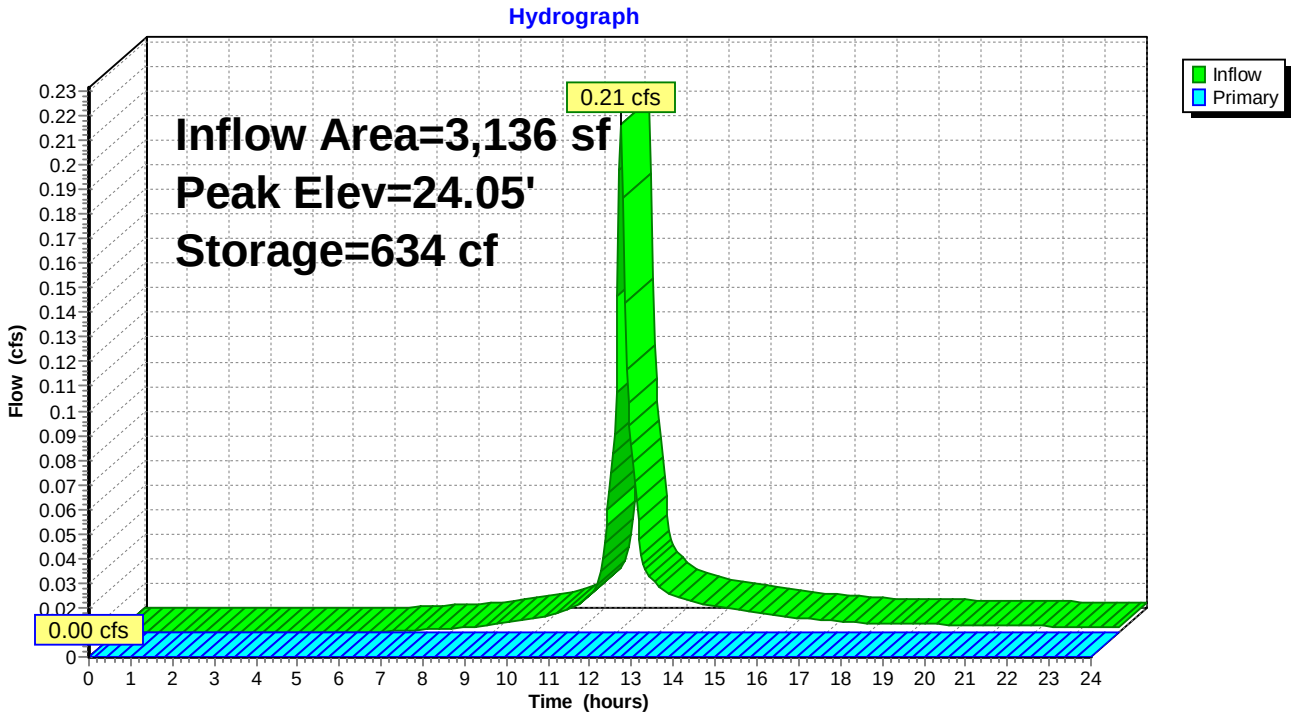
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	25.34'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=22.80' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Pond 3P: Cultec R-330XLHD



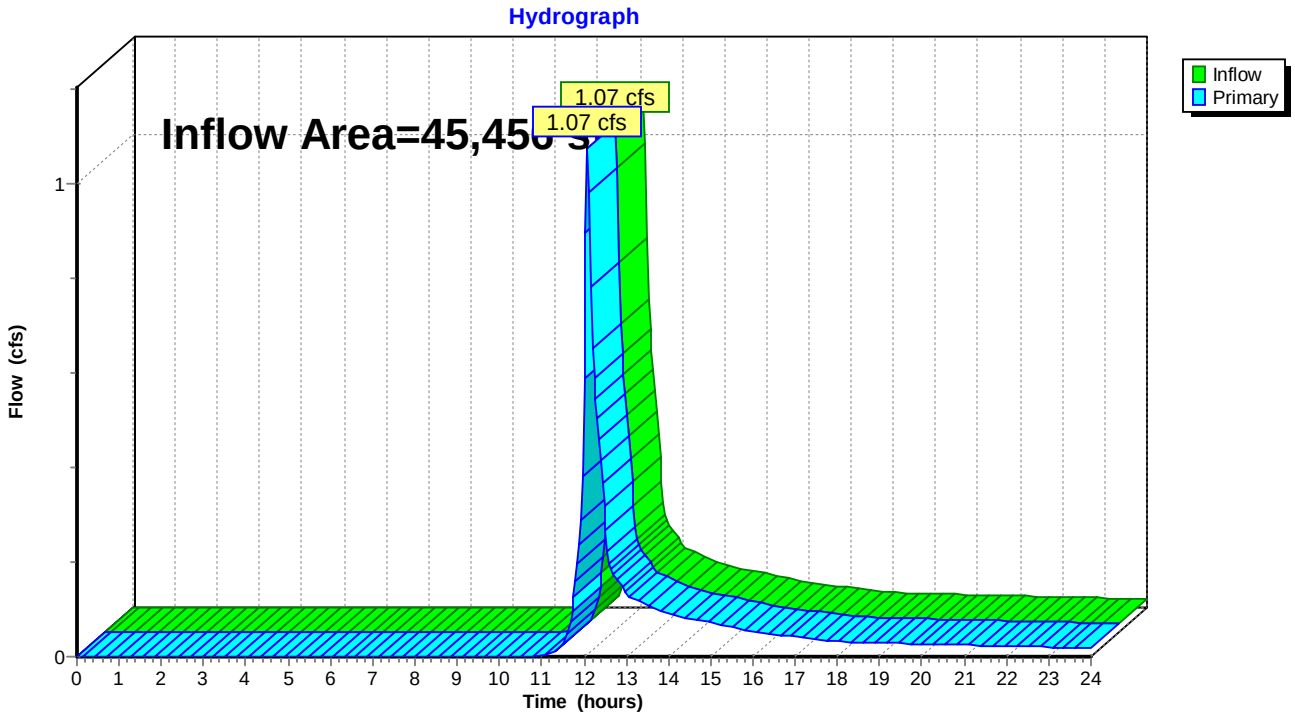
This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Link 1L: Combined Hydrograph

Inflow Area = 45,456 sf, 4.98% Impervious, Inflow Depth > 0.93" for 2 Year event
Inflow = 1.07 cfs @ 12.09 hrs, Volume= 3,508 cf
Primary = 1.07 cfs @ 12.09 hrs, Volume= 3,508 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 3S: Areas Routed to Retention

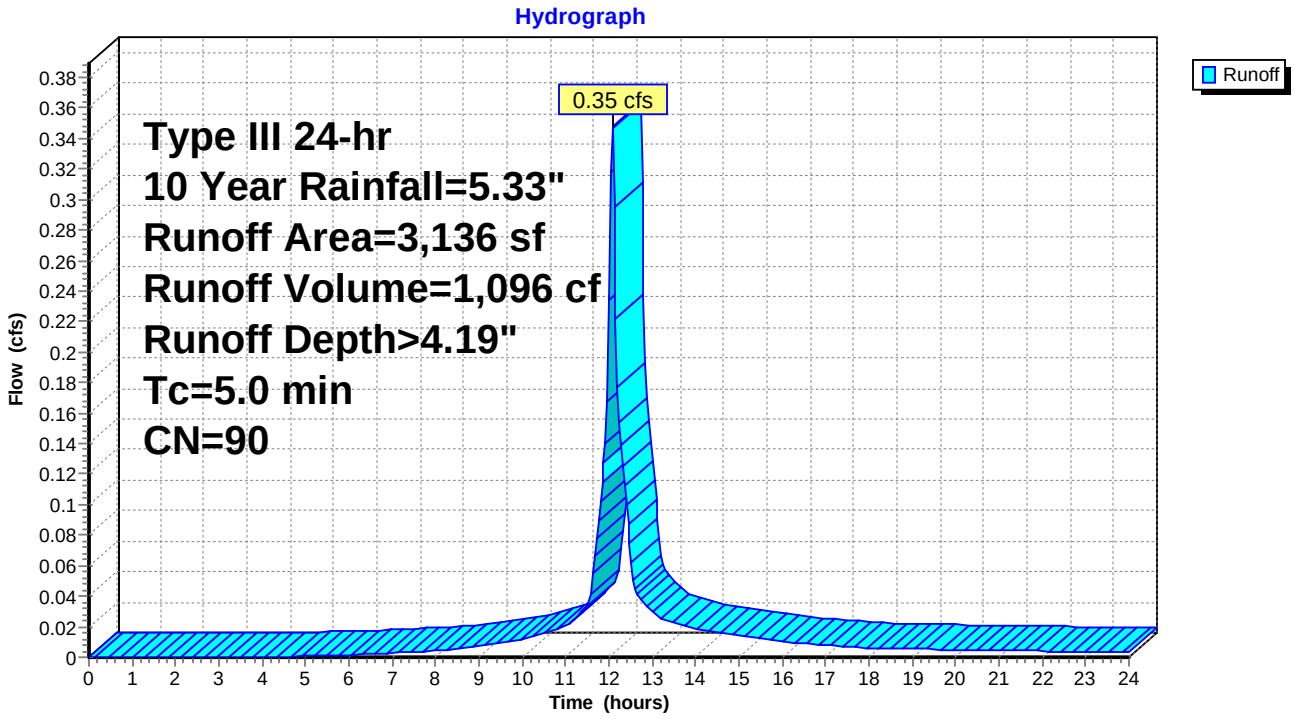
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,096 cf, Depth> 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=5.33"

	Area (sf)	CN	Description
*	2,236	98	House
	900	69	50-75% Grass cover, Fair, HSG B
	3,136	90	Weighted Average
	900		28.70% Pervious Area
	2,236		71.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 3S: Areas Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 4S: Areas not Routed to Retention

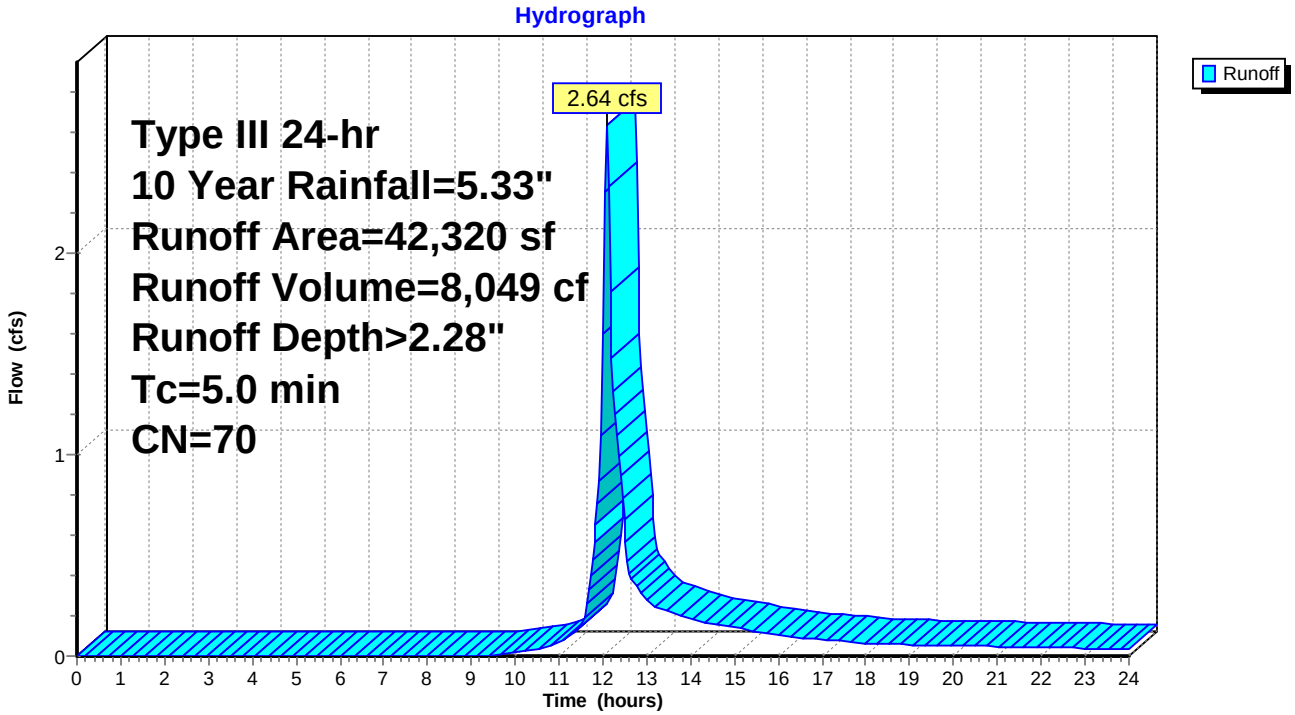
Runoff = 2.64 cfs @ 12.08 hrs, Volume= 8,049 cf, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=5.33"

	Area (sf)	CN	Description
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	39,945	69	50-75% Grass cover, Fair, HSG B
	42,320	70	Weighted Average
	42,293		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 4S: Areas not Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Pond 3P: Cultec R-330XLHD

Inflow Area = 3,136 sf, 71.30% Impervious, Inflow Depth > 4.19" for 10 Year event
Inflow = 0.35 cfs @ 12.07 hrs, Volume= 1,096 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 25.15' @ 24.00 hrs Surf.Area= 609 sf Storage= 1,095 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.80'	267 cf	**19.33'W x 31.50'L x 2.54'H Field A** 1,548 cf Overall - 879 cf Embedded = 669 cf x 40.0% Voids
#2A	22.80'	879 cf	**Cultec R-330XLHD** x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		1,147 cf	Total Available Storage

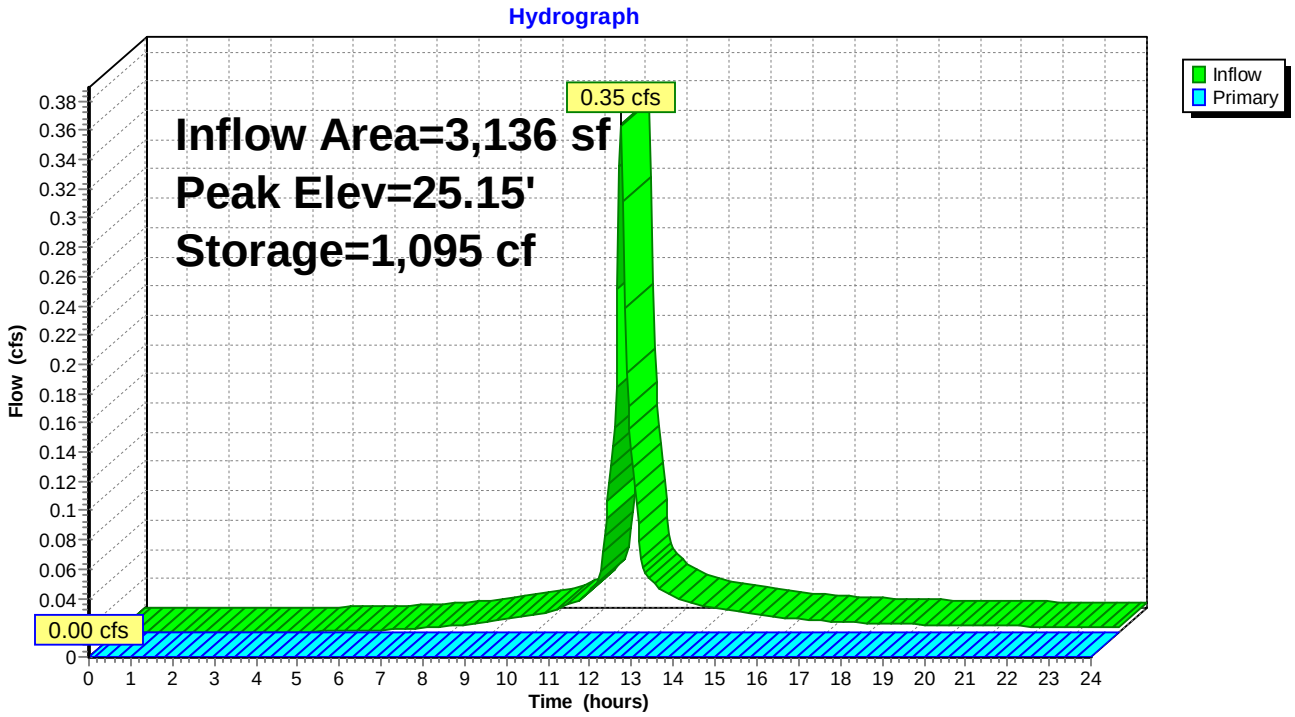
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	25.34'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=22.80' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Pond 3P: Cultec R-330XLHD



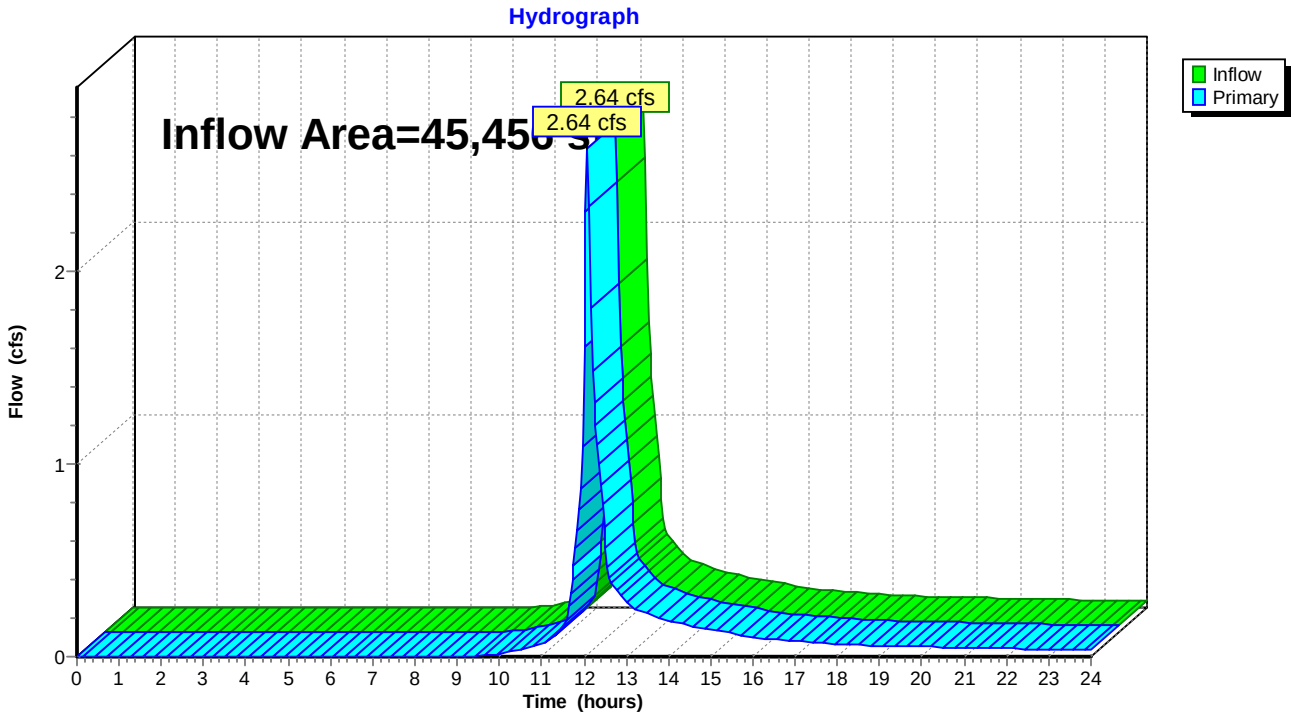
This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Link 1L: Combined Hydrograph

Inflow Area = 45,456 sf, 4.98% Impervious, Inflow Depth > 2.12" for 10 Year event
Inflow = 2.64 cfs @ 12.08 hrs, Volume= 8,049 cf
Primary = 2.64 cfs @ 12.08 hrs, Volume= 8,049 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 3S: Areas Routed to Retention

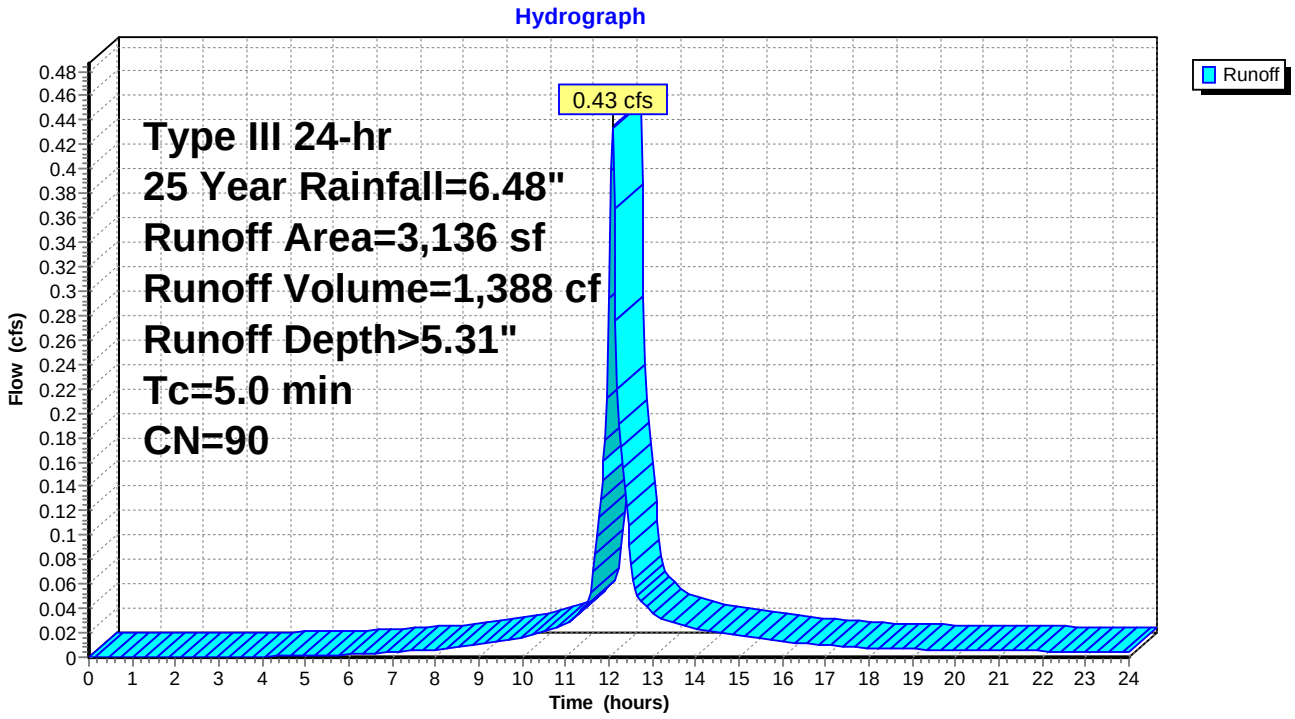
Runoff = 0.43 cfs @ 12.07 hrs, Volume= 1,388 cf, Depth> 5.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=6.48"

	Area (sf)	CN	Description
*	2,236	98	House
	900	69	50-75% Grass cover, Fair, HSG B
	3,136	90	Weighted Average
	900		28.70% Pervious Area
	2,236		71.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 3S: Areas Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 4S: Areas not Routed to Retention

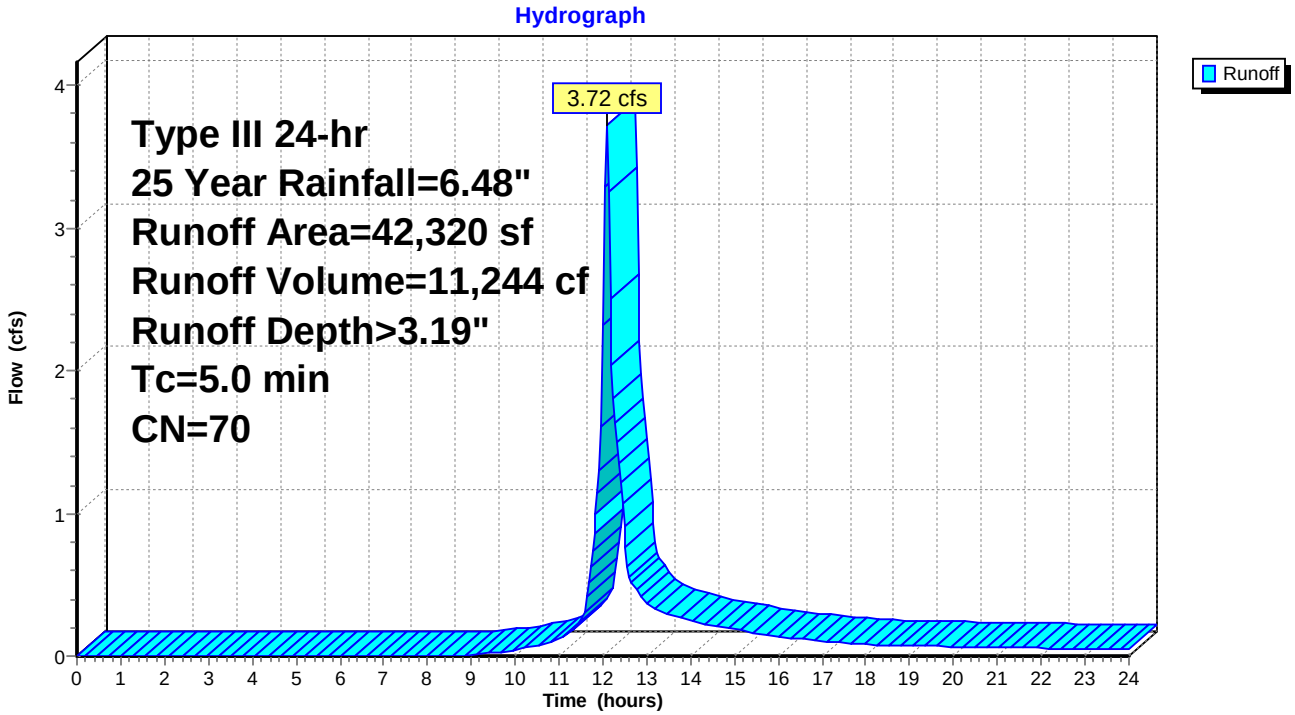
Runoff = 3.72 cfs @ 12.08 hrs, Volume= 11,244 cf, Depth> 3.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=6.48"

	Area (sf)	CN	Description
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	39,945	69	50-75% Grass cover, Fair, HSG B
	42,320	70	Weighted Average
	42,293		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 4S: Areas not Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Pond 3P: Cultec R-330XLHD

Inflow Area = 3,136 sf, 71.30% Impervious, Inflow Depth > 5.31" for 25 Year event
Inflow = 0.43 cfs @ 12.07 hrs, Volume= 1,388 cf
Outflow = 0.03 cfs @ 15.08 hrs, Volume= 241 cf, Atten= 94%, Lag= 180.4 min
Primary = 0.03 cfs @ 15.08 hrs, Volume= 241 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 25.37' @ 15.08 hrs Surf.Area= 609 sf Storage= 1,147 cf

Plug-Flow detention time= 536.4 min calculated for 241 cf (17% of inflow)
Center-of-Mass det. time= 329.2 min (1,110.1 - 781.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.80'	267 cf	**19.33'W x 31.50'L x 2.54'H Field A** 1,548 cf Overall - 879 cf Embedded = 669 cf x 40.0% Voids
#2A	22.80'	879 cf	**Cultec R-330XLHD** x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		1,147 cf	Total Available Storage

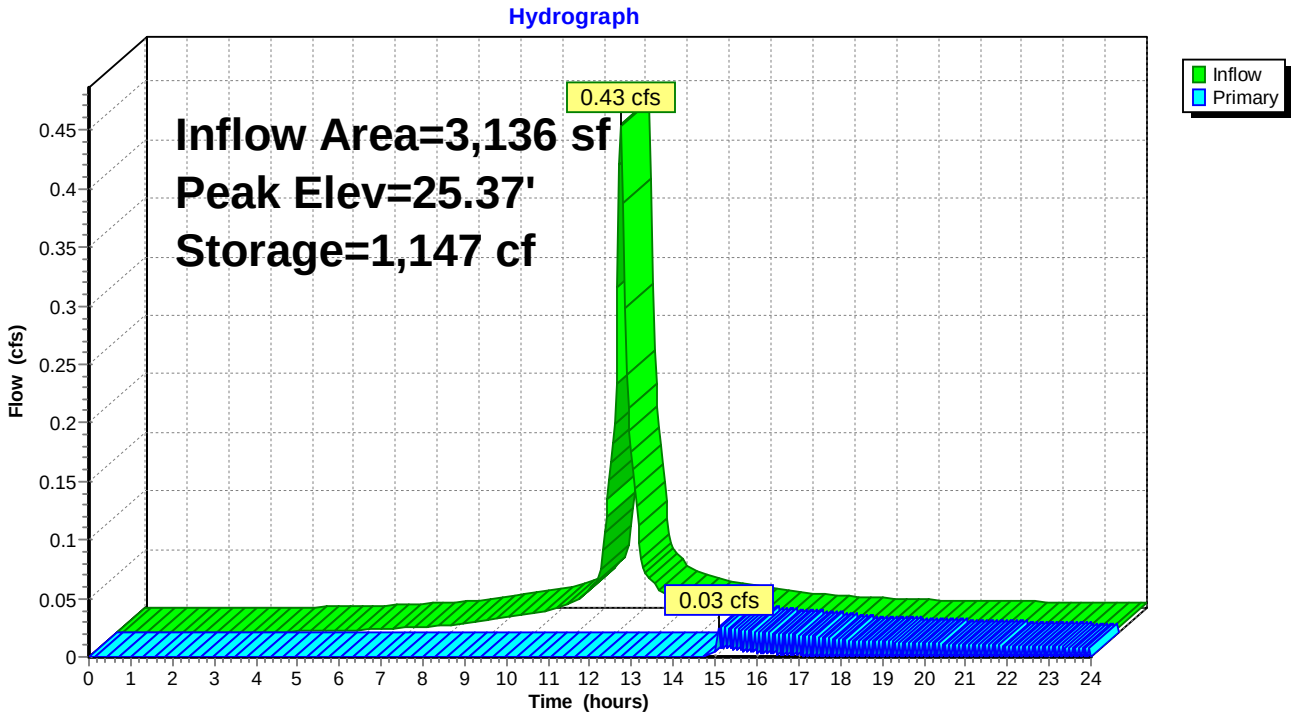
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	25.34'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.03 cfs @ 15.08 hrs HW=25.37' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 0.03 cfs @ 0.56 fps)

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Pond 3P: Cultec R-330XLHD



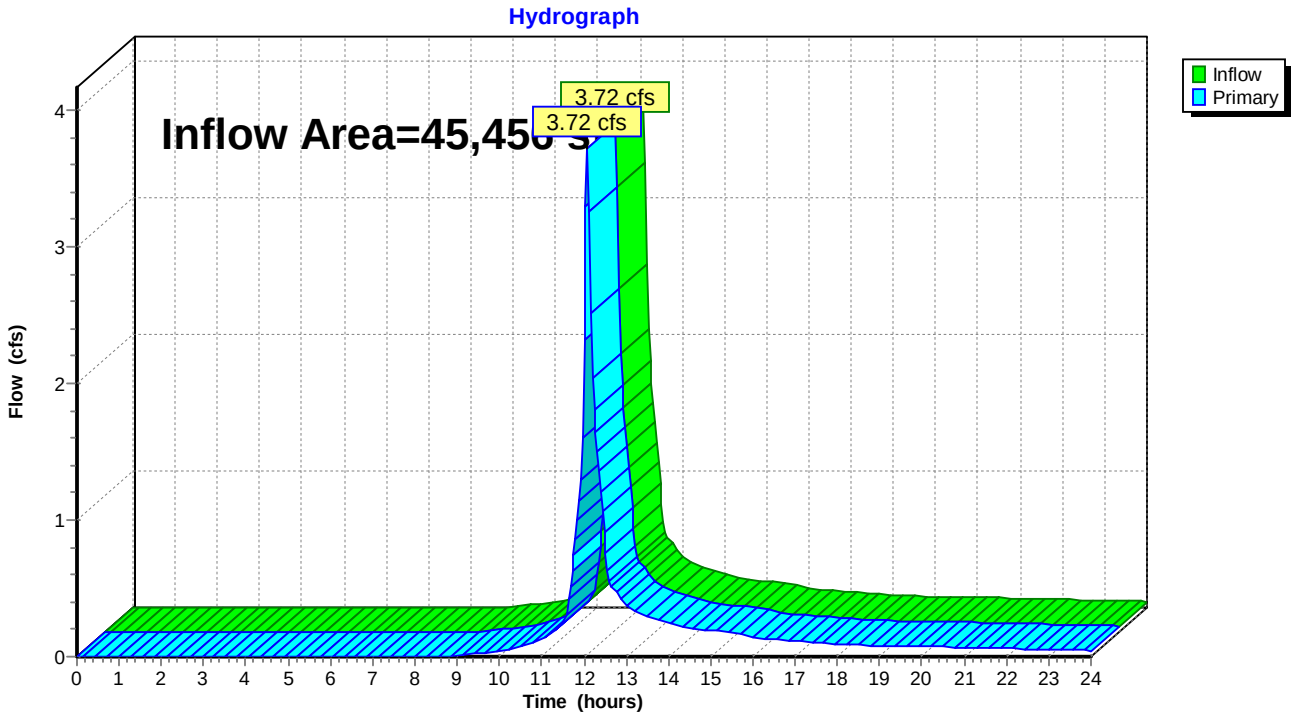
This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Link 1L: Combined Hydrograph

Inflow Area = 45,456 sf, 4.98% Impervious, Inflow Depth > 3.03" for 25 Year event
Inflow = 3.72 cfs @ 12.08 hrs, Volume= 11,485 cf
Primary = 3.72 cfs @ 12.08 hrs, Volume= 11,485 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 3S: Areas Routed to Retention

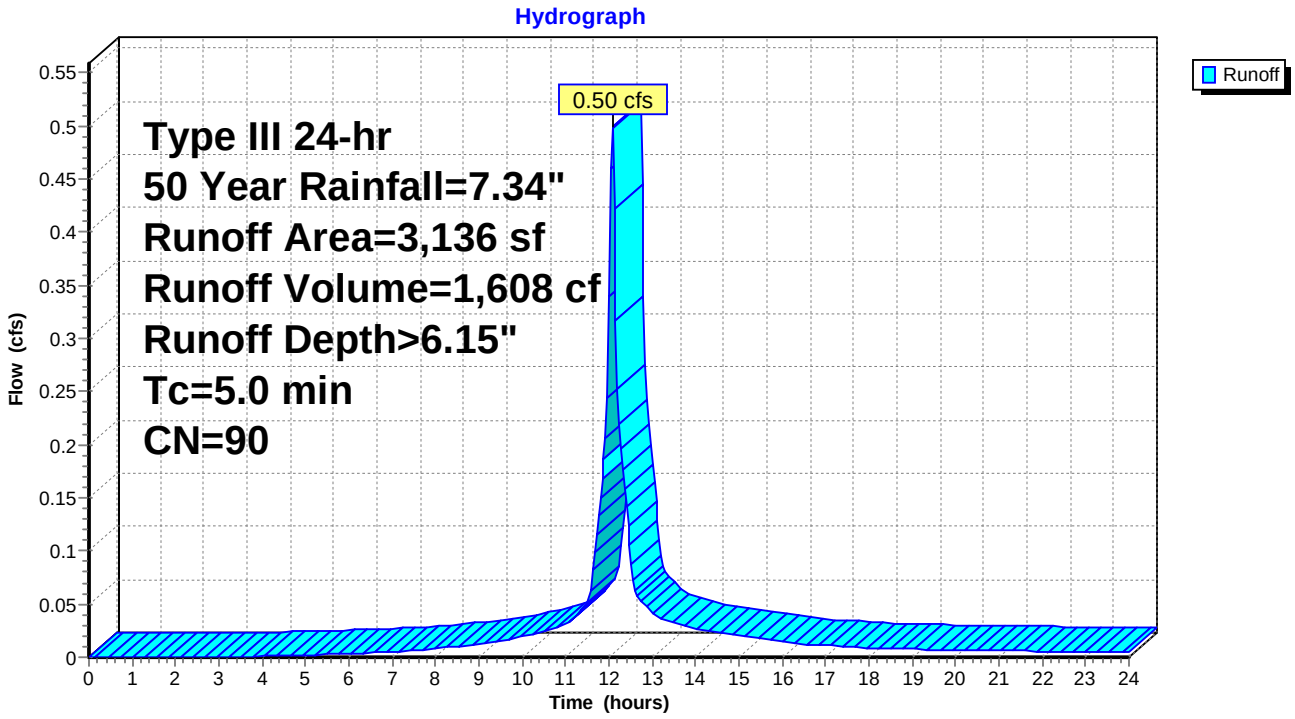
Runoff = 0.50 cfs @ 12.07 hrs, Volume= 1,608 cf, Depth> 6.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 Year Rainfall=7.34"

	Area (sf)	CN	Description
*	2,236	98	House
	900	69	50-75% Grass cover, Fair, HSG B
	3,136	90	Weighted Average
	900		28.70% Pervious Area
	2,236		71.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 3S: Areas Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 4S: Areas not Routed to Retention

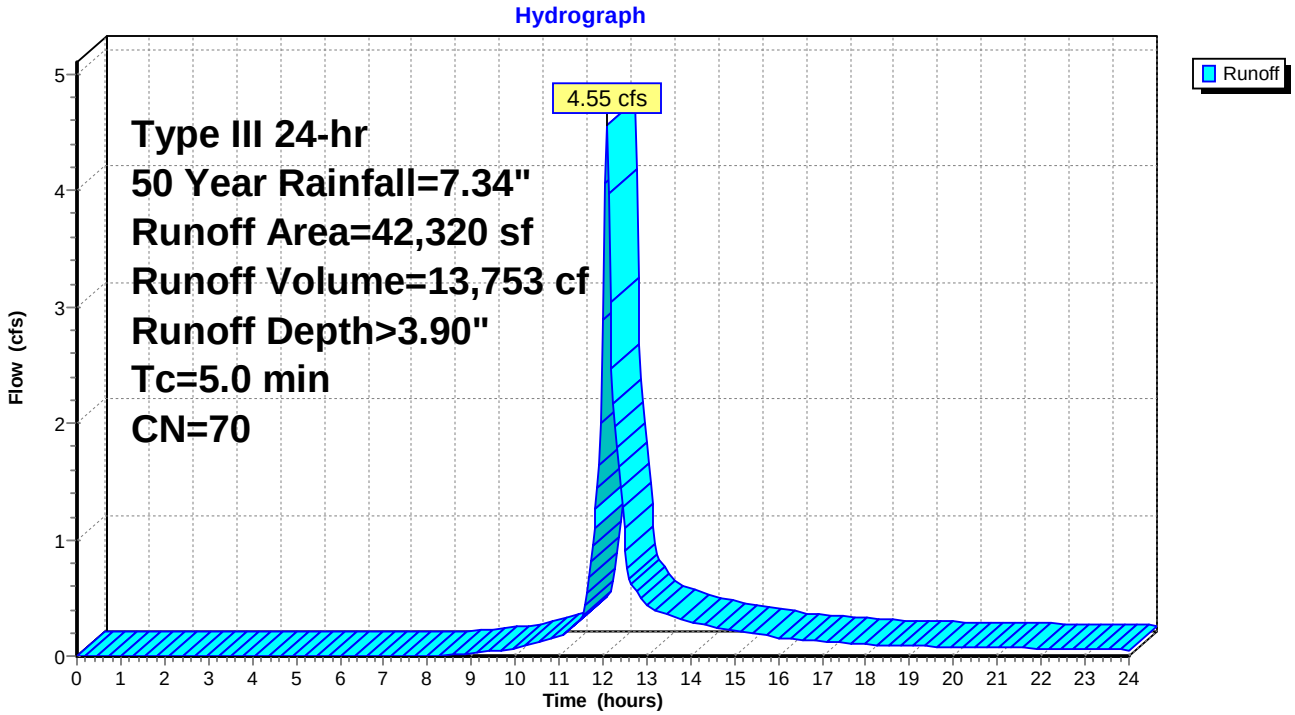
Runoff = 4.55 cfs @ 12.08 hrs, Volume= 13,753 cf, Depth> 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 Year Rainfall=7.34"

	Area (sf)	CN	Description
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	39,945	69	50-75% Grass cover, Fair, HSG B
	42,320	70	Weighted Average
	42,293		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 4S: Areas not Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Pond 3P: Cultec R-330XLHD

Inflow Area = 3,136 sf, 71.30% Impervious, Inflow Depth > 6.15" for 50 Year event
Inflow = 0.50 cfs @ 12.07 hrs, Volume= 1,608 cf
Outflow = 0.07 cfs @ 13.16 hrs, Volume= 461 cf, Atten= 86%, Lag= 65.2 min
Primary = 0.07 cfs @ 13.16 hrs, Volume= 461 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 25.40' @ 13.16 hrs Surf.Area= 609 sf Storage= 1,147 cf

Plug-Flow detention time= 383.6 min calculated for 461 cf (29% of inflow)
Center-of-Mass det. time= 223.2 min (1,000.3 - 777.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.80'	267 cf	**19.33'W x 31.50'L x 2.54'H Field A** 1,548 cf Overall - 879 cf Embedded = 669 cf x 40.0% Voids
#2A	22.80'	879 cf	**Cultec R-330XLHD** x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		1,147 cf	Total Available Storage

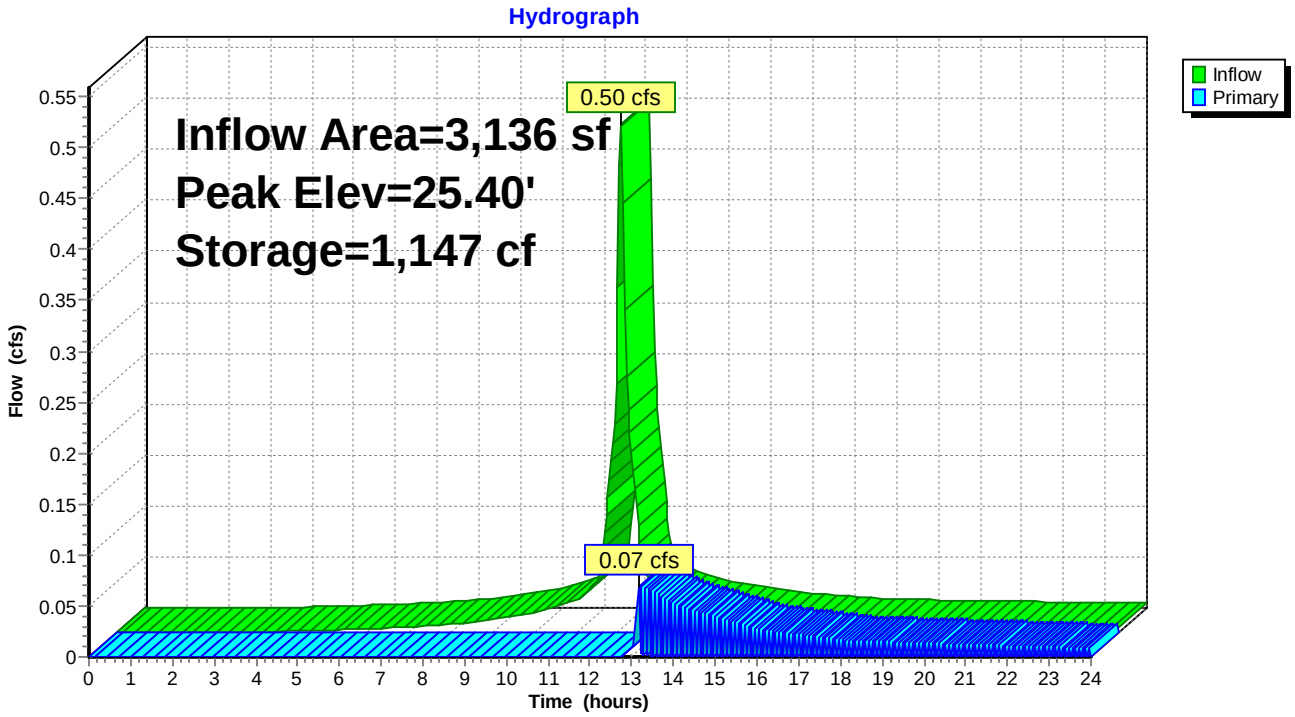
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	25.34'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.07 cfs @ 13.16 hrs HW=25.40' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 0.07 cfs @ 0.78 fps)

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Pond 3P: Cultec R-330XLHD



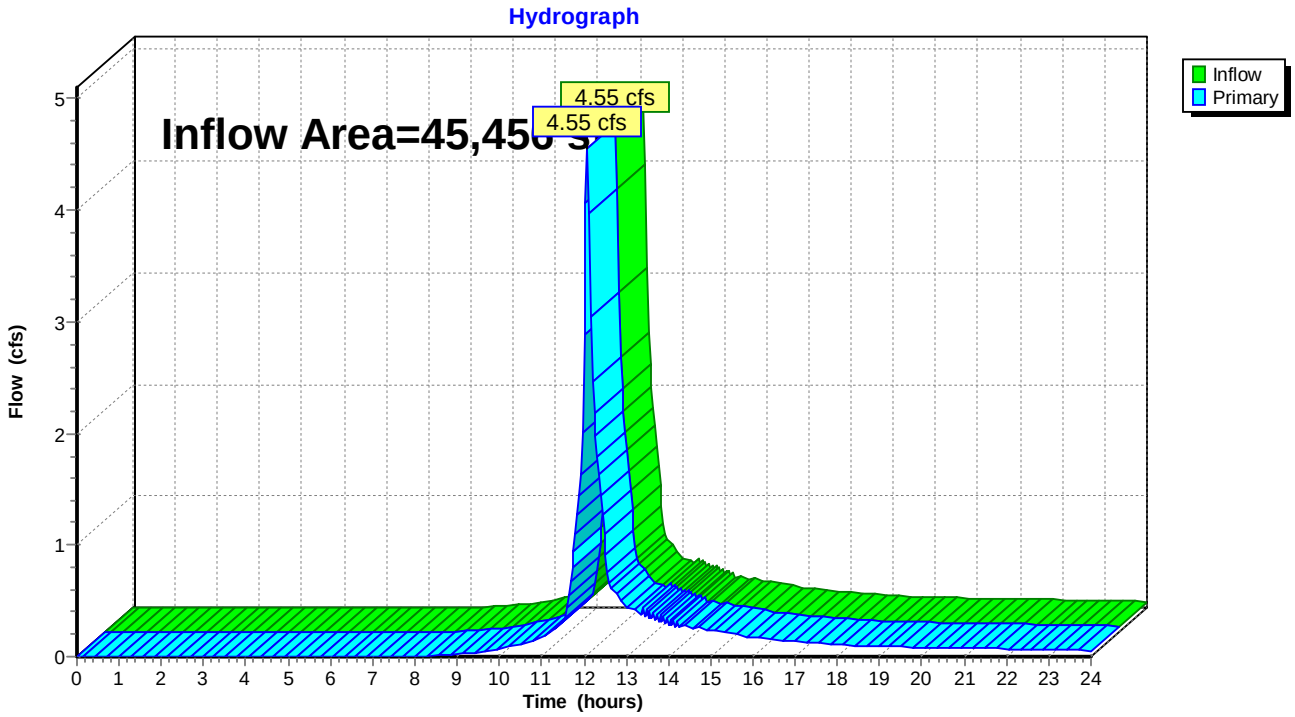
This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Link 1L: Combined Hydrograph

Inflow Area = 45,456 sf, 4.98% Impervious, Inflow Depth > 3.75" for 50 Year event
Inflow = 4.55 cfs @ 12.08 hrs, Volume= 14,214 cf
Primary = 4.55 cfs @ 12.08 hrs, Volume= 14,214 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 3S: Areas Routed to Retention

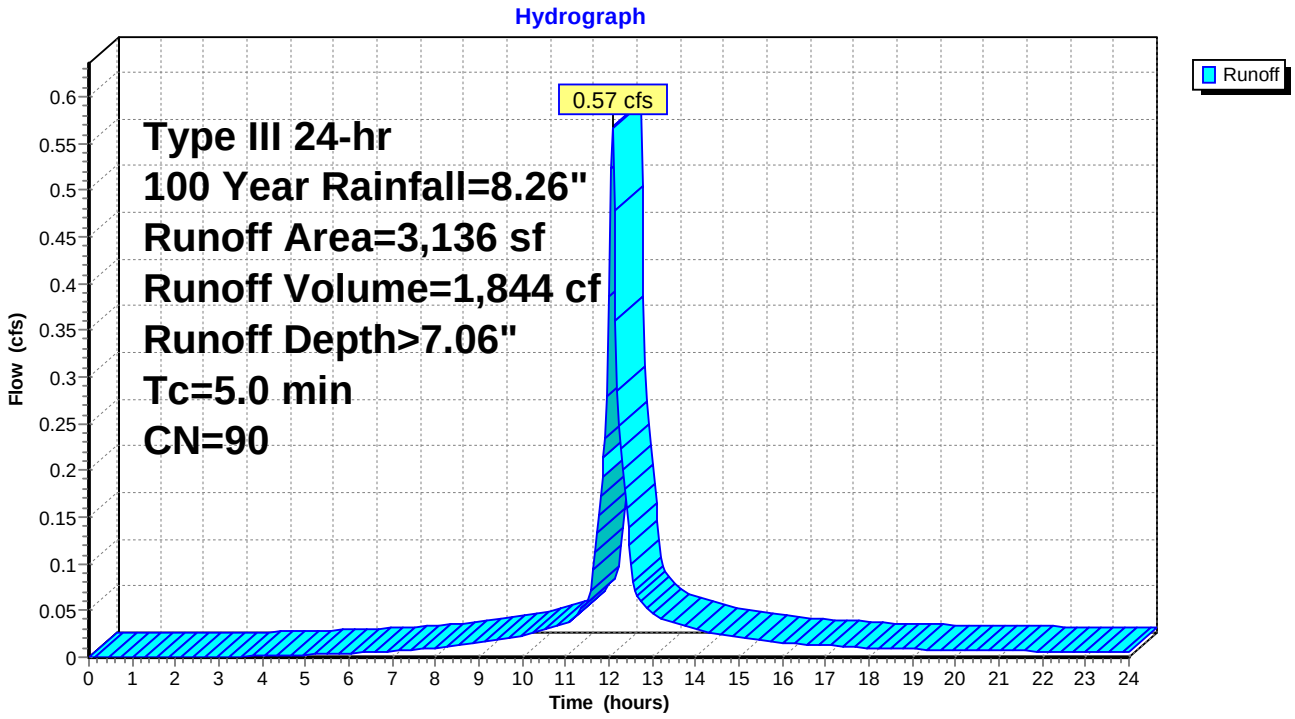
Runoff = 0.57 cfs @ 12.07 hrs, Volume= 1,844 cf, Depth> 7.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=8.26"

	Area (sf)	CN	Description
*	2,236	98	House
	900	69	50-75% Grass cover, Fair, HSG B
	3,136	90	Weighted Average
	900		28.70% Pervious Area
	2,236		71.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 3S: Areas Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 4S: Areas not Routed to Retention

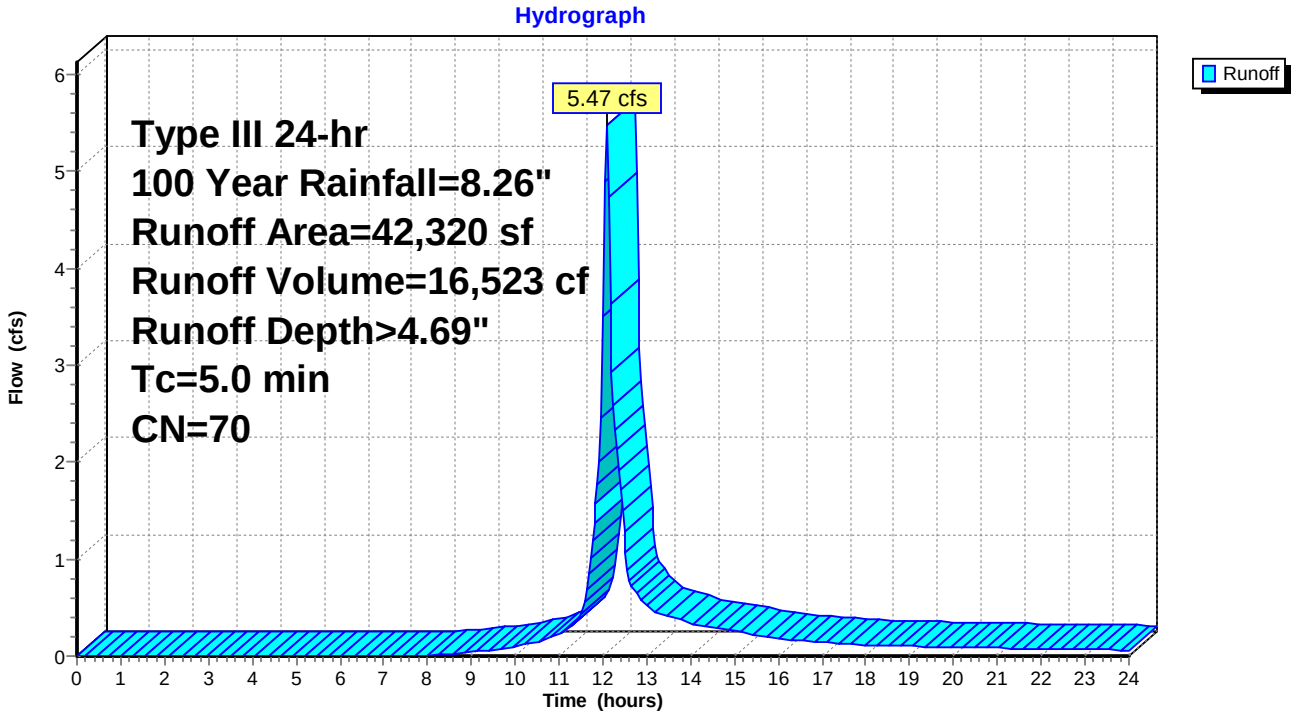
Runoff = 5.47 cfs @ 12.08 hrs, Volume= 16,523 cf, Depth> 4.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=8.26"

	Area (sf)	CN	Description
*	1,815	85	Gravel Driveway
*	533	85	Deck
*	27	98	Shed
	39,945	69	50-75% Grass cover, Fair, HSG B
	42,320	70	Weighted Average
	42,293		99.94% Pervious Area
	27		0.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Direct**

Subcatchment 4S: Areas not Routed to Retention



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Pond 3P: Cultec R-330XLHD

Inflow Area = 3,136 sf, 71.30% Impervious, Inflow Depth > 7.06" for 100 Year event
Inflow = 0.57 cfs @ 12.07 hrs, Volume= 1,844 cf
Outflow = 0.21 cfs @ 12.44 hrs, Volume= 697 cf, Atten= 63%, Lag= 22.2 min
Primary = 0.21 cfs @ 12.44 hrs, Volume= 697 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs
Peak Elev= 25.46' @ 12.45 hrs Surf.Area= 609 sf Storage= 1,147 cf

Plug-Flow detention time= 303.8 min calculated for 696 cf (38% of inflow)
Center-of-Mass det. time= 166.3 min (939.9 - 773.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.80'	267 cf	**19.33'W x 31.50'L x 2.54'H Field A** 1,548 cf Overall - 879 cf Embedded = 669 cf x 40.0% Voids
#2A	22.80'	879 cf	**Cultec R-330XLHD** x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		1,147 cf	Total Available Storage

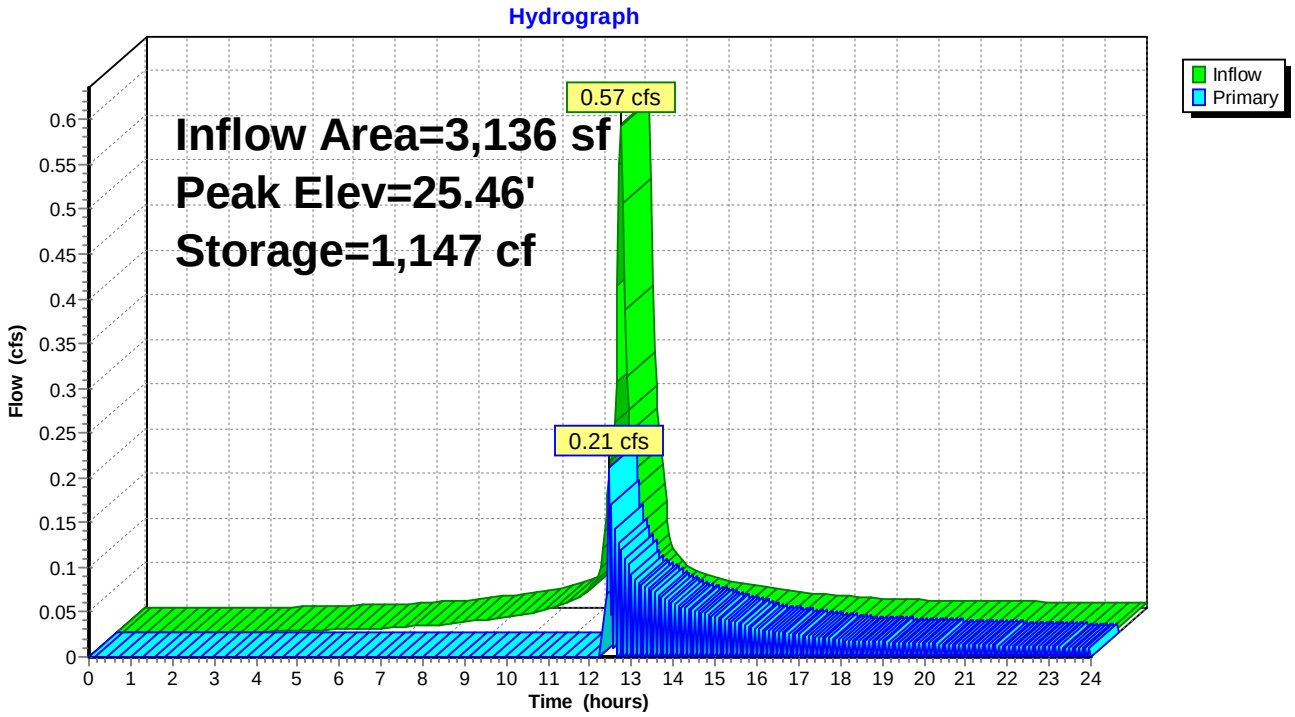
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	25.34'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.20 cfs @ 12.44 hrs HW=25.45' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 0.20 cfs @ 1.10 fps)

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Pond 3P: Cultec R-330XLHD



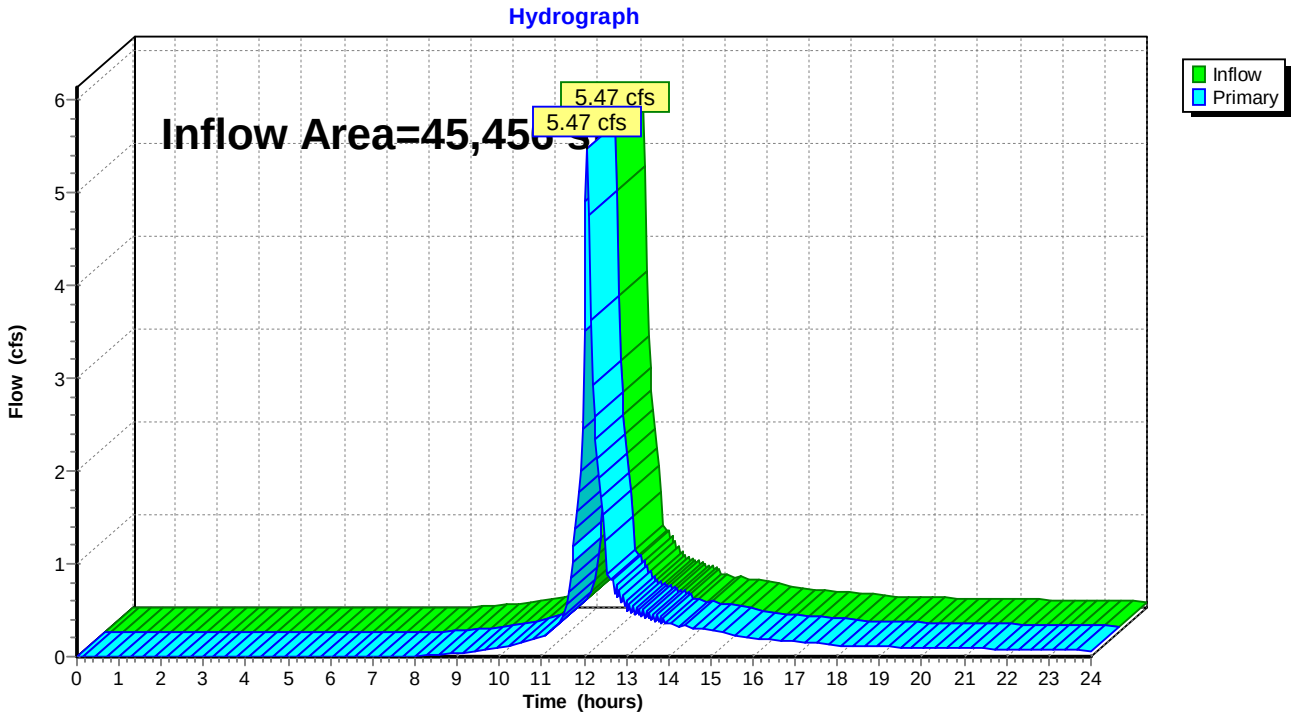
This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Link 1L: Combined Hydrograph

Inflow Area = 45,456 sf, 4.98% Impervious, Inflow Depth > 4.55" for 100 Year event
Inflow = 5.47 cfs @ 12.08 hrs, Volume= 17,220 cf
Primary = 5.47 cfs @ 12.08 hrs, Volume= 17,220 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

Link 1L: Combined Hydrograph



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

DRAINAGE REPORT

PREPARED FOR

EXISTING AND PROPOSED SITE CONDITIONS

LOCATED AT:

FCE #2450

315 ROWAYTON AVENUE Lot 5



NORWALK, CONNECTICUT

December 28, 2024

FAIRFIELD COUNTY ENGINEERING, LLC

CIVIL ENGINEERS

60 WINFIELD ST.
NORWALK, CONNECTICUT 06855
(203) 831-8005
FAX: (203) 831-8006
E-mail to: wayne@fairfieldce.com

NARRATIVE:

The subject of this report is a 0.910 acre parcel located at 315 Rowayton Avenue in Norwalk. The purpose of this report is to determine the existing and proposed runoffs resulting from the proposed site improvements in order to design a stormwater management system.

EXISTING CONDITIONS:

The subject parcel is located on the west side of Rowayton Avenue, approximately 300 feet from its intersection with Arnold Lane. The lot currently contains a residence, with associated driveway, patio and walk. The lot slopes moderately to steeply to the rear.

Existing soils at this location, as identified in the NRCS Soil Survey of Fairfield County, Connecticut, consist of a combination of Charlton-Chatfield complex, very rocky and Udorthents-Urban land complex, both of which have a Hydrologic classification of “B”.

The existing runoff as developed from a 100-Year rainfall event is 5.37 c.f.s.

PROPOSED CONDITIONS:

The proposal for this property is to construct an ADU, with associated driveway extension on this front lot, which is part of a two lot subdivision.

The proposed runoff (un-mitigated) from a 100-Year rainfall event is 5.61.

COMPUTATIONS:

The following computations of the existing and proposed conditions runoff flows were derived from the HydroCAD computer software. HydroCAD follows the NRCS TR-20 procedure for computing stormwater runoff. Computations were performed for a 100-year thru 2 Year storm event, which have a 1% and 50% chance of occurring in any given 12 month period, respectively.

Existing Conditions:

House	1,529 s.f.	CN 98
Driveway	2,144 s.f.	CN 98
Patio	652 s.f.	CN 98
Walk	43 s.f.	CN 98
Lawn	35,262 s.f.	CN 69
Total -	39,630 s.f.	

Weighted CN - 72

Proposed Conditions:

House	1,529 s.f.	CN 98
Driveway	2,144 s.f.	CN 98
Patio	652 s.f.	CN 98
Walk	43 s.f.	CN 98
ADU	1,135 s.f.	CN 98
Deck	193 s.f.	CN 85
Gravel Driveway	1,465 s.f.	CN 85
Lawn	32,469 s.f.	CN 69
Total -	39,630 s.f.	

Weighted CN - 74

Water Quality Volume

I = (18.1 x 0.009) + 0.05 = 0.2129
WQV = (0.4550 (0.910 acres)/12) x 1.3 = 0.0209883 ac-ft = 914.3 ft^3.

Groundwater Recharge Volume
GWV = 914.3 ft^3 x 0.25 = 228.6 ft^3.

Water Quality Volume Increased Impervious surfaces
2,793 s.f. /12 = 698.3 $ft.^3$

SUMMARY

	100 Year	50 Year	25Yr.	10Yr.	2Yr.
Existing Runoff :	5.37 c.f.s.	4.50 c.f.s.	3.70	2.67	1.15
Proposed Runoff :	5.61 c.f.s.	4.74 c.f.s.	3.93	2.87	1.29
Runoff Retained:	0.38 c.f.s.	0.34 c.f.s.	0.30	0.24	0.16
Areas Bypassing Retention Plus overflow:	5.10 c.f.s.	4.28 c.f.s.	3.52	2.53	1.09

Volume difference (100 Year) = 17,025 ft^3 – 16,247 ft^3 = 778 ft^3

CONCLUSIONS:

The runoff resulting from the proposed site improvements will be retained in an on-site retention system. The runoff from a portion of the roof of the house and the ADU roof will be routed to 10 units of Cultec R-330XLHD retention chamber.

This system will decrease the net peak runoff during a 100 Year storm to 5.10 c.f.s.from its current peak of 5.37 c.f.s.

The proposed retention system provides 744 ft^3 of storage. This meets the Water Quality Volume for the added impervious surfaces and provides groundwater recharge. There is a decrease in the net runoff for the 2 thru 100 Year rainfall events, as the table above illustrates.

There is one watershed on the property, with the runoff being directed to the northwest, towards the river. The drainage pattern will not be altered by the proposed improvements.

The proposed drainage and stormwater retention system complies with the City of Norwalk DPW Drainage Manual of June, 2017.

The proposed improvements will have no adverse impact on surrounding properties.

CITY OF NORWALK
Transportation Mobility & Parking
P: 203-854-7335
Norwalk City Hall
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

Sent via email to: esuchy@carmodylaw.com

To: Elizabeth A.B. Suchy, Esq. – Carmody Torrance Sandak & Hennessey LLP

From: Benjamin Yeung, P.E. – Senior Traffic Engineer, TMP

Date: June 27, 2025

Subject: 315 Rowayton Avenue – Detached Accessory Dwelling Unit – TMP Signoff

---

The City of Norwalk Transportation, Mobility, and Parking (TMP) Department has completed a substantive review of the following documents related to the Site Plan Application for the proposed detached accessory dwelling unit at 315 Rowayton Avenue:

- Zoning Location & Topographic Survey depicting Proposed Conditions, 315 Rowayton Avenue, Norwalk, Connecticut; prepared by Seymour Surveying, dated 01/24/25, revised 06/10/25
- Drainage Plan and Detail Sheet for 315 Rowayton Avenue, Norwalk, Connecticut; prepared by Fairfield County Engineering, LLC, dated 05/01/25

The aforementioned documents are in compliance with the current City Standards in relation to transportation, mobility, and parking. TMP takes no exception to the project moving forward.

This letter signifies final departmental sign-off from TMP. Should you have any questions, please do not hesitate to contact me.

Sincerely,

Benjamin Yeung

Benjamin Yeung, P.E., Senior Traffic Engineer – TMP

Cc: DPW Permits
Jay Habansky - Chief of Economic and Community Development
James Travers, Director – TMP
Garrett Bolella, P.E., PTOE, RSP1, Assistant Director – TMP
Nathan Fankhanel, E.I.T., Junior Engineer – TMP
Vanessa Valadares, P.E., Chief of Department of Public Works
Wilber Giron, P.E., Permit Engineer – Department of Public Works
Christine Cardascia, E.I.T., Junior Engineer – Department of Public Works
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Land Use Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement
Ralph Kolb, P.E., Sr. Environmental Engineer – WPCA
Christopher Cavaliere, Junior Engineer – WPCA
Alexis Cherichetti, Senior Environmental Officer – Conservation Office
William Mooney, Assistant Director of Health – Health Department
Troy Donohue, Deputy Fire Marshal – Fire Department

W:\Roads\CityRoads\R\RowaytonAv\DevelopmentReview\315RowaytonAv\Correspondence\20250627_TMPSignoff\20250627_315RowaytonAv_TMP-Signoff.docx

Outlook

Site Plan Review 315 Rowayton Avenue

From Ed Carlson <ecarlson@rowayton6td.com>
Date Tue 7/8/2025 9:12 AM
To Baker, Bryan <bbaker@norwalkct.gov>

CAUTION: EXTERNAL Email: Don't open links or attachments from untrusted senders

Good Morning Bryan,

I have reviewed the plans for the proposed ADU at 315 Rowayton Avenue and I do not have any issues with the proposed dwelling.

Please contact me if you have any questions or need more information.

Thank you,

Ed Carlson

Fire Marshal
Railroad Parking Lot Administrator
Sixth Taxing District
(203) 854-6666 ex.2
((203) 943-9174 c
ecarlson@rowayton6td.com

Norwalk Planning & Zoning Commission

125 East Avenue

Norwalk, Connecticut

July 11, 2025

Memorandum

To: Planning & Zoning Commission - Louis Schulman, Chairman
From: Bryan Baker, Principal Planner
Re: #2025-50 SPR – Craig Hyland and Nancy Zindell – 315 Rowayton Avenue (District 6, Block 27, Lot 5) – Site plan review application for the construction of a detached accessory dwelling unit

Commissioners,

The applicant has applied to construct a detached accessory dwelling unit (ADU) on their property located at 315 Rowayton Avenue (the property). The property is located within the CD-1M zoning district, a primarily single-family zone, and ADUs are permitted as-of-right if they comply with the applicable limitations listed within Section 4.3.9.G of the zoning regulations.

The location of the ADU is compliant with all applicable zoning regulations as documented within the zoning data chart provided on the site plan:

	REQUIRED / ALLOWED	EXISTING	PROPOSED
LOT AREA	12,500 SQ. FT.	39,630± SQ. FT.	NO CHANGE
LOT WIDTH	100 FT. MIN.	>100 FT.	NO CHANGE
FRONT YARD, PRINCIPAL	30 FT. MIN.	22.3± FT.	58.1 FT. (1)
FRONT YARD, SECONDARY	30 FT. MIN.	N/A	N/A
SIDE YARD	10 FT. MIN.	55.1± FT.	20.0 FT. (1)
REAR YARD	20 FT. MIN.	108.4± FT.	21.0 FT. (1)
BUILDING HEIGHT (STORIES)	2 1/2 MAX.	NOT MEASURED	SEE ARCHITECTURALS
BUILDING HEIGHT (FEET)	35 FT. MAX. 40 FT. MAX. (TOTAL)	NOT MEASURED	18.20 FT. (FROM ARCHITECT)
BUILDING COVERAGE LOTS <6,250 SQ. FT.	35% MAX.	N/A	N/A
IMPERVIOUS COVERAGE LOTS <6,250 SQ. FT.	50% MAX.	N/A	N/A
BUILDING COVERAGE LOTS 6,251–12,499 SQ. FT.	2,187 SQ. FT. +20% OF EVERY ADDITIONAL 400 SQ. FT. OF LOT OR BUILDING SITE AREA UP TO 12,499 SQ. FT.	N/A	N/A
IMPERVIOUS COVERAGE LOTS 6,251–12,499 SQ. FT.	50% MINUS 1% OF EVERY ADDITIONAL 400 SQ. FT. OF LOT OR BUILDING SITE AREA UP TO 12,499 SQ. FT.	N/A	N/A
BUILDING COVERAGE LOTS >12,500 SQ. FT.	25% MAX. (9,907 SQ. FT.)	3.56%± (1,400± SQ. FT.)	5.46%± (2,165± SQ. FT.)
IMPERVIOUS COVERAGE LOTS >12,500 SQ. FT.	35% MAX. (13,870 SQ. FT.)	11.07%± (4,358± SQ. FT.)	13.90%±(5,508± SQ. FT.)

(1) ACCESSORY DWELLING UNIT

The first floor of the ADU includes two parking spaces, which combined with the existing and proposed driveway configuration, provides more than the minimum number of parking spaces required for a single-family residence and ADU.



Parking locations

The height of the ADU complies with the maximum 20' height allowance and the architecture of the structure is consistent with that of a single-family residence. The floor area of the ADU is 699 square feet, which complies with the maximum square footage allowed of 700 square feet.



ACCESSORY DWELLING UNIT REAR (WEST) ELEVATION

ACCESSORY DWELLING UNIT FRONT (EAST) ELEVATION

Staff recommends that the application be approved and offers the following resolution for consideration by the Commission:

Draft resolution to approve:

THEREFORE BE IT RESOLVED by the Norwalk Planning & Zoning Commission that application #2025-50 SPR – Craig Hyland and Nancy Zindell – 315 Rowayton Avenue (District 6, Block 27, Lot 5) – Site plan review application for the construction of a detached accessory dwelling unit be **APPROVED** subject to the following conditions:

1. That the site shall be developed in accordance with the following plans:
    a. Per architectural drawings entitled "Accessory Dwelling Unit located at 315 Rowayton Avenue Norwalk, CT," prepared by Nicholas A. Sajda, dated 2/10/25; and
    b. Per site plans entitled "Drainage Plan," prepared by Fairfield County Engineering LLC, dated 5/1/25; and
    c. Per the site survey entitled, "Zoning Location & Topographic Survey depicting proposed conditions 315 Rowayton Avenue Norwalk, Connecticut," prepared by Seymour Surveying, dated 6/10/25; and
2. That any changes to the approved plans shall be submitted to the Commission's Staff (Staff) for review and approval prior to implementation. If any proposed changes are determined to be substantive, Staff shall refer the changes to the Commission for their review and approval prior to implementation; and
3. That all erosion and sediment controls be installed and maintained prior to the start of any construction or site work and that additional controls be installed at the direction Staff; and
4. That prior to the issuance of a Certificate of Zoning Compliance, the Applicant shall submit a certificate in the form of an affidavit which verifies that the owner resides on the premises and that the minimum rental duration of the accessory dwelling unit is a minimum of six (6) continuous months; and
5. That any and all conditions required by Norwalk Health Department are applicable to this approval; and
6. That any and all conditions required by Norwalk WPCA are applicable to this approval; and
7. That any and all conditions required by Norwalk DPW are applicable to this approval; and
8. That a Connecticut licensed engineer shall certify that all the required improvements, including any required off-site improvements, were installed to City standards prior to the issuance of a Certificate of Zoning Compliance (COZC); and

BE IT FURTHER RESOLVED that this application complies with all applicable sections of the Norwalk Zoning Regulations; and

BE IT FURTHER RESOLVED that the effective date of this action shall be July 25, 2025.

WOFSEY ROSEN

108 Water Street - Site Plan Review & Coastal Area Management (CAM) Applications

Table of Contents

1. Narrative Summary
2. Site Plan Application Form
3. Costal Site Plan Application Form
4. CAM Assessment, by Redniss & Mead, dated 6/13/2025
5. Zoning Site Plan, by Redniss & Mead, dated 6/13/25
6. Flood Preparedness Plan, by Redniss & Mead, dated 6/13/25
7. Site Engineering Report, by Redniss & Mead, dated 6/13/25
8. Traffic Impact Study, by DTS Provident, dated 6/18/2025
9. ITE Shared Parking Capacity Analysis
10. Architectural Plans and Renderings, by Beinfield Architecture PC, dated 6/18/2025
11. Landscape Rendering, by Eric Rains Landscape Architecture
12. Landscape Site Plan, by Eric Rains Landscape Architecture, dated 6/13/2025
13. Tax Clearance Certificate
14. Authorization of Owner
15. Authorization of Applicant (Contract Purchaser)
16. Workforce Housing Plan
17. Workforce Appendix A Unit Designations
18. Abutting Properties List
19. Aerial Photo
20. Building Materials

WOFSEY ROSEN

108 WATER STREET
NARRATIVE DESCRIPTION OF SITE PLAN REVIEW &
COASTAL AREA MANAGEMENT (CAM) APPLICATIONS



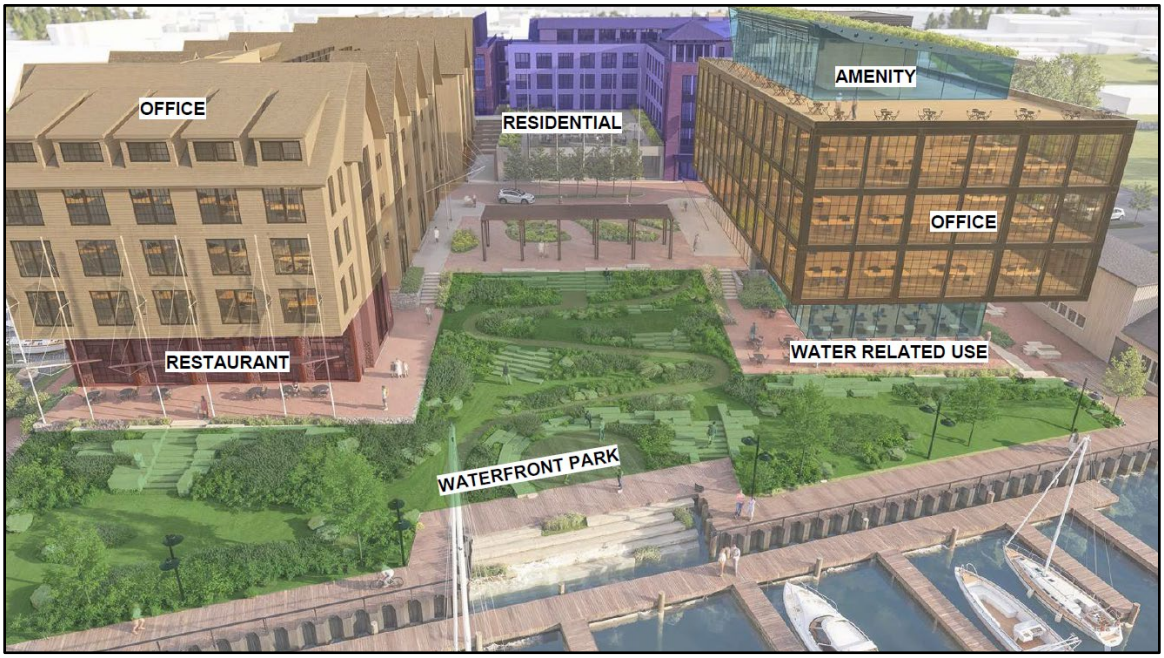
Spinnaker Acquisitions LLC (the "Applicant") is the contract purchaser of 108 Water Street, MBLU: 2/84/18/0 (the "Property"). The property is approximately 2.72 acres (118,483.2 square feet). The Applicant seeks to construct a mixed-use development at the Property consisting of boat slips, a boardwalk, office space, personal service establishments at street level, apartments, a restaurant, and a water dependent use (in addition to the boat slips) at the waterfront.

While the existing site provides no public access to the waterfront, the redevelopment proposes a publicly accessible and inviting landscaped park and boardwalk along the Norwalk Harbor. The applicant hopes this public access will set serve as a catalyst for a continued public walkway along the harbor for connectivity and greater access to the waterfront for Norwalk's residents. This application proposes the conversion of a private, exclusive, primarily non-water dependent use site to a tremendous asset available for all of Norwalk to enjoy, at no cost to the City.

The Property is zoned SD-MC, and the uses identified above are all permissible uses in a mixed-use building by Site Plan Review (not special permit) under Norwalk

Zoning Regulations (the "Zoning Regulations"). In other words, what is proposed is "as of right."

For purposes of the Zoning Regulations, since the structures are all connected, they are considered a single building; however, in this narrative they are described as if they are separate buildings which is how they will present to the public. The upper levels



of the building fronting Water St. will be used for apartments, including an amenity space and a pool. At street level in that building, various personal service establishments will line the street. As stated in the Norwalk Plan of Conservation Development, there is a need for housing in Norwalk, including affordable housing. This project will help make modest gains in that regard.

The project will also offer two commercial office buildings, with a combined total square footage of approximately 83,000 sq. ft of Usable Floor Area. Both will be 4.5 stories tall. The office building on the south-side of the Property will be connected to a restaurant of just under 4,000 sq. ft. at the ground level fronting the waterfront with ample room for outdoor dining. The other office building will run along the north-side of

the Property and on its ground level at the waterfront the use will shift to a large space dedicated to a water-dependent use.[1]

The project includes a total of 249 parking spaces, nearly all of which will be garaged, which satisfies the requirements under the Zoning Regulations. In addition to complying with Norwalk's parking regulations, we have also provided an ITE Shared Parking analysis which includes a breakdown on the maximum daily parking demand for the various uses, and shows the times of day that the greatest amount of parking is needed. The ITE Shared Parking analysis demonstrates that, as a practical matter, the parking provided is more than will be required by the mix of proposed uses.

There will be a total of 59 units of housing, consisting of 25 1BR, 17 2BR, 13 3BR, and 4 4BR units. A workforce housing plan is submitted with this application describing the allocation of the affordable units. As set forth in the POCD, Norwalk has a growing number children and most new developments fail to provide market or affordable units for families. There is an urgent need for developments that offer 2BR and 3BR units, and there should be attention to "family-sized housing units for lower income households." Norwalk's Affordable Housing Action Plan also recognizes the undersupply of 2BR apartments, which can serve both as a housing option for seniors whom seek to reduce overhead expense and live with other family members and caretakers, or "young couples and starter families without the means to purchase a home." One of the key findings based on the Housing Needs Assessment, as reflected in Norwalk's Affordable Housing Action Plan: "All kinds of rental housing are needed but there is an especially acute need for affordable 2BR rental apartments and family sized units." As part of this project one 1BR unit and two 3BR units will be deed restricted affordable helping to fill the need for larger affordable units. Further, both the Affordability Plan and the POCD emphasize the importance of re-working existing paved areas and underutilized lots, such as parking lots that are no longer necessary pursuant to the recent Zoning changes or vacant building space, before developing open green space. This application is in line with these considerations, as the current gravel lot consists primarily of unused space. It is more environmentally friendly to re-use this underutilized

[1] The Applicant is currently in discussions with multiple potential water dependent users to occupy this space.

existing space, and is also in line with Norwalk's commitment to "expand affordable housing opportunities." Further, due to the mixed-use nature of the development, it is the applicant's hope that many of the office and other employees working within the new development will also reside at the property, which also has the benefit of reduced traffic congestion.

The intent of the project is to create a community of complimentary uses in a park-like setting where residents can live, eat, work, play and stay connected to the harbor, and play, right in the heart of downtown South Norwalk. To create the park-like feel the property will contain various open-air walkways, patios and inviting green spaces.



Creating substantial public access in a park-like setting is an overarching goal of the project. Integrated into the site is a is a landscaped walkway serving as public realm space and allowing direct water front access for the South Norwalk community including an expansive boardwalk. At the waterfront a restored bulkhead is proposed that includes a grand staircase down to the water so the public literally has access to the water. The space will be a hub of activity for the residential tenants, office users, restaurant patrons, those docking their boats, as well as members of the public. In the SD-MC Zone no public realm space is required nor has any historically been provided at the Property.

However, the Applicant proposes to include a whopping 37% of the entire site as public realm (that translates to over one acre of public realm space).

The Property is in the Coastal Area Management (CAM) Zone, and the property lies partially within both the AE (AE-12) and VE (VE-14) regulatory flood zones. Although the Property sits on the Norwalk Harbor, all living areas are above the 12.0 Base Flood Elevation, making the living areas unlikely to flood, even in the event of a 100-year storm. A Flood Preparedness Plan has been submitted which sets forth a set of procedures to be followed to ensure people can safely relocate their vehicles before a severe flood, and includes notifying residents of spaces that will potentially be affected by flooding, permanent signage noting flood risk, and monitoring weather conditions by management so notifications can be sent via email, text, or posted.

The property will feature various sustainability improvements including a solar panel array and green roof. The development will be certifiable at LEED Silver or higher. Currently the site has no green area and there are no formal drainage systems in place with runoff discharging either directly into the Norwalk Harbor or into the city storm drain and then to Norwalk Harbor at 130 Water Street. Impervious coverage is proposed to decrease by over 12,000 sq. ft. Water quality will be improved from existing conditions by placing most of the parking in a covered garage, by installing infiltration systems to collect about 70% of the disturbed impervious coverage, through installation of green roof trays, and through permeable walkways with crushed stone reservoirs below. In total, approximately 79% of the site area runoff will be treated (which more than complies with your regulations).

The project is consistent with the Coastal Area Management Act as detailed in our application materials.

Historically, the Property operated as a material storage distribution yard. More recently, however, the Property has been used for two purposes. Predominantly, it has been used for winter boat storage. That use accounts for about 88% of the site. The small remainder of the site has been used by a dock building business. While the site has predominately been used for boat storage, that use is notable not truly a water dependent site. The current site has no boat slips for public use and the boats that are stored at the site are trailered to the Property from off-site locations outside of South Norwalk. Those

boats could be trailered to any site on the water, near the water, or anywhere inland. It is common for boats in Connecticut to routinely be trailered to inland locations for storage.



Although boat storage is no longer contemplated for the Property, the development plans include substantial space for a water dependent use and the Applicant is seeking the maximum number of boat slips that the Department of Environment Protection (DEEP) will permit given the water frontage and width of the harbor at the frontage (we are currently anticipating approval allowing for 14 slips).

Further, the POCD recognizes that Norwalk's "coastal location and miles of water front land" provides opportunities for "recreation, boarding and waterfront restaurants." This application is in line with the POCD in this regard, and helps to develop Norwalk's waterfront space to best serve the Norwalk community, while still incorporating water-dependent uses.

By incorporating various uses permitted by right in the SD-MC zone that are complimentary to one another, coupled with ample public realm space and contextual architecture that brings a maritime connection to the Property, the application includes all the features the City sought to encourage when it established this new Marine Commercial District compromised almost exclusively of similar properties along Water Street.

A traffic report has been submitted demonstrating that the project will not have an adverse impact upon the adjacent roadway network. Some intersections/movements will continue to experience minor delays during the peak hour without or with the Project, which is typical for this type of area and the traffic engineer makes a few signal timing recommendations to improve delays. As this is a site plan review application, the creation iof traffic volume or congestion cannot be a basis for denial of the application. *TLC Development, Inc. v. Planning & Zoning Com*., 215 Conn. 527, 532 (1990). In reviewing a site plan application and the uses proposed, "a conclusive presumption arises that such a use in general, does not adversely affect the traffic within the zone." *Friedman v. Planning & Zoning Com*., 222 Conn. 262, 266 (1992). A traffic report's only purpose on a site plan review is to identify "defects in the internal circulation" and placement of exits/entrances, and the commission may not take into consideration in its deliberations whether the development will generate excess traffic. *Pansy Road, LLC v. Town Plan & Zoning Commission*, 283 Conn. 369, 380 (2007); *2772 BPR, LLC v. Planning & Zoning Commission of North Branford*, 207 Conn. App. 377, 389-96 (2021).

Furthermore, as this is a Site Plan review, the Zoning Regulations do not permit a denial or even a modification or condition on a Site Plan approval that complies with the applicable regulations. (*See* Zoning Regulations, p. 417.) Your regulations borrow language from Connecticut General Statutes § 8-3, which states, "[a] site plan may be modified or denied ***only*** if it fails to comply with requirements already set forth in these regulations." (emphasis added.) Case law has set forth the role of the Commission in its assessment of a site plan application: "In ruling upon a site plan application, the … commission acts in its ministerial capacity, rather than in its quasi-judicial or legislative capacity. It is given no independent discretion beyond determining whether the plan complies with the applicable regulations." *Allied Plywood, Inc. v. Planning & Zoning Comm'n of Town of S. Windsor*, 2 Conn. App. 506, 512 (1984). Therefore, "if the plan submitted confirms to the[] regulations, the [commission] has no discretion or choice but to approve it." *Id*. (*citing RK Development Corp. v. Norwalk*, 156 Conn. 369, 375–76 (1968) (alterations added)).

We believe this Application fully complies with your regulations and that the project represents a wonderful addition to Water Street. We hope this Commission will look favorably upon it.

Respectfully submitted,
Spinnaker Acquisitions LLC

By: Adam J. Blank

Adam J. Blank, Esq.
Wofsey, Rosen, Kweskin & Kuriansky, LLP
600 Summer Street—Seventh Floor
Stamford, CT 06901-1490
Tel: (203) 327-2300; Fax: (203) 967-9273

Site Plan Review Application

City of Norwalk Planning & Zoning Commission
Phone: 203-854-7780
www.norwalkct.gov

Date Received:

Per Section 8.4.5 of the Norwalk Zoning Regulations, the purpose of Site Plan Reviews is to aid in determining the conformity of proposals related to Development, Buildings, Structures, Uses, and other matters with the Zoning Regulations.

1. **Address of Subject Property(s):**

   108 Water Street, Norwalk, CT

2. District: 2, Block: 84, Lot(s): 18 **3.** Zone: SD-MC, Overlay/Village District: _____

4. Historic Structure(s): ☑ No ☐ Yes **5.** Flood Hazard Zone: ☐ No ☑ Yes, Flood Zone(s) AE& VE

6. Coastal Area Management Zone: ☐ No ☑ Yes If yes, include application for Coastal Site Plan Review or specify Section allowing exemption: _____

7. Existing Use of Property:

   Principal use is Boat Storage

8. Proposed Use of Property as Identified per **Table 4.3.9.A** Building, Lot & Building Site Principal Uses:

   Office, Personal Service Establishments, Multi-Family Dwelling Units, Restaurant, Marine Supply, Boat Slips

Applicant Information

Applicant Name: Spinnaker Acquisitions LLC (contract purchaser & applicant)
Billing Address: 1 North Water Street, Suite 100, Norwalk, CT 06854
Phone Number: 203-354-1550 Email: henry@spinrep.com
Signature: Henry Conroy

Property Owner Information and Authorization

Owner of Record: 108 Water Street South Norwalk, LLC
Billing Address: PROSPECT ENTERPRISES LLC, 231 FARMINGTON AVENUE, FARMINGTON, CT, 06032
Phone Number: 860-424-4365 Email: billings@theprospectco.com; egersten@pullcom.com
Signature: See attached Owner authorization form.

**By signing, the property owner confirms that the Applicant has been authorized to apply for Planning & Zoning approval, and attests that all information provided is true and accurate.*

Application Information and Requirements

Sections 8.4.5 of the Norwalk Zoning Regulations detail items that are required for a Site Plan Review Application to be considered complete. All application requirements listed in Section 8.4.5.I. of the Norwalk Zoning Regulations may be required and are the responsibility of the Applicant to provide to the satisfaction of the Planning & Zoning Commission, for a decision to be made. The following items listed are considered minimum requirements for a Site Plan Review application submission:

1. Three copies of all applicable application materials shall be submitted at the time of application. One copy shall be the original, which shall include scalable plans and drawings as required within the Regulations. 11"x17" drawings and plans shall be included within the two remaining application sets. Hard copies of any additional or revised documents, plans or drawings shall be delivered to the Planning and Zoning Department. Any revised plans or drawings shall be scalable as required within the Regulations.
2. All application materials must also be submitted electronically in PDF format by the applicant. All information shall be sent in a singular package. Any additional or revised documents, plans or drawings shall also be sent electronically in PDF format.
3. Site Plan, prepared, signed, and sealed by an architect, landscape architect, engineer, or land surveyor licensed to practice by the State of Connecticut, per Section 8.4.5.I of the Norwalk Zoning Regulations:
    a) Each Site Plan shall be, include, show, or demonstrate, as applicable, the following:
        i. Detailed, fully dimensioned, and presented at a scale no smaller than 1" = 50' except as otherwise specifically provided for within the Zoning Regulations or except as otherwise approved in writing by the Planning and Zoning Director.
        ii. The actual shape, location and dimensions of the overall project site and each Lot or Building Site.
        iii. The shape, location, and materials of all Buildings or other Structures to be Constructed, demolished, Altered, or moved, and of any Building or other Structure already on the project site and each Lot or Building Site.
        iv. The existing and intended Use of each Lot, Building Site, Development Parcel, and other project land, and of all Buildings or other Structures upon it, including, for Residential Uses, the number of Dwelling Units each Building is intended to accommodate and the number of bedrooms and for all Non-Residential Uses, the number of square feet of each such Use.
        v. Include if regulated in the applicable District, the Density of each Community District within the Site Plan area and the Density of each Building and Lot or Building Site.
        vi. Show and include the following:
            a. Lot or Building Site Width and Lot or Building Site Yards.
            b. Percentage of Building and Wall at Frontage Line-to-Lot or Building Site Width (Frontage Buildout).
            c. Principal Building(s), Accessory Building(s) and other Accessory Structure(s).
            d. Setbacks or Setback Areas.
            e. Encroachments.
            f. Impervious Surface Coverage of each Lot or Building Site and the overall Development Parcel.
            g. Building and Lot Principal Uses, Accessory Uses, and Temporary Uses.

h. Vehicular Parking Lots, Parking Areas and Parking Structures including Parking Spaces and their dimensions within the Lot or Building Site, layout design and if applicable, landscaping of Parking Lots, Parking Areas, and Parking Structures, and if applicable, Loading Area Locations, Location(s) of Garage(s), Driveways to Parking, Passenger Drop-off Locations, Driveway/Vehicular Entrance Widths, any Parking Screens, and points of vehicular ingress and egress to and from each Lot, Building Site, and overall project site, including cross-access Easements.
i. Driveway(s) and widths.
j. Exterior public and private lighting plan including photometric plan, location, pole height, luminance/head type, pole/standard type, shielding, manufacturer's specifications and hours of operation for all exterior light fixtures.
k. Refuse Receptacles, Utility Boxes and service meter accommodations and locations.
l. All Screens & Streetscreens, including vegetative, Fence, and Wall Screens & Streetscreens and their dimensions.
m. Ground Floor Elevation above grade for each Building.
n. Existing Tree and Vegetation Plan and Survey:
    i. Showing all groupings of trees and how they will be incorporated into the proposed project.
    ii. Showing the locations, numbers, species, and diameters (dbh) of all existing trees to be removed and to remain.
    iii. Identifying tree preservation and protection measures, specifically identifying all Specimen Trees and other significant trees with a dbh of 8" or more.
    iv. Otherwise evidencing compliance with all applicable tree requirements of these Regulations.
o. Erosion and Sedimentation Control measures for the Development.
p. Topographic excavation and grading plans.
q. Stormwater Pollution Prevention Plan and Stormwater drainage plan.
r. Detailed Utilities plan, showing the locations, design, and specifications of all proposed sanitary sewage and water supply systems, electric, telecommunications, cable television, gas, and other utility facilities, together with "Capacity and Will Serve" letters from each applicable utility provider.
s. Detailed Parking plan.

vii. Such other information concerning the Lot, Building Site, or other project land all Adjacent Lots, Building Sites, or other land as may be deemed necessary by the Planning and Zoning Director, Director of Public Works, or City Engineer for determining whether the provisions of the Zoning Regulations and other applicable provisions of the City Codes are being met.

4. Certified Class A-2 survey of existing conditions of the applicable property, prepared and sealed by a licensed Connecticut surveyor within 6 (six) months of the Plan submission, as detailed in Section 8.4.5.I.7.g.
5. Architectural Plans/Drawings:
    a) Full color architectural renderings and preliminary architectural plans, showing all Facades and Elevations of each exterior Wall and all exterior materials to be used, keyed to the project description and project illustrative plan.
    b) Building Type(s).

   c) Floor Area, Dimensions, Floor Elevations, Floor-to-Floor Ceiling Heights, and Height of each Building.
   d) Private Frontage(s) and Façade Elements.
   e) Building Roof Type(s) & Pitch.
6. Project Description and illustrative plan showing each Development and Building element regulated by the Zoning Regulations (i.e. Use, Building Type, Private Frontage Type, etc.):
   a) Including the demonstration to the satisfaction of the Planning & Zoning Commission that the Site Plan complies with all applicable sections of the Norwalk Zoning Regulations.
7. If required by the Planning & Zoning Commission, a Traffic Impact Analysis:
   a) Including a Site Access and Circulation Plan, indicating access and circulation routes for all vehicular and pedestrian movement.
8. If required by the Planning & Zoning Commission, an Environmental Impact Assessment.
9. If required by the Planning & Zoning Commission, any other information necessary to the satisfaction of the Commission for a decision to be determined.

Fees

The Applicant shall pay to the City the fees established in the Fee Schedule Document available from the Planning & Zoning Department in order to cover a portion of the costs associated with the administration of the Norwalk Zoning Regulations. Failure to the pay the application fee at the time of submission of the Site Plan Review application shall render the application incomplete and delay the scheduling of the application to be heard by the Planning & Zoning Commission. Please find the Fee Schedule Document on the City of Norwalk's website, www.norwalkct.gov.

In addition to the administrative application fee, it is the responsibility of the Applicant to pay for all required legal notice fees, who will be billed for such fees directly by the publisher of such notice(s).

Public Notification

Notice shall be provided in accordance with Section 8.4.4.D of the Norwalk Zoning Regulations.

1. The Applicant shall notify all property owners that are within one hundred (100) feet of the subject property(s) (including owners of individual condominium units), as indicated on the Assessor's records, that a Special Permit Application has been submitted to the Planning & Zoning Department within ten (10) business days from the date of submission by mailed notice.
   a. The letter shall be sent by the Applicant using certified U.S. Mail, with certificate of mailing.
   b. The letter shall specify the street address, phone number, and website address for the Planning & Zoning Department.
   c. The letter shall contain the proposed action and street address for the property in question, including:
      i. The current zoning of the subject property.
      ii. A summary indicating the nature of the application.

Public hearings are discretionary for Site Plan Review Applications. If the Planning & Zoning Commission decides to hold a public hearing, the following steps shall be followed by the Applicant, in accordance with Section 8.4.4.D:

1. After a public hearing date has been established,
   the Applicant shall notify all property owners that are within one hundred (100) feet of the subject property(s) (including owners of individual condominium units), as indicated on the Assessor's records, by mailed notice, subject to the following requirements:
   a. The letter shall be sent by the Applicant using certified U.S. Mail, with certificate of mailing.
   b. The letter shall specify the street address, phone number, and website address for the Planning & Zoning Department.
   c. The letter shall contain the proposed action and street address for the property in question, including:
      i. The current zoning of the subject property.
      ii. A summary indicating the nature of the application.
   d. The letter shall include the date, time, and location of the meeting and the body before which the hearing shall take place.
   e. The letter shall be mailed at least ten (10) days prior to the scheduled meeting, hearing, or other action.

Minor defects in notice shall not impair the notice or invalidate proceedings pursuant to the notice if a bona fide attempt has been made to comply with applicable notice requirements.

In addition to the requirements listed above, it is the responsibility of the Applicant to pay for any required Legal Notice fees.

end

Planning & Zoning Commission

APPLICATION FOR COASTAL SITE PLAN REVIEW

Application must be accompanied by two (2) printed and one (1) digital set of all documents, and appropriate filing fee. Filing Fee: $310.00 for single or two family use; $810.00 for all other uses.

Date Stamp

Application Completion Date: Official Receipt Date: Fee Paid:

1. Property Address: 108 Water Street **2.** D/B/L/U: 2/84/18/0

3. Proposed Work: Proposed Mixed-Use Development **4.** Zone: SD-MC

5. Applicant Identification:

Applicant Name: Spinnaker Acquisitions LLC

Address: 1 North Water Street, Suite 100, Norwalk, CT 06854

Phone Number: 203-354-1550 Email: henry@spinrep.com

Interest in Property: ☐ fee simple ☐ option ☐ lessee ☐ easement ☑ other (specify): contract purchaser

List primary contact for correspondence *if other than applicant* (Agent or Attorney):

Name: Adam Blank, Esq.

Address: 600 Summer St., Stamford, CT, 7th Floor

Business Phone: 203-318-6936 Email: ablank@wrkk.com

6. Property Owner, if different than applicant:

Owner Name: 108 Water Street South Norwalk, LLC

Address: PROSPECT ENTERPRISES LLC, 231 FARMINGTON AVENUE, FARMINGTON, CT, 06032

Phone Number: 860-424-4365 Email: billings@theprospectco.com; egersten@pullcom.com

7. Project Information:

Please check the appropriate box to identify the plan or application that has resulted in this Coastal Site Plan Review:

- ○ Coastal Site Plan for Zoning Compliance/Zoning Permit
- ○ Subdivision or Resubdivision Application
- ○ Special Permit or Special Exception Application
- ◉ Site Plan Review Application
- ○ Variance Application
- ○ Municipal Project (CGS Section 8-24)

6. Project Site Plans:

Please provide project site plans that clearly and accurately depict the following information, and check the appropriate boxes to indicate that the plans are included in this application:

- ☑ Project location
- ☑ Existing and proposed conditions, including buildings and topography
- ☐ **All** coastal resources on and contiguous to the site
- ☐ High tide line [as defined in CGS Section 22a-359(c)] and mean high water mark elevation contours (for parcels abutting coastal waters and/or tidal wetlands only)
- ☑ Soil erosion and sediment controls
- ☑ Storm water management & treatment practices
- ☑ Ownership and type of use on adjacent properties
- ☑ Reference datum (i.e., National Geodetic Vertical Datum, Mean Sea Level, etc.)
- ☑ Landscaping and planting plan (existing & proposed)
- ☑ Utility Plan (existing & proposed: water, drainage, sanitary sewers, electric & gas lines)
- ☑ Easements (utility, sight preservation, conservation, pedestrian)

7. Site Information:

a) Street Address or Geographical Description:
108 Water Street

b) Is project or activity proposed at a waterfront site (includes tidal wetlands frontage)? ◉ YES ○ NO

c) Name of on-site, adjacent, or downstream coastal, tidal, or navigable waters, if applicable:
Norwalk Harbor

d) Identify and describe the existing land use in and adjacent to the site. Include description of any existing structures and significant features on the project site:
Refer to Coastal Area Management Assessment report prepared by Redniss & Mead, Inc.

e) Indicate the area of the project site: 2.72 acres **or** _____ square feet

f) Check the appropriate box below to indicate total land area of disturbance of the project or activity (please also see Question #9 regarding proposed stormwater best management practices):

- ○ Project or activity will disturb five (5) or more total acres of land area on the site. *Registration for CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities required.*
- ◉ Project or activity will disturb land, but less than five (5) total acres of land area would be disturbed. *A soil erosion and sedimentation control plan must be submitted.*
- ○ Project or activity will not disturb any land area.

g) Does the project include a shoreline flood and erosion control structure as defined in CGS section 22a-109(d)? ◉ Yes ○ No

8. Description of Proposed Project or Activity:

Describe the proposed project or activity including its purpose and related activities such as site clearing, grading, demolition, and other site preparations; percentage of increase or decrease in impervious cover over existing conditions resulting from the project; phasing, timing and method of proposed construction; and new uses and changes from existing uses (*attach additional pages if necessary*):

Refer to Coastal Area Management Assessment report prepared by Redniss & Mead, Inc.

9. Description of Proposed Stormwater Best Management Practices:

Describe the stormwater best management practices that will be utilized to ensure that the volume of runoff generated by the first inch of rainfall is retained on-site, especially if the site or stormwater discharge is adjacent to tidal wetlands. If runoff cannot be retained on-site, describe the site limitations that prevent such retention and identify how stormwater will be treated before it is discharged from the site. Also demonstrate that the loadings of total suspended solids from the site will be reduced by 80 percent on an average annual basis, and that post-development stormwater runoff rates and volumes will not exceed pre-development runoff rates and volumes (*attach additional pages if necessary*):

Refer to Coastal Area Management Assessment report and Site Engineering Report prepared by Redniss & Mead, Inc.

10. Identification of Applicable Coastal Resources and Coastal Resource Policies:

Identify the coastal resources and associated policies that apply to the project by placing a check mark in the appropriate box(es) in the following table.

Coastal Resources	On-site	Adjacent	Off-site but within the influence of project	Not Applicable
General Coastal Resources* - Definition: CGS Section 22a-93(7); Policy: CGS Section 22a-92(a)(2)	☑	☑	☐	☐
Beaches & Dunes - Definition: CGS Section 22a-93(7)(C); Policies: CGS Sections 22a-92-(b)(2)(C) and 22a-92(c)(1)(K)	☐	☐	☐	☑
Bluffs & Escarpments - Definition: CGS Section 22a-93(7)(A); Policy: CGS Section 22a-92(b)(2)(A)	☐	☐	☐	☑
Coastal Hazard Area - Definition: CGS Section 22a-93(7)(H); Policies: CGS Sections 22a-92(a)(2), 22a-92(a)(5), 22a-92(b)(2)(F), 22a-92(b)(2)(J), and 22a-92(c)(2)(B)	☑	☑	☐	☐
Coastal Waters, Estuarine Embayments, Nearshore Waters, Offshore Waters - Definition: CGS Sections 22a-93(5), 22a-93(7)(G), and 22a-93(7)(K), and 22a-93(7)(L) respectively; Policies: CGS Sections 22a-92(a)(2) and 22a-92(c)(2)(A)	☐	☑	☐	☐
Developed Shorefront - Definition: CGS Section 22a-93(7)(I); Policy: 22a-92(b)(2)(G)	☑	☑	☐	☐
Freshwater Wetlands and Watercourses - Definition: CGS Section 22a-93(7)(F); Policy: CGS Section 22a-92(a)(2)	☐	☐	☐	☑
Intertidal Flats - Definition: CGS Section 22a-93(7)(D); Policies: 22a-92(b)(2)(D) and 22a-92(c)(1)(K)	☐	☐	☐	☑
Islands - Definition: CGS Section 22a-93(7)(J); Policy: CGS Section 22a-92(b)(2)(H)	☐	☐	☐	☑
Rocky Shorefront - Definition: CGS Section 22a-93(7)(B); Policy: CGS Section 22a-92(b)(2)(B)	☐	☐	☐	☑
Shellfish Concentration Areas - Definition: CGS Section 22a-93(7)(N); Policy: CGS Section 22a-92(c)(1)(I)	☐	☐	☐	☑
Shorelands - Definition: CGS Section 22a-93(7)(M); Policy: CGS Section 22a-92(b)(2)(I)	☐	☐	☐	☑
Tidal Wetlands - Definition: CGS Section 22a-93(7)(E); Policies: CGS Sections 22a-92(a)(2), 22a-92(b)(2)(E), and 22a-92(c)(1)(B)	☐	☐	☐	☑

* General Coastal Resource policy is applicable to all proposed activities

11. Consistency with Applicable Coastal Resource Policies and Standards:

Describe the location and condition of the coastal resources identified in Question #10 and explain how the proposed project or activity is consistent with all of the applicable coastal resource policies and standards; also see adverse impacts assessment in Question #14 below (*attach additional pages if necessary*):

Refer to Coastal Area Management Assessment report prepared by Redniss & Mead, Inc.

12. Identification of Applicable Coastal Use and Activity Policies and Standards:

Identify all coastal policies and standards in or referenced by CGS Section 22a-92 applicable to the proposed project or activity:

- [x] General Development* - CGS Sections 22a-92(a)(1), 22a-92(a)(2), and 22a-92(a)(9)
- [x] Water-Dependent Uses** - CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A); Definition CGS Section 22a-93(16)
- [ ] Ports and Harbors - CGS Section 22a-92(b)(1)(C)
- [x] Coastal Structures and Filling - CGS Section 22a-92(b)(1)(D)
- [x] Dredging and Navigation - CGS Sections 22a-92(c)(1)(C) and 22a-92(c)(1)(D)
- [x] Boating - CGS Section 22a-92(b)(1)(G)
- [ ] Fisheries - CGS Section 22a-92(c)(1)(I)
- [x] Coastal Recreation and Access - CGS Sections 22a-92(a)(6), 22a-92(C)(1)(j) and 22a-92(c)(1)(K)
- [ ] Sewer and Water Lines - CGS Section 22a-92(b)(1)(B)
- [ ] Fuel, Chemicals and Hazardous Materials - CGS Sections 22a-92(b)(1)(C), 22a-92(b)(1)(E) and 22a-92(c)(1)(A)
- [ ] Transportation - CGS Sections 22a-92(b)(1)(F), 22a-92(c)(1)(F), 22a-92(c)(1)(G), and 22a-92(c)(1)(H)
- [ ] Solid Waste - CGS Section 22a-92(a)(2)
- [ ] Dams, Dikes and Reservoirs - CGS Section 22a-92(a)(2)
- [ ] Cultural Resources - CGS Section 22a-92(b)(1)(J)
- [ ] Open Space and Agricultural Lands - CGS Section 22a-92(a)(2)

* General Development policies are applicable to all proposed activities

** Water-dependent Use policies are applicable to all activities proposed at waterfront sites, including those with tidal wetlands frontage.

13. Consistency With Applicable Coastal Use Policies and Standards:

Explain how the proposed activity or use is consistent with all of the applicable coastal use and activity policies and standards identified in Question #12. **For projects proposed at waterfront sites (including those with tidal wetlands frontage)**, particular emphasis should be placed on the evaluation of the project's consistency with the water-dependent use policies and standards contained in CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A) -- also see adverse impacts assessment in Question #15 below (attach additional pages if necessary):

Refer to Coastal Area Management Assessment report prepared by Redniss & Mead, Inc.

14. Identification of Potential Adverse Impacts on Coastal Resources: (*Must be completed for ALL projects.*)
Identify the adverse impact categories below that apply to the proposed project or activity.

The **'applicable'** column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(15). If an adverse impact **may result** from the proposed project or activity, please use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Coastal Resources	Applicable	Not Applicable
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☑
Degrading existing circulation patterns of coastal water through the significant alteration of patterns of tidal exchange or flushing rates, freshwater input, or existing basin characteristics and channel contours - CGS Section 22a-93(15)(B)	☐	☑
Degrading natural or existing drainage patterns through the significant alteration of groundwater flow and recharge and volume of runoff - CGS Section 22a-93(15)(D)	☑	☐
Degrading natural erosion patterns through the significant alteration of littoral transport of sediments in terms of deposition or source reduction - CGS Section 22a-93(15)(C)	☑	☐
Degrading visual quality through significant alteration of the natural features of vistas and view points - CGS Section 22a-93(15)(F)	☐	☑
Degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen or salinity - CGS Section 22a-93(15)(A)	☑	☐
Degrading or destroying essential wildlife, finfish, or shellfish habitat through significant alteration of the composition, migration patterns, distribution, breeding or other population characteristics of the natural species or significant alterations of the natural components of the habitat - CGS Section 22a-93(15)(G)	☐	☑
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☑	☐

Refer to Coastal Area Management Assessment report prepared by Redniss & Mead, Inc.

15. Identification of Potential Adverse Impacts on Water-dependent Uses: ***(Complete only if the project/activity is proposed at a waterfront site.)***

a) Identify the adverse impact categories below that apply to the proposed project or activity. The applicable column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(17). If an adverse impact **may result** from the proposed project or activity, use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Future Water-dependent Development Opportunities and Activities	Applicable	Not Applicable
Locating a non-water-dependent use at a site physically suited for or planned for location of a water-dependent use - CGS Section 22a-93(17)	☑	☐
Replacing an existing water-dependent use with a non-water-dependent use - CGS Section 22a-93(17)	☐	☑
Siting a non-water-dependent use which would substantially reduce or inhibit existing public access to marine or tidal waters - CGS Section 22a-93(17)	☐	☑

b) Identification of existing and/or proposed Water-dependent Uses:

Describe the features or characteristics of the proposed activity or project that qualify as water-dependent uses as defined in CGS Section 22a-93(16). If general public access to coastal waters is provided, please identify the legal mechanisms used to ensure public access in perpetuity, and describe any provisions for parking or other access to the site and proposed amenities associated with the access (e.g., boardwalk, benches, trash receptacles, interpretative signage, etc.) *:

Refer to Coastal Area Management Assessment report prepared by Redniss & Mead, Inc.

*If there are no water-dependent use components, describe how the project site is not appropriate for the development of a water-dependent use.

16. Mitigation of Potential Adverse Impacts:

Explain how all potential adverse impacts on coastal resources and/or future water-dependent development opportunities and activities identified in Questions #14 & #15 have been avoided, eliminated, or minimized (*attach additional pages if necessary*):

Refer to Coastal Area Management Assessment report prepared by Redniss & Mead, Inc.

17. Remaining Adverse Impacts:

Explain why any remaining adverse impacts resulting from the proposed activity or use have not been mitigated and why the project as proposed is consistent with the Connecticut Coastal Management Act (*attach additional pages if necessary*):

Refer to Coastal Area Management Assessment report prepared by Redniss & Mead, Inc.

By signing this application, the applicant or his/her agent certifies that they are familiar with the information provided in this application and are aware of the penalties for obtaining a permit through deception or by submission of inaccurate or misleading information.

By signing this application, permission is hereby given to necessary and proper inspection of the subject property by the Commissioners and designated staff of the Commission or consultants to the Commission, at reasonable times, during the pendency of the application.

Applicant's Signature: Henry Conroy **DATE:** 6/17/2025

Agent's Signature: Adam J.Blank, Esq. **DATE:** 6/17/2025

Instructions for Coastal Site Plan Review Application

Notification of Neighbors

Coastal Site Plan Reviews require the applicant make three actions to notice to neighbors during the review of the application: 1) initial notification of the application submittal, 2) notice of public hearing (if applicable), and 3) legal notice of the public hearing in the newspaper (if applicable).

1) **Notice of Application Submittal:** ALL applications shall notify *by a certificate of mailing* the owners of land withing 100 feet of the subject parcel *within ten (10) days of submitting an application* to the Planning & Zoning Commission. The name of the owners shall be taken from the latest Tax Assessor records. *Proof of mailings shall be evidenced by providing a certificate of mailing* that must be submitted to the Planning & Zoning staff immediately following mailing. See Sample Letter below.
2) **Public Hearing Notice:** Any application for which a public hearing is required, the applicant shall notify *by certified mail, return receipt requested at least ten (10) days prior to the public hearing*, the owners of land that abut or are directly across the street from the subject parcel. The name of the owners shall be taken from the latest Tax Assessor records. See Sample Letter below.
   When a condominium is located across the street or abuts the subject proposal notification may be sent to the condominium association in lieu of the individual unit owners. Evidence of certified mailings shall be submitted by the applicant on or before the public hearing date.
3) **Legal Notice Payment:** When a public hearing is required, applicants shall be responsible for payment of three legal notices in The Hour newspaper. Two notices will advertise the application's public hearing date and one will advertise the Commission's action on the application.
   The Planning & Zoning staff will provide the required legal notices to The Hour. Applicants must contact The Hour at the number given below to arrange for payment in advance of the publication date.
   Classified Advertising Manager
   The HOUR
   Phone: (203) 354-1100 or 846-3281
   Fax: (203) 846 – 9897

Application Decision Publication

Decisions on ALL Coastal Site Review Applications must be published in The Hour. All application decisions must be published as a Legal Notice in The Hour. The applicant is responsible for payment of the Legal Notice of Decision. The Planning & Zoning staff will provide the required legal notices to The Hour. Applicants must contact The Hour at the number given below to arrange for payment.
Classified Advertising Manager
The HOUR
Phone: (203) 354-1100 or 846-3281
Fax: (203) 846 – 9897

Sample Letter: APPLICATION SUBMITTAL NOTIFICATION

Dear _____,

Be advised that _____ has applied for a Coastal Site Plan
(Applicant)

application for property located at the following address: _____

_____
(Street name and number and District, Block and Lot numbers)

The proposal is for _____
(Description of Proposal)

_____

You are being notified because your property abuts the property or is located directly across the street from the subject parcel. The application is on file in the Planning & Zoning Office located at City Hall, 125 East Avenue, Room 129, Norwalk, Connecticut 06856. The application materials can be reviewed on the City webpage at https://www.norwalkct.gov/1746/Pending-Application-Materials. If you have any questions regarding this application, you can email the staff person noted on the pending application webpage or you can call the Planning & Zoning Office at (203) 854-7780.

_____
Signature of applicant

Applicant must sign above and provide contact information below.
(THIS FORM IS TO BE COMPLETED BY APPLICANT)

Sample Letter: PUBLIC HEARING NOTIFICATION

Dear _____,

Be advised that **[Applicant Name]** has applied for a Coastal Site Plan Review application for property located at the following address: **[Project Address – street name and number]** and **[District/Block/Lot number]**.

The proposal is for **[Description of Proposal]**.

The Norwalk Planning & Zoning Commission will conduct a public hearing on this proposal on **[Day, Date, Time, and Location of Public Hearing].**

You are being notified because your property abuts the property or is located directly across the street from the subject parcel. The application is on file in the Planning & Zoning Office located at City Hall, 125 East Avenue, Room 129, Norwalk, Connecticut 06856. The application materials can be reviewed on the City webpage at https://www.norwalkct.gov/1746/Pending-Application-Materials. If you have any questions regarding this application, you can email the staff person noted on the pending application webpage or you can call the Planning & Zoning Office at (203) 854-7780.

_____
Signature of applicant

Applicant must sign above and provide contact information below.
(THIS FORM IS TO BE COMPLETED BY APPLICANT)

Application Form Instructions:

6. Project Site Plans
It is important to include clear and concise project plans that delineate coastal resources on and/or adjacent to site, especially the waterbody receiving stormwater discharges, if applicable. *Complete plans will expedite the review process.*

7. Site Information
Describe in detail the current land use on the site, current zoning classification, and any significant features of the project site. Indicate overall area of disturbance of the project. "*Disturbance*" includes not only the footprint of any construction, but also the extent of the project's work area. If the disturbance is 5 or more total acres of land area, then a CT DEEP stormwater permit may be required.

8. Description of Proposed Project or Activity
Provide a detailed description of the proposed project or activity, including the construction phasing, timing, and methodology. Include all activities related to construction such as site clearing, grading, and demolition. Also include the percentage of increase or decrease in impervious cover over existing conditions resulting from the project, and any changes or new uses of the property.

9. Description of Proposed Stormwater Best Management Practices
Describe in detail the stormwater best management practices (BMP), which will be utilized in this project. Explain how these stormwater BMPs will retain on-site the volume of runoff generated by the first inch of rainfall, especially if the site or ultimate discharge is adjacent to tidal wetlands. If retention is not a feasible option, explain why not and describe how the stormwater will be treated before it is discharged. It is also necessary to demonstrate that the loadings of total suspended solids from the site will be reduced by 80% on an average annual basis, and that post-development runoff rates and volumes will not exceed pre-development rates and volumes.

10. Identification of Applicable Coastal Resources and Coastal Resource Policies
Check ALL appropriate coastal resources and their associated Coastal Management Policies. This information should be based on a field-verified determination of on-site and adjacent coastal resources. Note that there is a box provided for the identification of resources, which are off-site but "within the influence of project." This is particularly applicable to "downstream" resources, such as those, which could be affected by project drainage, erosion sedimentation or other impacts unless the project is designed with proper mitigation.

Coastal Resource Maps may not be substituted for field surveys by qualified personnel where warranted by the presence of sensitive resources.

Please note that general "*Coastal Resources*" is "pre-checked" as its policies apply to all activities in the coastal boundary.

Additionally, check "*Shorelands*" for any site which is not entirely within the coastal flood hazard area, since shorelands are statutorily defined as, "...those land areas within the coastal boundary exclusive of coastal hazard areas…."

11. Consistency with Applicable Coastal Resource Policies and Standards
Explain how the proposed activity is consistent with the associated policies for each of the identified coastal resources in Question #10. Describe the location and condition of the coastal resources identified and explain how the proposed project is consistent with ALL applicable coastal resource policies. Where appropriate, describe mitigation measures proposed to offset any impacts from the project. For example, if "*Tidal Wetlands*" are identified on-site, explain the proposed wetland protection measures that will be incorporated into the project including setbacks, buffer areas, conservation easements and other protective measures, since the CCMA policies require strict protection of tidal wetland resources. Or, if off-site Tidal Wetlands could be affected by construction, provide a detailed description of the measures that will mitigate potential impacts.

12. Identification of Applicable Coastal Use and Activity Policies and Standards
This section provides a list of all statutory policies and standards for land and water uses in Connecticut's Coastal Boundary which are either set forth in, or referenced by, Section 22a-92 of the CCMA.
Using the appropriate fact sheet(s) identify all policies and standards applicable to the proposed activity.
Please note that "*General Development* " is "pre-checked" as its policies apply to all activities in the coastal boundary.

13. Consistency with Applicable Coastal Use Policies and Standards
Explain how the proposed activity, including any mitigation proposed to offset adverse impacts, is consistent with the coastal use policies and standards. Because all activities invoke the "*General Development*" policies, consistency must be addressed in every case.

14. Identification of Potential Adverse Impacts on Coastal Resources
This section requires the identification of applicable adverse impacts to coastal resources. "Adverse Impacts" are specifically defined by statute and are discussed in the Fact Sheet for Adverse Impacts. Based upon the proposed activity and its location, identify the potential adverse impacts to the resources on and adjacent to the site.

15. Identification of Potential Adverse Impacts on Future Water-dependent Uses:
Complete this Question if the project abuts marine or tidal waters, or tidal wetlands. Identify applicable adverse impacts to future water-dependent development opportunities and activities. As a reference, each statutorily defined adverse impact is listed with its statutory citation. Based upon the proposed activity and its location, carefully identify the potential adverse impacts on future water-dependent uses.

Identify the components of the project that constitute water-dependent uses and therefore render the project consistent with the CCMA. If there are no water-dependent use components, describe how the project is not appropriate for development of a water dependent use.

16. Mitigation of Potential Adverse Impacts
Explain how all potential adverse impacts to coastal resources and future water-dependent development opportunities have been avoided, minimized, or mitigated. For example, potential water-quality impacts might be minimized through preservation of pervious surfaces, which reduce runoff and mitigated by stormwater pre-treatment prior to discharge off-site. Impacts to water-dependent uses could be avoided by locating a water-dependent use at an appropriate site where no such water-dependent use currently exists.

17. Remaining Adverse Impacts
Identify any remaining impacts to coastal resources and/or future water-dependent development opportunities that have not been mitigated and explain why no other mitigation is proposed. Clearly explain why there are no feasible or prudent alternatives to the proposed activity that would result in fewer or lesser impacts to coastal resources and water-dependent uses.

N.B.

The Commission reserves the right to require any further plans or documentation which in its judgement may be necessary for the proper exercise of its responsibilities under the terms of Article 6, Section 10 of the Norwalk Zoning Regulations.

NO APPLICATION WILL BE ACCEPTED BY THE COMMISSION UNTIL IT IS COMPLETE AND DOCUMENTED AS SPECIFIED ABOVE. The applicant is encouraged to review their application with the Planning and Zoning Staff prior to the date of submission to facilitate expeditious administration of the application and to ensure that all necessary information and documentation is included.

Upon written request, the Commission may waive any of the requirements of a Coastal Site Plan Review application where such requirements are inappropriate or do not apply.

Coastal Area Management Assessment
108 Water Street
June 13, 2025

108 Water Street LLC, contract purchasers of 108 Water Street, are proposing to redevelop the property and construct a new 4 ½ story mixed-use building with public and private amenities, and site improvements. Uses of the site will include multi-family residential, office, personal services, restaurant, and water dependent uses (marine supply store and boat slips). Work will include reconstruction of an existing bulkhead wall, construction of a boardwalk with public access from Water Street, and installation of new boat slips.

Existing Conditions

The subject property is 2.72± acres and lies within the SD-MC zoning district. The property is located on the east side of Water Street, adjacent to its intersection with Hanford Place. The site is bound to the north and south by mixed-use commercial properties, to the west by Water Street and to the east by Norwalk Harbor. This portion of Water Street runs along the western bank of the Norwalk Harbor and consists of developed shorefront areas within the Coastal Flood Hazard Area. The site is and will continue to be served by public water and sewers.

The site area is primarily impervious with surfaces consisting of asphalt, buildings, and compacted gravel and dirt. Limited vegetation exists on site. Site stormwater runoff discharges from the site by sheet flow, either to the city right-of-way where it is collected by a storm drain network within Water Street or directly to the harbor; no formal stormwater infrastructure exists within the site. The city storm drain network consists of a series of catch basins, manholes, and pipes that convey the storm runoff from the street toward the harbor. The pipe sizes within Water Street range between 30" diameter and 48" diameter concrete pipe. The network discharges by a 60" diameter concrete pipe into the harbor via drainage easement located at 130 Water Street. As such, all stormwater runoff from the site is tributary to the harbor.

Coastal Resources

A list of coastal resources is provided in Table 2 with those resources present on site, adjacent, or not applicable so indicated.

The site is located on the west bank of Norwalk Harbor which consists of developed shorefront. A mix of uses, consisting of mixed-use parcels, water-related parcels, multi-family dwellings, office/retail buildings, and industrial uses line the harbor.

The entire site is in a *Coastal Hazard Area*, specifically it is within the AE-12 Zone with a small portion along the eastern property line within the VE-14 Zone as depicted on the Federal Emergency Management Agency – Flood Insurance Map Community No. 090012 Panel 531 Suffix G, effective date July 8, 2013. The proposed improvements are located within the AE Zone and will comply with

Section 6.9, Flood Hazard Zone Overlay, with all floor elevations and supporting mechanical equipment located at least two feet above the Base Flood Elevation.

Consistency with General Goals and Policies of the Coastal Area Management Act

The proposed project is consistent with other uses in the neighborhood and the proposed uses are allowed within the SD-MC zoning district. The proposal will create public access to the harbor via public paths that will connect the public sidewalk of Water Street to a proposed boardwalk along the harbor. Additionally, the proposal will encourage boating via the inclusion of boat slips and a marine supply store, or similar use, in the building.

No coastal resources will be disturbed or otherwise disrupted by the proposed activities. The existing shoreline is a developed shoreline and contains a mix of dilapidated timber and concrete structures and miscellaneous piles and debris. The site is generally devoid of vegetation and lacks coastal resources of natural significance. The proposed plan will remove debris and piles and rehabilitate the shoreline to improve stability and resiliency.

While there is decrease in site impervious coverage, addressing the quality of stormwater runoff is critical to protecting the receiving waters. Soil testing confirmed adequate soil conditions on site to infiltrate stormwater into the ground. Stormwater runoff from disturbed impervious surfaces will be collected and conveyed to proposed surface and underground infiltration practices designed to store the required water quality volume before overflowing to the receiving systems. In addition to providing water quality treatment, the systems also provide groundwater recharge.

In total, two underground infiltration systems are proposed to capture and provide treatment for the building roof areas and a series of permeable surfaces, consisting of bonded aggregate pavement and crushed stone reservoirs are proposed to capture and provide treatment for the public access walkways. The treatment systems provide water quality treatment to 93,167 square feet of impervious coverage (approximately 79% of the site area is treated) which is a significant improvement when compared to existing conditions where no treatment is provided. The overflow from systems on the west side of the site will either sheet flow to or be collected and piped to the storm drain network within Water Street. The overflow from systems on the east side of the site will be collected and discharged to the harbor by a new storm pipe discharge proposed at the bulkhead; note, a backflow preventer will be installed on the outlet pipe to the harbor. The proposed system is properly designed to protect the receiving waters from impact.

In addition to the above mentioned water quality treatment, the proposed drainage system was designed to minimize the rates and volume of flow tributary to the city stormwater infrastructure which is known to flood; as the city infrastructure discharges to the harbor, this does not result in an increase in tributary area to the harbor. With the proposed systems in place, the total runoff flow and volume tributary to the harbor are reduced up to and including the 100-year storm event.

Additionally, temporary sediment and erosion controls during construction and permanent stabilization of the disturbed surfaces after construction are proposed to minimize adverse impacts

linked to the transport of sediment from the upland disturbances associated with the proposed improvements.

The proposed bulkhead will be generally in line with existing structures to minimize encroachment. Since the shoreline structures are replacement structures, we do not anticipate adverse impacts to flow, flooding, or erosion patterns. In fact, the dilapidated condition of the shoreline structures currently allows for some erosion into the harbor. The proposed bulkhead replacement will stabilize the shoreline and prevent upland sediments from entering the harbor. The proposed boardwalk is not anticipated to impact flows or erosion patterns due to its landward location from the bulkhead. Similarly, the proposed dock facility will not alter flood or erosion patterns since it will be floating.

Each of the general goals and policies outlined in C.G.S. 22a-92(a) are provided below with a statement assessing consistency of the proposed improvements with those goals.

(1) To ensure that the development, preservation or use of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water resources to support development, preservation or use without significantly disrupting either the natural environment or sound economic growth.

The site development will include proposed uses consistent with and allowed by the local zoning regulations. Uses will include multi-family residential, restaurant, personal services, office, and water related uses (marine supply store and boat slips proposed) which will provide sound economic growth for the site and the local area.

As noted above, stormwater runoff from the new impervious surfaces will be collected and conveyed to the proposed underground infiltration system designed to store the required water quality volume before overflowing to the City stormwater infrastructure or to the harbor. Soil testing confirmed adequate soil conditions on site to infiltrate stormwater into the ground. The proposed system is properly designed to protect the receiving waters from impact.

(2) To preserve and enhance coastal resources in accordance with the policies established by chapters 439, 440, 446i, 446k, 447, 474 and 477.

As previously mentioned, the site is a "developed shorefront" relatively devoid of natural coastal resources (i.e., no wetlands, beaches, intertidal flats or other habitat for flora and fauna). The proposed bulkhead replacement will stabilize the shoreline to protect the shore from erosion and the adjacent waterway from sedimentation and allow for continuation of water-dependent marine-related uses consistent with the definition of developed shorefront. By protecting the shoreline, the project preserves adjacent coastal resources in accordance with the policies established by the aforementioned chapters. As noted above, the quality of storm water runoff from the site will be mitigated and improved by the addition of an underground infiltration system that does not exist today.

(3) To give high priority and preference to uses and facilities which are dependent upon proximity to the water or the shorelands immediately adjacent to marine and tidal waters.

The proposed project will not interfere with existing waterfront uses and will, in fact, enhance them. The project will include support services (bathroom and appropriate parking spaces) and space related to a water-dependent use within the building (to be determined), publicly accessible walkways to a boardwalk along the eastern edge of the parcel (there is no public access there today), an improved bulkhead, and new boat slips.

(4) To resolve conflicts between competing uses on the shorelands adjacent to marine and tidal waters by giving preference to uses that minimize adverse impacts on natural coastal resources while providing long term and stable economic benefits.

The site is fully impervious under existing conditions and the proposed design will minimize adverse impacts to coastal resources via implementation of temporary and permanent erosion controls measures. The indicated upland development is consistent with other uses of the neighborhood and will be constructed in a manner compliant with the local zoning regulations and is anticipated to provide economic benefits to the City of Norwalk. There are no apparent use conflicts. In addition, the proposed construction will include reconstruction of an existing bulkhead to stabilize and protect the harbor from the impacts of erosion and the upland development from flood and erosion, construction of a public boardwalk (with access paths from Water Street), construction of boat slips, and a water dependent use (e.g., marine supply store) within the building.

(5) To consider in the planning process the potential impact of coastal flooding and erosion patterns on coastal development so as to minimize damage to and destruction of life and property and reduce the necessity of public expenditure to protect future development from such hazards.

The proposed building improvements are located within the AE Zone and will comply with Section 6.9, Flood Hazard Zone Overlay with all floor elevations and supporting mechanical equipment located at least two feet above the Base Flood Elevation. The lowest occupied floor level, which is commercial floor area, is set at elevation 14.0, with the lowest office floor level set at elevation 19. While the residential lobby space extends below the BFE, to the street level, the lowest residential unit floor level is set at elevation 34. The lower parking level and lobby spaces are below the BFE, at elevation 9.0 (or lower), and are likely to experience flooding during a 100-year storm. The structures will be designed to local and federal requirements for these conditions.

The site development plans include temporary sediment and erosion control measures to limit potential construction sediment loads and permanent drainage features to provide water quality volume and limit impacts to erosion patterns. As previously discussed, the proposed bulkhead, as a replacement to existing, but dilapidated structures, is not anticipated to adversely impact coastal flooding and erosion patterns over existing conditions. In addition, the bulkhead replacement will help to minimize damage to the upland areas from flood and erosion impacts.

(6) To encourage public access to the waters of Long Island Sound by expansion, development and effective utilization of state-owned recreational facilities within the coastal area that are consistent with sound resource conservation procedures and constitutionally protected rights of private property owners.

The proposed improvements are on private property and therefore will not adversely affect state-owned recreational facilities. However, the proposed project will allow for public access opportunities to the water that currently don't exist on the site.

(7) To conduct, sponsor and assist research in coastal matters to improve the database upon which coastal land and water use decisions are made.

The proposed improvements do not impede the goals of the State or efforts of third parties to conduct, sponsor or assist in research into coastal matters.

(8) To coordinate the activities of public agencies to insure that state expenditures enhance development while affording maximum protection to natural coastal resources and processes in a manner consistent with the state plan for conservation and development adopted pursuant to part I of chapter 297.

Not applicable as the proposed improvements are privately funded.

(9) To coordinate planning and regulatory activities of public agencies at all levels of government to insure maximum protection of coastal resources while minimizing conflicts and disruption of economic development.

The proper coordination of planning and regulatory activities of public agencies are evidenced by this application to the Planning & Zoning Commission. As noted above, the proposed improvements create no conflict. The adjacent natural coastal resources are proposed to be protected while allowing the indicated upland development consistent with the local zoning regulations. Additionally, the project will be submitted to CT DEEP Land and Water Resource Division for review as it relates to the potential impacts for the reconstruction of the bulkhead, construction of a public boardwalk, and construction of boat slips.

(10) To insure that the state and the coastal municipalities provide adequate planning for facilities and resources which are in the national interest as defined in section 22a-93 and to insure that any restrictions or exclusions of such facilities or uses are reasonable.

The proposed facility will not adversely affect any facilities which are defined as in the national interest in accordance with 22a-93.

Potential for Adverse Impacts on Coastal Resources (C.G.S. 22a-93.(15))

Based on the descriptions provided above, the design of the site and building as indicated on the civil, architectural plans, and coastal plans, and the proper installation and construction of those designs we make the following findings as to the potential for adverse impacts on coastal resources.

(A) Degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen or salinity	Positive impact

(B) degrading existing circulation patterns of coastal waters through the significant alteration of patterns of tidal exchange or flushing rates, freshwater input, or existing basin characteristics and channel contours	No impact
(D) degrading natural or existing drainage patterns through the significant alteration of groundwater flow and recharge and volume of runoff	Positive Impact
(E) increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones	Positive Impact
(F) degrading visual quality through significant alteration of the natural features of vistas and view points	No impact
(G) degrading or destroying essential wildlife, finfish or shellfish habitat through significant alteration of the composition, migration patterns, distribution, breeding or other population characteristics of the natural species or significant alteration of the natural components of the habitat	No impact
(H) degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or function	No impact

TABLE 1: Coastal Uses and Activities

A list of coastal uses and activities is provided below with those uses applicable to the project so noted.

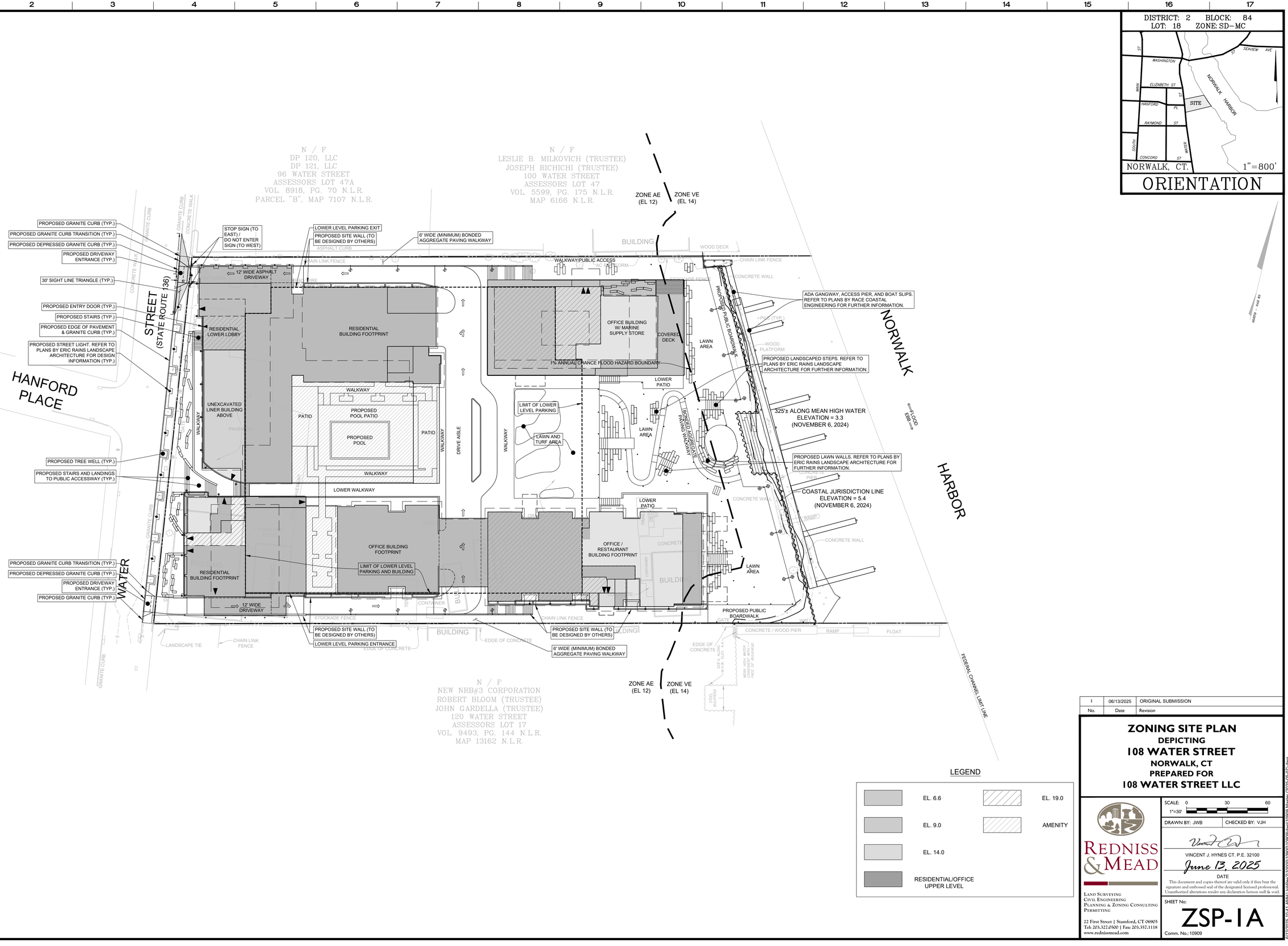
General Development	applicable
Water and Dependent Use	applicable
Ports & Harbors	not applicable
Coastal Structures & Filling	applicable
Dredging & Navigation	applicable
Boating	applicable
Fisheries	not applicable
Coastal Recreation & Access	applicable
Sewer and Water Lines	not applicable
Energy Facilities	not applicable
Fuels, Chemicals, & Hazardous Material	not applicable
Transportation	not applicable
Solid Waste	not applicable
Dams, Dikes & Reservoirs	not applicable
Cultural Resources	not applicable
Open Space & Agricultural	not applicable

TABLE 2: Coastal Resources

A list of coastal resources is provided below with those resources present on site, adjacent, or not applicable so indicated.

General Resources	present
Bluffs & Escarpments	not applicable
Rocky Shorefronts	not applicable
Beaches & Dunes	not applicable
Intertidal Flats	nearby (on eastern bank of Norwalk Harbor)
Tidal Wetlands	not applicable

Freshwater Wetlands	not applicable
Coastal Waters & Embayments	adjacent
Coastal Hazard Areas	present
Developed Shorefront	present
Islands	not applicable
Shorelands	not applicable
Shellfish Concentrations	not applicable



DISTRICT: 2 BLOCK: 84
LOT: 18 ZONE: SD–MC

ORIENTATION

No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

ZONING SITE PLAN
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

SCALE: 1"=30' (0, 30, 60)

DRAWN BY: JWB | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100

June 13, 2025

DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

REDNISS & MEAD

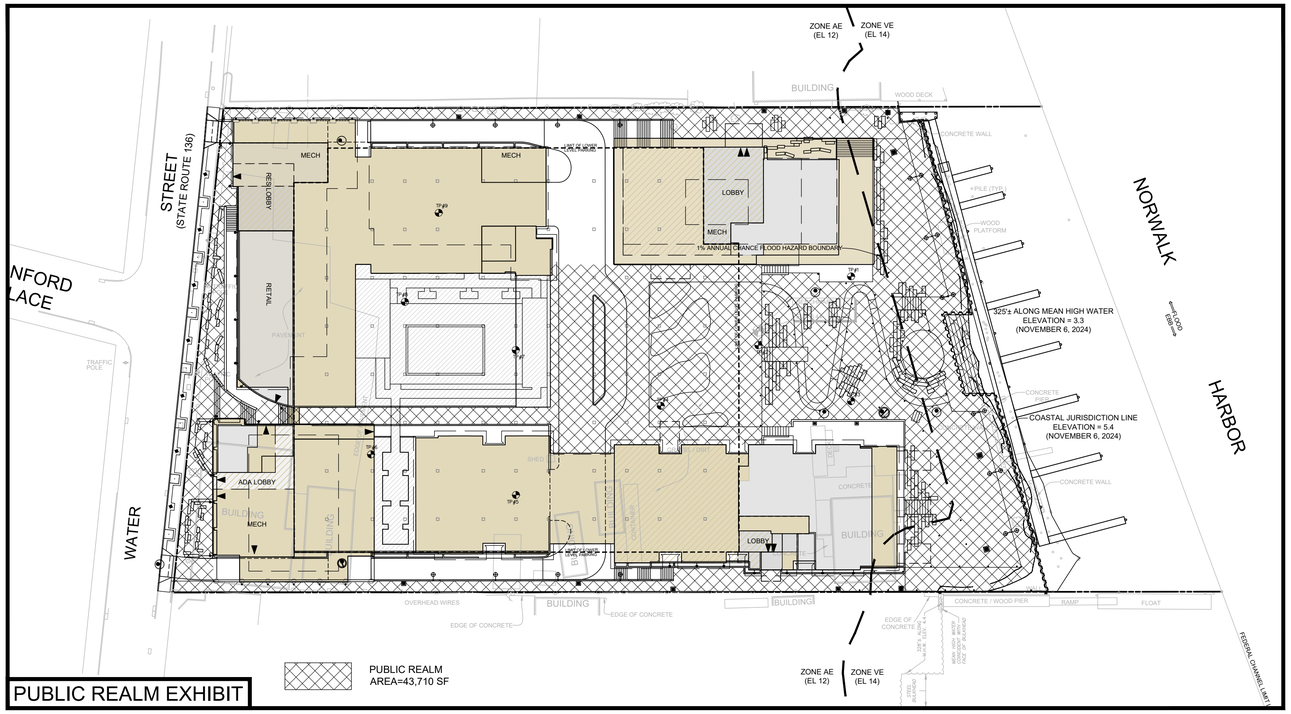
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

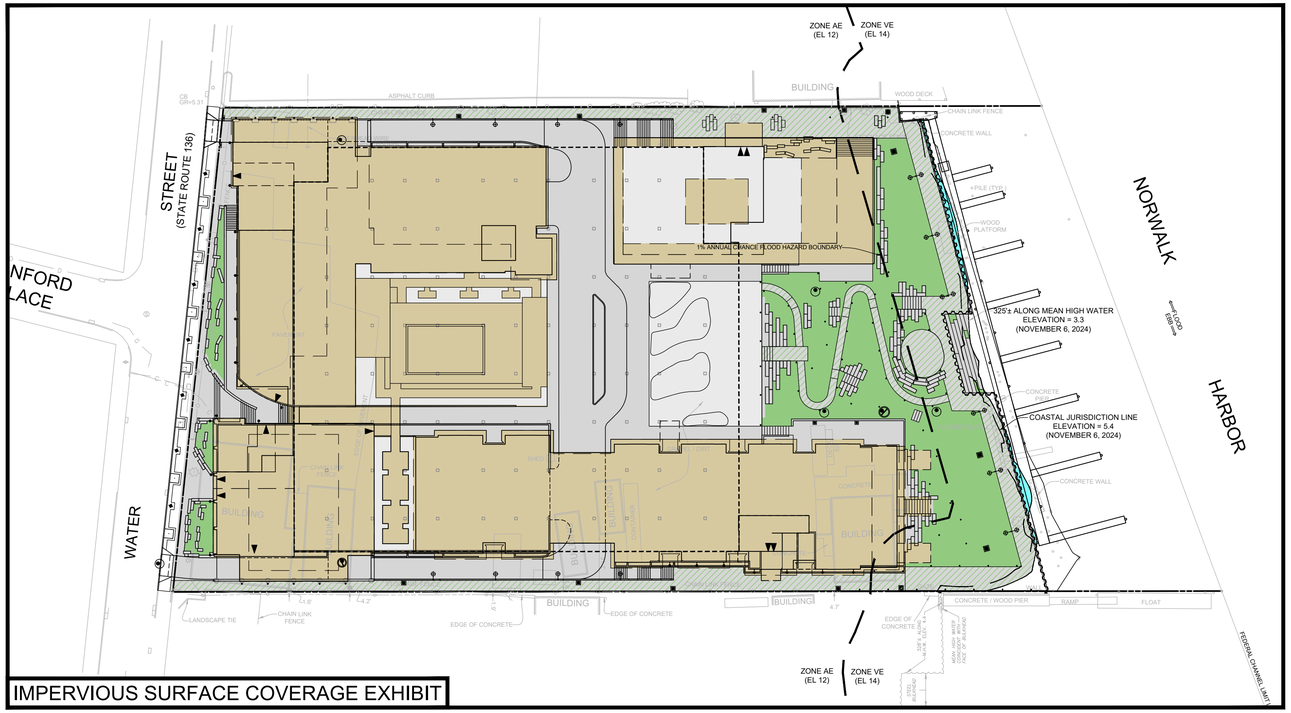
SHEET No: ZSP-1A

Comm. No.: 10909

6/12/2025 10:41 AM\Ldatfiles2\10000\10909\10909.dwg\10909 Master (2025-05-07).dwg



PUBLIC REALM EXHIBIT



IMPERVIOUS SURFACE COVERAGE EXHIBIT

PARKING ANALYSIS FOR 108 WATER STREET DEVELOPMENT

Version 6/13/2025

Description of Space	Category	Zoning Use Size	Requirement Norwalk Zoning Regulations Table 4.3.12.B-1	Base Parking Spaces Required	Reduction Factor	Total Required	*Reference Notes*
Commercial	Personal Service	2,583	1/500 Usable Floor Area	6	1.2	5	*Assumes 75% Usable Floor Area (Gross Area=3,444 sf)*
	Office	83,174	1/334 Usable Floor Area	250	1.4	179	*Assumes 75% Usable Floor Area (Gross Area=110,899 sf)*
	Restaurant	1,912	1/100 Usable Floor Area	20	1.2	17	*Assumes 50% Usable Floor Area (Gross Area=3,823 sf)*
	Marine Supply	1,691	1/500 Usable Floor Area	4	1.2	4	*Assumes 75% Usable Floor Area (Gross Area=2,254 sf)*
	Boat Slips	14	1 / Boat Slip	14	1	14	
			SUBTOTAL COMMERCIAL PARKING	294		219	
Multi-Family Residential	Residential	59	1.3 / Dwelling Unit	77	1 / D.U.	59	*(25-1BR, 17-2BR, 13-3BR, & 4-4BR)*
			SUBTOTAL RESIDENTIAL PARKING	77		59	
			SUBTOTAL RESIDENTIAL AND COMMERCIAL PARKING	*371*		*278*	
FURTHER REDUCTIONS (4.3.12.B.13)							
Residential Reduction: Day / Night Use		58		*58*	*50%*	*29*	
			SUBTOTAL RESIDENTIAL AND COMMERCIAL PARKING			*249*	
			TOTAL REQUIRED PARKING			**249**	
			TOTAL PARKING AVAILABLE			**249**	
			ADA ACCESSIBLE SPACES (INCLUDED IN TOTAL)	8			*8 Provided between Parking Levels*
			ELECTRICAL VEHICLE SPACES (INCLUDED IN TOTAL)	25			*25 Provided on Mezzanine Parking Level*
			BICYCLE PARKING (1 space per 10 Dwelling Units + 1 space per 2,000 sf commercial floor area)	39			*39 Sheltered Spaces Provided*
			LOADING SPACES: COMMERCIAL FLOOR AREA	1			*See Note 1*

1. One loading space required when proposing 3,000 - 25,000 sf of commercial area.
2. Gross floor areas of commercial spaces as depicted on plans by project architect.

ZONING INFORMATION TABLE

108 Water Street

6/13/2025		SD-MC Zone	Provided / Proposed Development
MINIMUM SIZE OF PLOT	AREA	Not regulated	118,594± SF (2.72± acres)
	LOT WIDTH	100' min.	267'
HEIGHT	MAXIMUM	4.5 stories	4.5 stories
	ADDITIONAL	Height further limited via ceiling height requirements.*	Compliant; refer to Architectural Plans for additional information.
BUILDING COMPOSITION		Non-residential use required on ground floor	Compliant; refer to Architectural Plans for additional information.
MINIMUM YARDS	FRONT	5'	5'
	SIDE	5'	20'
	REAR	25' from Mean High Water	28'
BUILDING TYPE			Mid-Rise
USE DESIGNATION			Mixed-Use Multi-family Residential Units: 59 units Office: 110,899 sf Restaurant: 3,823 sf Personal Service Establishment: 3,444 sf Marine Supply Store: 2,254 sf
RESIDENTIAL DENSITY		1 Dwelling Unit / 2,000 sf (59 units allowed)	59 units
IMPERVIOUS SURFACE COVERAGE		80% MAX, 90% max if use LID practices and provide a vegatative buffer against the water, required access to the water shall not be included in calculations	94,694 sf (79.8%)
STORMWATER MANAGEMENT		Section 8.4.5.N.2.g.(1)(a): 75% or more of the Development's stormwater is retained on-site	78% of Site Area treated via: infiltration system, green roof, and permeable pavement surfaces.
PUBLIC REALM			Provided: 43,710 sf (37%)

*Ceiling height may not exceed 13 ft from finished floor to finished floor, except for first floor Business/Commercial, Office, Retail/Personal Service which must be a minimum of 15 ft with max of 25 ft

SITE AREA
(SITE AREA=118,594 SF)

SYMBOL	DESCRIPTION	AREA (sq.ft.)
	STRUCTURES	59,754
	PAVEMENT & SIDEWALKS	23,066
	IMPERVIOUS GREENROOF	11,649
	IMPERVIOUS TOTAL =	94,469 (79.66%)
	BONDED AGGREGATE & OPEN JOINTED SURFACE	12,030
	LANDSCAPE	11,753
	WATER	342
	PERVIOUS TOTAL =	24,125 (20.34%)

No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

ZONING SITE PLAN B
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: 1"=40' (0, 40, 80)

DRAWN BY: JWB | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100

June 13, 2025

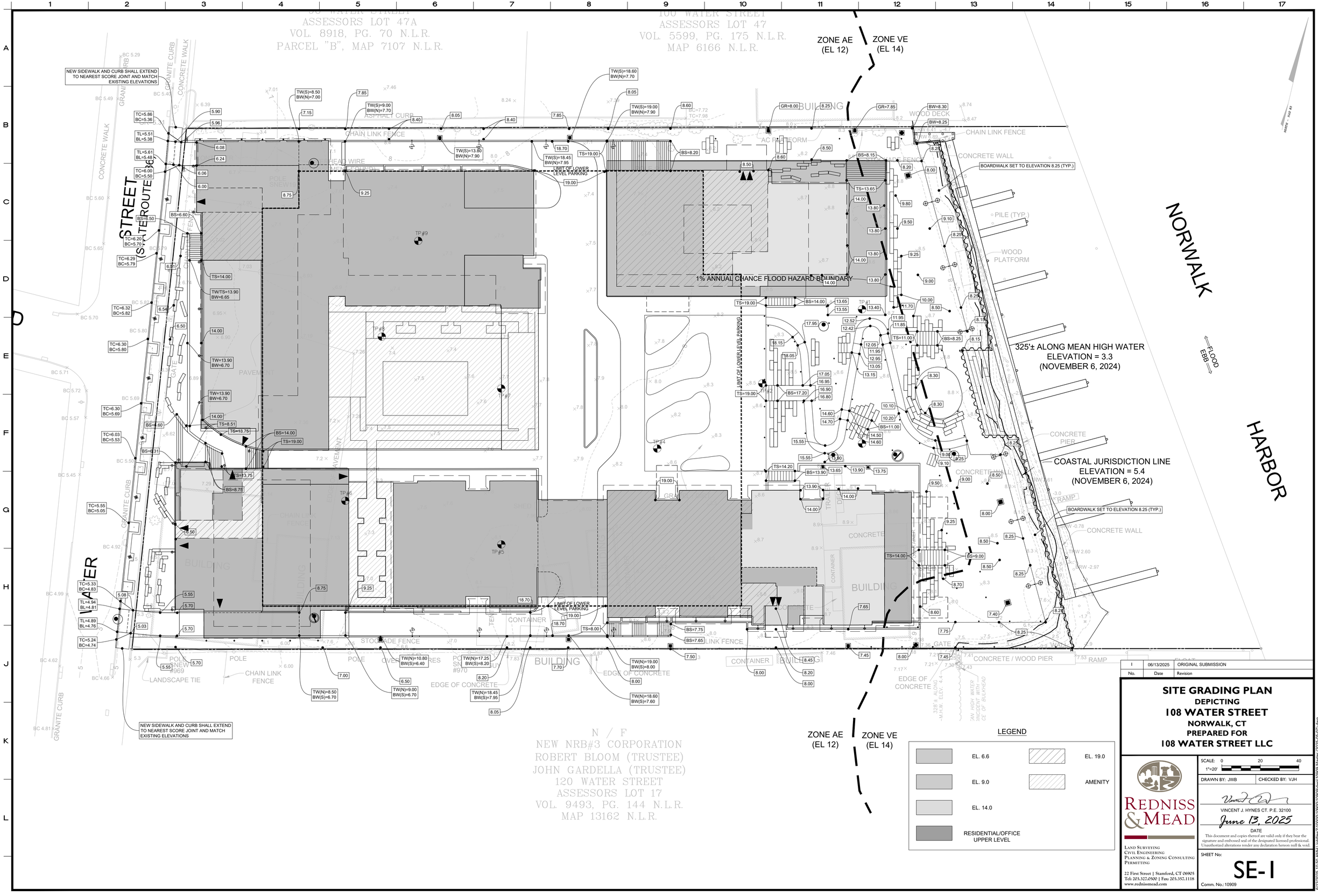
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:

ZSP-1B

Comm. No.: 10909



No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

SITE GRADING PLAN
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

SCALE: 1"=20' (0, 20, 40)

DRAWN BY: JWB | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100

June 13, 2025

DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declarations hereon null & void.

REDNISS & MEAD

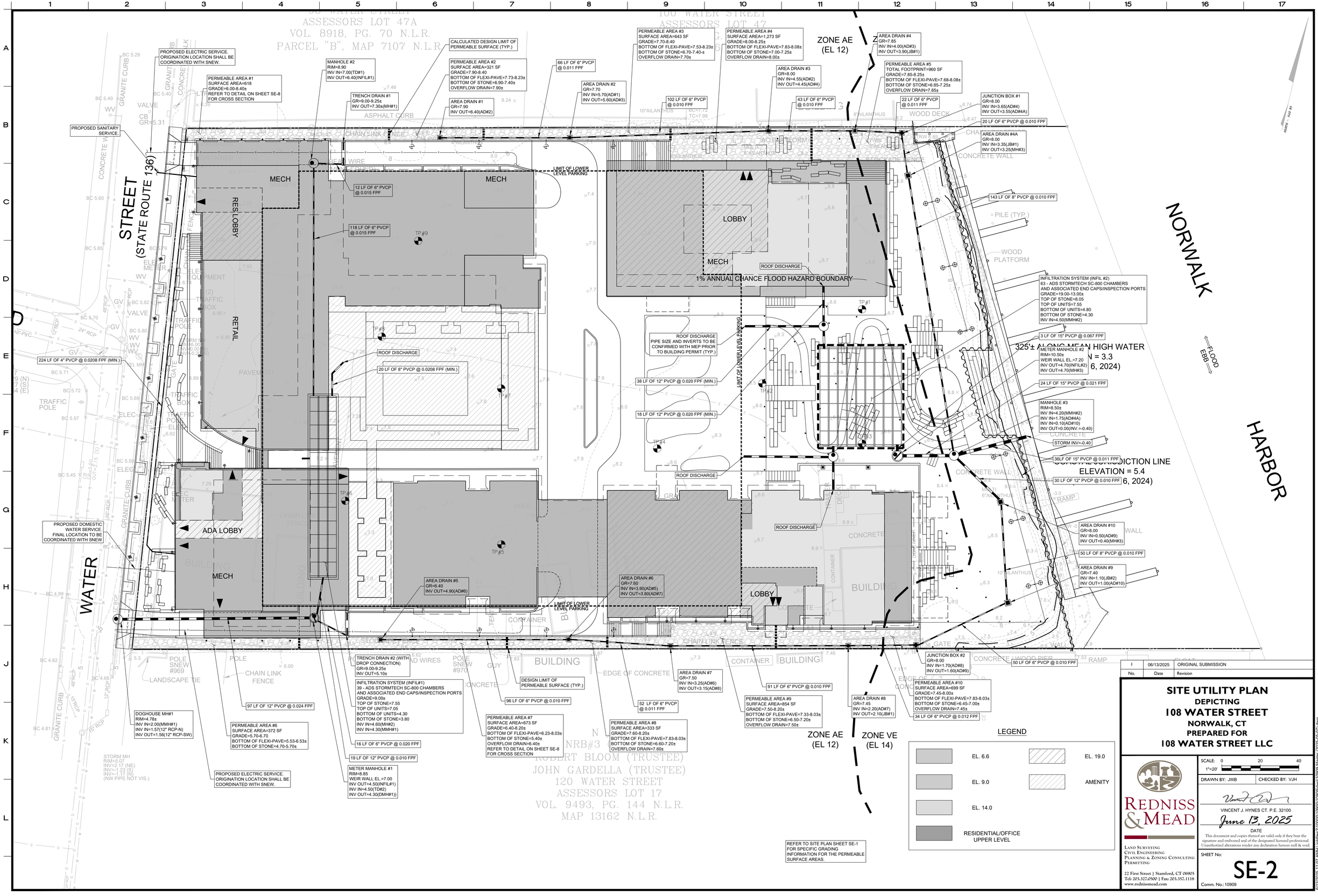
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.2500 | Fax: 203.357.1118
www.rednissmead.com

SHEET No: SE-1

Comm. No.: 10909

6/12/2025 10:50 AM\\Jobfiles2\10000\10900\10909\dwg\10909 Master 2025-05-07.dwg



No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

SITE UTILITY PLAN
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: 1"=20' (0, 20, 40)

DRAWN BY: JWB | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100

June 13, 2025

DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declarations hereon null & void.

SHEET No: SE-2

Comm. No.: 10909

6/12/2025 11:07 AM\\ Usfiles2\10000\10900\10909\dwg\10909 Master 2025-05-07.dwg

DP 120, LLC
DP 121, LLC
96 WATER STREET
ASSESSORS LOT 47A
VOL. 8918, PG. 70 N.L.R.
PARCEL "B", MAP 7107 N.L.R.

LESLIE B. MILKOVICH (TRUSTEE)
JOSEPH RICHICHI (TRUSTEE)
100 WATER STREET
ASSESSORS LOT 47
VOL. 5599, PG. 175 N.L.R.
MAP 6166 N.L.R.

ZONE AE (EL 12)
ZONE VE (EL 14)

SILT SACK SHALL BE INSTALLED AND MAINTAINED UNTIL CONSTRUCTION ALLOWS FOR REMOVAL OF STRUCTURE (TYP.).

TREE TO BE REMOVED (TYP.)

STREET (STATE ROUTE 136)

TRACKING PAD TO BE PLACED AT CONSTRUCTION ENTRANCE AND MAINTAINED IN GOOD CONDITION THROUGHOUT CONSTRUCTION. LOCATION MAY SHIFT TO PROPOSED DRIVEWAY LOCATIONS AS NECESSARY TO ADVANCE CONSTRUCTION ACTIVITIES.

CONSTRUCTION ACCESS GATE

1% ANNUAL CHANCE FLOOD HAZARD BOUNDARY

DOUBLE ROW OF SILT FENCE BACKED WITH HAYBALES

325'± ALONG MEAN HIGH WATER ELEVATION = 3.3 (NOVEMBER 6, 2024)

COASTAL JURISDICTION LINE ELEVATION = 5.4 (NOVEMBER 6, 2024)

NORWALK HARBOR

WATER

SILT SACK SHALL BE INSTALLED AND MAINTAINED UNTIL CONSTRUCTION ALLOWS FOR REMOVAL OF STRUCTURE (TYP.).

POTENTIAL STOCKPILE LOCATION WITH HAYBALES ON DOWNSTREAM PERIMETER (TYP.). LOCATION AND SIZE OF STOCKPILE MAY VARY DEPENDENT ON PHASE OF CONSTRUCTION.

SILT FENCE BACKED WITH HAYBALES (TYP.)

CONSTRUCTION FENCE (TYP.)

TREE REMOVAL NOTES:
1. ANY EXISTING TREES THAT ARE TO BE REMOVED WITHIN THE CITY R-O-W THAT ARE 8 INCHES OR GREATER IN CALIPER, WILL REQUIRE A TREE REMOVAL PERMIT AND MUST BE POSTED BY THE CITY'S TREE WARDEN AT LEAST 10 DAYS IN ADVANCE, IN ACCORDANCE WITH THE CITY CODE CHAPTER 112.
2. CITY TREES TO BE REMOVED SHALL BE REPLACED IN ACCORDANCE WITH CITY CODE CHAPTER 112-10C.

N / F
NEW NRB#3 CORPORATION
ROBERT BLOOM (TRUSTEE)
JOHN GARDELLA (TRUSTEE)
120 WATER STREET
ASSESSORS LOT 17
VOL. 9493, PG. 144 N.L.R.
MAP 13162 N.L.R.

No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

SEDIMENT & EROSION CONTROL PLAN
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

SCALE: 1"=20' (0, 20, 40)

DRAWN BY: JWB | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100
June 13, 2025
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No: SE-3

Comm. No.: 10909

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

6/12/2025 11:10 AM H:\odfiles\2010000\10900\10909\dwg\10909 Master (2025-05-07).dwg

DP 120, LLC
DP 121, LLC
96 WATER STREET
ASSESSORS LOT 47A
VOL. 8918, PG. 70 N.L.R.
PARCEL "B", MAP 7107 N.L.R.

LESLIE B. MILKOVICH (TRUSTEE)
JOSEPH RICHICHI (TRUSTEE)
100 WATER STREET
ASSESSORS LOT 47
VOL. 5599, PG. 175 N.L.R.
MAP 6166 N.L.R.

ZONE AE (EL 12) | ZONE VE (EL 14)

REFER TO SEDIMENT & EROSION CONTROL PLAN (SHEET SE-3) FOR TREES TO BE REMOVED (TYP.)

CONTRACTOR/OWNER TO COORDINATE WITH UTILITY COMPANIES FOR REMOVAL OF EXISTING UTILITY POLES

EXISTING CURB CUT TO BE REMOVED

EXISTING STREETSCAPE (INCLUDING SIDEWALKS, CURBING, AND ON-SITE LANDSCAPING) TO BE REMOVED UNLESS OTHERWISE NOTED IN PLAN SET. SIDEWALK SHALL BE LEFT OPEN FOR PEDESTRIAN MOVEMENT AS LONG AS CONSTRUCTION ALLOWS AND CONTRACTOR TO PROVIDE NORWALK DPW WITH A PEDESTRIAN DETOUR PLAN FOR SEQUENCING PURPOSES (TYP.)

EXISTING STRUCTURES, CONTAINERS, ACCESSORY WALKWAYS, DECKS, AND SHEDS TO BE REMOVED

EXISTING ASPHALT AND GRAVEL SURFACE TO BE REMOVED (TYP.)

1% ANNUAL CHANCE FLOOD HAZARD BOUNDARY

STREET (STATE ROUTE 136)

WATER

NORWALK HARBOR

BUILDING

ASPHALT CURB

CONCRETE WALK

CHAIN LINK FENCE

OVERHEAD WIRE (NO EASEMENT FOUND)

POLE SNEW19

POLE

VALVE

CB GR=5.31

LTPOLE

CONTAINER

ELEC METER

ELEC. EQUIPMENT

(2) TRAFFIC BOX

TRAFFIC POLE

GATE

PAVEMENT

EDGE OF PAVEMENT

ELEC

GV

FH

SHED

TENT

CONTAINER

TRAILER

DECK

GRAVEL / DIRT

CONCRETE

STOCKADE FENCE

POLE SNEW #969

POLE SNEW #970

GUY

LANDSCAPE TIE

OVERHEAD WIRES

EDGE OF CONCRETE

AC PLATFORM

WOOD DECK

CONCRETE WALL

PILE (TYP.)

WOOD PLATFORM

CONCRETE / WOOD PIER

RAMP

CONCRETE PIER

EDGE OF CONCRETE

STEEL BULKHEAD

325'± ALONG MEAN HIGH WATER ELEVATION = 3.3 (NOVEMBER 6, 2024)

MEAN HIGH WATER CONCIDENT WITH FACE OF BULKHEAD

328'± ALONG M.H.W. ELEV. 4.4

COASTAL JURISDICTION LINE ELEVATION = 5.4 (NOVEMBER 6, 202·

FLOOD EBB

N / F
NEW NRB#3 CORPORATION
ROBERT BLOOM (TRUSTEE)
JOHN GARDELLA (TRUSTEE)
120 WATER STREET
ASSESSORS LOT 17
VOL. 9493, PG. 144 N.L.R.
MAP 13162 N.L.R.

ZONE AE (EL 12) | ZONE VE (EL 14)

SANITARY SEWER NOTES:

1. CONTRACTOR SHALL VERIFY EXISTING SANITARY SEWER LATERAL LOCATIONS TO BE ABANDONED (IF NOT PREVIOUSLY ABANDONED) AND THE LATERALS SHALL BE CAPPED WITHIN TWO FEET OF THE EXISTING SANITARY SEWER MAINS IN ACCORDANCE WITH WPCA REQUIREMENTS. LATERALS SHALL BE CUT AND PLUGGED AT THE MANHOLE IF MANHOLE CONNECTIONS EXIST.

NOTES:

1. REFER TO SITE PLAN SHEETS SE-1 AND SE-2 FOR DESIGN PLAN INFORMATION AND SE-3 FOR SEDIMENT AND EROSION CONTROLS.
2. ALL TREES WITHIN RIGHT-OF-WAY, IF ANY, THAT ARE TO BE REMOVED REQUIRE CITY TREE WARDEN APPROVAL.
3. UTILITY INSTALLATION / REMOVAL SHALL BE IN ACCORDANCE TO APPLICABLE UTILITY COMPANY REQUIREMENTS.

No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

SITE REMOVALS PLAN
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.2500 | Fax 203.357.1118
www.rednissmead.com

SCALE: 1"=20' (0, 20, 40)

DRAWN BY: JWB | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100
June 13, 2025
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declarations hereon null & void.

SHEET No: SE-4

Comm. No.: 10909

6/12/2025 11:13 AM\\ Jobfiles2\10000\10909\dwg\10909 Master (2025-05-07).dwg

GENERAL NOTES:

1. These drawings are intended only to depict the design of site grading, drainage, sanitary, utilities, and sediment & erosion controls. These drawings are for approval purposes only. No construction may begin prior to obtaining all necessary permits and approvals.
2. All survey data, boundary lines, topography, building locations and area calculations are from a survey prepared by Redniss & Mead, Inc. titled Property & Topographic Survey dated May 8, 2025. Elevations depicted or labeled are based on NAVD-88 datum.
3. Refer to plans prepared by Beinfield Architecture for information and design of the proposed building and renovations to the existing buildings to remain. These drawings depict site plans corresponding to the latest architectural plans received on May 8, 2025.
4. Property lies in the SD-MC zoning district and within the Coastal Area Management Boundary.
5. The 1% annual chance flood hazard boundary depicted hereon was plotted by state plane coordinates from the national flood hazard geographic information system. Property is depicted as lying within a 1% annual chance flood hazard boundary (Zone AE-12 (elevation 12) and Zone VE-14 (elevation 14)) per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map 09001C0531G effective July 8, 2013.
6. All construction shall comply with the City of Norwalk requirements, the State of Connecticut Basic Building Code Americans with Disabilities Act (ADA), the Connecticut Guidelines for Soil and Erosion and Sediment Control, OSHA, and CT DOT Form 819 (latest edition) and FEMA Flood Regulations.
7. All development activities to be undertaken within the street right-of-way and other public lands shall comply fully with City standards unless approved deviation is specifically set forth as part of this application. All work within the State right-of-way will comply with the CT DOT Form 819 with the latest special Provisions and Typical State Standard Details.
8. Contractor shall supply complete shop drawings including manufacturer's product data sheets to the Site Engineer, for all construction material used in conjunction with these drawings. Contractor shall allow a 5 day review period, prior to fabrication and installation.
9. Information on existing utilities has been compiled from various sources including utility company records, municipal record maps and field survey and is not guaranteed to be correct or complete. The contractor is solely responsible for determining actual locations and elevations of all utilities including underground services.
10. The property shall be served by public water and sewers.
11. Prior to any excavation the Contractor and/or Applicant, in accordance with Public Act 77-350, shall be required to contact "Call Before You Dig" at 1-800-922-4455 for mark-out of underground utilities. Dig test pit(s) at utility crossing(s) to check actual clearances with new utilities prior to construction. If conflicts are found the contractor shall notify the engineer, at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid the conflict. Such relocation shall be done with knowledge of and in accordance with the owner of the utility.
12. It shall be the responsibility of the contractor to provide any excavation safeguards, necessary barricades, flagmen, etc., for traffic control and site safety. All work shall be done in accordance with OSHA requirements. The contractor shall be responsible for compliance with OSHA requirements.
13. When preparing the existing site for the proposed development, all materials removed shall be disposed of in conformance with all governing agencies.
14. Remove stumps and brush from site, or chip and use during landscaping. Do not bury stumps on site.
15. Building elevations are subject to change and shall be finalized prior to building permit.
16. Special attention of the contractor is called to the required type and compaction of pipe bedding and backfill specified on these drawings. These requirements will be strictly enforced.
17. Prior to issuance of a Certificate of Occupancy, the Planning and Zoning and the Department of Public Works may require a certification letter stating that the development was constructed in accordance to the approved plans, and an "as-built" drawing shall be submitted
18. The Contractor is responsible for coordinating with a licensed surveyor to prepare an "as-built" plan. The Contractor is responsible to coordinate with a site engineer 48 hours prior to any inspections.
19. The Engineering Division of the Department of Public Works and the inspecting engineer shall be notified by the contractor three (3) days prior to the commencement of each phase of construction.
20. The work shall be done in conformance with the contract documents/plans unless changes have been approved in writing by the design engineer prior to the work being done.
21. A preconstruction meeting shall be held with the Owner, Architect and Engineer to review the scope of construction. The Contractor shall be responsible to coordinate the preconstruction meeting.
22. A Public Right of Passage Easement shall be granted in favor of the City of Norwalk for street facing sidewalks located on private property.
23. A detailed Construction Phasing and Logistics Plan shall be prepared by the contractor for all off-site work. The plan shall be submitted to the City Department of Public Works for review and approval before a street opening permit for such work is issued.
24. A Department of Public Works (DPW) Encroachment, Driveway, and Sewer Permit, in conformance with DPW's Permit Provisions, shall be required for work in the City's Right-of-Way (ROW) prior to the commencement of the work. Road restoration requirements shall be determined at the time of permitting.

FLOOD PROTECTION:

25. The property lies within Special Flood Hazard Area Zone AE-12 and VE-14. Base Flood Elevation (BFE) (100 year storm) is elevation 12 NAVD-88 as depicted on FEMA Flood Insurance Rate Map, 09001C0531G, effective July 8, 2013.
26. The construction of this development must follow the requirements set forth in the Federal Emergency Management Administration (FEMA) regulations for flood protection.
27. Refer to plans prepared by Beinfield Architecture for information regarding flood protection and flood opening information.
28. All utilities shall be installed per FEMA regulations for flood protection. All utilities (i.e., meters, etc.) must be set two feet above the BFE or waterproofed.
29. The first floor of the proposed building shall be set 2' above elevation 12, which corresponds to the Base Flood Elevation.

EARTHWORK & GRADING:

1. Grade away from building walls at 2% minimum (typical).
2. Earth slopes shall be no steeper than 2:1 (horz.:vert.).
3. All excess materials shall be removed from the site and disposed of legally.
4. General fill beyond paved areas shall be free of brush rubbish, stumps and stones larger than 8". Fill shall be placed in compacted layers not to exceed 8" in thickness. The dry density after compaction shall not be less than 95% of the Standard Proctor Test and done in accordance with the requirements of ASTM D698. After compacting, the fill shall be 4" below the required grade as shown on the plan.
5. Disturbed areas shall be top soiled, seeded with grass and mulched in a manner conforming to the recommendations of the "Guidelines for Soil Erosion and Sediment Control", published by The Connecticut Council on Soil and Water Conservation, May 2002.
6. Excavation for pipes or concrete pavement repair may require either a braced excavation or open cut designed according to the requirements of OSHA, 29 CFR Parts 1926. The lateral support systems and slopes should also be designed such that building footings, slabs on grade, adjacent pavement and existing ut ilities are protected and supported and not allowed to settle. The contractor shall be responsible for having a Professional Engineer, registered in the State of Connecticut design the excavation support method. The designs shall be submitted to the owner or his geotechnical engineer for review. The contractor shall submit plans showing the type, limits, design and sequence of construction for the lateral support system.
7. During the excavation, it is anticipated that existing utilities and sewers may be exposed. The contractor shall provide protection and support of these facilities and repair any damage caused by the work in a manner satisfactory to the owner. The condition of the existing facilities shall be observed by the owner's representative who shall determine if the facilities shall be replaced. Replacement of the facilities shall be done in a manner satisfactory to the owner and in compliance with applicable Codes.

PAVEMENT AND PAVEMENT MARKINGS:

8. Areas of new asphalt shall follow the details on Sheet SE-6.
9. Permeable pavers shall be installed in accordance with the details on Sheet SE-6.
10. Areas of asphalt pavement that are disturbed by the construction of this project shall be replaced in accordance with the asphalt pavement repair detail. The finished grade of asphalt paving shall blend to existing grade and the edge of the concrete pavement smoothly with no slopes exceeding 4%.
11. Existing features such as but not limited to walks, curbs, and pavement damaged by construction activities shall be repaired at no additional cost to the owner.
12. Bituminous curbs damaged by the project shall be replaced with the new bituminous curbing machine laid Class 3 as described in Sections 8.15 and M.04 of the CT DOT Form 819.
13. Saw cut perimeter of area to be excavated. Saw cut shall be straight and vertical.
14. Contractor shall engage a testing lab who shall verify the base course material by means of a sieve analysis and perform compaction testing of the base and each course of pavement. Site Engineer shall review with the contractor the required testing at the preconstruction meeting. Site Engineer shall approve base course prior to placement of each layer of pavement.
15. The Contractor shall engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from specified requirements.
16. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements as directed by the Site Engineer.
17. Contractor is responsible to place the hot-mix asphalt mix as required in the drawings, details and the applicable Section of the CT DOT FORM 819 (latest edition).
18. Compaction shall be constructed as specified in the CT DOT FORM 819 (latest edition), Section 4.06 specification, the drawings and the details. Testing lab shall verify compaction of each course of pavement as directed by the Site Engineer.
19. After the asphalt pavement has cured sufficiently to support the weight of a water truck without marking the newly installed pavement, it shall be water tested for low spots, areas of little or no drainage, etc. A water truck shall spray a sufficient amount of water on all pavement sections to observe the drainage of water. There shall be positive drainage on all areas of the pavement. Any visible low spots where significant water (greater than or equal to 3/16" in depth) is left standing, shall be clearly marked for the Contractor to repair prior to final acceptance. These areas must be sawcut and removed down to the base course prior to replacement with asphalt mixture as per the original approved design. The base course and edges of sawcut asphalt must be treated with tack oil prior to new section of asphalt being installed. The Owner's Representative or inspecting A/E shall be notified 48 hours in advance of water test so that he may be present during the test.
20. The inspecting engineer and contractor will review the testing requirements at the preconstruction meeting. At this meeting, samples to be tested and compaction testing protocol will be discussed. Testing and approval of the subgrade, base course and asphalt layers prior to the installation of the next layer to determine if the work complies or deviates from the specified requirements. Prior to installation of the base course, contractor shall contact inspecting engineer to determine the suitability of the subgrade material, base course and asphalt. Additional excavation or base course may be required.
21. Finished paving shall be free of ``bird baths" and be smooth at the slopes specified on the plans.
22. Finished grade shall be within 1/2 inch of that noted on the drawings.
23. The pavement shall be protected from vehicular traffic of any kind with the use of barricades, etc. for a minimum period of 24 hours after final rolling. Maintain and protect asphalt surface from scrapes, sears, spills, hydraulic leaks, and any other construction damage for the remainder of construction until Owner's Representative acceptance. Contractor is responsible for clearing, repairing, seal coating, patching, and re-striping as necessary to obtain Owner's Representative's final approval/acceptance.
24. Thicknesses of all layers shown are after compaction. Compact all layers to 95% per ASTM D 1557 (Modified Proctor Method).
25. New pavement markings shall be painted with epoxy resin paint in compliance with the CT DOT Form 819 Section 12.10 as revised.
26. New sign material and sheeting shall be made of retroreflective material in compliance with CT DOT Form 819 Section 12.08 as revised.
27. All signs and pavement markings installed along the state road must conform to the ``Manual on Uniform Traffic Control Devices," the latest State of Connecticut Catalog of Signs and standard as revised

STORM AND SANITARY SEWER SYSTEMS:

1. All pipe shall be installed straight and at the vertical and horizontal alignment shown. Pipes shall have a uniform slope as specified.
2. Minimum cover on all pipes shall be two feet (2') unless otherwise noted.
3. All storm pipe specified as Poly Vinyl Chloride Pipe (PVCP) shall be SDR 35 with rubber gasketed joints and meet the requirements of ASTM D3034 and D3212.
4. All storm pipe specified as High Density Polyethylene Pipe (HDPE) for the stormwater system shall be ADS N-12 or equivalent with O-Ring joints (Pro-series) suitable for water tight installations.
5. All sanitary sewer pipe shall be Poly Vinyl Chloride Pipe (PVCP) and shall be Schedule 40 with solvent weld joints.
6. Dig test pits at utility and sewer crossings to check actual clearances with these facilities prior to construction. Dig test pits at the connection points to existing sanitary sewer pipes to confirm that the elevation of the proposed gravity sewer is appropriate. If conflicts are found the contractor shall notify the engineer at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid conflict.
7. All catch basins and area drains shall have a two foot (2') sump with bell traps or 90° PVC elbows.
8. Manhole diameters listed are minimum sizes and are assumed to be 4' inside diameter. If precast manholes are used, larger manholes must be used if recommended by the manufacturer.
9. All existing and proposed catch basins, manhole rims and utility facilities shall be raised or lowered to be flush with finished grade.
10. Locate and abandon existing sanitary laterals at the property line with the end capped and mortared. Other existing utilities shall be abandoned in accordance with the requirements of the utility owner(s).
11. When connecting new pipes to existing structures such as manholes and catch basins, the structure shall be completely cleaned out. The hole made in the structure shall be made as small as possible. The structure shall be repaired to match its original type of construction. The joint between the structure and the pipe shall be made watertight by filling the joint with mortar.
12. Flow in existing sewer system must not be interrupted. Any temporary routing of this sewer flow must be done in conformance with all applicable rules and regulations.
13. Under no circumstances shall trench water be allowed to drain off through sanitary sewer lines.
14. All crushed stone shall be Gradation No. 4 as per CT DOT Form 818, Article M.01.02. Stone shall consist of sound, tough, durable particles free from soft, thin, elongated, laminated, friable, micaceous, or disintegrated pieces of mud, dirt or other deleterious material.
15. The storm and sanitary sewer shall be encased in concrete for a distance of 10 feet on either side of any intersection between the sanitary sewer and storm sewer. Where concrete encasement is required, temporarily support the pipes in place. Use sufficient concrete to encase piping not less than 6 inches at all points. The encasement shall be adequately supported with a stone base and shall be keyed into the foundation wall to prevent damage from settlement.
16. Sanitary Sewer Testing: The sanitary sewer line shall be Low Pressure Air Tested, at the expense of the contractor; Testing to be in accordance with recommended procedure in "Unibell's" "Recommended Practice for Low Pressure Air Testing of Installed Sewer Pipe" UNI B-6. The minimum starting pressure for the test is 3.5 P.S.I. (in excess of the groundwater pressure at the top of the pipe) and there shall be no more than 0.5 P.S.I. drop in five (5) minutes. Manholes to be visually inspected. Lateral plugs shall be airtight to allow proper testing. Inspecting Engineer and the Engineering Bureau shall be informed of testing schedule three days in advance so they can witness the testing.
17. At the end of construction, after the site has be fully stabilized, all new and previously existing storm sewer facilities including, but not limited to, catch basins, area drains, manholes, junction boxes, flow control structures, pipes, oil grit separators, permeable pavers and porous pavement shall be fully cleaned with equipment designed for that purpose to the satisfaction of the inspecting engineer.

UTILITIES:

18. Utilities shown on these plans are "not guaranteed" to be complete or correct. Prior to any site activities, the contractor shall be responsible for verification of clearances of proposed utilities from existing utilities. This verification shall include physical observation by means of test pits of the locations of affected utilities. The contractor shall notify the site engineer immediately of any conflict.
19. Easements may be required in favor of the various utility companies.
20. Electric, telephone, cable, and water services shall be installed in conformance to the requirements of the governing utility companies.
21. Proposed electric, telephone, cable, and water services are shown for schematic purposes only and are subject to change pending utility company review. These utilities shall be designed by others and installed in conformance to the requirements of the governing utility companies.
22. All proposed utility facilities shall be raised or lowered to be flush with finished grade.
23. Utility connections at building face shall be coordinated with the building contractors.
24. The contractor must supply and install drag lines with all conduits.
25. Assume one 2" PVCP conduit for all site lighting. Service location to be determined.
26. In general, each utility shall have a minimum clearance of three feet to any other underground utility.
27. Any and all utilities abandoned shall be capped or removed in accordance with utility companies' requirements.
28. All utilities shall be installed per FEMA regulations for flood protection. All utilities (i.e. HVAC condensers, electric transformers, etc.) must be set two feet above the Base Flood Elevation (BFE).
29. The electric transformer shall be located to meet all applicable Zoning setbacks.
30. Detectable Tape shall be used to mark piping listed below. The identification tape shall be buried at least 6-inches to 10-inches below final grade but no closer than 12-inches to the buried utility piping or service.

Electric	Red	Caution Electric Line Buried Below
Telephone & Control	Orange	Caution Telephone Line Buried Below
Gas	Yellow	Caution Gas Line Buried Below
Water Systems	Blue	Caution Water Line Buried Below
Sewer	Green	Caution Sewer Line Buried Below

31. Underground-Type Plastic Line Marker: Manufacturer's standard permanent, bright-colored detectable tape, continuous-printed plastic tape, intended for direct-burial service; not less than 6" wide X 4 mils thick.

SEDIMENT AND EROSION CONTROL NOTES:

1. All sediment and erosion controls shall be done in conformance with the "Connecticut Guidelines for Soil Erosion and Sediment Control" dated May 2002 prepared by The Connecticut Council on Soil and Water Conservation.
2. The contractor is assigned the responsibility for implementing this sediment and erosion control plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan notifying the Zoning Department of any transfer of this responsibility, and that construction is to begin three (3) days prior to commencing work.
3. Temporary sediment control measures and tree protection must be installed in accordance with drawings and manufacturer recommendations prior to work in any upland areas.
4. No construction or construction equipment or storage of materials will be allowed on the downhill side of the silt fence or within fenced off areas, except during construction of the proposed facilities shown beyond the fences.
5. Where existing trees are to be saved, trees shall be protected with trunk armoring where shown. Tree limbs shall be trimmed as needed to protect the trees from damage by construction operations. Such trimming shall be minimized. Armoring and any limb trimming should be done before construction begins. Tree protection should be maintained during construction. Equipment Trafficking and materials storage over the tree roots shall be avoided.
6. Tracking pads shall be installed at start of construction and maintained in an effective condition throughout the duration of construction. Pads consist of 2" - 4" crushed stone, 6" minimum thickness and extend the width of the construction access. The length of the access shall be sufficient to prevent dirt from being tracked onto off site roads (minimum length of 50').
7. The location of each stockpile will vary throughout the construction period. Excavated silt and earth stockpiles shall be stored on site. Silt fence shall be placed at the base of the stockpile to prevent sediment from leaving the site and to protect storm drains, wetlands and watercourses.
8. Silt fence shall be Mirafi envirofence, Amoco siltstop or equivalent approved by Site Engineer. Filter fabric used shall be Mirafi 100x or equivalent. Install silt fence according to manufacturer's instruction, particularly, bury lower edge of fabric into ground.
9. All roof leader downspouts shall temporarily discharge onto splash pads measuring at least 8" wide by 18" long, or approved equal.
10. If disturbed areas can not be seeded immediately due to the time of year, mulch area until seeding can occur; remove mulch and seed and remulch when season permits.
11. If excavation dewatering is required, all dewatering pumping must have sediment and erosion control provisions to maintain clear water discharge (not muddy). Such provisions shall be approved by governing agencies. All pump discharge from dewatering shall be clear at the point where it flows off the property.
12. Upon installation of each catch basin and area drain, immediately surround it with haybales as per sediment filter detail.
13. Haybales shall be new and are to be replaced whenever their condition deteriorates beyond reasonable usability.
14. Temporarily block pipes leading into the storm water infiltration system until upland areas are thoroughly stabilized. Under no circumstances shall sediment or silty water be allowed to enter the infiltration system.
15. Pavement and curbing should be placed as soon as possible after drainage is installed.
16. Loaded trucks shall be covered as required to keep down dust.
17. Affected portions of off site roads and sidewalks must be swept clean when required to keep down dust and prevent safety hazards or at least once a week during construction and as directed by Site Engineer.
18. Dust control to be achieved with watering down disturbed areas as required.
19. After each storm event or once bi-weekly, all sediment and erosion controls shall be inspected. Any corrective actions to mitigate environmental concerns will be ordered by the site engineer or environmental engineer. It is the Owner's responsibility to retain such consultant.
20. Additional sediment and erosion control measures may be installed during the construction period if found necessary by the inspecting engineer or any Governing Agency.
21. All permanent and temporary sediment control devices will be maintained in effective condition throughout the construction period until upland disturbed areas are thoroughly stabilized. Upon completion of work and stabilization of all upland areas, all temporary sediment control devices and tree protection should be removed from the site and any silt disposed of legally.
22. Periodically and upon completion of the job, clean silt from any effected storm sewer systems including pipes and inlets. Use silt during final landscaping or dispose off-site legally.

CONSTRUCTION PHASING:

The following description of construction phasing is intended to demonstrate a feasible sequence of construction. The actual sequence may vary due to field conditions if approved by the inspecting engineer.

PHASE I: PREPARATION

A. AT LEAST ONE WEEK PRIOR TO THE START OF CONSTRUCTION, THE INSPECTING ENGINEER SHALL MEET WITH THE CONTRACTOR AND OWNER TO REVIEW THE SEDIMENT AND EROSION CONTROL (S&E PLAN), DISCUSS ANY MODIFICATIONS TO CONSTRUCTION SEQUENCE OR S&E PLAN AND TO REVIEW CONTRACTORS LOGISTICS PLAN.
B. ESTABLISH STAGING AREA AND TEMPORARY UTILITIES.
C. INSTALL TRACKING PADS FOR CONSTRUCTION ACCESS.
D. INSTALL SILT FENCE, CONSTRUCTION FENCE AND PERIMETER FENCE AS SHOWN ON THE PLANS.
E. CUT TREES TO BE REMOVED AND GRUB AREAS TO BE CLEARED.
F. REMOVE/DEMOLISH EXISTING BUILDINGS. REMOVE EXISTING PAVEMENT ONLY AS NECESSARY TO PROCEED WITH EACH PHASE OF CONSTRUCTION.

PHASE II: CONSTRUCTION

A. ROUGH GRADE SITE. GENERAL EARTHWORK. EXCAVATE FOR BUILDING FOUNDATION.
B. CONSTRUCT FOUNDATION AND BACKFILL AS SOON AS POSSIBLE.
C. INSTALL STORM WATER SYSTEM. THE DRAINAGE UTILITIES WILL BE INSTALLED AND READY TO RECEIVE STORM WATER PRIOR TO THE INSTALLATION OF PAVING.
D. INSTALL SEDIMENT AND EROSION CONTROLS ASSOCIATED WITH DRAINAGE STRUCTURES.
E. INSTALL SANITARY, WATER, CABLE, ELECTRIC, AND TELEPHONE UTILITIES.
F. FINAL GRADING AND PAVING.
G. SEED & MULCH DISTURBED AREAS AND INSTALL LANDSCAPING AS SOON AS POSSIBLE.
H. MAINTAIN ALL SEDIMENT AND EROSION CONTROLS IN AN EFFECTIVE CONDITION DURING THE CONSTRUCTION PERIOD.

PHASE III: CLEAN UP AFTER ALL AREAS ARE STABILIZED

A. CLEAN EFFECTED PORTION OF ON & OFF SITE ROADS AND DRIVEWAYS.
B. REMOVE ACCUMULATED SILT AND DEBRIS FROM CATCH BASIN SUMPS & PIPES OF EFFECTED ON & OFF SITE STORM DRAINS.
C. REMOVE ACCUMULATED SEDIMENT FROM EFFECTED AREAS AND DISPOSE OF LEGALLY.
D. REMOVE TEMPORARY SEDIMENT AND EROSION CONTROL AND TREE PROTECTION.
E. MAKE ANY NECESSARY REPAIRS TO PERMANENT SEDIMENT AND EROSION CONTROLS SUCH AS PLANTINGS.

Subsurface Soil Investigation
Soil Profile

Test Pit #: 1 — Date: 04/17/2025
Inspector: PBS — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 88"	Soil Description
0"-10"	Gravel Parking
10"-57"	Fill (moderate compaction)
57"-62"	Crushed Shells
62"-88"	Bank Run Gravel

Subsurface Soil Investigation
Soil Profile

Test Pit #: 2 — Date: 04/17/2025
Inspector: PBS — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 84"	Soil Description
0"-8"	Gravel Parking
8"-55"	Fill (moderate compaction)
55"-84"	Bank Run Gravel / Crushed Shells

Subsurface Soil Investigation
Soil Profile

Test Pit #: 3 — Date: 04/17/2025
Inspector: PBS — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: N/A — Roots at: N/A

Depth: 77"	Soil Description
0"-10"	Gravel Parking
10"-40"	Fill (moderate compaction)
40"-56"	Orange-Brown Sand
56"-77"	Bank Run Gravel / Grey Sand

Subsurface Soil Investigation
Soil Profile

Test Pit #: 4 — Date: 04/17/2025
Inspector: PBS — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: 71" — Roots at: N/A

Depth: 75"	Soil Description
0"-8"	Gravel Parking
8"-55"	Fill (moderate compaction)
55"-75"	Bank Run Gravel / Grey Sand

Subsurface Soil Investigation
Soil Profile

Test Pit #: 5 — Date: 04/17/2025
Inspector: PBS — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: 55" — Roots at: N/A

Depth: 63"	Soil Description
0"-8"	Gravel Parking
8"-50"	Fill (moderate compaction)
50"-63"	Bank Run Gravel / Grey Sand

Subsurface Soil Investigation
Soil Profile

Test Pit #: 6 — Date: 04/17/2025
Inspector: PBS — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: 62" — Roots at: N/A

Depth: 71"	Soil Description
0"-10"	Asphalt/Gravel Parking
10"-40"	Fill (moderate compaction)
40"-48"	Black Sand
48"-71"	Bank Run Gravel / Grey Sand

Subsurface Soil Investigation
Soil Profile

Test Pit #: 7 — Date: 04/17/2025
Inspector: PBS — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: 60" — Roots at: N/A

Depth: 63"	Soil Description
0"-8"	Gravel Parking
8"-40"	Fill (moderate compaction)
40"-63"	Bank Run Gravel / Grey Sand

Subsurface Soil Investigation
Soil Profile

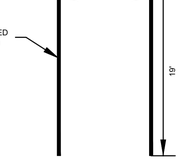
Test Pit #: 8 — Date: 04/17/2025
Inspector: PBS — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: 57" — Roots at: N/A

Depth: 64"	Soil Description
0"-9"	Gravel Parking
9"-45"	Fill (moderate compaction)
45"-64"	Bank Run Gravel / Grey Sand

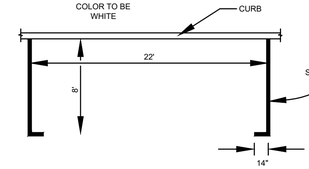
Subsurface Soil Investigation
Soil Profile

Test Pit #: 9 — Date: 04/17/2025
Inspector: PBS — Sanitarian: N/A
Ledge at: N/A — Mottling at: N/A
Water at: 58" — Roots at: N/A

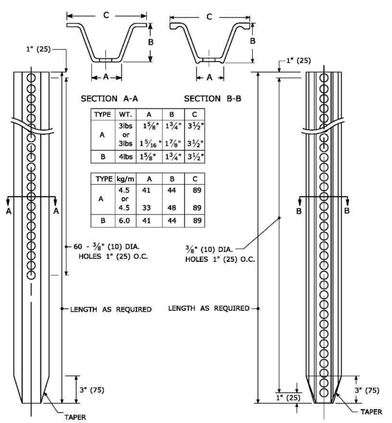
Depth: 61"	Soil Description
0"-10"	Gravel Parking
10"-41"	Fill with Pockets of Orange Brown Sand
41"-61"	Bank Run Gravel / Grey Sand



REGULAR PARKING SPACE
N.T.S.



PARALLEL PARKING SPACE
N.T.S.



TYPE	WT.	A	B	C
A	3lbs or 3lbs	1 5/16"	1 3/4"	3 1/2"
B	4lbs	1 5/16"	1 3/4"	3 1/2"

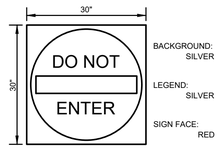
TYPE	kg/m	A	B	C
A	4.5 or 4.5	33	48	89
B	6.0	41	44	89

TYPICAL METAL SIGN POST
N.T.S.



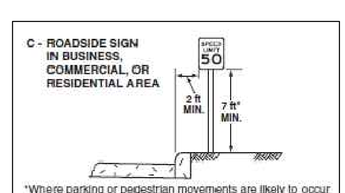
CONN. D.O.T. SERIES R1-1
31-0552

SIGNAGE TO BE COORDINATED WITH THE CITY OF NORWALK DEPARTMENT OF PUBLIC WORKS



CONN. D.O.T. SERIES R5-1 #31-0509

SIGNAGE DETAILS
N.T.S.



SIGN MOUNTING DETAIL
N.T.S.

No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

NOTES & DETAILS
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

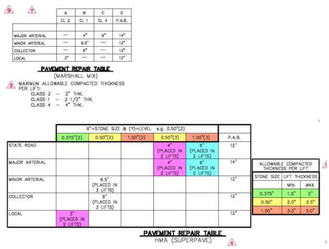
REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: N.T.S.
DRAWN BY: DML | CHECKED BY: VJH
VINCENT J. HYNES CT. P.E. 32100
June 13, 2025
DATE

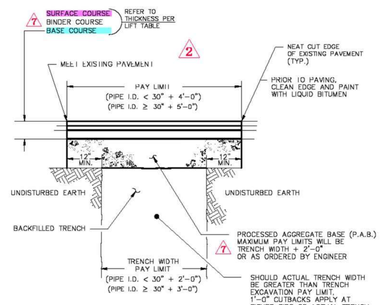
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

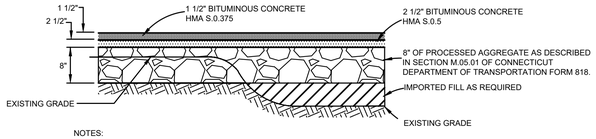
SHEET No: SE-5
Comm. No.: 10909

6/12/2025 11:24 AM\\Lothfiles2\10900\10909\dwg\10909 Notes And Details.dwg



TRENCH REPAIR DETAIL
(FOR CITY RIGHT-OF-WAY)
N.T.S.





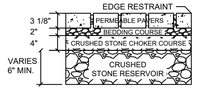
NOTES:

1. SAW CUT PERIMETER OF AREA TO BE EXCAVATED. SAW CUT SHALL BE STRAIGHT AND VERTICAL.
2. CONTRACTOR SHALL ENGAGE A TESTING LAB WHO SHALL VERIFY THE BASE COURSE MATERIAL BY MEANS OF A SIEVE ANALYSIS AND PERFORM COMPACTION TESTING OF THE BASE AND EACH COURSE OF PAVEMENT. SITE ENGINEER SHALL REVIEW WITH THE CONTRACTOR THE REQUIRED TESTING AT THE PRECONSTRUCTION MEETING. SITE ENGINEER SHALL APPROVE BASE COURSE PRIOR TO PLACEMENT OF EACH LAYER OF PAVEMENT.
3. THE CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AGENCY TO PERFORM FIELD INSPECTIONS AND TESTS AND TO PREPARE TEST REPORTS. TESTING AGENCY WILL CONDUCT AND INTERPRET TESTS AND STATE IN EACH REPORT WHETHER TESTED WORK COMPLIES WITH OR DEVIATES FROM SPECIFIED REQUIREMENTS.
4. ADDITIONAL TESTING, AT CONTRACTOR'S EXPENSE, WILL BE PERFORMED TO DETERMINE COMPLIANCE OF CORRECTED WORK WITH SPECIFIED REQUIREMENTS. REMOVE AND REPLACE OR INSTALL ADDITIONAL HOT-MIX ASPHALT WHERE TEST RESULTS OR MEASUREMENTS INDICATE THAT IT DOES NOT COMPLY WITH SPECIFIED REQUIREMENTS AS DIRECTED BY THE SITE ENGINEER.
5. CONTRACTOR IS RESPONSIBLE TO PLACE THE HOT-MIX ASPHALT MIX AS REQUIRED IN THE DRAWINGS, DETAILS AND THE APPLICABLE SECTION OF THE CT DOT FORM 818 (LATEST EDITION).
6. AFTER THE ASPHALT PAVEMENT HAS CURED SUFFICIENTLY TO SUPPORT THE WEIGHT OF A WATER TRUCK WITHOUT MARKING THE NEWLY INSTALLED PAVEMENT, IT SHALL BE WATER TESTED FOR LOW SPOTS. AREAS OF LITTLE OR NO DRAINAGE, ETC. A WATER TRUCK SHALL SPRAY A SUFFICIENT AMOUNT OF WATER ON ALL PAVEMENT SECTIONS TO OBSERVE THE DRAINAGE OF WATER. THERE SHALL BE POSITIVE DRAINAGE ON ALL AREAS OF THE PAVEMENT. ANY VISIBLE LOW SPOTS WHERE SIGNIFICANT WATER (GREATER THAN OR EQUAL TO 3/16" IN DEPTH) IS LEFT STANDING, SHALL BE CLEARLY MARKED FOR THE CONTRACTOR TO REPAIR PRIOR TO FINAL ACCEPTANCE. THESE AREAS MUST BE SAWCUT AND REMOVED DOWN TO THE BASE COURSE PRIOR TO REPLACEMENT WITH ASPHALT MIXTURE AS PER THE ORIGINAL APPROVED DESIGN. THE BASE COURSE AND EDGES OF SAWCUT ASPHALT MUST BE TREATED WITH TACK OIL PRIOR TO NEW SECTION OF ASPHALT BEING INSTALLED. THE OWNER'S REPRESENTATIVE OR INSPECTING A/E SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF WATER TEST SO THAT HE MAY BE PRESENT DURING THE TEST.
7. THE INSPECTING ENGINEER AND CONTRACTOR WILL REVIEW THE TESTING REQUIREMENTS AT THE PRECONSTRUCTION MEETING. AT THIS MEETING, SAMPLES TO BE TESTED AND COMPACTION TESTING PROTOCOL WILL BE DISCUSSED. TESTING AND APPROVAL OF THE SUBGRADE, BASE COURSE AND ASPHALT LAYERS PRIOR TO THE INSTALLATION OF THE NEXT LAYER TO DETERMINE IF THE WORK COMPLIES OR DEVIATES FROM THE SPECIFIED REQUIREMENTS. PRIOR TO INSTALLATION OF THE BASE COURSE, CONTRACTOR SHALL CONTACT INSPECTING ENGINEER TO DETERMINE THE SUITABILITY OF THE SUBGRADE MATERIAL, BASE COURSE AND ASPHALT. ADDITIONAL EXCAVATION OR BASE COURSE MAY BE REQUIRED.
8. FINISHED PAVING SHALL BE FREE OF "BIRD BATHS" AND BE SMOOTH AT THE SLOPES SPECIFIED ON THE PLANS.
9. FINISHED GRADE SHALL BE WITHIN 1/2 INCH OF THAT NOTED ON THE DRAWINGS.
10. THE PAVEMENT SHALL BE PROTECTED FROM VEHICULAR TRAFFIC OF ANY KIND WITH THE USE OF BARRICADES, ETC. FOR A MINIMUM PERIOD OF 24 HOURS AFTER FINAL ROLLING. MAINTAIN AND PROTECT ASPHALT SURFACE FROM SCRAPES, SEARS, SPILLS, HYDRAULIC LEAKS, AND ANY OTHER CONSTRUCTION DAMAGE FOR THE REMAINDER OF CONSTRUCTION UNTIL OWNER'S REPRESENTATIVE ACCEPTANCE. CONTRACTOR IS RESPONSIBLE FOR CLEARING, REPAIRING, SEAL COATING, PATCHING, AND RE-STRIPING AS NECESSARY TO OBTAIN OWNER'S REPRESENTATIVE'S FINAL APPROVAL/ACCEPTANCE.

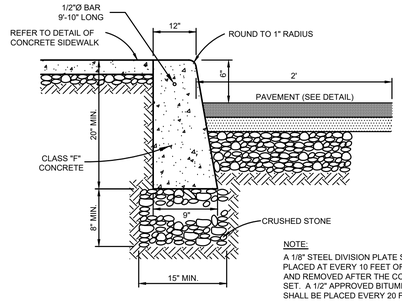
PAVEMENT DETAIL
(FOR ON-SITE PAVEMENT)
N.T.S.

NOTES:

1. Permeable Pavers shall be Eco-Priora permeable pavers or equivalent and shall be 3 1/8" thick with ⅜" joint spacing. Refer to plans by Eric Rains Landscape Architecture for pattern and color scheme.
2. Choker Course shall consist of a 4" thick layer of crushed stone conforming to gradation ASTM No. 57.
3. Bedding Course for permeable pavers shall consist of a 2" thick layer of crushed stone conforming to gradation ASTM No. 8.
4. Crushed Stone Reservoir shall conform to gradation ASTM No. 2.
5. O&G Industries, Inc. ¾" stone meets ASTM No. 8 aggregate standards, ¾" stone meets ASTM No. 57 aggregate standards and 2" stone meets ASTM No. 3 stone standards. ASTM No. 3 stone (2" stone) can be used in place of ASTM No. 2 stone. Aggregate gradations shall be tested to confirm that they match required standards.
6. Soils beneath the proposed BMP shall be scarified or tilled prior to installation to improve infiltration.
7. The site contractor shall provide a sieve analysis of each stone material to confirm gradations prior to installation.

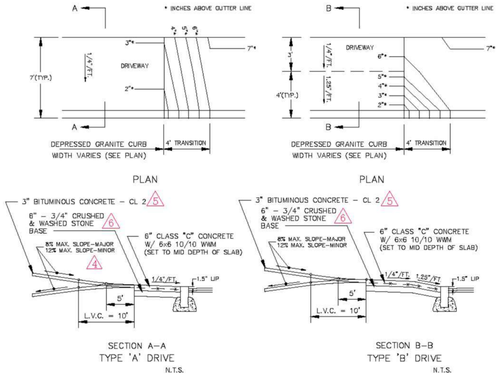


PERMEABLE PAVERS DETAIL
N.T.S.

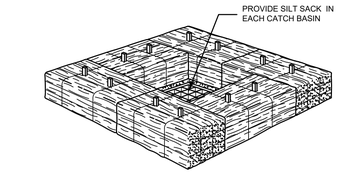


NOTE:
A 1/8" STEEL DIVISION PLATE SHALL BE PLACED AT EVERY 10 FEET OF CURBING AND REMOVED AFTER THE CONCRETE HAS SET. A 1/2" APPROVED BITUMINOUS JOINT SHALL BE PLACED EVERY 20 FEET.

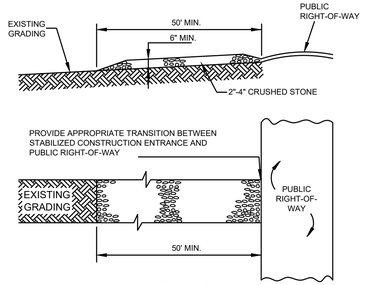
CONCRETE CURB
(ON-SITE)
N.T.S.



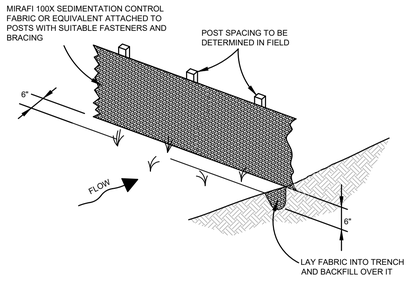
REINFORCED CONCRETE DRIVEWAY RAMP
N.T.S.



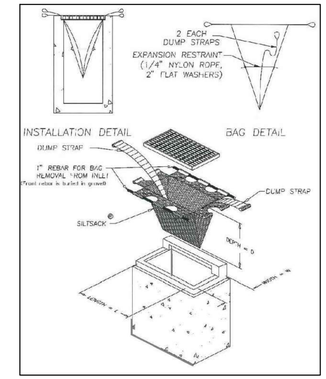
SEDIMENT FILTER FOR CATCH BASINS
N.T.S.



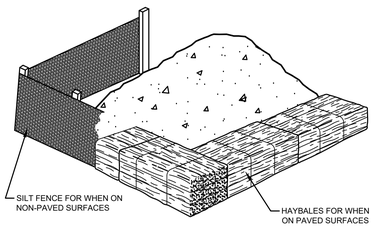
STABILIZED CONSTRUCTION ENTRANCE
(TRACKING PAD)
N.T.S.



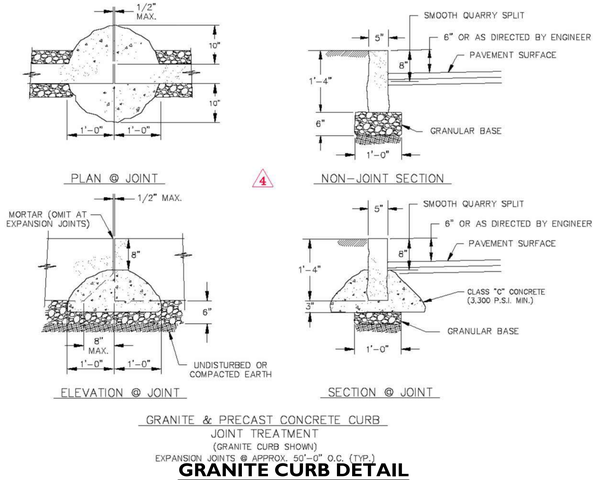
FABRIC & POST SILTATION BARRIER
(SILT FENCE)
N.T.S.



INLET SEDIMENT CONTROL DEVICE
(SILT SACK)
N.T.S.



SEDIMENT FILTER FOR STOCK PILE
N.T.S.



GRANITE & PRECAST CONCRETE CURB
JOINT TREATMENT
(GRANITE CURB SHOWN)
EXPANSION JOINTS @ APPROX. 50'-0" O.C. (TYP.)

GRANITE CURB DETAIL
(CITY R-O-W)
N.T.S.

No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

DETAILS
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

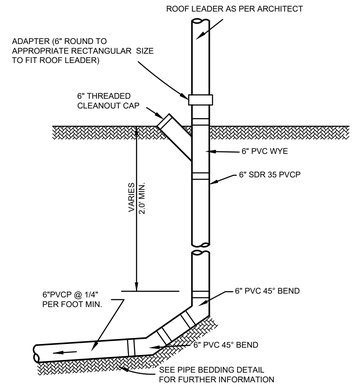
SCALE: N.T.S.
DRAWN BY: DML | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100
June 13, 2025
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

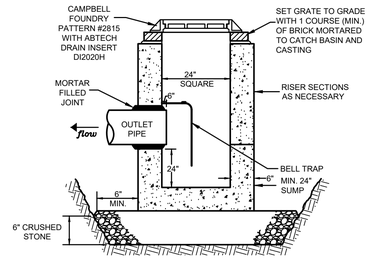
SHEET No: SE-6
Comm. No.: 10909

6/12/2025 11:22 AM H:\pdfiles2\10000\10909\dwg\10909 Notes And Details.dwg



ROOF LEADER CLEANOUT DETAIL

N.T.S.

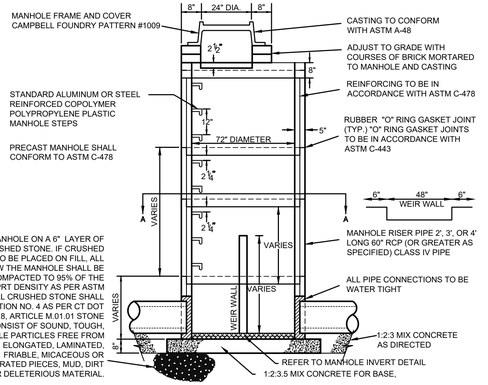


NOTES:

1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. AREA DRAIN SHALL CONFORM TO ASTM C478.
4. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT D.O.T. FORM 817, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

24" STORM AREA DRAIN

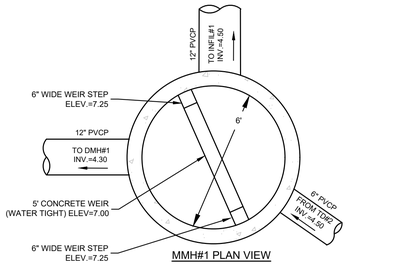
N.T.S.



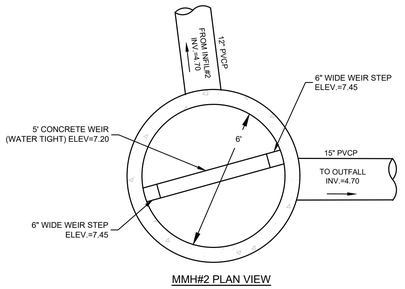
METER MANHOLE DETAIL

(MMH#I & MMH#2)

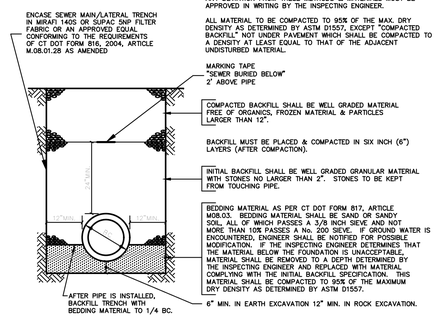
N.T.S.



MMH#1 PLAN VIEW



MMH#2 PLAN VIEW



STORM PIPE TRENCH BEDDING DETAIL

(48" DIA. & UNDER)

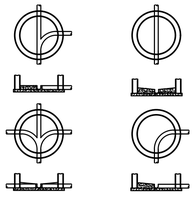
N.T.S.

WATER STOP:- 10' UPSTREAM OF STRUCTURES AND WHERE SHOWN, FOUNDATION MATERIAL, BEDDING, HAUNCHING, INITIAL BACKFILL AND THE BOTTOM FOOT OF GENERAL BACKFILL TO BE REPLACED WITH SM, SC, OR ML SOIL AS PER UNIFIED SOIL CLASSIFICATION SYSTEM" WITH MAXIMUM PARTICLE SIZE OF 1-1/2", FOR 3 LINEAR FEET OF TRENCH. WATER STOP TO BE KEYED INTO TRENCH BOTTOM AND WALLS A MINIMUM OF ONE FOOT. NO STONES LARGER THAN 6" SHALL BE WITHIN 12" OF THE PIPE.

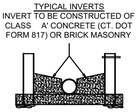
ALL FOUNDATION, INITIAL BACKFILL & BACKFILL MATERIAL TO BE APPROVED BY THE INSPECTING ENGINEER.

ANY DEVIATION FROM THESE METHODS & MATERIALS MUST BE APPROVED IN WRITING BY THE INSPECTING ENGINEER.

ALL MATERIAL TO BE COMPACTED TO 95% OF THE MAX. DRY DENSITY AS DETERMINED BY ASTM D1557, EXCEPT "COMPACTED BACKFILL" NOT UNDER PAVEMENT WHICH SHALL BE COMPACTED TO A DENSITY AT LEAST EQUAL TO THAT OF THE ADJACENT UNDISTURBED MATERIAL.

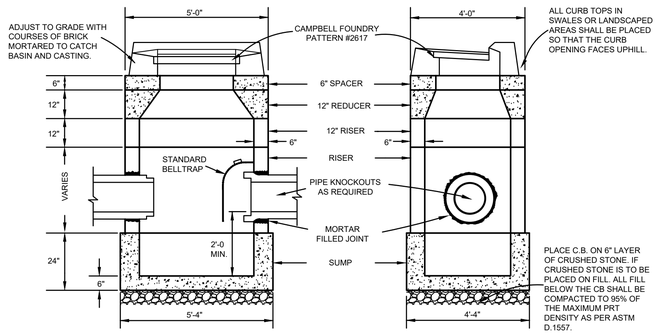


TYPICAL INVERTS
INVERT TO BE CONSTRUCTED OF CLASS 'A' CONCRETE (CT. DOT FORM 817) OR BRICK MASONRY



MANHOLE INVERT

N.T.S.



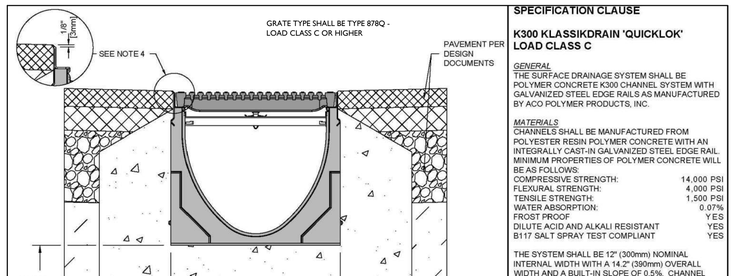
NOTES:

1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN H-20 TRUCK LOAD.
2. ALL JOINTS TO BE MORTARED.
3. CATCH BASIN SHALL CONFORM TO ASTM C478. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT D.O.T. FORM 818, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

CAST IRON BELL TRAP	
PIPE SIZE	CAMPBELL FOUNDRY NO.
12"	2563
15"	2564
18"	2565
21"	2566
24"	2568A

CATCH BASIN DETAIL

N.T.S.



NOTES:

1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. *ENGINEERING ADVICE MAY BE REQUIRED.*
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. *ENGINEERING ADVICE MAY BE REQUIRED.*
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

SPECIFICATION CLAUSE

K300 KLASSIKDRAIN 'QUICKLOK' LOAD CLASS C

GENERAL

THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K300 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS

CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE WILL BE AS FOLLOWS:

COMPRESSIVE STRENGTH:	14,000 PSI
FLEXURAL STRENGTH:	4,000 PSI
TENSILE STRENGTH:	1,500 PSI
WATER ABSORPTION:	0.07%
FROST PROOF	YES
DILUTE ACID AND ALKALI RESISTANT	YES
B117 SALT SPRAY TEST COMPLIANT	YES

THE SYSTEM SHALL BE 12" (300mm) NOMINAL INTERNAL WIDTH WITH A 14.2" (390mm) OVERALL WIDTH AND A BUILT-IN SLOPE OF 0.5%. CHANNEL INVERT SHALL HAVE DEVELOPED "V" SHAPE. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

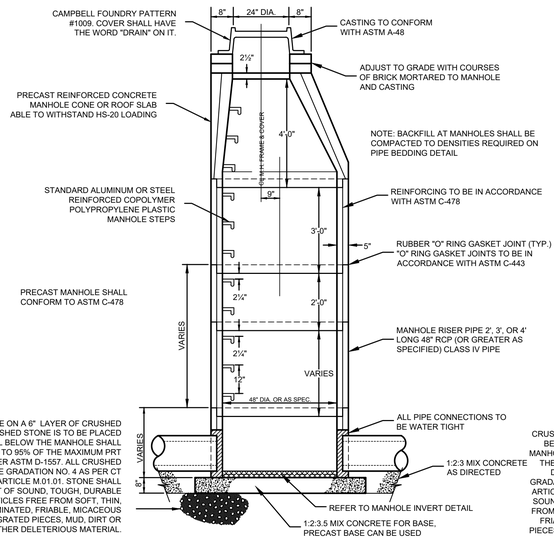
THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED USING 'QUICKLOK' BOLTLESS LOCKING SYSTEM. CHANNEL AND GRATE SHALL BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

K3-C-HAP	K300 - KLASSIKDRAIN - LOAD CLASS: C Haunched Asphalt Pavement	ACO Polymer Products, Inc.		
ACO	INSTALLATION DRAWING - ACO DRAIN	825 W. Beechcraft St Casa Grande, AZ 85122 Tel: 520-421-9868 Fax: 520-421-9899	9470 Pineone Dr. Mentor, OH 44060 Tel: 440-639-7230 Fax: 440-639-7235	4211 Pleasant Rd. Fort Mill, SC 29708 Tel: 440-639-7230 Fax: 803-802-1083
DATE: 08/18/16				

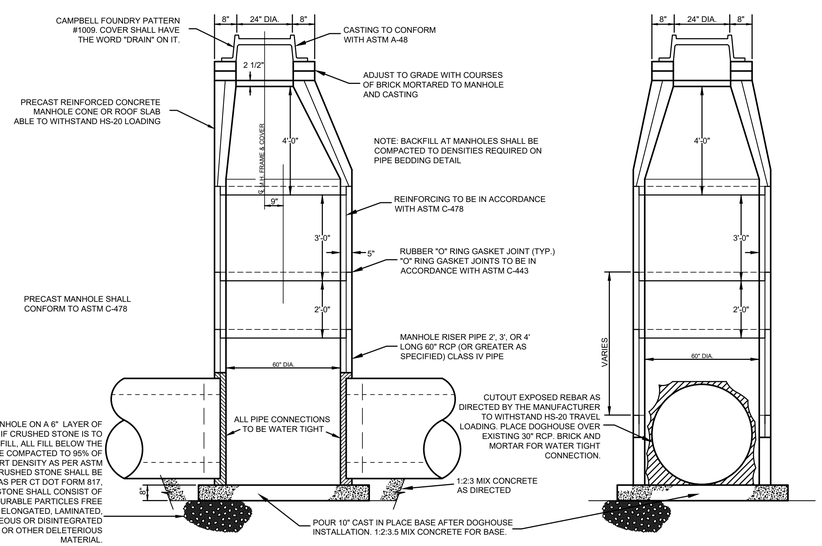
ACO K300 TRENCH DRAIN DETAIL

N.T.S.



STORM MANHOLE DETAIL

N.T.S.



DOG HOUSE STORM MANHOLE DETAIL

N.T.S.

No.	Date	Revision
I	06/13/2025	ORIGINAL SUBMISSION

DETAILS

DEPICTING

108 WATER STREET

NORWALK, CT

PREPARED FOR

108 WATER STREET LLC

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.322.0500 | Fax 203.357.1118
www.rednissmead.com

SCALE: N.T.S.

DRAWN BY: DML | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100

June 13, 2025

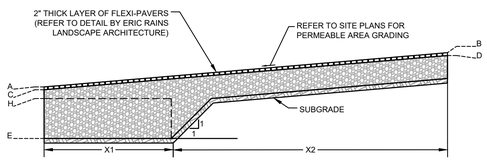
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No: SE-7

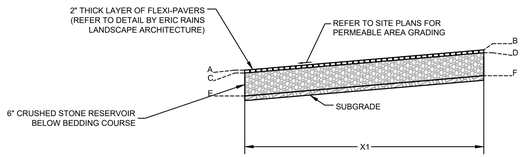
Comm. No.: 10909

6/12/2025 11:21 AM\\ Lfiles\2100\00\10909\dwg\10909 Notes And Details.dwg



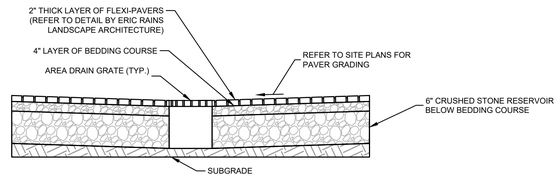
PERMEABLE AREA	A	B	C	D	E	X1	X2	H
PA#1	6.00	8.40	5.83	8.23	5.00	35 LF	73 LF	5.60
PA#7	6.70	8.20	6.53	8.03	5.40	55 LF	53 LF	6.40

(PERMEABLE AREAS #1 & #7)



PERMEABLE AREA	A	B	C	D	E	F	X1
PA#6	5.70	6.70	5.53	6.53	4.70	5.70	87 LF

(PERMEABLE AREA #6)

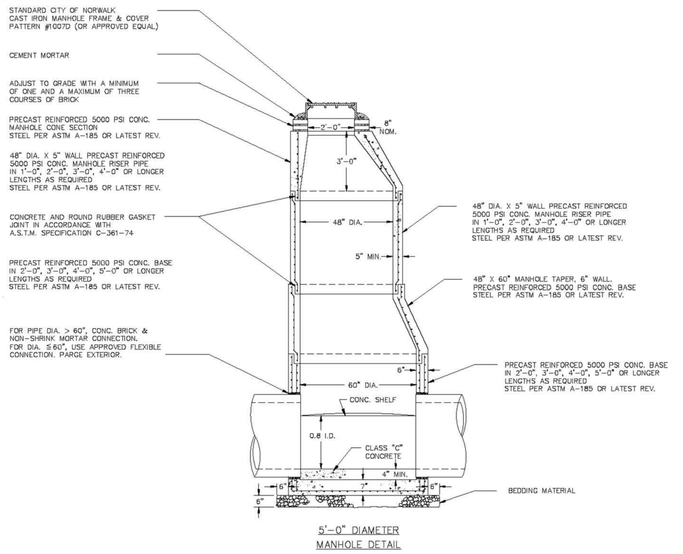


(PERMEABLE AREAS #2-6, #8-10)

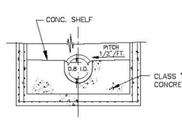
NOTES:

1. PERMEABLE PAVERS SHALL BE "ECO-PRIORA" BY UNILOCK OR EQUIVALENT. COLOR AND PATTERN SHALL BE FINALIZED PRIOR TO CONSTRUCTION AND SHALL BE DETERMINED BY ARCHITECT, LANDSCAPE ARCHITECT, AND OWNER.
2. SUBGRADE MATERIAL TO BE PREPARED AND COMPACTED TO DRAIN AT A RATE OF 1 INCH PER HOUR MINIMUM TO A POINT AT LEAST 3' BELOW THE CRUSHED STONE RESERVOIR. A 10' X 10' TEST AREA IS TO BE PREPARED AND COMPACTED FOR THE DESIGN ENGINEER TO TEST AND CONFIRM.
3. BEDDING COURSE FOR PERMEABLE PAVERS SHALL CONSIST OF A 4" THICK LAYER OF CRUSHED STONE CONFORMING TO GRADATION NO. 8 OF SECTION M.01 OF CTDOT FORM 817.
4. CRUSHED STONE RESERVOIR SHALL CONSIST OF A LAYER OF CRUSHED STONE CONFORMING TO GRADATION NO. 4 AS PER CT D.O.T. FORM 817, ARTICLE M.01.01.
5. ALL AGGREGATE SHALL CONFORM TO THE REQUIREMENTS OF SECTION M.02 OF CTDOT FORM 817 AND SHALL CONSIST OF SOUND, TOUGH, DURABLE BROKEN STONE THAT IS REASONABLY FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.
6. CONTRACTOR SHALL PROVIDE SITE ENGINEER WITH A SIEVE ANALYSIS OF MATERIAL USED FOR THE BEDDING COURSE PRIOR TO INSTALLATION.
7. AFTER SCREEDING THE BEDDING MATERIAL, THE PAVERS ARE PLACED ON THIS LAYER. PAVER INSTALLATION CAN BE BY HAND OR WITH MECHANICAL EQUIPMENT.
8. THE PAVER JOINTS ARE FILLED WITH ASTM NO. 8 STONE. DEPENDING ON THE PICP AREA, SPREADING AND SWEEPING CAN BE DONE WITH SHOVELS AND BROOMS, OR LARGER AREAS WITH BOBCATS AND SWEPT INTO THE PAVER JOINTS WITH POWERED BROOMS OR SWEEPERS. ONCE THE JOINTS ARE FULL (WITHIN ¼ IN. OF THE PAVER SURFACE), THE SURFACE MUST BE SWEPT CLEAN PRIOR TO COMPACTION AS LOOSE STONES ON THE SURFACE CAN MAR THE PAVERS, WHEN IN CONTACT WITH A PLATE COMPACTOR.
9. AFTER THE PICP SURFACE IS SWEPT CLEAN, IT IS COMPACTED WITH A PLATE COMPACTOR. A MINIMUM OF TWO PASSES SHOULD BE MADE WITH THE SECOND PASS IN A PERPENDICULAR DIRECTION FROM THE FIRST PASS. THE PATH OF THE PLATE COMPACTOR SHOULD OVERLAP SEVERAL INCHES. FOR PAVING UNITS 3-1/8 IN. TO 4 IN. THICK, THE PLATE COMPACTOR SHOULD EXERT A MINIMUM 5,000 LBF AT 70 TO 90 HZ.
10. COMPACTION CAN CAUSE SOME SETTLEMENT OF THE STONES INSIDE THE JOINTS. IF THE STONES ARE MORE THAN ¼ IN. FROM THE PAVER SURFACE, THEY SHOULD BE TOPPED UP TO THIS LEVEL WITH ADDITIONAL STONES. THE PAVER SURFACE SHOULD BE SWEPT CLEAN PRIOR TO OPENING THE PICP TO TRAFFIC. AGGREGATES IN THE PAVER JOINTS CAN SETTLE IN EARLY IN THE LIFE OF THE PAVEMENT. SOME SETTLEMENT CAN BE REDUCED THROUGH CONSISTENT, THROUGH COMPACTION OF THE BASE, PAVERS AND BEDDING LAYERS. HOWEVER, IT IS ADVISABLE FOR THE CONTRACTOR TO RETURN TO THE SITE AFTER SIX MONTHS, INSPECT THE JOINTS AND TOP THEM UP WITH AGGREGATE IF THEY HAVE SETTLED TO MORE THAN ¼ IN. BELOW THE PAVER SURFACE.
11. USE APPROPRIATE EQUIPMENT AND ADEQUATE NUMBERS OF SKILLED WORKERS WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK FOR PERMEABLE PAVERS AND SUBBASE MATERIAL.
12. THE ABOVE CONSTRUCTION NOTES ARE FROM THE PERMEABLE INTERLOCKING CONCRETE PAVEMENTS MANUAL BY DAVID R. SMITH - FOURTH EDITION. ADDITIONAL INFORMATION FOR THE DESIGN, SPECIFICATIONS, CONSTRUCTION, AND MAINTENANCE OF PICP ARE IN THE MANUAL.

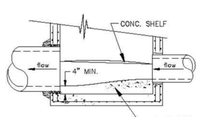
PERMEABLE AREAS DETAIL
N.T.S.



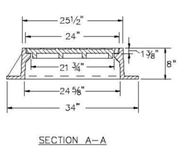
5'-0" DIAMETER
MANHOLE DETAIL
1/2" = 1'-0"



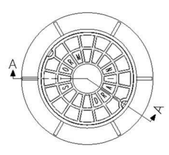
CONCRETE SHELF
SECTION A-A
1/2" = 1'-0"



CONCRETE SHELF
SECTION B-B



SECTION A-A



MANHOLE FRAME & COVER
1" = 1'-0"

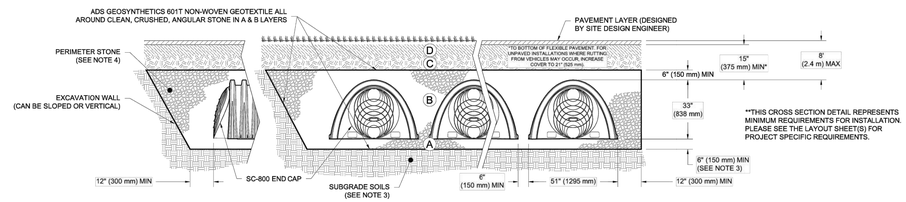
NOTE:
MANHOLE FRAMES & COVERS SHALL BE PATTERN #1007D AS MANUFACTURED BY THE "CAMPBELL FOUNDRY COMPANY" OF NORTH HAVEN, CONNECTICUT, OR APPROVED EQUAL.

STORM MANHOLE DETAIL
(CITY RIGHT-OF-WAY)
N.T.S.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 15" (375 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[4] A-1, A-2-4, A-3 OR AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

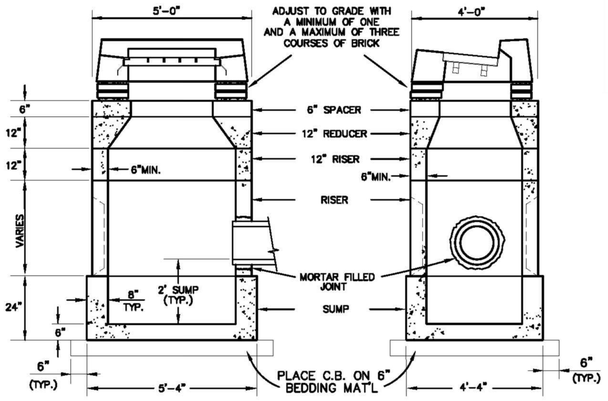


**THIS CROSS SECTION DETAIL REPRESENTS MINIMUM REQUIREMENTS FOR INSTALLATION. PLEASE SEE THE LAYOUT SHEET(S) FOR PROJECT SPECIFIC REQUIREMENTS.

NOTE: PERIMETER STONE SHALL BE INCREASED TO 15" WIDE AROUND INFILTRATION SYSTEM #2

NOTES:
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 750 LBS/FT/% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

STORMTECH SC-800 CHAMBER DETAIL
(INFIL#1 & INFIL#2)
N.T.S.

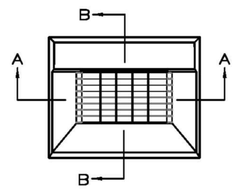


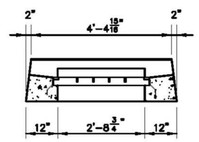
NOTE: ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE , ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN HS-20 TRUCK LOAD.
ALL JOINTS TO BE MORTARED.
CATCH BASIN SHALL CONFORM TO ASTM C478.

TYPE "C" CATCH BASIN DETAIL
N.T.S.

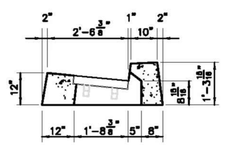
CATCH BASIN FILTER INSERT NOTES
1.) USE FILTER INSERTS WHERE SHOWN ON DESIGN PLANS OR AS REQUIRED BY D.P.W. ENGINEERING.
FILTER USED SHALL BE FROM D.P.W. APPROVED SUPPLIERS LIST:
"ULTRA-URBAN FILTER W/SMART SPONGE FILTER MEDIA"
-ABTECH INDUSTRIES, SCOTTSDALE, AZ, 1-800-543-8999
"TRANSPO ENVIROSAFE MODULAR STORMWATER CATCH BASIN FILTER"
-TRANSPO INDUSTRIES, NEW ROCHELLE, NY, 1-914-636-1000
OR OTHER APPROVED FILTER.
2.) ALLOW 24" MINIMUM CLEARANCE BETWEEN BOTTOM OF GRATE AND TOP OF PIPE INLET OR OUTLET.
3.) INSTALL AND MAINTAIN ACCORDING TO MANUFACTURERS RECOMMENDATIONS.

CATCH BASIN DETAIL
(CITY RIGHT-OF-WAY)
N.T.S.





SECTION A-A



SECTION B-B

TYPE "C" CONC. CURB

No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

DETAILS
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

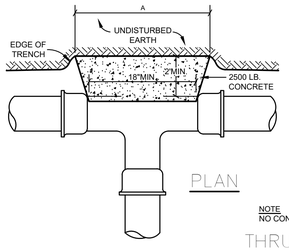
REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: N.T.S.
DRAWN BY: DML | CHECKED BY: VJH
VINCENT J. HYNES CT. P.E. 32100
June 13, 2025
DATE

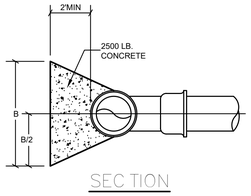
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No:
SE-8
Comm. No.: 10909

8/12/2025 11:17 AM\\ LibFiles2\10000\10900\10909\dwg\10909 Notes And Details.dwg



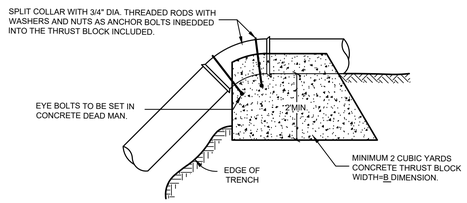
PLAN



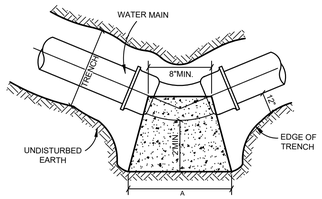
SECTION

NOTE
NO CONCRETE SHALL BE POURED AGAINST JOINTS

THRUST BLOCK AT TEE

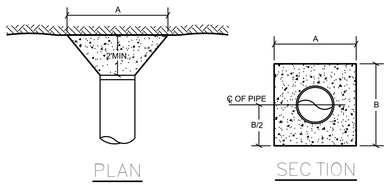


THRUST BLOCK AT VERTICAL BENDS TENSILE THRUST



NOTE
NO CONCRETE SHALL BE POURED AGAINST JOINTS

THRUST BLOCK AT BENDS



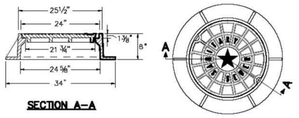
PLAN SECTION

THRUST BLOCK AT PLUG

NOTE:
IN ADDITION TO CONCRETE THRUST BLOCKS, FITTINGS SHALL BE TIED TOGETHER WITH TIE BOLTS (STAR). 3/4" THREADED GALVANIZED RODS AND NUTS. DIMENSIONS IN THE SCHEDULE AT RIGHT ARE BASED ON WATER PRESSURE OF 250 P.S.I. AND SOIL BEARING CAPACITY OF 2000 LB./SQ.FT. THE ENGINEER SHALL ASCERTAIN IF ANY OTHER CONDITIONS PREVAIL AND DESIGN THRUST BLOCKS ACCORDINGLY.

THRUST BLOCK DIMENSIONS			
FOR 6" & 8" WATER MAINS			
FITTING	C.Y.	A	B
45°	1/3	2'-6"	2'-0"
22-1/2°	1/6	2'-0"	1'-6"
11-1/4°	1/7	2'-0"	1'-0"
TEE	4/5	3'-6"	3'-0"
PLUG	4/5	3'-6"	3'-0"
FOR 10" & 12" WATER MAINS			
45°	1	3'-6"	3'-6"
22-1/2°	2/5	3'-0"	2'-0"
11-1/4°	1/5	2'-6"	1'-6"
TEE	1	5'-0"	4'-0"
PLUG	1	5'-0"	4'-0"
FOR 16" WATER MAINS			
45°	1	3'-6"	4'-0"
22-1/2°	1	3'-6"	3'-0"
11-1/4°	1/2	3'-6"	2'-0"
TEE	2	5'-0"	5'-0"
PLUG	2	5'-0"	5'-0"

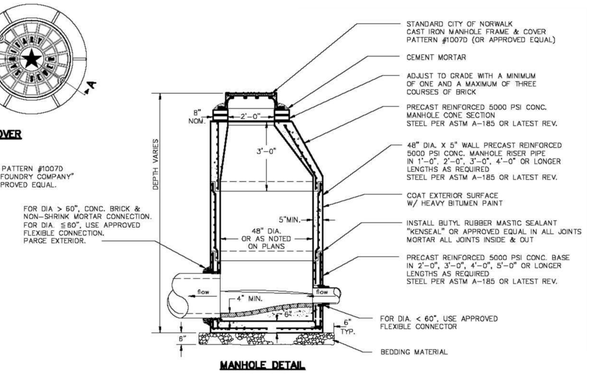
CONCRETE THRUST BLOCK DETAILS
N.T.S.



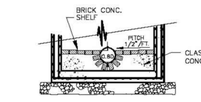
SECTION A–A

MANHOLE FRAME & COVER
1" = 1'-0"

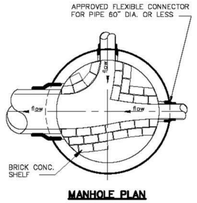
NOTE:
MANHOLE FRAMES & COVERS SHALL BE PATTERN #10070 AS MANUFACTURED BY THE "CAMPBELL FOUNDRY COMPANY" OF NORTH HAVEN, CONNECTICUT, OR APPROVED EQUAL.



MANHOLE DETAIL
1/2" = 1'-0"

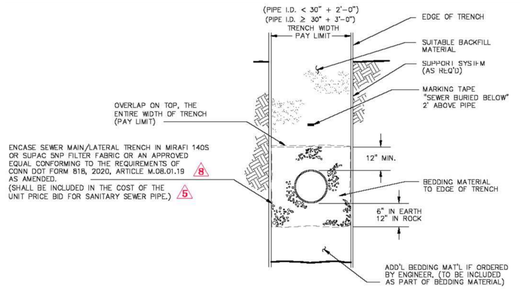


MANHOLE SECTION
1/2" = 1'-0"

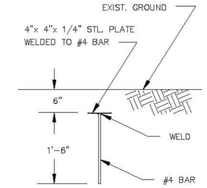


MANHOLE PLAN
1/2" = 1'-0"

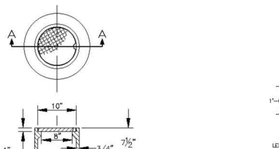
SANITARY MANHOLE DETAIL
N.T.S.



SANITARY SEWER TRENCH DETAIL
N.T.S.



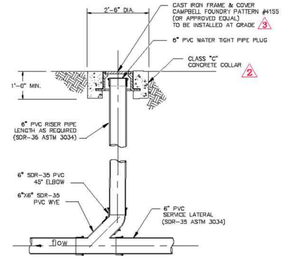
SANITARY LATERAL MARKER DETAIL
N.T.S.



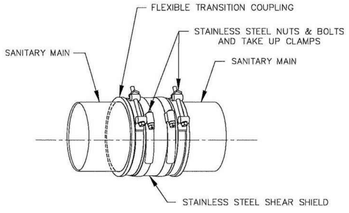
SECTION A–A

CLEAN OUT FRAME & COVER
1" = 1'-0"

NOTE:
CLEAN OUT FRAMES & COVERS SHALL BE PATTERN #4155 AS MANUFACTURED BY THE "CAMPBELL FOUNDRY COMPANY" OF NORTH HAVEN, CONNECTICUT, OR APPROVED EQUAL.



SANITARY CLEANOUT DETAIL
N.T.S.



REPAIR COUPLING
28.97" PIPE O.D. MAXIMUM

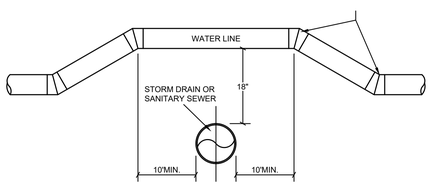
STRONG BACK RC SERIES
as manufactured by FERNCO INC.
(or Approved Equal)

SANITARY COUPLING DETAIL
N.T.S.

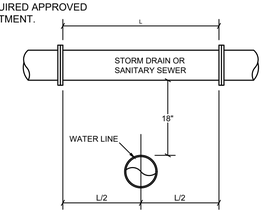
NOTE: FOR ANY CONDITIONS OTHER THAN SHOWN BELOW THE FOLLOWING REQUIREMENTS SHALL BE MET. THE JOINTS OF THE SANITARY SEWER OR STORM DRAIN SHALL BE A MINIMUM OF 10' FROM THE POINT OF CROSSING. THE SANITARY SEWER SHALL BE CLASS 150 PRESSURE PIPE AND THE STORM DRAIN SHALL BE LOCK-JOINT PRESSURE PIPE.

NOTE: WHERE THE WATER LINE PASSES BENEATH THE SAN. SEWER OR STORM DRAIN, THE JOINTS OF THE PIPE SHALL BE A MINIMUM OF 10' FROM THE POINT OF CROSSING AND THE SAN. SEWER SHALL BE CLASS 150 PRESSURE PIPE AND THE STORM DRAIN SHALL BE LOCK-JOINT PRESSURE PIPE.

DEFLECTION OF PIPE AS PER MANUFACTURER'S RECOMMENDATION AND AS REQUIRED APPROVED BY ENGINEER OR WATER DEPARTMENT.



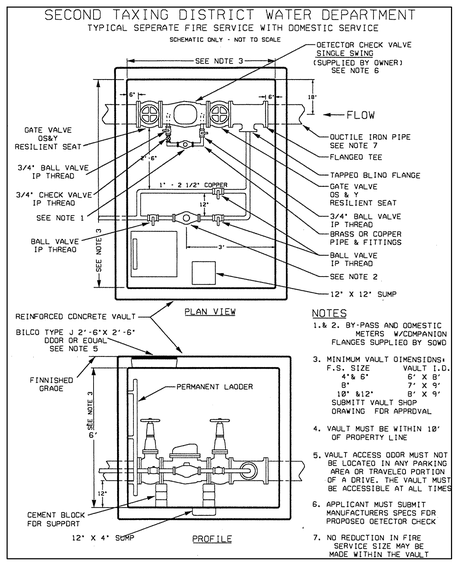
WATER LINE OVER SAN. OR STORM PIPE



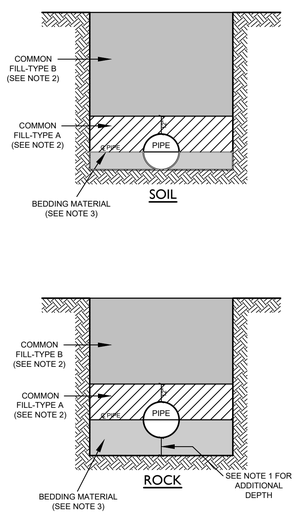
WATER LINE UNDER SAN. OR STORM PIPE

REQUIREMENTS AS STATED IN THE TWO NOTES ABOVE WILL ALSO APPLY WHEN HORIZONTAL SEPARATION BETWEEN THE SEWER & WATER LINES IS LESS THAN 10' AND VERTICAL SEPARATION IS LESS THAN 18".

CROSSINGS OF WATER LINE AND SAN. & STORM PIPES
N.T.S.



WATER METER VAULT DETAIL
N.T.S.



NOTES:
1. THE TRENCH SHALL BE EXCAVATED TO THE DEPTH REQUIRED, SO AS TO PROVIDE A UNIFORM AND CONTINUOUS BEARING AND SUPPORT FOR THE PIPE BARREL ON SOLID AND UNDISTURBED GROUND AT EVERY POINT BETWEEN JOINTS, EXCEPT THAT IT WILL BE PERMISSIBLE TO DISTURB THE FINISHED TRENCH BOTTOM OVER A MAXIMUM LENGTH OF 18" NEAR THE MIDDLE OF EACH LENGTH OF PIPE BY THE WITHDRAWAL OF PIPE SLINGS OR OTHER LIFTING TACKLE. WHEN REQUIRED, BELL HOLES SHALL BE PROVIDED. THE FINISHED TRENCH BOTTOM SHALL BE ACCURATELY PREPARED BY MEANS OF HAND TOOLS
2. MATERIAL FOR BACKFILLING SHALL BE EARTH MATERIALS ENTIRELY FREE FROM VEGETATION, TRASH, LUMBER, FROZEN, SOFT OR ORGANIC MATERIALS. NO STONES OR ROCK LARGER THAN THE SIZES LISTED BELOW WILL BE PERMITTED IN THE BACKFILL:

   COMMON FILL-TYPE A- NO STONES OR ROCKS LARGER THAN 1"
   COMMON FILL-TYPE B- NO STONES OR ROCKS LARGER THAN 4"

   COMMON FILL MATERIAL MAY BE OBTAINED FROM THE TRENCH EXCAVATION PROVIDED IT HAS BEEN APPROVED BY THE ENGINEER AND HAS BEEN TESTED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

   a.a. ALL MATERIALS TO BE USED FOR BACKFILL, INCLUDING COMMON FILL AND BEDDING MATERIALS, SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING THE MATERIALS IN THE PIPE TRENCH. ALL BACKFILL AND BEDDING MATERIALS WHETHER OBTAINED FROM THE TRENCH EXCAVATION OR FROM AN OFF-SITE SOURCE MUST BE TESTED AS DIRECTED BY THE ENGINEER.
   a.b. SAMPLES OF THE MATERIALS SHALL BE SUBMITTED TO AN APPROVED TESTING AGENCY FOR ANALYSIS. THE TEST RESULTS AND REPORT STATING THAT THE MATERIALS MEET THE REQUIREMENTS THESE SPECIFICATIONS AND THE SPECIFICATIONS OF FEDERAL, STATE AND LOCAL AUTHORITIES (WHERE APPLICABLE) SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PLACING THE MATERIALS IN THE PIPE TRENCH.

   IF APPROVED MATERIAL OBTAINED FROM THE TRENCH EXCAVATION IS INSUFFICIENT TO COMPLETE THE BACKFILL, THE CONTRACTOR SHALL OBTAIN THE NECESSARY APPROVED COMMON FILL MATERIALS FROM AN OFF-SITE SOURCE.
3. MATERIALS USED FOR BEDDING AND THE HAUNCH AROUND THE PIPE SHALL BE A COARSE TO FINE SANDY MATERIAL WITH MAXIMUM STONE SIZE OF 1 INCH. THE MATERIAL SHALL CONFORM TO ASTM D2487 STANDARD METHOD FOR CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES" USING THE UNIFIED SOIL CLASSIFICATION SYSTEM, EXCEPT WHERE A HIGHER STANDARD IS REQUIRED ELSEWHERE IN THE CONTRACT DOCUMENTS OR BY RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE OF THE WORK.

   THE MATERIAL SHALL MEET A CLASS II DESIGNATION. SOIL TYPES GW, GP, SW AND SP, NON-COHESIVE, WELL GRADED AND CONTAINING SOME FINES ARE INCLUDED IN THIS CLASS. WHERE VOIDS, FINER GRAINED SOILS OR MOVEMENT MAY ALLOW MIGRATION OF THIS MATERIAL, A FILTER FABRIC AS DIRECTED BY THE ENGINEER WILL BE USED IN THE TRENCH BOTTOM AND SIDES BEFORE THE SELECT FILL BEDDING IS PLACED.

   BEDDING MATERIAL MAY BE OBTAINED FROM THE TRENCH EXCAVATION PROVIDED IT HAS BEEN TESTED IN ACCORDANCE WITH THE REQUIRE- MENTS STATED ABOVE AND APPROVED BY THE ENGINEER. IF THE APPROVED MATERIAL OBTAINED FROM THE TRENCH EXCAVATION IS INSUFFICIENT TO COMPLETE THE BEDDING, THE CONTRACTOR SHALL OBTAIN THE NECESSARY TESTED AND APPROVED BEDDING MATERIALS FROM AN OFF-SITE SOURCE.
4. REFER TO SECTION 2210 OF THE CONNECTICUT-AMERICAN WATER COMPANY SPECIFICATIONS.

WATER TRENCH BACKFILL MATERIALS
N.T.S.

I	06/13/2025	ORIGINAL SUBMISSION
No.	Date	Revision

DETAILS
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

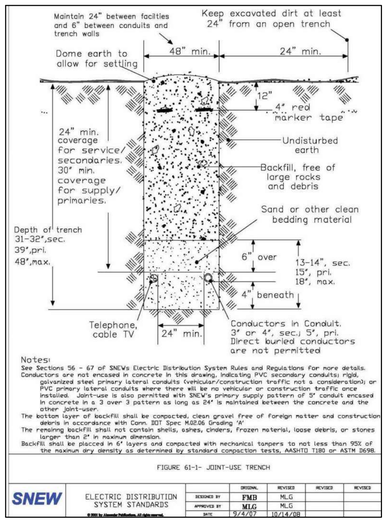
SCALE: N.T.S.
DRAWN BY: DML | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100
June 13, 2025
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration herein null & void.

SHEET No: SE-9
Comm. No.: 10909

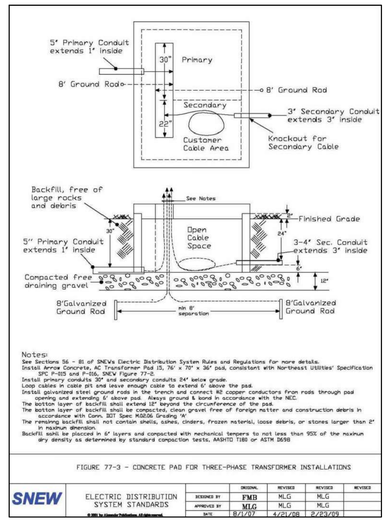
6/12/2025 11:19 AM\Jobfiles2\10000\10900\10909\dwg\10909 Notes And Details.dwg



Notes:
See Sections 56 - 67 of SNEW's Electric Distribution System Rules and Regulations for more details.
Conductors are not encased in concrete in this drawing, indicating PVC secondary conduits; rigid, galvanized steel primary lateral conduits (vehicular/construction traffic not a consideration); or PVC primary lateral conduits where there will be no vehicular or construction traffic once installed. Joint-use is also permitted with SNEW's primary supply pattern of 3" conduit encased in concrete in a 3 over 3 pattern as long as 24" is maintained between the concrete and the other joint-user.
The bottom layer of backfill shall be compacted, clean gravel free of foreign matter and construction debris in accordance with Conn. DOT Spec M.02.06 Grading 'A'
The remaining backfill shall not contain shells, ashes, cinders, frozen material, loose debris, or stones larger than 2" in maximum dimension.
Backfill shall be placed in 6" layers and compacted with mechanical tampers to not less than 95% of the maximum dry density as determined by standard compaction tests, AASHTO T180 or ASTM D698.

FIGURE 61-1- JOINT-USE TRENCH

SNEW	ELECTRIC DISTRIBUTION SYSTEM STANDARDS		ORIGINAL	REVISED	REVISED	REVISED
		DESIGNED BY	FMB	MLG		
		APPROVED BY	MLG	MLG		
		DATE	9/4/07	10/14/08		



Notes:
See Sections 56 - 81 of SNEW's Electric Distribution System Rules and Regulations for more details.
Install Arrow Concrete, AC Transformer Pad (S, 76" x 70" x 36" pad, consistent with Northeast Utilities' Specification SPC P-015 and P-016, SNEW Figure 77-2.
Install primary conduits in the secondary conduits 24" below grade.
Loop secondary conduits 24" and secondary cable to extend 6' above the pad.
Installed galvanized steel ground rods in the trench and connect #2 copper conductors from rods through pad opening and extending 6' above pad. Always ground & bond in accordance with the NEC.
The bottom layer of backfill shall extend 12" beyond the circumference of the pad.
The bottom layer of backfill shall be compacted, clean gravel free of foreign matter and construction debris in accordance with Conn. DOT Spec M.02.06 Grading 'A'
The remaining backfill shall not contain shells, ashes, cinders, frozen material, loose debris, or stones larger than 2" in maximum dimension.
Backfill shall be placed in 6" layers and compacted with mechanical tampers to not less than 95% of the maximum dry density as determined by standard compaction tests, AASHTO T180 or ASTM D698.

FIGURE 77-3 - CONCRETE PAD FOR THREE-PHASE TRANSFORMER INSTALLATIONS

SNEW	ELECTRIC DISTRIBUTION SYSTEM STANDARDS		ORIGINAL	REVISED	REVISED	REVISED
		DESIGNED BY	FMB	MLG	MLG	
		APPROVED BY	MLG	MLG	MLG	
		DATE	8/1/07	4/21/08	2/23/09	

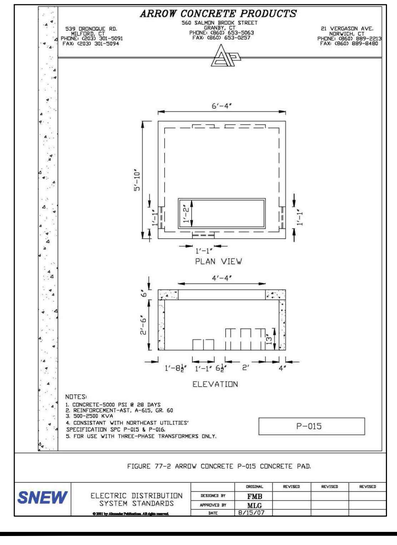
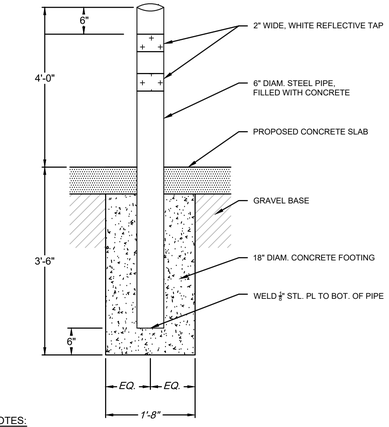


FIGURE 77-2 ARROW CONCRETE P-015 CONCRETE PAD.

SNEW	ELECTRIC DISTRIBUTION SYSTEM STANDARDS		ORIGINAL	REVISED	REVISED	REVISED
		DESIGNED BY	FMB			
		APPROVED BY	MLG			
		DATE	8/15/07			

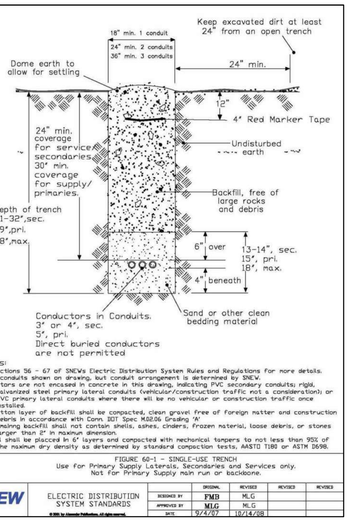


NOTES:

1. BOLLARDS SHALL BE PLACED 12" FROM THE EDGE OF CONCRETE PAD. REFER TO SITE PLAN LAYOUT.
2. CONCRETE TO BE MINIMUM OF 2,500 PSI STRENGTH.

BOLLARD DETAIL

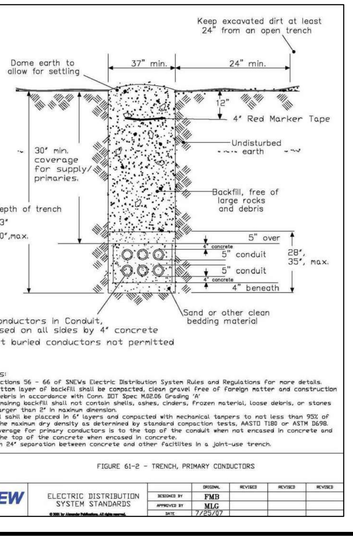
N.T.S.



Notes:
See Sections 56 - 67 of SNEW's Electric Distribution System Rules and Regulations for more details.
Three conduits shown on drawing, but conduit arrangement is determined by SNEW.
Conductors are not encased in concrete in this drawing, indicating PVC secondary conduits; rigid, galvanized steel primary lateral conduits (vehicular/construction traffic not a consideration); or PVC primary lateral conduits where there will be no vehicular or construction traffic once installed.
The bottom layer of backfill shall be compacted, clean gravel free of foreign matter and construction debris in accordance with Conn. DOT Spec M.02.06 Grading 'A'
The remaining backfill shall not contain shells, ashes, cinders, frozen material, loose debris, or stones larger than 2" in maximum dimension.
Backfill shall be placed in 6" layers and compacted with mechanical tampers to not less than 95% of the maximum dry density as determined by standard compaction tests, AASTO T180 or ASTM D698.

FIGURE 60-1 - SINGLE-USE TRENCH
Use for Primary Supply Laterals, Secondaries and Services only.
Not for Primary Supply main run or backbone.

SNEW	ELECTRIC DISTRIBUTION SYSTEM STANDARDS		ORIGINAL	REVISED	REVISED	REVISED
		DESIGNED BY	FMB	MLG		
		APPROVED BY	MLG	MLG		
		DATE	9/4/07	10/14/08		



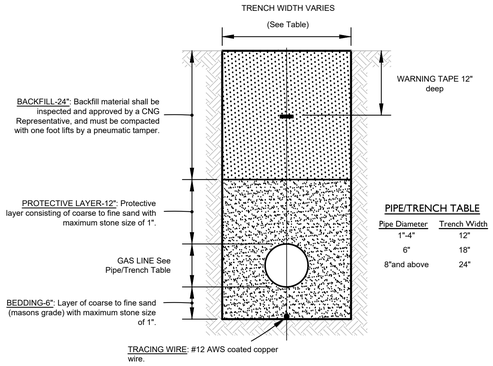
Notes:
See Sections 56 - 66 of SNEW's Electric Distribution System Rules and Regulations for more details.
The bottom layer of backfill shall be compacted, clean gravel free of foreign matter and construction debris in accordance with Conn. DOT Spec M.02.06 Grading 'A'
The remaining backfill shall not contain shells, ashes, cinders, frozen material, loose debris, or stones larger than 2" in maximum dimension.
Backfill sahll be placed in 6" layers and compacted with mechanical tampers to not less than 95% of the maximum dry density as determined by standard compaction tests, AASTO T180 or ASTM D698.
30" coverage for primary conductors is to the top of the conduit when not encased in concrete and the top of the concrete when encased in concrete.
Maintain 24" separation between concrete and other facilities in a joint-use trench.

FIGURE 61-2 - TRENCH, PRIMARY CONDUCTORS

SNEW	ELECTRIC DISTRIBUTION SYSTEM STANDARDS		ORIGINAL	REVISED	REVISED	REVISED
		DESIGNED BY	FMB			
		APPROVED BY	MLG			
		DATE	7/25/07			

Notes:

1. A minimum of 1'0" vertical clearance and 5'0" horizontal clearance will be maintained between the gas line and all other structures.
2. Minimum cover for mains shall be 3'0" from finished grade as measured from gutter line.
   a. In the traveled portion of the road - from the top of the pipe to the top of the trench using the shallow side for measurement.
   b. Off the traveled portion when section is at a higher elevation than the traveled way - elevation to be taken from gutter line.
   c. Off the traveled portion when section is at a lower elevation than the traveled way from the top of the pipe to the top of the trench using the shallow side for measurement.
3. Minimum cover of service lines in private property shall be 2'0" only when approved by the Eversource inspector or designee.
4. The bottom of the trench must be free of rocks, debris, or water that could damage the pipe or its coating.
5. Tracing Wire is a #12 AWS coated copper tracing wire to be installed in the center of the trench prior to 6" of sand padding. (Connection will be made by a Eversource Representative).
6. Exposed piping will be backfilled with a minimum of 12" of sand prior to leaving the job site each day and witnessed by a Eversource Representative or Eversource Contractor.
7. Only personnel qualified by Eversource will be allowed to install gas lines.
8. The builder will supply a suitable location to store the pipe and materials and will be responsible for its security.



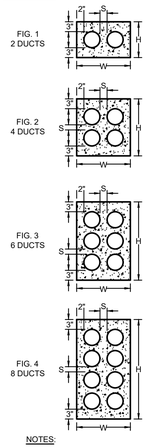
PIPE/TRENCH TABLE

Pipe Diameter	Trench Width
1"-4"	12"
6"	18"
8"and above	24"

GAS SERVICE TRENCH DETAIL

N.T.S.

PREFERRED:



ALTERNATE:
(SEE NOTE 3)

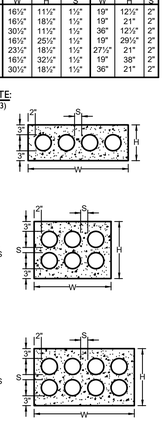


FIG	DUCT BANK DIMENSIONS 4" DUCT W	H	S	5" DUCT W	H	S	6" DUCT W	H	S
1	14½"	10½"	1½"	16½"	11½"	1½"	19"	12½"	2"
2	14½"	16½"	1½"	16½"	18½"	1½"	19"	21"	2"
2A	26½"	10½"	1½"	30½"	11½"	1½"	36"	12½"	2"
3	14½"	22½"	1½"	16½"	25½"	1½"	19"	29½"	2"
3A	20½"	16½"	1½"	23½"	18½"	1½"	27½"	21"	2"
4	14½"	28½"	1½"	16½"	32½"	1½"	19"	38"	2"
4A	26½"	16½"	1½"	30½"	18½"	1½"	36"	21"	2"

NOTES:

1. AT MANHOLES CONDUIT BANKS SHALL BE PER FIGS. 1, 2, 3 OR 4.
2. MINIMUM COVER FROM TOP OF A CONDUIT BANK TO THE PAVEMENT OR EARTH SURFACE TO BE:
   a) STATE HIGHWAYS - 36"
   b) RAILROAD TRACKS - 60"
   c) ALL OTHER AREAS - 24"
3. IN THE CONDUIT RUN BETWEEN MANHOLES IF OBSTRUCTIONS ARE ENCOUNTERED OR TO REDUCE TRENCH DEPTH, FIGS. 2A, 3A OR 4A ARE PERMISSIBLE.
4. CONCRETE SHALL BE 2500 P.S.I., 1/2" MAXIMUM STONE, 6"-9" SLUMP OF SUCH CONSISTENCY THAT SPADING WILL INSURE THE FLOW OF CONCRETE BETWEEN AND UNDER THE INDIVIDUAL DUCTS, BUT NOT SO WET AS TO FLOAT THE DUCTS. FOR TIER BUILDUP CONSTRUCTION A STIFFER CONSISTENCY SHOULD BE USED.
5. DUCTS SHALL BE SCHEDULE 40 PVC.

CONDUIT BANK CONSTRUCTION

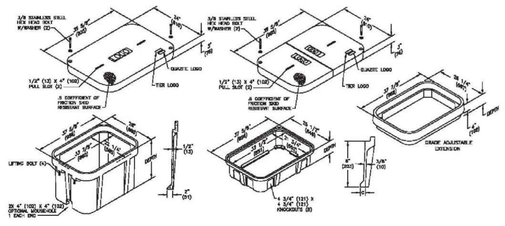
N.T.S.

Quazite

Dimensions / Data

24" x 36" PG Style Polymer Concrete (Stackable) Assembly

Hex Head Bolts are Standard



Covers

	DESCRIPTION	TIER	DESIGN / TEST LOAD #	WEIGHT #	PALLET QTY	PART NO.
N	W/ 2 Bolts	8	8,000 / 12,000	100	10	PG2436CA00**
	2 piece w/2 Bolts	8	8,000 / 12,000	122	10	PG2436C500**
N	W/ 2 Bolts	15	15,000 / 22,500	115	10	PG2436HA00**
N	2 piece w/2 Bolts	15	15,000 / 22,500	122	10	PG2436H500**
N	W/ 2 Bolts	22	22,500 / 33,750	122	10	PG2436HH00**
N	No Bolts	8	8,000 / 12,000	100	10	PG2436NA00**

To order gasketed covers, replace the letter "A" with the letter "G".
Replace "**" with a logo code found on page 60. See page 65 for meter and touch/radio read cover options.
NOTE: Gasketed covers and bolt grommets must be used with a gasketed box. Gaskets reduce the inflow of fluids but do not make the enclosure water tight.

24" x 36" QUAZITE BOX DETAIL

N.T.S.

No.	Date	Revision
I	06/13/2025	ORIGINAL SUBMISSION

DETAILS
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: N.T.S.

DRAWN BY: DML | CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100
June 13, 2025
DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration hereon null & void.

SHEET No: SE-10

Comm. No.: 10909

6/12/2025 11:20 AM\H:\Jobfiles\10000\10900\10909\dwg\10909 Notes And Details.dwg

Flood Preparedness Plan

for

108 Water Street, Norwalk, CT

prepared for

108 Water Street, LLC

issued on

June 13, 2025

Prepared by Redniss & Mead, Inc.

22 First Street | Stamford, CT 06905 | Tel: 203.327.0500 | Fax: 203.357.1118 | www.rednissmead.com

Table of Contents

Orientation Map 1

I. INTRODUCTION
Property Description 2
Nature of Flooding 2

II. FLOOD PREPAREDNESS
Awareness and Preparedness 3
Flood Warning Procedure 3

III. LIMITATIONS 4

FIGURES

Figure 1 FEMA Firmette

Figure 2 Flood Inundation Exhibit

Orientation Map



I. INTRODUCTION

Property Description

108 Water Street is located on the east side of Water Street, adjacent to the intersection of Water Street and Hanford Place. The property abuts the Norwalk Harbor along its eastern property line. The proposed improvements include removing the existing buildings and replacing them with a new 4 ½ - story mixed-use building, a boardwalk, a new bulkhead, and boat slips.

This Flood Preparedness Plan is provided to alert the owners, management personnel, residents, and tenants of 108 Water Street as to the nature of potential flooding on and around the property, to provide information to facilitate awareness and preparedness, and to outline a plan so that people can safely relocate their vehicles before a severe flood.

Nature of Flooding

The site falls within coastal regulatory flood zones AE (AE-12) and VE (VE-14) as depicted on the Federal Emergency Management Agency – Flood Insurance Map Community No. 090012 Panel 531 Suffix G, effective date July 8, 2013. The Mean High Water surface of the Norwalk Harbor fronting the site is elevation 3.3 based on the NAVD-88 Datum. The Base Flood Elevation (BFE) is 12.0 pursuant to the FEMA FIRM map. The Base Flood Elevation refers to the water surface elevation of the Norwalk Harbor during the 100-year storm as related to the referenced datum. This event, which is severe and infrequent, is defined as having a 1% chance of occurring in any given year. The nature and severity of flooding can vary depending on several factors, so the above information is provided as a general guide. Coastal flooding of this magnitude is caused by one or more of the following events: storm surge (associated with hurricanes, tropical storms, or nor'easters), high tides, heavy rainfall, or strong winds. The primary driver of storm surges in this area is wind, during strong weather systems, pushing water into Long Island Sound and up Norwalk Harbor.

The proposed building is elevated above surface parking, with occupied areas and critical mechanical and electrical systems set at least 2' above the BFE as required by the Zoning Regulations; the first-floor elevation for commercial floor areas is set to elevation 14.0, with office floor areas set to elevation 19.0. The lowest residential unit floor level is set at elevation 34.0 which is elevated well above the 12.0 Base Flood Elevation. The lower parking level, however, is below the BFE, at elevation 9.0, and is likely to experience flooding during a 100-year storm. With this in mind, the building is designed in accordance with local and federal requirements. Refer to the Flood Inundation Exhibit for a depiction of the portions of the site that will be subject to flooding during the 100-year Base Flood Event.

II. FLOOD PREPAREDNESS

Awareness and Preparedness

The key to effectively reducing threats to public health and safety in flood prone areas is public awareness. Accordingly, the following is a list of suggestions to be best prepared in the event a flood

emergency occurs:

- Residents and tenants shall be made aware of the potential for flooding and impacted parking spaces and be provided with a copy of this Flood Preparedness Plan.

- Residents, tenants, and management personnel shall periodically review the guidelines outlined in this Flood Preparedness Plan.

- Permanent signage shall be maintained in the affected parking and building access (stairs and elevators) areas noting the flood risk.

Responsibilities

It is the responsibility of both the residents, tenants, and building management to monitor weather conditions and prepare for flooding. It is the responsibility of residents and building management personnel to register with the City of Norwalk Everbridge Emergency Notification System (see next section). When information related to flood warnings or observations is received, building management shall disseminate such information to residents promptly. It is the responsibility of residents to take action to relocate their vehicle(s).

Flood Warning Procedure

Residents, tenants, and building management shall maintain a careful watch on conditions when storm surges or coastal flooding are predicted. Emergency information is distributed through the City of Norwalk Everbridge Emergency Notification System. Residents can sign up for Everbridge at the following website: https://member.everbridge.net/77895137493012/new. Per the City's website, messages are generally distributed when emergency conditions exist or to update residents regarding important information after significant storms. To receive additional information residents can visit the City website or follow the City of Norwalk Office of Emergency Management on X or Facebook. Any of the above-mentioned resources shall be used while also checking other local news sources and monitoring other emergency communications (see list below).

Conditions shall be monitored by building management and information disseminated by management via email, text or posted notices.

Coastal Flood Watch, Coastal Flod Advisory, and Coastal Flood Warnings are issued by the National Weather Service. These warnings shall be heeded by residents. Residents can monitor weather conditions via weather websites like weather.com, accuweather.com, and the National Weather Service, especially when hurricanes, tropical storms, and nor'easters are predicted.

The following broadcast and internet-based sources shall be monitored during severe rainfall events for information regarding current flooding conditions:

Radio:	WSTC	(1400 AM)
	WGCH	(1490 AM)

	Fox Radio	(95.9 FM)
	WNLK	(1350 AM)
Television:	News 12 Connecticut	(Channel 12)
	WTNH Channel 8	(Channel 8)
Website:	City of Norwalk	https://www.norwalkct.gov/
	The Weather Channel	https://weather.com
	AccuWeather	https://www.accuweather.com
	National Weather Service	https://www.weather.gov/

If coastal floods are predicted or imminent, residents of the building may be advised to take certain action which may include the following:

- Make sure there are no vehicles in front of the building or within the access drive that may impede emergency access or residents relocating their vehicles.

- Move cars parked in the floodplain to higher ground. This may include tandem or stacked parking in the upper garage level or movement to a public parking garage or lot in Norwalk (i.e. South Norwalk Train Station, Haviland Parking Lot, Maritime Garage, Webster Street Lot, Yankee Doodle Garage, the SoNo Collection, etc.).

In the event of a flood, residents and management are reminded to:

- Follow instructions given by public safety officials.

- Do not walk through flowing water. Most drownings occur during flash floods. Six inches of swiftly moving water can knock you off your feet.

- Remember the phrase "Turn Around, Don't Drown!" Don't drive through flooded roads. Cars can be swept away in only one foot of moving water. If your vehicle is trapped in rapidly moving water, stay in the vehicle. If the water is rising inside the vehicle, seek refuge on the roof.

- Do not drive around road barriers. Roads and bridges may be washed out or structurally unsound.

- If flood conditions obstruct the routes to available public parking, drive towards higher ground and find a safe location to stop.

- Stay away from downed utility wires. Always assume a downed power line is live. Electrocution is also a danger in floods as electrical currents can travel through water.

In the event of a flooding emergency, residents and management are encouraged to call 911 to receive

assistance from City of Norwalk Emergency Services. For building related issues during a flood emergency, residents are encouraged to call building management or maintenance.

Definitions

- **Coastal Flood Advisory:** This is issued when minor or nuisance coastal flooding is occurring or imminent. It's a "be aware" message, suggesting that residents should be cautious and monitor the situation.

- **Coastal Flood Watch:** This indicates the potential for moderate to major coastal flooding in the watch area. It's a "get ready" message, meaning residents should be prepared to take action if a warning is issued.

- **Coastal Flood Warning:** This is the most serious level, indicating that moderate to major coastal flooding is occurring or is expected to occur soon. It's a "take action" message, prompting residents to move to higher ground and protect their property.

III. LIMITATIONS:

There are limitations to any flood warning system. These shall be understood by those operating the system and people relying on them. Some of those limitations are described below:

- Rain and thunderstorms can produce intermittent and localized rainfalls with varying intensities. Therefore, it is often difficult to predict the time and depth of street flooding.

- Flood depths and flood flow paths are unpredictable. Bridges or other natural stream constrictions may become blocked with debris and divert flows. New channels and directions of flow may develop.

- An important limitation to consider is flood preparedness planning and enactment depends on adequate forewarning and notice and the actions of individuals. Forewarning may not be available or provided in every case.

- Proper education of owners, management personnel, and residents along with proper planning, can reduce the potential for flood damage and unsafe actions.

- Vehicle evacuation procedures carried out for a storm for which there is no significant flooding to warrant the evacuation may result in lax attentiveness during subsequent flood warnings. Continued education can mitigate this response.

108 WATER STREET DEVELOPMENT

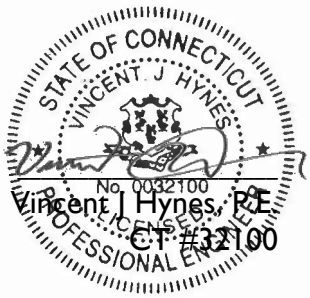
SITE ENGINEERING REPORT

Prepared For
108 Water Street LLC c/o Spinnaker Real Estate Partners
108 Water Street
Norwalk, CT

Prepared by
Redniss & Mead, Inc.
22 First Street
Stamford, CT
(203) 327-0500

Issued on:

June 13, 2025



Vincent J Hynes, P.E.
CT #32100

TABLE OF CONTENTS

Orientation.....1

Drainage Narrative.....2

Sanitary Sewer Narrative.....6

APPENDICES

Drainage:

Appendix 1: Existing and Proposed Drainage Basin Exhibits

Appendix 2: Existing & Proposed On-Site Hydraulic Data
Proposed Conveyance Exhibit and Calculations

Appendix 3: HydroCAD Report

Appendix 4: Rainfall Intensity Data, Exfiltration Rate Data, Vegetated Roofs Adjusted CN Values, & NRCS Web Soil Survey

Appendix 5: FEMA Flood Insurance Map
USGS Topographic Quad Map

Appendix 6: Draft Stormwater Operations and Maintenance Plan

Tide and Sea Level Data:

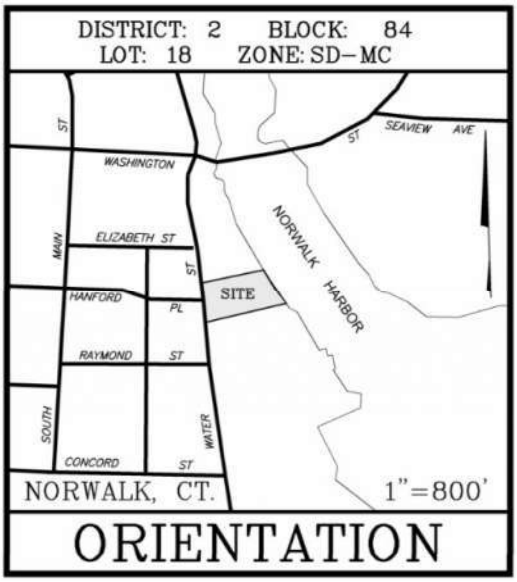
Appendix 7: Drainage Infrastructure Exhibit
Exhibit depicting Surface Elevations, South Norwalk

Sanitary Sewer:

Appendix 8: Sanitary Sewer Exhibit and Analysis

Appendix 9: Flow Assessment Site Information Field Log (03/10/2021)

ORIENTATION



DRAINAGE SUMMARY NARRATIVE

Introduction

The applicant is proposing to redevelop the property located at 108 Water Street in Norwalk, CT. The redevelopment includes demolition of existing site features including buildings, walkways, and parking areas (paved and gravel) and the construction of a new four and one-half-story mixed-use structure with covered parking, a rooftop courtyard (on the 3rd floor), and boat slips, public amenities, and associated site improvements. The proposed mixed-use building will consist of 59 residential units, 110,900± sf of office floor area, 3,440± sf of personal service business area, 3,820± sf of restaurant floor area, and 2,250± sf of marine supply store floor area. There will be a total of 249 parking spaces and 14 boat slips.

The site is approximately 2.72 acres (to Mean High Water) and is bounded by Water Street to the west, commercial and mixed-use developments to the north and south, and the Norwalk Harbor to the east. The site lies within the SD-MC zoning district and the Coastal Area Management Boundary. The site is located within the regulatory flood hazard boundary (Zone AE-12 and Zone VE-14) as established by FEMA and depicted on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 09001C0531G dated July 8, 2013. This report compares existing site characteristics and proposed site development and the effect on the storm water drainage system. Reference is made to the accompanying site development plans prepared by Redniss & Mead, Inc.

Existing Conditions

The site is approximately 2.72 acres and is currently developed with five single-story buildings servicing marine uses, and an at-grade parking lot consisting of both paved and compacted dirt/gravel surfaces. No notable green area exists on the site and there are no formal drainage systems in place. Although a portion of the site stormwater runoff is tributary to City stormwater infrastructure within Water Street, the whole site is ultimately tributary to the Norwalk Harbor; the city storm drain discharges to the harbor via drainage easement at 130 Water Street. As such, this report focuses on the comparison of runoff characteristics to the Harbor.

The portion of the site tributary to Water Street (West Basin) consists of 89,640± sf of area of which 21,200± sf if building or paved parking and the remainder is compacted gravel/dirt surfaces. The remainder of the site, which flows toward the Harbor (East Basin) consists of 28,960± sf of area of which 3,005± sf is building or hardscape and 25,950± is compacted gravel/dirt surface. The compacted gravel/dirt surfaces have been included as impervious area. Refer to appendix I for the Existing Conditions Drainage Basin Map.

Proposed Conditions

The developer is seeking approval to construct a new four and one-half story mixed-use structure with covered parking and a rooftop courtyard (on the 3rd floor) and associated site improvements. Work includes reconstruction of an existing bulkhead, construction of a boardwalk with public access from Water Street, and construction of boat slips. It is proposed to decrease impervious coverage by approximately 12,090 sf as part of the property redevelopment. For the purposes of water

quality and groundwater recharge volume calculations, areas of green roof, permeable walk surfaces, and the open jointed boardwalk have been counted as impervious coverage; these surfaces are pervious for zoning purposes. A piped discharge to the harbor is proposed for conveyance of the on-site stormwater infrastructure; this pipe will discharge at the bulkhead and will include a backflow preventer. Water Quality improvements are provided, and peak rates of runoff will be reduced to the city infrastructure and to the harbor. Reference is made to the site and utility plans prepared by Redniss & Mead, Inc. and to the Proposed Conditions Drainage Basin Map within appendix I.

The tributary area to the west basin is reduced by approximately 53,160 sf in proposed conditions. As such, the peak rates of runoff and volume tributary to the storm drains in Water Street are reduced and emphasis is placed on water quality within the basin via permeable and infiltration systems.

The tributary area of the west basin is split into four sub-basins: Infiltration #1, Permeable Paver 1, Permeable Paver 6, and West Bypass. The permeable system basins consist of public amenity sidewalk area that will be comprised of a bonded aggregate pavement surface with crushed stone below (total tributary area to the combined permeable systems = 990 sf); each system will consist of a 12" minimum profile of bonded aggregate and crushed stone (reference is made to site plan sheet SE-8 for the corresponding details). The permeable systems have been sized to treat the tributary water quality volume (102 cf combined requirement; 156 cf combined provided) and will overflow toward the Water Street drainage infrastructure. The bypass basin will consist of the public sidewalk along the property frontage where stormwater runoff will flow into Water Street (total bypass area = 5,160 sf).

The infiltration #1 basin will consist of building roof area for the residential portion of the building and portions of the driveway ramps (total tributary area = 30,322 sf). The areas will be collected and will discharge to an underground infiltration system consisting of 39 ADS Stormtech SC-800 chambers and corresponding crushed stone. The system is metered via a meter manhole device with a weir wall set at elevation 7.0, which allows 3,137 cf of runoff to be treated prior to discharge into the Water Street stormwater infrastructure (3,121 cf required for 100% WQV).

The east basin is split into ten sub-basins: Infiltration #2, eight Permeable Paver basins, and the East Bypass. The bypass basin consists of bonded aggregate walking surfaces, the public boardwalk, and landscaped areas (total tributary area = 20,270± sf). The bypass area will either sheet flow directly to the harbor or be collected by area drains and piped to the proposed discharge to the harbor.

The Permeable Paver basins consist of public amenity sidewalk area that will be comprised of a bonded aggregate pavement surface with crushed stone below (total tributary area to the combined permeable systems = 6,330 sf); each system will consist of a 12" minimum profile of bonded aggregate and crushed stone and an overflow area drain (reference is made to site plan sheet SE-8 for the corresponding details). The permeable systems have been sized to treat the tributary water quality volume (652 cf combined requirement; 1,411 cf combined provided) and the overflow drains are piped to the proposed discharge to the harbor.

The infiltration #2 basin will consist of the remainder of building roof area (office buildings, courtyard space, and green roof areas - total tributary area = 55,520 sf). The roof area will discharge to an underground infiltration system consisting of 63 ADS Stormtech SC-800 chambers and corresponding crushed stone. The system is metered via a meter manhole devise with a weir wall set at elevation 7.2,

which allows 4,710 cf of runoff to be treated prior to discharge into the Water Street stormwater infrastructure (4,515 cf required for 100% WQV).

Calculations were prepared using the methodologies provided in Technical Release 55: Urban Hydrology for Small Watersheds, published by the United States Department of Agriculture National Resources Conservation Service and HydroCAD software. Note that the rainfall rates used are based upon the National Oceanic and Atmospheric Administration (NOAA) National Weather Service Hydrometeorological Design Studies Center Precipitation Frequency Data Server (PFDS) for the area. The following tables depict the existing and proposed peak flows leaving the west basin and the corresponding totals tributary to Norwalk Harbor and their associated runoff volumes:

Table 1: Peak Rates of Runoff

		West Basin (Tributary to City Infrastructure) Peak Flow (cfs)				Site Total (Tributary to Norwalk Harbor) Peak Flows (cfs)			
Return Period (yrs)	Rainfall Rates (in)	Ex	Pr	Change	% Change	Ex	Pr	Change	% Change
2	3.49	6.23	2.79	-3.44	-55.2%	8.17	8.17	0.00	0.0%
5	4.50	8.47	3.64	-4.83	-57.0%	11.13	10.88	-0.25	-2.2%
10	5.33	10.29	4.33	-5.96	-57.9%	13.55	13.09	-0.46	-3.4%
25	6.48	12.81	5.38	-7.43	-58.0%	16.88	16.23	-0.65	-3.9%
50	7.34	14.67	6.11	-8.56	-58.4%	19.35	18.57	-0.78	-4.0%
100	8.26	16.66	6.89	-9.77	-58.6%	21.99	21.36	-0.63	-2.9%

Table 2: Runoff Volumes

		West Basin (Tributary to City Infrastructure) Runoff Volume (cf)				Site Total (Tributary to Norwalk Harbor) Runoff Volume (cf)			
Return Period (yrs)	Rainfall Rates (in)	Ex	Pr	Change	% Change	Ex	Pr	Change	% Change
2	3.49	18,986	6,307	-12,679	-66.8%	24,850	18,991	-5,859	-23.6%
5	4.50	26,208	9,292	-16,916	-64.5%	34,379	28,139	-6,240	-18.2%
10	5.33	32,222	11,761	-20,461	-63.5%	42,319	35,731	-6,588	-15.6%
25	6.48	40,623	15,188	-25,435	-62.6%	53,417	46,395	-7,022	-13.1%
50	7.34	46,939	17,765	-29,174	-62.2%	61,765	54,459	-7,306	-11.8%
100	8.26	53,718	20,525	-33,193	-61.8%	70,725	63,113	-7,612	-10.8%

Water Quality:

The water quality from the proposed development will be improved as compared to existing conditions. This is accomplished as follows:

1. A majority of the proposed parking will be covered with those surfaces not exposed to rainfall and associated runoff. Should any drains be installed within the areas of covered parking, they will be tributary to an oil/grit separator prior to discharging into the sanitary sewer system.
2. Infiltration systems are proposed to collect about 70% of the disturbed impervious coverage. The overflow elevation is set to provide 100% of the tributary water quality volume. In addition, various rooftop areas will consist of green roof trays or other planting trays consisting of at least 6" of soil depth which provides water quality treatment for the tributary area.
3. Permeable walkways with crushed stone reservoirs below are proposed for the public access walkways from Water Street to the waterside boardwalk. In total, between infiltration systems and permeable walkways, approximately 79% of the site area runoff is treated.
4. A detailed Sediment and Erosion Control Plan, including a system of controls both temporary and permanent, is designed to minimize erosion, and contain and properly dispose of any accumulation of sediment during construction.

Water Street Drainage

There are several low points (as low as elevation 4.55) in Water Street along and nearby the site frontage between Elizabeth Street and Raymond Street. These low points are known to pool water during spring (monthly) and king (annual) tides, and minor and major coastal storm surges. By establishing a new outfall to the Norwalk Harbor, the proposal significantly reduces the rate (-55%) and volume (-60%) of stormwater runoff tributary to the receiving storm drains in Water Street thereby easing the burden on that system during intense rainfall events. Whereas this is a positive impact during rain events, it will not materially change the ponding that occurs directly related to tides and surges.

The City of Norwalk commissioned a study exploring solutions to such occurrences in a report titled "Resilient South Norwalk", prepared by AECOM and dated November 30, 2023. This report lists a series of potential tools for limiting the tidal surcharge impact on the area. One area of focus recommends elevating sections of Water Street and thereby significantly reducing both the frequency and depth of such floods. No one property owner can achieve such a result as it will take a coordinated effort between the city and dozens of property owners. However, the proposed application has taken these recommendations into account. The proposed garage level is at the same elevation (9) as is recommended for the roadway elevation in the AECOM report. Additionally, the two lobbies along Water Street are being designed such that they could be elevated in the future should the city move forward with the roadwork (e.g. double height spaces, superstructure design, etc.).

One option that could be employed in the near term by the city to provide relief to the nuisance conditions related to the spring and king tides is to place a backflow preventer on the Water Street outlet pipe discharging to the harbor at 130 Water Street. This would alleviate surcharges in the city storm drain system and limit surcharges into low-lying areas. This could provide up to an eighteen-inch (18") benefit, keeping Water Street dry during spring and king tides, and minor surges up to elevation 6.05 or so.

Conclusion:

Based on the above information and with proper implementation of the design drawings and proper sediment and erosion controls, the proposed development will not adversely impact adjacent or downstream properties or City owned drainage facilities. Furthermore, water quality will be significantly improved with the installation of the infiltration systems, reduction in uncovered parking, and landscaping improvements.

SANITARY SEWER SUMMARY

The applicant is proposing to redevelop the property located at 108 Water Street in Norwalk, CT. The redevelopment includes demolition of existing site features including buildings, walkways, and parking areas (paved and gravel) and the construction of a new four and one-half-story mixed-use structure with covered parking, a rooftop courtyard (on the 3rd floor), and boat slips, public amenities, and associated site improvements. The proposed mixed-use building will consist of 59 residential units, 110,900± sf of office floor area, 3,440± sf of personal service business floor area, 3,820± sf of restaurant floor area, and 2,250± sf of marine supply floor area. Reference is made to the accompanying site & utility plans prepared by Redniss & Mead, Inc.

Existing City-owned sanitary sewer infrastructure exists within Water Street and consists of sanitary manholes and a 48" sewer. The sewer main flows to the north and transitions to a 54" sewer at North Water Street. Based upon the usage assumptions provided in Appendix 7, the existing conditions total daily flow tributary to the sewer is approximately 410 GPD (peak flow = 0.003 cfs).

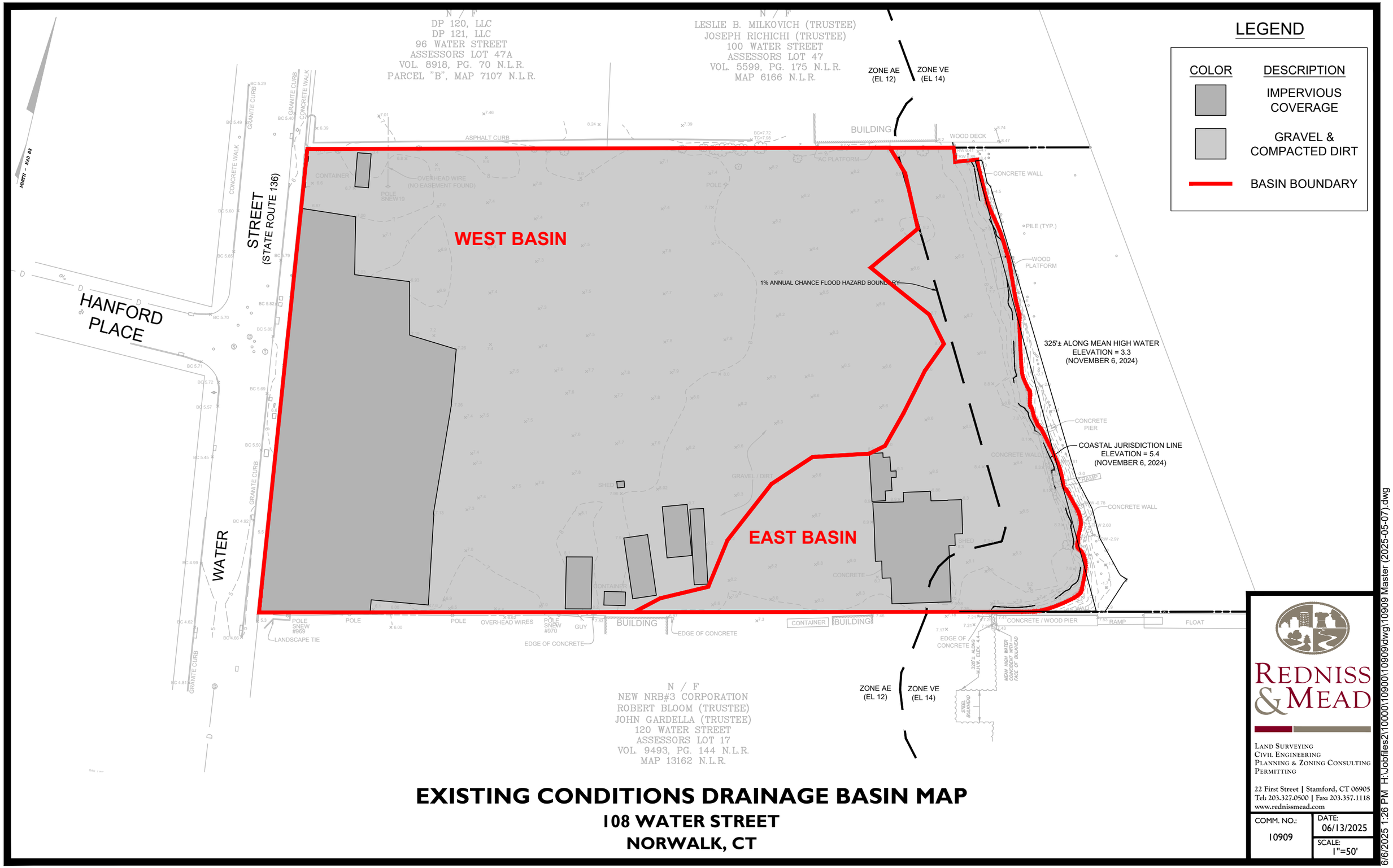
Under proposed conditions, the developer is seeking permission to construct a new four and one-half-story building with 59 residential units (25 one-bed units, 17 two-bed units, 13 three-bed units and 4 four-bed units), 110,900± sf of office floor area, 3,440± sf of personal service area, 3,820± sf of restaurant floor area, and 2,250± sf of water related floor area. It is proposed to connect the new building to the Water Street sewer main with a new sewer lateral; the existing sanitary sewer lateral(s) are to be removed in accordance with WPCA requirements. Using the CT Health Code guidelines, the proposed structure and usage of the site would result in a total average daily sewage flow of 34,496 GPD. Using a peak factor of 4, the peak sewage flow is 0.214 cfs (cubic feet per second). This represents a net increase in peak flow to the Water Street system of 0.211 cfs.

In addition to the above referenced analysis, flow monitoring data was provided by Norwalk WPCA based on a flow monitoring location of WPCA Manhole #15-1 in North Water Street; refer to appendix 8 for information provided by WPCA. The dates of the monitoring were 3/11/2021 to 8/24/2021 and the peak flow during that time period was 14.784 mgd (27.47 cfs).

Based upon the above and attached calculations, under proposed conditions the sewer system within Water Street operates at approximately 50% of the total capacity; this is conservative as the flows north of the site were not removed from the calculation. Refer to Appendix 7 for a Sanitary Sewer Connection Exhibit, the proposed sanitary flow assumptions, and pipe capacity calculations.

Based on the above information, it is our opinion the City owned sanitary sewer system has sufficient capacity to accommodate the proposed development, and with proper implementation of the design drawings, the proposed development will not adversely impact the existing sanitary sewer system.

Appendix 1



EXISTING CONDITIONS DRAINAGE BASIN MAP

108 WATER STREET

NORWALK, CT

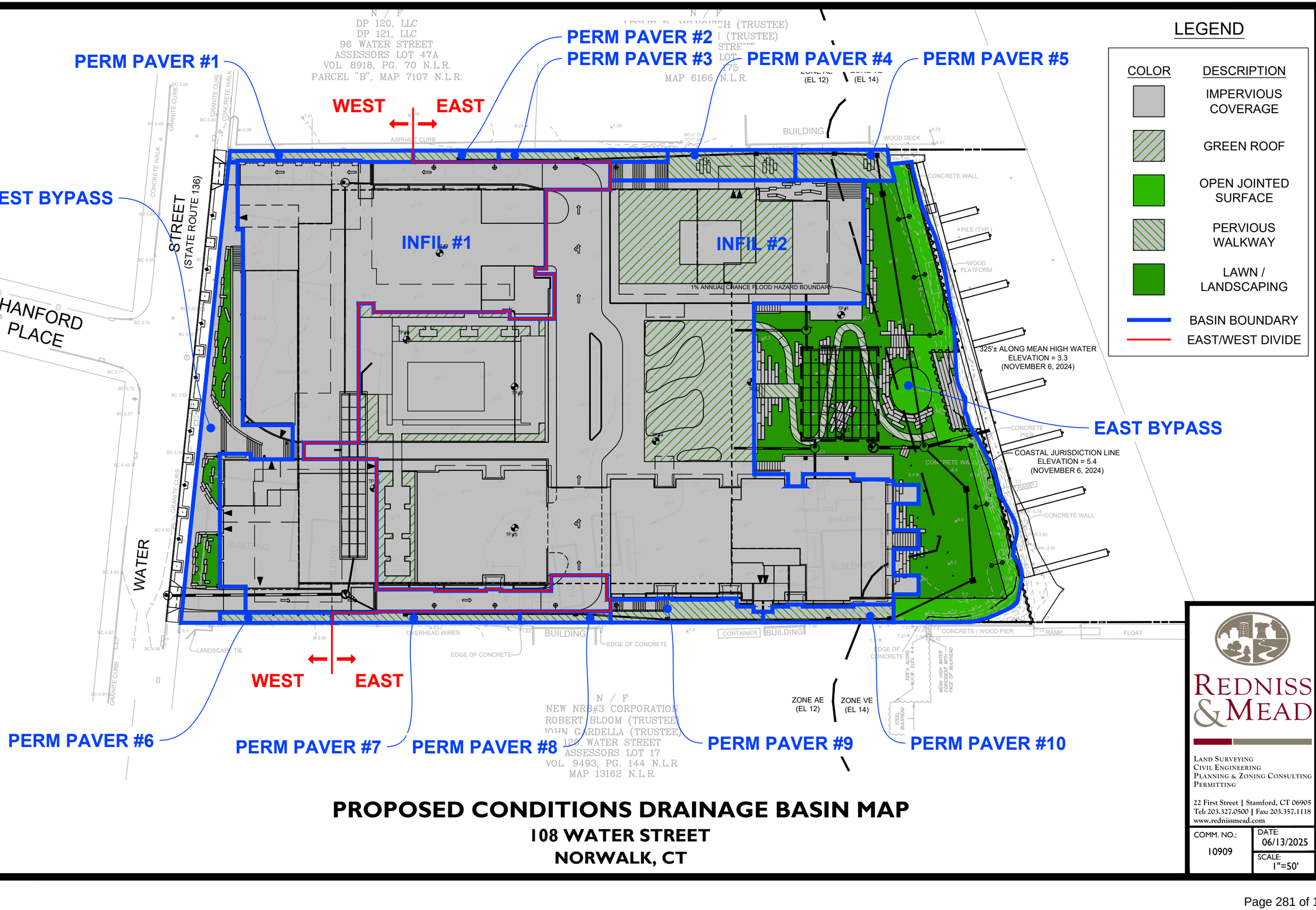
REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
10909	06/13/2025
	SCALE: 1"=50'

6/6/2025 1:26 PM H:\Jobfiles2\10000\10900\10909\dwg\10909 Master (2025-05-07).dwg



PROPOSED CONDITIONS DRAINAGE BASIN MAP

108 WATER STREET

NORWALK, CT

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

COMM. NO.:	DATE:
10909	06/13/2025
	SCALE: 1"=50'

6/6/2025 1:37 PM H:\Jobfiles2\10000\10900\10909\dwg\10909 Master (2025-05-07).dwg

Appendix 2

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Infiltration System #1 Basin

Area=	0.696	acres
Impervious Area=	0.696	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.072	ac. ft. [c]

WQV=	**3,121**	**ft.^{3}**
WQV PROVIDED=	**3,137.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Infiltration #1 below outlet elevation set to 7.00

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Infiltration System #2 Basin

Area=	1.007	acres*
Impervious Area=	1.007	acres*
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.104	ac. ft. [c]

WQV=	**4,515**	**ft.^{3}**
WQV PROVIDED=	**4,710.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Infiltration #2 below outlet elevation set to 7.20

* For the purposes of this calculation the green roof area was not included as the water quality volume for those areas is captured via green trays or soil mediums with depths greater than 4".

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #1 Basin

Area=	0.014	acres
Impervious Area=	0.014	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.001	ac. ft. [c]

WQV=	**64**	**ft.^{3}**
WQV PROVIDED=	**82.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #1 below outlet elevation set to 7.90

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #2 Basin

Area=	0.007	acres
Impervious Area=	0.007	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.001	ac. ft. [c]

WQV=	**33**	**ft.^{3}**
WQV PROVIDED=	**96.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #2 below outlet elevation set to 7.70

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #3 Basin

Area=	0.015	acres
Impervious Area=	0.015	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.002	ac. ft. [c]

WQV=	**66**	**ft.^{3}**
WQV PROVIDED=	**167.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #3 below outlet elevation set to 7.70

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #4 Basin

Area=	0.037	acres
Impervious Area=	0.037	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.004	ac. ft. [c]

WQV=	**167**	**ft.^{3}**
WQV PROVIDED=	**282.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #4 below outlet elevation set to 8.00

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #5 Basin

Area=	0.022	acres
Impervious Area=	0.022	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.002	ac. ft. [c]

WQV=	**99**	**ft.^{3}**
WQV PROVIDED=	**146.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #5 below outlet elevation set to 7.85

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #5 Basin

Area=	0.009	acres
Impervious Area=	0.009	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.001	ac. ft. [c]

WQV=	**38**	**ft.^{3}**
WQV PROVIDED=	**74.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #5 below outlet elevation set to 5.70

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #5 Basin

Area=	0.015	acres
Impervious Area=	0.015	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.002	ac. ft. [c]

WQV=	**69**	**ft.^{3}**
WQV PROVIDED=	**202.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #5 below outlet elevation set to 6.40

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #5 Basin

Area=	0.008	acres
Impervious Area=	0.008	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.001	ac. ft. [c]

WQV=	**34**	**ft.^{3}**
WQV PROVIDED=	**93.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #5 below outlet elevation set to 7.60

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #5 Basin

Area=	0.025	acres
Impervious Area=	0.025	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.003	ac. ft. [c]

WQV=	**111**	**ft.^{3}**
WQV PROVIDED=	**222.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #5 below outlet elevation set to 7.5

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Water Quality Volume Calculations

Project: *108 Water St*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *DML*	**Checked:** *VJH*

Perm Pavers #5 Basin

Area=	0.016	acres
Impervious Area=	0.016	acres
I=	1.000	[a]
R=	0.950	[b]
WQV=	0.002	ac. ft. [c]

WQV=	**72**	**ft.^{3}**
WQV PROVIDED=	**203.00**	**ft.^{3}** [d]

[a] I=Percent Impervious Coverage

[b] R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[c] WQV=(1.3"xRxA)/12; Water Quality Volume, Equation taken from 2024 Connecticut Stormwater Quality Manual Chapter 4

[d] WQV provided by Permeable Pavers #5 below outlet elevation set to 7.45

[e] Although counted as pervious area for area calculations, the bonded aggregate walkway surfaces have been counted as impervious area for Water Quality calculation purposes.

Groundwater Recharge Volume Calculation

Project:	*108 Water Street*	**Project #:**	*10909*	**Date:**	*6/13/2025*
Location:	*Norwalk, CT*	**By:**	*VJH*	**Checked:**	*CJF*

Proposed Site

Total On-site Impervious Area (I) =	2.445 acres
NRCS Hydrologic Soil Group =	D [a]
Design Rainfall =	1.0 inches
Groundwater Recharge Depth (F) =	0.10 [b]

Groundwater Recharge Volume (GRV)=	**0.020 ac. ft.** [c]	**887.49 ft.^{3}**

[a] From Natural Resources Conservation Service

[b] Table 1-1 from the 2017 City of Norwalk Drainage Manual Section 1.4.4

[c] GRV = F x I from the 2017 City of Norwalk Drainage Manual Section 1.4.4

Note: As the GRV is lower than the Water Quality Volumes required for tributary area to the proposed infiltration systems, the systems are designed to infiltrate the larger volume.

Although counted as pervious area for area calculations, the bonded aggregate walking surfaces have been counted as impervious area for GRV and WQV calculation purposes.

HYDRAULIC DATA FOR RATIONAL METHOD

Project:	*108 Water Street*	**Project #:**	*10909*	**Date:**	*6/13/2025*
Location:	*Norwalk, CT*	**By:**	*VJH*	**Checked:**	*CJF*

25 Year Storm

Pipe From AD#1 to AD#2

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**					**5**	**8.60**	**0.00**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)	Note
0.05	6	66	0.010	PVC	0.011	0.77	6.5%	0.25	Note: Flow Q in System = Hydrocad Inflow for Pr. PP#2 during 25-yr event.

Pipe From AD#2 to AD#3

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)	Note
0.15	6	102	0.010	PVC	0.010	0.73	20.5%	0.76	Note: Flow Q in System = Hydrocad Inflow for Pr. PP#3 during 25-yr event plus upstream flow.

Pipe From AD#3 to AD#4

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)	Note
0.40	6	43	0.010	PVC	0.010	0.73	54.7%	2.04	Note: Flow Q in System = Hydrocad Inflow for Pr. PP#4 during 25-yr event plus upstream flow.

Pipe From AD#4 to JB#1

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)	Note
0.55	6	22	0.010	PVC	0.011	0.77	71.7%	2.80	Note: Flow Q in System = Hydrocad Inflow for Pr. PP#5 during 25-yr event plus upstream flow.

Pipe From JB#1 to AD#4A

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)	Note
0.55	6	20	0.010	PVC	0.010	0.73	75.2%	2.80	Note: Flow Q in System = Upstream Flow

Pipe from AD#4A to MH#3

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
0.01	0.95	Impervious	0.01							
0.01	0.30	Pervious	0.00							
0.02		**Total**	**0.01**					**5**	**8.60**	**0.11**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)	Note
0.66	8	143	0.010	PVC	0.010	1.58	41.7%	1.88	Note: Flow Q in System = Upstream Flow + new tributary area

HYDRAULIC DATA FOR RATIONAL METHOD

Project:	*108 Water Street*	**Project #:**	*10909*	**Date:**	*6/13/2025*
Location:	*Norwalk, CT*	**By:**	*VJH*	**Checked:**	*CJF*

25 Year Storm

Pipe From AD#5 to AD#6

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)
0.10	6	96	0.010	PVC	0.010	0.73	13.7%	0.51

Note: Flow Q in System = Hydrocad Inflow for Pr. PP#7 during 25-yr event.

Pipe From AD#6 To AD#7

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)
0.15	6	52	0.010	PVC	0.011	0.77	19.6%	0.76

Note: Flow Q in System = Hydrocad Inflow for Pr. PP#8 during 25-yr event plus upstream flow.

Pipe From AD#7 to AD#8

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)
0.31	6	91	0.010	PVC	0.010	0.73	42.4%	1.58

Note: Flow Q in System = Hydrocad Inflow for Pr. PP#9 during 25-yr event plus upstream flow.

Pipe From AD#8 to JB#2

Basin				Drainage				Time (min)	Rainfall	Q = ACI
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description			
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)
0.42	6	34	0.010	PVC	0.012	0.80	52.4%	2.14

Note: Flow Q in System = Hydrocad Inflow for Pr. PP#10 during 25-yr event plus upstream flow.

Pipe From JB#2 to AD#9

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
0.000	0.95	Impervious	0.00							
0.000	0.30	Pervious	0.00							
0.00		**Total**	**0.00**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)
0.42	6	50	0.010	PVC	0.010	0.73	57.4%	2.14

Note: Flow Q in System = Upstream Flow

Pipe from AD#9 to AD#10

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
0.091	0.95	Impervious	0.086							
0.002	0.30	Pervious	0.001							
0.092		**Total**	**0.087**					**5**	**8.60**	**0.74**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)
1.16	8	50	0.010	PVC	0.010	1.58	73.9%	3.34

Note: Flow Q in System = Tributary Sheet Flow + Upstream Flow

HYDRAULIC DATA FOR RATIONAL METHOD

Project:	*108 Water Street*	**Project #:**	*10909*	**Date:**	*6/13/2025*
Location:	*Norwalk, CT*	**By:**	*VJH*	**Checked:**	*CJF*

25 Year Storm

Pipe From AD#10 to MH#3

Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
0.150	0.95	Impervious	0.143							
0.000	0.30	Pervious	0.000							
0.150		**Total**	**0.143**					**5**	**8.60**	**1.23**

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)
2.39	12	30	0.010	PVC	0.010	4.64	51.5%	3.04

Note: Flow Q in System = Tributary Sheet Flow + Upstream Flow

Pipe From MH#3 to inv.=-1.70

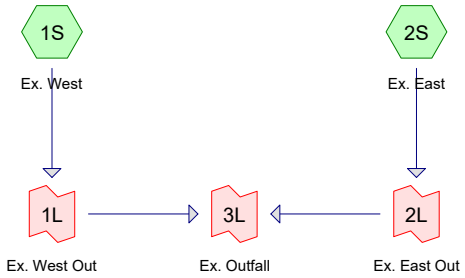
Basin Description				Drainage Path					25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)
Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description	Time (min)		
	0.95	Impervious	0.000							
	0.30	Pervious	0.000							
0.000		**Total**	**0.000**							

Q in system (cfs)	Pipe Size (in)	Pipe Length (ft)	Roughness coefficient	Material	Slope (ft/ft)	Q_{full} (cfs)	Q_{system} / Q_{full} (%)	Velocity (ft/s)
3.05	15	36	0.010	PVC	0.011	8.83	34.5%	2.48

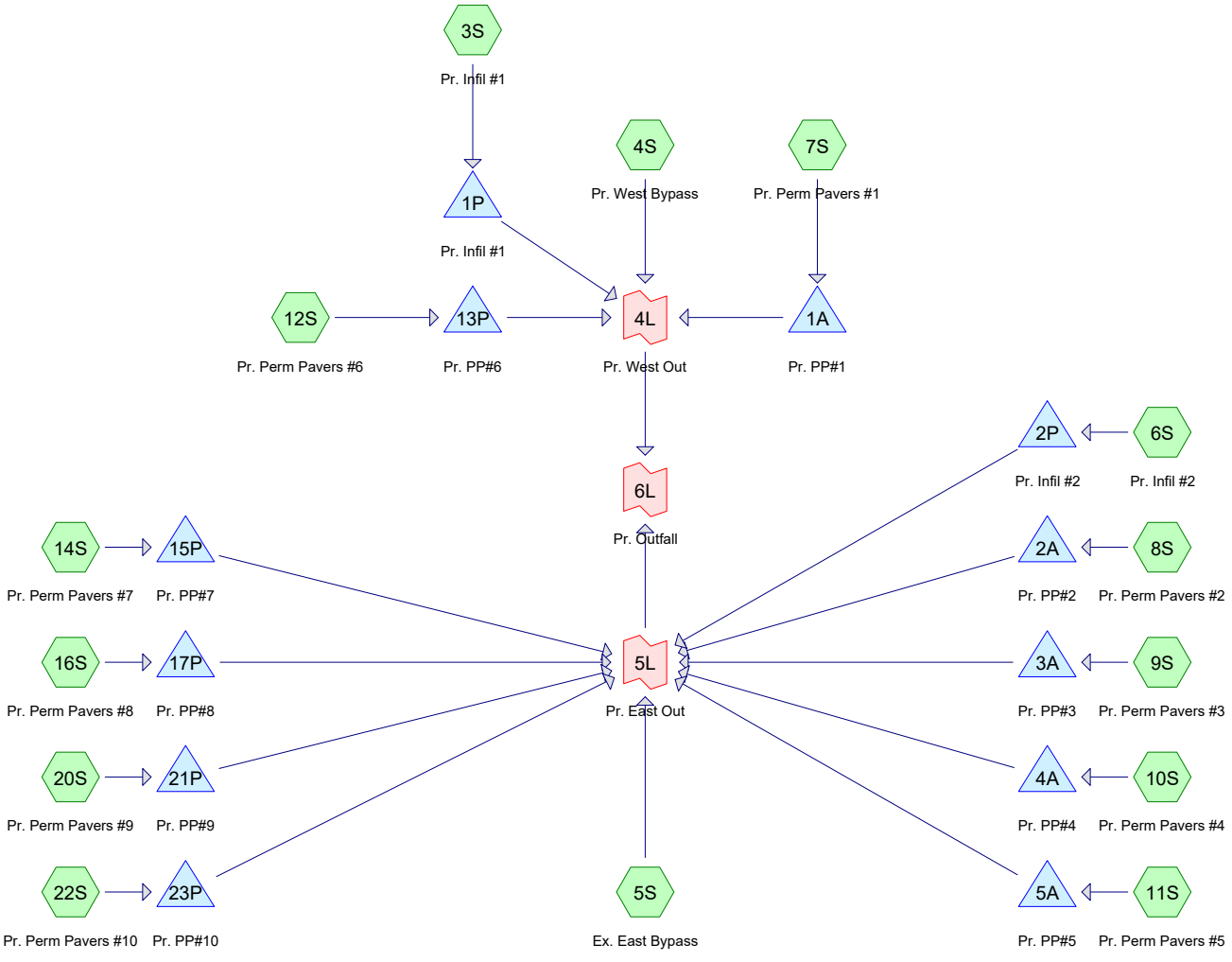
Note: Flow Q in System = Upstream flow

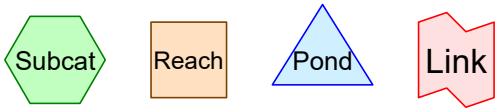
Appendix 3

EXISTING CONDITIONS



PROPOSED CONDITIONS





Routing Diagram for 10909 HydroCAD
Prepared by Redniss & Mead, Inc, Printed 6/6/2025
HydroCAD® 10.20-6a s/n 08721 © 2024 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type III 24-hr		Default	24.00	1	3.49	2
2	5-Year	Type III 24-hr		Default	24.00	1	4.50	2
3	10-Year	Type III 24-hr		Default	24.00	1	5.33	2
4	25-Year	Type III 24-hr		Default	24.00	1	6.48	2
5	50-Year	Type III 24-hr		Default	24.00	1	7.34	2
6	100-Year	Type III 24-hr		Default	24.00	1	8.26	2

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. West Runoff Area=89,636 sf 23.65% Impervious Runoff Depth>2.54"
Tc=5.0 min CN=91.13 Runoff=6.23 cfs 18,986 cf

Subcatchment2S: Ex. East Runoff Area=28,958 sf 10.38% Impervious Runoff Depth>2.43"
Tc=5.0 min CN=89.93 Runoff=1.94 cfs 5,864 cf

Subcatchment3S: Pr. Infil #1 Runoff Area=30,322 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=2.45 cfs 8,223 cf

Subcatchment4S: Pr. West Bypass Runoff Area=5,159 sf 79.43% Impervious Runoff Depth>2.85"
Tc=5.0 min CN=94.30 Runoff=0.39 cfs 1,227 cf

Subcatchment5S: Ex. East Bypass Runoff Area=20,268 sf 21.08% Impervious Runoff Depth>2.10"
Tc=5.0 min CN=86.15 Runoff=1.19 cfs 3,547 cf

Subcatchment6S: Pr. Infil #2 Runoff Area=55,520 sf 79.02% Impervious Runoff Depth>3.02"
Tc=5.0 min CN=95.90 Runoff=4.35 cfs 13,984 cf

Subcatchment7S: Pr. Perm Pavers #1 Runoff Area=618 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.05 cfs 168 cf

Subcatchment8S: Pr. Perm Pavers #2 Runoff Area=321 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.03 cfs 87 cf

Subcatchment9S: Pr. Perm Pavers #3 Runoff Area=643 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.05 cfs 174 cf

Subcatchment10S: Pr. Perm Pavers #4 Runoff Area=1,625 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.13 cfs 441 cf

Subcatchment11S: Pr. Perm Pavers #5 Runoff Area=961 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.08 cfs 261 cf

Subcatchment12S: Pr. Perm Pavers #6 Runoff Area=372 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.03 cfs 101 cf

Subcatchment14S: Pr. Perm Pavers #7 Runoff Area=673 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.05 cfs 183 cf

Subcatchment16S: Pr. Perm Pavers #8 Runoff Area=333 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.03 cfs 90 cf

Subcatchment20S: Pr. Perm Pavers #9 Runoff Area=1,080 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.09 cfs 293 cf

Subcatchment22S: Pr. Perm Pavers #10 Runoff Area=699 sf 100.00% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=98.00 Runoff=0.06 cfs 190 cf

Pond 1A: Pr. PP#1 Peak Elev=5.89' Storage=71 cf Inflow=0.05 cfs 168 cf
Discarded=0.00 cfs 166 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 166 cf

Pond 1P: Pr. Infil #1 Peak Elev=7.30' Storage=3,322 cf Inflow=2.45 cfs 8,223 cf
Outflow=2.41 cfs 5,080 cf

Pond 2A: Pr. PP#2 Peak Elev=7.36' Storage=27 cf Inflow=0.03 cfs 87 cf
Discarded=0.01 cfs 87 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 87 cf

Pond 2P: Pr. Infil #2 Peak Elev=7.73' Storage=5,274 cf Inflow=4.35 cfs 13,984 cf
Outflow=4.21 cfs 9,136 cf

Pond 3A: Pr. PP#3 Peak Elev=7.26' Storage=58 cf Inflow=0.05 cfs 174 cf
Discarded=0.01 cfs 174 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 174 cf

Pond 4A: Pr. PP#4 Peak Elev=7.73' Storage=161 cf Inflow=0.13 cfs 441 cf
Discarded=0.02 cfs 440 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 440 cf

Pond 5A: Pr. PP#5 Peak Elev=7.70' Storage=95 cf Inflow=0.08 cfs 261 cf
Discarded=0.01 cfs 260 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 260 cf

Pond 13P: Pr. PP#6 Peak Elev=5.38' Storage=35 cf Inflow=0.03 cfs 101 cf
Discarded=0.01 cfs 101 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 101 cf

Pond 15P: Pr. PP#7 Peak Elev=5.56' Storage=42 cf Inflow=0.05 cfs 183 cf
Discarded=0.01 cfs 182 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 182 cf

Pond 17P: Pr. PP#8 Peak Elev=7.11' Storage=29 cf Inflow=0.03 cfs 90 cf
Discarded=0.01 cfs 90 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 90 cf

Pond 21P: Pr. PP#9 Peak Elev=7.15' Storage=102 cf Inflow=0.09 cfs 293 cf
Discarded=0.01 cfs 293 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 293 cf

Pond 23P: Pr. PP#10 Peak Elev=6.93' Storage=60 cf Inflow=0.06 cfs 190 cf
Discarded=0.01 cfs 189 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 189 cf

Link 1L: Ex. West Out Inflow=6.23 cfs 18,986 cf
Primary=6.23 cfs 18,986 cf

Link 2L: Ex. East Out Inflow=1.94 cfs 5,864 cf
Primary=1.94 cfs 5,864 cf

Link 3L: Ex. Outfall Inflow=8.17 cfs 24,850 cf
Primary=8.17 cfs 24,850 cf

Link 4L: Pr. West Out Inflow=2.79 cfs 6,307 cf
Primary=2.79 cfs 6,307 cf

Link 5L: Pr. East Out Inflow=5.38 cfs 12,683 cf
Primary=5.38 cfs 12,683 cf

Link 6L: Pr. Outfall Inflow=8.17 cfs 18,991 cf
Primary=8.17 cfs 18,991 cf

Total Runoff Area = 237,188 sf Runoff Volume = 53,817 cf Average Runoff Depth = 2.72"
51.90% Pervious = 123,091 sf 48.10% Impervious = 114,097 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. West Runoff Area=89,636 sf 23.65% Impervious Runoff Depth>3.51"
Tc=5.0 min CN=91.13 Runoff=8.47 cfs 26,208 cf

Subcatchment2S: Ex. East Runoff Area=28,958 sf 10.38% Impervious Runoff Depth>3.39"
Tc=5.0 min CN=89.93 Runoff=2.66 cfs 8,171 cf

Subcatchment3S: Pr. Infil #1 Runoff Area=30,322 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=3.17 cfs 10,767 cf

Subcatchment4S: Pr. West Bypass Runoff Area=5,159 sf 79.43% Impervious Runoff Depth>3.85"
Tc=5.0 min CN=94.30 Runoff=0.52 cfs 1,653 cf

Subcatchment5S: Ex. East Bypass Runoff Area=20,268 sf 21.08% Impervious Runoff Depth>3.01"
Tc=5.0 min CN=86.15 Runoff=1.69 cfs 5,092 cf

Subcatchment6S: Pr. Infil #2 Runoff Area=55,520 sf 79.02% Impervious Runoff Depth>4.02"
Tc=5.0 min CN=95.90 Runoff=5.69 cfs 18,607 cf

Subcatchment7S: Pr. Perm Pavers #1 Runoff Area=618 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.06 cfs 219 cf

Subcatchment8S: Pr. Perm Pavers #2 Runoff Area=321 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.03 cfs 114 cf

Subcatchment9S: Pr. Perm Pavers #3 Runoff Area=643 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.07 cfs 228 cf

Subcatchment10S: Pr. Perm Pavers #4 Runoff Area=1,625 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.17 cfs 577 cf

Subcatchment11S: Pr. Perm Pavers #5 Runoff Area=961 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.10 cfs 341 cf

Subcatchment12S: Pr. Perm Pavers #6 Runoff Area=372 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.04 cfs 132 cf

Subcatchment14S: Pr. Perm Pavers #7 Runoff Area=673 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.07 cfs 239 cf

Subcatchment16S: Pr. Perm Pavers #8 Runoff Area=333 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.03 cfs 118 cf

Subcatchment20S: Pr. Perm Pavers #9 Runoff Area=1,080 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.11 cfs 383 cf

Subcatchment22S: Pr. Perm Pavers #10 Runoff Area=699 sf 100.00% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=98.00 Runoff=0.07 cfs 248 cf

Pond 1A: Pr. PP#1 Peak Elev=6.01' Storage=83 cf Inflow=0.06 cfs 219 cf
Discarded=0.00 cfs 193 cf Primary=0.02 cfs 16 cf Outflow=0.02 cfs 209 cf

Pond 1P: Pr. Infil #1 Peak Elev=7.36' Storage=3,356 cf Inflow=3.17 cfs 10,767 cf
Outflow=3.13 cfs 7,623 cf

Pond 2A: Pr. PP#2 Peak Elev=7.44' Storage=37 cf Inflow=0.03 cfs 114 cf
Discarded=0.01 cfs 114 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 114 cf

Pond 2P: Pr. Infil #2 Peak Elev=7.82' Storage=5,352 cf Inflow=5.69 cfs 18,607 cf
Outflow=5.57 cfs 13,755 cf

Pond 3A: Pr. PP#3 Peak Elev=7.36' Storage=79 cf Inflow=0.07 cfs 228 cf
Discarded=0.01 cfs 228 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 228 cf

Pond 4A: Pr. PP#4 Peak Elev=7.87' Storage=220 cf Inflow=0.17 cfs 577 cf
Discarded=0.02 cfs 576 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 576 cf

Pond 5A: Pr. PP#5 Peak Elev=7.80' Storage=127 cf Inflow=0.10 cfs 341 cf
Discarded=0.02 cfs 340 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 340 cf

Pond 13P: Pr. PP#6 Peak Elev=5.50' Storage=47 cf Inflow=0.04 cfs 132 cf
Discarded=0.01 cfs 132 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 132 cf

Pond 15P: Pr. PP#7 Peak Elev=5.65' Storage=63 cf Inflow=0.07 cfs 239 cf
Discarded=0.01 cfs 239 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 239 cf

Pond 17P: Pr. PP#8 Peak Elev=7.20' Storage=40 cf Inflow=0.03 cfs 118 cf
Discarded=0.01 cfs 118 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 118 cf

Pond 21P: Pr. PP#9 Peak Elev=7.26' Storage=140 cf Inflow=0.11 cfs 383 cf
Discarded=0.02 cfs 383 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 383 cf

Pond 23P: Pr. PP#10 Peak Elev=7.02' Storage=82 cf Inflow=0.07 cfs 248 cf
Discarded=0.01 cfs 248 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 248 cf

Link 1L: Ex. West Out Inflow=8.47 cfs 26,208 cf
Primary=8.47 cfs 26,208 cf

Link 2L: Ex. East Out Inflow=2.66 cfs 8,171 cf
Primary=2.66 cfs 8,171 cf

Link 3L: Ex. Outfall Inflow=11.13 cfs 34,379 cf
Primary=11.13 cfs 34,379 cf

Link 4L: Pr. West Out Inflow=3.64 cfs 9,292 cf
Primary=3.64 cfs 9,292 cf

Link 5L: Pr. East Out Inflow=7.25 cfs 18,847 cf
Primary=7.25 cfs 18,847 cf

Link 6L: Pr. Outfall

Inflow=10.89 cfs 28,139 cf
Primary=10.89 cfs 28,139 cf

Total Runoff Area = 237,188 sf Runoff Volume = 73,099 cf Average Runoff Depth = 3.70"
51.90% Pervious = 123,091 sf 48.10% Impervious = 114,097 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. West Runoff Area=89,636 sf 23.65% Impervious Runoff Depth>4.31"
Tc=5.0 min CN=91.13 Runoff=10.29 cfs 32,222 cf

Subcatchment2S: Ex. East Runoff Area=28,958 sf 10.38% Impervious Runoff Depth>4.18"
Tc=5.0 min CN=89.93 Runoff=3.26 cfs 10,097 cf

Subcatchment3S: Pr. Infil #1 Runoff Area=30,322 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=3.77 cfs 12,860 cf

Subcatchment4S: Pr. West Bypass Runoff Area=5,159 sf 79.43% Impervious Runoff Depth>4.66"
Tc=5.0 min CN=94.30 Runoff=0.62 cfs 2,005 cf

Subcatchment5S: Ex. East Bypass Runoff Area=20,268 sf 21.08% Impervious Runoff Depth>3.79"
Tc=5.0 min CN=86.15 Runoff=2.11 cfs 6,398 cf

Subcatchment6S: Pr. Infil #2 Runoff Area=55,520 sf 79.02% Impervious Runoff Depth>4.85"
Tc=5.0 min CN=95.90 Runoff=6.79 cfs 22,419 cf

Subcatchment7S: Pr. Perm Pavers #1 Runoff Area=618 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.08 cfs 262 cf

Subcatchment8S: Pr. Perm Pavers #2 Runoff Area=321 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.04 cfs 136 cf

Subcatchment9S: Pr. Perm Pavers #3 Runoff Area=643 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.08 cfs 273 cf

Subcatchment10S: Pr. Perm Pavers #4 Runoff Area=1,625 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.20 cfs 689 cf

Subcatchment11S: Pr. Perm Pavers #5 Runoff Area=961 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.12 cfs 408 cf

Subcatchment12S: Pr. Perm Pavers #6 Runoff Area=372 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.05 cfs 158 cf

Subcatchment14S: Pr. Perm Pavers #7 Runoff Area=673 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.08 cfs 285 cf

Subcatchment16S: Pr. Perm Pavers #8 Runoff Area=333 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.04 cfs 141 cf

Subcatchment20S: Pr. Perm Pavers #9 Runoff Area=1,080 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.13 cfs 458 cf

Subcatchment22S: Pr. Perm Pavers #10 Runoff Area=699 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98.00 Runoff=0.09 cfs 296 cf

Pond 1A: Pr. PP#1 Peak Elev=6.02' Storage=84 cf Inflow=0.08 cfs 262 cf
Discarded=0.00 cfs 204 cf Primary=0.05 cfs 42 cf Outflow=0.05 cfs 247 cf

Pond 1P: Pr. Infil #1 Peak Elev=7.40' Storage=3,381 cf Inflow=3.77 cfs 12,860 cf
Outflow=3.72 cfs 9,714 cf

Pond 2A: Pr. PP#2 Peak Elev=7.51' Storage=47 cf Inflow=0.04 cfs 136 cf
Discarded=0.01 cfs 136 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 136 cf

Pond 2P: Pr. Infil #2 Peak Elev=7.87' Storage=5,410 cf Inflow=6.79 cfs 22,419 cf
Outflow=6.67 cfs 17,563 cf

Pond 3A: Pr. PP#3 Peak Elev=7.43' Storage=97 cf Inflow=0.08 cfs 273 cf
Discarded=0.01 cfs 272 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 272 cf

Pond 4A: Pr. PP#4 Peak Elev=7.98' Storage=271 cf Inflow=0.20 cfs 689 cf
Discarded=0.02 cfs 688 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 688 cf

Pond 5A: Pr. PP#5 Peak Elev=7.85' Storage=147 cf Inflow=0.12 cfs 408 cf
Discarded=0.02 cfs 397 cf Primary=0.02 cfs 8 cf Outflow=0.04 cfs 405 cf

Pond 13P: Pr. PP#6 Peak Elev=5.58' Storage=58 cf Inflow=0.05 cfs 158 cf
Discarded=0.01 cfs 157 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 157 cf

Pond 15P: Pr. PP#7 Peak Elev=5.73' Storage=81 cf Inflow=0.08 cfs 285 cf
Discarded=0.01 cfs 285 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 285 cf

Pond 17P: Pr. PP#8 Peak Elev=7.27' Storage=49 cf Inflow=0.04 cfs 141 cf
Discarded=0.01 cfs 141 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 141 cf

Pond 21P: Pr. PP#9 Peak Elev=7.36' Storage=174 cf Inflow=0.13 cfs 458 cf
Discarded=0.02 cfs 457 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 457 cf

Pond 23P: Pr. PP#10 Peak Elev=7.09' Storage=102 cf Inflow=0.09 cfs 296 cf
Discarded=0.01 cfs 296 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 296 cf

Link 1L: Ex. West Out Inflow=10.29 cfs 32,222 cf
Primary=10.29 cfs 32,222 cf

Link 2L: Ex. East Out Inflow=3.26 cfs 10,097 cf
Primary=3.26 cfs 10,097 cf

Link 3L: Ex. Outfall Inflow=13.55 cfs 42,319 cf
Primary=13.55 cfs 42,319 cf

Link 4L: Pr. West Out Inflow=4.33 cfs 11,761 cf
Primary=4.33 cfs 11,761 cf

Link 5L: Pr. East Out Inflow=8.76 cfs 23,970 cf
Primary=8.76 cfs 23,970 cf

Link 6L: Pr. Outfall

Inflow=13.09 cfs 35,731 cf
Primary=13.09 cfs 35,731 cf

Total Runoff Area = 237,188 sf Runoff Volume = 89,108 cf Average Runoff Depth = 4.51"
51.90% Pervious = 123,091 sf 48.10% Impervious = 114,097 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. West Runoff Area=89,636 sf 23.65% Impervious Runoff Depth>5.44"
Tc=5.0 min CN=91.13 Runoff=12.81 cfs 40,623 cf

Subcatchment2S: Ex. East Runoff Area=28,958 sf 10.38% Impervious Runoff Depth>5.30"
Tc=5.0 min CN=89.93 Runoff=4.07 cfs 12,795 cf

Subcatchment3S: Pr. Infil #1 Runoff Area=30,322 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=4.59 cfs 15,760 cf

Subcatchment4S: Pr. West Bypass Runoff Area=5,159 sf 79.43% Impervious Runoff Depth>5.80"
Tc=5.0 min CN=94.30 Runoff=0.76 cfs 2,495 cf

Subcatchment5S: Ex. East Bypass Runoff Area=20,268 sf 21.08% Impervious Runoff Depth>4.88"
Tc=5.0 min CN=86.15 Runoff=2.69 cfs 8,242 cf

Subcatchment6S: Pr. Infil #2 Runoff Area=55,520 sf 79.02% Impervious Runoff Depth>5.99"
Tc=5.0 min CN=95.90 Runoff=8.31 cfs 27,712 cf

Subcatchment7S: Pr. Perm Pavers #1 Runoff Area=618 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.09 cfs 321 cf

Subcatchment8S: Pr. Perm Pavers #2 Runoff Area=321 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.05 cfs 167 cf

Subcatchment9S: Pr. Perm Pavers #3 Runoff Area=643 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.10 cfs 334 cf

Subcatchment10S: Pr. Perm Pavers #4 Runoff Area=1,625 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.25 cfs 845 cf

Subcatchment11S: Pr. Perm Pavers #5 Runoff Area=961 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.15 cfs 499 cf

Subcatchment12S: Pr. Perm Pavers #6 Runoff Area=372 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.06 cfs 193 cf

Subcatchment14S: Pr. Perm Pavers #7 Runoff Area=673 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.10 cfs 350 cf

Subcatchment16S: Pr. Perm Pavers #8 Runoff Area=333 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.05 cfs 173 cf

Subcatchment20S: Pr. Perm Pavers #9 Runoff Area=1,080 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.16 cfs 561 cf

Subcatchment22S: Pr. Perm Pavers #10 Runoff Area=699 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98.00 Runoff=0.11 cfs 363 cf

Pond 1A: Pr. PP#1 Peak Elev=6.03' Storage=85 cf Inflow=0.09 cfs 321 cf
Discarded=0.00 cfs 219 cf Primary=0.09 cfs 81 cf Outflow=0.09 cfs 300 cf

Pond 1P: Pr. Infil #1 Peak Elev=7.45' Storage=3,413 cf Inflow=4.59 cfs 15,760 cf
Outflow=4.54 cfs 12,612 cf

Pond 2A: Pr. PP#2 Peak Elev=7.62' Storage=60 cf Inflow=0.05 cfs 167 cf
Discarded=0.01 cfs 167 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 167 cf

Pond 2P: Pr. Infil #2 Peak Elev=7.95' Storage=5,482 cf Inflow=8.31 cfs 27,712 cf
Outflow=8.19 cfs 22,850 cf

Pond 3A: Pr. PP#3 Peak Elev=7.54' Storage=125 cf Inflow=0.10 cfs 334 cf
Discarded=0.01 cfs 334 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 334 cf

Pond 4A: Pr. PP#4 Peak Elev=8.00' Storage=284 cf Inflow=0.25 cfs 845 cf
Discarded=0.03 cfs 778 cf Primary=0.09 cfs 65 cf Outflow=0.11 cfs 843 cf

Pond 5A: Pr. PP#5 Peak Elev=7.85' Storage=147 cf Inflow=0.15 cfs 499 cf
Discarded=0.02 cfs 445 cf Primary=0.08 cfs 50 cf Outflow=0.10 cfs 496 cf

Pond 13P: Pr. PP#6 Peak Elev=5.69' Storage=73 cf Inflow=0.06 cfs 193 cf
Discarded=0.01 cfs 193 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 193 cf

Pond 15P: Pr. PP#7 Peak Elev=5.84' Storage=106 cf Inflow=0.10 cfs 350 cf
Discarded=0.01 cfs 349 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 349 cf

Pond 17P: Pr. PP#8 Peak Elev=7.38' Storage=64 cf Inflow=0.05 cfs 173 cf
Discarded=0.01 cfs 173 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 173 cf

Pond 21P: Pr. PP#9 Peak Elev=7.50' Storage=222 cf Inflow=0.16 cfs 561 cf
Discarded=0.02 cfs 560 cf Primary=0.00 cfs 1 cf Outflow=0.02 cfs 560 cf

Pond 23P: Pr. PP#10 Peak Elev=7.20' Storage=132 cf Inflow=0.11 cfs 363 cf
Discarded=0.01 cfs 363 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 363 cf

Link 1L: Ex. West Out Inflow=12.81 cfs 40,623 cf
Primary=12.81 cfs 40,623 cf

Link 2L: Ex. East Out Inflow=4.07 cfs 12,795 cf
Primary=4.07 cfs 12,795 cf

Link 3L: Ex. Outfall Inflow=16.88 cfs 53,417 cf
Primary=16.88 cfs 53,417 cf

Link 4L: Pr. West Out Inflow=5.38 cfs 15,188 cf
Primary=5.38 cfs 15,188 cf

Link 5L: Pr. East Out Inflow=10.85 cfs 31,207 cf
Primary=10.85 cfs 31,207 cf

Link 6L: Pr. Outfall

Inflow=16.23 cfs 46,395 cf
Primary=16.23 cfs 46,395 cf

Total Runoff Area = 237,188 sf Runoff Volume = 111,433 cf Average Runoff Depth = 5.64"
51.90% Pervious = 123,091 sf 48.10% Impervious = 114,097 sf

Summary for Subcatchment 1S: Ex. West

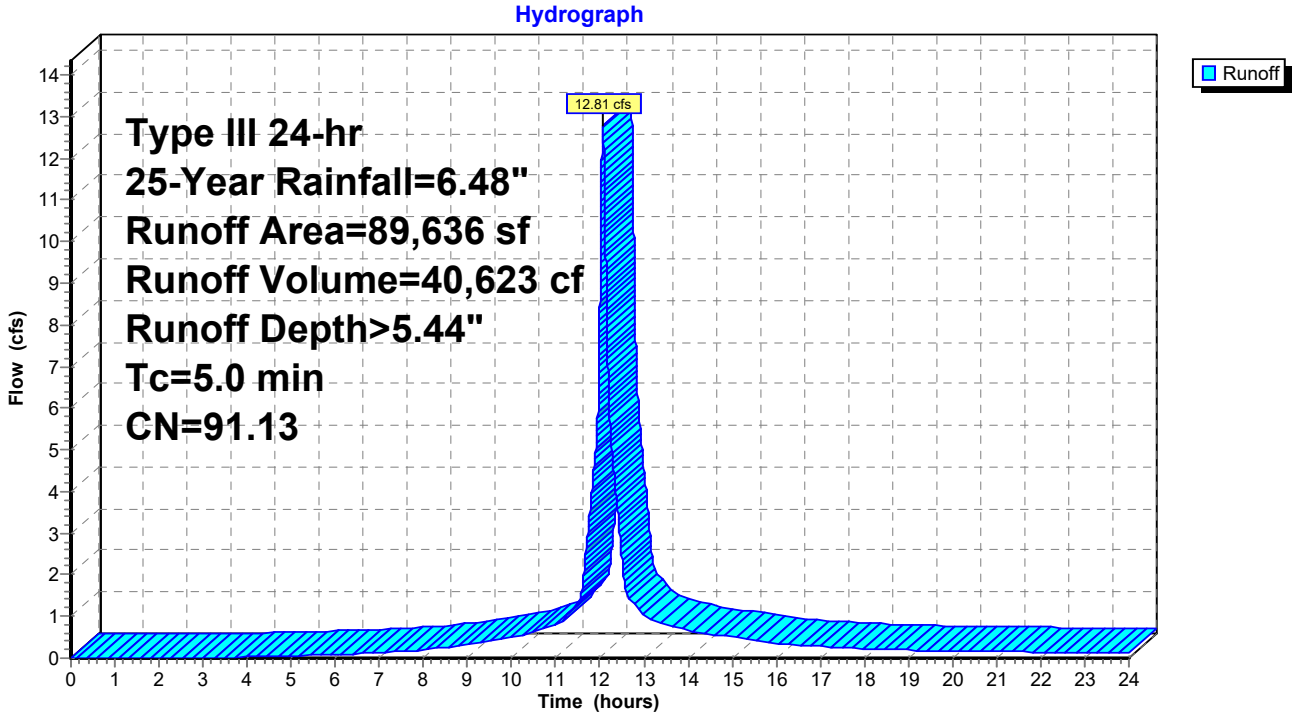
Runoff = 12.81 cfs @ 12.07 hrs, Volume= 40,623 cf, Depth> 5.44"
Routed to Link 1L : Ex. West Out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	68,433	89.00	Gravel and Compacted Dirt
*	21,203	98.00	Paved parking, HSG D
	89,636	91.13	Weighted Average
	68,433		76.35% Pervious Area
	21,203		23.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1S: Ex. West



Summary for Subcatchment 2S: Ex. East

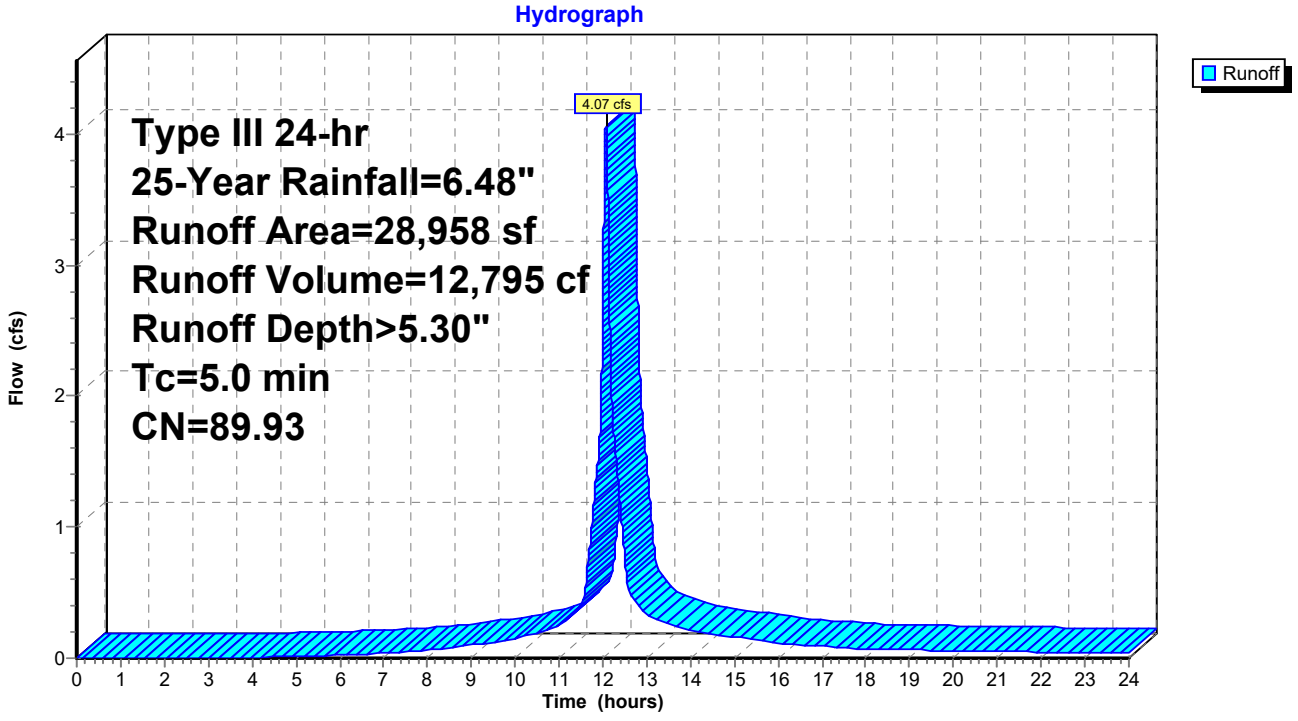
Runoff = 4.07 cfs @ 12.07 hrs, Volume= 12,795 cf, Depth> 5.30"
Routed to Link 2L : Ex. East Out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	25,952	89.00	Gravel and Compacted Dirt
*	3,006	98.00	Paved parking, HSG D
	28,958	89.93	Weighted Average
	25,952		89.62% Pervious Area
	3,006		10.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Ex. East



Summary for Subcatchment 3S: Pr. Infil #1

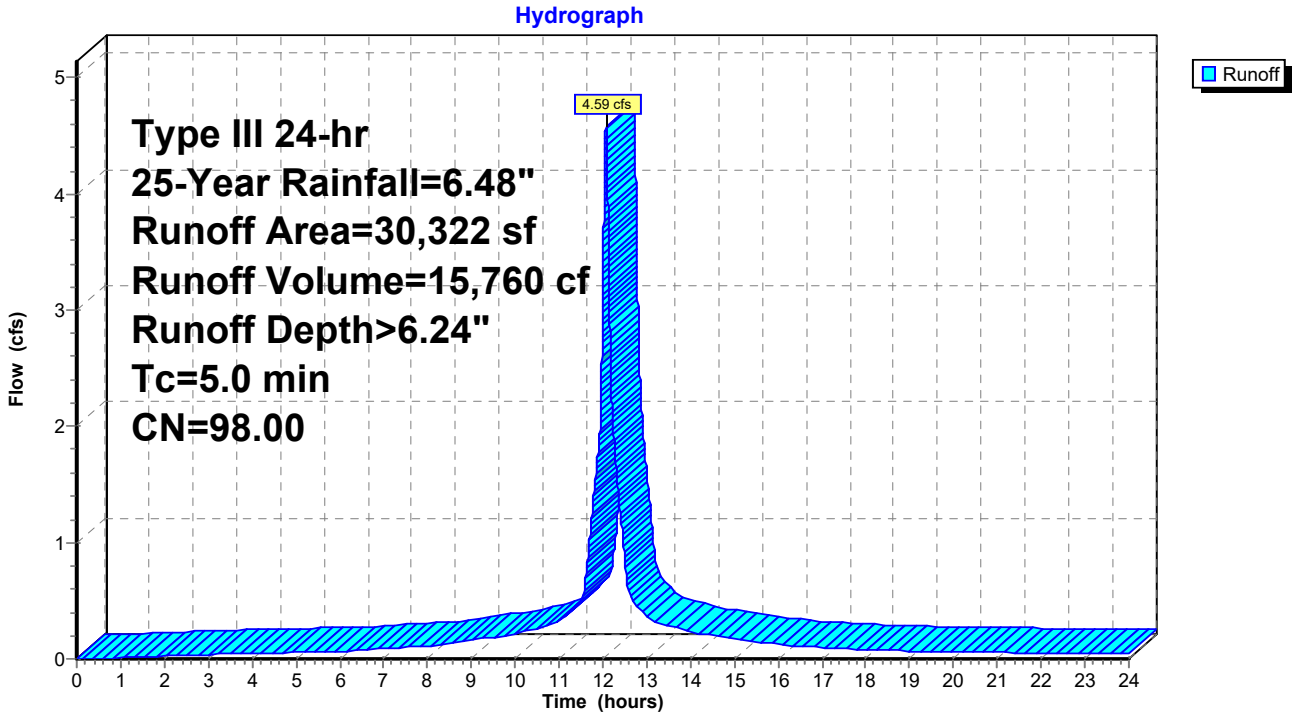
Runoff = 4.59 cfs @ 12.07 hrs, Volume= 15,760 cf, Depth> 6.24"
Routed to Pond 1P : Pr. Infil #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	30,322	98.00	Impervious, HSG D
	30,322		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3S: Pr. Infil #1



Summary for Subcatchment 4S: Pr. West Bypass

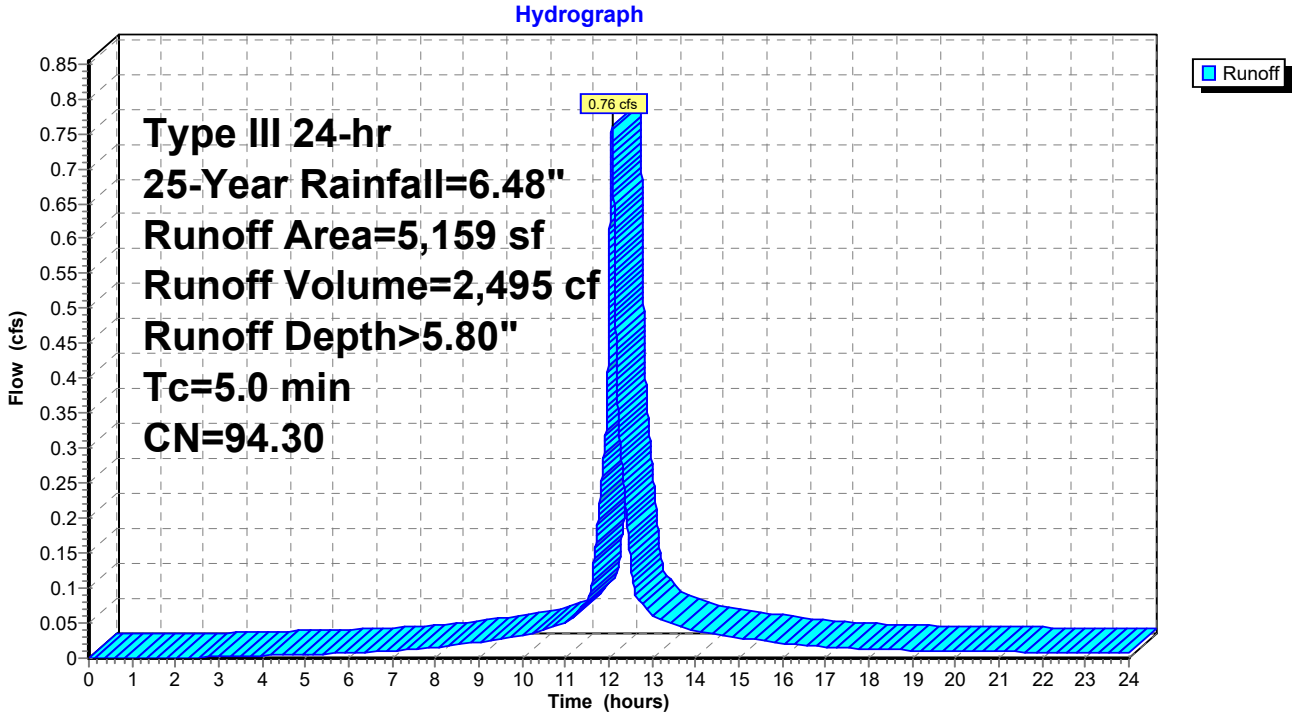
Runoff = 0.76 cfs @ 12.07 hrs, Volume= 2,495 cf, Depth> 5.80"
Routed to Link 4L : Pr. West Out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	4,098	98.00	Impervious, HSG D
	1,061	80.00	>75% Grass cover, Good, HSG D
	5,159	94.30	Weighted Average
	1,061		20.57% Pervious Area
	4,098		79.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 4S: Pr. West Bypass



Summary for Subcatchment 5S: Ex. East Bypass

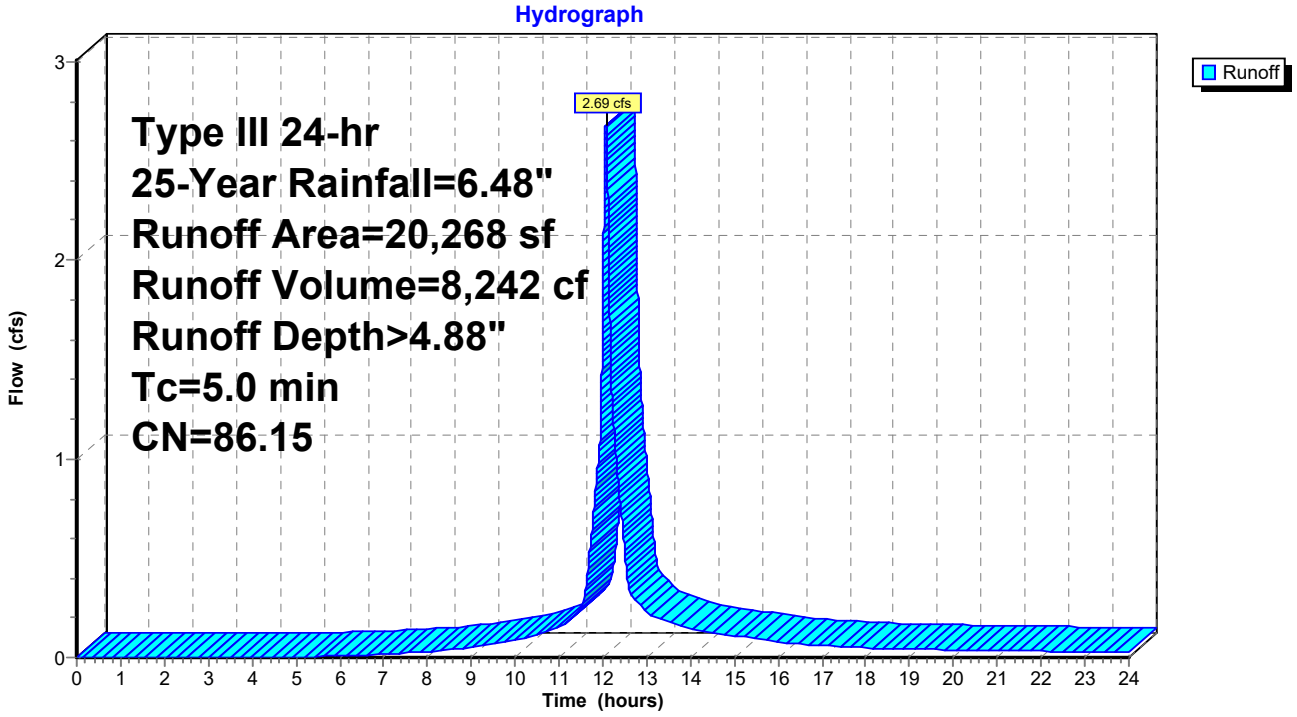
Runoff = 2.69 cfs @ 12.07 hrs, Volume= 8,242 cf, Depth> 4.88"
Routed to Link 5L : Pr. East Out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	3,930	98.00	Impervious, HSG D
*	4,126	89.00	Open-jointed Surface
*	1,178	89.00	Bonded Aggregate, HSG D
	10,692	80.00	>75% Grass cover, Good, HSG D
*	342	98.00	Water
	20,268	86.15	Weighted Average
	15,996		78.92% Pervious Area
	4,272		21.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 5S: Ex. East Bypass



Summary for Subcatchment 6S: Pr. Infil #2

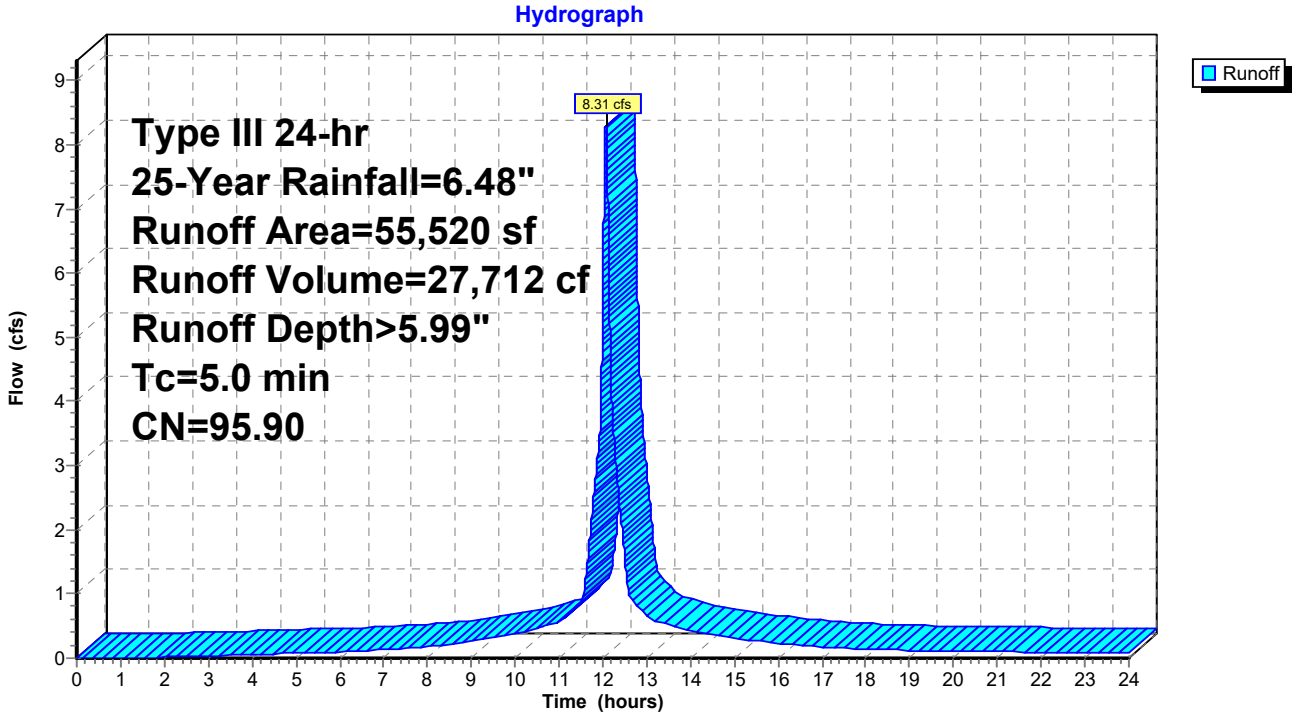
Runoff = 8.31 cfs @ 12.07 hrs, Volume= 27,712 cf, Depth> 5.99"
Routed to Pond 2P : Pr. Infil #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	43,871	98.00	Impervious, HSG D
*	11,649	88.00	Green Roof
	55,520	95.90	Weighted Average
	11,649		20.98% Pervious Area
	43,871		79.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 6S: Pr. Infil #2



Summary for Subcatchment 7S: Pr. Perm Pavers #1

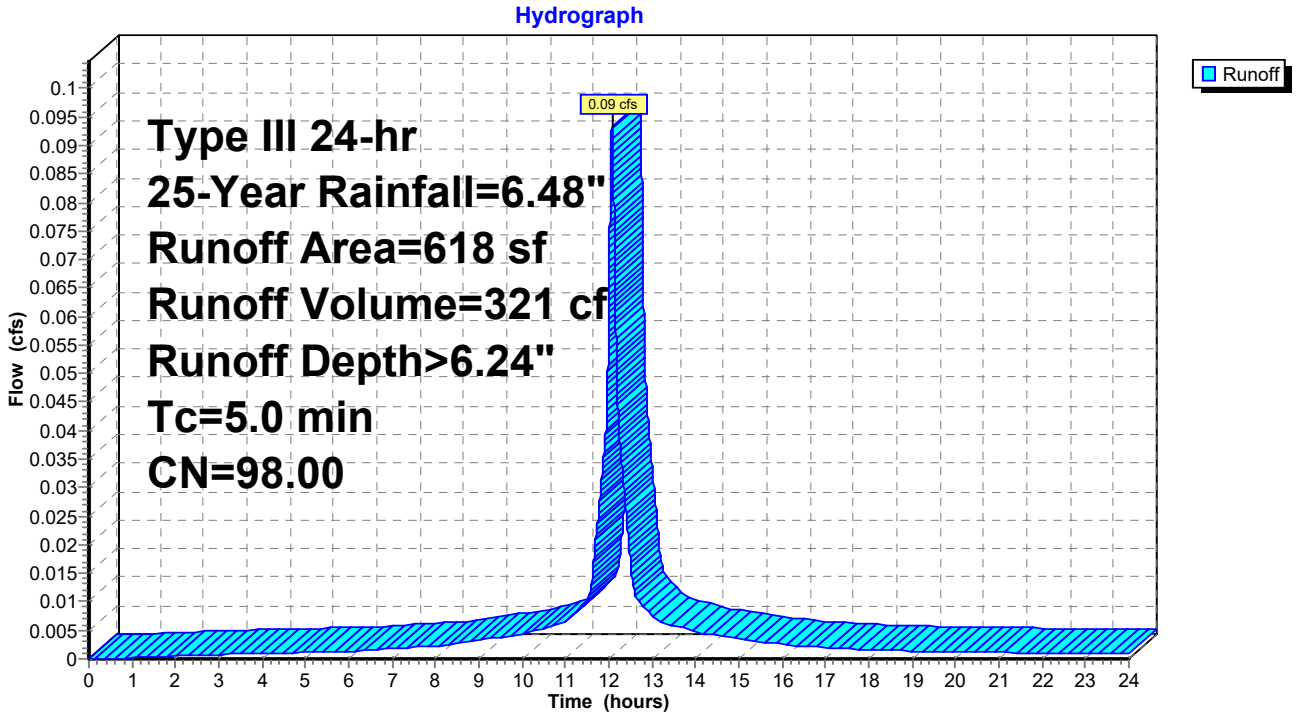
Runoff = 0.09 cfs @ 12.07 hrs, Volume= 321 cf, Depth> 6.24"
Routed to Pond 1A : Pr. PP#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	618	98.00	Pavers, HSG D
	618		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 7S: Pr. Perm Pavers #1



Summary for Subcatchment 8S: Pr. Perm Pavers #2

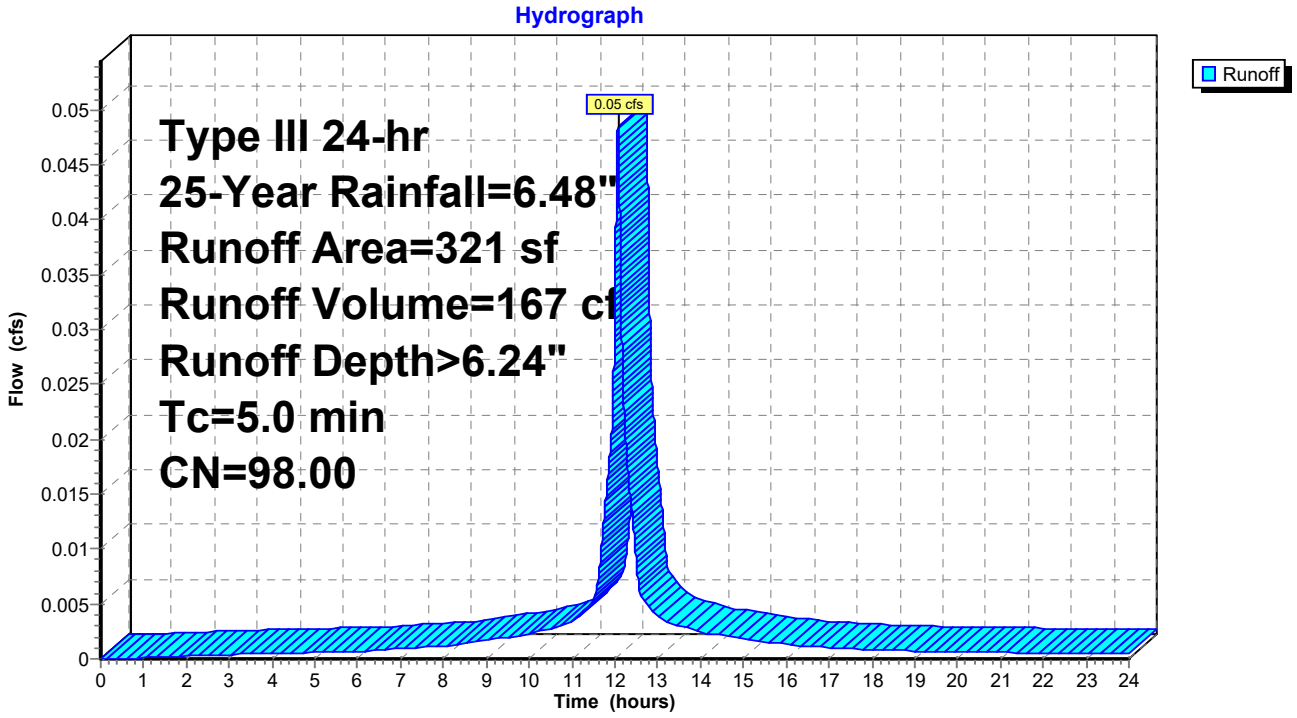
Runoff = 0.05 cfs @ 12.07 hrs, Volume= 167 cf, Depth> 6.24"
Routed to Pond 2A : Pr. PP#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	321	98.00	Bonded Aggregate, HSG D
	321		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 8S: Pr. Perm Pavers #2



Summary for Subcatchment 9S: Pr. Perm Pavers #3

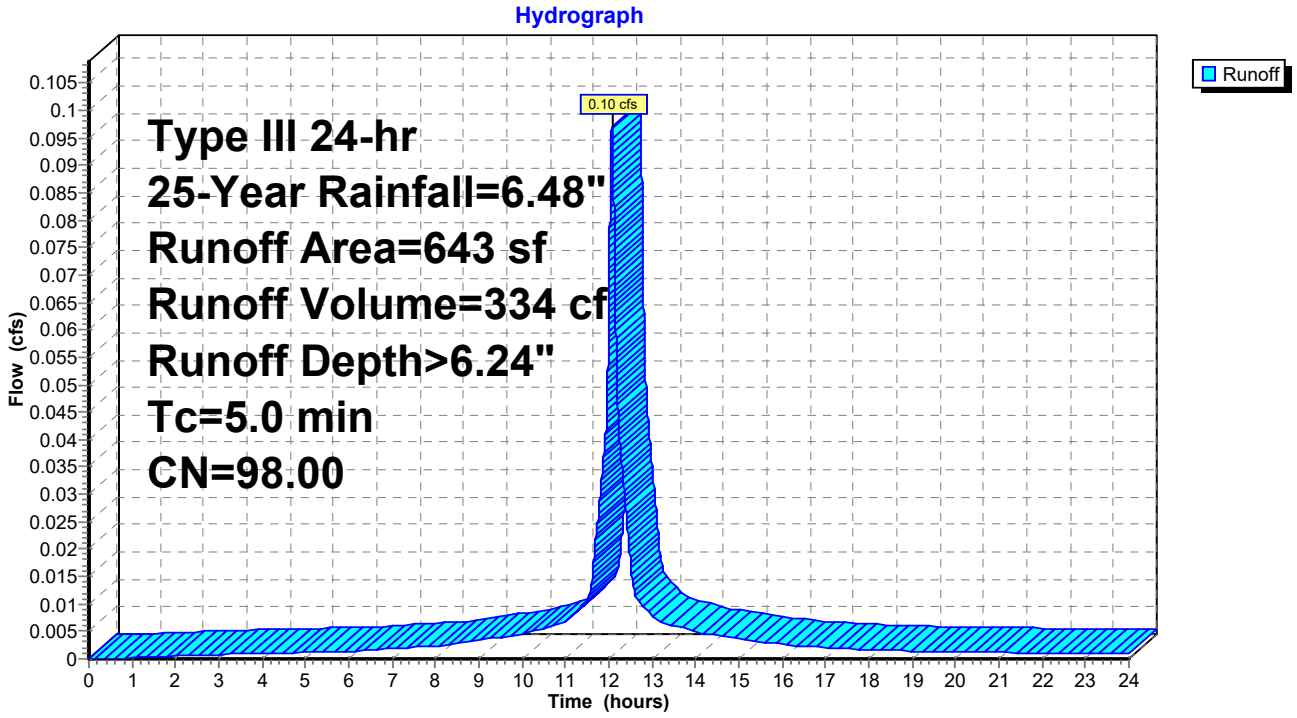
Runoff = 0.10 cfs @ 12.07 hrs, Volume= 334 cf, Depth> 6.24"
Routed to Pond 3A : Pr. PP#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	643	98.00	Bonded Aggregate, HSG D
	643		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 9S: Pr. Perm Pavers #3



Summary for Subcatchment 10S: Pr. Perm Pavers #4

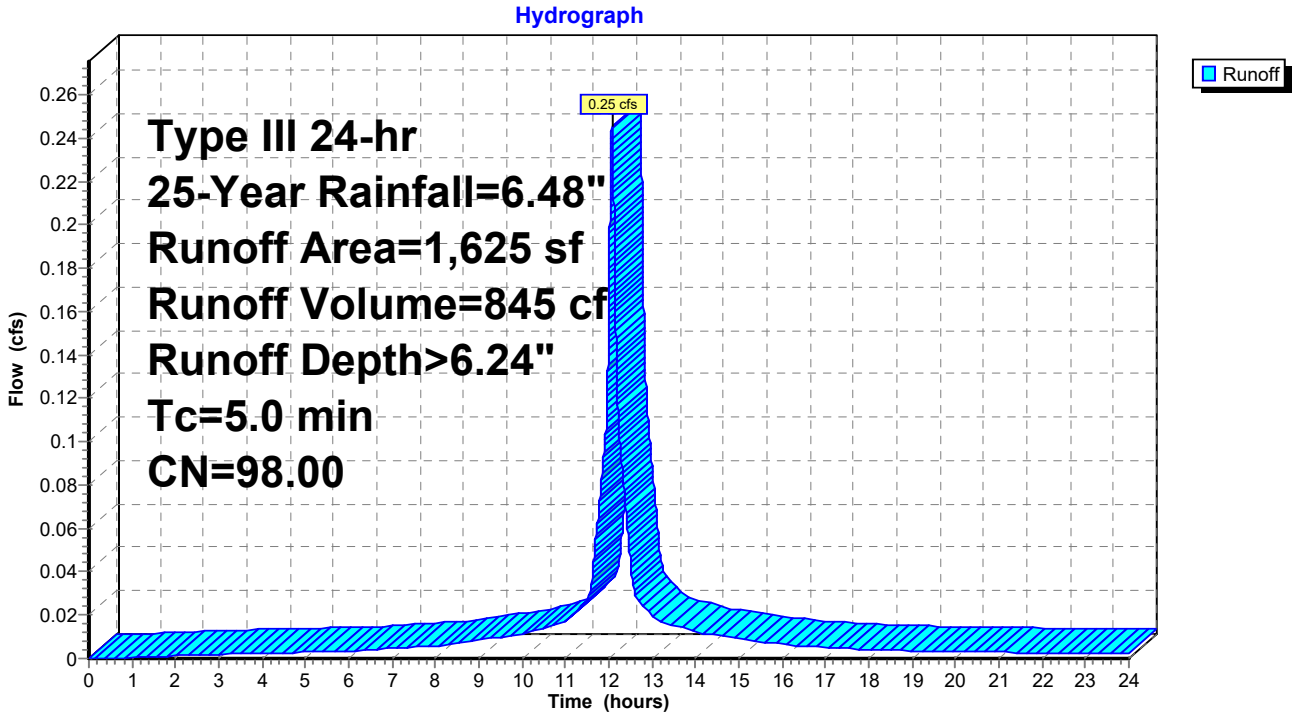
Runoff = 0.25 cfs @ 12.07 hrs, Volume= 845 cf, Depth> 6.24"
Routed to Pond 4A : Pr. PP#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	1,273	98.00	Bonded Aggregate, HSG D
*	352	98.00	Impervious, HSG D
	1,625	98.00	Weighted Average
	1,625		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 10S: Pr. Perm Pavers #4



Summary for Subcatchment 11S: Pr. Perm Pavers #5

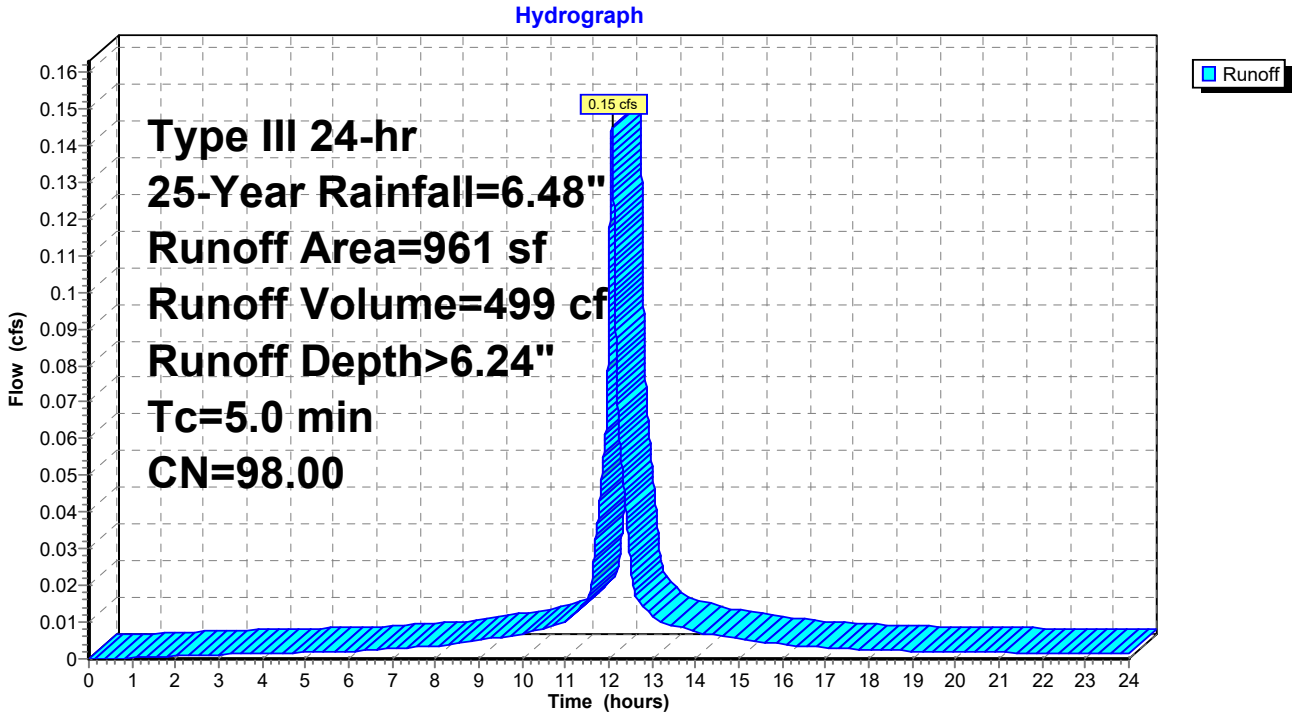
Runoff = 0.15 cfs @ 12.07 hrs, Volume= 499 cf, Depth> 6.24"
Routed to Pond 5A : Pr. PP#5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	961	98.00	Bonded Aggregate, HSG D
	961		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 11S: Pr. Perm Pavers #5



Summary for Subcatchment 12S: Pr. Perm Pavers #6

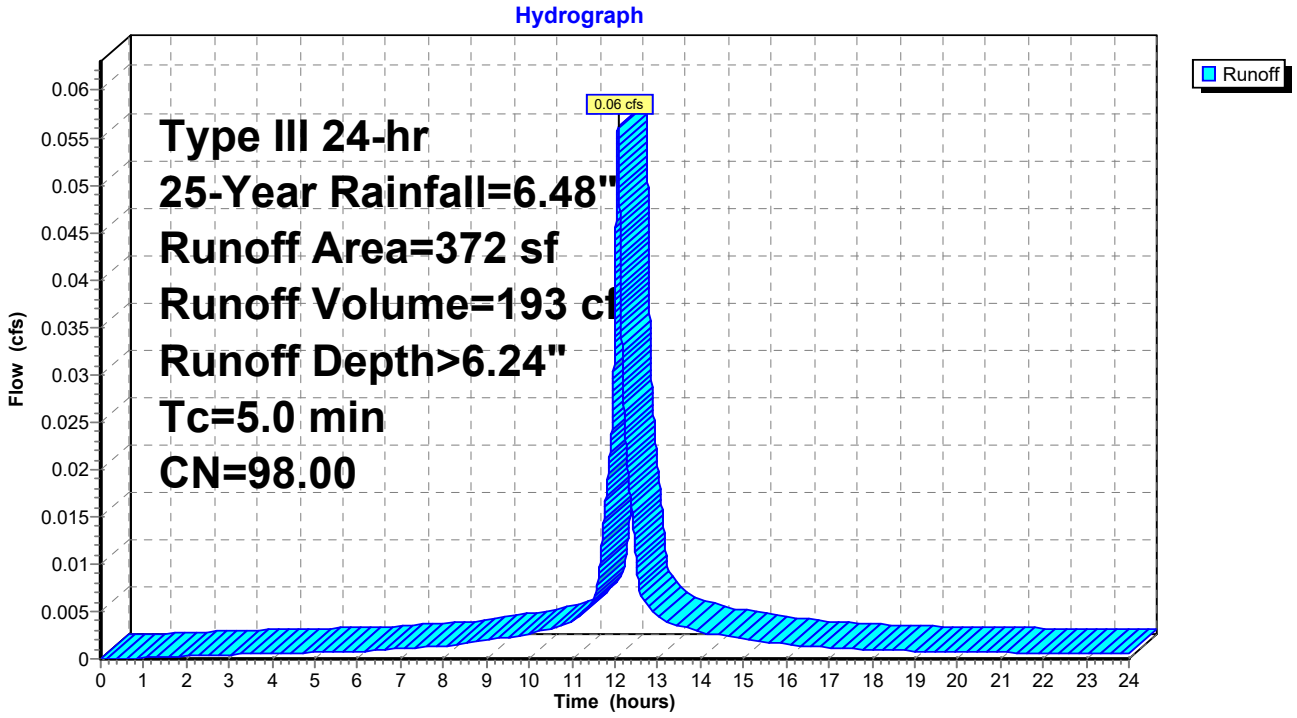
Runoff = 0.06 cfs @ 12.07 hrs, Volume= 193 cf, Depth> 6.24"
Routed to Pond 13P : Pr. PP#6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	372	98.00	Pavers, HSG D
	372		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 12S: Pr. Perm Pavers #6



Summary for Subcatchment 14S: Pr. Perm Pavers #7

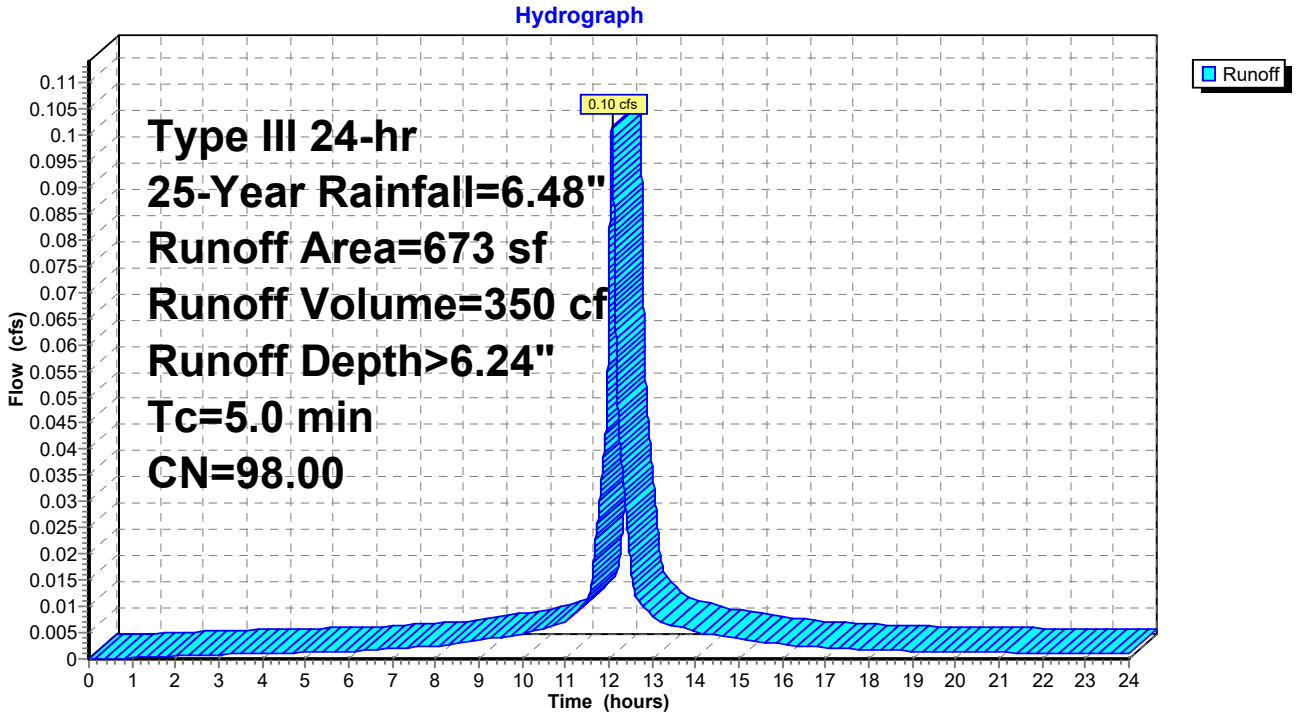
Runoff = 0.10 cfs @ 12.07 hrs, Volume= 350 cf, Depth> 6.24"
Routed to Pond 15P : Pr. PP#7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	673	98.00	Bonded Aggregate, HSG D
	673		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 14S: Pr. Perm Pavers #7



Summary for Subcatchment 16S: Pr. Perm Pavers #8

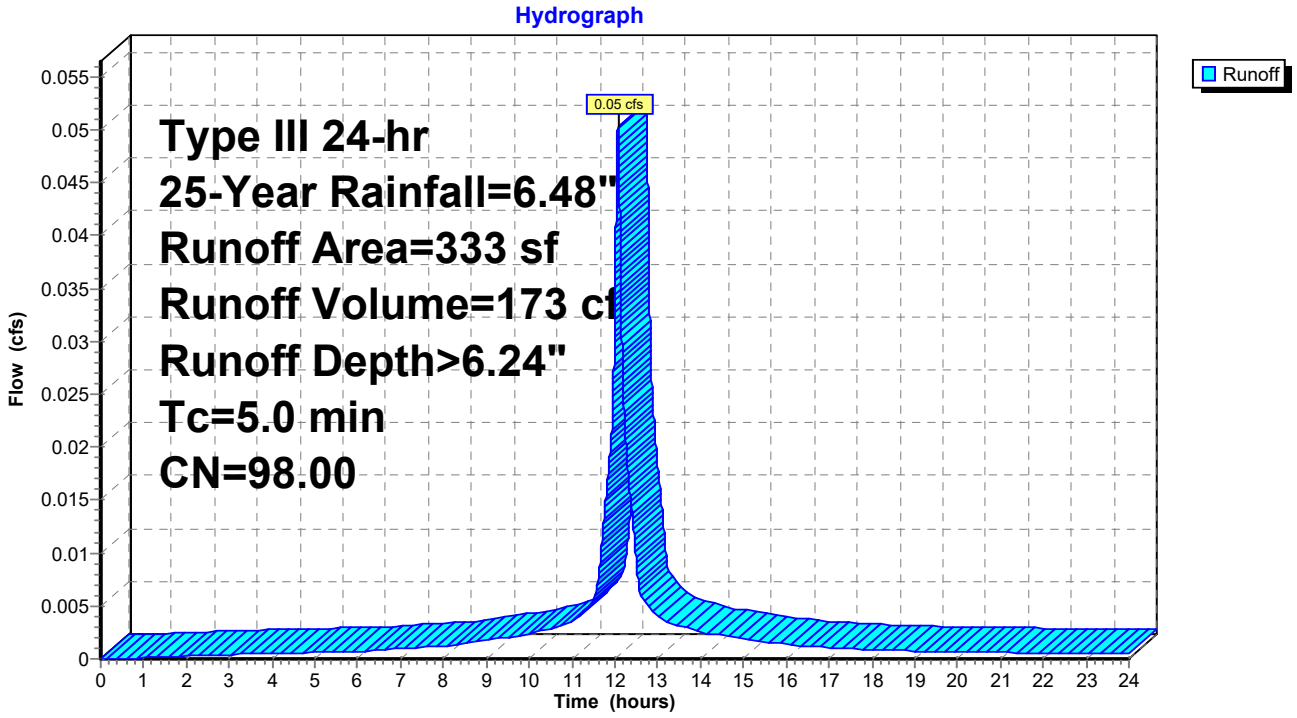
Runoff = 0.05 cfs @ 12.07 hrs, Volume= 173 cf, Depth> 6.24"
Routed to Pond 17P : Pr. PP#8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	333	98.00	Bonded Aggregate, HSG D
	333		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 16S: Pr. Perm Pavers #8



Summary for Subcatchment 20S: Pr. Perm Pavers #9

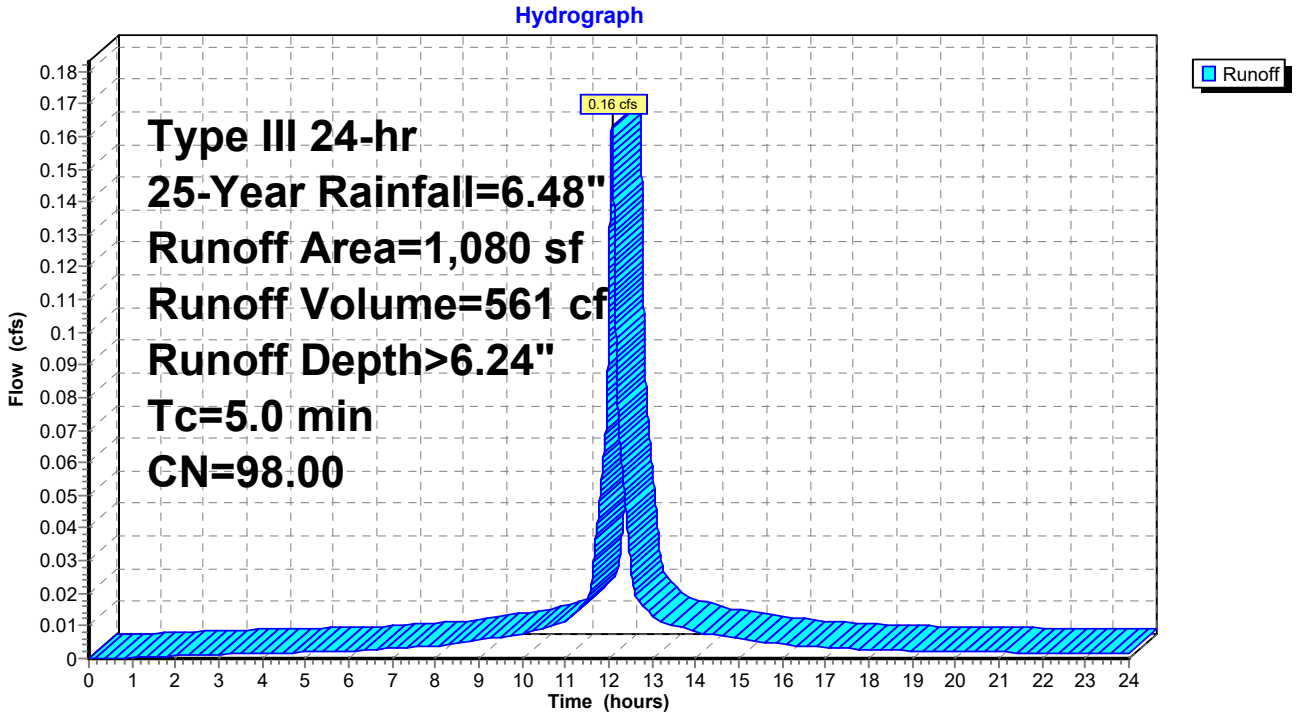
Runoff = 0.16 cfs @ 12.07 hrs, Volume= 561 cf, Depth> 6.24"
Routed to Pond 21P : Pr. PP#9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	854	98.00	Bonded Aggregate, HSG D
*	226	98.00	Impervious, HSG D
	1,080	98.00	Weighted Average
	1,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 20S: Pr. Perm Pavers #9



Summary for Subcatchment 22S: Pr. Perm Pavers #10

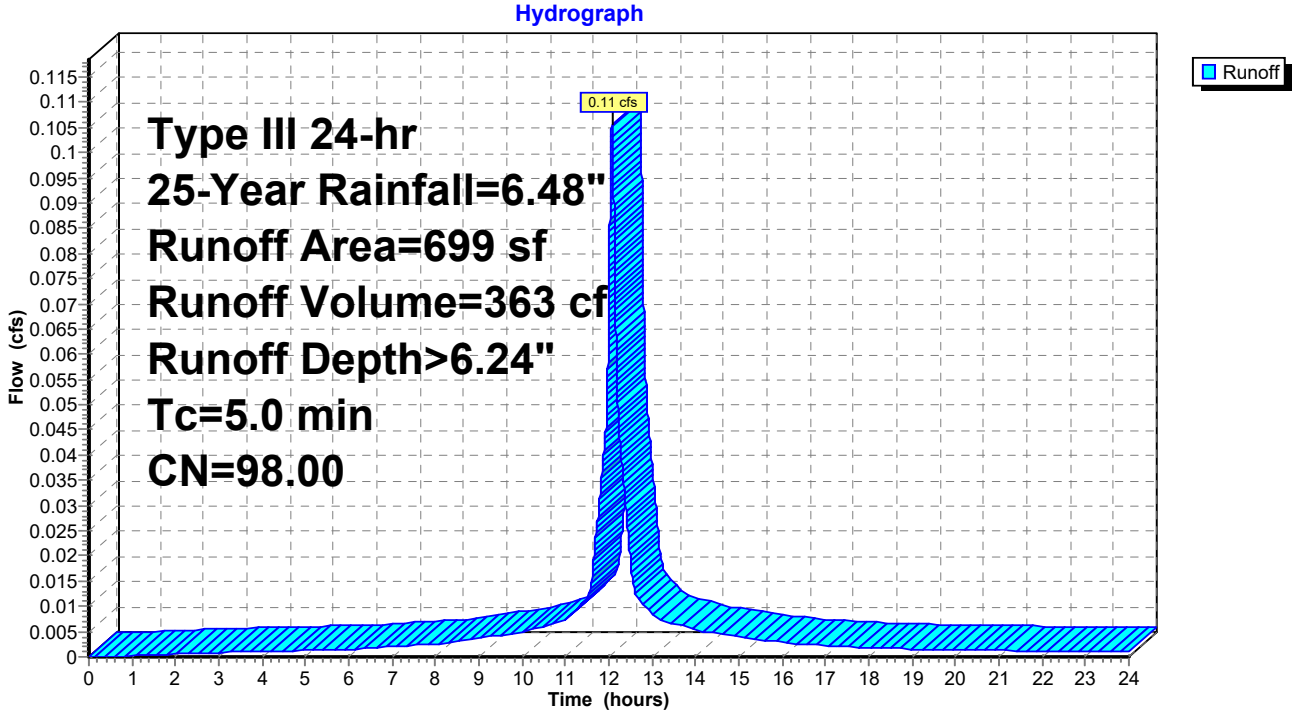
Runoff = 0.11 cfs @ 12.07 hrs, Volume= 363 cf, Depth> 6.24"
Routed to Pond 23P : Pr. PP#10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	699	98.00	Bonded Aggregate, HSG D
	699		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 22S: Pr. Perm Pavers #10



Summary for Pond 1A: Pr. PP#1

Inflow Area = 618 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.09 cfs @ 12.07 hrs, Volume= 321 cf
Outflow = 0.09 cfs @ 12.08 hrs, Volume= 300 cf, Atten= 1%, Lag= 0.3 min
Discarded = 0.00 cfs @ 12.08 hrs, Volume= 219 cf
Primary = 0.09 cfs @ 12.08 hrs, Volume= 81 cf
Routed to Link 4L : Pr. West Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 6.03' @ 12.08 hrs Surf.Area= 302 sf Storage= 85 cf

Plug-Flow detention time= 140.2 min calculated for 300 cf (93% of inflow)
Center-of-Mass det. time= 103.0 min (845.6 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	5.00'	273 cf	**Custom Stage Data (Prismatic)** Listed below 684 cf Overall x 40.0% Voids

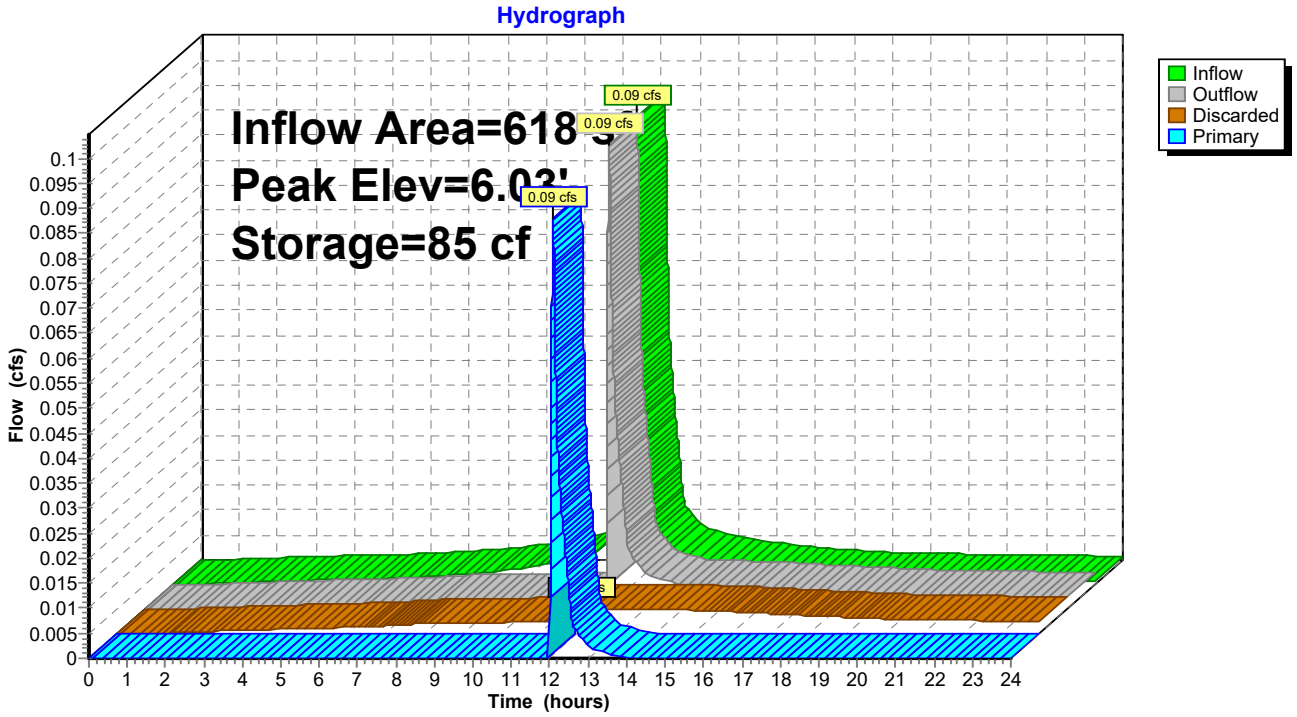
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
5.00	181	0	0
5.60	181	109	109
6.00	304	97	206
7.40	221	368	573
8.40	0	111	684

Device	Routing	Invert	Outlet Devices
#1	Discarded	5.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	6.00'	**7.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Discarded OutFlow Max=0.00 cfs @ 12.08 hrs HW=6.03' (Free Discharge)
1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.08 cfs @ 12.08 hrs HW=6.03' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 0.08 cfs @ 0.42 fps)

Pond 1A: Pr. PP#1



Stage-Area-Storage for Pond 1A: Pr. PP#1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
5.00	181	0
5.05	181	4
5.10	181	7
5.15	181	11
5.20	181	14
5.25	181	18
5.30	181	22
5.35	181	25
5.40	181	29
5.45	181	33
5.50	181	36
5.55	181	40
5.60	181	43
5.65	196	48
5.70	212	53
5.75	227	58
5.80	243	63
5.85	258	68
5.90	273	73
5.95	289	77
6.00	**304**	82
6.05	301	87
6.10	298	93
6.15	295	98
6.20	292	103
6.25	289	108
6.30	286	114
6.35	283	119
6.40	280	124
6.45	277	129
6.50	274	135
6.55	271	140
6.60	268	145
6.65	265	150
6.70	263	156
6.75	260	161
6.80	257	166
6.85	254	171
6.90	251	177
6.95	248	182
7.00	245	187
7.05	242	192
7.10	239	198
7.15	236	203
7.20	233	208
7.25	230	213
7.30	227	219
7.35	224	224
7.40	221	229
7.45	210	231
7.50	199	234
7.55	188	236
7.60	177	238
7.65	166	240
7.70	155	243
7.75	144	245
7.80	133	247
7.85	122	249
7.90	111	251
7.95	99	254
8.00	88	256
8.05	77	258
8.10	66	260
8.15	55	262
8.20	44	265
8.25	33	267
8.30	22	269
8.35	11	271
8.40	0	**273**

Summary for Pond 1P: Pr. Infil #1

Inflow Area = 30,322 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 4.59 cfs @ 12.07 hrs, Volume= 15,760 cf
Outflow = 4.54 cfs @ 12.08 hrs, Volume= 12,612 cf, Atten= 1%, Lag= 0.5 min
Primary = 4.54 cfs @ 12.08 hrs, Volume= 12,612 cf
Routed to Link 4L : Pr. West Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 3
Peak Elev= 7.45' @ 12.08 hrs Surf.Area= 1,516 sf Storage= 3,413 cf

Plug-Flow detention time= 146.7 min calculated for 12,612 cf (80% of inflow)
Center-of-Mass det. time= 69.5 min (812.1 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.80'	1,477 cf	**15.75'W x 96.28'L x 3.75'H Field A** 5,687 cf Overall - 1,994 cf Embedded = 3,693 cf x 40.0% Voids
#2A	4.30'	1,994 cf	**ADS_StormTech SC-800 +Cap** x 39 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 39 Chambers in 3 Rows Cap Storage= 3.4 cf x 2 x 3 rows = 20.5 cf
		3,471 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.00'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.54 cfs @ 12.08 hrs HW=7.45' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 4.54 cfs @ 2.00 fps)

Pond 1P: Pr. Infil #1 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-800 +Cap (ADS StormTech®SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 3 rows = 20.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

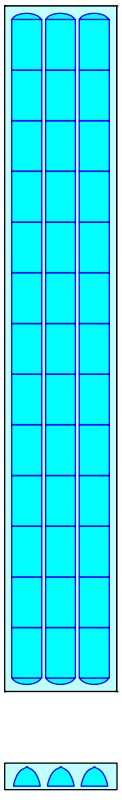
13 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 94.28' Row Length +12.0" End Stone x 2 = 96.28' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

39 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 3 Rows = 1,993.6 cf Chamber Storage

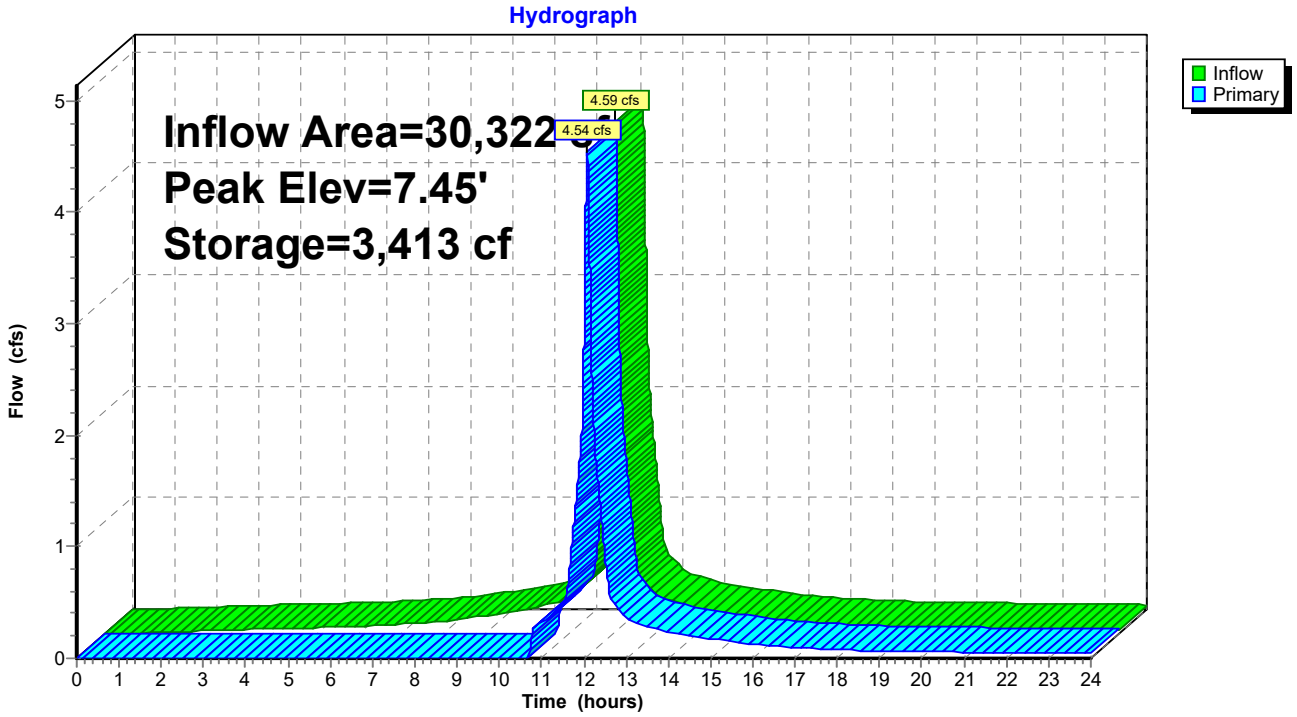
5,686.7 cf Field - 1,993.6 cf Chambers = 3,693.1 cf Stone x 40.0% Voids = 1,477.2 cf Stone Storage

Chamber Storage + Stone Storage = 3,470.9 cf = 0.080 af
Overall Storage Efficiency = 61.0%
Overall System Size = 96.28' x 15.75' x 3.75'

39 Chambers
210.6 cy Field
136.8 cy Stone



Pond 1P: Pr. Infil #1



Stage-Area-Storage for Pond 1P: Pr. Infil #1

Elevation (feet)	Storage (cubic-feet)
3.80	0
3.85	30
3.90	61
3.95	91
4.00	121
4.05	152
4.10	182
4.15	212
4.20	243
4.25	273
4.30	303
4.35	365
4.40	427
4.45	488
4.50	550
4.55	611
4.60	672
4.65	733
4.70	793
4.75	854
4.80	914
4.85	974
4.90	1,034
4.95	1,093
5.00	1,152
5.05	1,211
5.10	1,270
5.15	1,328
5.20	1,387
5.25	1,445
5.30	1,502
5.35	1,559
5.40	1,616
5.45	1,673
5.50	1,729
5.55	1,785
5.60	1,841
5.65	1,896
5.70	1,951
5.75	2,005
5.80	2,059
5.85	2,112
5.90	2,165
5.95	2,218
6.00	2,270
6.05	2,321
6.10	2,372
6.15	2,423
6.20	2,472
6.25	2,522
6.30	2,570
6.35	2,618
6.40	2,665
6.45	2,711
6.50	2,756
6.55	2,801
6.60	2,844
6.65	2,886
6.70	2,926
6.75	2,965
6.80	3,002
6.85	3,037
6.90	3,071
6.95	3,104
7.00	3,137
7.05	3,168
7.10	3,198
7.15	3,228
7.20	3,259
7.25	3,289
7.30	3,319
7.35	3,350
7.40	3,380
7.45	3,410
7.50	3,441
7.55	**3,471**

Summary for Pond 2A: Pr. PP#2

Inflow Area = 321 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.05 cfs @ 12.07 hrs, Volume= 167 cf
Outflow = 0.01 cfs @ 12.58 hrs, Volume= 167 cf, Atten= 87%, Lag= 30.3 min
Discarded = 0.01 cfs @ 12.58 hrs, Volume= 167 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 5L : Pr. East Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 7.62' @ 12.58 hrs Surf.Area= 321 sf Storage= 60 cf

Plug-Flow detention time= 78.9 min calculated for 167 cf (100% of inflow)
Center-of-Mass det. time= 78.1 min (820.8 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	6.90'	128 cf	**Stone Storage (Prismatic)** Listed below (Recalc) 321 cf Overall x 40.0% Voids

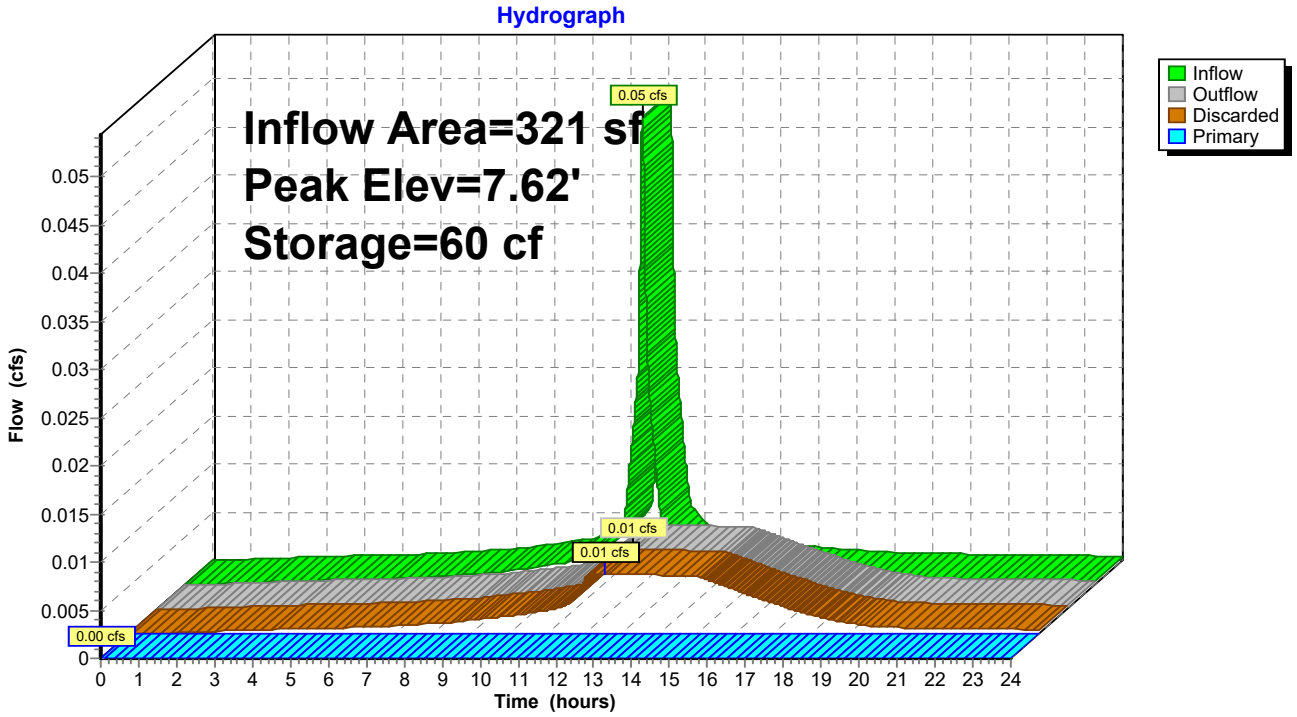
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
6.90	0	0	0
7.40	321	80	80
7.90	321	161	241
8.40	0	80	321

Device	Routing	Invert	Outlet Devices
#1	Discarded	6.90'	**0.750 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.90'	**Special & User-Defined** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

Discarded OutFlow Max=0.01 cfs @ 12.58 hrs HW=7.62' (Free Discharge)
↑**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=6.90' (Free Discharge)
↑**2=Special & User-Defined** (Controls 0.00 cfs)

Pond 2A: Pr. PP#2



Stage-Area-Storage for Pond 2A: Pr. PP#2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
6.90	0	0
6.95	32	0
7.00	64	1
7.05	96	3
7.10	128	5
7.15	161	8
7.20	193	12
7.25	225	16
7.30	257	21
7.35	289	26
7.40	**321**	32
7.45	321	39
7.50	321	45
7.55	321	51
7.60	321	58
7.65	321	64
7.70	321	71
7.75	321	77
7.80	321	83
7.85	321	90
7.90	321	96
7.95	289	102
8.00	257	108
8.05	225	113
8.10	193	117
8.15	161	120
8.20	128	123
8.25	96	126
8.30	64	127
8.35	32	128
8.40	0	**128**

Summary for Pond 2P: Pr. Infil #2

Inflow Area = 55,520 sf, 79.02% Impervious, Inflow Depth > 5.99" for 25-Year event
Inflow = 8.31 cfs @ 12.07 hrs, Volume= 27,712 cf
Outflow = 8.19 cfs @ 12.08 hrs, Volume= 22,850 cf, Atten= 1%, Lag= 0.7 min
Primary = 8.19 cfs @ 12.08 hrs, Volume= 22,850 cf
Routed to Link 5L : Pr. East Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 3
Peak Elev= 7.95' @ 12.08 hrs Surf.Area= 2,420 sf Storage= 5,482 cf

Plug-Flow detention time= 128.3 min calculated for 22,850 cf (82% of inflow)
Center-of-Mass det. time= 57.8 min (813.5 - 755.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	4.30'	2,331 cf	**44.75'W x 54.08'L x 3.75'H Field A** 9,076 cf Overall - 3,249 cf Embedded = 5,827 cf x 40.0% Voids
#2A	4.80'	3,249 cf	**ADS_StormTech SC-800 +Cap** x 63 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 63 Chambers in 9 Rows Cap Storage= 3.4 cf x 2 x 9 rows = 61.6 cf
		5,580 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.30'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=8.18 cfs @ 12.08 hrs HW=7.95' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 8.18 cfs @ 2.52 fps)

Pond 2P: Pr. Infil #2 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-800 +Cap (ADS StormTech®SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 9 rows = 61.6 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

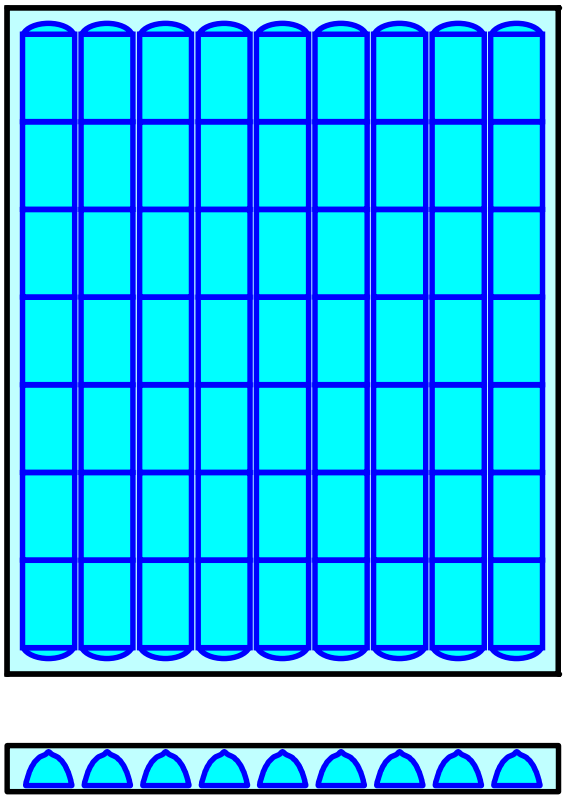
7 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 51.58' Row Length +15.0" End Stone x 2 = 54.08' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 15.0" Side Stone x 2 = 44.75' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

63 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 9 Rows = 3,248.9 cf Chamber Storage

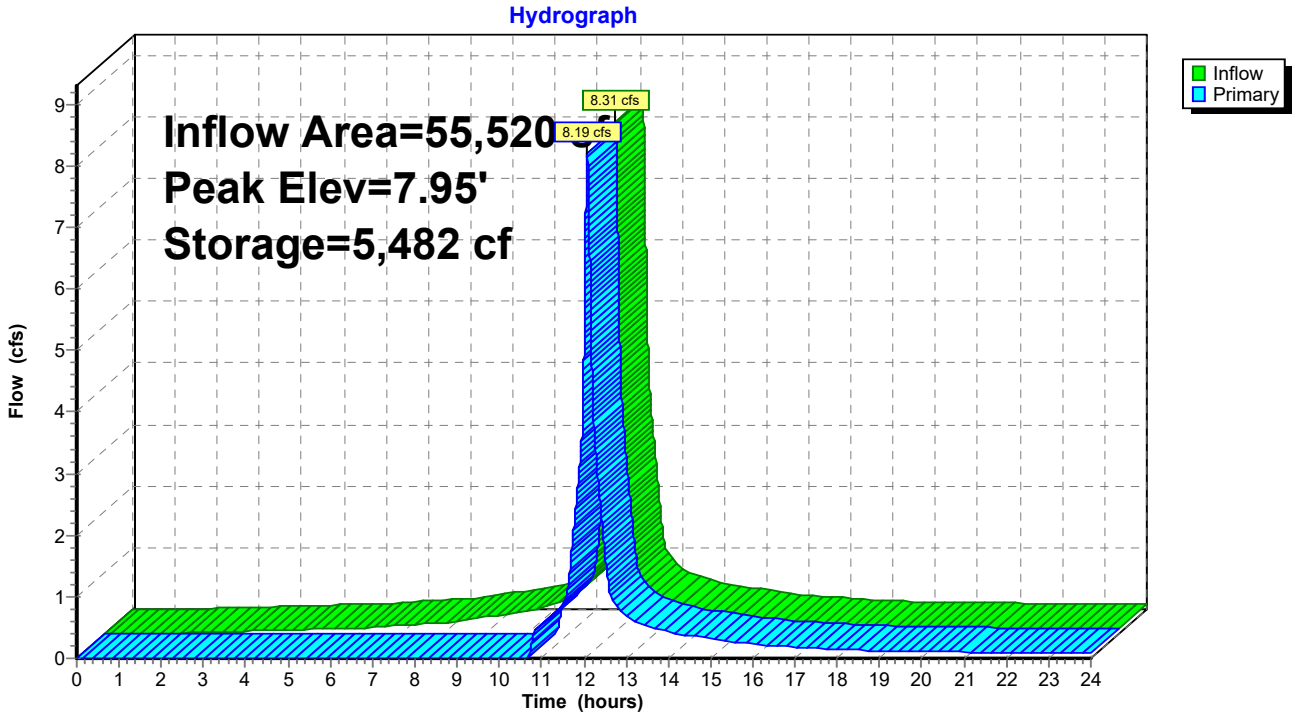
9,075.9 cf Field - 3,248.9 cf Chambers = 5,827.0 cf Stone x 40.0% Voids = 2,330.8 cf Stone Storage

Chamber Storage + Stone Storage = 5,579.7 cf = 0.128 af
Overall Storage Efficiency = 61.5%
Overall System Size = 54.08' x 44.75' x 3.75'

63 Chambers
336.1 cy Field
215.8 cy Stone



Pond 2P: Pr. Infil #2



Stage-Area-Storage for Pond 2P: Pr. Infil #2

Elevation (feet)	Storage (cubic-feet)
4.30	0
4.35	48
4.40	97
4.45	145
4.50	194
4.55	242
4.60	290
4.65	339
4.70	387
4.75	436
4.80	484
4.85	584
4.90	683
4.95	783
5.00	882
5.05	980
5.10	1,079
5.15	1,177
5.20	1,274
5.25	1,372
5.30	1,469
5.35	1,566
5.40	1,662
5.45	1,758
5.50	1,853
5.55	1,948
5.60	2,043
5.65	2,137
5.70	2,231
5.75	2,324
5.80	2,417
5.85	2,510
5.90	2,601
5.95	2,693
6.00	2,783
6.05	2,873
6.10	2,963
6.15	3,052
6.20	3,140
6.25	3,227
6.30	3,314
6.35	3,400
6.40	3,486
6.45	3,570
6.50	3,654
6.55	3,737
6.60	3,819
6.65	3,900
6.70	3,980
6.75	4,059
6.80	4,137
6.85	4,214
6.90	4,289
6.95	4,364
7.00	4,437
7.05	4,508
7.10	4,577
7.15	4,645
7.20	4,710
7.25	4,772
7.30	4,831
7.35	4,888
7.40	4,942
7.45	4,995
7.50	5,046
7.55	5,096
7.60	5,144
7.65	5,192
7.70	5,241
7.75	5,289
7.80	5,338
7.85	5,386
7.90	5,434
7.95	5,483
8.00	5,531
8.05	**5,580**

Summary for Pond 3A: Pr. PP#3

Inflow Area = 643 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.10 cfs @ 12.07 hrs, Volume= 334 cf
Outflow = 0.01 cfs @ 12.57 hrs, Volume= 334 cf, Atten= 87%, Lag= 30.2 min
Discarded = 0.01 cfs @ 12.57 hrs, Volume= 334 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 5L : Pr. East Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 7.54' @ 12.57 hrs Surf.Area= 643 sf Storage= 125 cf

Plug-Flow detention time= 88.9 min calculated for 334 cf (100% of inflow)
Center-of-Mass det. time= 87.8 min (830.4 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	6.70'	257 cf	**Stone Storage (Prismatic)** Listed below (Recalc) 643 cf Overall x 40.0% Voids

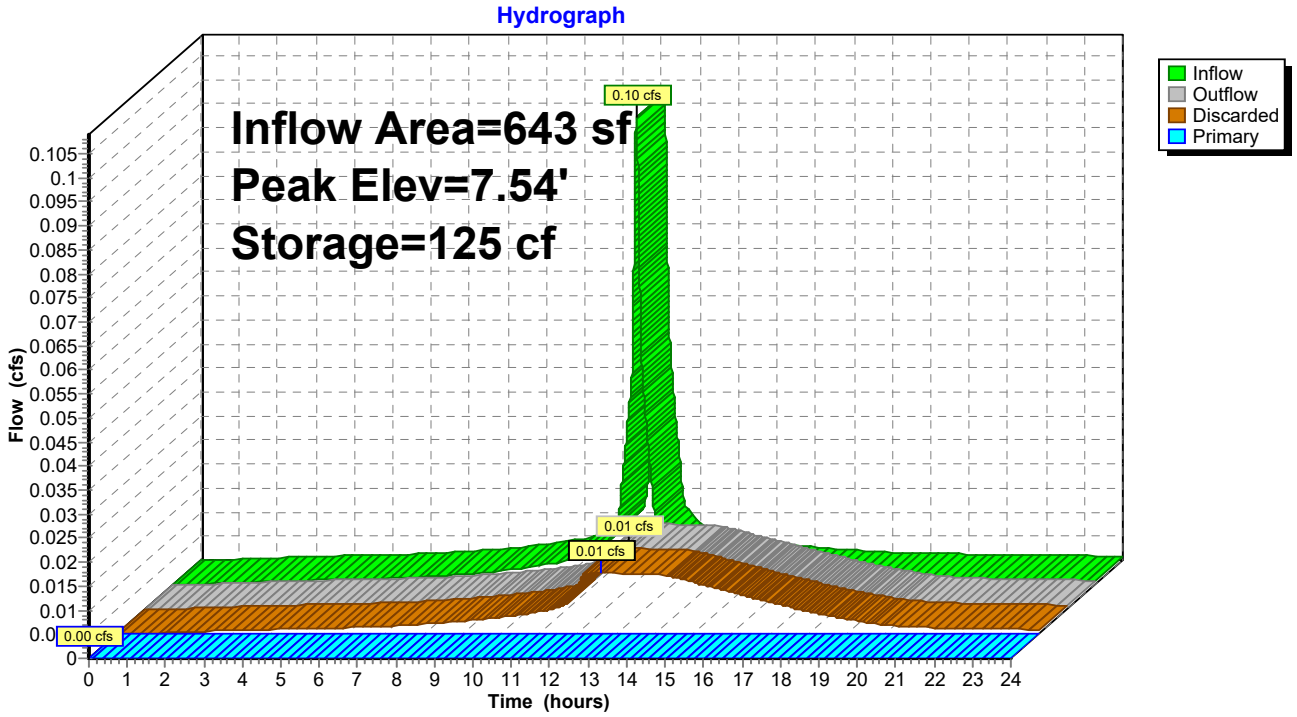
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
6.70	0	0	0
7.40	643	225	225
7.70	643	193	418
8.40	0	225	643

Device	Routing	Invert	Outlet Devices
#1	Discarded	6.70'	**0.750 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.70'	**Special & User-Defined** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

Discarded OutFlow Max=0.01 cfs @ 12.57 hrs HW=7.54' (Free Discharge)
↑**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=6.70' (Free Discharge)
↑**2=Special & User-Defined** (Controls 0.00 cfs)

Pond 3A: Pr. PP#3



Stage-Area-Storage for Pond 3A: Pr. PP#3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
6.70	0	0
6.75	46	0
6.80	92	2
6.85	138	4
6.90	184	7
6.95	230	11
7.00	276	17
7.05	321	23
7.10	367	29
7.15	413	37
7.20	459	46
7.25	505	56
7.30	551	66
7.35	597	78
7.40	**643**	90
7.45	643	103
7.50	643	116
7.55	643	129
7.60	643	141
7.65	643	154
7.70	643	167
7.75	597	180
7.80	551	191
7.85	505	202
7.90	459	211
7.95	413	220
8.00	367	228
8.05	321	235
8.10	276	241
8.15	230	246
8.20	184	250
8.25	138	253
8.30	92	255
8.35	46	257
8.40	0	**257**

Summary for Pond 4A: Pr. PP#4

Inflow Area = 1,625 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.25 cfs @ 12.07 hrs, Volume= 845 cf
Outflow = 0.11 cfs @ 12.21 hrs, Volume= 843 cf, Atten= 54%, Lag= 8.6 min
Discarded = 0.03 cfs @ 12.21 hrs, Volume= 778 cf
Primary = 0.09 cfs @ 12.21 hrs, Volume= 65 cf
Routed to Link 5L : Pr. East Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 8.00' @ 12.21 hrs Surf.Area= 1,255 sf Storage= 284 cf

Plug-Flow detention time= 105.3 min calculated for 843 cf (100% of inflow)
Center-of-Mass det. time= 103.8 min (846.5 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	7.00'	346 cf	**Stone Storage (Prismatic)** Listed below (Recalc) 864 cf Overall x 40.0% Voids

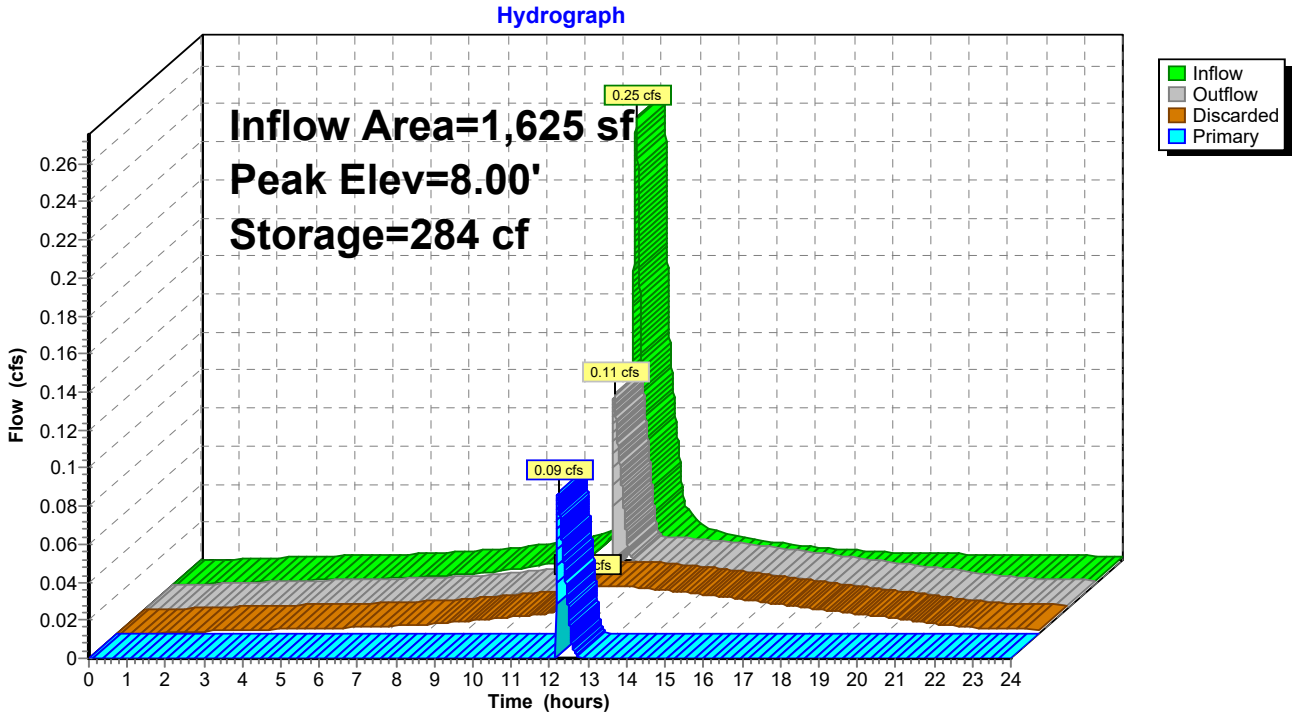
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
7.00	0	0	0
7.25	455	57	57
8.00	1,273	648	705
8.25	0	159	864

Device	Routing	Invert	Outlet Devices
#1	Discarded	7.00'	**0.750 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	8.00'	**Special & User-Defined** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

Discarded OutFlow Max=0.03 cfs @ 12.21 hrs HW=8.00' (Free Discharge)
↑**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.09 cfs @ 12.21 hrs HW=8.00' (Free Discharge)
↑**2=Special & User-Defined** (Custom Controls 0.09 cfs)

Pond 4A: Pr. PP#4



Stage-Area-Storage for Pond 4A: Pr. PP#4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
7.00	0	0
7.05	91	1
7.10	182	4
7.15	273	8
7.20	364	15
7.25	455	23
7.30	510	32
7.35	564	43
7.40	619	55
7.45	673	68
7.50	728	82
7.55	782	97
7.60	837	113
7.65	891	130
7.70	946	149
7.75	1,000	168
7.80	1,055	189
7.85	1,109	210
7.90	1,164	233
7.95	1,218	257
8.00	**1,273**	282
8.05	1,018	305
8.10	764	323
8.15	509	335
8.20	255	343
8.25	0	**346**
8.30	0	346
8.35	0	346
8.40	0	346
8.45	0	346
8.50	0	346

Summary for Pond 5A: Pr. PP#5

Inflow Area = 961 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.15 cfs @ 12.07 hrs, Volume= 499 cf
Outflow = 0.10 cfs @ 12.14 hrs, Volume= 496 cf, Atten= 29%, Lag= 4.2 min
Discarded = 0.02 cfs @ 12.59 hrs, Volume= 445 cf
Primary = 0.08 cfs @ 12.14 hrs, Volume= 50 cf
Routed to Link 5L : Pr. East Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 7.85' @ 12.14 hrs Surf.Area= 952 sf Storage= 147 cf

Plug-Flow detention time= 83.8 min calculated for 496 cf (99% of inflow)
Center-of-Mass det. time= 78.6 min (821.2 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	6.85'	223 cf	**Stone Storage (Prismatic)** Listed below (Recalc) 558 cf Overall x 40.0% Voids

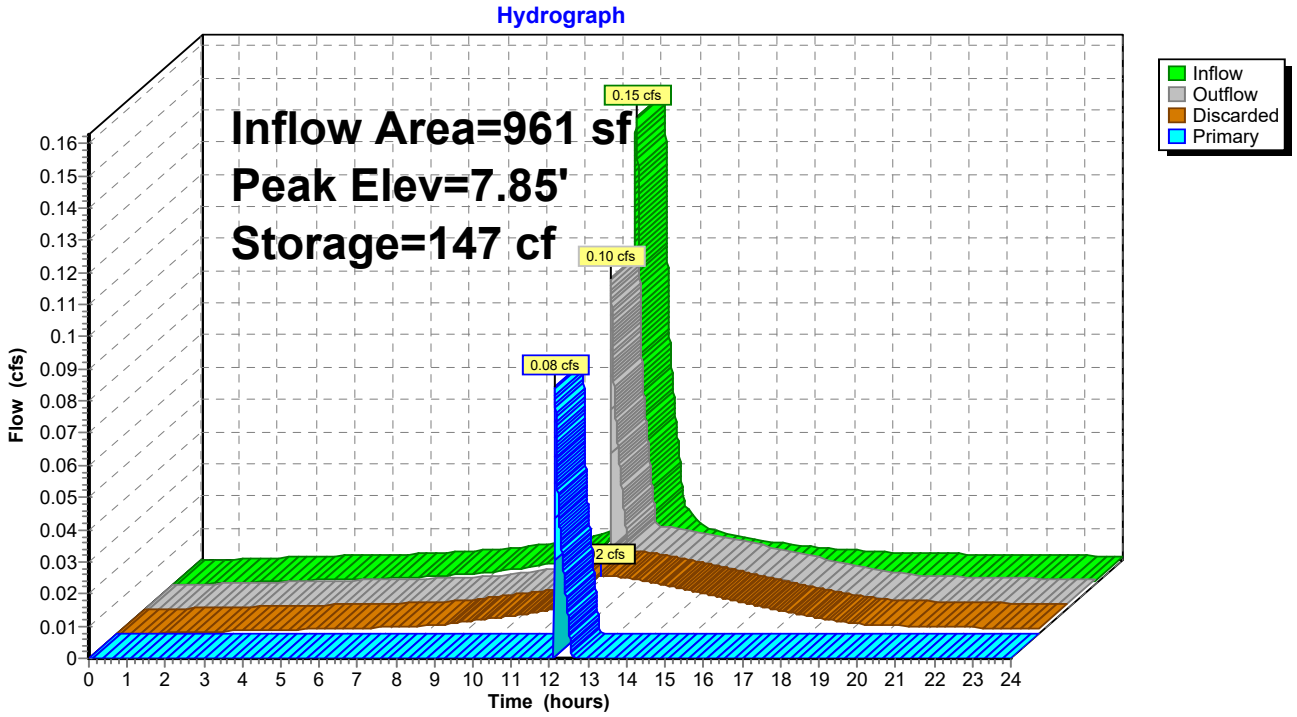
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
6.85	0	0	0
7.25	155	31	31
7.85	960	334	365
8.25	0	192	558

Device	Routing	Invert	Outlet Devices
#1	Discarded	6.85'	**0.750 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.85'	**Special & User-Defined** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

Discarded OutFlow Max=0.02 cfs @ 12.59 hrs HW=7.85' (Free Discharge)
↑**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.08 cfs @ 12.14 hrs HW=7.85' (Free Discharge)
↑**2=Special & User-Defined** (Custom Controls 0.08 cfs)

Pond 5A: Pr. PP#5



Stage-Area-Storage for Pond 5A: Pr. PP#5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
6.85	0	0
6.90	19	0
6.95	39	1
7.00	58	2
7.05	78	3
7.10	97	5
7.15	116	7
7.20	136	9
7.25	155	12
7.30	222	16
7.35	289	21
7.40	356	28
7.45	423	36
7.50	490	45
7.55	558	55
7.60	625	67
7.65	692	80
7.70	759	95
7.75	826	110
7.80	893	128
7.85	**960**	146
7.90	840	164
7.95	720	180
8.00	600	193
8.05	480	204
8.10	360	212
8.15	240	218
8.20	120	222
8.25	0	**223**
8.30	0	223
8.35	0	223

Summary for Pond 13P: Pr. PP#6

Inflow Area = 372 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.06 cfs @ 12.07 hrs, Volume= 193 cf
Outflow = 0.01 cfs @ 12.55 hrs, Volume= 193 cf, Atten= 85%, Lag= 28.5 min
Discarded = 0.01 cfs @ 12.55 hrs, Volume= 193 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : Pr. West Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 5.69' @ 12.55 hrs Surf.Area= 369 sf Storage= 73 cf

Plug-Flow detention time= 92.8 min calculated for 193 cf (100% of inflow)
Center-of-Mass det. time= 91.2 min (833.8 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	4.70'	149 cf	**Stone Storage (Prismatic)** Listed below (Recalc) 372 cf Overall x 40.0% Voids

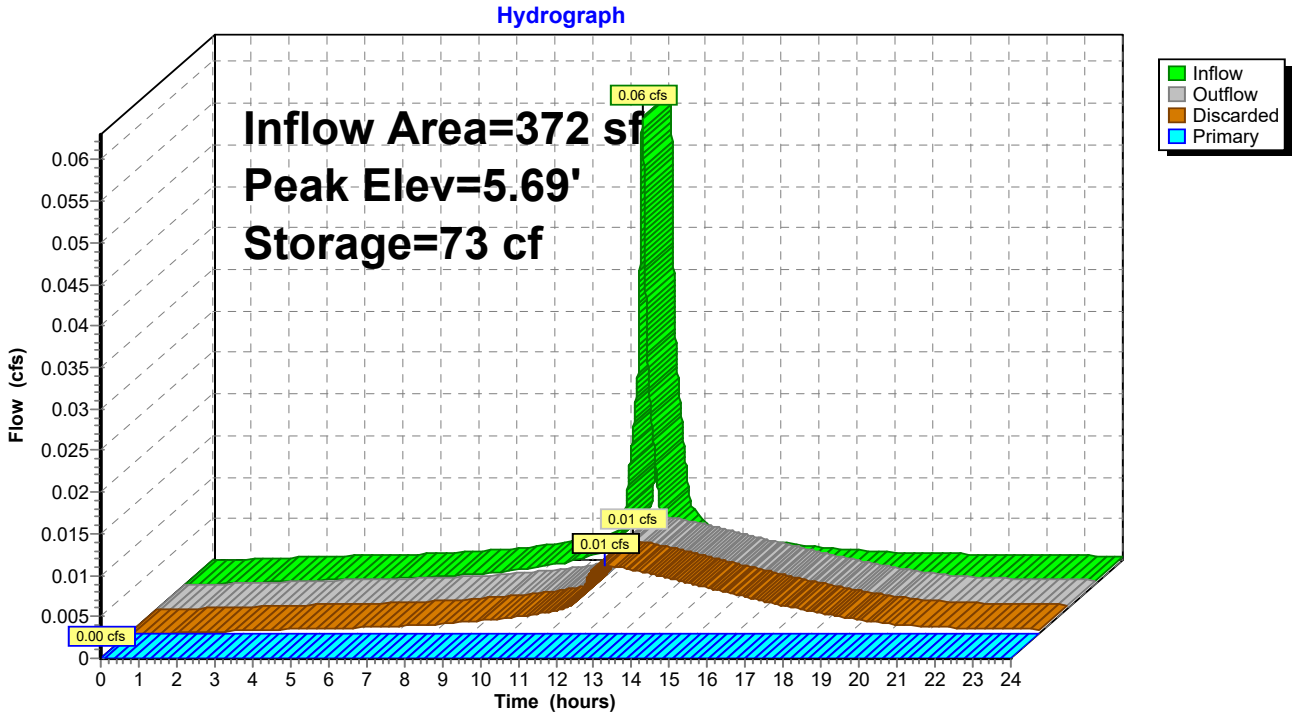
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.70	0	0	0
5.70	372	186	186
6.70	0	186	372

Device	Routing	Invert	Outlet Devices
#1	Discarded	4.70'	**0.750 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	5.70'	**5.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.01 cfs @ 12.55 hrs HW=5.69' (Free Discharge)
↑**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=4.70' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 13P: Pr. PP#6



Stage-Area-Storage for Pond 13P: Pr. PP#6

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.70	0	0
4.75	19	0
4.80	37	1
4.85	56	2
4.90	74	3
4.95	93	5
5.00	112	7
5.05	130	9
5.10	149	12
5.15	167	15
5.20	186	19
5.25	205	23
5.30	223	27
5.35	242	31
5.40	260	36
5.45	279	42
5.50	298	48
5.55	316	54
5.60	335	60
5.65	353	67
5.70	**372**	74
5.75	353	82
5.80	335	89
5.85	316	95
5.90	298	101
5.95	279	107
6.00	260	112
6.05	242	117
6.10	223	122
6.15	205	126
6.20	186	130
6.25	167	134
6.30	149	137
6.35	130	140
6.40	112	142
6.45	93	144
6.50	74	146
6.55	56	147
6.60	37	148
6.65	19	149
6.70	0	**149**

Summary for Pond 15P: Pr. PP#7

Inflow Area = 673 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.10 cfs @ 12.07 hrs, Volume= 350 cf
Outflow = 0.01 cfs @ 12.56 hrs, Volume= 349 cf, Atten= 86%, Lag= 29.1 min
Discarded = 0.01 cfs @ 12.56 hrs, Volume= 349 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 5L : Pr. East Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 5.84' @ 12.56 hrs Surf.Area= 523 sf Storage= 106 cf

Plug-Flow detention time= 51.3 min calculated for 349 cf (100% of inflow)
Center-of-Mass det. time= 50.2 min (792.8 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	5.40'	322 cf	**Stone Storage (Prismatic)** Listed below (Recalc) 805 cf Overall x 40.0% Voids

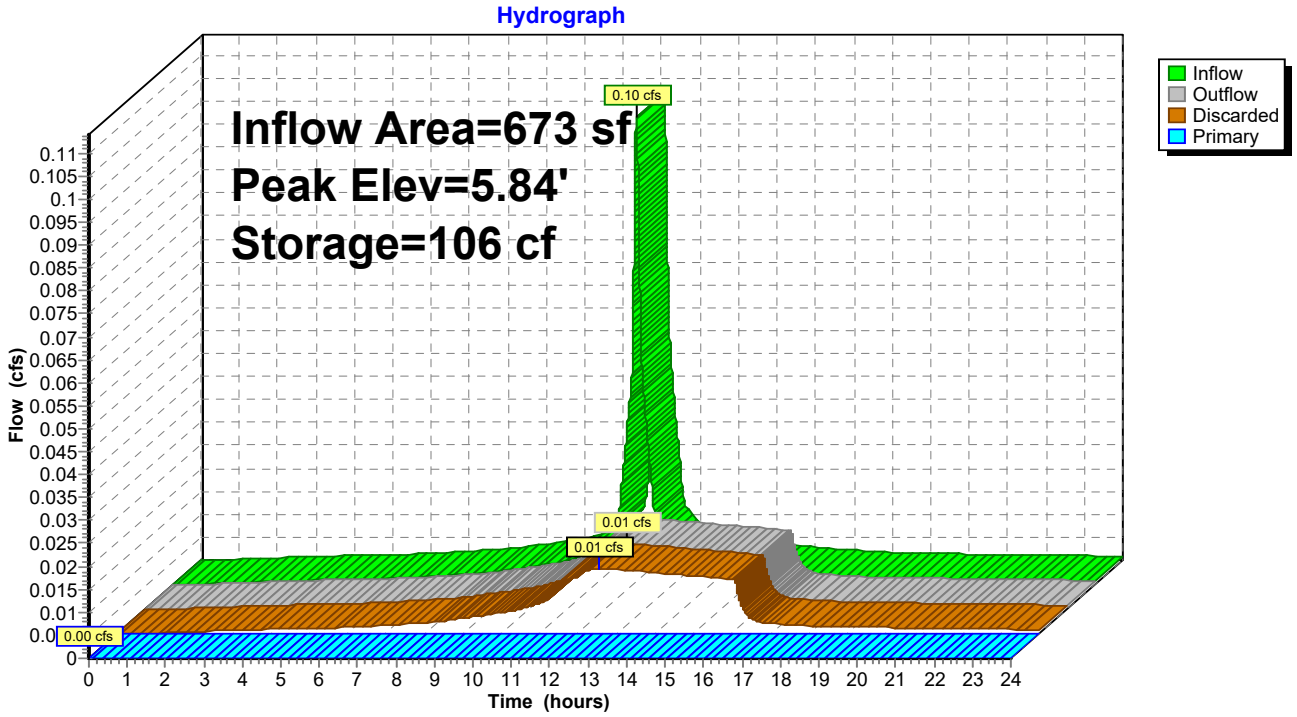
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
5.40	673	0	0
6.40	335	504	504
8.20	0	301	805

Device	Routing	Invert	Outlet Devices
#1	Discarded	5.40'	**0.750 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	6.40'	**Special & User-Defined** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

Discarded OutFlow Max=0.01 cfs @ 12.56 hrs HW=5.84' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=5.40' (Free Discharge)
↑—**2=Special & User-Defined** (Controls 0.00 cfs)

Pond 15P: Pr. PP#7



Stage-Area-Storage for Pond 15P: Pr. PP#7

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
5.40	**673**	0
5.45	656	13
5.50	639	26
5.55	622	39
5.60	605	51
5.65	589	63
5.70	572	75
5.75	555	86
5.80	538	97
5.85	521	107
5.90	504	118
5.95	487	128
6.00	470	137
6.05	453	146
6.10	436	155
6.15	420	164
6.20	403	172
6.25	386	180
6.30	369	188
6.35	352	195
6.40	335	202
6.45	326	208
6.50	316	215
6.55	307	221
6.60	298	227
6.65	288	233
6.70	279	238
6.75	270	244
6.80	261	249
6.85	251	254
6.90	242	259
6.95	233	264
7.00	223	269
7.05	214	273
7.10	205	277
7.15	195	281
7.20	186	285
7.25	177	289
7.30	167	292
7.35	158	295
7.40	149	298
7.45	140	301
7.50	130	304
7.55	121	306
7.60	112	309
7.65	102	311
7.70	93	313
7.75	84	315
7.80	74	316
7.85	65	318
7.90	56	319
7.95	47	320
8.00	37	321
8.05	28	321
8.10	19	322
8.15	9	322
8.20	0	**322**

Summary for Pond 17P: Pr. PP#8

Inflow Area = 333 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.05 cfs @ 12.07 hrs, Volume= 173 cf
Outflow = 0.01 cfs @ 12.57 hrs, Volume= 173 cf, Atten= 87%, Lag= 30.2 min
Discarded = 0.01 cfs @ 12.57 hrs, Volume= 173 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 5L : Pr. East Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 7.38' @ 12.57 hrs Surf.Area= 333 sf Storage= 64 cf

Plug-Flow detention time= 83.4 min calculated for 173 cf (100% of inflow)
Center-of-Mass det. time= 82.4 min (825.0 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	6.60'	133 cf	**Stone Storage (Prismatic)** Listed below (Recalc) 333 cf Overall x 40.0% Voids

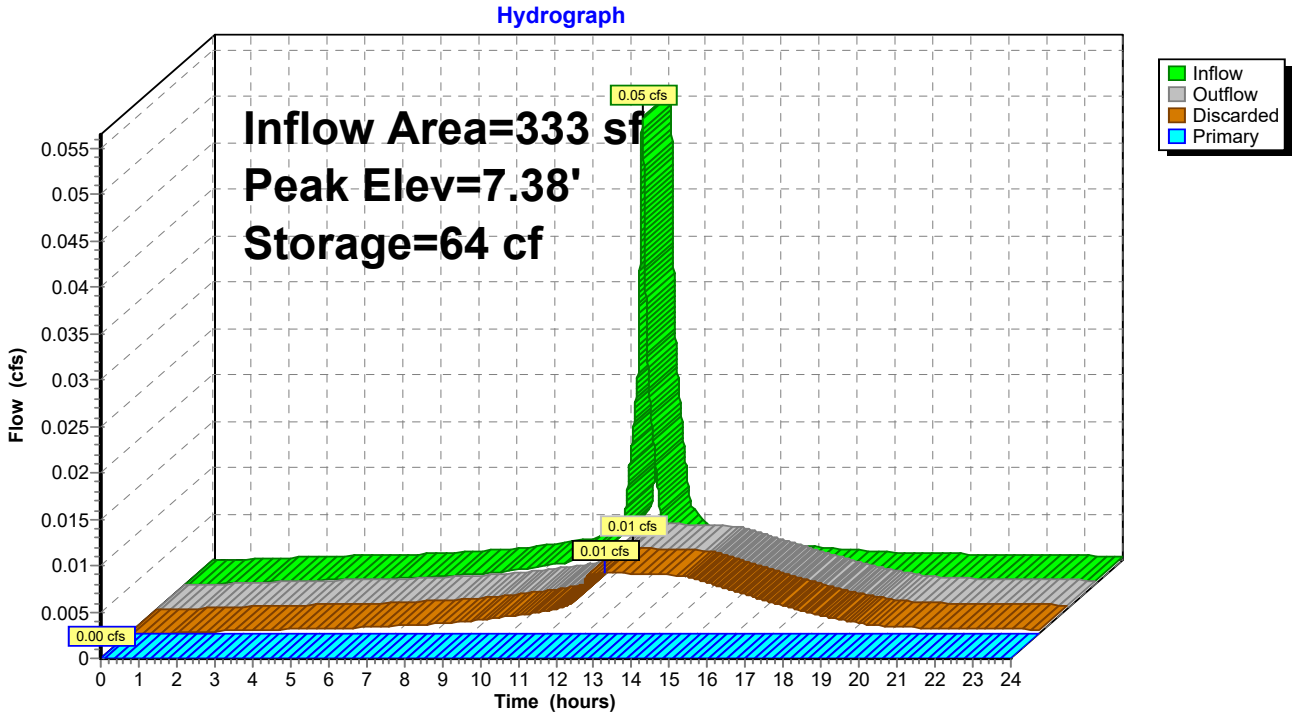
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
6.60	0	0	0
7.20	333	100	100
7.60	333	133	233
8.20	0	100	333

Device	Routing	Invert	Outlet Devices
#1	Discarded	6.60'	**0.750 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.60'	**Special & User-Defined** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

Discarded OutFlow Max=0.01 cfs @ 12.57 hrs HW=7.38' (Free Discharge)
↑**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=6.60' (Free Discharge)
↑**2=Special & User-Defined** (Controls 0.00 cfs)

Pond 17P: Pr. PP#8



Stage-Area-Storage for Pond 17P: Pr. PP#8

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
6.60	0	0
6.65	28	0
6.70	55	1
6.75	83	2
6.80	111	4
6.85	139	7
6.90	166	10
6.95	194	14
7.00	222	18
7.05	250	22
7.10	277	28
7.15	305	34
7.20	**333**	40
7.25	**333**	47
7.30	333	53
7.35	333	60
7.40	333	67
7.45	333	73
7.50	333	80
7.55	333	87
7.60	333	93
7.65	305	100
7.70	278	105
7.75	250	111
7.80	222	115
7.85	194	120
7.90	167	123
7.95	139	126
8.00	111	129
8.05	83	131
8.10	55	132
8.15	28	133
8.20	0	**133**

Summary for Pond 21P: Pr. PP#9

Inflow Area = 1,080 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 561 cf
Outflow = 0.02 cfs @ 12.58 hrs, Volume= 560 cf, Atten= 87%, Lag= 30.5 min
Discarded = 0.02 cfs @ 12.58 hrs, Volume= 560 cf
Primary = 0.00 cfs @ 12.58 hrs, Volume= 1 cf
Routed to Link 5L : Pr. East Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 7.50' @ 12.58 hrs Surf.Area= 854 sf Storage= 222 cf

Plug-Flow detention time= 112.9 min calculated for 560 cf (100% of inflow)
Center-of-Mass det. time= 111.4 min (854.1 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	6.50'	342 cf	**Stone Storage (Prismatic)** Listed below (Recalc) 854 cf Overall x 40.0% Voids

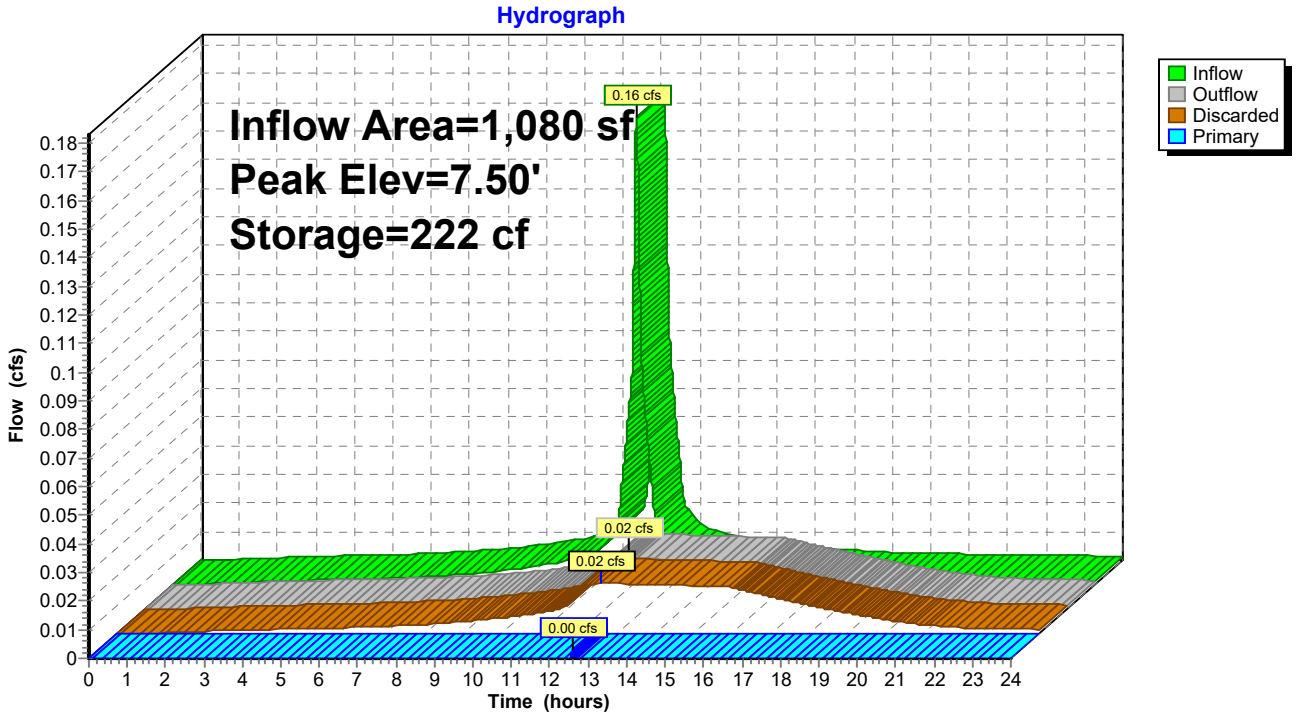
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
6.50	0	0	0
7.20	854	299	299
7.50	854	256	555
8.20	0	299	854

Device	Routing	Invert	Outlet Devices
#1	Discarded	6.50'	**0.750 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.50'	**Special & User-Defined** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

Discarded OutFlow Max=0.02 cfs @ 12.58 hrs HW=7.50' (Free Discharge)
↑**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 12.58 hrs HW=7.50' (Free Discharge)
↑**2=Special & User-Defined** (Custom Controls 0.00 cfs)

Pond 21P: Pr. PP#9



Stage-Area-Storage for Pond 21P: Pr. PP#9

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
6.50	0	0
6.55	61	1
6.60	122	2
6.65	183	5
6.70	244	10
6.75	305	15
6.80	366	22
6.85	427	30
6.90	488	39
6.95	549	49
7.00	610	61
7.05	671	74
7.10	732	88
7.15	793	103
7.20	**854**	120
7.25	854	137
7.30	854	154
7.35	854	171
7.40	854	188
7.45	854	205
7.50	854	222
7.55	793	239
7.60	732	254
7.65	671	268
7.70	610	281
7.75	549	292
7.80	488	303
7.85	427	312
7.90	366	320
7.95	305	326
8.00	244	332
8.05	183	336
8.10	122	339
8.15	61	341
8.20	0	**342**

Summary for Pond 23P: Pr. PP#10

Inflow Area = 699 sf,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.11 cfs @ 12.07 hrs, Volume= 363 cf
Outflow = 0.01 cfs @ 12.57 hrs, Volume= 363 cf, Atten= 87%, Lag= 30.1 min
Discarded = 0.01 cfs @ 12.57 hrs, Volume= 363 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 5L : Pr. East Out

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs / 2
Peak Elev= 7.20' @ 12.57 hrs Surf.Area= 699 sf Storage= 132 cf

Plug-Flow detention time= 80.3 min calculated for 363 cf (100% of inflow)
Center-of-Mass det. time= 79.5 min (822.1 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	6.45'	280 cf	**Stone Storage (Prismatic)** Listed below (Recalc) 699 cf Overall x 40.0% Voids

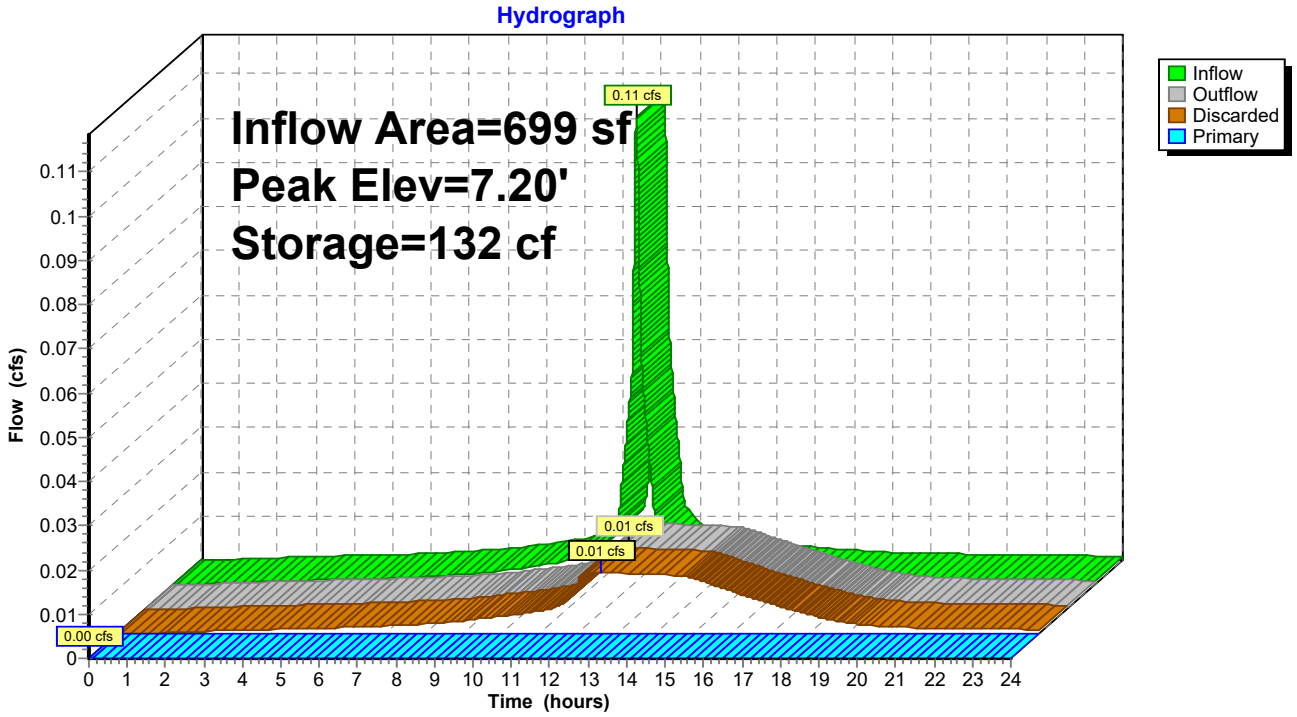
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
6.45	0	0	0
7.00	699	192	192
7.45	699	315	507
8.00	0	192	699

Device	Routing	Invert	Outlet Devices
#1	Discarded	6.45'	**0.750 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.45'	**Special & User-Defined** Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

Discarded OutFlow Max=0.01 cfs @ 12.57 hrs HW=7.20' (Free Discharge)
1=Exfiltration (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=6.45' (Free Discharge)
2=Special & User-Defined (Controls 0.00 cfs)

Pond 23P: Pr. PP#10



Stage-Area-Storage for Pond 23P: Pr. PP#10

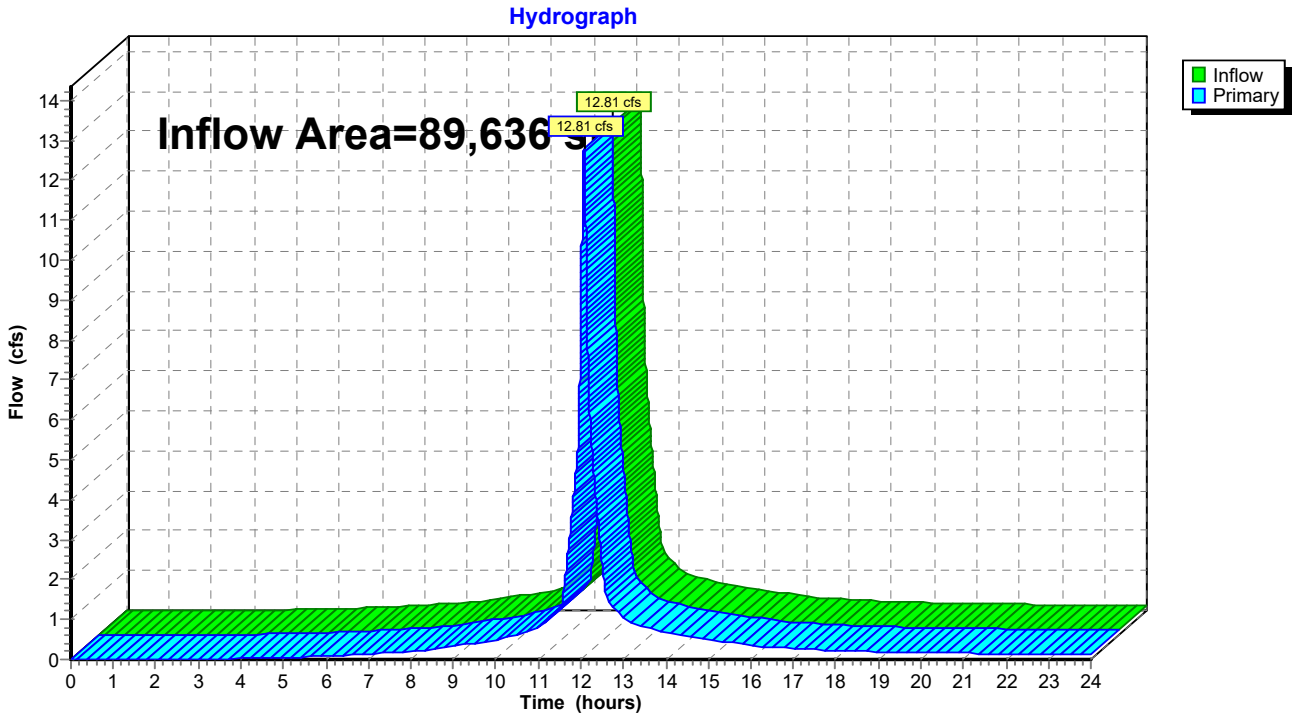
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
6.45	0	0
6.50	64	1
6.55	127	3
6.60	191	6
6.65	254	10
6.70	318	16
6.75	381	23
6.80	445	31
6.85	508	41
6.90	572	51
6.95	635	64
7.00	**699**	77
7.05	699	91
7.10	699	105
7.15	699	119
7.20	699	133
7.25	699	147
7.30	699	161
7.35	699	175
7.40	699	189
7.45	699	203
7.50	635	216
7.55	572	228
7.60	508	239
7.65	445	248
7.70	381	257
7.75	318	264
7.80	254	269
7.85	191	274
7.90	127	277
7.95	64	279
8.00	0	**280**

Summary for Link 1L: Ex. West Out

Inflow Area = 89,636 sf, 23.65% Impervious, Inflow Depth > 5.44" for 25-Year event
Inflow = 12.81 cfs @ 12.07 hrs, Volume= 40,623 cf
Primary = 12.81 cfs @ 12.07 hrs, Volume= 40,623 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : Ex. Outfall

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 1L: Ex. West Out

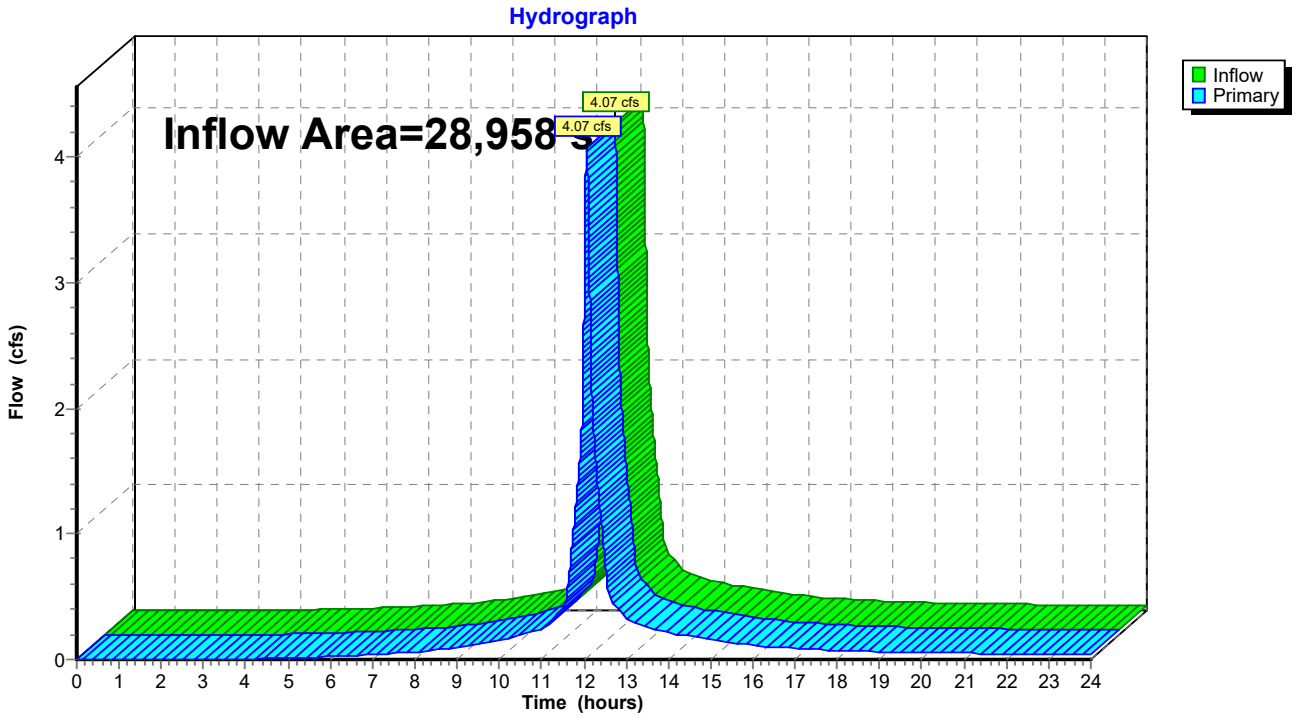


Summary for Link 2L: Ex. East Out

Inflow Area = 28,958 sf, 10.38% Impervious, Inflow Depth > 5.30" for 25-Year event
Inflow = 4.07 cfs @ 12.07 hrs, Volume= 12,795 cf
Primary = 4.07 cfs @ 12.07 hrs, Volume= 12,795 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : Ex. Outfall

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 2L: Ex. East Out

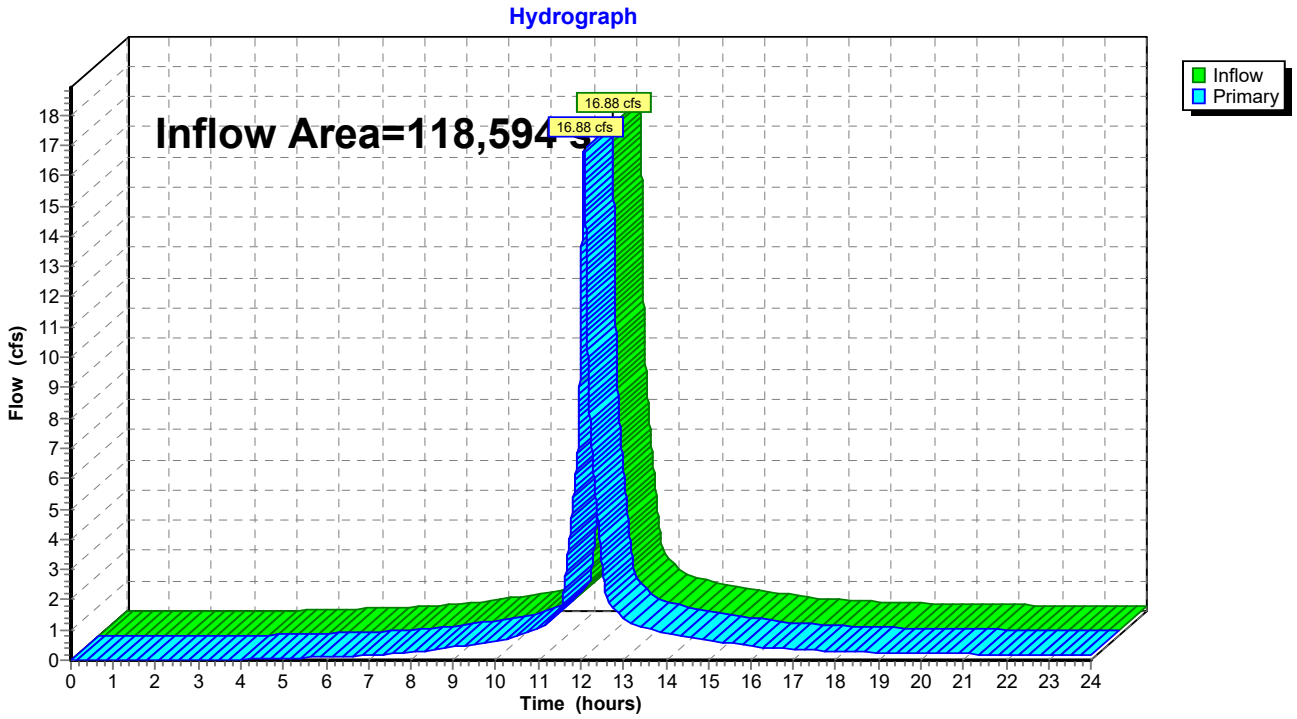


Summary for Link 3L: Ex. Outfall

Inflow Area = 118,594 sf, 20.41% Impervious, Inflow Depth > 5.41" for 25-Year event
Inflow = 16.88 cfs @ 12.07 hrs, Volume= 53,417 cf
Primary = 16.88 cfs @ 12.07 hrs, Volume= 53,417 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 3L: Ex. Outfall

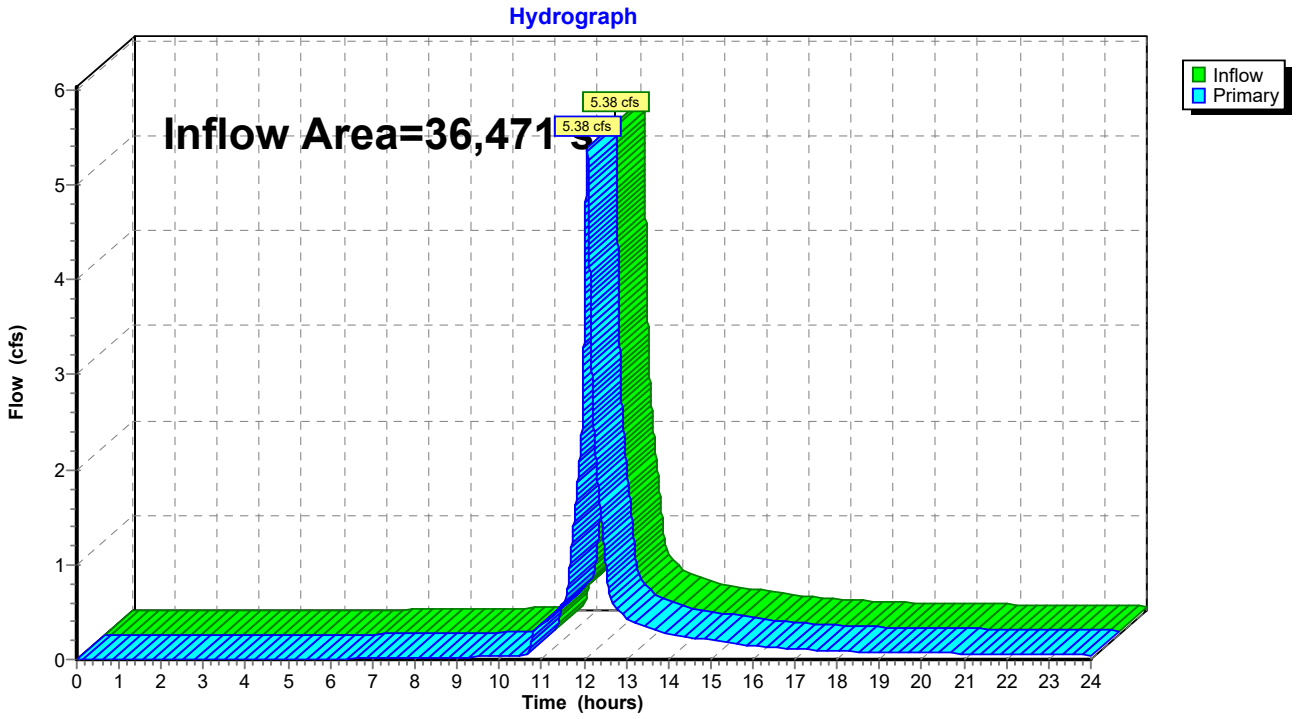


Summary for Link 4L: Pr. West Out

Inflow Area = 36,471 sf, 97.09% Impervious, Inflow Depth > 5.00" for 25-Year event
Inflow = 5.38 cfs @ 12.08 hrs, Volume= 15,188 cf
Primary = 5.38 cfs @ 12.08 hrs, Volume= 15,188 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 6L : Pr. Outfall

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 4L: Pr. West Out

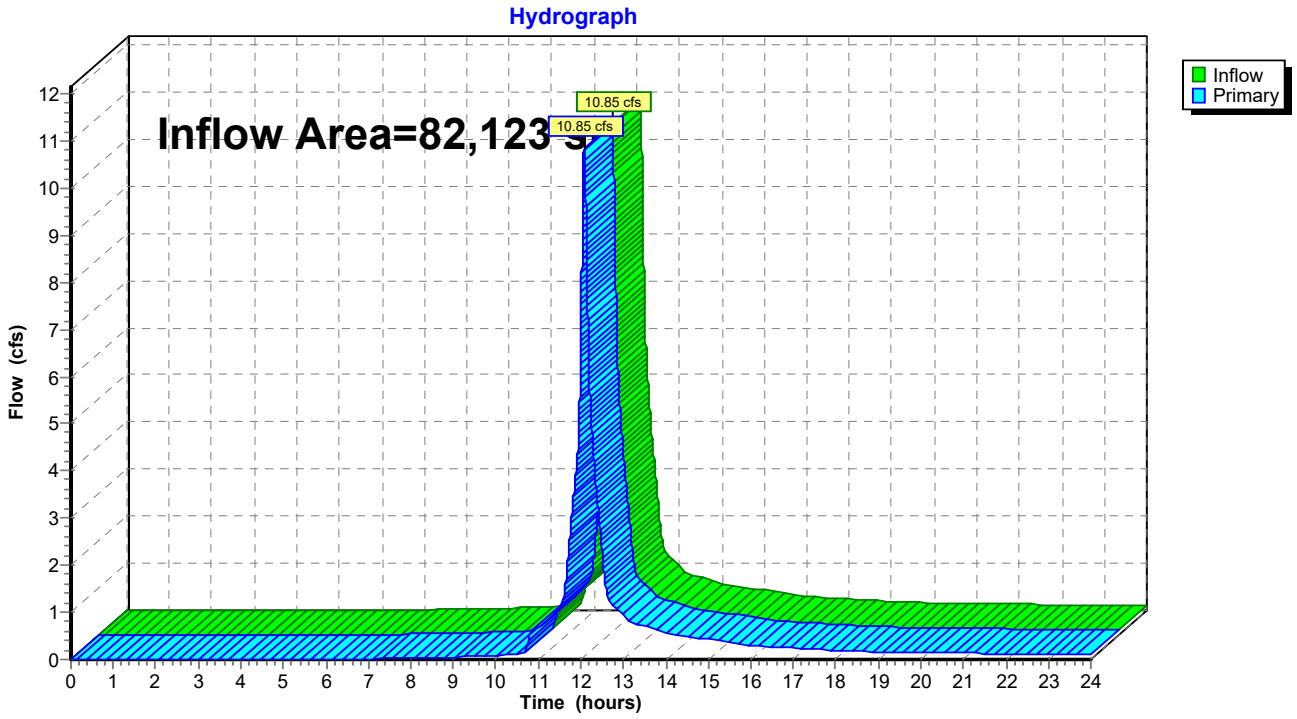


Summary for Link 5L: Pr. East Out

Inflow Area = 82,123 sf, 66.34% Impervious, Inflow Depth > 4.56" for 25-Year event
Inflow = 10.85 cfs @ 12.08 hrs, Volume= 31,207 cf
Primary = 10.85 cfs @ 12.08 hrs, Volume= 31,207 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 6L : Pr. Outfall

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 5L: Pr. East Out

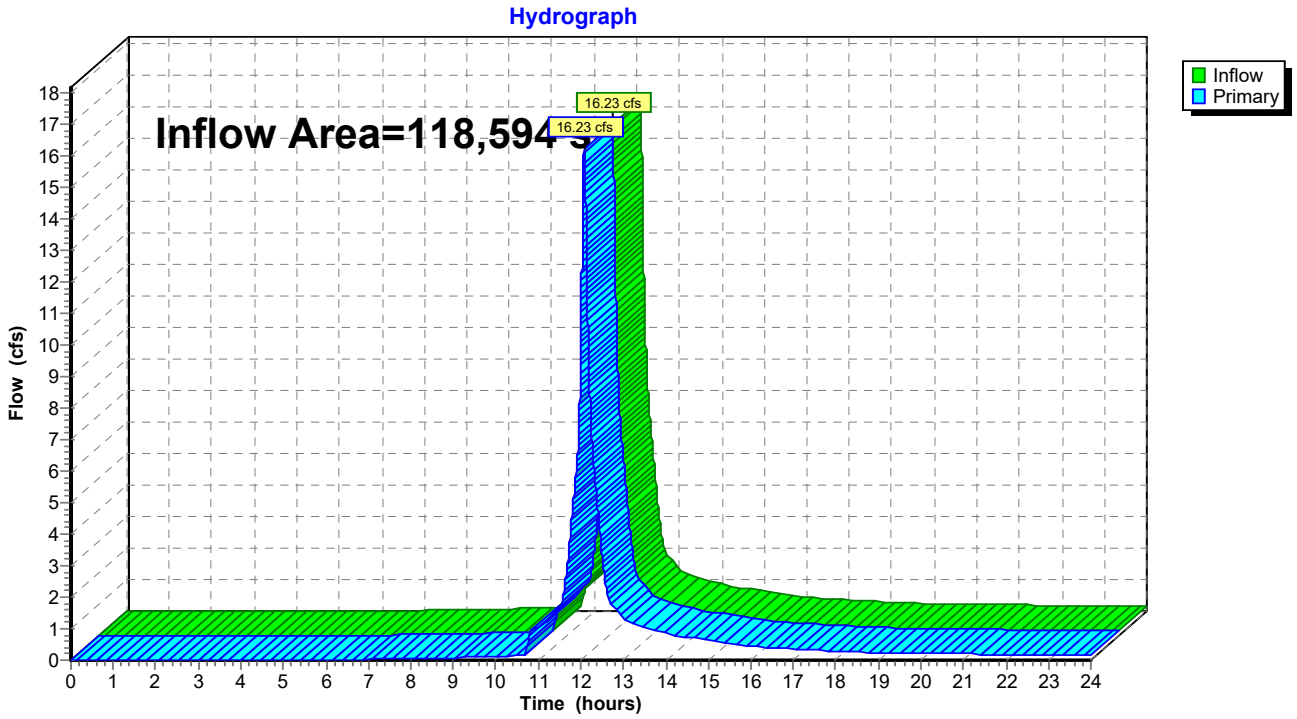


Summary for Link 6L: Pr. Outfall

Inflow Area = 118,594 sf, 75.79% Impervious, Inflow Depth > 4.69" for 25-Year event
Inflow = 16.23 cfs @ 12.08 hrs, Volume= 46,395 cf
Primary = 16.23 cfs @ 12.08 hrs, Volume= 46,395 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 6L: Pr. Outfall



Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. West Runoff Area=89,636 sf 23.65% Impervious Runoff Depth>6.28"
Tc=5.0 min CN=91.13 Runoff=14.67 cfs 46,939 cf

Subcatchment2S: Ex. East Runoff Area=28,958 sf 10.38% Impervious Runoff Depth>6.14"
Tc=5.0 min CN=89.93 Runoff=4.68 cfs 14,826 cf

Subcatchment3S: Pr. Infil #1 Runoff Area=30,322 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=5.20 cfs 17,930 cf

Subcatchment4S: Pr. West Bypass Runoff Area=5,159 sf 79.43% Impervious Runoff Depth>6.66"
Tc=5.0 min CN=94.30 Runoff=0.87 cfs 2,862 cf

Subcatchment5S: Ex. East Bypass Runoff Area=20,268 sf 21.08% Impervious Runoff Depth>5.71"
Tc=5.0 min CN=86.15 Runoff=3.12 cfs 9,637 cf

Subcatchment6S: Pr. Infil #2 Runoff Area=55,520 sf 79.02% Impervious Runoff Depth>6.85"
Tc=5.0 min CN=95.90 Runoff=9.44 cfs 31,674 cf

Subcatchment7S: Pr. Perm Pavers #1 Runoff Area=618 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.11 cfs 365 cf

Subcatchment8S: Pr. Perm Pavers #2 Runoff Area=321 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.06 cfs 190 cf

Subcatchment9S: Pr. Perm Pavers #3 Runoff Area=643 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.11 cfs 380 cf

Subcatchment10S: Pr. Perm Pavers #4 Runoff Area=1,625 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.28 cfs 961 cf

Subcatchment11S: Pr. Perm Pavers #5 Runoff Area=961 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.16 cfs 568 cf

Subcatchment12S: Pr. Perm Pavers #6 Runoff Area=372 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.06 cfs 220 cf

Subcatchment14S: Pr. Perm Pavers #7 Runoff Area=673 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.12 cfs 398 cf

Subcatchment16S: Pr. Perm Pavers #8 Runoff Area=333 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.06 cfs 197 cf

Subcatchment20S: Pr. Perm Pavers #9 Runoff Area=1,080 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.19 cfs 639 cf

Subcatchment22S: Pr. Perm Pavers #10 Runoff Area=699 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98.00 Runoff=0.12 cfs 413 cf

Pond 1A: Pr. PP#1 Peak Elev=6.03' Storage=85 cf Inflow=0.11 cfs 365 cf
Discarded=0.00 cfs 229 cf Primary=0.10 cfs 111 cf Outflow=0.11 cfs 340 cf

Pond 1P: Pr. Infil #1 Peak Elev=7.49' Storage=3,435 cf Inflow=5.20 cfs 17,930 cf
Outflow=5.15 cfs 14,781 cf

Pond 2A: Pr. PP#2 Peak Elev=7.70' Storage=71 cf Inflow=0.06 cfs 190 cf
Discarded=0.01 cfs 190 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 190 cf

Pond 2P: Pr. Infil #2 Peak Elev=8.00' Storage=5,530 cf Inflow=9.44 cfs 31,674 cf
Outflow=9.32 cfs 26,808 cf

Pond 3A: Pr. PP#3 Peak Elev=7.62' Storage=147 cf Inflow=0.11 cfs 380 cf
Discarded=0.01 cfs 380 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 380 cf

Pond 4A: Pr. PP#4 Peak Elev=8.01' Storage=286 cf Inflow=0.28 cfs 961 cf
Discarded=0.03 cfs 832 cf Primary=0.19 cfs 126 cf Outflow=0.21 cfs 958 cf

Pond 5A: Pr. PP#5 Peak Elev=7.86' Storage=148 cf Inflow=0.16 cfs 568 cf
Discarded=0.02 cfs 480 cf Primary=0.14 cfs 83 cf Outflow=0.15 cfs 563 cf

Pond 13P: Pr. PP#6 Peak Elev=5.71' Storage=75 cf Inflow=0.06 cfs 220 cf
Discarded=0.01 cfs 209 cf Primary=0.02 cfs 11 cf Outflow=0.02 cfs 219 cf

Pond 15P: Pr. PP#7 Peak Elev=5.94' Storage=125 cf Inflow=0.12 cfs 398 cf
Discarded=0.01 cfs 397 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 397 cf

Pond 17P: Pr. PP#8 Peak Elev=7.46' Storage=75 cf Inflow=0.06 cfs 197 cf
Discarded=0.01 cfs 197 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 197 cf

Pond 21P: Pr. PP#9 Peak Elev=7.50' Storage=223 cf Inflow=0.19 cfs 639 cf
Discarded=0.02 cfs 597 cf Primary=0.06 cfs 40 cf Outflow=0.07 cfs 637 cf

Pond 23P: Pr. PP#10 Peak Elev=7.28' Storage=155 cf Inflow=0.12 cfs 413 cf
Discarded=0.01 cfs 413 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 413 cf

Link 1L: Ex. West Out Inflow=14.67 cfs 46,939 cf
Primary=14.67 cfs 46,939 cf

Link 2L: Ex. East Out Inflow=4.68 cfs 14,826 cf
Primary=4.68 cfs 14,826 cf

Link 3L: Ex. Outfall Inflow=19.35 cfs 61,765 cf
Primary=19.35 cfs 61,765 cf

Link 4L: Pr. West Out Inflow=6.11 cfs 17,765 cf
Primary=6.11 cfs 17,765 cf

Link 5L: Pr. East Out Inflow=12.47 cfs 36,695 cf
Primary=12.47 cfs 36,695 cf

Link 6L: Pr. Outfall

Inflow=18.57 cfs 54,459 cf
Primary=18.57 cfs 54,459 cf

Total Runoff Area = 237,188 sf Runoff Volume = 128,199 cf Average Runoff Depth = 6.49"
51.90% Pervious = 123,091 sf 48.10% Impervious = 114,097 sf

Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Ex. West Runoff Area=89,636 sf 23.65% Impervious Runoff Depth>7.19"
Tc=5.0 min CN=91.13 Runoff=16.66 cfs 53,718 cf

Subcatchment2S: Ex. East Runoff Area=28,958 sf 10.38% Impervious Runoff Depth>7.05"
Tc=5.0 min CN=89.93 Runoff=5.32 cfs 17,008 cf

Subcatchment3S: Pr. Infil #1 Runoff Area=30,322 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=5.86 cfs 20,252 cf

Subcatchment4S: Pr. West Bypass Runoff Area=5,159 sf 79.43% Impervious Runoff Depth>7.57"
Tc=5.0 min CN=94.30 Runoff=0.98 cfs 3,255 cf

Subcatchment5S: Ex. East Bypass Runoff Area=20,268 sf 21.08% Impervious Runoff Depth>6.60"
Tc=5.0 min CN=86.15 Runoff=3.57 cfs 11,141 cf

Subcatchment6S: Pr. Infil #2 Runoff Area=55,520 sf 79.02% Impervious Runoff Depth>7.76"
Tc=5.0 min CN=95.90 Runoff=10.65 cfs 35,916 cf

Subcatchment7S: Pr. Perm Pavers #1 Runoff Area=618 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.12 cfs 413 cf

Subcatchment8S: Pr. Perm Pavers #2 Runoff Area=321 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.06 cfs 214 cf

Subcatchment9S: Pr. Perm Pavers #3 Runoff Area=643 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.12 cfs 429 cf

Subcatchment10S: Pr. Perm Pavers #4 Runoff Area=1,625 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.31 cfs 1,085 cf

Subcatchment11S: Pr. Perm Pavers #5 Runoff Area=961 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.19 cfs 642 cf

Subcatchment12S: Pr. Perm Pavers #6 Runoff Area=372 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.07 cfs 248 cf

Subcatchment14S: Pr. Perm Pavers #7 Runoff Area=673 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.13 cfs 449 cf

Subcatchment16S: Pr. Perm Pavers #8 Runoff Area=333 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.06 cfs 222 cf

Subcatchment20S: Pr. Perm Pavers #9 Runoff Area=1,080 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.21 cfs 721 cf

Subcatchment22S: Pr. Perm Pavers #10 Runoff Area=699 sf 100.00% Impervious Runoff Depth>8.01"
Tc=5.0 min CN=98.00 Runoff=0.14 cfs 467 cf

Pond 1A: Pr. PP#1 Peak Elev=6.03' Storage=86 cf Inflow=0.12 cfs 413 cf
Discarded=0.00 cfs 238 cf Primary=0.11 cfs 145 cf Outflow=0.12 cfs 383 cf

Pond 1P: Pr. Infil #1 Peak Elev=7.53' Storage=3,458 cf Inflow=5.86 cfs 20,252 cf
Outflow=5.81 cfs 17,101 cf

Pond 2A: Pr. PP#2 Peak Elev=7.79' Storage=82 cf Inflow=0.06 cfs 214 cf
Discarded=0.01 cfs 214 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 214 cf

Pond 2P: Pr. Infil #2 Peak Elev=8.05' Storage=5,579 cf Inflow=10.65 cfs 35,916 cf
Outflow=10.52 cfs 31,046 cf

Pond 3A: Pr. PP#3 Peak Elev=7.70' Storage=167 cf Inflow=0.12 cfs 429 cf
Discarded=0.01 cfs 426 cf Primary=0.01 cfs 3 cf Outflow=0.02 cfs 429 cf

Pond 4A: Pr. PP#4 Peak Elev=8.01' Storage=287 cf Inflow=0.31 cfs 1,085 cf
Discarded=0.03 cfs 887 cf Primary=0.27 cfs 194 cf Outflow=0.30 cfs 1,082 cf

Pond 5A: Pr. PP#5 Peak Elev=7.86' Storage=149 cf Inflow=0.19 cfs 642 cf
Discarded=0.02 cfs 515 cf Primary=0.17 cfs 120 cf Outflow=0.19 cfs 635 cf

Pond 13P: Pr. PP#6 Peak Elev=5.71' Storage=76 cf Inflow=0.07 cfs 248 cf
Discarded=0.01 cfs 223 cf Primary=0.03 cfs 24 cf Outflow=0.04 cfs 248 cf

Pond 15P: Pr. PP#7 Peak Elev=6.05' Storage=146 cf Inflow=0.13 cfs 449 cf
Discarded=0.02 cfs 449 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 449 cf

Pond 17P: Pr. PP#8 Peak Elev=7.55' Storage=87 cf Inflow=0.06 cfs 222 cf
Discarded=0.01 cfs 222 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 222 cf

Pond 21P: Pr. PP#9 Peak Elev=7.50' Storage=224 cf Inflow=0.21 cfs 721 cf
Discarded=0.02 cfs 636 cf Primary=0.11 cfs 83 cf Outflow=0.13 cfs 719 cf

Pond 23P: Pr. PP#10 Peak Elev=7.37' Storage=180 cf Inflow=0.14 cfs 467 cf
Discarded=0.01 cfs 466 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 466 cf

Link 1L: Ex. West Out Inflow=16.66 cfs 53,718 cf
Primary=16.66 cfs 53,718 cf

Link 2L: Ex. East Out Inflow=5.32 cfs 17,008 cf
Primary=5.32 cfs 17,008 cf

Link 3L: Ex. Outfall Inflow=21.99 cfs 70,725 cf
Primary=21.99 cfs 70,725 cf

Link 4L: Pr. West Out Inflow=6.89 cfs 20,525 cf
Primary=6.89 cfs 20,525 cf

Link 5L: Pr. East Out Inflow=14.48 cfs 42,588 cf
Primary=14.48 cfs 42,588 cf

Link 6L: Pr. Outfall

Inflow=21.36 cfs 63,113 cf
Primary=21.36 cfs 63,113 cf

Total Runoff Area = 237,188 sf Runoff Volume = 146,181 cf Average Runoff Depth = 7.40"
51.90% Pervious = 123,091 sf 48.10% Impervious = 114,097 sf

Appendix 4

NOAA Atlas 14, Volume 10, Version 3
Location name: Norwalk, Connecticut, USA*
Latitude: 41.0962°, Longitude: -73.4155°
Elevation: 7 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.366** (0.295-0.454)	**0.426** (0.342-0.529)	**0.524** (0.419-0.652)	**0.605** (0.481-0.758)	**0.716** (0.548-0.937)	**0.801** (0.597-1.07)	**0.888** (0.638-1.23)	**0.981** (0.668-1.40)	**1.11** (0.722-1.65)	**1.21** (0.766-1.84)
10-min	**0.519** (0.417-0.643)	**0.603** (0.485-0.749)	**0.741** (0.593-0.923)	**0.857** (0.681-1.07)	**1.02** (0.776-1.33)	**1.14** (0.847-1.52)	**1.26** (0.904-1.74)	**1.39** (0.946-1.99)	**1.57** (1.02-2.34)	**1.72** (1.08-2.61)
15-min	**0.610** (0.491-0.757)	**0.710** (0.571-0.881)	**0.873** (0.699-1.09)	**1.01** (0.801-1.26)	**1.19** (0.913-1.56)	**1.34** (0.996-1.79)	**1.48** (1.06-2.05)	**1.64** (1.11-2.34)	**1.85** (1.20-2.75)	**2.02** (1.28-3.07)
30-min	**0.848** (0.683-1.05)	**0.987** (0.794-1.23)	**1.21** (0.973-1.51)	**1.40** (1.12-1.76)	**1.66** (1.27-2.17)	**1.86** (1.39-2.48)	**2.06** (1.48-2.85)	**2.27** (1.55-3.25)	**2.55** (1.66-3.79)	**2.77** (1.75-4.21)
60-min	**1.09** (0.874-1.35)	**1.26** (1.02-1.57)	**1.56** (1.25-1.94)	**1.80** (1.43-2.26)	**2.13** (1.63-2.78)	**2.39** (1.78-3.19)	**2.65** (1.89-3.65)	**2.91** (1.98-4.16)	**3.26** (2.12-4.84)	**3.52** (2.23-5.35)
2-hr	**1.38** (1.12-1.70)	**1.64** (1.32-2.02)	**2.06** (1.66-2.55)	**2.40** (1.92-2.99)	**2.88** (2.22-3.75)	**3.24** (2.43-4.32)	**3.62** (2.62-5.00)	**4.03** (2.75-5.73)	**4.60** (3.00-6.80)	**5.06** (3.22-7.65)
3-hr	**1.58** (1.29-1.94)	**1.89** (1.54-2.32)	**2.40** (1.94-2.95)	**2.81** (2.26-3.49)	**3.39** (2.62-4.40)	**3.82** (2.88-5.08)	**4.27** (3.11-5.91)	**4.78** (3.27-6.78)	**5.52** (3.61-8.12)	**6.12** (3.89-9.20)
6-hr	**2.00** (1.63-2.43)	**2.40** (1.96-2.92)	**3.05** (2.49-3.74)	**3.60** (2.91-4.44)	**4.35** (3.38-5.63)	**4.91** (3.73-6.51)	**5.51** (4.04-7.60)	**6.20** (4.25-8.73)	**7.20** (4.72-10.5)	**8.04** (5.13-12.0)
12-hr	**2.47** (2.04-2.99)	**2.97** (2.45-3.60)	**3.79** (3.11-4.61)	**4.47** (3.64-5.47)	**5.40** (4.23-6.95)	**6.10** (4.66-8.03)	**6.85** (5.05-9.39)	**7.71** (5.31-10.8)	**8.98** (5.91-13.0)	**10.0** (6.42-14.9)
24-hr	**2.88** (2.38-3.46)	**3.49** (2.89-4.20)	**4.50** (3.71-5.44)	**5.33** (4.37-6.48)	**6.48** (5.11-8.29)	**7.34** (5.64-9.61)	**8.26** (6.13-11.3)	**9.34** (6.46-13.0)	**11.0** (7.23-15.8)	**12.3** (7.90-18.1)
2-day	**3.13** (2.61-3.74)	**3.88** (3.24-4.64)	**5.11** (4.25-6.14)	**6.14** (5.06-7.41)	**7.54** (5.98-9.60)	**8.58** (6.64-11.2)	**9.71** (7.27-13.2)	**11.1** (7.68-15.3)	**13.1** (8.69-18.8)	**14.9** (9.59-21.8)
3-day	**3.33** (2.79-3.96)	**4.16** (3.48-4.95)	**5.51** (4.59-6.58)	**6.62** (5.48-7.97)	**8.17** (6.50-10.4)	**9.31** (7.23-12.1)	**10.5** (7.92-14.3)	**12.0** (8.37-16.6)	**14.3** (9.50-20.5)	**16.3** (10.5-23.7)
4-day	**3.54** (2.98-4.20)	**4.41** (3.70-5.24)	**5.83** (4.87-6.95)	**7.01** (5.82-8.40)	**8.63** (6.88-10.9)	**9.83** (7.65-12.7)	**11.1** (8.38-15.1)	**12.7** (8.85-17.4)	**15.1** (10.0-21.5)	**17.1** (11.0-24.9)
7-day	**4.18** (3.53-4.92)	**5.11** (4.32-6.04)	**6.65** (5.59-7.88)	**7.92** (6.61-9.45)	**9.68** (7.75-12.1)	**11.0** (8.57-14.1)	**12.4** (9.32-16.6)	**14.0** (9.81-19.1)	**16.5** (11.0-23.3)	**18.5** (12.0-26.8)
10-day	**4.81** (4.08-5.66)	**5.80** (4.91-6.82)	**7.41** (6.24-8.75)	**8.74** (7.32-10.4)	**10.6** (8.49-13.2)	**12.0** (9.34-15.3)	**13.4** (10.1-17.8)	**15.1** (10.6-20.5)	**17.5** (11.7-24.7)	**19.5** (12.7-28.1)
20-day	**6.76** (5.77-7.89)	**7.86** (6.70-9.19)	**9.66** (8.20-11.3)	**11.2** (9.40-13.2)	**13.2** (10.6-16.3)	**14.8** (11.6-18.6)	**16.4** (12.3-21.4)	**18.1** (12.8-24.4)	**20.4** (13.7-28.6)	**22.3** (14.5-31.9)
30-day	**8.40** (7.20-9.76)	**9.59** (8.21-11.2)	**11.5** (9.83-13.5)	**13.1** (11.1-15.4)	**15.4** (12.4-18.8)	**17.1** (13.4-21.3)	**18.8** (14.1-24.3)	**20.5** (14.5-27.5)	**22.8** (15.4-31.8)	**24.6** (16.0-35.0)
45-day	**10.5** (9.00-12.1)	**11.7** (10.1-13.6)	**13.8** (11.8-16.1)	**15.6** (13.2-18.2)	**18.0** (14.6-21.9)	**19.9** (15.6-24.6)	**21.7** (16.3-27.8)	**23.5** (16.7-31.3)	**25.8** (17.4-35.7)	**27.4** (17.9-38.9)
60-day	**12.2** (10.5-14.1)	**13.5** (11.7-15.7)	**15.8** (13.5-18.3)	**17.6** (15.0-20.6)	**20.2** (16.4-24.4)	**22.2** (17.5-27.4)	**24.1** (18.1-30.7)	**25.9** (18.5-34.5)	**28.2** (19.1-39.0)	**29.8** (19.5-42.2)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

Table B-1. Requirements for Determining Field Infiltration Rates

Infiltration Design Method	NRCS Hydrologic Soil Groups			
	A	B	C	D
Static Method	Soil Textural Analysis	Soil Textural Analysis	Saturated Hydraulic Conductivity Testing	Infiltration Not Allowed
Simple Dynamic Method	Soil Textural Analysis	Soil Textural Analysis	Saturated Hydraulic Conductivity Testing	Infiltration Not Allowed
Dynamic Field Method	Saturated Hydraulic Conductivity Testing	Saturated Hydraulic Conductivity Testing	Saturated Hydraulic Conductivity Testing	Infiltration Not Allowed

Table B-2. Default (Rawls) Infiltration Rates

Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate Inches/Hour
Sand	A	8.27
Loamy Sand	A	2.41
Sandy Loam	B	1.02
Loam	B	0.52
Silt Loam	C	0.27
Sandy Clay Loam	C	0.17
Clay Loam	D	0.09
Silty Clay Loam	D	0.06
Sandy Clay	D	0.05
Silty Clay	D	0.04
Clay	D	0.02

Source: Rawls, Brakensiek and Saxton, 1982.

- The slowest of the Hydrologic Soil Groups determined to exist at the point where infiltration is proposed shall be used.
    - *Example:* Two samples are taken at a proposed infiltration bioretention system in the actual soil layer where recharge is proposed. One sample indicates sandy soils. The second sample indicates a sandy loam soil. The default infiltration rate used for the design analysis must use the sandy loam rate and not the sandy soil rate. Soils must not be composited for purposes of the soil textural analysis.

- When the "Dynamic Field" method is used to size the infiltration system (regardless of Hydrologic Soil Group) or infiltration is proposed within Hydrologic Soil Group C soils

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

VEGETATED ROOFS
ADJUSTED CN VALUES

DRAFT

Soil Depth (inches)	Storage Volume[1] (inches)	Storm Event ----->	WQV	1-YR	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR
		24-Hour Rainfall Depth (inches)[2]	1.0	2.9	3.4	4.3	5.1	6.4	7.6	9.1
		Runoff Depth (inches)[3]	0.79	2.67	3.17	4.06	4.86	6.16	7.36	8.86
		Unadjusted CN Value[3]	98	98	98	98	98	98	98	98
2	0.4	Reduced Runoff Depth (inches)[4]	0.39	2.27	2.77	3.66	4.46	5.76	6.96	8.46
		Adjusted CN Value[4]	91	94	94	94	94	95	95	95
3	0.6	Reduced Runoff Depth (inches)[4]	0.19	2.07	2.57	3.46	4.26	5.56	6.76	8.26
		Adjusted CN Value[4]	86	92	92	92	93	93	93	93
4	0.8	Reduced Runoff Depth (inches)[4]	0.00	1.87	2.37	3.26	4.06	5.36	6.56	8.06
		Adjusted CN Value[4]	61	90	90	90	91	91	91	91
5	1.0	Reduced Runoff Depth (inches)[4]	0.00	1.67	2.17	3.06	3.86	5.16	6.36	7.86
		Adjusted CN Value[4]	61	87	88	88	89	89	90	90
6	1.2	Reduced Runoff Depth (inches)[4]	0.00	1.47	1.97	2.86	3.66	4.96	6.16	7.66
		Adjusted CN Value[4]	61	84	85	86	87	88	88	88
7	1.4	Reduced Runoff Depth (inches)[4]	0.00	1.27	1.77	2.66	3.46	4.76	5.96	7.46
		Adjusted CN Value[4]	61	81	83	84	85	86	86	86
8	1.6	Reduced Runoff Depth (inches)[4]	0.00	1.07	1.57	2.46	3.26	4.56	5.76	7.26
		Adjusted CN Value[4]	61	78	80	82	83	84	84	85
9	1.8	Reduced Runoff Depth (inches)[4]	0.00	0.87	1.37	2.26	3.06	4.36	5.56	7.06
		Adjusted CN Value[4]	61	74	77	80	81	82	83	83
10	2.0	Reduced Runoff Depth (inches)[4]	0.00	0.67	1.17	2.06	2.86	4.16	5.36	6.86
		Adjusted CN Value[4]	61	70	74	77	79	80	81	82
12	2.4	Reduced Runoff Depth (inches)[4]	0.00	0.27	0.77	1.66	2.46	3.76	4.96	6.46
		Adjusted CN Value[4]	61	61	66	72	74	76	77	78
15	3.0	Reduced Runoff Depth (inches)[4]	0.00	0.00	0.17	1.06	1.86	3.16	4.36	5.86
		Adjusted CN Value[4]	61	61	61	62	67	70	72	74
18	3.6	Reduced Runoff Depth (inches)[4]	0.00	0.00	0.00	0.46	1.26	2.56	3.76	5.26
		Adjusted CN Value[4]	61	61	61	61	61	64	67	69
24	4.8	Reduced Runoff Depth (inches)[4]	0.00	0.00	0.00	0.00	0.06	1.36	2.56	4.06
		Adjusted CN Value[4]	61	61	61	61	61	61	61	61
30	6.0	Reduced Runoff Depth (inches)[4]	0.00	0.00	0.00	0.00	0.00	0.16	1.36	2.86
		Adjusted CN Value[4]	61	61	61	61	61	61	61	61
36	7.2	Reduced Runoff Depth (inches)[4]	0.00	0.00	0.00	0.00	0.00	0.00	0.16	1.66
		Adjusted CN Value[4]	61	61	61	61	61	61	61	61
42	8.4	Reduced Runoff Depth (inches)[4]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
		Adjusted CN Value[4]	61	61	61	61	61	61	61	61
48	9.6	Reduced Runoff Depth (inches)[4]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Adjusted CN Value[4]	61	61	61	61	61	61	61	61

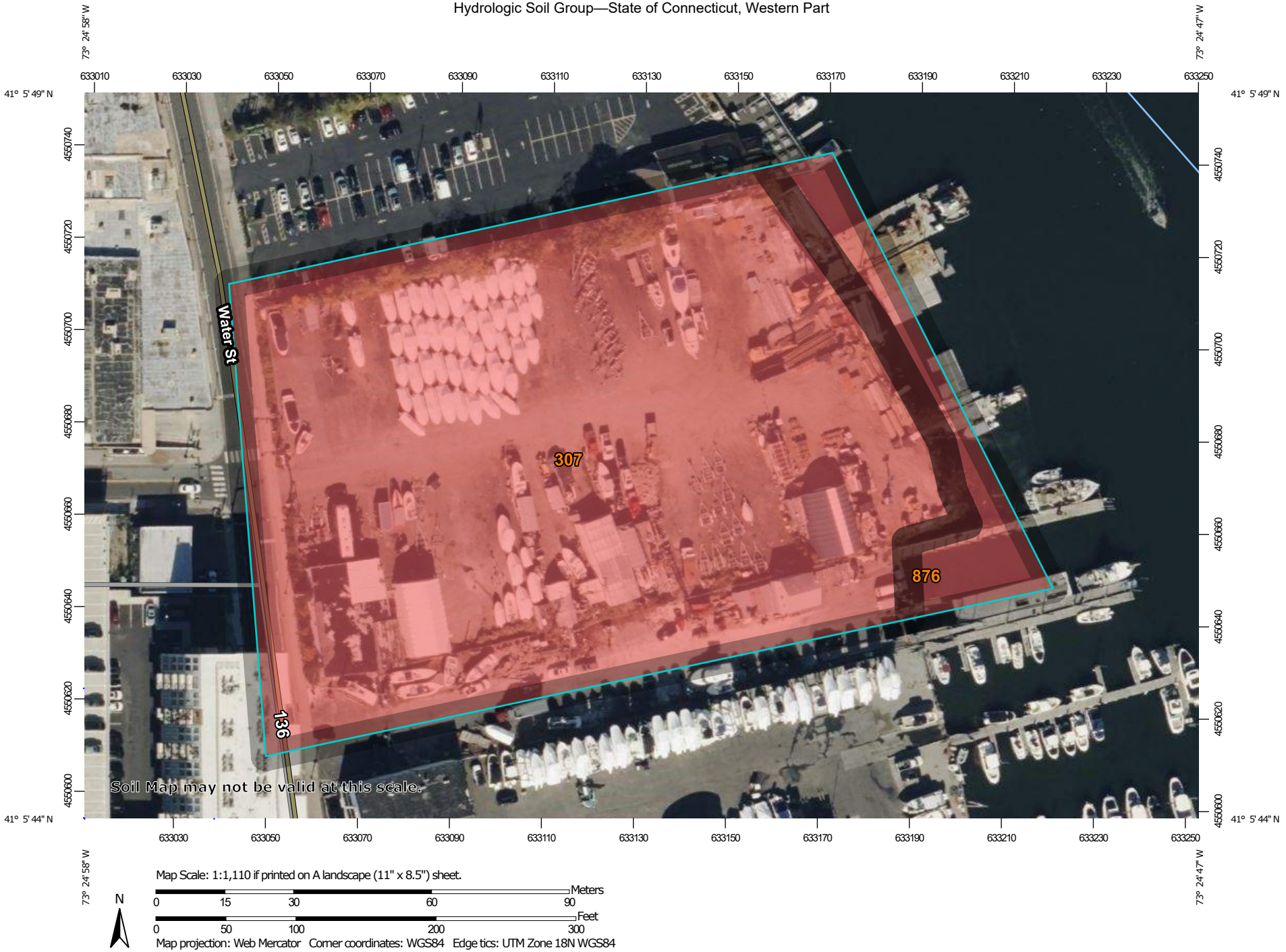
[1] It has been reported (Hunt, 2007) that green roofs can provide 0.20 inches of storage volume per inch of soil depth (E5DM, 2007).

[2] Town of Greenwich Drainange Manual February 2012 - Addendum 1 February 2014, Appendix L - 24-Hour Design 5torm Rainfall Amounts.

[3] Interpolated from Table 2.1 of TR-55 - Urban Hydrology for 5mall Watersheds (NRC5, 1986).

[4] The adjusted CN values are computed by subtracting the storage volume from the TR-55 runoff depth provided at the top of this table and interpolating a new CN value using Table 2.1 of TR-55 based on 24-Hour Rainfall Depth and Reduced Runoff Depth (E5DM, 2007).

[5] Please note that minimum CN value used is 61 for all Reduced Runoff Depths equal to 0 and in the range where the calculated CN would be less than 61. CN value of 61 from Table 2-2a of TR-55 is for open space in good condition within hydrologic soil group B.



Map Scale: 1:1,110 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 2, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
307	Urban land	D	3.6	91.6%
876	Pishagqua mucky silt loam, subtidal	D	0.3	8.4%
Totals for Area of Interest			**3.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

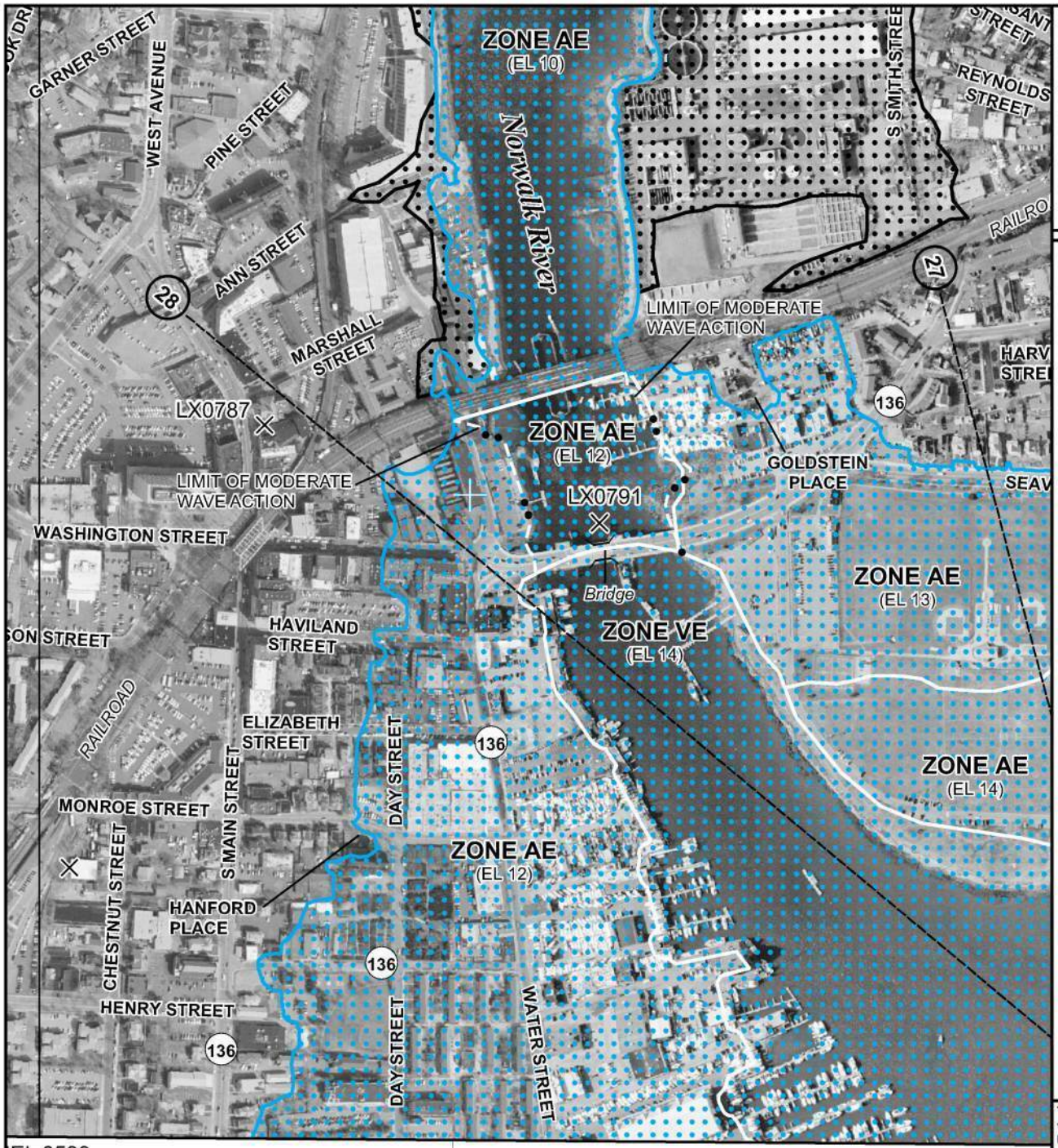
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix 5



EL 0533

MAP SCALE 1" = 500'

250 0 500 1000 FE

150 0 150 30

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0531G

FIRM

FLOOD INSURANCE RATE MAP

FAIRFIELD COUNTY, CONNECTICUT
(ALL JURISDICTIONS)

PANEL 531 OF 626

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NORWALK, CITY OF	090012	0531	G

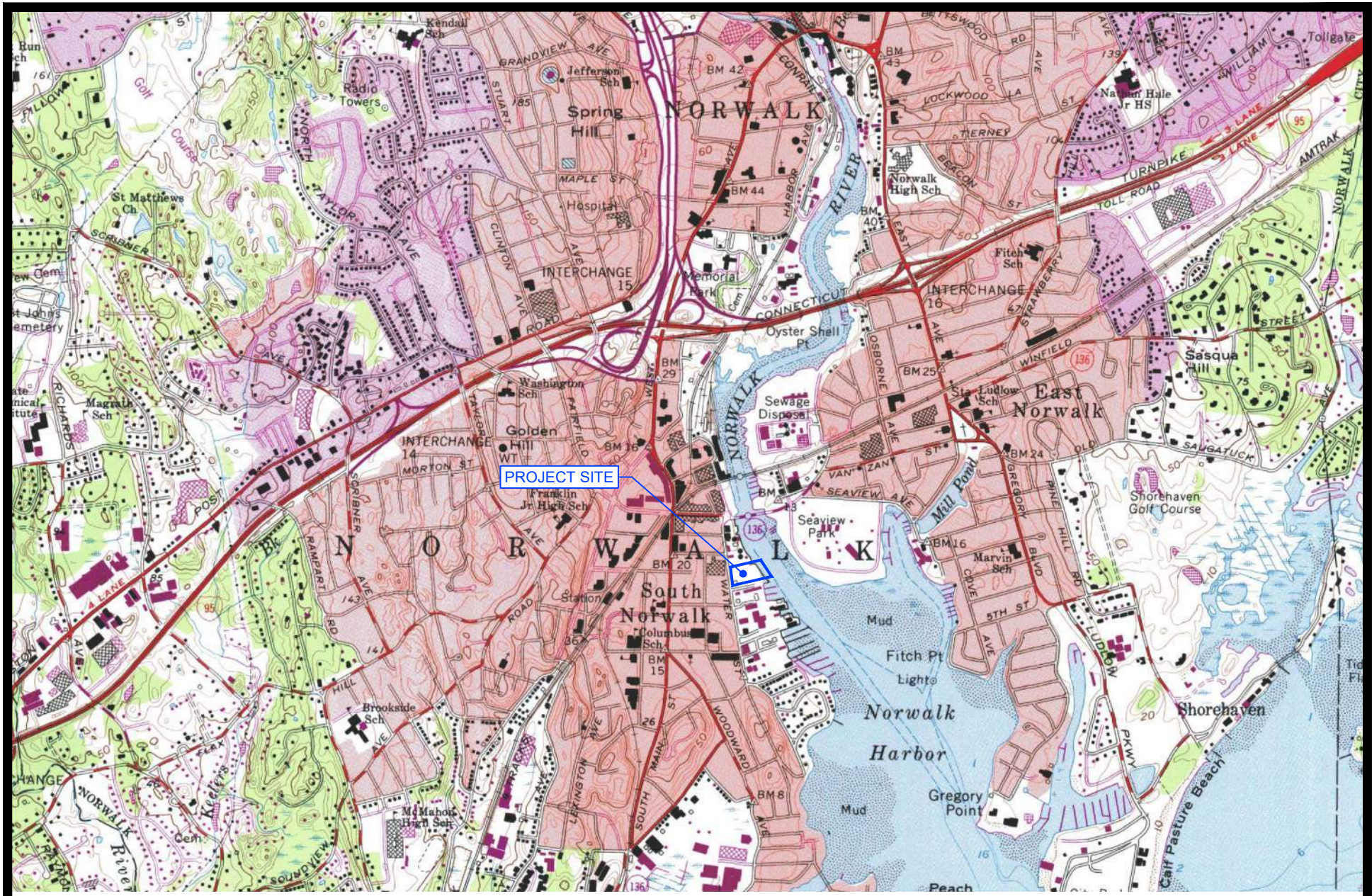
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09001C0531G

MAP REVISED
JULY 8, 2013

Federal Emergency Management Agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://msc.fema.gov.



MAP NAME: NORWALK SOUTH
MAP NUMBER: 114

USGS TOPOGRAPHIC QUAD MAP

108 WATER STREET
NORWALK, CT

REDNISS & MEAD

COMM. NO.: 10909 DATE: 06/13/2025 SCALE: 1"=2000'

6/2/2025 3:39 PM H:\Jobfiles2\10000\10900\10909\dwg\Engineering\10909 Quad Map.dwg

Appendix 6

STORMWATER OPERATIONS AND MAINTENANCE PLAN
108 Water Street, Norwalk CT
June 13, 2025

The purpose of this Operations and Maintenance plan is to ensure that the drainage facilities proposed on site at 108 Water Street (the "Property") shall be maintained in operational condition. While some normal wear is expected over time, the facilities must be properly maintained in order to function as designed. Please refer to the Site Utility Plan for the location of proposed drainage facilities.

108 Water Street LLC and its successors or assigns agree to maintain the drainage facilities in a functioning condition by following the maintenance plan described below.

Storm Drainage Maintenance and Inspection Requirements: The storm drainage system shall be inspected on a semi-annual basis for the first year to ensure that the system is functioning properly. If these inspections show that debris and sediment have accumulated, then more frequent inspections will be scheduled. Inspections should be scheduled following major storm events. If after one year there is little sediment accumulation, then inspections shall be performed on an annual basis.

Catch Basins and Area Drains: Structures with an open grate top intended to collect rain water and direct it into the underground drainage pipes. Note that if sediment is allowed to build up it can greatly reduce the performance of the structure.

- Inspect yearly and remove accumulated debris, trash, and sediment with a vacuum truck as needed to insure proper working order.

Storm Drainage Piping and Junction Boxes: Pipes are located beneath the surface and are used for piping stormwater out of the site. Junction boxes are square structures that are used as junctions for pipe intersections. There are two junction boxes located on site.

- All piping shall be completely cleaned of debris and accumulated sediment at the completion of constriction.
- Junction Boxes shall be inspected on an annual basis. Accumulated debris shall be removed and repairs shall be conducted as necessary.
- Video inspection of the storm drainage piping shall occur once every 10 years, unless the system performance indicates an issue.

DRAFT

Infiltration Systems: The infiltration systems are designed to store water and let it infiltrate back into the ground. There are two infiltration systems proposed on site.

- The infiltration system shall be completely cleaned of accumulated debris at the completion of construction.
- Infiltration systems shall be inspected annually.
- Accumulated debris, trash and sediment shall be removed and repairs made as necessary.

Vegetative Roof:

- Vegetative roof shall be cleaned of debris and sediments upon the completion of construction. Any filter media impacted by the construction activities shall be removed and replaced at this time.
- The roof shall be visually inspected monthly for the first 6 months. Any erosion or displacement of the filter media shall be promptly repaired, and the cause of the problem shall be identified and corrected. During these inspections weeds shall be pulled and removed. Monthly inspections shall continue until successful operation of the system is confirmed.
- The surface of these structures shall be inspected on a quarterly basis after the first six months of successful operation and after heavy runoff events (e.g. > 2.0" in a 24-hour period). One inspection shall occur immediately following the winter months after snow has melted. Any accumulated debris and sediments shall be removed.
- Check draining time of vegetative roof annually. Check within 72 hours after a minimum one-inch rain event. If there is no standing water, infiltration is acceptable. If draining time is excessive, quantitatively determine infiltration rate. If infiltration rate < 0.5 in. /hour, remedial action shall be taken.
- Perform a soil test for nutrients and ph every spring and amend the growing media as recommend by the testing agency.
- During the spring and summer months, once per month, weeding shall be performed and weeds shall be removed.
- During extreme durations of heat and drought watering may be necessary.
- Any additional maintenance required per the manufacturer's specifications shall also be completed.

DRAFT

Disposal of Debris and Sediment: All debris and sediment removed from the storm water structures shall be disposed of legally. There shall be no dumping of silt or debris into or in proximity to any inland or tidal wetlands or the abutting river.

Maintenance Arrangements: The names of the person or party responsible for completing routine inspection and maintenance activities, pet waste management, and proper management of de-icing chemicals and snow shall be filed with the Norwalk Department of Public Works annually.

Good Housekeeping:

1. Most domestic waste will be stored inside the trash room
2. No fertilizers, pesticides, or herbicides will be stored on site
3. No vehicle washing will be permitted on site
4. Lawn and garden areas will be kept in satisfactory condition maintaining ground stabilization and the pervious nature of landscaped areas.
5. In accordance with Sec. 2a-450 of CT General Statues spills of petroleum or chemicals will be reported to the CT DEEP's Oil & Chemical Response Division at (860) 424-3338, be contained as quickly as practical, and cleaned by a licensed contractor.

DRAFT

Declaration: The Owner(s) listed below agrees to the following statements. The statements are intended to ensure that the owner agrees to install and maintain stormwater management practices on the subject property in accordance with approved plans and conditions, and to further ensure that the management practices serve the intended function in perpetuity.

1. The Owner(s) shall be solely responsible for the inspection, maintenance, and repair of the postconstruction storm water management system identified in the above sections.

2. The Owner(s) agrees in the event that the Property is sold, transferred, or leased to provide information to the new owner, operator, or lessee regarding proper inspection, maintenance and repair of the storm water management practice(s). The information shall accompany the first deed transfer and include this "Drainage Facilities Operations and Maintenance Plan" and "Operations & Maintenance Exhibit A". The transfer of this information shall also be required with any subsequent sale, transfer or lease of the Property.

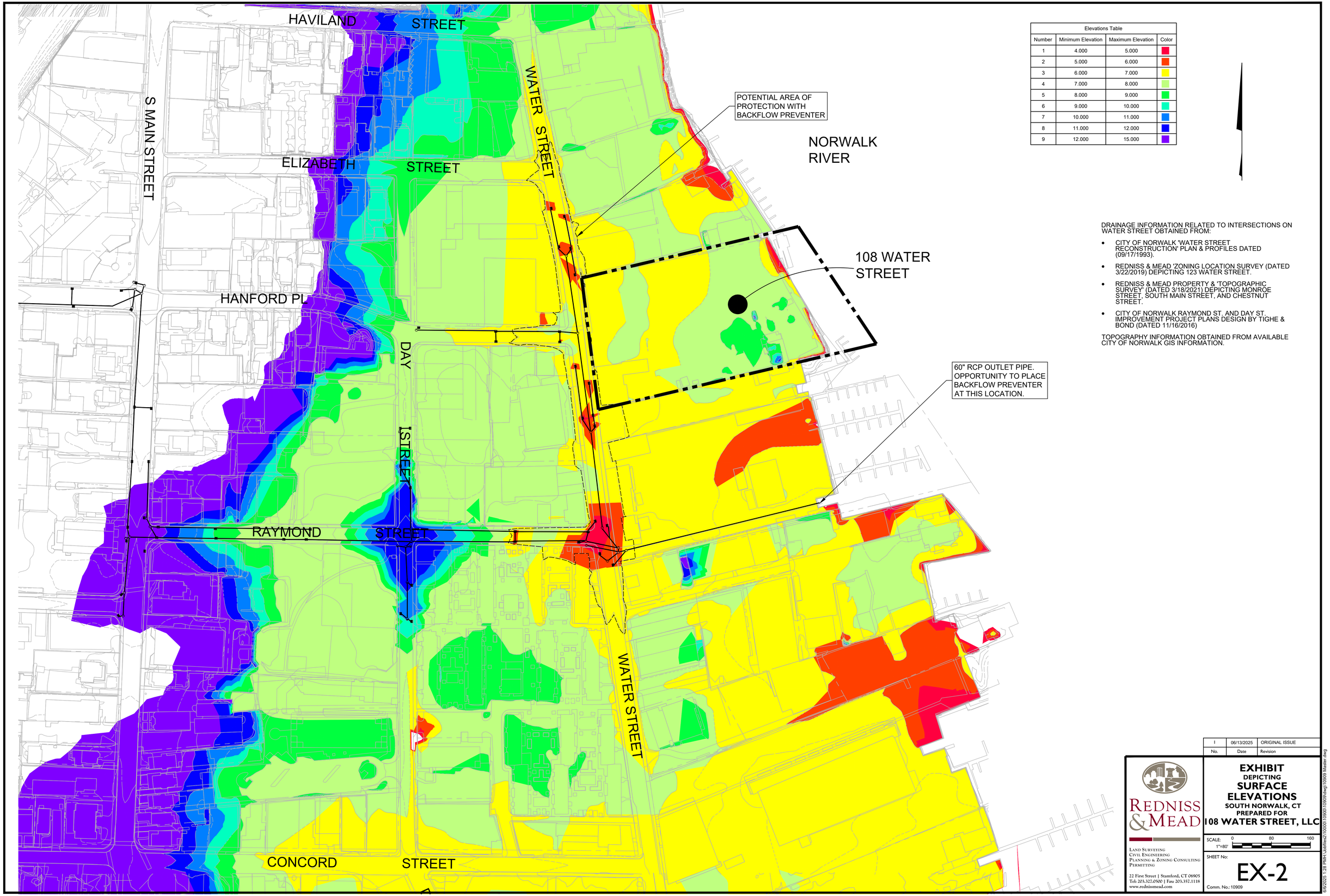
3. The City of Norwalk or its designee is authorized to access the property as necessary to conduct inspections of the storm water management practices to ascertain compliance with the intent of this Operations and Maintenance Plan. Upon written notification by the City of Norwalk or their designee of required maintenance or repairs, the Owner(s) shall complete the specified maintenance or repairs within a reasonable time frame determined by the City of Norwalk. The Owner(s) shall be liable for the failure to undertake any maintenance or repairs so that the public health, safety, general welfare or the environment shall not be endangered.

By: _____ _____
[Owner(s)] [Date]

By: _____ _____
[Owner(s)] [Date]

DRAFT

Appendix 7



Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	4.000	5.000	
2	5.000	6.000	
3	6.000	7.000	
4	7.000	8.000	
5	8.000	9.000	
6	9.000	10.000	
7	10.000	11.000	
8	11.000	12.000	
9	12.000	15.000	

DRAINAGE INFORMATION RELATED TO INTERSECTIONS ON WATER STREET OBTAINED FROM:

- CITY OF NORWALK 'WATER STREET RECONSTRUCTION' PLAN & PROFILES DATED (09/17/1993).
- REDNISS & MEAD 'ZONING LOCATION SURVEY (DATED 3/22/2019) DEPICTING 123 WATER STREET.
- REDNISS & MEAD PROPERTY & 'TOPOGRAPHIC SURVEY' (DATED 3/18/2021) DEPICTING MONROE STREET, SOUTH MAIN STREET, AND CHESTNUT STREET.
- CITY OF NORWALK RAYMOND ST. AND DAY ST. IMPROVEMENT PROJECT PLANS DESIGN BY TIGHE & BOND (DATED 11/16/2016)

TOPOGRAPHY INFORMATION OBTAINED FROM AVAILABLE CITY OF NORWALK GIS INFORMATION.

No.	Date	Revision
1	06/13/2025	ORIGINAL ISSUE

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

EXHIBIT
DEPICTING
SURFACE ELEVATIONS
SOUTH NORWALK, CT
PREPARED FOR
108 WATER STREET, LLC

SCALE: 1"=80' (0, 80, 160)

SHEET No:
EX-2

Comm. No.: 10909

6/6/2025 1:28 PM\\Jobfiles2\10000\10909\dwg\10909 Master.dwg

DRAINAGE INFORMATION RELATED TO INTERSECTIONS ON WATER STREET OBTAINED FROM:

- CITY OF NORWALK 'WATER STREET RECONSTRUCTION' PLAN & PROFILES DATED (09/17/1993).
- REDNISS & MEAD 'ZONING LOCATION SURVEY (DATED 3/22/2019) DEPICTING 123 WATER STREET.
- REDNISS & MEAD PROPERTY & 'TOPOGRAPHIC SURVEY' (DATED 3/18/2021) DEPICTING MONROE STREET, SOUTH MAIN STREET, AND CHESTNUT STREET.
- CITY OF NORWALK RAYMOND ST. AND DAY ST. IMPROVEMENT PROJECT PLANS DESIGN BY TIGHE & BOND (DATED 11/16/2016)

HAVILAND STREET

ELIZABETH STREET

RAYMOND STREET

CONCORD STREET

HANFORD PL

S MAIN STREET

DAY STREET

WATER STREET

WATER STREET

NORWALK RIVER

POTENTIAL AREA OF PROTECTION WITH BACKFLOW PREVENTER

108 WATER STREET

60" RCP OUTLET PIPE. OPPORTUNITY TO PLACE BACKFLOW PREVENTER AT THIS LOCATION.

CB GR=4.90 (APPROXIMATE)
CB GR=4.95 (APPROXIMATE)
CB GR=5.15 INV=2.05 INV=1.45
CB GR=5.06 INV=2.06 INV=1.85
MH RIM=5.39 INV=0.72 INV=-0.16 INV=1.74
CB GR=5.40 INV=
CB GR=6.67 INV=3.67 (S) INV=3.12 (W) INV=2.73 (E)
CB GR=5.52 INV=2.62 (S) INV=2.22 (E) INV=2.22 (W)
STORM MH RIM=6.00 INV=0.00 (N) INV=-0.20 (S)
STORM MH RIM=7.85
CB GR=6.58 OUT=4.50 (N)
CB GR=5.65 WL=3.55
CB GR=4.92 OUT=1.67 (S)
CB GR=4.68 INV=1.48 (N) INV=1.47 (S)
CB GR=5.50 OUT=2.15 (S)
CB GR=4.96 INV=1.89 (N) INV=1.76 (SW)
CB GR=4.64 INV=1.22 (N) INV=1.19 (SE)
STORM MH RIM=5.07 INV=-2.17 (NE) INV=-1.23 (S) INV=-1.17 (N) (NW PIPE NOT VIS.)
CB GR=4.55 12" RCP OUT=1.73
CB GR=4.62 INV=0.92 (S)
CB GR=4.87 WL=2.17 INV=2.02 (NE)
STORM MH RIM=4.90 INV=-2.05 (S) INV=-1.65 (N)
CB GR=4.86 (NO ACCESS)
STORM MH RIM=5.60 WEIR=1.37 INV=-2.85 (W) 72" RCP
STORM MH RIM=5.69
STORM MH RIM=5.45 INV=-4.40 (E)
STORM MH RIM=5.02 WEIR=0.52 INV=0.24 (N) INV=-3.68 (E)
STORM MH RIM=5.71
CB GR=4.90 OUT=1.80
CB GR=8.81± INV IN=3.15 N INV IN=3.35 E INV IN=3.85 W INV OUT=2.98 S
CB GR=8.78 INV OUT=4.32 W
CB GR=10.43± INV IN=2.78 N INV OUT=2.78 SE
CB GR=11.10 INV IN=2.00 NW INV OUT=1.86 S
CB GR=±5.75 INV IN=2.96 S INV IN=2.32 W INV OUT=2.32 E
MH RIM=12.05 INV IN=1.31 N INV OUT=0.51 S INV OUT=0.48 W
MH RIM=12.00 INV IN=3.10 W INV OUT=1.33 E
MH RIM= 12.10
MH RIM=11.05
MH RIM=12.05
SHALLOW CB GR=±5.75 INV OUT=3.17
MH RIM=12.05 INV IN=3.50 SE INV OUT=0.40 W
CB GR=9.80
CB GR=9.50 INV OUT=1.82 W
MH RIM=9.71 INV IN=1.55 S INV IN=1.24 E INV IN=3.24 NW INV OUT=1.31 N
CB GR=7.90 INV OUT=4.40 W
CB GR=9.0 (APPROXIMATE)
CB GR=9.1 (APPROXIMATE)
CB GR=7.90 INV OUT=4.40 W
CB GR=12.81
CB GR=12.81
CB GR=13.87 OUT=6.72 (E)
CB GR=14.72 INV. NOT VISIBLE
CB GR=13.94
STORM MH RIM=14.50 INV=9.60 (N) OUT=8.22 (S)
STORM MH RIM=13.74 INV=7.97 (N) OUT=7.84 (S)
CB GR=14.00 INV=10.70 (N) INV=2.78 (N) OUT=2.55 (S)
STORM MH RIM=14.17 INV=9.42 (W) INV=7.87 (S) INV=2.27 (N) OUT=2.07 (E)
STORM MH RIM=14.53
CB GR=13.95 OUT=9.02 (E)
CB GR=14.09 OUT=9.09 (E)
STORM MH RIM=14.35 INV=9.17 (W) INV=9.13 (S) OUT=8.60 (N)
CB GR=14.17 OUT=10.67 (E)
STORM MH RIM=14.59 INV=10.79 (W) OUT=10.49 (N)
CB GR=14.72 FL=4.92
CB GR=16.69 INV=13.31 (N-15") INV=13.09 (W) INV=11.99 (N-6") OUT=11.54 (S)
CB GR=16.34 INV=11.79 (N) OUT=11.64 (S)
CB GR=15.87 INV=13.17 (E) INV=12.37 (N) OUT=12.27 (SW)
STORM MH RIM=16.74 INV=12.24 (NE) INV=12.04 (N) INV=11.59 (W) OUT=10.99 (SE)
CB GR=15.41 OUT=8.23 (W)
CB GR=15.37
CB GR=17.25 OUT=13.96
CB GR=18.12 INV=14.04 (W) OUT=14.04 (N)
CB GR=16.66 OUT=11.66 (N)
CB GR=17.18 OUT=13.78 (N)
STORM MH RIM=17.48 INV=14.13 (S) OUT=13.78 (N)
STORM MH RIM=17.85 INV=11.95 (W) INV=8.33 (N) INV=8.28 (SW) OUT=7.52 (S)
CB GR=17.33
STORM MH RIM=17.85 INV=8.65 (W) INV=8.46 (E) OUT=8.20 (S)
CB GR=17.29 OUT=13.84 (E)
CB GR=16.75 OUT=12.25 (S)
STORM MH RIM=18.21 INV=15.26 (E) INV=13.46 (NW) OUT=10.94 (N)
STORM MH RIM=17.61 INV=13.76 (S) INV=13.51 (W) INV=13.11 (NW) OUT=11.51 (SE)
STORM MH RIM=17.97

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING
22 First Street | Stamford, CT 06905
Tel: 203.327.2500 | Fax 203.357.1118
www.rednissmead.com

No.	Date	Revision
1	06/13/2025	ORIGINAL ISSUE

EXHIBIT
DEPICTING
DRAINAGE INFRASTRUCTURE
SOUTH NORWALK, CT
PREPARED FOR
108 WATER STREET, LLC

SCALE: 1"=80' (0, 80, 160)

SHEET No:
EX-1

Comm. No.: 10909

6/9/2025 1:29 PM P:\projfiles\2010\001\10909\dwg\10909 Master.dwg

Appendix 8

Onsite Sanitary Sewer Flow Estimates from Site

Project: *108 Water Street*	**Project #:** *10909*	**Date:** *6/13/2025*
Location: *Norwalk, CT*	**By:** *VJH*	**Checked:** *CJF*

Note: The flows listed below represent sanitary sewer flows from 108 Water Street contemplated under the proposal.

Existing On-Site Flow

Location	Building Use	Floor Area (SF)**	Design Flow (GPD/SF)*	Total Flow (GPD)
108 Water Street	Commerical	4,104	0.1	410

Existing Sanitary Flow (GPD)	410
Peak Rate (CFS)	0.001
Peaking Factor	4
Total Existing Peak Flow (CFS)	**0.003**

Proposed On-Site Flow

Location	Building Use	Floor Area (SF)**	Design Flow (GPD/SF)*	Total Flow (GPD)
108 Water Street	Office	110,899	0.1	11,090
108 Water Street	Restaurant	3,823	1.5	5,735
108 Water Street	Personal Service	3,444	0.1	345
108 Water Street	Marine Supply	2,254	0.1	226

Location	Building Use	# of Bedrooms ***	Design Flow (GPD / Rm.)*	Total Flow (GPD)
108 Water Street	Residential	114	150	17,100

	Existing	Proposed	Net Inc.
Sanitary Flow (GPD)	410	34,496	34,086
Peak Rate (CFS)	0.001	0.053	0.053
Peaking Factor	4	4	4
Total Proposed Peak Flow (CFS)	**0.003**	**0.214**	**0.211**

*Per State of CT Public Health Code

** Data taken from tax card.

***Proposed Residential Unit Count = 59 units (25-1BR, 17-2BR, 13-3BR, 4-4BR)

Mannings Equation - Circular Pipe

Project:	*108 Water Street*	**Project #:**	*10909*	**Date:**	*6/13/25*
Location:	*Norwalk, CT*	**By:**	*VJH*	**Checked:**	*CJF*

48" Sanitary Pipe - Pipe #1

Calculate the maximum flow capacity using Manning's equation.

Pipe material	einforced Concrete Pipe (RC		
Manning's n	0.013		
Pipe diameter, D	4 ft		
Area, A	12.57 ft^2	$A = \frac{\pi}{4} D^2$	
Wetted perimeter, P	12.57 ft	$P = \pi D$	
Hydraulic radius, R_h	1.00 ft	$R_h = \frac{A}{P}$	
Slope, S	0.0013 ft/ft		
Flow, Q_{full}	**51.79 cfs**	$Q = \frac{1.486}{n} A R_h^{2/3} S^{1/2}$	

Existing Conditions Flow

Flow, Q	27.470 cfs[1]		
Flow to Flow Full, Q/Q_{fu}	**0.530**	**53.0%**	

Proposed Conditions Flow Conditions Flow

Flow, Q	27.681 cfs[2]		
Flow to Flow Full, Q/Q_{fu}	**0.534**	**53.4%**	46.6% Reserve Capacity

[1] Flow tributary to WPCA Manhole #15-1 (on North Water St) as provided by WPCA via 2021 flow monitoring data. Flow = 14.784 MGD during rainfall of 7/2/2021.

[2] Existing Flow + Pr. Net Site Flow (Refer to Proposed Sanitary Sewer Flow Estimates for further information)

Mannings Equation - Circular Pipe

Project:	*108 Water Street*	**Project #:**	*10909*	**Date:**	*6/13/25*
Location:	*Norwalk, CT*	**By:**	*VJH*	**Checked:**	*CJF*

48" Sanitary Pipe - Pipe #2

Calculate the maximum flow capacity using Manning's equation.

Pipe material	einforced Concrete Pipe (RC		
Manning's n	0.013		
Pipe diameter, D	4 ft		
Area, A	12.57 ft^2	$A = \frac{\pi}{4} D^2$	
Wetted perimeter, P	12.57 ft	$P = \pi D$	
Hydraulic radius, R_h	1.00 ft	$R_h = \frac{A}{P}$	
Slope, S	0.0013 ft/ft	Assumed to match Pipe #1	
Flow, Q_{full}	**51.79 cfs**	$Q = \frac{1.486}{n} A R_h^{2/3} S^{1/2}$	

Existing Conditions Flow

Flow, Q	27.470 cfs[1]		
Flow to Flow Full, Q/Q_{fu}	**0.530**	**53.0%**	

Proposed Conditions Flow Conditions Flow

Flow, Q	27.681 cfs[2]		
Flow to Flow Full, Q/Q_{fu}	**0.534**	**53.4%**	46.6% Reserve Capacity

[1] Flow tributary to WPCA Manhole #15-1 (on North Water St) as provided by WPCA via 2021 flow monitoring data. Flow = 14.784 MGD during rainfall of 7/2/2021.

[2] Existing Flow + Pr. Net Site Flow (Refer to Proposed Sanitary Sewer Flow Estimates for further information)

Appendix 9

METER SITE INFORMATION FIELD LOG

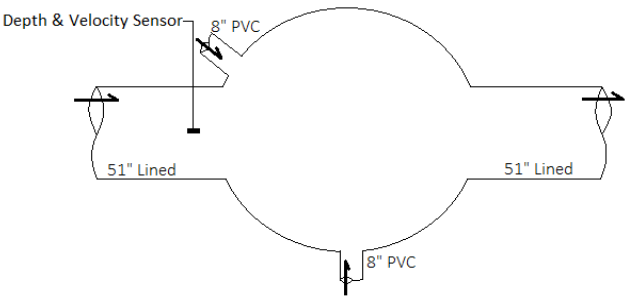
PROJECT: Norwalk, CT	**DATE:** March 10, 2021	**JOB#:** 21026
LOCATION: 10 North Water Street	**MH#:**	**METER SITE:** 15
GPS/COMMENTS: 41.100361, -73.416479		





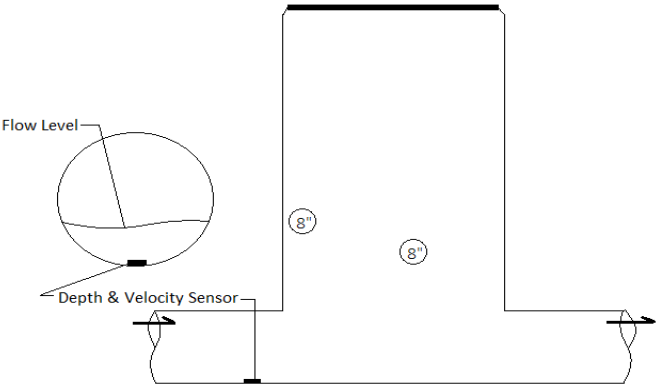
	Size (")	Material	Flow Depth (")	Debris	Shape	MH Depth
Incoming	51	Lined	12	0	Circular	13' 10"
Incoming	8	PVC	0.25	0	Circular	07' 01"
Incoming	8	PVC	0	0.5	Circular	06' 07"
Outgoing	51	Lined	12	0	Circular	13' 11"





SURCHARGE INFORMATION	WEIR INFORMATION	
SURCHARGE NONE EVIDENT:	**LENGTH:**	**HEIGHT ABOVE WEIR:**
SURCHARGED MARKS TO: 8'	**BREADTH:**	**OVERFLOW OCCURS AT:**
SURCHARGE CURRENTLY TO:	**LEVEL:**	





DTS • PROVIDENT
Intelligent Land Use

TRAFFIC IMPACT STUDY

108 Water Street
City of Norwalk, Fairfield County, CT

Prepared by
DTS Provident Design Engineering, LLP
1 North Broadway
White Plains, New York

June 18, 2025

DTS Provident Project No. 1187

APPENDICES

APPENDIX A TRAFFIC FIGURES

APPENDIX B LEVEL OF SERVICE TABLES

APPENDIX C LEVEL OF SERVICE STANDARDS

APPENDIX D CAPACITY ANALYSES

APPENDIX E CRASH DATA

INTRODUCTION

DTS Provident Design Engineering, LLP (DTS Provident), a licensed Professional Engineering firm in the state of Connecticut, has prepared this Traffic Study to evaluate the traffic for the proposed mixed-use development to be located at 108 Water Street in the City of Norwalk. The Site is currently used as a storage area including boat storage and other facilities. The proposed project plans to construct a mixed-use building containing 59 residential units, 110,899 square feet (sf) of office space, 3,444 sf of personal service space, 3,823 sf of restaurant space, 2,254 sf of marine supply, and 14 boat slips. The Site Location is illustrated on Figure No. 1 in Appendix A.

The Project proposes to change the existing Site driveway location, which is currently along Water Street opposite directly across from Hanford Place at a signalized intersection. It is proposed to change from a single full movement driveway to two separate driveways, one entrance only and one exit only. The entrance driveway will be located to the south of Hanford Place and the exit driveway will be located to the north of Hanford Place. Both the entrance and the exit will be unsignalized. Traffic flow will be counterclockwise through the Site.

DTS Provident, has been retained to analyze the traffic impact, if any, associated with the proposed Project. This Traffic Study has been prepared using industry-standard traffic engineering procedures to document the findings and conclusions of the analysis undertaken to measure the traffic impacts associated with the proposed Project. In addition to the adjacent roadway network, the Site is well-served by an established sidewalk system, bike lanes, as well as various pedestrian amenities including pedestrian signals, ADA measures and high visibility crosswalks. The Site is within easy walking distance to the train station (approximately 1/3rd of a mile) and there are also various bus routes available in the vicinity of the Site.

This Traffic Impact Study was prepared in conjunction with discussions with the City's Transportation, Mobility and Parking (TMP) Department as well preliminary reviews/confirmations with the TMP. To perform this Study, field observations and traffic counts were performed, and capacity analyses were conducted using utilizing traffic signal timing information provided by the City of as well as information from other projects in the area. The other projects (adjacent developments) in the area were accounted for in the analyses. The following is a summary of our findings and conclusions.

EXISTING AND PROPOSED USE OF SITE

The project site is located on the east side of the intersection of Water Street and Hanford Place. It is proposed to consist of 59 residential units, 110,899 sf of office space, 3,444 sf of personal service space, 3,823 sf of restaurant space, 2,254 sf of marine supply, and 14 boat slips and replaces the current marine services business, boat storage and other services at the Site.

EXISTING CONDITIONS

The TMP requested that the following intersections be analyzed:

- Water Street/Driveway & Hanford Place
- Water Street & Elizabeth Street

- Water Street & Haviland Street
- Water Street & Washington Street
- Washington Street & North/South Main Street
- Washington Street/Fort Point Street & Seaview Avenue
- South Main Street & Monroe Street/Hanford Place

The following is a summary of intersections within the project area that were determined to be studied in conjunction with discussions with the TMP based upon projected traffic volumes and trip distributions:

Water Street/Driveway & Hanford Place – The intersection of Water Street/Driveway & Hanford Place forms a four-legged intersection with signal control. All approaches contain a single left-turn/ thru/right-turn lane. There are marked crosswalks on the western and northern legs. Pedestrian signal heads and buttons are available to aid pedestrians in using these crosswalks. Bike lanes are present running along the east and west sides of Water Street.

Water Street & Elizabeth Street – The intersection of Water Street & Elizabeth Street forms a three-legged intersection with sign control. The eastbound approach contains a left-turn lane and a right-turn lane. The northbound and southbound approaches contain a through lane. There is a marked crosswalk on the western leg. Bike lanes are present running along the east and west sides of Water Street. Parking is available on the northern and southern sides of Elizabeth Street.

Water Street & Haviland Street – The intersection of Water Street & Haviland Street forms a three-legged intersection. The northbound approach contains a left-turn/through lane while the southbound approach contains a through/right-turn. There are marked crosswalks on the western and southern legs. Bike lanes are present running along the east and west sides of Water Street. Parking is available on the northern and southern sides of Haviland Street.

Water Street & Washington Street – The intersection of Water Street and Washington Street forms a four-legged intersection with signal control. The northbound approach contains a left-turn lane, a through lane, and a channelized right-turn lane. The southbound approach contains a shared left-turn/through/right-turn lane. The eastbound approach contains a shared left-turn/through/right-turn lane. The westbound approach contains a left-turn lane and a shared through/right-turn lane. Crosswalks are present on all legs of the intersections. Pedestrian buttons and heads are present to aid pedestrian crossing Water Street and the east leg of Washington Street. Pedestrian heads and buttons are not present on the west leg of Washington Street or the channelized northbound right turn. Bike lanes are present on the southern leg of the intersection. Parking is available on the west leg of Washington Street.

Washington Street & North/South Main Street – The intersection of Water Street & North/South Main Street forms a four-legged intersection with signal control. The eastbound approach contains a left-turn lane and a through/right-turn lane. The westbound approach contains a shared left-turn/through/right-turn lane. The northbound approach contains a shared left-turn/through/right-turn lane. The southbound approach contains a left-turn lane and a shared through/right-turn. There are marked crosswalks on all legs of the intersection. Pedestrian heads and buttons are available on all legs of the intersection. Parking is available on the eastern and western sides of North Main Street, the eastern side of South Main Street, and the northern and southern sides of the east leg of Washington Street.

Washington Street/Fort Point Street & Seaview Avenue – The intersection of Washington Street / Fort Point Street & Seaview Avenue forms a three-legged intersection with signal control. The northbound approach contains a through lane and a right-turn lane. The southbound approach contains a left turn/through lane and a through lane. The westbound approach contains a left-turn lane and a left-turn/right-turn lane. There are marked crosswalks on the eastern, northern, and southern legs. Pedestrian heads and buttons are available on all legs of the intersection. Bike lanes are present on the eastern and western sides of Washington Street/Fort Point Street. There is a shared bike/driving lane on the northbound approach. A bus stop is present on the eastern side of Fort Point Street.

South Main Street & Monroe Street/Hanford Place – The intersection of South Main Street & Monroe Street/Hanford Place forms a four-legged intersection with signal control. The northbound approach contains a left-turn/through/right-turn lane. The southbound approach contains a left turn/through lane and a right-turn lane. The westbound approach contains a left-turn/through/right-turn lane. The eastbound approach contains a left-turn lane and a through/right-turn lane. There are marked crosswalks on all legs of the intersection. Pedestrian heads and buttons are available on all legs of the intersection. Bike lanes are present on the northern side of Monroe Street.

It should be noted that Water Street in the vicinity of the Site is a State Roadway (State Route 136) but in the vicinity of the Site, it is under local jurisdictione.

CRASH DATA

DTS Provident consulted the Connecticut Crash Data Repository to obtain crash data for the surrounding area over the last 5 years and 5 months from January 1, 2020, to May 5, 2025.

- The intersection of Water Street & Hanford Place experienced a total of 12 crashes over the study period or an average of 2.2 crashes per year. Of the 12 crashes, 11 were property damage only and 1 involved an injury. 8 were front to rear crashes, 1 was an angle crash, 1 was a sideswipe crash, and 2 were classified as other.

- The intersection of Water Street & Elizabeth Street experienced a total of 6 crashes over the study period or an average of 1.1 crashes per year. Of the 6 crashes, 5 were property damage only, and 1 involved an injury. 2 were front to rear crashes, 1 was an angle crash, 1 was a sideswipe crash, and 2 were classified as not applicable / other. One crash involved a pedestrian, although no injury resulted from the crash.

- The intersection of Water Street & Haviland Street experienced a total of 4 crashes over the study period or an average of 0.7 crashes per year. All crashes were property damage only. 2 were front to rear crashes and 2 were angle crashes.

- The intersection of Water Street & Washington Street experienced a total of 32 crashes over the study period or an average of 5.9 crashes per year. Of the 32 crashes, 27 were property damage only, and 5 involved an injury (2 of which involved pedestrian injuries). 12 were front to rear crashes, 9 were angle crashes, 2 were sideswipe crashes, and 9 were classified as not applicable / other / unknown.

- The intersection of Washington Street & Seaview Avenue experienced a total of 14 crashes over the study period or an average of 2.6 crashes per year. Of these 14 crashes, 8 were property damage only and 6 involved an injury. 7 of these crashes were front to rear crashes, 1 was a front to front crash, 2 were angle crashes, 1 was a sideswipe, and 3 were classified as other / not applicable. One of the 14 crashes involved a serious injury and was a result of a pedestrian jumping/falling from the vehicle.

- The intersection of Washington Street & North/South Main Street experienced a total of 33 crashes over the study period or an average of 6.1 crashes per year. Of these 33 crashes, 28 were property damage only and 5 involved an injury. 4 of these crashes were front to rear crashes, 2 were front to front crashes, 6 were angle crashes, 5 were sideswipe crashes, 1 was a rear to side crash, and 15 were classified as other / not applicable.

- The intersection of South Main Street & Monroe Street/Hanford Place experienced a total of 35 crashes over the study period or an average of 6.5 crashes per year. Of these 35 crashes, 26 were property damage only and 9 involved an injury. 16 of these crashes were front to rear crashes, 1 was a rear-to-rear crash, 7 were angle crashes, 8 were sideswipe crashes, and 3 were classified as other / not applicable.

The crash data is contained in Appendix E. DTS Provident does not anticipate a significant increase in the likelihood of crashes due to the construction and operation of the proposed project.

EXISTING TRAFFIC VOLUMES

The TMP requested that the following traffic conditions be studied:

- Peak Weekday AM Commuter Hour
- Peak Weekday Midday/Lunch Hour
- Peak Weekday PM Commuter Hour
- Peak Saturday Shopper Hour

Representatives of DTS Provident conducted turning movement traffic counts on Thursday May 8th, 2025, and Saturday May 10th, 2025. Counts were conducted from 7:00 AM-9:00 AM, 11:30 AM-1:30 PM, and 4:00 PM-6:00 PM for the weekday and 12:00 PM – 3:00 PM for the weekend. Based upon the traffic counts conducted, the following Peak Roadway Hours were determined:

Peak Weekday AM Hour - 7:30 AM to 8:30 AM
Peak Weekday MID Hour - 12:30 PM to 1:30 PM
Peak Weekday PM Hour - 4:45 PM to 5:45 PM
Peak Saturday Hour - 1:15 PM to 2:15 PM

The 2025 Existing Traffic Volumes are illustrated on Figure No. 2 in Appendix A. The 2025 Existing Pedestrian Volumes are illustrated in Figure No. 3 in Appendix A.

Signal Timings for the intersections were obtained from the City TMP.

DTS Provident representatives conducted observations within the study area on Thursday, May 8, 2025 during the traffic counts. There was construction on the eastern side of North Water Street located just to the north of the North Water Lot (municipal parking lot). It was observed that several construction-related vehicles were traveling back and forth along Water Street but did not have a significant impact to traffic operations.

TRIP GENERATION AND FUTURE TRAFFIC VOLUME CONDITIONS

Upon establishing the existing traffic volume conditions, DTS Provident projected the existing volumes to a future design year of 2028 using a growth rate of 1.0% per year, compounded annually (as provided by the Connecticut Department of Transportation).

DTS Provident also included the following four adjacent developments in its future analysis as requested by TMP:

- 10 Monroe Street – This development consists of removing the existing 35 residential units, 5,071 sf of retail space, and 4,492 sf of restaurant space. It plans to replace this with 150 multi-family residential units, 6,525 sf of residential space, 4,175 sf of restaurant space, and 4,300 sf of general office space. This project is projected to be completed by 2026.

- 5-17 Chestnut Street – This development consists of 200 residential units, 9,025 sf of retail space, and 6,835 sf of restaurant space. This project is projected to be completed by 2028.

- 25-35 South Main Street – This development consists of a new 8-story luxury hotel consisting of 100 rooms. This projected is projected to be completed by 2026.

- 71 Water Street – This development consists of removing the existing 12,823 sf building on site and replace it with a new building consisting of 32 residential units and 3,176 sf of health/fitness space.

The volumes from these adjacent developments were obtained from their traffic studies for the respective projects and are illustrated in Figures 4-8 in Appendix A.

The grown volumes were combined with the adjacent development volumes to form the 2028 No-Build Traffic Volumes which are illustrated on Figure No. 9 in Appendix A.

DTS Provident consulted the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition to calculate the proposed trip generation for the project. A 20% credit was used for the office for the weekday midday peak hour for those who will go to the on-site restaurant or walk to other food establishments at lunchtime. A 5% internal credit was used for the office for the weekday AM and PM peak hours as well as the Saturday peak hour for those who will utilize some of the other facilities in the Site (such as live at the Site and also work there or visit the restaurant or the personal service as well as the adjacent properties. These volumes have been previously discussed with the City TMP.

Below is Table No. 1 illustrating the trip generation for this project. The proposed trips from Table 1 below were added to the adjacent roads in conjunction with the Arrival and Departure Distributions

illustrated on Figures 10 and 11 (these distributions have been previously discussed with the City TMP) in Appendix A to form the Site Generated trips illustrated on Figure No. 12. The No-Build Volumes were combined with the Site-Generated Volumes to form the 2028 Build Traffic Volumes which are illustrated on Figure No. 13.

TABLE NO. 1
TRIP GENERATION SUMMARY – ITE MANUAL 11TH EDITION

Type of Development		Weekday AM Peak Hour		Weekday MID Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		ENTER	**EXIT**	**ENTER**	**EXIT**	**ENTER**	**EXIT**	**ENTER**	**EXIT**
LUC 221	Multifamily Housing 59 Units	2	13	7	7	12	4	8	8
LUC 710	Office 110,899 SF	91	14	65	64	16	84	10	9
LUC 822	Personal Service* 3,444 SF	9	6	7	7	18	18	12	12
LUC 931	Fine Dining Restaurant 3,823 SF	1	1	10	5	20	10	24	17
Marine Supply 2,254 SF		2	2	2	2	2	2	2	2
Boat Slips 14 Total		2	2	2	2	2	2	2	2
20% Credit for Office Midday Lunch Hour		-	-	-13	-13	-	-	-	-
5% Credit for Office AM+PM Weekday & Sat		-5	-1	-	-	-1	-4	-1	0
Total		**103**	**37**	**80**	**75**	**69**	**116**	**57**	**49**

*The Dense Multi Use Urban setting was utilized when available. For when unavailable, the General Urban/Suburban setting was used instead
*Midday trip generation values for Fine Dining obtained by multiplying Weekday PM Peak Hour values by 0.5
*Land Use Code 822 Strip Retail Plaza <40k was used to calculate trip generation for personal service

FUTURE TRAFFIC CAPACITY ANALYSIS & MITIGATION

DTS Provident utilized Synchro software to calculate the capacity analysis of the intersections for the Existing, No-Build, and Build traffic volume conditions. The software was used to obtain levels of service (LOS) and delays (seconds per vehicle). A Level of Service 'A' represents the best roadway operating conditions while a Level of Service 'F' represents the roadway operating conditions experiencing delays. A description of Level of Service Standards is contained in Appendix C. Table No. 2 below summarizes the capacity analysis results for the intersections:

TABLE NO. 2A OVERALL LEVEL OF SERVICE SUMMARY PEAK WEEKDAY AM HOUR and PEAK WEEKDAY MIDDAY HOUR						
Intersection	**PEAK WEEKDAY AM HOUR**			**PEAK WEEKDAY MID HOUR**		
	No-Build	**Build**	**Build With Imp.**	**No-Build**	**Build**	**Build With Imp.**
	LOS Delay (sec/veh)	**LOS Delay (sec/veh)**	**LOS Delay (sec/veh)**	**LOS Delay (sec/veh)**	**LOS Delay (sec/veh)**	**LOS Delay (sec/veh)**
Water Street & Washington Street	C 32.4	D 40.3	C (1) 34.5	C 26.6	C 28.1	N/A
Water Street & Haviland Street	a 0.5	a 0.5	N/A	a 0.5	a 0.4	N/A
Water Street & Elizabeth Street	a 1.9	a 2.1	N/A	a 2.0	a 2.1	N/A
Water Street & Hanford Place	B 15.8	B 18.2	N/A	B 13.2	B 13.3	N/A
Washington Street & North/South Main Street	C 34.9	D 36.3	C (2) 35.0	C 27.7	C 28.0	N/A
Washington Street/Fort Point Street & Seaview Avenue	C 21.3	C 22.0	N/A	B 14.4	B 17.0	N/A
North/South Main Street & Monroe Street/Hanford Place	C 32.0	C 33.7	N/A	C 26.6	C 27.6	N/A
Water Street & Proposed Site Driveway A	N/A N/A	a 0.5	N/A	N/A N/A	a 1.0	N/A
Water Street & Proposed Site Driveway B	N/A N/A	a 0.9	N/A	N/A N/A	a 0.8	N/A

Signalized intersections are denoted by upper case letters.
Unsignalized intersections are denoted by lower case letters.
(1) Takes 5 seconds of green time from Ø2. Gives 5 seconds of green time to Ø1.
(2) Takes 4 seconds of green time from Ø4 & Ø6. Gives 4 seconds of green time to Ø4 & Ø8.

TABLE NO. 2B OVERALL LEVEL OF SERVICE SUMMARY PEAK WEEKDAY PM HOUR and PEAK SATURDAY HOUR						
Intersection	**PEAK WEEKDAY PM HOUR**			**PEAK SAT HOUR**		
	No-Build	**Build**	**Build With Imp.**	**No-Build**	**Build**	**Build With Imp.**
	LOS Delay (sec/veh)	**LOS Delay (sec/veh)**	**LOS Delay (sec/veh)**	**LOS Delay (sec/veh)**	**LOS Delay (sec/veh)**	**LOS Delay (sec/veh)**
Water Street & Washington Street	E 58.6	E 65.6	E [1] 63.5	D 41.9	D 48.1	D [3] 46.5
Water Street & Haviland Street	a 0.4	a 0.3	N/A	a 0.6	a 0.6	N/A
Water Street & Elizabeth Street	a 3.9	a 5.1	N/A	a 4.0	a 4.6	N/A
Water Street & Hanford Place	B 15.9	B 15.9	N/A	B 13.1	B 17.5	N/A
Washington Street & North/South Main Street	C 33.6	D 35.8	C [2] 35.0	C 31.4	C 32.3	N/A
Washington Street/Fort Point Street & Seaview Avenue	C 22.9	C 24.0	N/A	B 18.2	B 18.5	N/A
North/South Main Street & Monroe Street/Hanford Place	C 30.0	C 31.4	N/A	C 24.7	C 25.1	N/A
Water Street & Proposed Site Driveway A	N/A N/A	a 1.7	N/A	N/A N/A	a 0.6	N/A
Water Street & Proposed Site Driveway B	N/A N/A	a 0.6	N/A	N/A N/A	a 0.5	N/A

Signalized intersections are denoted by upper case letters.
Unsignalized intersections are denoted by lower case letters.
(1) Takes 5 seconds of green time from Ø2. Gives 3 seconds of green time to Ø4 & Ø8. Gives 2 seconds of green time to Ø1.
(2) Takes 3 seconds of green time from Ø2 & Ø6. Gives 3 seconds of green time to Ø4 & Ø8.
(3) Takes 2 seconds of green time from Ø2. Gives 2 seconds of green time to Ø4 & Ø8.

More detailed Level of Service Tables by intersection approach lane group are contained in Appendix B. Some individual turning movements were determined to operate at poor Levels of Service without and with the Project during some of the peak hours and some traffic signal timing changes benefit those movements such as the southbound Water Street left turn movement as well as westbound Washington Street at the intersection of Water Street and Washington Street. The Project generally does not add much traffic to some of these movements and will not have a significant impact on the overall intersections. Traffic signal timing changes would generally be recommended without or with the with the Project. There are some delays experienced for the left turn movement from Elizabeth Street to Water Street, without or with the Project, during the Peak PM Hour. The Site Driveways are expected to operate at good Levels of service.

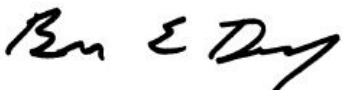
Copies of the capacity analysis summary sheets are contained in Appendix D. It is the opinion of DTS Provident that the study intersections will not be significantly impacted by the proposed Project.

CONCLUSION

Based upon the information contained herein, it is the considered professional opinion of DTS Provident that the traffic associated with the proposed Project will not have an adverse impact upon the adjacent roadway network. Some intersections/movements will continue to experience some minor delays during the peak hour without or with the Project, which is typical for this type of area.

Very truly yours,

DTS Provident Design Engineering, LLP



Brian E. Dempsey P.E., P.T.O.E., RSP1
Partner



Brian Haggarty, EIT
Traffic Engineer

https://divneytungschwalbe.sharepoint.com/sites/DTSP/Shared Documents/Projects/Projects 1100/1187 Norwalk - 108 Water Street/TRAF/Reports/1187_TIS_108 Water Street_V3.docx

APPENDIX A

TRAFFIC FIGURES



C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg

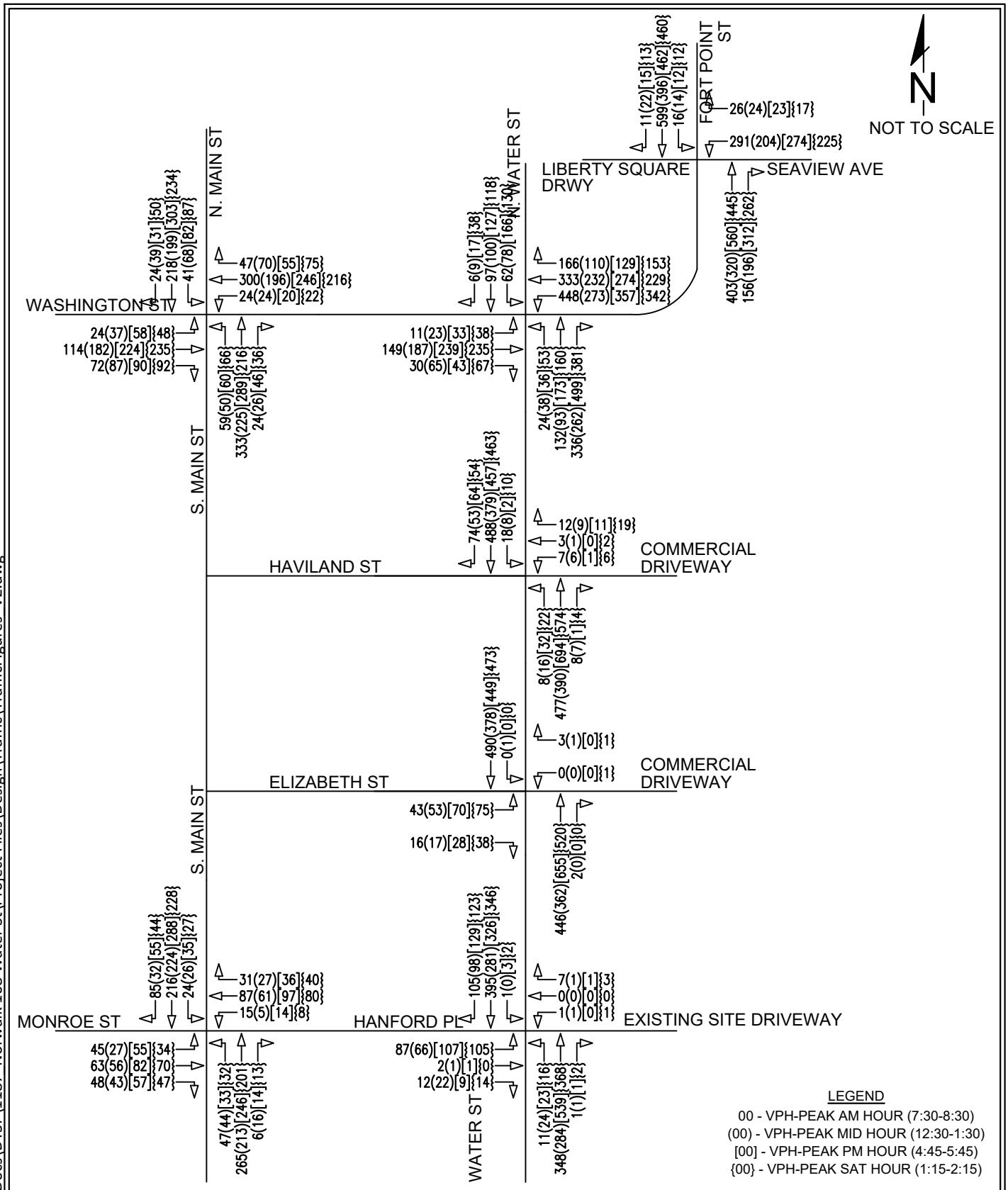
DTS · PROVIDENT
Intelligent Land Use

DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Site Location
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: As Shown
June, 2025

Figure No. 01



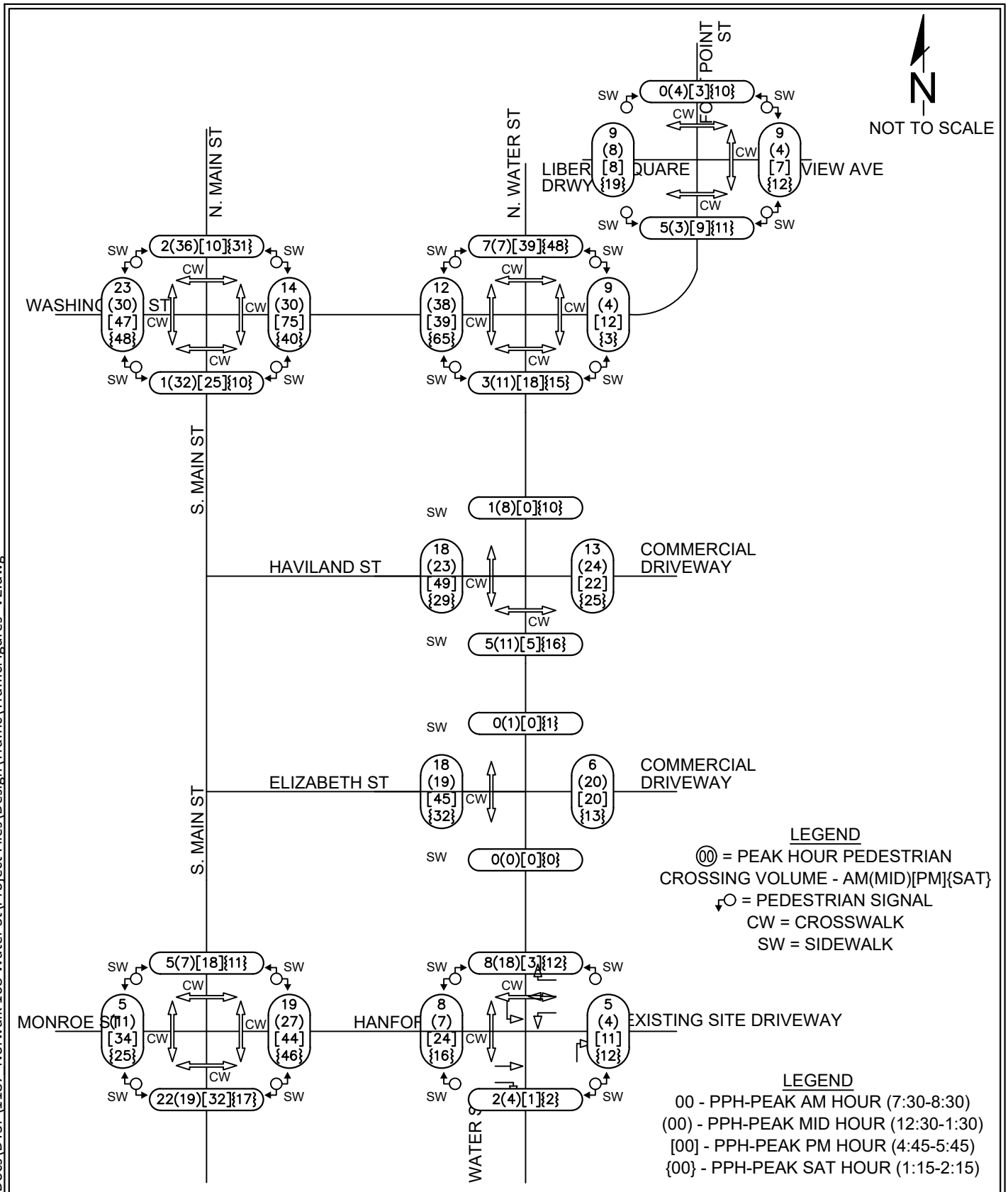
C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg

DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Existing Traffic Volumes
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 02



C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg

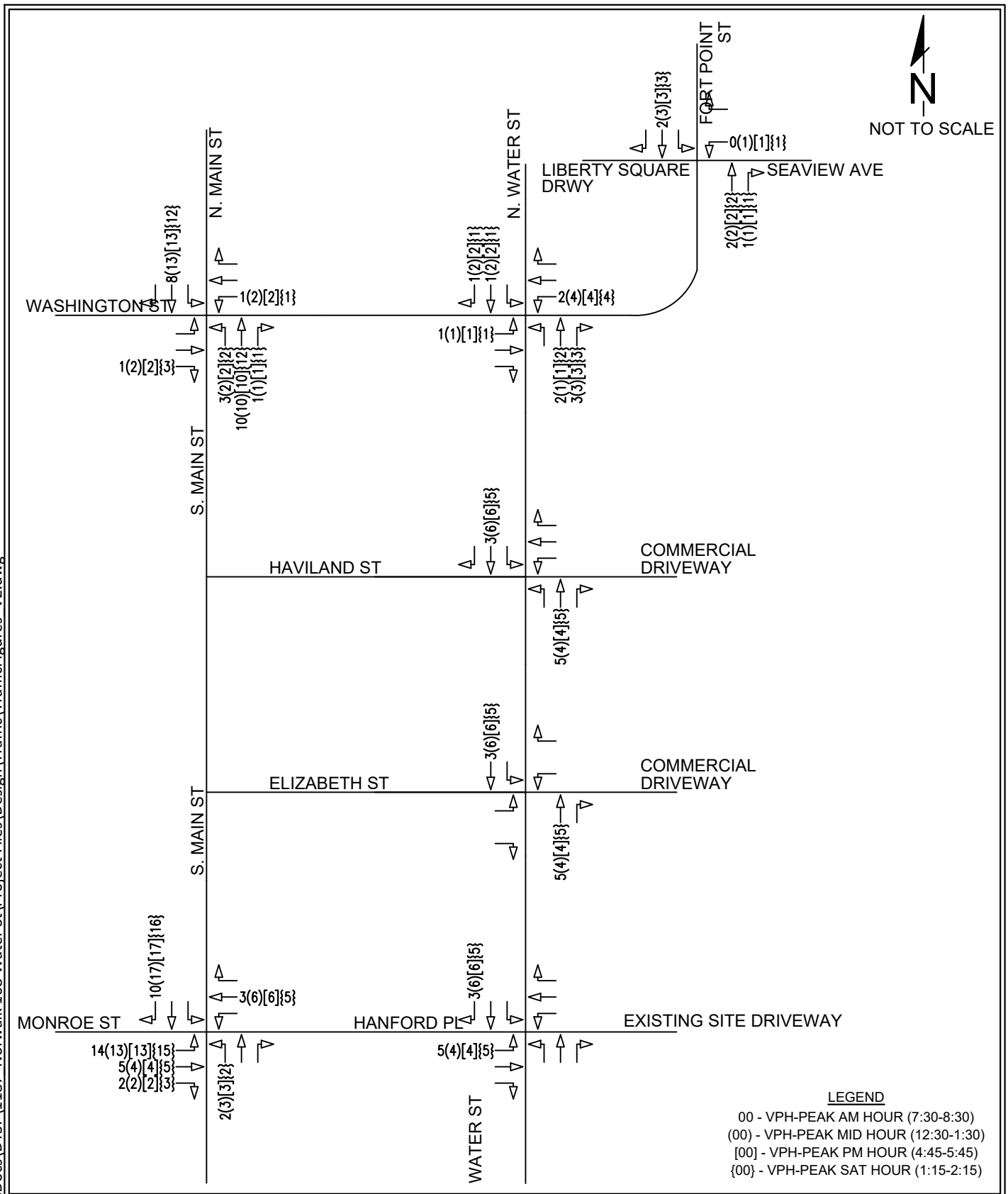
DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Existing Pedestrian Volumes

108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 03



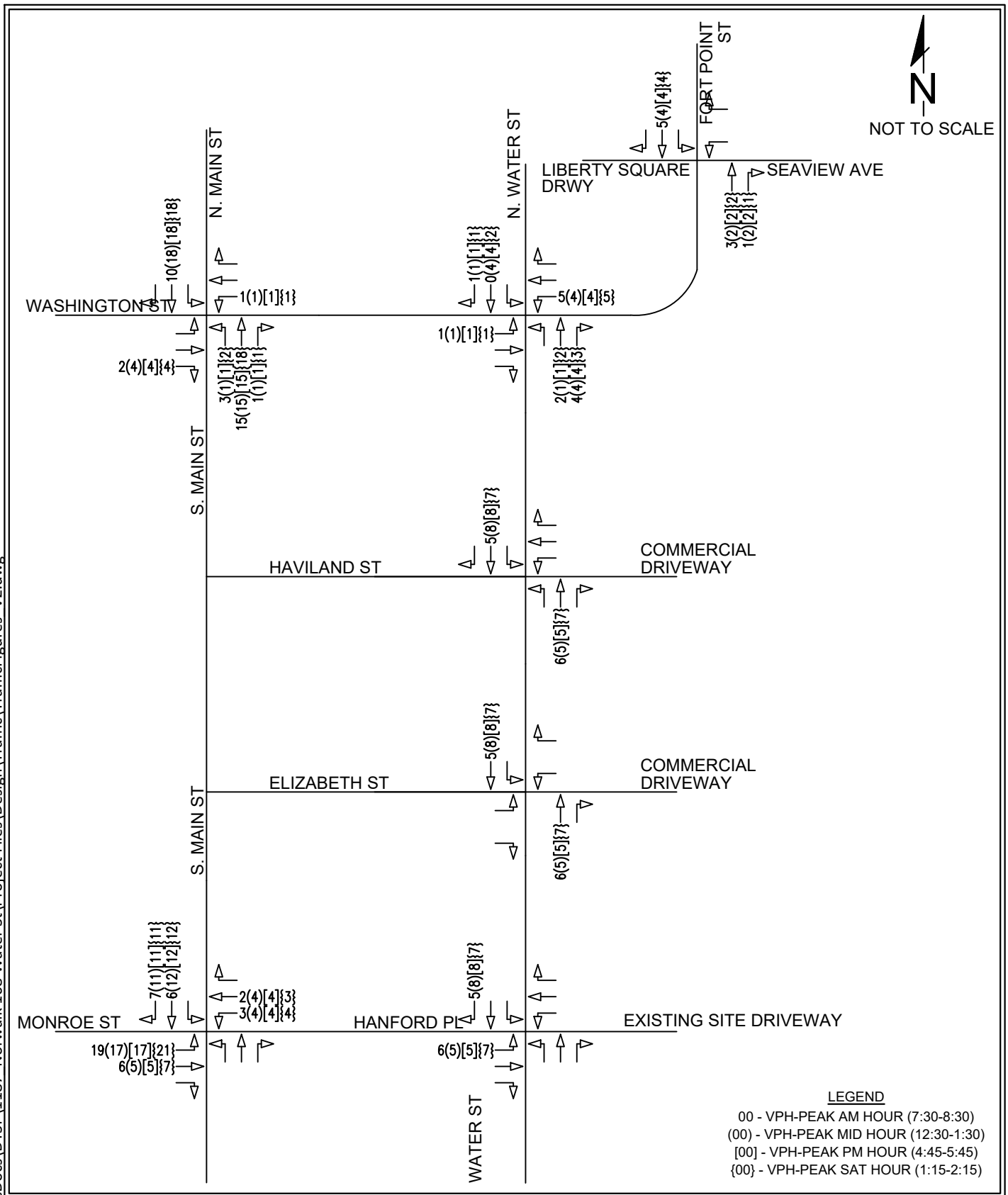
DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Adjacent Development Traffic Volumes
10 Monroe Street
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 04

C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg



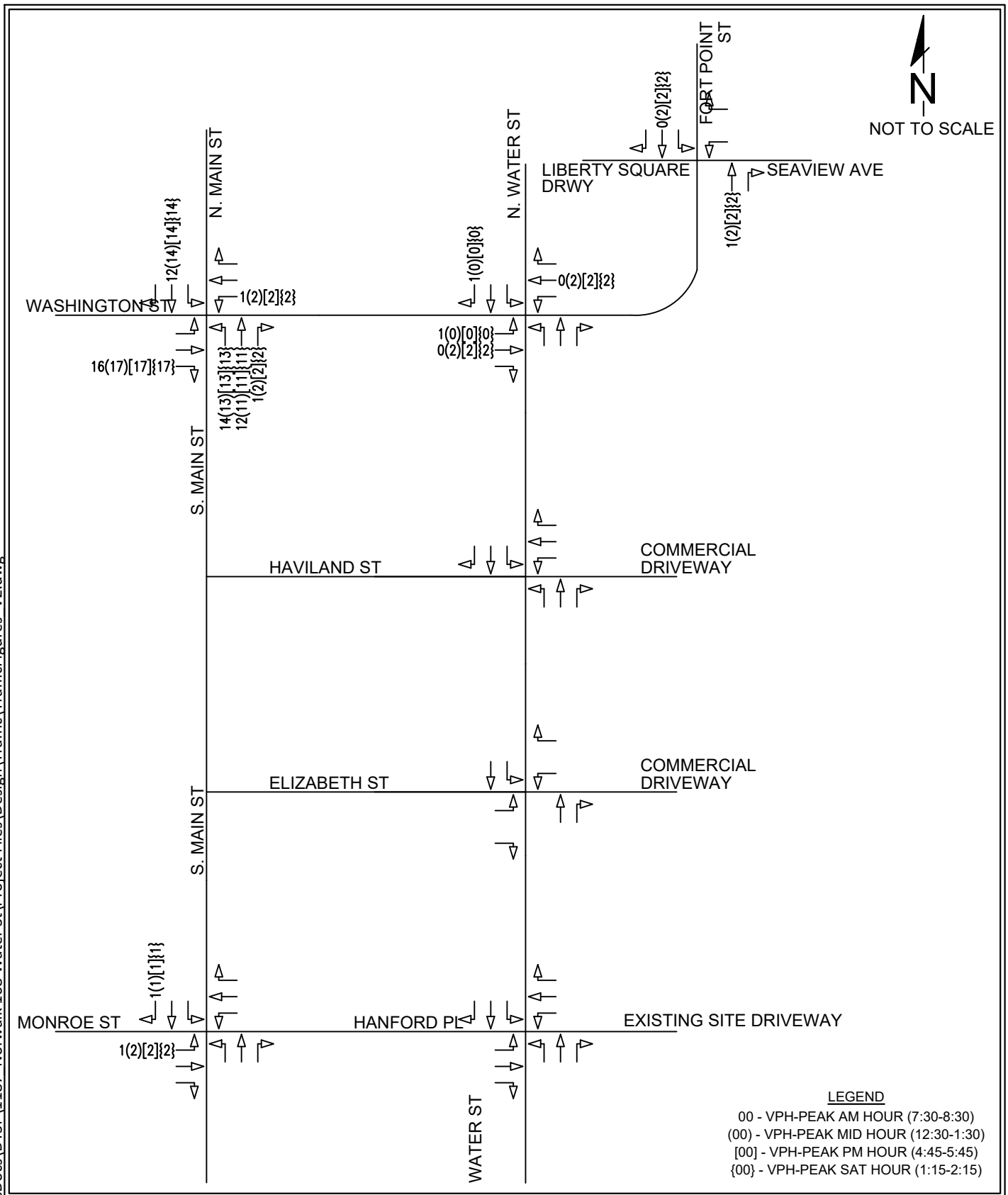
DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Adjacent Development Traffic Volumes
15-07 Chestnut Street
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 05

C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg



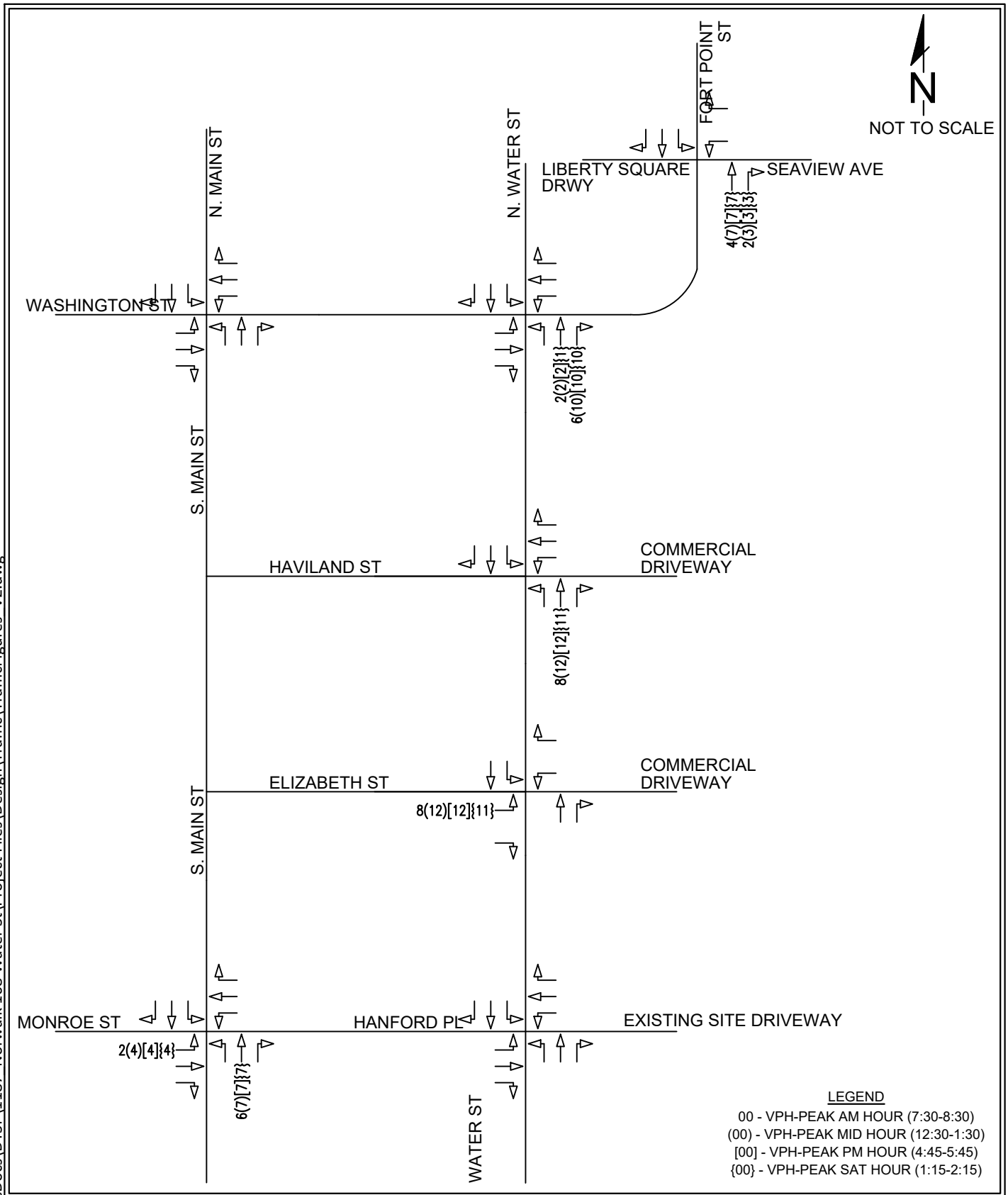
C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg

DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Adjacent Development Traffic Volumes
25-35 South Main Street
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 06



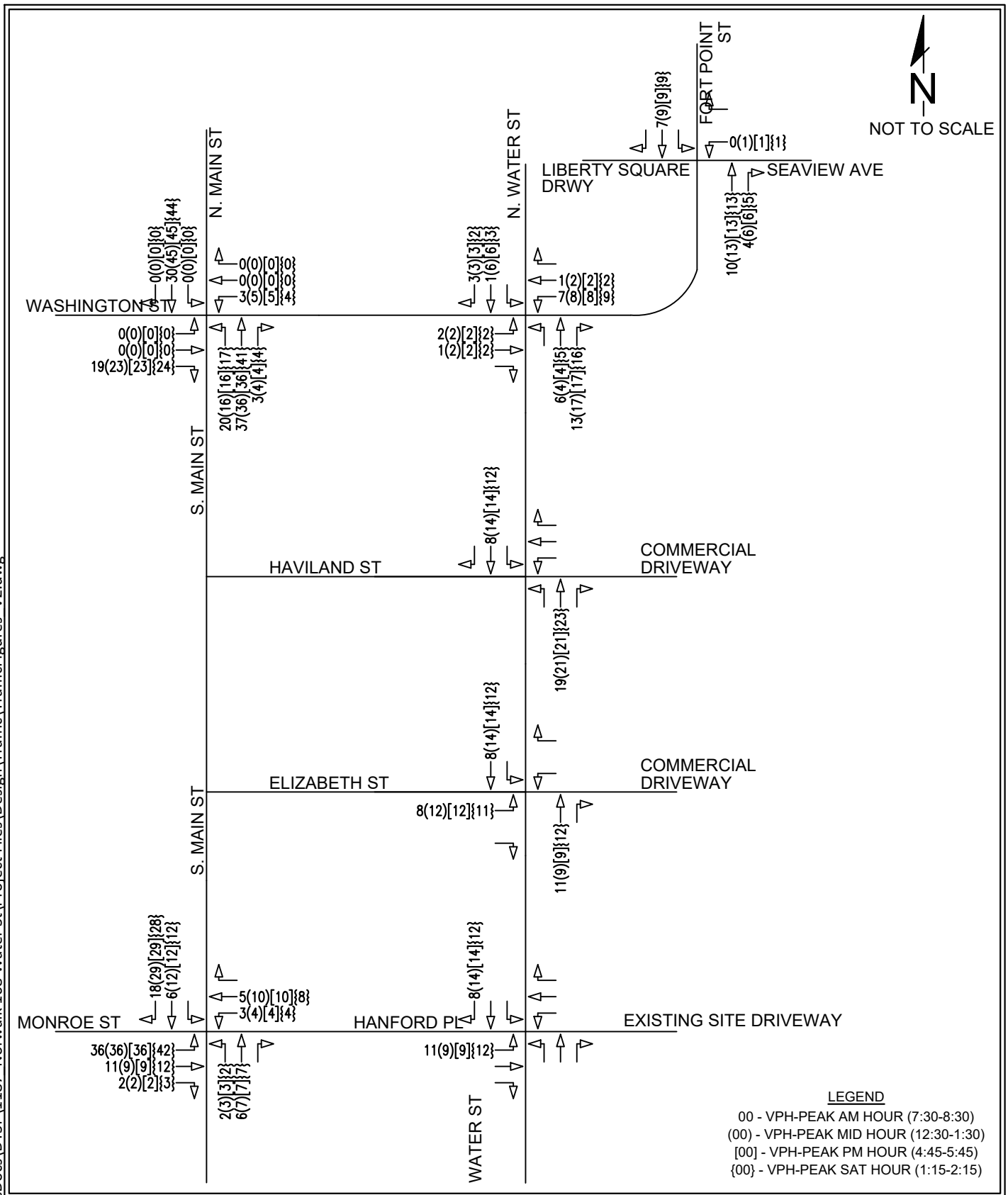
DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Adjacent Development Traffic Volumes
71 Water Street
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 07

C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg



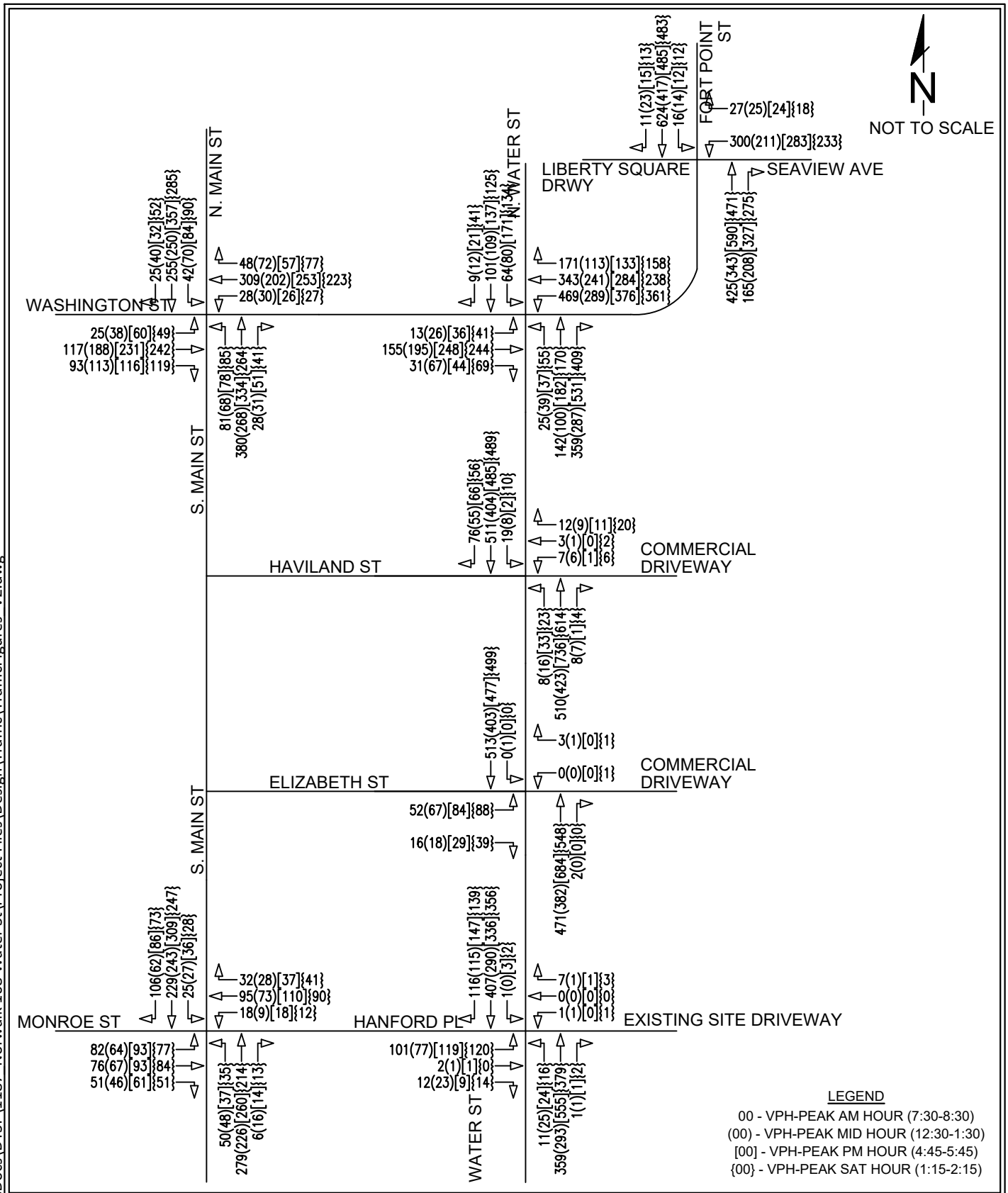
C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg

DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Adjacent Development Traffic Volumes
Total
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 08



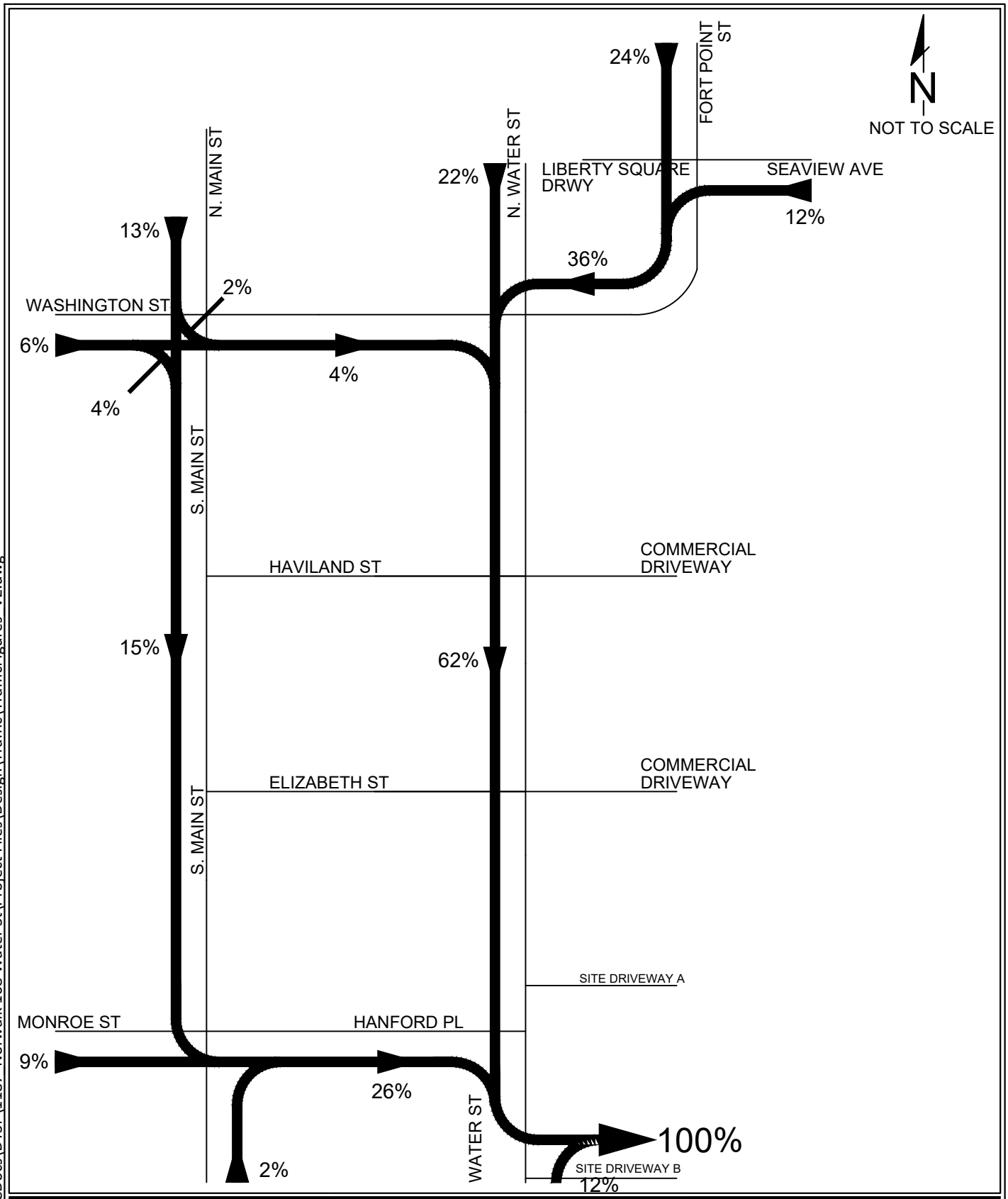
C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg

DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

No-Build Traffic Volumes
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 09



DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

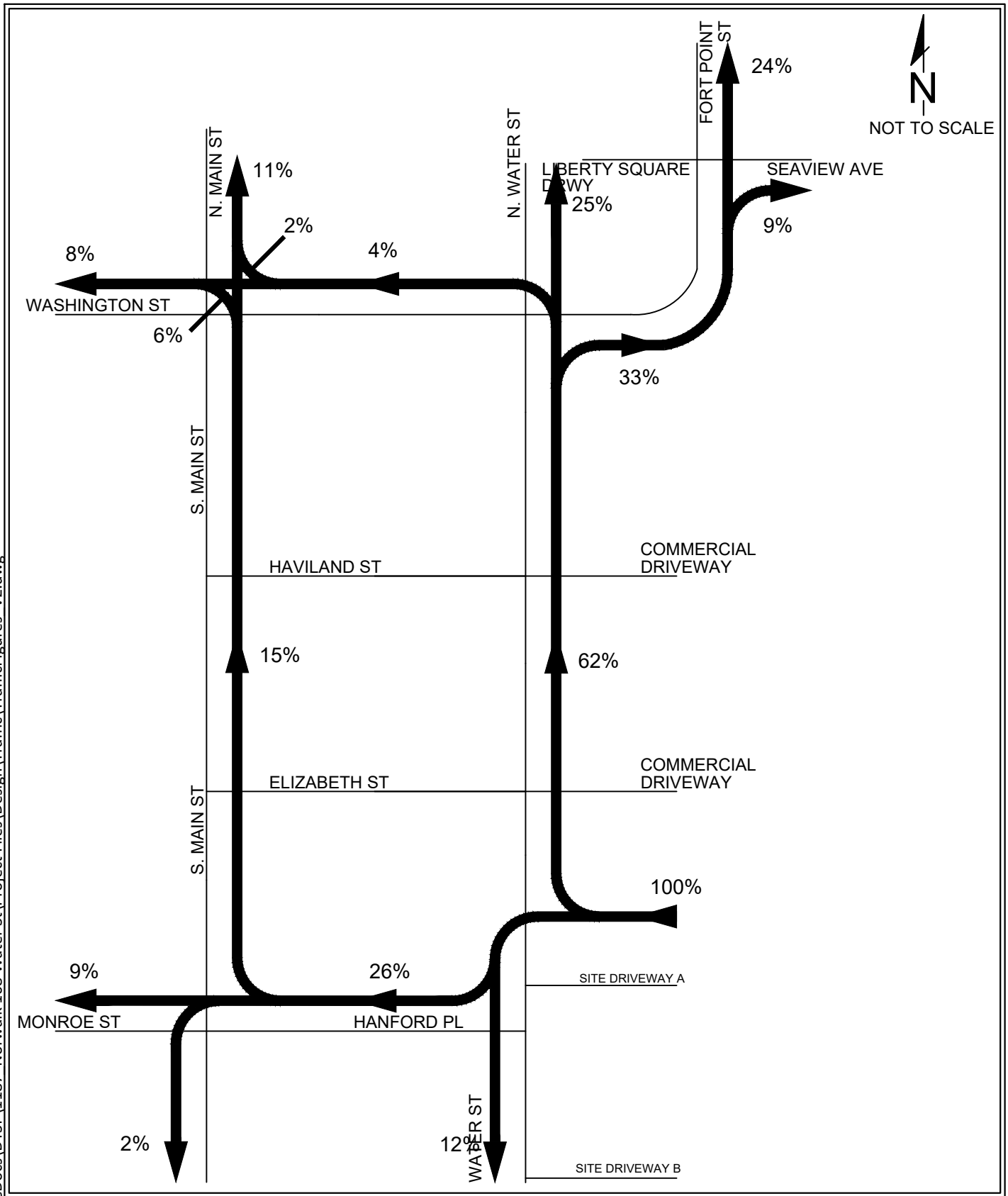
Arrival Distribution

108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 10

C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg



C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg

DTS · PROVIDENT
Intelligent Land Use

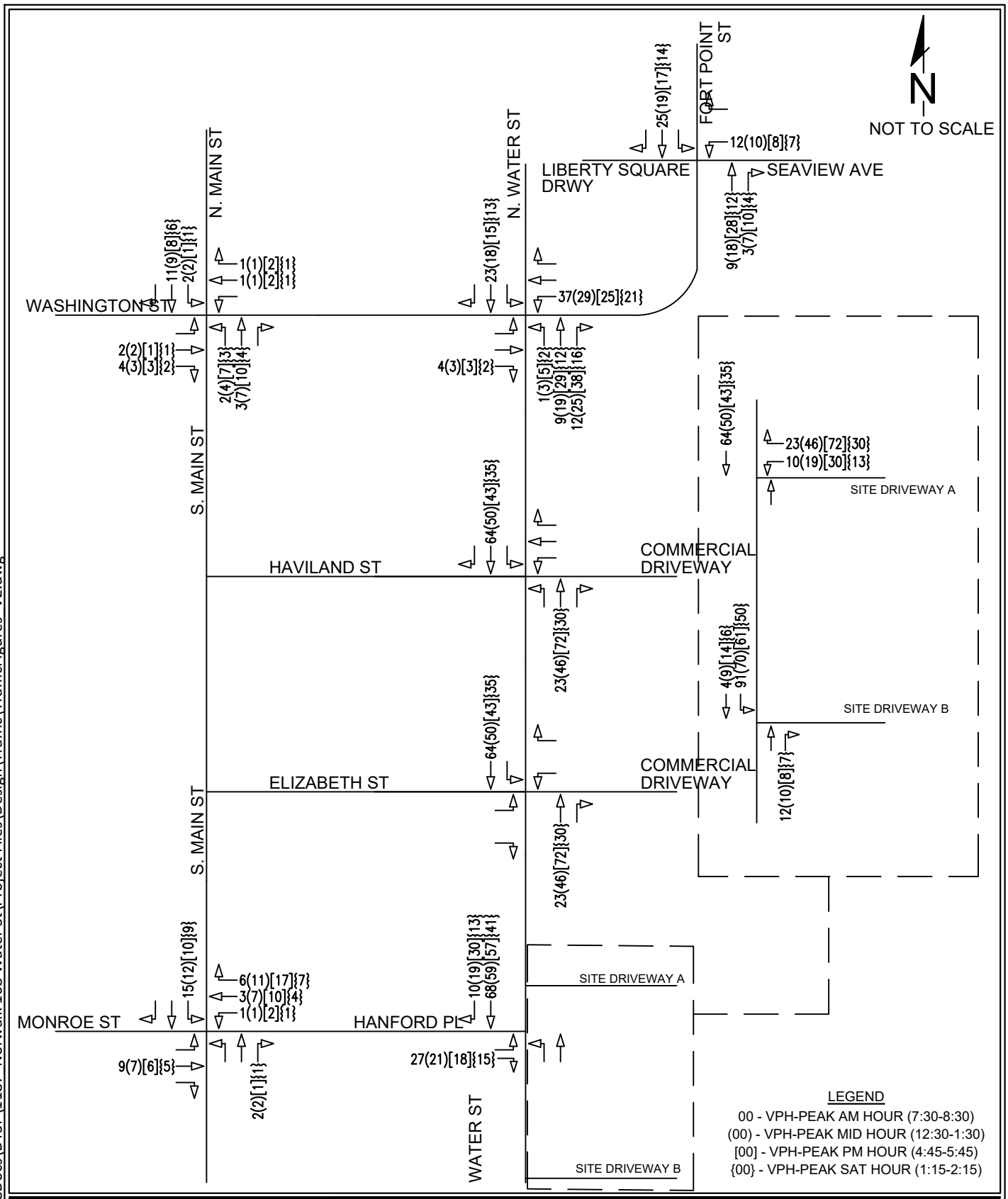
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Departure Distribution

108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 11



C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg

DTS · PROVIDENT
Intelligent Land Use

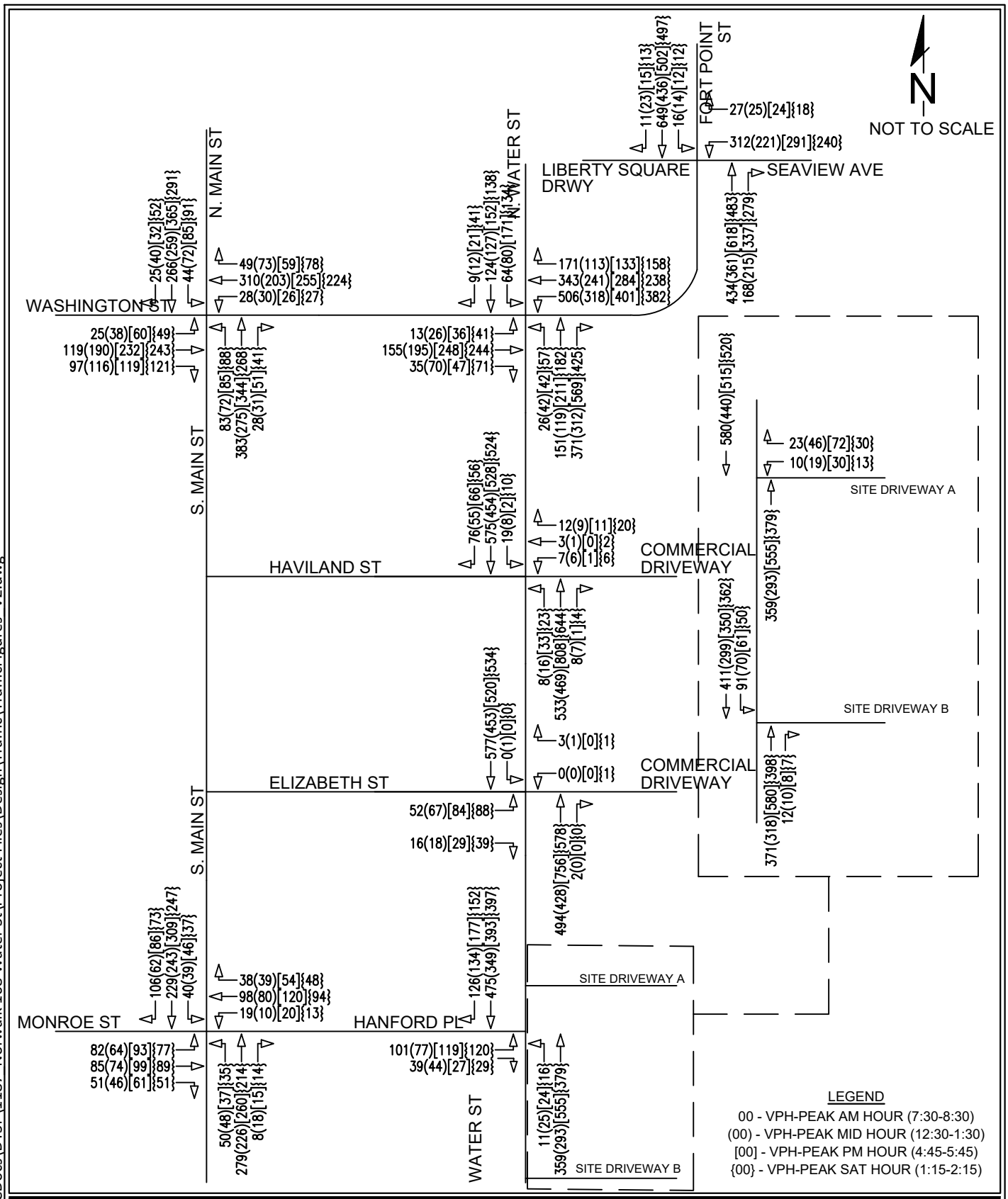
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Site Generated Traffic Volumes

108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 12



C:\Users\bhaggarty\DC\ACCDocs\DTSP\1187 Norwalk 108 Water St\Project Files\Design\Traffic\TrafficFigures V2.dwg

DTS · PROVIDENT
Intelligent Land Use
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Build Traffic Volumes

108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 13

APPENDIX B

LEVEL OF SERVICE SUMMARY

TABLES

TABLE B-1A
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Washington Street

APPROACH		AM PEAK HOUR				MIDDAY PEAK HOUR		
		2025	2028	2028	2028	2025	2028	2028
		EXISTING	NO-BUILD	BUILD	BUILD WITH IMPROVEMENTS	EXISTING	NO-BUILD	BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Washington Street								
EB	OVERALL	C 31.9	D 36.5	D 37.6	D 44.1	D 44.1	D 46.9	D 49.4
WB	L	C 33.8	E 60.2	F 87.3	E 60.1	C 27.4	C 29.8	C 33.9
	TR	B 17.8	C 22.5	C 23.0	C 21.7	B 18.7	B 19.0	B 19.3
	OVERALL	C 25.4	D 40.5	D 54.9	D 40.7	C 22.5	C 23.9	C 26.2
Water Street								
NB	L	C 31.5	C 34.2	C 34.4	D 35.9	C 30.7	C 30.8	C 31.2
	T	C 32.1	D 35.6	D 35.4	D 37.3	C 29.7	C 29.8	C 30.2
	R	A 0.4	A 0.4	A 0.4	A 0.4	A 0.2	A 0.3	A 0.3
	OVERALL	B 10.4	B 11.5	B 11.7	B 12.3	B 10.1	A 10.0	B 10.6
SB	OVERALL	D 38.3	D 44.9	D 47.0	D 53.9	D 40.0	D 41.6	D 43.4
INTERSECTION		C **23.2**	C **32.4**	D **40.3**	C **34.5**	C **25.5**	C **26.6**	C **28.1**

*AM Improvements - Take 5 seconds of green time from Ø2. Give 5 seconds of green time to Ø1.

TABLE B-1B
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Washington Street

APPROACH		PM PEAK HOUR				SAT PEAK HOUR			
		2025	2028	2028	2028	2025	2028	2028	2028
		EXISTING	NO-BUILD	BUILD	BUILD WITH IMPROVEMENTS	EXISTING	NO-BUILD	BUILD	BUILD WITH IMPROVEMENTS
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Washington Street									
EB	OVERALL	D 39.3	D 41.1	D 41.1	D 48.5	D 54.0	E 56.0	E 56.4	E 59.7
WB	L	F 166.7	F 218.3	F 255.5	F 234.8	D 45.2	D 54.7	E 66.2	E 77.1
	TR	C 25.6	C 26.3	C 26.4	C 27.9	B 18.3	B 18.6	B 18.6	C 20.1
	OVERALL	F 92.0	F 117.8	F 138.7	F 129.3	C 31.0	D 35.9	D 42.0	D 48.1
Water Street									
NB	L	C 27.6	C 28.0	C 28.3	C 27.2	C 33.8	C 34.5	D 35.1	C 32.8
	T	C 27.6	C 27.7	C 28.3	C 27.4	C 31.9	C 32.3	C 32.8	C 31.0
	R	A 0.4	A 0.5	A 0.5	A 0.5	A 0.3	A 0.4	A 0.4	A 0.4
	OVERALL	A 8.5	A 8.5	A 9.1	A 8.8	B 11.8	B 11.9	B 12.2	B 11.5
SB	OVERALL	D 44.7	D 47.5	E 57.3	D 52.2	E 79.8	F 103.9	F 129.6	F 101.5
INTERSECTION		D **48.8**	E **58.6**	E **66.6**	E **63.5**	D **36.4**	D **41.9**	D **48.1**	D **46.5**

*PM Improvements - Take 5 seconds of green time from Ø2. Give 3 seconds of green time to Ø4 & Ø8. Give 2 seconds of green time to Ø1.
*SAT Improvements - Take 2 seconds of green time from Ø2. Give 2 seconds of green time to Ø4 & Ø8.

TABLE B-2A
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Haviland Street

APPROACH		AM PEAK HOUR			MIDDAY PEAK HOUR		
		2025 EXISTING	**2028 NO-BUILD**	**2028 BUILD**	**2025 EXISTING**	**2028 NO-BUILD**	**2028 BUILD**
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Driveway							
WB	OVERALL	c 15.9	c 16.7	c 18.0	b 13.1	b 13.6	b 14.5
Water Street							
NB	OVERALL	a 0.1	a 0.1	a 0.1	a 0.3	a 0.3	a 0.3
SB	OVERALL	a 0.3	a 0.3	a 0.3	a 0.2	a 0.1	a 0.1
INTERSECTION		a **0.5**	a **0.5**	a **0.5**	a **0.5**	a **0.5**	a **0.4**

TABLE B-2B
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Haviland Street

APPROACH		PM PEAK HOUR			SAT PEAK HOUR		
		2025 EXISTING	**2028 NO-BUILD**	**2028 BUILD**	**2025 EXISTING**	**2028 NO-BUILD**	**2028 BUILD**
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Driveway							
WB	OVERALL	b 14.3	b 14.9	c 16.0	c 15.2	c 15.9	c 16.6
Water Street							
NB	OVERALL	a 0.4	a 0.4	a 0.4	a 0.3	a 0.3	a 0.3
SB	OVERALL	a 0.0	a 0.0	a 0.0	a 0.2	a 0.2	a 0.2
INTERSECTION		a **0.4**	a **0.4**	a **0.3**	a **0.6**	a **0.6**	a **0.6**

TABLE B-3A
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Elizabeth Street

APPROACH		AM PEAK HOUR			MIDDAY PEAK HOUR		
		2025 EXISTING	2028 NO-BUILD	2028 BUILD	2025 EXISTING	2028 NO-BUILD	2028 BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Elizabeth Street							
EB	L	d 30.4	d 34.0	e 41.5	c 19.8	c 22.3	d 26.5
	R	b 12.4	b 12.3	b 13.1	b 11.0	b 11.2	b 11.7
	OVERALL	d 25.5	d 28.9	d 34.8	c 17.7	c 20.0	c 23.4
Driveway							
WB	OVERALL	b 12.1	b 12.3	b 12.6	b 12.6	b 12.8	b 13.4
Water Street							
NB	OVERALL	a 0.0	a 0.0	a 0.0	a 0.0	a 0.0	a 0.0
SB	OVERALL	a 0.0	a 0.0	a 0.0	a 0.0	a 0.0	a 0.0
INTERSECTION		a **1.6**	a **1.9**	a **2.1**	a **1.5**	a **2.0**	a **2.1**

TABLE B-3B
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Elizabeth Street

APPROACH		PM PEAK HOUR			SAT PEAK HOUR		
		2025 EXISTING	2028 NO-BUILD	2028 BUILD	2025 EXISTING	2028 NO-BUILD	2028 BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Elizabeth Street							
EB	L	e 41.5	f 55.5	f 80.7	e 37.3	e 47.9	f 58.3
	R	b 11.4	b 11.6	b 12.1	b 12.4	b 12.7	b 13.1
	OVERALL	d 32.9	e 44.3	f 63.1	d 28.9	e 37.1	e 44.4
Driveway							
WB	OVERALL	a 0.0	a 0.0	a 0.0	c 23.3	d 25.8	d 28.1
Water Street							
NB	OVERALL	a 0.0	a 0.0	a 0.0	a 0.0	a 0.0	a 0.0
SB	OVERALL	a 0.0	a 0.0	a 0.0	a 0.0	a 0.0	a 0.0
INTERSECTION		a **2.7**	a **3.9**	a **5.1**	a **3.0**	a **4.0**	a **4.6**

TABLE B-4A
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Hanford Place

APPROACH		AM PEAK HOUR			MIDDAY PEAK HOUR		
		2025	2028	2028	2025	2028	2028
		EXISTING	NO-BUILD	BUILD	EXISTING	NO-BUILD	BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Hanford Place							
EB	OVERALL	C 31.0	C 33.0	C 30.8	C 20.2	C 22.5	C 20.2
Driveway							
WB	OVERALL	A 0.1	A 0.1	N/A N/A	A 0.0	A 0.0	N/A N/A
Water Street							
NB	OVERALL	B 12.0	B 12.3	B 12.5	B 10.7	B 11.8	B 11.3
SB	OVERALL	B 13.9	B 14.7	B 18.8	B 10.7	B 12.0	B 12.9
INTERSECTION		B **14.8**	B **15.8**	B **18.2**	B **11.8**	B **13.2**	B **13.3**

TABLE B-4B
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Hanford Place

APPROACH		PM PEAK HOUR			SAT PEAK HOUR		
		2025	2028	2028	2025	2028	2028
		EXISTING	NO-BUILD	BUILD	EXISTING	NO-BUILD	BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Hanford Place							
EB	OVERALL	C 29.9	C 29.9	C 27.3	B 16.0	B 17.3	C 27.0
Driveway							
WB	OVERALL	A 0.0	A 0.0	N/A N/A	A 0.0	A 0.0	N/A N/A
Water Street							
NB	OVERALL	B 15.2	B 15.2	B 14.6	B 11.4	B 11.9	B 14.3
SB	OVERALL	B 13.1	B 13.1	B 14.3	B 12.1	B 13.0	B 17.3
INTERSECTION		B **15.9**	B **15.9**	B **15.9**	B **12.3**	B **13.1**	B **17.5**

TABLE B-5A
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
North/South Main Street & Washington Street

APPROACH		AM PEAK HOUR				MIDDAY PEAK HOUR		
		2025	2028	2028	2028	2025	2028	2028
		EXISTING	NO-BUILD	BUILD	BUILD WITH IMPROVEMENTS	EXISTING	NO-BUILD	BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Washington Street								
EB	L	C 23.2	C 24.2	C 24.2	C 27.3	C 21.3	C 22.4	C 22.6
	TR	C 24.3	C 26.6	C 26.8	C 29.8	C 24.8	C 28.0	C 29.3
	OVERALL	C 24.2	C 26.4	C 26.5	C 29.5	C 24.3	C 27.3	C 28.6
WB	OVERALL	C 31.8	D 38.7	D 38.8	D 45.5	C 25.2	C 27.7	C 28.7
South Main Street								
NB	OVERALL	D 37.0	D 42.9	D 47.0	D 37.9	C 27.0	C 31.3	C 30.7
North Main Street								
SB	L	C 24.6	C 24.5	C 24.7	C 22.5	C 23.6	C 24.4	C 24.3
	TR	C 24.5	C 24.3	C 24.7	C 22.7	C 23.4	C 24.4	C 24.1
	OVERALL	C 24.5	C 24.4	C 24.7	C 22.7	C 23.4	C 24.4	C 24.2
INTERSECTION		C **30.7**	C **34.9**	D **36.3**	C **35.0**	C **25.0**	C **27.7**	C **28.0**

*AM Improvements - Take 4 seconds of green time from Ø2 & Ø6. Give 4 seconds of green time to Ø4 & Ø8.

TABLE B-5B
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
North/South Main Street & Washington Street

APPROACH		PM PEAK HOUR				SAT PEAK HOUR		
		2025	2028	2028	2028	2025	2028	2028
		EXISTING	NO-BUILD	BUILD	BUILD WITH IMPROVEMENTS	EXISTING	NO-BUILD	BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Washington Street								
EB	L	C 26.7	C 31.7	C 32.5	C 29.5	C 24.4	C 27.7	C 28.0
	TR	C 30.3	D 41.2	D 43.1	D 38.8	C 29.6	D 36.6	D 37.6
	OVERALL	C 29.8	D 39.8	D 41.5	D 37.5	C 28.9	D 36.5	D 36.5
WB	OVERALL	C 29.2	D 43.2	D 48.5	D 39.7	C 27.9	C 33.9	D 35.1
South Main Street								
NB	OVERALL	C 30.5	C 31.7	C 34.5	D 39.7	C 26.5	C 34.6	D 36.2
South Main Street								
SB	L	C 24.4	C 23.3	C 23.3	C 25.0	C 23.0	C 22.4	C 22.3
	TR	C 24.2	C 23.3	C 23.3	C 24.8	C 22.9	C 22.6	C 22.5
	OVERALL	C 24.2	C 23.3	C 23.3	C 24.8	C 22.9	C 22.6	C 22.5
INTERSECTION		C **28.3**	C **33.6**	D **35.8**	C **35.0**	C **26.5**	C **31.4**	C **32.3**

*PM Improvements - Take 3 seconds of green time from Ø2 & Ø6. Give 3 seconds of green time to Ø4 & Ø8.

TABLE B-6A

PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE

Fort Point Street / Washington Street & Seaview Avenue

APPROACH		AM PEAK HOUR			MIDDAY PEAK HOUR		
		2025	2028	2028	2025	2028	2028
		EXISTING	NO-BUILD	BUILD	EXISTING	NO-BUILD	BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Seaview Avenue							
WB	L	C 27.1	C 27.1	C 27.1	C 22.2	C 22.5	C 26.3
	LR	B 14.0	B 14.2	B 14.5	A 9.1	A 9.6	B 11.0
	OVERALL	C 20.6	C 20.7	C 20.9	B 15.8	B 16.1	B 18.7
Washington Street							
NB	OVERALL	B 19.6	C 20.4	C 21.0	B 14.0	B 14.2	B 16.9
Fort Point Street							
SB	OVERALL	C 21.5	C 22.4	C 23.5	B 13.5	B 13.7	B 16.3
INTERSECTION		C **20.6**	C **21.3**	C **22.0**	B **14.1**	B **14.4**	B **17.0**

TABLE B-6B

PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE

Fort Point Street / Washington Street & Seaview Avenue

APPROACH		PM PEAK HOUR			SAT PEAK HOUR		
		2025	2028	2028	2025	2028	2028
		EXISTING	NO-BUILD	BUILD	EXISTING	NO-BUILD	BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Seaview Avenue							
WB	L	C 26.5	C 26.5	C 26.5	C 25.3	C 25.5	C 25.5
	LR	B 12.3	B 12.6	B 12.8	B 10.8	B 11.2	B 11.4
	OVERALL	B 19.5	B 19.7	B 19.8	B 18.1	B 18.3	B 18.5
Washington Street							
NB	OVERALL	C 24.8	C 26.6	C 28.6	B 18.5	B 19.3	B 19.6
Fort Point Street							
SB	OVERALL	B 17.5	B 17.9	B 18.3	B 16.3	B 16.6	B 16.7
INTERSECTION		C **21.7**	C **22.9**	C **24.0**	B **17.7**	B **18.2**	B **18.5**

TABLE B-7A
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
South Main Street & Monroe Street / Hanford Place

APPROACH		AM PEAK HOUR			MIDDAY PEAK HOUR		
		2025	2028	2028	2025	2028	2028
		EXISTING	NO-BUILD	BUILD	EXISTING	NO-BUILD	BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Monroe Street							
EB	L	B 19.2	B 20.0	B 19.8	C 20.4	C 21.0	C 20.7
	TR	C 20.8	C 21.0	C 21.0	C 21.7	C 21.5	C 21.2
	OVERALL	C 20.4	C 20.6	C 20.6	C 21.4	C 21.3	C 21.1
Hanford Place							
WB	OVERALL	D 36.6	D 37.8	D 38.0	C 33.8	D 37.0	D 37.7
South Main Street							
NB	OVERALL	C 34.1	D 45.2	D 48.6	C 27.0	C 29.4	C 30.4
SB	LT	C 27.2	C 30.0	C 32.5	C 24.9	C 26.9	C 28.6
	R	A 9.2	A 9.7	A 9.8	A 8.3	A 8.7	A 9.0
	OVERALL	C 22.5	C 24.0	C 26.0	C 23.1	C 23.5	C 25.1
INTERSECTION		C **28.1**	C **32.0**	C **33.7**	C **25.5**	C **26.6**	C **27.6**

TABLE B-7B
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
South Main Street & Monroe Street / Hanford Place

APPROACH		PM PEAK HOUR			SAT PEAK HOUR		
		2025	2028	2028	2025	2028	2028
		EXISTING	NO-BUILD	BUILD	EXISTING	NO-BUILD	BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Monroe Street							
EB	L	C 21.4	C 23.0	C 22.9	C 20.2	C 20.7	C 20.6
	TR	C 22.8	C 23.9	C 23.8	C 21.3	C 20.9	C 20.8
	OVERALL	C 22.4	C 23.6	C 23.5	C 21.1	C 20.8	C 20.7
Hanford Place							
WB	OVERALL	D 36.9	D 39.8	D 41.4	C 31.6	C 32.4	C 32.3
South Main Street							
NB	OVERALL	C 27.5	C 33.1	C 34.4	C 24.6	C 26.4	C 26.9
SB	LT	C 28.0	C 32.3	C 34.3	C 24.3	C 26.0	C 26.9
	R	A 8.7	A 9.2	A 9.5	A 8.8	A 9.4	A 9.5
	OVERALL	C 25.2	C 27.6	C 29.5	C 22.0	C 22.5	C 23.4
INTERSECTION		C **27.1**	C **30.0**	C **31.4**	C **24.1**	C **24.7**	C **25.1**

TABLE B-8A
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Site Driveway A

APPROACH		AM PEAK HOUR 2028 BUILD	MIDDAY PEAK HOUR 2028 BUILD
		LOS DELAY (sec)	LOS DELAY (sec)
Site Driveway A			
WB	OVERALL	b 13.7	b 12.4
Water Street			
NB	OVERALL	a 0.0	a 0.0
SB	OVERALL	a 0.0	a 0.0
INTERSECTION		a **0.5**	a **1.0**

TABLE B-8B
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Site Driveway A

APPROACH		PM PEAK HOUR 2028 BUILD	SAT PEAK HOUR 2028 BUILD
		LOS DELAY (sec)	LOS DELAY (sec)
Site Driveway A			
WB	OVERALL	c 19.4	b 13.7
Water Street			
NB	OVERALL	a 0.0	a 0.0
SB	OVERALL	a 0.0	a 0.0
INTERSECTION		a **1.7**	a **0.6**

TABLE B-9A
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Site Driveway B

APPROACH		AM PEAK HOUR 2028 BUILD	MIDDAY PEAK HOUR 2028 BUILD
		LOS DELAY (sec)	LOS DELAY (sec)
Site Driveway B			
WB	OVERALL	a 0.0	a 0.0
Water Street			
NB	OVERALL	a 0.0	a 0.0
SB	OVERALL	a 1.5	a 1.6
INTERSECTION		a **0.9**	a **0.8**

TABLE B-9B
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE
Water Street & Site Driveway B

APPROACH		PM PEAK HOUR 2028 BUILD	SAT PEAK HOUR 2028 BUILD
		LOS DELAY (sec)	LOS DELAY (sec)
Site Driveway B			
WB	OVERALL	a 0.0	a 0.0
Water Street			
NB	OVERALL	a 0.0	a 0.0
SB	OVERALL	a 1.4	a 1.0
INTERSECTION		a **0.6**	a **0.5**

APPENDIX C

LEVEL OF SERVICE STANDARDS

1. LEVEL OF SERVICE

CONCEPT

The Highway Capacity Manual, published by the Transportation Research Board of the U.S. Government, established a system by which highway facilities are examined for their adequacy to handle traffic volumes. The terminology "Level of Service" is used to provide a "qualitative" evaluation based on certain "quantitative" calculations which are related to empirical values.

Intersection Capacity, Delay and resultant Levels of Service are dependent upon a number of factors, including the following:

- Area Type
- Intersection geometrics
- Traffic volumes
- Parking conditions
- Pedestrian activity
- Vehicle Mix
- Bus Stop location and activity
- Peak Hour Factor
- Traffic Signal operation, if applicable

Ramp and weaving area Densities and resultant Levels of Service are dependent upon a number of factors, including the following:

- Number of lanes
- Configuration of weaving area
- Length of acceleration/deceleration lanes
- Vehicle speeds
- Traffic volumes
- Vehicle Mix
- Peak Hour Factor

FACTORS

SIGNALIZED INTERSECTIONS

Level of Service for Signalized Intersections is defined in terms of Delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, Level of Service criteria are stated in terms of the Average Control Delay per vehicle for the peak 15-minute period within the hour analyzed.

Delay is a complex measure and is dependent upon a number of variables, including:

- Cycle length
- Ratio of Green time to Cycle length (G/C)

- Ratio of Volume to Capacity (V/C) for lane group or approach
- Traffic signal progression

UNSIGNALIZED INTERSECTIONS

Level of Service for Unsignalized Intersections is also defined in terms of Delay. The amount of Delay is based upon the availability of "gaps" in the mainline traffic stream and the acceptance of these gaps by motorists waiting on the side street to enter the main street traffic flow.

RAMP AND RAMP JUNCTIONS

Level of Service for ramp freeway junctions and the ramp proper are defined in terms of Density (passenger cars per mile per lane). Density is related to the traffic flow in the area of influence.

WEAVING AREAS

Level of Service for weaving areas is defined in terms of Density (passenger cars per mile per lane). Density is based on the ratio of weaving vehicles to non-weaving vehicles and on vehicle speeds in the weaving area of influence

CRITERIA

The criteria for the various Level of Service designations are as follows:

	SIGNALIZED	UNSIGNALIZED
LEVEL OF SERVICE	**Average Control Delay per Vehicle (Seconds)**	**Average Control Delay per Vehicle (Seconds)**
A	10.0 or less	10.0 or less
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	80.1 or greater	50.1 or greater

Level of Service	Ramp-Freeway Junction	Ramp Proper	Weaving Areas	
	Maximum Density pc/mi/ln	Density Range pc/mi/ln	Maximum Density pc/mi/ln	
			Freeway Weaving Area	Multi-lane + C-D Weaving Area
A	≤10	≤11	≤10	≤12
B	>10 - 20	>11 – 18	>10 - 20	>12 - 24
C	>20 - 28	>18 – 26	> 20 - 28	>24 - 32
D	>28 - 35	>26 – 35	>28 - 35	>32 - 36
E	>35	>35 – 45	>35 - 43	>36 - 40
F	Demand exceeds capacity	>45	>43	>40

DESCRIPTION

The following is a brief description of each of the six Level of Service designations as defined by the Highway Capacity Manual:

SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE A

Average Control Delay - 10.0 secs. or less

Describes operations with very low delay. Occurs when progression is extremely favorable and most vehicles arrive during the Green Phase and do not stop at all. Short cycle lengths may also contribute to low delay.

LEVEL OF SERVICE B

Average Control Delay - 10.1 to 20.0 secs.

Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average delay.

LEVEL OF SERVICE C

Average Control Delay - 20.1 to 35.0 secs.

Higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this Level of Service. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.

LEVEL OF SERVICE D

Average Control Delay - 35.1 to 55.0 secs.

The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high Volume/Capacity (V/C) Ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LEVEL OF SERVICE E

Average Control Delay - 55.1 to 80.0 secs.

The limit of acceptable delay.

Higher delay values generally indicate poor progression, long cycle lengths, and high V/C Ratios. Individual cycle failures are frequent occurrences.

LEVEL OF SERVICE F

Average Control Delay - in excess of 80.0 secs.

Unacceptable to most drivers.

Occurs with oversaturation, i.e., arrival flow rates exceed the capacity of the intersection. May also occur at high V/C Ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.

UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE A
Average Control Delay - 10.0 secs. or less
Operations with little or no delay to minor turning movements.

LEVEL OF SERVICE B
Average Control Delay - 10.1 to 15.0 secs.
Operations with short delays on minor turning movements.

LEVEL OF SERVICE C
Average Control Delay - 15.1 to 25.0 secs.
Operations with average delays on minor turning movements.

LEVEL OF SERVICE D
Average Control Delay - 25.1 to 35.0 secs.
Operations with some delays on minor turning movements.

LEVEL OF SERVICE E
Average Control Delay - 35.1 to 50.0 secs.
Operations with long delays on minor turning movements.

LEVEL OF SERVICE F
Average Control Delay - In excess of 50.0 secs.
Operations where demand exceeds capacity. Very long delays with queuing may be experienced on the minor street approach.

RAMPS AND RAMP JUNCTIONS

LEVEL OF SERVICE A

Maximum Density - 10 pc/mi/ln

Unrestricted operations with no noticeable turbulence in the ramp influence area.

LEVEL OF SERVICE B

Maximum Density - 20 pc/mi/ln

Minimal levels of turbulence exist and speeds of vehicles in the influence area begin to decline.

LEVEL OF SERVICE C

Maximum Density - 28 pc/mi/ln

Level of turbulence becomes noticeable as average speed within the influence area declines. Driving conditions are still relatively comfortable at this level.

LEVEL OF SERVICE D

Maximum Density - 35 pc/mi/ln

.

Turbulence levels become intrusive. Queues may form on some high volume on-ramps but freeway operation remains stable.

LEVEL OF SERVICE E

Maximum Density - >35 pc/mi/ln

.

Conditions approaching and reaching capacity. Speeds are reduced and turbulence of merging/diverging vehicles becomes intrusive to all vehicles in the influence area. Flow levels approach capacity limits and minor changes in demand can cause ramp and freeway queues to occur.

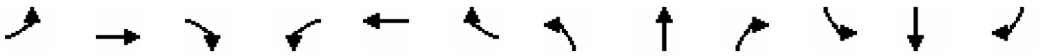
LEVEL OF SERVICE F

Maximum Density – Demand flow exceeds limits

Unstable, or breakdown, operation. Approaching demand flows exceed the discharge capacity of the downstream freeway or ramp. Queues are visibly formed on the freeway and on-ramps and will continue to grow as long as the approaching demand exceeds the discharge capacity.

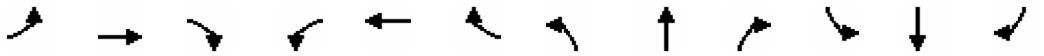
APPENDIX D

CAPACITY ANALYSIS SHEETS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	2	12	1	0	7	11	348	1	1	395	105
Future Volume (vph)	87	2	12	1	0	7	11	348	1	1	395	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		0%			-1%			-1%			-1%	
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.96			1.00			0.99	
Frt		0.984			0.880						0.972	
Flt Protected		0.959			0.994			0.998				
Satd. Flow (prot)	0	1497	0	0	1282	0	0	1550	0	0	1552	0
Flt Permitted		0.749			0.971			0.983				
Satd. Flow (perm)	0	1150	0	0	1252	0	0	1526	0	0	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			67						23	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			175			356			363	
Travel Time (s)		9.7			4.8			9.7			9.9	
Confl. Peds. (#/hr)	8		2	2		8	8		5	5		8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	18%	50%	25%	0%	0%	29%	9%	15%	0%	0%	11%	11%
Adj. Flow (vph)	96	2	13	1	0	8	12	382	1	1	434	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	9	0	0	395	0	0	550	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.99	0.99	0.99	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



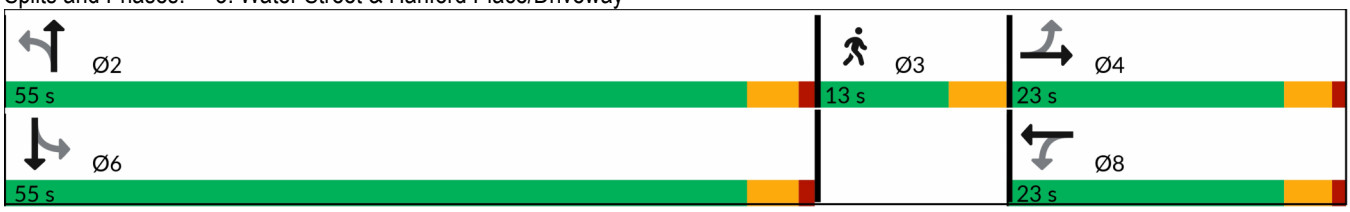
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		6.0	6.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.2	11.2		10.2	10.2		19.6	19.6		19.6	19.6	
Total Split (s)	23.0	23.0		23.0	23.0		55.0	55.0		55.0	55.0	
Total Split (%)	25.3%	25.3%		25.3%	25.3%		60.4%	60.4%		60.4%	60.4%	
Maximum Green (s)	18.8	18.8		18.8	18.8		50.4	50.4		50.4	50.4	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.1	1.1		1.1	1.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.2			4.2			4.6			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		11.9			11.5			35.7			35.7	
Actuated g/C Ratio		0.21			0.20			0.62			0.62	
v/c Ratio		0.46			0.03			0.42			0.56	
Control Delay (s/veh)		31.0			0.1			12.0			13.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		31.0			0.1			12.0			13.9	
LOS		C			A			B			B	
Approach Delay (s/veh)		31.0			0.1			12.0			13.9	
Approach LOS		C			A			B			B	
90th %ile Green (s)	18.8	18.8		18.8	18.8		49.9	49.9		49.9	49.9	
90th %ile Term Code	Max	Max		Hold	Hold		Hold	Hold		Gap	Gap	
70th %ile Green (s)	14.3	14.3		14.3	14.3		36.2	36.2		36.2	36.2	
70th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	9.5	9.5		9.5	9.5		19.2	19.2		19.2	19.2	
50th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	8.4	8.4		8.4	8.4		26.1	26.1		26.1	26.1	
30th %ile Term Code	Gap	Gap		Hold	Hold		Dwell	Dwell		Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)		18			0			46			69	
Queue Length 95th (ft)		110			0			222			337	
Internal Link Dist (ft)		274			95			276			283	
Turn Bay Length (ft)												
Base Capacity (vph)		447			522			1280			1305	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	9.0
Minimum Split (s)	17.0
Total Split (s)	13.0
Total Split (%)	14%
Maximum Green (s)	9.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	6.0
Pedestrian Calls (#/hr)	23
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	13.0
90th %ile Term Code	Ped
70th %ile Green (s)	13.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.25			0.02			0.31			0.42	

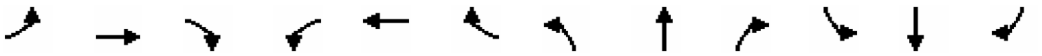
Intersection Summary			
Area Type:	Other		
Cycle Length: 91			
Actuated Cycle Length: 57.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 14.8		Intersection LOS: B	
Intersection Capacity Utilization 47.5%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 94.5			
70th %ile Actuated Cycle: 76.3			
50th %ile Actuated Cycle: 37.5			
30th %ile Actuated Cycle: 43.3			
10th %ile Actuated Cycle: 34.6			

Splits and Phases: 3: Water Street & Hanford Place/Driveway



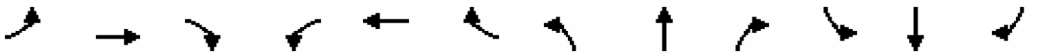
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	149	30	448	333	166	24	132	336	62	97	6
Future Volume (vph)	11	149	30	448	333	166	24	132	336	62	97	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	0.99		0.98		0.99		0.99	
Frt		0.979			0.950				0.850		0.995	
Flt Protected		0.997		0.950			0.950				0.981	
Satd. Flow (prot)	0	1677	0	1560	1632	0	1671	1810	1506	0	1757	0
Flt Permitted		0.956		0.416			0.585				0.826	
Satd. Flow (perm)	0	1607	0	682	1632	0	1011	1810	1483	0	1474	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		9			35				361			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			234			313	
Travel Time (s)		13.1			16.8			6.4			8.5	
Confl. Peds. (#/hr)	7		3	3		7	12		9	9		12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	11%	10%	13%	8%	5%	8%	5%	18%	2%	0%	33%
Adj. Flow (vph)	12	160	32	482	358	178	26	142	361	67	104	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	204	0	482	536	0	26	142	361	0	177	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



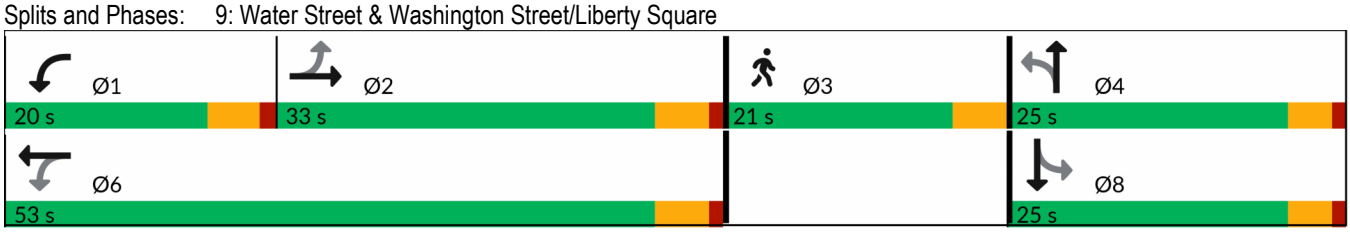
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	33.0	33.0		20.0	53.0		25.0	25.0		25.0	25.0	
Total Split (%)	33.3%	33.3%		20.2%	53.5%		25.3%	25.3%		25.3%	25.3%	
Maximum Green (s)	28.1	28.1		15.0	48.1		20.7	20.7		20.7	20.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		16.5		38.6	38.7		14.7	14.7	71.1		14.7	
Actuated g/C Ratio		0.23		0.54	0.54		0.21	0.21	1.00		0.21	
v/c Ratio		0.54		0.84	0.59		0.13	0.38	0.24		0.58	
Control Delay (s/veh)		31.9		33.8	17.8		31.5	32.1	0.4		38.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		31.9		33.8	17.8		31.5	32.1	0.4		38.3	
LOS		C		C	B		C	C	A		D	
Approach Delay (s/veh)		31.9			25.4			10.4			38.3	
Approach LOS		C			C			B			D	
90th %ile Green (s)	28.1	28.1		15.0	48.1		20.7	20.7		20.7	20.7	
90th %ile Term Code	Hold	Hold		Max	Max		Hold	Hold		Max	Max	
70th %ile Green (s)	19.9	19.9		15.0	39.9		19.3	19.3		19.3	19.3	
70th %ile Term Code	Hold	Hold		Max	Gap		Hold	Hold		Gap	Gap	
50th %ile Green (s)	15.8	15.8		15.0	35.8		15.9	15.9		15.9	15.9	
50th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	10.1	10.1		15.0	30.1		10.1	10.1		10.1	10.1	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	10.0	10.0		15.0	30.0		7.7	7.7		7.7	7.7	
10th %ile Term Code	Min	Min		Max	Hold		Hold	Hold		Gap	Gap	
Queue Length 50th (ft)		60		93	97		7	42	0		55	
Queue Length 95th (ft)		179		#562	385		39	142	0		182	
Internal Link Dist (ft)		399			537			154			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		711		576	1228		327	585	1483		477	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	31
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.29		0.84	0.44		0.08	0.24	0.24		0.37	

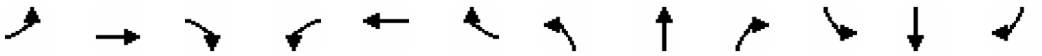
Intersection Summary			
Area Type:	Other		
Cycle Length: 99			
Actuated Cycle Length: 71.1			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 23.2		Intersection LOS: C	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 104			
70th %ile Actuated Cycle: 94.4			
50th %ile Actuated Cycle: 60.9			
30th %ile Actuated Cycle: 49.4			
10th %ile Actuated Cycle: 46.9			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



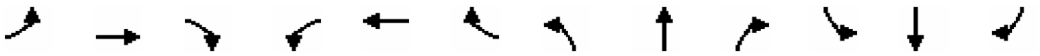
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	63	48	15	87	31	47	265	6	24	216	85
Future Volume (vph)	45	63	48	15	87	31	47	265	6	24	216	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98			0.99			1.00			1.00	0.97
Frt		0.935			0.969			0.997				0.850
Flt Protected	0.950				0.994			0.993			0.995	
Satd. Flow (prot)	1546	1345	0	0	1663	0	0	1498	0	0	1745	1449
Flt Permitted	0.391				0.949			0.918			0.944	
Satd. Flow (perm)	634	1345	0	0	1582	0	0	1384	0	0	1653	1410
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	5		22	22		5	5		19	19		5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	9%	24%	17%	7%	13%	0%	57%	20%	17%	8%	9%	12%
Adj. Flow (vph)	50	70	53	17	97	34	52	294	7	27	240	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	123	0	0	148	0	0	353	0	0	267	94
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



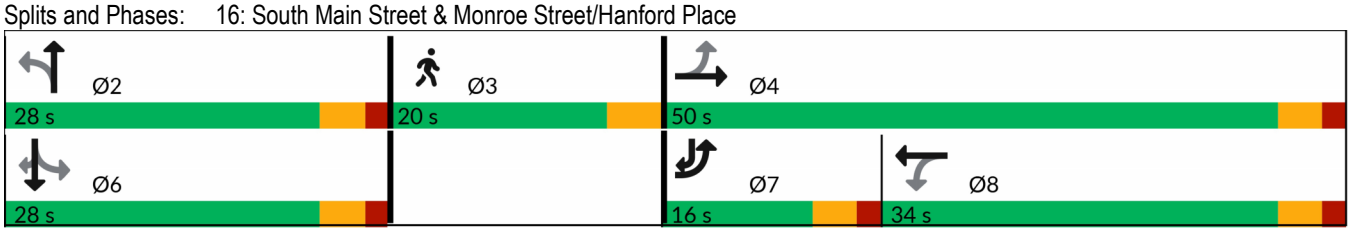
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	16.0	50.0		34.0	34.0		28.0	28.0		28.0	28.0	16.0
Total Split (%)	16.3%	51.0%		34.7%	34.7%		28.6%	28.6%		28.6%	28.6%	16.3%
Maximum Green (s)	11.1	45.1		29.1	29.1		23.1	23.1		23.1	23.1	11.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	25.4	25.4			14.4			31.0			31.0	36.4
Actuated g/C Ratio	0.36	0.36			0.20			0.44			0.44	0.51
v/c Ratio	0.13	0.26			0.46			0.58			0.37	0.13
Control Delay (s/veh)	19.2	20.8			36.6			34.1			27.2	9.2
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	19.2	20.8			36.6			34.1			27.2	9.2
LOS	B	C			D			C			C	A
Approach Delay (s/veh)		20.4			36.6			34.1			22.5	
Approach LOS		C			D			C			C	
90th %ile Green (s)	10.8	34.4		18.7	18.7		23.1	23.1		23.1	23.1	10.8
90th %ile Term Code	Gap	Hold		Gap	Gap		Max	Max		Max	Max	Gap
70th %ile Green (s)	10.0	30.1		15.2	15.2		23.1	23.1		23.1	23.1	10.0
70th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Max	Max	Min
50th %ile Green (s)	10.0	27.9		13.0	13.0		23.1	23.1		23.1	23.1	10.0
50th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
30th %ile Green (s)	10.0	25.7		10.8	10.8		23.1	23.1		23.1	23.1	10.0
30th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
10th %ile Green (s)	0.0	0.0		0.0	0.0		28.5	28.5		28.5	28.5	0.0
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	Skip
Queue Length 50th (ft)	18	48			75			184			123	16
Queue Length 95th (ft)	42	90			135			#384			222	32
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	395	891			748			605			722	742
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.13	0.14			0.20			0.58			0.37	0.13

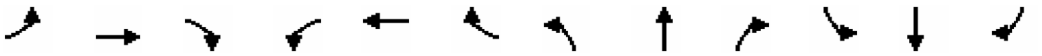
Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 71			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay (s/veh): 28.1		Intersection LOS: C	
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 91.3			
70th %ile Actuated Cycle: 87			
50th %ile Actuated Cycle: 84.8			
30th %ile Actuated Cycle: 58.6			
10th %ile Actuated Cycle: 33.4			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



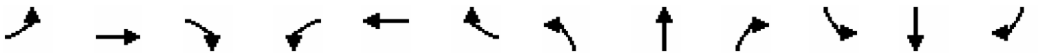
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	114	72	24	300	47	59	333	24	41	218	24
Future Volume (vph)	24	114	72	24	300	47	59	333	24	41	218	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99			1.00			0.99		0.99	0.99	
Frt		0.942			0.983			0.992			0.985	
Flt Protected	0.950				0.997			0.993		0.950		
Satd. Flow (prot)	1552	1549	0	0	1710	0	0	1673	0	1596	1644	0
Flt Permitted	0.381				0.973			0.915		0.391		
Satd. Flow (perm)	622	1549	0	0	1668	0	0	1537	0	652	1644	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	2		1	1		2	23		14	14		23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	4%	17%	7%	6%	12%	11%	29%	5%	8%	17%
Adj. Flow (vph)	26	124	78	26	326	51	64	362	26	45	237	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	202	0	0	403	0	0	452	0	45	263	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



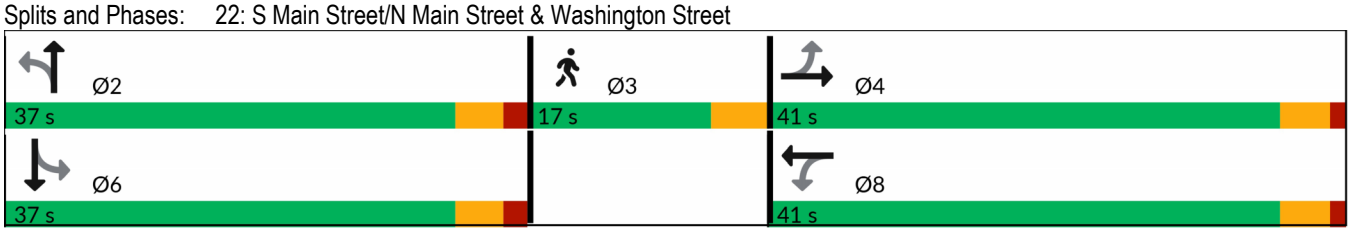
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	41.0	41.0		41.0	41.0		37.0	37.0		37.0	37.0	
Total Split (%)	43.2%	43.2%		43.2%	43.2%		38.9%	38.9%		38.9%	38.9%	
Maximum Green (s)	36.4	36.4		36.4	36.4		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	25.5	25.5			25.5			27.6		27.6	27.6	
Actuated g/C Ratio	0.34	0.34			0.34			0.37		0.37	0.37	
v/c Ratio	0.12	0.38			0.70			0.79		0.19	0.43	
Control Delay (s/veh)	23.2	24.3			31.8			37.0		24.6	24.5	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	23.2	24.3			31.8			37.0		24.6	24.5	
LOS	C	C			C			D		C	C	
Approach Delay (s/veh)		24.2			31.8			37.0			24.5	
Approach LOS		C			C			D			C	
90th %ile Green (s)	36.4	36.4		36.4	36.4		32.0	32.0		32.0	32.0	
90th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Hold	Hold	
70th %ile Green (s)	31.8	31.8		31.8	31.8		32.0	32.0		32.0	32.0	
70th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
50th %ile Green (s)	26.2	26.2		26.2	26.2		32.0	32.0		32.0	32.0	
50th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
30th %ile Green (s)	16.7	16.7		16.7	16.7		21.3	21.3		21.3	21.3	
30th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		16.1	16.1		16.1	16.1	
10th %ile Term Code	Min	Min		Min	Min		Gap	Gap		Hold	Hold	
Queue Length 50th (ft)	11	91			209			226		17	111	
Queue Length 95th (ft)	31	152			316			#460		51	211	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	350	874			941			762		323	815	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	18%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	40
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.07	0.23			0.43			0.59		0.14	0.32	

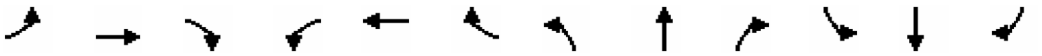
Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 74.1			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 30.7		Intersection LOS: C	
Intersection Capacity Utilization 84.0%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 99			
70th %ile Actuated Cycle: 94.4			
50th %ile Actuated Cycle: 88.8			
30th %ile Actuated Cycle: 47.6			
10th %ile Actuated Cycle: 40.7			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



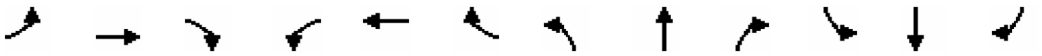
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	291	0	26	0	403	156	16	599	11
Future Volume (vph)	0	0	0	291	0	26	0	403	156	16	599	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.99	1.00			0.99			1.00	
Frt					0.975			0.958			0.997	
Flt Protected				0.950	0.960						0.999	
Satd. Flow (prot)	0	0	0	1579	1512	0	0	2977	0	0	3103	0
Flt Permitted				0.950	0.960						0.934	
Satd. Flow (perm)	0	0	0	1570	1505	0	0	2977	0	0	2900	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					99						3	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)			5	5			9		9	9		9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	5%	0%	23%	0%	17%	10%	44%	12%	27%
Adj. Flow (vph)	0	0	0	313	0	28	0	433	168	17	644	12
Shared Lane Traffic (%)				45%								
Lane Group Flow (vph)	0	0	0	172	169	0	0	601	0	0	673	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2		1	2	
Detector Template				Left	Thru			Thru		Left	Thru	
Leading Detector (ft)				20	100			100		20	100	
Trailing Detector (ft)				0	0			0		0	0	
Detector 1 Position(ft)				0	0			0		0	0	
Detector 1 Size(ft)				20	6			6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



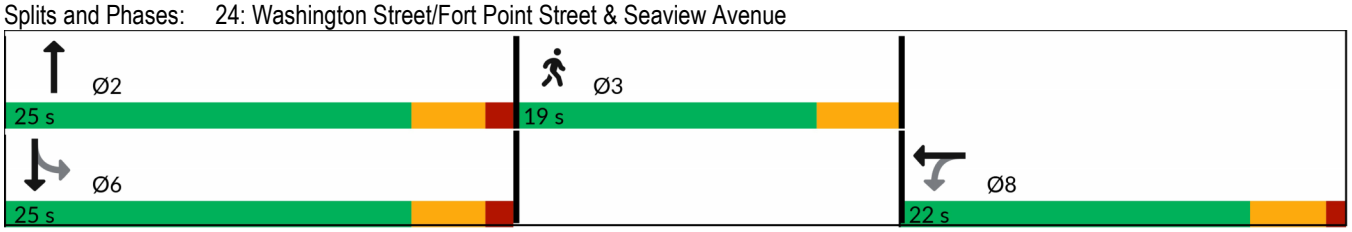
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA			NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8						6		
Detector Phase				8	8			2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0			15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7			20.0		20.0	20.0	
Total Split (s)				22.0	22.0			25.0		25.0	25.0	
Total Split (%)				33.3%	33.3%			37.9%		37.9%	37.9%	
Maximum Green (s)				17.3	17.3			20.0		20.0	20.0	
Yellow Time (s)				3.7	3.7			3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0			1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0			3.0		3.0	3.0	
Recall Mode				None	None			Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				12.0	12.0			20.6			20.6	
Actuated g/C Ratio				0.22	0.22			0.38			0.38	
v/c Ratio				0.50	0.42			0.53			0.61	
Control Delay (s/veh)				27.1	14.0			19.6			21.5	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				27.1	14.0			19.6			21.5	
LOS				C	B			B			C	
Approach Delay (s/veh)					20.6			19.6			21.5	
Approach LOS					C			B			C	
90th %ile Green (s)				17.3	17.3			20.0		20.0	20.0	
90th %ile Term Code				Max	Max			Max		Max	Max	
70th %ile Green (s)				15.6	15.6			20.0		20.0	20.0	
70th %ile Term Code				Gap	Gap			Max		Max	Max	
50th %ile Green (s)				12.2	12.2			20.0		20.0	20.0	
50th %ile Term Code				Gap	Gap			Hold		Max	Max	
30th %ile Green (s)				8.0	8.0			15.0		15.0	15.0	
30th %ile Term Code				Gap	Gap			Min		Min	Min	
10th %ile Green (s)				7.0	7.0			20.1		20.1	20.1	
10th %ile Term Code				Min	Min			Dwell		Dwell	Dwell	
Queue Length 50th (ft)				66	25			107			124	
Queue Length 95th (ft)				123	75			176			#225	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				554	595			1217			1187	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	29%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.31	0.28			0.49			0.57	

Intersection Summary			
Area Type:	Other		
Cycle Length: 66			
Actuated Cycle Length: 54.5			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 20.6		Intersection LOS: C	
Intersection Capacity Utilization 52.1%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 70			
70th %ile Actuated Cycle: 68.3			
50th %ile Actuated Cycle: 64.9			
30th %ile Actuated Cycle: 32.7			
10th %ile Actuated Cycle: 36.8			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	1	16	0	0	3	0	446	2	0	490	0
Future Vol, veh/h	43	1	16	0	0	3	0	446	2	0	490	0
Conflicting Peds, #/hr	0	0	0	0	0	0	18	0	6	6	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	5	0	6	0	0	33	0	16	50	0	11	0
Mvmt Flow	47	1	18	0	0	3	0	490	2	0	538	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1047	1055	556	1036	1054	497	-	0	0	-	-	0
Stage 1	556	556	-	497	497	-	-	-	-	-	-	-
Stage 2	490	498	-	539	556	-	-	-	-	-	-	-
Critical Hdwy	7.35	6.7	6.36	7.1	6.5	6.53	-	-	-	-	-	-
Critical Hdwy Stg 1	6.35	5.7	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.35	5.7	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.354	3.5	4	3.597	-	-	-	-	-	-
Pot Cap-1 Maneuver	192	215	515	211	228	515	0	-	-	0	-	-
Stage 1	494	500	-	559	548	-	0	-	-	0	-	-
Stage 2	539	532	-	530	516	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	188	210	507	202	223	512	-	-	-	-	-	-
Mov Cap-2 Maneuver	188	210	-	202	223	-	-	-	-	-	-	-
Stage 1	487	493	-	555	545	-	-	-	-	-	-	-
Stage 2	536	529	-	511	508	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	25.54	12.07	0	0
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	188	507	512	-	-
HCM Lane V/C Ratio	-	-	0.251	0.035	0.006	-	-
HCM Ctrl Dly (s/v)	-	-	30.4	12.4	12.1	-	-
HCM Lane LOS	-	-	D	B	B	-	-
HCM 95th %tile Q(veh)	-	-	1	0.1	0	-	-

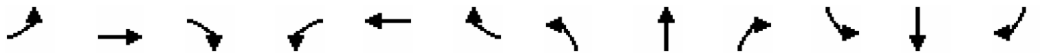
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	3	12	8	477	8	18	488	74
Future Vol, veh/h	0	0	0	7	3	12	8	477	8	18	488	74
Conflicting Peds, #/hr	1	0	5	5	0	1	18	0	13	13	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	14	33	0	0	14	0	11	11	12
Mvmt Flow	0	0	0	8	3	13	9	530	9	20	542	82

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1152	1248	548	642	0	0	552	0	0
Stage 1	565	565	-	-	-	-	-	-	-
Stage 2	587	682	-	-	-	-	-	-	-
Critical Hdwy	6.14	6.43	6	4.1	-	-	4.21	-	-
Critical Hdwy Stg 1	5.14	5.43	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.14	5.43	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.297	3.3	2.2	-	-	2.299	-	-
Pot Cap-1 Maneuver	235	173	556	952	-	-	974	-	-
Stage 1	581	491	-	-	-	-	-	-	-
Stage 2	569	438	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	222	0	551	952	-	-	966	-	-
Mov Cap-2 Maneuver	222	0	-	-	-	-	-	-	-
Stage 1	569	0	-	-	-	-	-	-	-
Stage 2	548	0	-	-	-	-	-	-	-

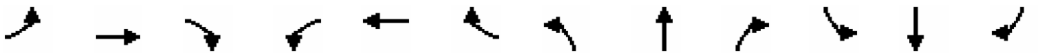
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	15.85	0.14	0.27
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	29	-	-	356	966	-	-
HCM Lane V/C Ratio	0.009	-	-	0.069	0.021	-	-
HCM Ctrl Dly (s/v)	8.8	0	-	15.9	8.8	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1	22	1	0	1	24	284	1	0	281	98
Future Volume (vph)	66	1	22	1	0	1	24	284	1	0	281	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		0%			-1%			-1%			-1%	
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.97			1.00			0.99	
Frt		0.967			0.932						0.965	
Flt Protected		0.964			0.976			0.996				
Satd. Flow (prot)	0	1584	0	0	1694	0	0	1633	0	0	1570	0
Flt Permitted		0.780			0.854			0.962				
Satd. Flow (perm)	0	1253	0	0	1478	0	0	1577	0	0	1570	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			75						28	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			175			356			363	
Travel Time (s)		9.7			4.8			9.7			9.9	
Confl. Peds. (#/hr)	18		4	4		18	7		4	4		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	6%	0%	27%	0%	0%	0%	17%	8%	0%	0%	9%	8%
Adj. Flow (vph)	67	1	22	1	0	1	24	290	1	0	287	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	2	0	0	315	0	0	387	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.99	0.99	0.99	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



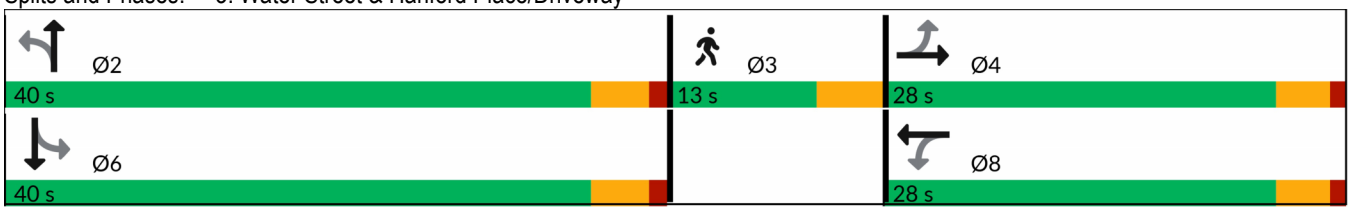
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		6.0	6.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.2	11.2		10.2	10.2		19.6	19.6		19.6	19.6	
Total Split (s)	28.0	28.0		28.0	28.0		40.0	40.0		40.0	40.0	
Total Split (%)	34.6%	34.6%		34.6%	34.6%		49.4%	49.4%		49.4%	49.4%	
Maximum Green (s)	23.8	23.8		23.8	23.8		35.4	35.4		35.4	35.4	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.1	1.1		1.1	1.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.2			4.2			4.6			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		9.1			8.5			30.8			30.8	
Actuated g/C Ratio		0.20			0.18			0.67			0.67	
v/c Ratio		0.34			0.01			0.30			0.37	
Control Delay (s/veh)		20.2			0.0			10.7			10.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		20.2			0.0			10.7			10.7	
LOS		C			A			B			B	
Approach Delay (s/veh)		20.2						10.7			10.7	
Approach LOS		C						B			B	
90th %ile Green (s)	13.4	13.4		13.4	13.4		28.1	28.1		28.1	28.1	
90th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
70th %ile Green (s)	10.1	10.1		10.1	10.1		21.4	21.4		21.4	21.4	
70th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	7.5	7.5		7.5	7.5		20.1	20.1		20.1	20.1	
50th %ile Term Code	Gap	Gap		Hold	Hold		Dwell	Dwell		Dwell	Dwell	
30th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
30th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)		12			0			28			33	
Queue Length 95th (ft)		63			0			157			190	
Internal Link Dist (ft)		274			95			276			283	
Turn Bay Length (ft)												
Base Capacity (vph)		710			860			1298			1297	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	9.0
Minimum Split (s)	17.0
Total Split (s)	13.0
Total Split (%)	16%
Maximum Green (s)	9.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	6.0
Pedestrian Calls (#/hr)	33
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	13.0
90th %ile Term Code	Ped
70th %ile Green (s)	13.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.13			0.00			0.24			0.30	

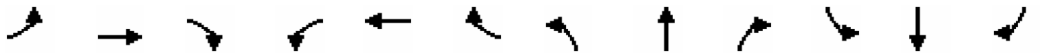
Intersection Summary			
Area Type:	Other		
Cycle Length: 81			
Actuated Cycle Length: 46			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay (s/veh): 11.8		Intersection LOS: B	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 67.3			
70th %ile Actuated Cycle: 57.3			
50th %ile Actuated Cycle: 36.4			
30th %ile Actuated Cycle: 34.6			
10th %ile Actuated Cycle: 34.6			

Splits and Phases: 3: Water Street & Hanford Place/Driveway



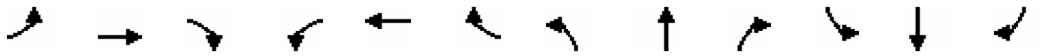
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	187	65	273	232	110	38	93	262	78	100	9
Future Volume (vph)	23	187	65	273	232	110	38	93	262	78	100	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	0.99		0.95		0.99		0.99	
Frt		0.968			0.952				0.850		0.994	
Flt Protected		0.996		0.950			0.950				0.980	
Satd. Flow (prot)	0	1724	0	1588	1612	0	1752	1881	1615	0	1709	0
Flt Permitted		0.945		0.319			0.579				0.827	
Satd. Flow (perm)	0	1634	0	529	1612	0	1017	1881	1594	0	1440	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		16			32				270			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			230			313	
Travel Time (s)		13.1			16.8			6.3			8.5	
Confl. Peds. (#/hr)	7		11	11		7	38		4	4		38
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	9%	4%	9%	11%	6%	14%	3%	1%	10%	5%	4%	0%
Adj. Flow (vph)	24	193	67	281	239	113	39	96	270	80	103	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	284	0	281	352	0	39	96	270	0	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



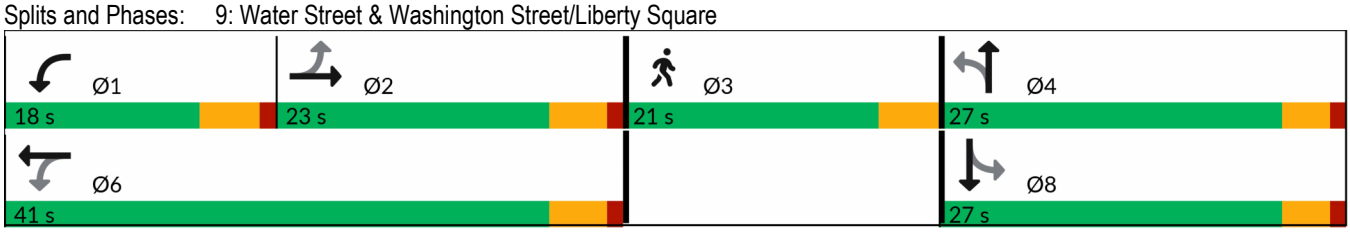
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	23.0	23.0		18.0	41.0		27.0	27.0		27.0	27.0	
Total Split (%)	25.8%	25.8%		20.2%	46.1%		30.3%	30.3%		30.3%	30.3%	
Maximum Green (s)	18.1	18.1		13.0	36.1		22.7	22.7		22.7	22.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		16.3		34.2	34.3		15.4	15.4	72.6		15.4	
Actuated g/C Ratio		0.22		0.47	0.47		0.21	0.21	1.00		0.21	
v/c Ratio		0.75		0.66	0.45		0.18	0.24	0.17		0.63	
Control Delay (s/veh)		44.1		27.4	18.7		30.7	29.7	0.2		40.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		44.1		27.4	18.7		30.7	29.7	0.2		40.0	
LOS		D		C	B		C	C	A		D	
Approach Delay (s/veh)		44.1			22.5			10.1			40.0	
Approach LOS		D			C			B			D	
90th %ile Green (s)	18.1	18.1		13.0	36.1		22.7	22.7		22.7	22.7	
90th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	18.1	18.1		13.0	36.1		19.9	19.9		19.9	19.9	
70th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	18.1	18.1		13.0	36.1		16.7	16.7		16.7	16.7	
50th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	13.4	13.4		10.5	28.9		10.8	10.8		10.8	10.8	
30th %ile Term Code	Gap	Gap		Gap	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	10.3	10.3		8.6	23.9		7.9	7.9		7.9	7.9	
10th %ile Term Code	Gap	Gap		Gap	Hold		Hold	Hold		Gap	Gap	
Queue Length 50th (ft)		143		109	129		18	46	0		100	
Queue Length 95th (ft)		#302		#207	235		46	88	0		172	
Internal Link Dist (ft)		399			537			150			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		471		463	957		359	664	1594		508	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	24%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.60		0.61	0.37		0.11	0.14	0.17		0.38	

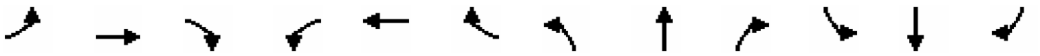
Intersection Summary			
Area Type:	Other		
Cycle Length: 89			
Actuated Cycle Length: 72.6			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 25.5		Intersection LOS: C	
Intersection Capacity Utilization 63.2%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 94			
70th %ile Actuated Cycle: 91.2			
50th %ile Actuated Cycle: 88			
30th %ile Actuated Cycle: 48.9			
10th %ile Actuated Cycle: 41			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



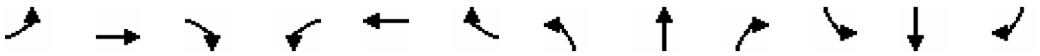
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	56	43	5	61	27	44	213	16	26	224	32
Future Volume (vph)	27	56	43	5	61	27	44	213	16	26	224	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.99			0.99			1.00	0.97
Frt		0.935			0.961			0.992				0.850
Flt Protected	0.950				0.997			0.992			0.995	
Satd. Flow (prot)	1465	1466	0	0	1633	0	0	1660	0	0	1759	1436
Flt Permitted	0.491				0.979			0.910			0.945	
Satd. Flow (perm)	752	1466	0	0	1600	0	0	1520	0	0	1667	1388
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	7		19	19		7	11		27	27		11
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	15%	14%	7%	20%	11%	7%	25%	9%	19%	8%	8%	13%
Adj. Flow (vph)	31	64	49	6	69	31	50	242	18	30	255	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	113	0	0	106	0	0	310	0	0	285	36
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



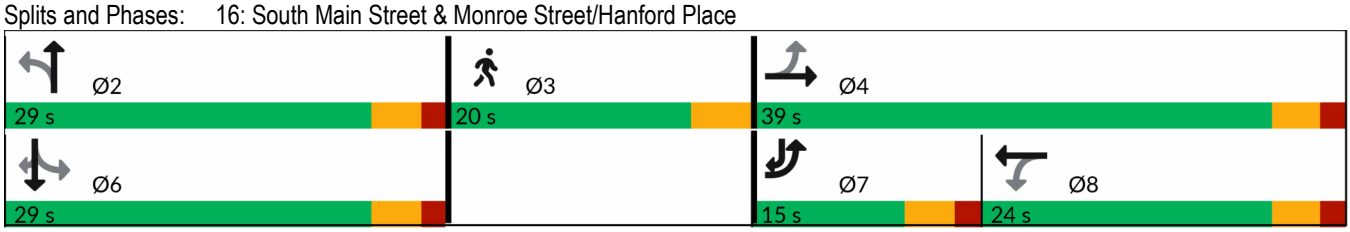
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	15.0	39.0		24.0	24.0		29.0	29.0		29.0	29.0	15.0
Total Split (%)	17.0%	44.3%		27.3%	27.3%		33.0%	33.0%		33.0%	33.0%	17.0%
Maximum Green (s)	10.1	34.1		19.1	19.1		24.1	24.1		24.1	24.1	10.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	20.3	20.3			13.4			29.7			29.7	36.2
Actuated g/C Ratio	0.31	0.31			0.20			0.45			0.45	0.55
v/c Ratio	0.09	0.25			0.32			0.45			0.38	0.05
Control Delay (s/veh)	20.4	21.7			33.8			27.0			24.9	8.3
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	20.4	21.7			33.8			27.0			24.9	8.3
LOS	C	C			C			C			C	A
Approach Delay (s/veh)		21.4			33.8			27.0			23.1	
Approach LOS		C			C			C			C	
90th %ile Green (s)	10.0	30.4		15.5	15.5		24.1	24.1		24.1	24.1	10.0
90th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Max	Max	Min
70th %ile Green (s)	10.0	27.6		12.7	12.7		24.1	24.1		24.1	24.1	10.0
70th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
50th %ile Green (s)	10.0	25.7		10.8	10.8		24.1	24.1		24.1	24.1	10.0
50th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
30th %ile Green (s)	0.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	0.0
30th %ile Term Code	Skip	Min		Min	Min		Min	Min		Min	Min	Skip
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	0.0
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	Skip
Queue Length 50th (ft)	11	44			53			145			128	6
Queue Length 95th (ft)	30	83			99			#268			218	15
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	366	923			564			770			845	780
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.08	0.12			0.19			0.40			0.34	0.05

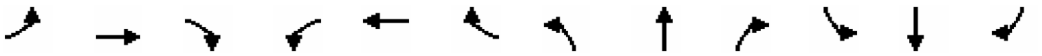
Intersection Summary			
Area Type:	Other		
Cycle Length: 88			
Actuated Cycle Length: 65.4			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay (s/veh): 25.5		Intersection LOS: C	
Intersection Capacity Utilization 49.6%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 88.3			
70th %ile Actuated Cycle: 85.5			
50th %ile Actuated Cycle: 83.6			
30th %ile Actuated Cycle: 34.8			
10th %ile Actuated Cycle: 34.9			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



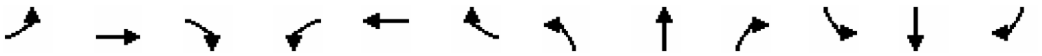
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	182	87	24	196	70	50	225	26	68	199	39
Future Volume (vph)	37	182	87	24	196	70	50	225	26	68	199	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.98			0.98			0.99		0.98	0.99	
Frt		0.951			0.967			0.988			0.976	
Flt Protected	0.950				0.996			0.992		0.950		
Satd. Flow (prot)	1596	1586	0	0	1689	0	0	1716	0	1538	1641	0
Flt Permitted	0.492				0.959			0.908		0.501		
Satd. Flow (perm)	804	1586	0	0	1622	0	0	1563	0	791	1641	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	36		32	32		36	30		30	30		30
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	3%	5%	17%	5%	3%	4%	9%	12%	9%	8%	5%
Adj. Flow (vph)	38	188	90	25	202	72	52	232	27	70	205	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	278	0	0	299	0	0	311	0	70	245	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



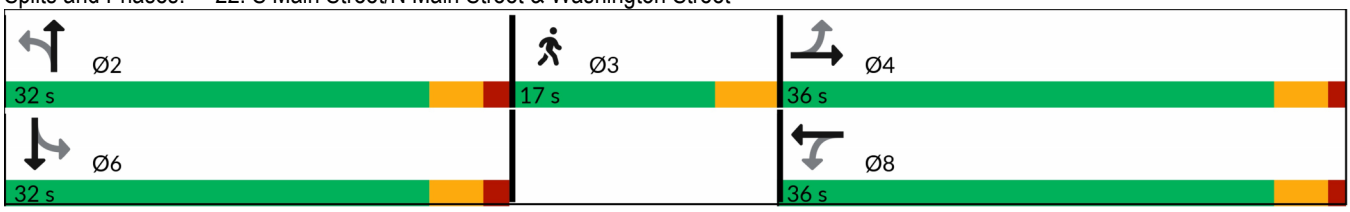
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	36.0	36.0		36.0	36.0		32.0	32.0		32.0	32.0	
Total Split (%)	42.4%	42.4%		42.4%	42.4%		37.6%	37.6%		37.6%	37.6%	
Maximum Green (s)	31.4	31.4		31.4	31.4		27.0	27.0		27.0	27.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	20.2	20.2			20.2			20.2		20.2	20.2	
Actuated g/C Ratio	0.33	0.33			0.33			0.33		0.33	0.33	
v/c Ratio	0.14	0.53			0.56			0.61		0.27	0.45	
Control Delay (s/veh)	21.3	24.8			25.2			27.0		23.6	23.4	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	21.3	24.8			25.2			27.0		23.6	23.4	
LOS	C	C			C			C		C	C	
Approach Delay (s/veh)		24.3			25.2			27.0			23.4	
Approach LOS		C			C			C			C	
90th %ile Green (s)	29.0	29.0		29.0	29.0		27.0	27.0		27.0	27.0	
90th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
70th %ile Green (s)	21.7	21.7		21.7	21.7		22.4	22.4		22.4	22.4	
70th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Hold	Hold	
50th %ile Green (s)	17.5	17.5		17.5	17.5		18.2	18.2		18.2	18.2	
50th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Hold	Hold	
30th %ile Green (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
30th %ile Term Code	Min	Min		Min	Min		Min	Min		Min	Min	
10th %ile Green (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
10th %ile Term Code	Min	Min		Min	Min		Min	Min		Min	Min	
Queue Length 50th (ft)	12	100			109			114		22	84	
Queue Length 95th (ft)	38	198			212			234		65	178	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	456	901			922			763		386	802	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	20%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.08	0.31			0.32			0.41		0.18	0.31	

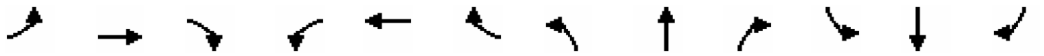
Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 61.4			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 25.0		Intersection LOS: C	
Intersection Capacity Utilization 77.8%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 86.6			
70th %ile Actuated Cycle: 74.7			
50th %ile Actuated Cycle: 66.3			
30th %ile Actuated Cycle: 39.6			
10th %ile Actuated Cycle: 39.6			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



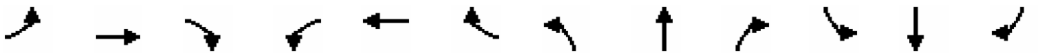
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	204	0	24	0	320	196	14	396	22
Future Volume (vph)	0	0	0	204	0	24	0	320	196	14	396	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				1.00	0.99			0.99			1.00	
Frt					0.967			0.943			0.992	
Flt Protected				0.950	0.962						0.998	
Satd. Flow (prot)	0	0	0	1549	1508	0	0	3104	0	0	3151	0
Flt Permitted				0.950	0.962						0.935	
Satd. Flow (perm)	0	0	0	1544	1504	0	0	3104	0	0	2952	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					98						9	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)	4		3	3		4	8		4	4		8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	7%	0%	8%	0%	12%	3%	21%	10%	14%
Adj. Flow (vph)	0	0	0	210	0	25	0	330	202	14	408	23
Shared Lane Traffic (%)				43%								
Lane Group Flow (vph)	0	0	0	120	115	0	0	532	0	0	445	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2		1	2	
Detector Template				Left	Thru			Thru		Left	Thru	
Leading Detector (ft)				20	100			100		20	100	
Trailing Detector (ft)				0	0			0		0	0	
Detector 1 Position(ft)				0	0			0		0	0	
Detector 1 Size(ft)				20	6			6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



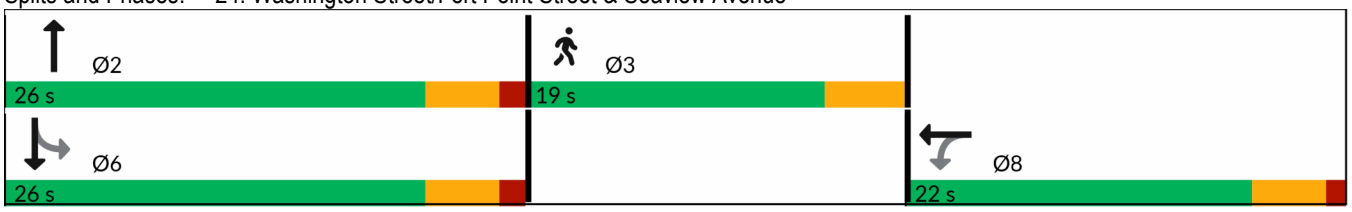
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA			NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8						6		
Detector Phase				8	8			2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0			15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7			20.0		20.0	20.0	
Total Split (s)				22.0	22.0			26.0		26.0	26.0	
Total Split (%)				32.8%	32.8%			38.8%		38.8%	38.8%	
Maximum Green (s)				17.3	17.3			21.0		21.0	21.0	
Yellow Time (s)				3.7	3.7			3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0			1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0			3.0		3.0	3.0	
Recall Mode				None	None			Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				10.5	10.5			23.8			23.8	
Actuated g/C Ratio				0.22	0.22			0.51			0.51	
v/c Ratio				0.35	0.28			0.34			0.30	
Control Delay (s/veh)				22.2	9.1			14.0			13.5	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				22.2	9.1			14.0			13.5	
LOS				C	A			B			B	
Approach Delay (s/veh)					15.8			14.0			13.5	
Approach LOS					B			B			B	
90th %ile Green (s)				15.9	15.9			21.0		21.0	21.0	
90th %ile Term Code				Gap	Gap			Max		Max	Max	
70th %ile Green (s)				11.9	11.9			19.2		19.2	19.2	
70th %ile Term Code				Gap	Gap			Gap		Hold	Hold	
50th %ile Green (s)				9.8	9.8			15.8		15.8	15.8	
50th %ile Term Code				Gap	Gap			Gap		Hold	Hold	
30th %ile Green (s)				7.0	7.0			15.0		15.0	15.0	
30th %ile Term Code				Min	Min			Min		Min	Min	
10th %ile Green (s)				0.0	0.0			30.0		30.0	30.0	
10th %ile Term Code				Skip	Skip			Dwell		Dwell	Dwell	
Queue Length 50th (ft)				18	2			31			25	
Queue Length 95th (ft)				91	45			147			121	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				632	674			1793			1708	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	28%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.19	0.17			0.30			0.26	

Intersection Summary			
Area Type:	Other		
Cycle Length: 67			
Actuated Cycle Length: 47.1			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay (s/veh): 14.1		Intersection LOS: B	
Intersection Capacity Utilization 43.1%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 69.6			
70th %ile Actuated Cycle: 63.8			
50th %ile Actuated Cycle: 35.3			
30th %ile Actuated Cycle: 31.7			
10th %ile Actuated Cycle: 35			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	0	17	0	0	1	0	362	0	1	378	0
Future Vol, veh/h	53	0	17	0	0	1	0	362	0	1	378	0
Conflicting Peds, #/hr	1	0	0	0	0	1	19	0	20	20	0	19
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	8	0	18	0	0	100	0	7	0	100	9	0
Mvmt Flow	55	0	18	0	0	1	0	373	0	1	390	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	766	-	390	785	785	394	-	0	0	393	0	0
Stage 1	392	-	-	393	393	-	-	-	-	-	-	-
Stage 2	374	-	-	392	392	-	-	-	-	-	-	-
Critical Hdwy	7.38	-	6.48	7.1	6.5	7.2	-	-	-	5.1	-	-
Critical Hdwy Stg 1	6.38	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.38	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	-	3.462	3.5	4	4.2	-	-	-	3.1	-	-
Pot Cap-1 Maneuver	299	0	618	313	327	486	0	-	-	784	-	0
Stage 1	608	0	-	636	609	-	0	-	-	-	-	0
Stage 2	622	0	-	637	610	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	298	-	618	298	320	476	-	-	-	769	-	-
Mov Cap-2 Maneuver	298	-	-	298	320	-	-	-	-	-	-	-
Stage 1	606	-	-	624	598	-	-	-	-	-	-	-
Stage 2	620	-	-	618	609	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	17.65	12.57	0	0.03
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	298	618	476	5	-
HCM Lane V/C Ratio	-	-	0.183	0.028	0.002	0.001	-
HCM Ctrl Dly (s/v)	-	-	19.8	11	12.6	9.7	0
HCM Lane LOS	-	-	C	B	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1	0	0	-

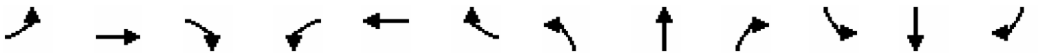
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	1	9	16	390	7	8	379	53
Future Vol, veh/h	0	0	0	6	1	9	16	390	7	8	379	53
Conflicting Peds, #/hr	8	0	11	11	0	8	23	0	24	24	0	23
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	6	8	0	0	9	9
Mvmt Flow	0	0	0	6	1	9	16	402	7	8	391	55

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	881	948	438	468	0	0	433	0	0
Stage 1	463	463	-	-	-	-	-	-	-
Stage 2	418	485	-	-	-	-	-	-	-
Critical Hdwy	6	6.1	6	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	5	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	353	292	639	1073	-	-	1137	-	-
Stage 1	672	598	-	-	-	-	-	-	-
Stage 2	700	586	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	334	0	624	1073	-	-	1120	-	-
Mov Cap-2 Maneuver	334	0	-	-	-	-	-	-	-
Stage 1	648	0	-	-	-	-	-	-	-
Stage 2	687	0	-	-	-	-	-	-	-

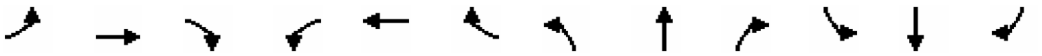
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	13.06	0.33	0.15
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	69	-	-	463	1120	-	-
HCM Lane V/C Ratio	0.015	-	-	0.036	0.007	-	-
HCM Ctrl Dly (s/v)	8.4	0	-	13.1	8.2	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	1	9	0	0	1	23	539	1	3	326	129
Future Volume (vph)	107	1	9	0	0	1	23	539	1	3	326	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		0%			-1%			-1%			-1%	
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.97			1.00			0.99	
Frt		0.990			0.865						0.962	
Flt Protected		0.956						0.998				
Satd. Flow (prot)	0	1752	0	0	1610	0	0	1726	0	0	1599	0
Flt Permitted		0.743						0.975			0.998	
Satd. Flow (perm)	0	1355	0	0	1610	0	0	1685	0	0	1596	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			374						30	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			175			356			363	
Travel Time (s)		9.7			4.8			9.7			9.9	
Confl. Peds. (#/hr)	3		1	1		3	24		11	11		24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	33%	0%	0%	0%	0%	3%	100%	33%	6%	5%
Adj. Flow (vph)	111	1	9	0	0	1	24	561	1	3	340	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	1	0	0	586	0	0	477	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.99	0.99	0.99	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



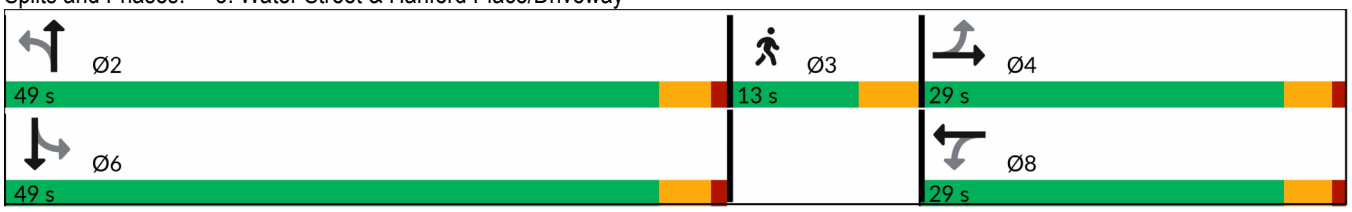
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		6.0	6.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.2	11.2		10.2	10.2		19.6	19.6		19.6	19.6	
Total Split (s)	29.0	29.0		29.0	29.0		49.0	49.0		49.0	49.0	
Total Split (%)	31.9%	31.9%		31.9%	31.9%		53.8%	53.8%		53.8%	53.8%	
Maximum Green (s)	24.8	24.8		24.8	24.8		44.4	44.4		44.4	44.4	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.1	1.1		1.1	1.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.2			4.2			4.6			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		11.9			11.6			35.8			35.8	
Actuated g/C Ratio		0.21			0.20			0.62			0.62	
v/c Ratio		0.42			0.00			0.56			0.47	
Control Delay (s/veh)		29.3			0.0			14.3			12.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		29.3			0.0			14.3			12.2	
LOS		C			A			B			B	
Approach Delay (s/veh)		29.3						14.3			12.2	
Approach LOS		C						B			B	
90th %ile Green (s)	18.4	18.4		18.4	18.4		44.4	44.4		44.4	44.4	
90th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
70th %ile Green (s)	14.1	14.1		14.1	14.1		35.3	35.3		35.3	35.3	
70th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Gap		Hold	Hold	
50th %ile Green (s)	11.2	11.2		11.2	11.2		28.0	28.0		28.0	28.0	
50th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Gap		Hold	Hold	
30th %ile Green (s)	8.4	8.4		8.4	8.4		22.8	22.8		22.8	22.8	
30th %ile Term Code	Gap	Gap		Hold	Hold		Dwell	Dwell		Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)		27			0			87			60	
Queue Length 95th (ft)		110			0			364			265	
Internal Link Dist (ft)		274			95			276			283	
Turn Bay Length (ft)												
Base Capacity (vph)		669			982			1353			1288	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	9.0
Minimum Split (s)	17.0
Total Split (s)	13.0
Total Split (%)	14%
Maximum Green (s)	9.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	6.0
Pedestrian Calls (#/hr)	39
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	13.0
90th %ile Term Code	Ped
70th %ile Green (s)	13.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.18			0.00			0.43			0.37	

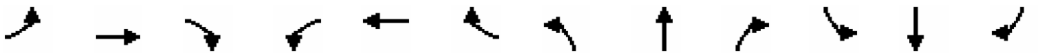
Intersection Summary			
Area Type:	Other		
Cycle Length: 91			
Actuated Cycle Length: 57.3			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 15.0		Intersection LOS: B	
Intersection Capacity Utilization 64.7%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 88.6			
70th %ile Actuated Cycle: 75.2			
50th %ile Actuated Cycle: 48			
30th %ile Actuated Cycle: 40			
10th %ile Actuated Cycle: 34.6			

Splits and Phases: 3: Water Street & Hanford Place/Driveway



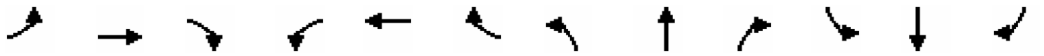
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	239	43	357	274	129	36	173	499	166	127	17
Future Volume (vph)	33	239	43	357	274	129	36	173	499	166	127	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	0.98		0.97		0.98		0.99	
Frt		0.982			0.952				0.850		0.993	
Flt Protected		0.995		0.950			0.950				0.974	
Satd. Flow (prot)	0	1812	0	1647	1684	0	1805	1863	1725	0	1744	0
Flt Permitted		0.924		0.326			0.561				0.692	
Satd. Flow (perm)	0	1677	0	559	1684	0	1030	1863	1698	0	1233	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		8			29				461			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			225			313	
Travel Time (s)		13.1			16.8			6.1			8.5	
Confl. Peds. (#/hr)	39		18	18		39	39		12	12		39
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	0%	7%	3%	2%	0%	2%	3%	1%	2%	0%
Adj. Flow (vph)	33	241	43	361	277	130	36	175	504	168	128	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	317	0	361	407	0	36	175	504	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



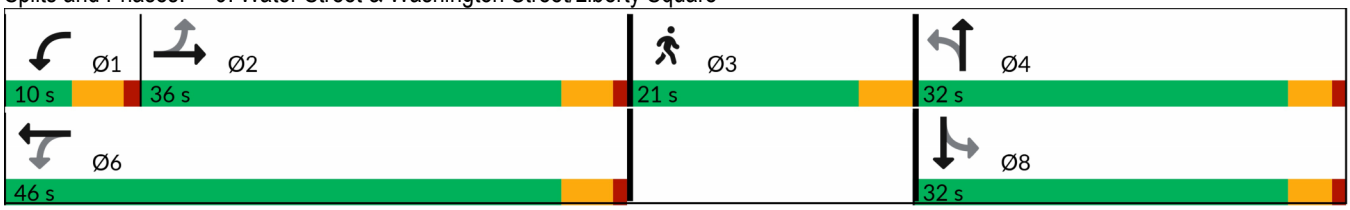
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	36.0	36.0		10.0	46.0		32.0	32.0		32.0	32.0	
Total Split (%)	36.4%	36.4%		10.1%	46.5%		32.3%	32.3%		32.3%	32.3%	
Maximum Green (s)	31.1	31.1		5.0	41.1		27.7	27.7		27.7	27.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		21.7		32.4	32.5		27.7	27.7	83.2		27.7	
Actuated g/C Ratio		0.26		0.39	0.39		0.33	0.33	1.00		0.33	
v/c Ratio		0.72		1.25	0.60		0.10	0.28	0.30		0.76	
Control Delay (s/veh)		39.3		166.7	25.6		27.6	27.6	0.4		44.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		39.3		166.7	25.6		27.6	27.6	0.4		44.7	
LOS		D		F	C		C	C	A		D	
Approach Delay (s/veh)		39.3			92.0			8.5			44.7	
Approach LOS		D			F			A			D	
90th %ile Green (s)	31.1	31.1		5.0	41.1		27.7	27.7		27.7	27.7	
90th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	26.5	26.5		5.0	36.5		27.7	27.7		27.7	27.7	
70th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	22.5	22.5		5.0	32.5		27.7	27.7		27.7	27.7	
50th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
30th %ile Green (s)	18.9	18.9		5.0	28.9		27.7	27.7		27.7	27.7	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
10th %ile Green (s)	11.1	11.1		5.0	21.1		21.1	21.1		21.1	21.1	
10th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
Queue Length 50th (ft)		177		~271	196		16	83	0		180	
Queue Length 95th (ft)		272		#493	297		45	156	0		#378	
Internal Link Dist (ft)		399			537			145			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		680		288	910		370	668	1698		442	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.47		1.25	0.45		0.10	0.26	0.30		0.71	

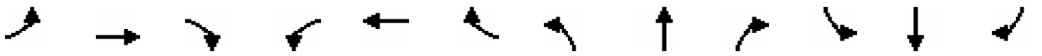
Intersection Summary			
Area Type:	Other		
Cycle Length: 99			
Actuated Cycle Length: 83.2			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.25			
Intersection Signal Delay (s/veh): 48.8		Intersection LOS: D	
Intersection Capacity Utilization 82.1%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 104			
70th %ile Actuated Cycle: 99.4			
50th %ile Actuated Cycle: 95.4			
30th %ile Actuated Cycle: 65.8			
10th %ile Actuated Cycle: 51.4			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



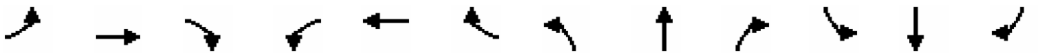
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	82	57	14	97	36	33	246	14	35	288	55
Future Volume (vph)	55	82	57	14	97	36	33	246	14	35	288	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.98			0.98			0.99			1.00	0.94
Frt		0.939			0.967			0.993				0.850
Flt Protected	0.950				0.995			0.994			0.995	
Satd. Flow (prot)	1620	1502	0	0	1733	0	0	1760	0	0	1798	1546
Flt Permitted	0.362				0.954			0.930			0.936	
Satd. Flow (perm)	608	1502	0	0	1652	0	0	1642	0	0	1685	1452
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	18		32	32		18	34		44	44		34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	14%	0%	5%	3%	24%	4%	0%	3%	6%	5%
Adj. Flow (vph)	61	91	63	16	108	40	37	273	16	39	320	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	154	0	0	164	0	0	326	0	0	359	61
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



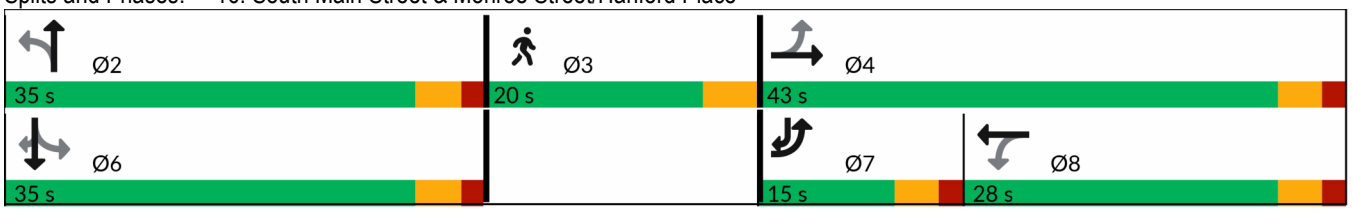
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	15.0	43.0		28.0	28.0		35.0	35.0		35.0	35.0	15.0
Total Split (%)	15.3%	43.9%		28.6%	28.6%		35.7%	35.7%		35.7%	35.7%	15.3%
Maximum Green (s)	10.1	38.1		23.1	23.1		30.1	30.1		30.1	30.1	10.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	27.9	27.9			17.2			33.1			33.1	37.1
Actuated g/C Ratio	0.38	0.38			0.24			0.46			0.46	0.51
v/c Ratio	0.14	0.27			0.42			0.44			0.47	0.08
Control Delay (s/veh)	21.4	22.8			36.9			27.5			28.0	8.7
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	21.4	22.8			36.9			27.5			28.0	8.7
LOS	C	C			D			C			C	A
Approach Delay (s/veh)		22.4			36.9			27.5			25.2	
Approach LOS		C			D			C			C	
90th %ile Green (s)	10.1	35.7		20.7	20.7		30.1	30.1		30.1	30.1	10.1
90th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
70th %ile Green (s)	10.0	31.7		16.8	16.8		30.1	30.1		30.1	30.1	10.0
70th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
50th %ile Green (s)	10.0	28.9		14.0	14.0		25.8	25.8		25.8	25.8	10.0
50th %ile Term Code	Min	Hold		Gap	Gap		Gap	Gap		Hold	Hold	Min
30th %ile Green (s)	10.0	26.2		11.3	11.3		21.0	21.0		21.0	21.0	10.0
30th %ile Term Code	Min	Hold		Gap	Gap		Gap	Gap		Hold	Hold	Min
10th %ile Green (s)	0.0	0.0		0.0	0.0		17.6	17.6		17.6	17.6	0.0
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	Skip
Queue Length 50th (ft)	24	64			87			160			180	10
Queue Length 95th (ft)	54	120			158			278			306	23
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	425	865			707			816			837	760
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.14	0.18			0.23			0.40			0.43	0.08

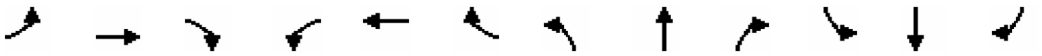
Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 72.6			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay (s/veh): 27.1		Intersection LOS: C	
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 99.6			
70th %ile Actuated Cycle: 95.6			
50th %ile Actuated Cycle: 88.5			
30th %ile Actuated Cycle: 57			
10th %ile Actuated Cycle: 22.5			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



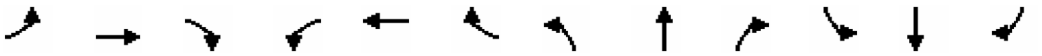
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	224	90	20	246	55	60	289	46	82	303	31
Future Volume (vph)	58	224	90	20	246	55	60	289	46	82	303	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.99			0.98		0.96	0.99	
Frt		0.957			0.977			0.984			0.986	
Flt Protected	0.950				0.997			0.992		0.950		
Satd. Flow (prot)	1676	1624	0	0	1783	0	0	1790	0	1660	1722	0
Flt Permitted	0.437				0.967			0.861		0.426		
Satd. Flow (perm)	765	1624	0	0	1727	0	0	1546	0	711	1722	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	10		25	25		10	47		75	75		47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	3%	10%	2%	0%	2%	3%	2%	1%	4%	3%
Adj. Flow (vph)	60	233	94	21	256	57	63	301	48	85	316	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	327	0	0	334	0	0	412	0	85	348	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



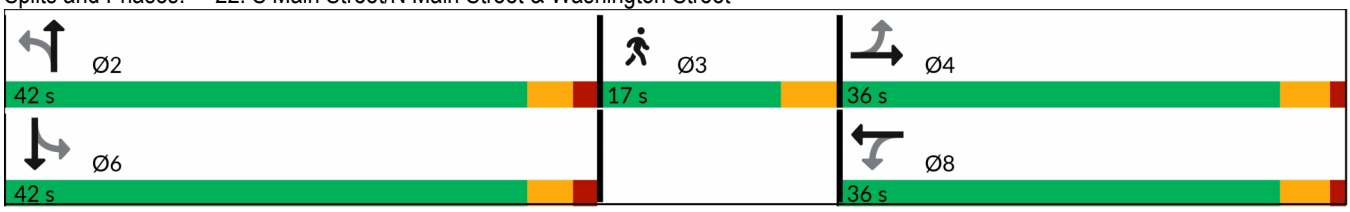
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	36.0	36.0		36.0	36.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.9%	37.9%		37.9%	37.9%		44.2%	44.2%		44.2%	44.2%	
Maximum Green (s)	31.4	31.4		31.4	31.4		37.0	37.0		37.0	37.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	22.9	22.9			22.9			25.7		25.7	25.7	
Actuated g/C Ratio	0.33	0.33			0.33			0.37		0.37	0.37	
v/c Ratio	0.24	0.61			0.59			0.72		0.32	0.55	
Control Delay (s/veh)	26.7	30.3			29.2			30.5		24.4	24.2	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	26.7	30.3			29.2			30.5		24.4	24.2	
LOS	C	C			C			C		C	C	
Approach Delay (s/veh)		29.8			29.2			30.5			24.2	
Approach LOS		C			C			C			C	
90th %ile Green (s)	31.4	31.4		31.4	31.4		37.0	37.0		37.0	37.0	
90th %ile Term Code	Max	Max		Max	Max		Max	Max		Hold	Hold	
70th %ile Green (s)	27.6	27.6		27.6	27.6		34.7	34.7		34.7	34.7	
70th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Gap		Hold	Hold	
50th %ile Green (s)	21.0	21.0		21.0	21.0		26.5	26.5		26.5	26.5	
50th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Gap		Hold	Hold	
30th %ile Green (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
30th %ile Term Code	Min	Min		Min	Min		Min	Min		Min	Min	
10th %ile Green (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
10th %ile Term Code	Min	Min		Min	Min		Min	Min		Min	Min	
Queue Length 50th (ft)	23	145			147			178		31	138	
Queue Length 95th (ft)	63	271			271			334		79	259	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	404	858			912			962		442	1072	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	18%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.15	0.38			0.37			0.43		0.19	0.32	

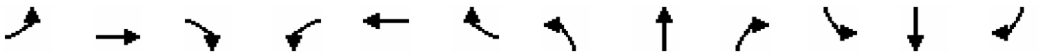
Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 69.8			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 28.3		Intersection LOS: C	
Intersection Capacity Utilization 85.5%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 99			
70th %ile Actuated Cycle: 92.9			
50th %ile Actuated Cycle: 78.1			
30th %ile Actuated Cycle: 39.6			
10th %ile Actuated Cycle: 39.6			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



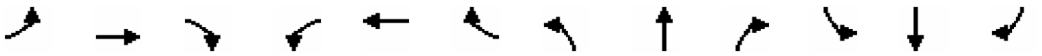
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	274	0	23	2	560	312	12	462	15
Future Volume (vph)	0	0	0	274	0	23	2	560	312	12	462	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.99	0.99			0.99			1.00	
Frt					0.977			0.946			0.995	
Flt Protected				0.950	0.959						0.999	
Satd. Flow (prot)	0	0	0	1609	1569	0	0	3311	0	0	3336	0
Flt Permitted				0.950	0.959			0.954			0.928	
Satd. Flow (perm)	0	0	0	1595	1558	0	0	3159	0	0	3098	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					98						4	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)	3		9	9		3	8		7	7		8
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	3%	0%	9%	0%	3%	0%	8%	5%	0%
Adj. Flow (vph)	0	0	0	280	0	23	2	571	318	12	471	15
Shared Lane Traffic (%)				45%								
Lane Group Flow (vph)	0	0	0	154	149	0	0	891	0	0	498	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2		1	2	
Detector Template				Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)				20	100		20	100		20	100	
Trailing Detector (ft)				0	0		0	0		0	0	
Detector 1 Position(ft)				0	0		0	0		0	0	
Detector 1 Size(ft)				20	6		20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



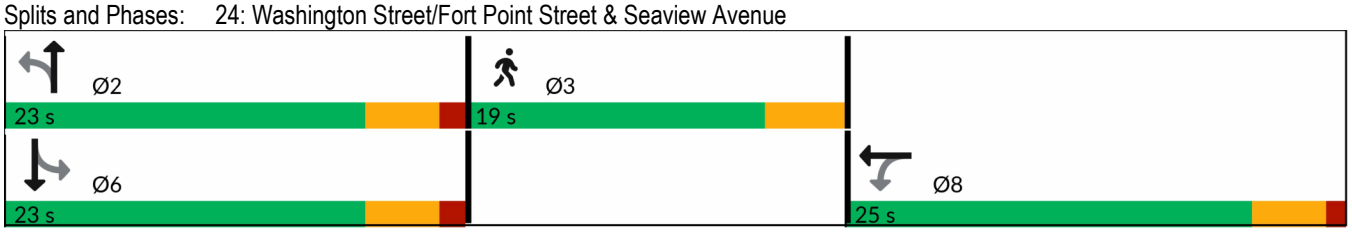
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA		Perm	NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2			6		
Detector Phase				8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7		20.0	20.0		20.0	20.0	
Total Split (s)				25.0	25.0		23.0	23.0		23.0	23.0	
Total Split (%)				37.3%	37.3%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)				20.3	20.3		18.0	18.0		18.0	18.0	
Yellow Time (s)				3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode				None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				11.1	11.1			22.2			22.2	
Actuated g/C Ratio				0.20	0.20			0.40			0.40	
v/c Ratio				0.48	0.38			0.70			0.40	
Control Delay (s/veh)				26.5	12.3			24.8			17.5	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				26.5	12.3			24.8			17.5	
LOS				C	B			C			B	
Approach Delay (s/veh)					19.5			24.8			17.5	
Approach LOS					B			C			B	
90th %ile Green (s)				17.3	17.3		18.0	18.0		18.0	18.0	
90th %ile Term Code				Gap	Gap		Max	Max		Max	Max	
70th %ile Green (s)				13.2	13.2		18.0	18.0		18.0	18.0	
70th %ile Term Code				Gap	Gap		Max	Max		Max	Max	
50th %ile Green (s)				11.1	11.1		18.0	18.0		18.0	18.0	
50th %ile Term Code				Gap	Gap		Max	Max		Hold	Hold	
30th %ile Green (s)				7.6	7.6		18.0	18.0		18.0	18.0	
30th %ile Term Code				Gap	Gap		Max	Max		Hold	Hold	
10th %ile Green (s)				7.0	7.0		31.7	31.7		31.7	31.7	
10th %ile Term Code				Min	Min		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)				55	16			171			81	
Queue Length 95th (ft)				107	61			#330			141	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				618	664			1265			1243	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	28%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.25	0.22			0.70			0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 67			
Actuated Cycle Length: 55.5			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 21.7		Intersection LOS: C	
Intersection Capacity Utilization 50.3%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 68			
70th %ile Actuated Cycle: 63.9			
50th %ile Actuated Cycle: 61.8			
30th %ile Actuated Cycle: 35.3			
10th %ile Actuated Cycle: 48.4			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	0	28	0	0	0	0	655	0	0	449	0
Future Vol, veh/h	70	0	28	0	0	0	0	655	0	0	449	0
Conflicting Peds, #/hr	0	0	0	0	0	0	45	0	20	20	0	45
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	0	0	0	0	3	0	0	6	0
Mvmt Flow	72	0	29	0	0	0	0	675	0	0	463	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1138	-	463	1158	1158	695	-	0	0	695	0	0
Stage 1	463	-	-	695	695	-	-	-	-	-	-	-
Stage 2	675	-	-	463	463	-	-	-	-	-	-	-
Critical Hdwy	7.31	-	6.3	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.31	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.31	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	-	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	168	0	595	175	198	445	0	-	-	910	-	0
Stage 1	566	0	-	436	447	-	0	-	-	-	-	0
Stage 2	429	0	-	583	568	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	168	-	595	163	194	437	-	-	-	893	-	-
Mov Cap-2 Maneuver	168	-	-	163	194	-	-	-	-	-	-	-
Stage 1	566	-	-	427	438	-	-	-	-	-	-	-
Stage 2	429	-	-	555	568	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	32.9	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	168	595	-	893	-
HCM Lane V/C Ratio	-	-	0.429	0.048	-	-	-
HCM Ctrl Dly (s/v)	-	-	41.5	11.4	0	0	-
HCM Lane LOS	-	-	E	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.2	-	0	-

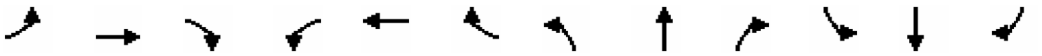
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	11	32	694	1	2	457	64
Future Vol, veh/h	0	0	0	1	0	11	32	694	1	2	457	64
Conflicting Peds, #/hr	0	0	5	5	0	0	49	0	22	22	0	49
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	5	5
Mvmt Flow	0	0	0	1	0	11	32	701	1	2	462	65

Major/Minor	Minor1		Major1				Major2		
Conflicting Flow All	1259	1367	724	575	0	0	724	0	0
Stage 1	788	788	-	-	-	-	-	-	-
Stage 2	471	579	-	-	-	-	-	-	-
Critical Hdwy	6	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	219	173	447	1008	-	-	888	-	-
Stage 1	493	442	-	-	-	-	-	-	-
Stage 2	667	537	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	203	0	441	1008	-	-	875	-	-
Mov Cap-2 Maneuver	203	0	-	-	-	-	-	-	-
Stage 1	460	0	-	-	-	-	-	-	-
Stage 2	662	0	-	-	-	-	-	-	-

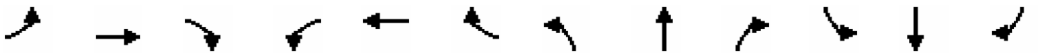
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	14.25	0.38	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	79	-	-	401	875	-	-
HCM Lane V/C Ratio	0.032	-	-	0.03	0.002	-	-
HCM Ctrl Dly (s/v)	8.7	0	-	14.2	9.1	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	0	14	1	0	3	16	368	2	2	346	123
Future Volume (vph)	105	0	14	1	0	3	16	368	2	2	346	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		0%			-1%			-1%			-1%	
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.97			1.00			0.99	
Frt		0.984			0.899			0.999			0.965	
Flt Protected		0.958			0.988			0.998				
Satd. Flow (prot)	0	1728	0	0	1646	0	0	1702	0	0	1634	0
Flt Permitted		0.749			0.920			0.976			0.999	
Satd. Flow (perm)	0	1328	0	0	1532	0	0	1664	0	0	1632	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		75			75						27	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			175			356			363	
Travel Time (s)		9.7			4.8			9.7			9.9	
Confl. Peds. (#/hr)	12		2	2		12	16		12	12		16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	21%	0%	0%	0%	13%	4%	0%	0%	5%	2%
Adj. Flow (vph)	111	0	15	1	0	3	17	387	2	2	364	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	0	0	4	0	0	406	0	0	495	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.99	0.99	0.99	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



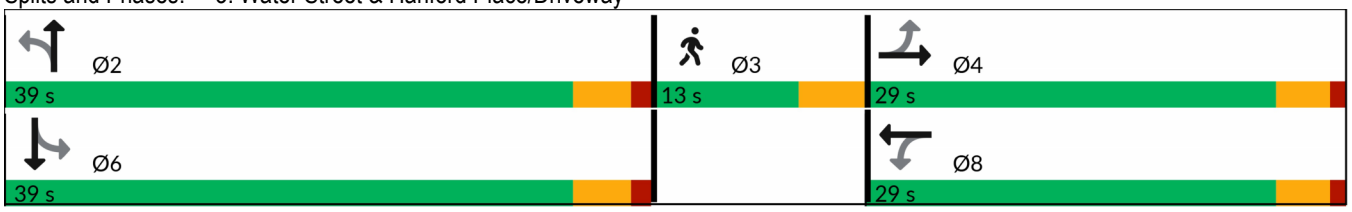
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		6.0	6.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.2	11.2		10.2	10.2		19.6	19.6		19.6	19.6	
Total Split (s)	29.0	29.0		29.0	29.0		39.0	39.0		39.0	39.0	
Total Split (%)	35.8%	35.8%		35.8%	35.8%		48.1%	48.1%		48.1%	48.1%	
Maximum Green (s)	24.8	24.8		24.8	24.8		34.4	34.4		34.4	34.4	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.1	1.1		1.1	1.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.2			4.2			4.6			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		9.2			8.9			29.8			29.8	
Actuated g/C Ratio		0.19			0.18			0.61			0.61	
v/c Ratio		0.41			0.01			0.40			0.50	
Control Delay (s/veh)		16.0			0.0			11.4			12.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		16.0			0.0			11.4			12.1	
LOS		B			A			B			B	
Approach Delay (s/veh)		16.0						11.4			12.1	
Approach LOS		B						B			B	
90th %ile Green (s)	13.6	13.6		13.6	13.6		34.4	34.4		34.4	34.4	
90th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	10.0	10.0		10.0	10.0		26.1	26.1		26.1	26.1	
70th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	7.7	7.7		7.7	7.7		21.4	21.4		21.4	21.4	
50th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	7.0	7.0		7.0	7.0		21.6	21.6		21.6	21.6	
30th %ile Term Code	Min	Min		Hold	Hold		Dwell	Dwell		Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)		9			0			39			48	
Queue Length 95th (ft)		67			0			204			255	
Internal Link Dist (ft)		274			95			276			283	
Turn Bay Length (ft)												
Base Capacity (vph)		769			882			1279			1260	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	9.0
Minimum Split (s)	17.0
Total Split (s)	13.0
Total Split (%)	16%
Maximum Green (s)	9.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	6.0
Pedestrian Calls (#/hr)	42
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	13.0
90th %ile Term Code	Ped
70th %ile Green (s)	13.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.16			0.00			0.32			0.39	

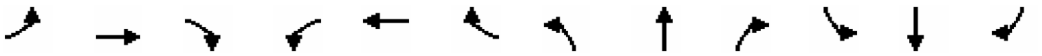
Intersection Summary			
Area Type:	Other		
Cycle Length: 81			
Actuated Cycle Length: 49.1			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay (s/veh): 12.3		Intersection LOS: B	
Intersection Capacity Utilization 51.8%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 73.8			
70th %ile Actuated Cycle: 61.9			
50th %ile Actuated Cycle: 37.9			
30th %ile Actuated Cycle: 37.4			
10th %ile Actuated Cycle: 34.6			

Splits and Phases: 3: Water Street & Hanford Place/Driveway



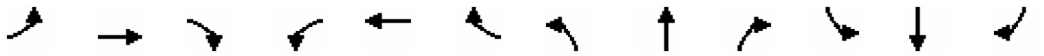
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	235	67	342	229	153	53	160	381	130	118	38
Future Volume (vph)	38	235	67	342	229	153	53	160	381	130	118	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99	0.97		0.94		0.99		0.98	
Frt		0.973			0.940				0.850		0.982	
Flt Protected		0.994		0.950			0.950				0.978	
Satd. Flow (prot)	0	1804	0	1695	1682	0	1703	1881	1708	0	1711	0
Flt Permitted		0.913		0.268			0.517				0.699	
Satd. Flow (perm)	0	1646	0	474	1682	0	867	1881	1686	0	1221	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		13			48				397			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			234			313	
Travel Time (s)		13.1			16.8			6.4			8.5	
Confl. Peds. (#/hr)	48		15	15		48	65		3	3		65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	4%	1%	0%	6%	1%	4%	0%	1%	3%
Adj. Flow (vph)	40	245	70	356	239	159	55	167	397	135	123	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	355	0	356	398	0	55	167	397	0	298	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



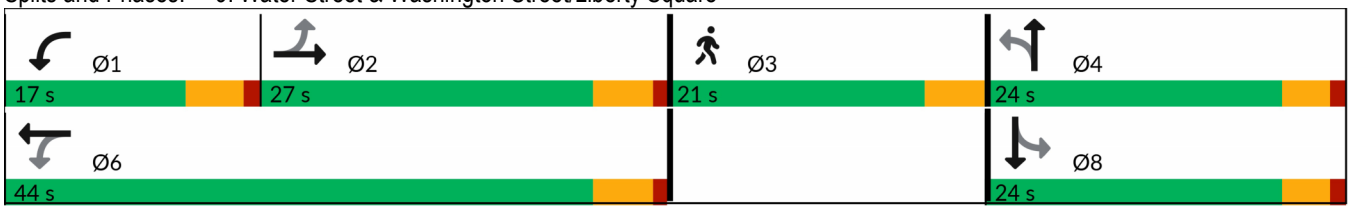
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	27.0	27.0		17.0	44.0		24.0	24.0		24.0	24.0	
Total Split (%)	30.3%	30.3%		19.1%	49.4%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		19.6		37.2	37.4		20.6	20.6	81.0		20.6	
Actuated g/C Ratio		0.24		0.46	0.46		0.25	0.25	1.00		0.25	
v/c Ratio		0.87		0.87	0.50		0.25	0.35	0.24		0.96	
Control Delay (s/veh)		54.0		45.2	18.3		33.8	31.9	0.3		79.8	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		54.0		45.2	18.3		33.8	31.9	0.3		79.8	
LOS		D		D	B		C	C	A		E	
Approach Delay (s/veh)		54.0			31.0			11.8			79.8	
Approach LOS		D			C			B			E	
90th %ile Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
90th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
70th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
50th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
30th %ile Green (s)	17.4	17.4		12.0	34.4		19.7	19.7		19.7	19.7	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
10th %ile Green (s)	13.6	13.6		12.0	30.6		19.7	19.7		19.7	19.7	
10th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
Queue Length 50th (ft)		199		~156	153		28	87	0		~213	
Queue Length 95th (ft)		#363		#311	244		64	149	0		#374	
Internal Link Dist (ft)		399			537			154			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		478		407	872		220	478	1686		310	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	24%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.74		0.87	0.46		0.25	0.35	0.24		0.96	

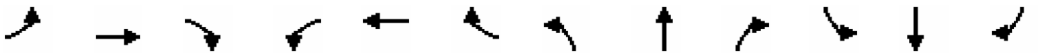
Intersection Summary			
Area Type:	Other		
Cycle Length: 89			
Actuated Cycle Length: 81			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay (s/veh): 36.4		Intersection LOS: D	
Intersection Capacity Utilization 81.9%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 94			
70th %ile Actuated Cycle: 94			
50th %ile Actuated Cycle: 94			
30th %ile Actuated Cycle: 63.3			
10th %ile Actuated Cycle: 59.5			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



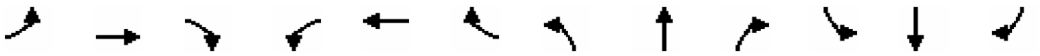
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	70	47	8	80	40	32	201	13	27	228	44
Future Volume (vph)	34	70	47	8	80	40	32	201	13	27	228	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.99			0.99			0.99	0.94
Frt		0.940			0.958			0.993				0.850
Flt Protected	0.950				0.997			0.993			0.995	
Satd. Flow (prot)	1652	1605	0	0	1770	0	0	1740	0	0	1819	1591
Flt Permitted	0.424				0.974			0.932			0.948	
Satd. Flow (perm)	730	1605	0	0	1726	0	0	1627	0	0	1724	1501
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	11		17	17		11	25		46	46		25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	1%	1%	2%	0%	4%	8%	0%	0%	5%	2%
Adj. Flow (vph)	38	78	52	9	89	44	36	223	14	30	253	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	130	0	0	142	0	0	273	0	0	283	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



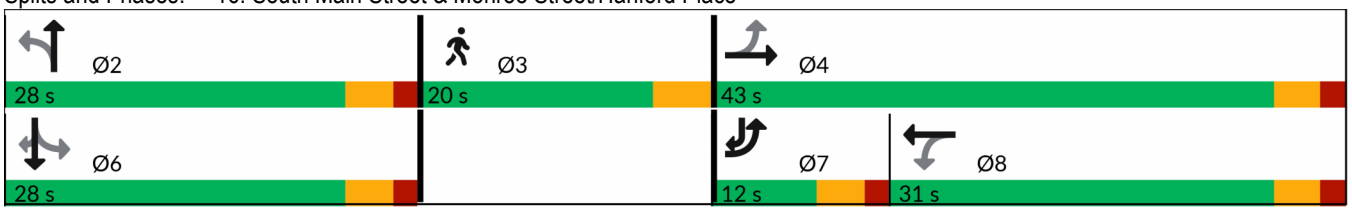
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	12.0	43.0		31.0	31.0		28.0	28.0		28.0	28.0	12.0
Total Split (%)	13.2%	47.3%		34.1%	34.1%		30.8%	30.8%		30.8%	30.8%	13.2%
Maximum Green (s)	7.1	38.1		26.1	26.1		23.1	23.1		23.1	23.1	7.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	18.3	19.4			13.9			28.0			28.0	31.9
Actuated g/C Ratio	0.29	0.31			0.22			0.45			0.45	0.51
v/c Ratio	0.11	0.26			0.37			0.37			0.37	0.06
Control Delay (s/veh)	20.2	21.3			31.6			24.6			24.3	8.8
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	20.2	21.3			31.6			24.6			24.3	8.8
LOS	C	C			C			C			C	A
Approach Delay (s/veh)		21.1			31.6			24.6			22.0	
Approach LOS		C			C			C			C	
90th %ile Green (s)	7.1	28.7		16.7	16.7		23.1	23.1		23.1	23.1	7.1
90th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
70th %ile Green (s)	7.1	25.7		13.7	13.7		23.1	23.1		23.1	23.1	7.1
70th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Hold	Hold	Max
50th %ile Green (s)	7.1	23.7		11.7	11.7		20.1	20.1		20.1	20.1	7.1
50th %ile Term Code	Max	Hold		Gap	Gap		Gap	Gap		Hold	Hold	Max
30th %ile Green (s)	0.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	0.0
30th %ile Term Code	Skip	Min		Min	Min		Min	Min		Min	Min	Skip
10th %ile Green (s)	0.0	0.0		0.0	0.0		26.8	26.8		26.8	26.8	0.0
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	Skip
Queue Length 50th (ft)	13	47			64			117			121	8
Queue Length 95th (ft)	35	93			123			211			215	19
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	340	1090			873			817			866	777
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.11	0.12			0.16			0.33			0.33	0.06

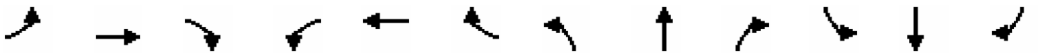
Intersection Summary			
Area Type:	Other		
Cycle Length: 91			
Actuated Cycle Length: 62.5			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay (s/veh): 24.1		Intersection LOS: C	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 85.6			
70th %ile Actuated Cycle: 82.6			
50th %ile Actuated Cycle: 77.6			
30th %ile Actuated Cycle: 34.8			
10th %ile Actuated Cycle: 31.7			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



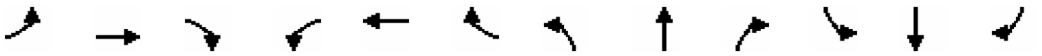
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	235	92	22	216	75	66	216	36	87	234	50
Future Volume (vph)	48	235	92	22	216	75	66	216	36	87	234	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.99			0.98			0.98		0.97	0.99	
Frt		0.958			0.968			0.985			0.973	
Flt Protected	0.950				0.997			0.990		0.950		
Satd. Flow (prot)	1643	1647	0	0	1748	0	0	1795	0	1676	1733	0
Flt Permitted	0.450				0.961			0.860		0.492		
Satd. Flow (perm)	758	1647	0	0	1684	0	0	1547	0	844	1733	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	31		10	10		31	48		40	40		48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	1%	3%	9%	1%	3%	0%	3%	8%	0%	1%	2%
Adj. Flow (vph)	51	247	97	23	227	79	69	227	38	92	246	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	344	0	0	329	0	0	334	0	92	299	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



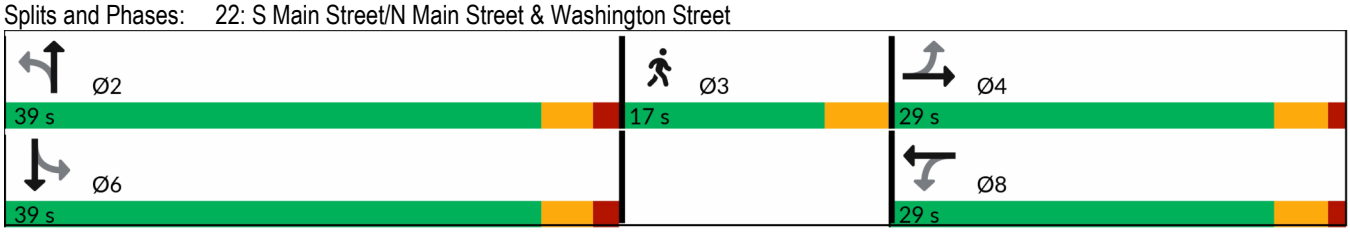
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	29.0	29.0		29.0	29.0		39.0	39.0		39.0	39.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		45.9%	45.9%		45.9%	45.9%	
Maximum Green (s)	24.4	24.4		24.4	24.4		34.0	34.0		34.0	34.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	20.6	20.6			20.6			21.9		21.9	21.9	
Actuated g/C Ratio	0.32	0.32			0.32			0.34		0.34	0.34	
v/c Ratio	0.21	0.64			0.60			0.63		0.32	0.50	
Control Delay (s/veh)	24.4	29.6			27.9			26.5		23.0	22.9	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	24.4	29.6			27.9			26.5		23.0	22.9	
LOS	C	C			C			C		C	C	
Approach Delay (s/veh)		28.9			27.9			26.5			22.9	
Approach LOS		C			C			C			C	
90th %ile Green (s)	24.4	24.4		24.4	24.4		32.3	32.3		32.3	32.3	
90th %ile Term Code	Max	Max		Max	Max		Gap	Gap		Hold	Hold	
70th %ile Green (s)	24.4	24.4		24.4	24.4		24.9	24.9		24.9	24.9	
70th %ile Term Code	Max	Max		Hold	Hold		Gap	Gap		Hold	Hold	
50th %ile Green (s)	19.9	19.9		19.9	19.9		20.5	20.5		20.5	20.5	
50th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Gap		Hold	Hold	
30th %ile Green (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
30th %ile Term Code	Min	Min		Min	Min		Min	Min		Min	Min	
10th %ile Green (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
10th %ile Term Code	Min	Min		Min	Min		Min	Min		Min	Min	
Queue Length 50th (ft)	17	136			128			132		32	112	
Queue Length 95th (ft)	53	#296			257			233		75	197	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	327	711			727			931		508	1043	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	20%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.16	0.48			0.45			0.36		0.18	0.29	

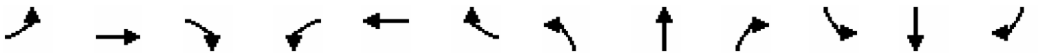
Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 63.5			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay (s/veh): 26.5		Intersection LOS: C	
Intersection Capacity Utilization 81.1%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 87.3			
70th %ile Actuated Cycle: 79.9			
50th %ile Actuated Cycle: 71			
30th %ile Actuated Cycle: 39.6			
10th %ile Actuated Cycle: 39.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



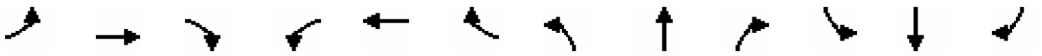
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	225	0	17	0	445	262	12	460	13
Future Volume (vph)	0	0	0	225	0	17	0	445	262	12	460	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.99	0.99			0.98			1.00	
Frt					0.979			0.944			0.996	
Flt Protected				0.950	0.959						0.999	
Satd. Flow (prot)	0	0	0	1641	1619	0	0	3270	0	0	3398	0
Flt Permitted				0.950	0.959						0.932	
Satd. Flow (perm)	0	0	0	1622	1603	0	0	3270	0	0	3170	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					98						4	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)	10		11	11		10	19		12	12		19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	3%	2%	0%	3%	8%
Adj. Flow (vph)	0	0	0	239	0	18	0	473	279	13	489	14
Shared Lane Traffic (%)				46%								
Lane Group Flow (vph)	0	0	0	129	128	0	0	752	0	0	516	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2		1	2	
Detector Template				Left	Thru			Thru		Left	Thru	
Leading Detector (ft)				20	100			100		20	100	
Trailing Detector (ft)				0	0			0		0	0	
Detector 1 Position(ft)				0	0			0		0	0	
Detector 1 Size(ft)				20	6			6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



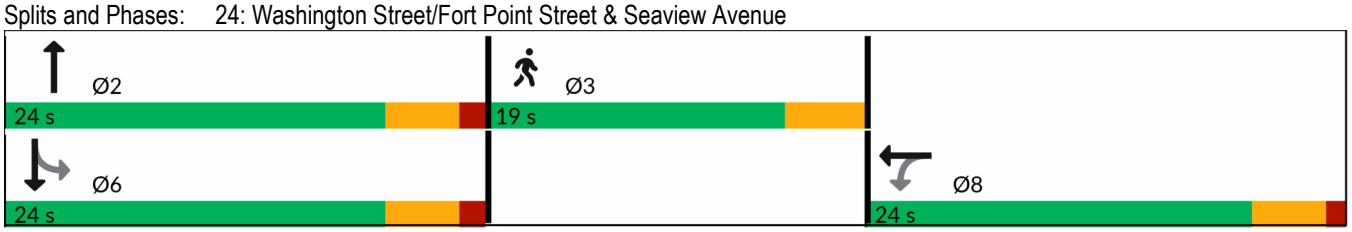
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA			NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8						6		
Detector Phase				8	8			2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0			15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7			20.0		20.0	20.0	
Total Split (s)				24.0	24.0			24.0		24.0	24.0	
Total Split (%)				35.8%	35.8%			35.8%		35.8%	35.8%	
Maximum Green (s)				19.3	19.3			19.0		19.0	19.0	
Yellow Time (s)				3.7	3.7			3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0			1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0			3.0		3.0	3.0	
Recall Mode				None	None			Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				10.5	10.5			24.5			24.5	
Actuated g/C Ratio				0.20	0.20			0.47			0.47	
v/c Ratio				0.39	0.32			0.49			0.34	
Control Delay (s/veh)				25.3	10.8			18.5			16.3	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				25.3	10.8			18.5			16.3	
LOS				C	B			B			B	
Approach Delay (s/veh)					18.1			18.5			16.3	
Approach LOS					B			B			B	
90th %ile Green (s)				15.7	15.7			19.0		19.0	19.0	
90th %ile Term Code				Gap	Gap			Max		Max	Max	
70th %ile Green (s)				11.9	11.9			19.0		19.0	19.0	
70th %ile Term Code				Gap	Gap			Max		Hold	Hold	
50th %ile Green (s)				10.1	10.1			19.0		19.0	19.0	
50th %ile Term Code				Gap	Gap			Max		Hold	Hold	
30th %ile Green (s)				7.2	7.2			15.0		15.0	15.0	
30th %ile Term Code				Gap	Gap			Min		Min	Min	
10th %ile Green (s)				0.0	0.0			30.0		30.0	30.0	
10th %ile Term Code				Skip	Skip			Dwell		Dwell	Dwell	
Queue Length 50th (ft)				46	10			131			82	
Queue Length 95th (ft)				93	51			#237			141	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				667	717			1624			1576	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	28%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.19	0.18			0.46			0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 67			
Actuated Cycle Length: 51.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay (s/veh): 17.7		Intersection LOS: B	
Intersection Capacity Utilization 43.4%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 67.4			
70th %ile Actuated Cycle: 63.6			
50th %ile Actuated Cycle: 61.8			
30th %ile Actuated Cycle: 31.9			
10th %ile Actuated Cycle: 35			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	0	38	1	0	1	0	520	0	0	473	1
Future Vol, veh/h	75	0	38	1	0	1	0	520	0	0	473	1
Conflicting Peds, #/hr	1	0	0	0	0	1	32	0	13	13	0	32
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	0	5	100	0	100	0	3	0	0	3	0
Mvmt Flow	77	0	39	1	0	1	0	536	0	0	488	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1057	-	520	1037	1070	550	-	0	0	549	0	0
Stage 1	520	-	-	549	549	-	-	-	-	-	-	-
Stage 2	537	-	-	488	521	-	-	-	-	-	-	-
Critical Hdwy	7.31	-	6.35	8.1	6.5	7.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.31	-	-	7.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.31	-	-	7.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	-	3.345	4.4	4	4.2	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	192	0	542	140	223	387	0	-	-	1031	-	-
Stage 1	526	0	-	380	520	-	0	-	-	-	-	-
Stage 2	514	0	-	415	535	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	-	528	128	215	381	-	-	-	1018	-	-
Mov Cap-2 Maneuver	187	-	-	128	215	-	-	-	-	-	-	-
Stage 1	512	-	-	376	513	-	-	-	-	-	-	-
Stage 2	512	-	-	384	521	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	28.92	23.98	0	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	187	528	192	1018	-	-
HCM Lane V/C Ratio	-	-	0.414	0.074	0.011	-	-	-
HCM Ctrl Dly (s/v)	-	-	37.3	12.4	24	0	-	-
HCM Lane LOS	-	-	E	B	C	A	-	-
HCM 95th %tile Q(veh)	-	-	1.9	0.2	0	0	-	-

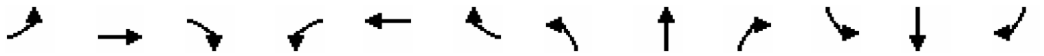
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	2	19	22	574	4	10	463	54
Future Vol, veh/h	0	0	0	6	2	19	22	574	4	10	463	54
Conflicting Peds, #/hr	10	0	16	16	0	10	29	0	25	25	0	29
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	3	0
Mvmt Flow	0	0	0	6	2	20	23	592	4	10	477	56

Major/Minor	Minor1		Major1				Major2		
Conflicting Flow All	1178	1247	629	562	0	0	621	0	0
Stage 1	664	664	-	-	-	-	-	-	-
Stage 2	514	583	-	-	-	-	-	-	-
Critical Hdwy	6	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	243	201	503	1019	-	-	970	-	-
Stage 1	555	497	-	-	-	-	-	-	-
Stage 2	640	536	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	224	0	491	1019	-	-	954	-	-
Mov Cap-2 Maneuver	224	0	-	-	-	-	-	-	-
Stage 1	528	0	-	-	-	-	-	-	-
Stage 2	621	0	-	-	-	-	-	-	-

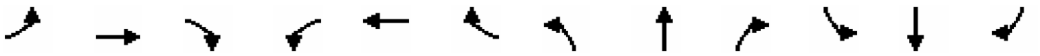
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	15.17	0.32	0.17
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	66	-	-	382	954	-	-
HCM Lane V/C Ratio	0.022	-	-	0.073	0.011	-	-
HCM Ctrl Dly (s/v)	8.6	0	-	15.2	8.8	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	2	12	1	0	7	11	359	1	1	407	116
Future Volume (vph)	101	2	12	1	0	7	11	359	1	1	407	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		0%			-1%			-1%			-1%	
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.96			1.00			0.99	
Frt		0.986			0.880						0.970	
Flt Protected		0.958			0.994			0.999				
Satd. Flow (prot)	0	1501	0	0	1282	0	0	1551	0	0	1548	0
Flt Permitted		0.745			0.972			0.983				
Satd. Flow (perm)	0	1148	0	0	1253	0	0	1526	0	0	1548	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			67						25	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			175			356			363	
Travel Time (s)		9.7			4.8			9.7			9.9	
Confl. Peds. (#/hr)	8		2	2		8	8		5	5		8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	18%	50%	25%	0%	0%	29%	9%	15%	0%	0%	11%	11%
Adj. Flow (vph)	111	2	13	1	0	8	12	395	1	1	447	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	0	0	9	0	0	408	0	0	575	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.99	0.99	0.99	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



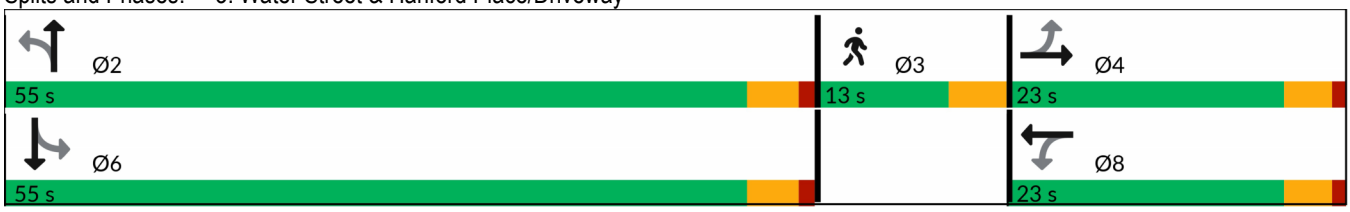
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		6.0	6.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.2	11.2		10.2	10.2		19.6	19.6		19.6	19.6	
Total Split (s)	23.0	23.0		23.0	23.0		55.0	55.0		55.0	55.0	
Total Split (%)	25.3%	25.3%		25.3%	25.3%		60.4%	60.4%		60.4%	60.4%	
Maximum Green (s)	18.8	18.8		18.8	18.8		50.4	50.4		50.4	50.4	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.1	1.1		1.1	1.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.2			4.2			4.6			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		12.5			12.2			36.2			36.2	
Actuated g/C Ratio		0.21			0.21			0.62			0.62	
v/c Ratio		0.50			0.03			0.43			0.59	
Control Delay (s/veh)		33.0			0.1			12.3			14.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		33.0			0.1			12.3			14.7	
LOS		C			A			B			B	
Approach Delay (s/veh)		33.0			0.1			12.3			14.7	
Approach LOS		C			A			B			B	
90th %ile Green (s)	18.8	18.8		18.8	18.8		50.4	50.4		50.4	50.4	
90th %ile Term Code	Max	Max		Hold	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	16.0	16.0		16.0	16.0		39.6	39.6		39.6	39.6	
70th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	10.4	10.4		10.4	10.4		20.9	20.9		20.9	20.9	
50th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	8.8	8.8		8.8	8.8		22.6	22.6		22.6	22.6	
30th %ile Term Code	Gap	Gap		Hold	Hold		Dwell	Dwell		Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)		22			0			51			79	
Queue Length 95th (ft)		126			0			232			362	
Internal Link Dist (ft)		274			95			276			283	
Turn Bay Length (ft)												
Base Capacity (vph)		441			519			1266			1289	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	9.0
Minimum Split (s)	17.0
Total Split (s)	13.0
Total Split (%)	14%
Maximum Green (s)	9.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	6.0
Pedestrian Calls (#/hr)	23
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	13.0
90th %ile Term Code	Ped
70th %ile Green (s)	13.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.29			0.02			0.32			0.45	

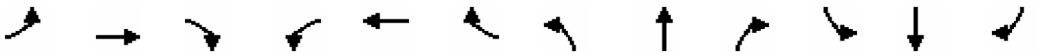
Intersection Summary			
Area Type:	Other		
Cycle Length: 91			
Actuated Cycle Length: 58.3			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay (s/veh): 15.8		Intersection LOS: B	
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 95			
70th %ile Actuated Cycle: 81.4			
50th %ile Actuated Cycle: 40.1			
30th %ile Actuated Cycle: 40.2			
10th %ile Actuated Cycle: 34.6			

Splits and Phases: 3: Water Street & Hanford Place/Driveway



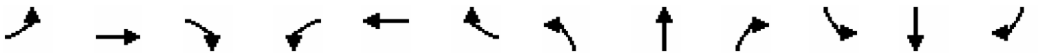
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	155	31	469	343	171	25	142	359	64	101	9
Future Volume (vph)	13	155	31	469	343	171	25	142	359	64	101	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	0.99		0.98		0.99		0.99	
Frt		0.979			0.950				0.850		0.993	
Flt Protected		0.997		0.950			0.950				0.982	
Satd. Flow (prot)	0	1677	0	1560	1632	0	1671	1810	1506	0	1743	0
Flt Permitted		0.948		0.394			0.556				0.794	
Satd. Flow (perm)	0	1594	0	646	1632	0	961	1810	1483	0	1404	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		9			35				386			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			234			313	
Travel Time (s)		13.1			16.8			6.4			8.5	
Confl. Peds. (#/hr)	7		3	3		7	12		9	9		12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	11%	10%	13%	8%	5%	8%	5%	18%	2%	0%	33%
Adj. Flow (vph)	14	167	33	504	369	184	27	153	386	69	109	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	214	0	504	553	0	27	153	386	0	188	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



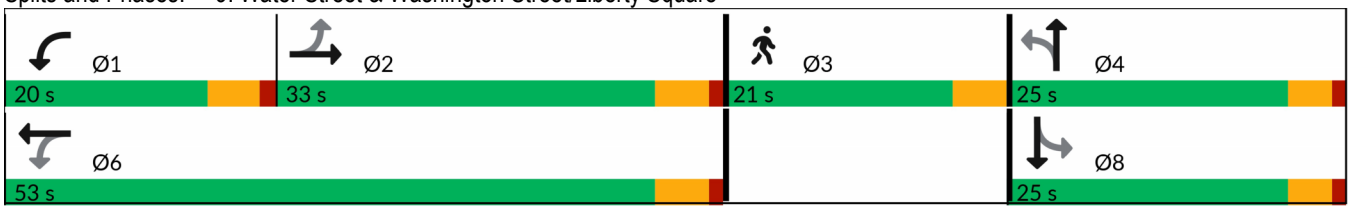
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	33.0	33.0		20.0	53.0		25.0	25.0		25.0	25.0	
Total Split (%)	33.3%	33.3%		20.2%	53.5%		25.3%	25.3%		25.3%	25.3%	
Maximum Green (s)	28.1	28.1		15.0	48.1		20.7	20.7		20.7	20.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.9		39.8	39.9		16.3	16.3	79.1		16.3	
Actuated g/C Ratio		0.23		0.50	0.50		0.21	0.21	1.00		0.21	
v/c Ratio		0.58		0.98	0.66		0.14	0.41	0.26		0.65	
Control Delay (s/veh)		36.5		60.2	22.5		34.2	35.6	0.4		44.9	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		36.5		60.2	22.5		34.2	35.6	0.4		44.9	
LOS		D		E	C		C	D	A		D	
Approach Delay (s/veh)		36.5			40.5			11.5			44.9	
Approach LOS		D			D			B			D	
90th %ile Green (s)	28.1	28.1		15.0	48.1		20.7	20.7		20.7	20.7	
90th %ile Term Code	Hold	Hold		Max	Max		Hold	Hold		Max	Max	
70th %ile Green (s)	21.9	21.9		15.0	41.9		20.7	20.7		20.7	20.7	
70th %ile Term Code	Hold	Hold		Max	Gap		Hold	Hold		Max	Max	
50th %ile Green (s)	16.7	16.7		15.0	36.7		17.6	17.6		17.6	17.6	
50th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	13.5	13.5		15.0	33.5		14.2	14.2		14.2	14.2	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	10.0	10.0		15.0	30.0		8.3	8.3		8.3	8.3	
10th %ile Term Code	Min	Min		Max	Hold		Hold	Hold		Gap	Gap	
Queue Length 50th (ft)		110		~313	252		13	77	0		99	
Queue Length 95th (ft)		188		#603	404		40	153	0		#207	
Internal Link Dist (ft)		399			537			154			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		629		515	1101		277	521	1483		404	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.34		0.98	0.50		0.10	0.29	0.26		0.47	

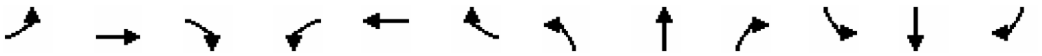
Intersection Summary			
Area Type:	Other		
Cycle Length: 99			
Actuated Cycle Length: 79.1			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay (s/veh): 32.4		Intersection LOS: C	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 104			
70th %ile Actuated Cycle: 97.8			
50th %ile Actuated Cycle: 89.5			
30th %ile Actuated Cycle: 56.9			
10th %ile Actuated Cycle: 47.5			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



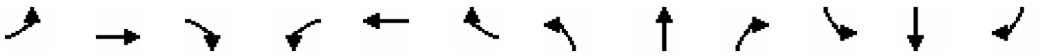
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	76	51	18	95	32	50	279	6	25	229	106
Future Volume (vph)	82	76	51	18	95	32	50	279	6	25	229	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98			0.99			1.00			1.00	0.97
Frt		0.939			0.970			0.997				0.850
Flt Protected	0.950				0.994			0.993			0.995	
Satd. Flow (prot)	1546	1350	0	0	1664	0	0	1497	0	0	1745	1449
Flt Permitted	0.447				0.950			0.908			0.947	
Satd. Flow (perm)	724	1350	0	0	1585	0	0	1368	0	0	1658	1410
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	5		22	22		5	5		19	19		5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	9%	24%	17%	7%	13%	0%	57%	20%	17%	8%	9%	12%
Adj. Flow (vph)	91	84	57	20	106	36	56	310	7	28	254	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	141	0	0	162	0	0	373	0	0	282	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



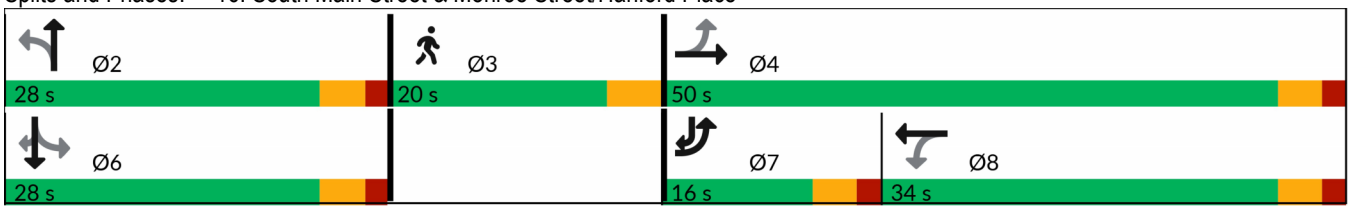
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	16.0	50.0		34.0	34.0		28.0	28.0		28.0	28.0	16.0
Total Split (%)	16.3%	51.0%		34.7%	34.7%		28.6%	28.6%		28.6%	28.6%	16.3%
Maximum Green (s)	11.1	45.1		29.1	29.1		23.1	23.1		23.1	23.1	11.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	26.1	26.1			14.6			25.2			25.2	36.5
Actuated g/C Ratio	0.35	0.35			0.20			0.34			0.34	0.49
v/c Ratio	0.24	0.30			0.52			0.80			0.50	0.17
Control Delay (s/veh)	20.0	21.0			37.8			45.2			30.0	9.7
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	20.0	21.0			37.8			45.2			30.0	9.7
LOS	B	C			D			D			C	A
Approach Delay (s/veh)		20.6			37.8			45.2			24.0	
Approach LOS		C			D			D			C	
90th %ile Green (s)	11.1	36.0		20.0	20.0		23.1	23.1		23.1	23.1	11.1
90th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
70th %ile Green (s)	11.1	32.2		16.2	16.2		23.1	23.1		23.1	23.1	11.1
70th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
50th %ile Green (s)	10.0	28.7		13.8	13.8		23.1	23.1		23.1	23.1	10.0
50th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
30th %ile Green (s)	10.0	26.5		11.6	11.6		23.1	23.1		23.1	23.1	10.0
30th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
10th %ile Green (s)	0.0	10.0		10.0	10.0		23.1	23.1		23.1	23.1	0.0
10th %ile Term Code	Skip	Hold		Min	Min		Max	Max		Hold	Hold	Skip
Queue Length 50th (ft)	34	56			82			~204			134	20
Queue Length 95th (ft)	68	102			147			#425			240	40
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	393	885			680			466			565	718
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.23	0.16			0.24			0.80			0.50	0.16

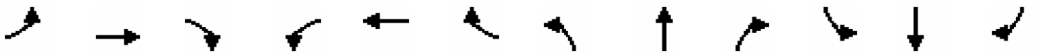
Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 74			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 32.0		Intersection LOS: C	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 92.9			
70th %ile Actuated Cycle: 89.1			
50th %ile Actuated Cycle: 85.6			
30th %ile Actuated Cycle: 59.4			
10th %ile Actuated Cycle: 42.9			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



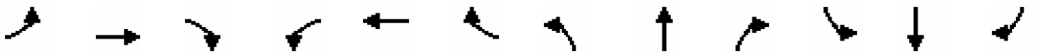
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	117	93	28	309	48	81	380	28	42	255	25
Future Volume (vph)	25	117	93	28	309	48	81	380	28	42	255	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99			1.00			0.99		0.99	1.00	
Frt		0.934			0.983			0.992			0.987	
Flt Protected	0.950				0.996			0.992		0.950		
Satd. Flow (prot)	1552	1537	0	0	1707	0	0	1671	0	1596	1650	0
Flt Permitted	0.331				0.966			0.871		0.374		
Satd. Flow (perm)	540	1537	0	0	1655	0	0	1463	0	624	1650	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	2		1	1		2	23		14	14		23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	4%	17%	7%	6%	12%	11%	29%	5%	8%	17%
Adj. Flow (vph)	27	127	101	30	336	52	88	413	30	46	277	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	228	0	0	418	0	0	531	0	46	304	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



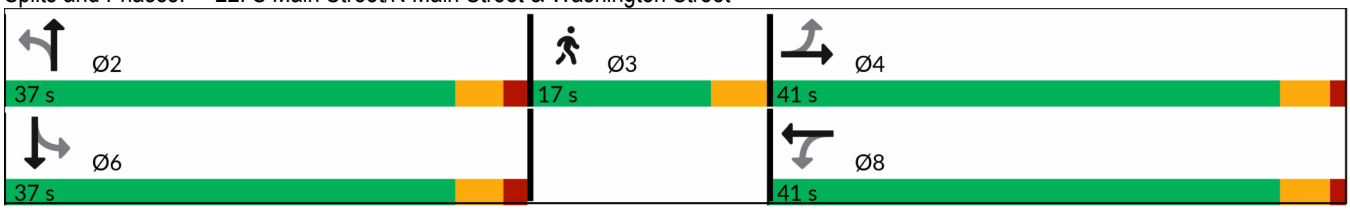
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	41.0	41.0		41.0	41.0		37.0	37.0		37.0	37.0	
Total Split (%)	43.2%	43.2%		43.2%	43.2%		38.9%	38.9%		38.9%	38.9%	
Maximum Green (s)	36.4	36.4		36.4	36.4		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	25.3	25.3			25.3			34.0		34.0	34.0	
Actuated g/C Ratio	0.32	0.32			0.32			0.42		0.42	0.42	
v/c Ratio	0.16	0.47			0.80			0.86		0.17	0.43	
Control Delay (s/veh)	24.2	26.6			38.7			42.9		24.5	24.3	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	24.2	26.6			38.7			42.9		24.5	24.3	
LOS	C	C			D			D		C	C	
Approach Delay (s/veh)		26.4			38.7			42.9			24.4	
Approach LOS		C			D			D			C	
90th %ile Green (s)	36.4	36.4		36.4	36.4		32.0	32.0		32.0	32.0	
90th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Hold	Hold	
70th %ile Green (s)	33.3	33.3		33.3	33.3		32.0	32.0		32.0	32.0	
70th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
50th %ile Green (s)	27.4	27.4		27.4	27.4		32.0	32.0		32.0	32.0	
50th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
30th %ile Green (s)	17.3	17.3		17.3	17.3		32.0	32.0		32.0	32.0	
30th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		32.0	32.0		32.0	32.0	
10th %ile Term Code	Min	Min		Min	Min		Max	Max		Hold	Hold	
Queue Length 50th (ft)	11	105			220			~311		18	135	
Queue Length 95th (ft)	32	172			332			#591		52	246	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	260	741			798			620		264	699	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	18%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.10	0.31			0.52			0.86		0.17	0.43	

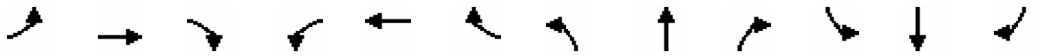
Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 80.1			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 34.9		Intersection LOS: C	
Intersection Capacity Utilization 90.6%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 99			
70th %ile Actuated Cycle: 95.9			
50th %ile Actuated Cycle: 90			
30th %ile Actuated Cycle: 58.9			
10th %ile Actuated Cycle: 56.6			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



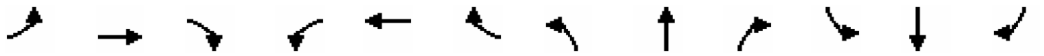
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	300	0	27	0	425	165	16	624	11
Future Volume (vph)	0	0	0	300	0	27	0	425	165	16	624	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.99	1.00			0.99			1.00	
Frt					0.975			0.958			0.997	
Flt Protected				0.950	0.960						0.999	
Satd. Flow (prot)	0	0	0	1579	1512	0	0	2977	0	0	3104	0
Flt Permitted				0.950	0.960						0.933	
Satd. Flow (perm)	0	0	0	1570	1505	0	0	2977	0	0	2898	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					99						3	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)			5	5			9		9	9		9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	5%	0%	23%	0%	17%	10%	44%	12%	27%
Adj. Flow (vph)	0	0	0	323	0	29	0	457	177	17	671	12
Shared Lane Traffic (%)				45%								
Lane Group Flow (vph)	0	0	0	178	174	0	0	634	0	0	700	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2		1	2	
Detector Template				Left	Thru			Thru		Left	Thru	
Leading Detector (ft)				20	100			100		20	100	
Trailing Detector (ft)				0	0			0		0	0	
Detector 1 Position(ft)				0	0			0		0	0	
Detector 1 Size(ft)				20	6			6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



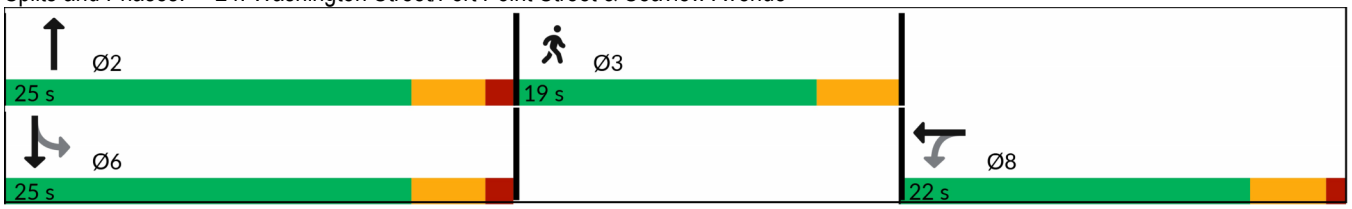
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA			NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8						6		
Detector Phase				8	8			2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0			15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7			20.0		20.0	20.0	
Total Split (s)				22.0	22.0			25.0		25.0	25.0	
Total Split (%)				33.3%	33.3%			37.9%		37.9%	37.9%	
Maximum Green (s)				17.3	17.3			20.0		20.0	20.0	
Yellow Time (s)				3.7	3.7			3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0			1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0			3.0		3.0	3.0	
Recall Mode				None	None			Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				12.2	12.2			20.3			20.3	
Actuated g/C Ratio				0.22	0.22			0.37			0.37	
v/c Ratio				0.51	0.42			0.57			0.65	
Control Delay (s/veh)				27.1	14.2			20.4			22.4	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				27.1	14.2			20.4			22.4	
LOS				C	B			C			C	
Approach Delay (s/veh)					20.7			20.4			22.4	
Approach LOS					C			C			C	
90th %ile Green (s)				17.3	17.3			20.0		20.0	20.0	
90th %ile Term Code				Max	Max			Max		Max	Max	
70th %ile Green (s)				15.9	15.9			20.0		20.0	20.0	
70th %ile Term Code				Gap	Gap			Max		Max	Max	
50th %ile Green (s)				12.5	12.5			20.0		20.0	20.0	
50th %ile Term Code				Gap	Gap			Max		Max	Max	
30th %ile Green (s)				8.3	8.3			15.0		15.0	15.0	
30th %ile Term Code				Gap	Gap			Min		Min	Min	
10th %ile Green (s)				7.0	7.0			18.3		18.3	18.3	
10th %ile Term Code				Min	Min			Dwell		Dwell	Dwell	
Queue Length 50th (ft)				68	27			115			131	
Queue Length 95th (ft)				127	78			187			#240	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				560	600			1227			1196	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	29%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.32	0.29			0.52			0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 66			
Actuated Cycle Length: 54.4			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay (s/veh): 21.3		Intersection LOS: C	
Intersection Capacity Utilization 53.0%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 70			
70th %ile Actuated Cycle: 68.6			
50th %ile Actuated Cycle: 65.2			
30th %ile Actuated Cycle: 33			
10th %ile Actuated Cycle: 35			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	1	16	0	0	3	0	471	2	0	513	0
Future Vol, veh/h	52	1	16	0	0	3	0	471	2	0	513	0
Conflicting Peds, #/hr	0	0	0	0	0	0	18	0	6	6	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	5	0	6	0	0	33	0	16	50	0	11	0
Mvmt Flow	57	1	18	0	0	3	0	518	2	0	564	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1081	1090	564	1089	1088	525	-	0	0	526	0	0
Stage 1	564	564	-	525	525	-	-	-	-	-	-	-
Stage 2	518	526	-	564	564	-	-	-	-	-	-	-
Critical Hdwy	7.35	6.7	6.36	7.1	6.5	6.53	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.35	5.7	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.35	5.7	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.354	3.5	4	3.597	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	181	204	510	195	217	496	0	-	-	1051	-	0
Stage 1	490	496	-	540	533	-	0	-	-	-	-	0
Stage 2	520	517	-	514	512	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	180	203	510	186	216	494	-	-	-	1045	-	-
Mov Cap-2 Maneuver	180	203	-	186	216	-	-	-	-	-	-	-
Stage 1	490	496	-	537	530	-	-	-	-	-	-	-
Stage 2	517	514	-	495	512	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	28.88	12.34	0	0
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	180	510	494	1045	-
HCM Lane V/C Ratio	-	-	0.317	0.034	0.007	-	-
HCM Ctrl Dly (s/v)	-	-	34	12.3	12.3	0	-
HCM Lane LOS	-	-	D	B	B	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0.1	0	0	-

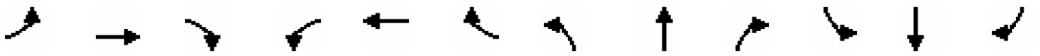
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	3	12	8	510	8	19	511	76
Future Vol, veh/h	0	0	0	7	3	12	8	510	8	19	511	76
Conflicting Peds, #/hr	1	0	5	5	0	1	18	0	13	13	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	14	33	0	0	14	0	11	11	12
Mvmt Flow	0	0	0	8	3	13	9	567	9	21	568	84

Major/Minor	Minor1		Major1				Major2		
Conflicting Flow All	1217	1314	585	670	0	0	589	0	0
Stage 1	602	602	-	-	-	-	-	-	-
Stage 2	615	712	-	-	-	-	-	-	-
Critical Hdwy	6.14	6.43	6	4.1	-	-	4.21	-	-
Critical Hdwy Stg 1	5.14	5.43	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.14	5.43	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.297	3.3	2.2	-	-	2.299	-	-
Pot Cap-1 Maneuver	216	159	532	930	-	-	944	-	-
Stage 1	561	474	-	-	-	-	-	-	-
Stage 2	553	425	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	203	0	527	930	-	-	936	-	-
Mov Cap-2 Maneuver	203	0	-	-	-	-	-	-	-
Stage 1	548	0	-	-	-	-	-	-	-
Stage 2	531	0	-	-	-	-	-	-	-

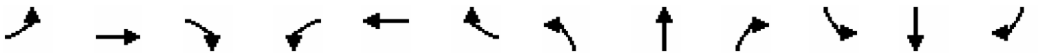
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	16.72	0.14	0.28
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	27	-	-	332	936	-	-
HCM Lane V/C Ratio	0.01	-	-	0.074	0.023	-	-
HCM Ctrl Dly (s/v)	8.9	0	-	16.7	8.9	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1	23	1	0	1	25	293	1	0	290	115
Future Volume (vph)	77	1	23	1	0	1	25	293	1	0	290	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		0%			-1%			-1%			-1%	
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.97			1.00			0.99	
Frt		0.970			0.932						0.962	
Flt Protected		0.963			0.976			0.996				
Satd. Flow (prot)	0	1595	0	0	1694	0	0	1633	0	0	1565	0
Flt Permitted		0.775			0.874			0.956				
Satd. Flow (perm)	0	1253	0	0	1512	0	0	1567	0	0	1565	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			75						31	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			175			356			363	
Travel Time (s)		9.7			4.8			9.7			9.9	
Confl. Peds. (#/hr)	18		4	4		18	7		4	4		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	6%	0%	27%	0%	0%	0%	17%	8%	0%	0%	9%	8%
Adj. Flow (vph)	79	1	23	1	0	1	26	299	1	0	296	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	103	0	0	2	0	0	326	0	0	413	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.99	0.99	0.99	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



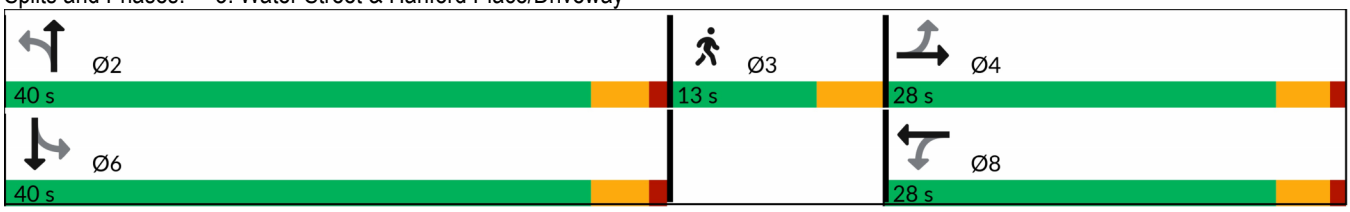
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		6.0	6.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.2	11.2		10.2	10.2		19.6	19.6		19.6	19.6	
Total Split (s)	28.0	28.0		28.0	28.0		40.0	40.0		40.0	40.0	
Total Split (%)	34.6%	34.6%		34.6%	34.6%		49.4%	49.4%		49.4%	49.4%	
Maximum Green (s)	23.8	23.8		23.8	23.8		35.4	35.4		35.4	35.4	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.1	1.1		1.1	1.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.2			4.2			4.6			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		9.8			9.5			29.4			29.4	
Actuated g/C Ratio		0.20			0.19			0.60			0.60	
v/c Ratio		0.39			0.01			0.35			0.44	
Control Delay (s/veh)		22.5			0.0			11.8			12.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		22.5			0.0			11.8			12.0	
LOS		C			A			B			B	
Approach Delay (s/veh)		22.5						11.8			12.0	
Approach LOS		C						B			B	
90th %ile Green (s)	15.3	15.3		15.3	15.3		31.9	31.9		31.9	31.9	
90th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
70th %ile Green (s)	11.2	11.2		11.2	11.2		23.2	23.2		23.2	23.2	
70th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	7.9	7.9		7.9	7.9		16.7	16.7		16.7	16.7	
50th %ile Term Code	Gap	Gap		Hold	Hold		Dwell	Dwell		Dwell	Dwell	
30th %ile Green (s)	7.2	7.2		7.2	7.2		30.0	30.0		30.0	30.0	
30th %ile Term Code	Gap	Gap		Hold	Hold		Dwell	Dwell		Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)		12			0			31			38	
Queue Length 95th (ft)		76			0			170			213	
Internal Link Dist (ft)		274			95			276			283	
Turn Bay Length (ft)												
Base Capacity (vph)		669			833			1204			1210	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	9.0
Minimum Split (s)	17.0
Total Split (s)	13.0
Total Split (%)	16%
Maximum Green (s)	9.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	6.0
Pedestrian Calls (#/hr)	33
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	13.0
90th %ile Term Code	Ped
70th %ile Green (s)	13.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.15			0.00			0.27			0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 81			
Actuated Cycle Length: 49.4			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay (s/veh): 13.2		Intersection LOS: B	
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 73			
70th %ile Actuated Cycle: 60.2			
50th %ile Actuated Cycle: 33.4			
30th %ile Actuated Cycle: 46			
10th %ile Actuated Cycle: 34.6			

Splits and Phases: 3: Water Street & Hanford Place/Driveway

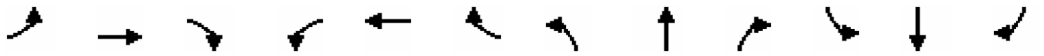


Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	195	67	291	239	113	39	100	287	80	109	12
Future Volume (vph)	26	195	67	291	239	113	39	100	287	80	109	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	0.99		0.95		0.99		0.99	
Frt		0.969			0.952				0.850		0.992	
Flt Protected		0.995		0.950			0.950				0.980	
Satd. Flow (prot)	0	1724	0	1588	1612	0	1752	1881	1615	0	1705	0
Flt Permitted		0.939		0.306			0.555				0.830	
Satd. Flow (perm)	0	1626	0	508	1612	0	977	1881	1594	0	1442	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		15			32				296			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			230			313	
Travel Time (s)		13.1			16.8			6.3			8.5	
Confl. Peds. (#/hr)	7		11	11		7	38		4	4		38
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	9%	4%	9%	11%	6%	14%	3%	1%	10%	5%	4%	0%
Adj. Flow (vph)	27	201	69	300	246	116	40	103	296	82	112	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	297	0	300	362	0	40	103	296	0	206	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



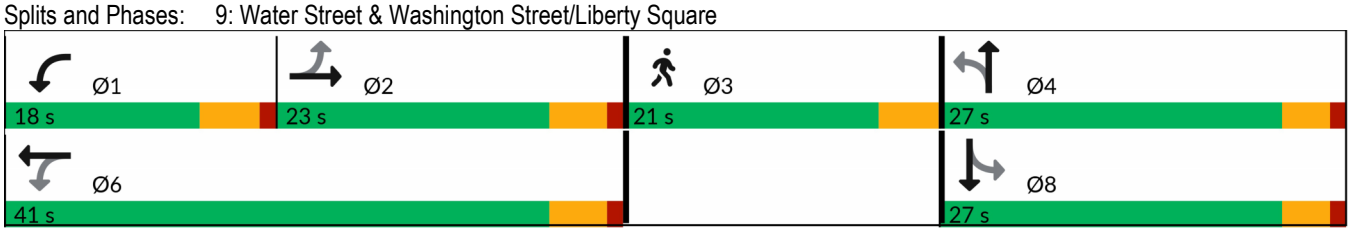
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	23.0	23.0		18.0	41.0		27.0	27.0		27.0	27.0	
Total Split (%)	25.8%	25.8%		20.2%	46.1%		30.3%	30.3%		30.3%	30.3%	
Maximum Green (s)	18.1	18.1		13.0	36.1		22.7	22.7		22.7	22.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		16.9		35.5	35.6		16.0	16.0	74.4		16.0	
Actuated g/C Ratio		0.23		0.48	0.48		0.22	0.22	1.00		0.22	
v/c Ratio		0.78		0.69	0.46		0.19	0.26	0.19		0.67	
Control Delay (s/veh)		46.9		29.8	19.0		30.8	29.8	0.3		41.6	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		46.9		29.8	19.0		30.8	29.8	0.3		41.6	
LOS		D		C	B		C	C	A		D	
Approach Delay (s/veh)		46.9			23.9			10.0			41.6	
Approach LOS		D			C			A			D	
90th %ile Green (s)	18.1	18.1		13.0	36.1		22.7	22.7		22.7	22.7	
90th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	18.1	18.1		13.0	36.1		21.1	21.1		21.1	21.1	
70th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	18.1	18.1		13.0	36.1		17.6	17.6		17.6	17.6	
50th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	14.9	14.9		12.2	32.1		11.3	11.3		11.3	11.3	
30th %ile Term Code	Gap	Gap		Gap	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	11.5	11.5		10.0	26.5		8.4	8.4		8.4	8.4	
10th %ile Term Code	Gap	Gap		Gap	Hold		Hold	Hold		Gap	Gap	
Queue Length 50th (ft)		155		121	137		19	49	0		109	
Queue Length 95th (ft)		#323		#239	243		47	93	0		184	
Internal Link Dist (ft)		399			537			150			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		448		450	880		329	635	1594		487	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	24%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.66		0.67	0.41		0.12	0.16	0.19		0.42	

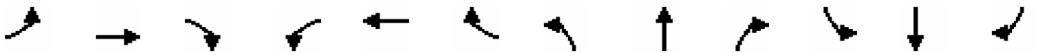
Intersection Summary			
Area Type:	Other		
Cycle Length: 89			
Actuated Cycle Length: 74.4			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 26.6		Intersection LOS: C	
Intersection Capacity Utilization 65.2%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 94			
70th %ile Actuated Cycle: 92.4			
50th %ile Actuated Cycle: 88.9			
30th %ile Actuated Cycle: 52.6			
10th %ile Actuated Cycle: 44.1			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



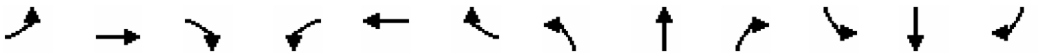
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	67	46	9	73	28	48	226	16	27	243	62
Future Volume (vph)	64	67	46	9	73	28	48	226	16	27	243	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.99			0.99			1.00	0.97
Frt		0.939			0.965			0.993				0.850
Flt Protected	0.950				0.996			0.992			0.995	
Satd. Flow (prot)	1465	1471	0	0	1635	0	0	1662	0	0	1759	1436
Flt Permitted	0.415				0.965			0.900			0.944	
Satd. Flow (perm)	636	1471	0	0	1579	0	0	1505	0	0	1665	1388
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	7		19	19		7	11		27	27		11
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	15%	14%	7%	20%	11%	7%	25%	9%	19%	8%	8%	13%
Adj. Flow (vph)	73	76	52	10	83	32	55	257	18	31	276	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	128	0	0	125	0	0	330	0	0	307	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



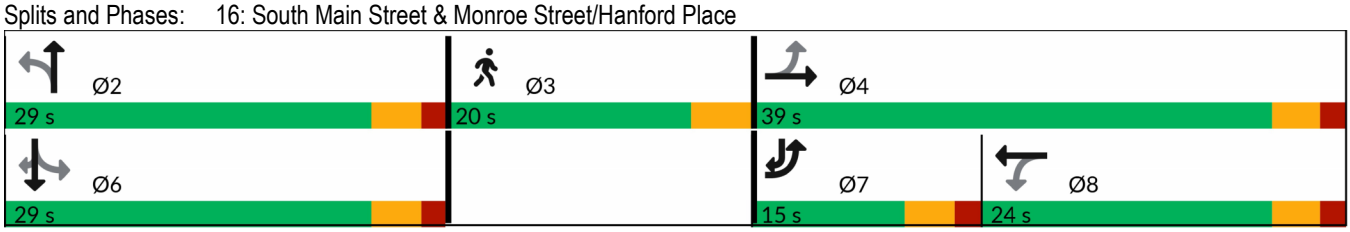
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	15.0	39.0		24.0	24.0		29.0	29.0		29.0	29.0	15.0
Total Split (%)	17.0%	44.3%		27.3%	27.3%		33.0%	33.0%		33.0%	33.0%	17.0%
Maximum Green (s)	10.1	34.1		19.1	19.1		24.1	24.1		24.1	24.1	10.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	24.2	24.2			13.2			32.2			32.2	37.8
Actuated g/C Ratio	0.34	0.34			0.18			0.45			0.45	0.53
v/c Ratio	0.21	0.26			0.43			0.49			0.41	0.09
Control Delay (s/veh)	21.0	21.5			37.0			29.4			26.9	8.7
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	21.0	21.5			37.0			29.4			26.9	8.7
LOS	C	C			D			C			C	A
Approach Delay (s/veh)		21.3			37.0			29.4			23.5	
Approach LOS		C			D			C			C	
90th %ile Green (s)	10.1	32.3		17.3	17.3		24.1	24.1		24.1	24.1	10.1
90th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
70th %ile Green (s)	10.1	29.0		14.0	14.0		24.1	24.1		24.1	24.1	10.1
70th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
50th %ile Green (s)	10.0	26.7		11.8	11.8		24.1	24.1		24.1	24.1	10.0
50th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
30th %ile Green (s)	10.0	24.9		10.0	10.0		24.1	24.1		24.1	24.1	10.0
30th %ile Term Code	Min	Hold		Min	Min		Max	Max		Hold	Hold	Min
10th %ile Green (s)	0.0	0.0		0.0	0.0		34.3	34.3		34.3	34.3	0.0
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	Skip
Queue Length 50th (ft)	28	51			63			160			143	12
Queue Length 95th (ft)	57	91			114			#307			242	24
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	343	771			464			674			745	738
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.21	0.17			0.27			0.49			0.41	0.09

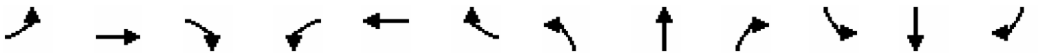
Intersection Summary			
Area Type:	Other		
Cycle Length: 88			
Actuated Cycle Length: 71.9			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay (s/veh): 26.6		Intersection LOS: C	
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90.2			
70th %ile Actuated Cycle: 86.9			
50th %ile Actuated Cycle: 84.6			
30th %ile Actuated Cycle: 58.8			
10th %ile Actuated Cycle: 39.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



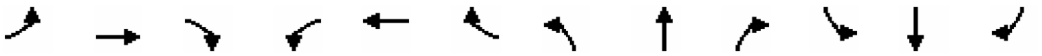
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	188	113	30	202	72	68	268	31	70	250	40
Future Volume (vph)	38	188	113	30	202	72	68	268	31	70	250	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.98			0.98			0.99		0.98	0.99	
Frt		0.944			0.968			0.989			0.979	
Flt Protected	0.950				0.995			0.991		0.950		
Satd. Flow (prot)	1596	1568	0	0	1686	0	0	1718	0	1538	1648	0
Flt Permitted	0.469				0.945			0.876		0.453		
Satd. Flow (perm)	767	1568	0	0	1598	0	0	1511	0	718	1648	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	36		32	32		36	30		30	30		30
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	3%	5%	17%	5%	3%	4%	9%	12%	9%	8%	5%
Adj. Flow (vph)	39	194	116	31	208	74	70	276	32	72	258	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	310	0	0	313	0	0	378	0	72	299	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



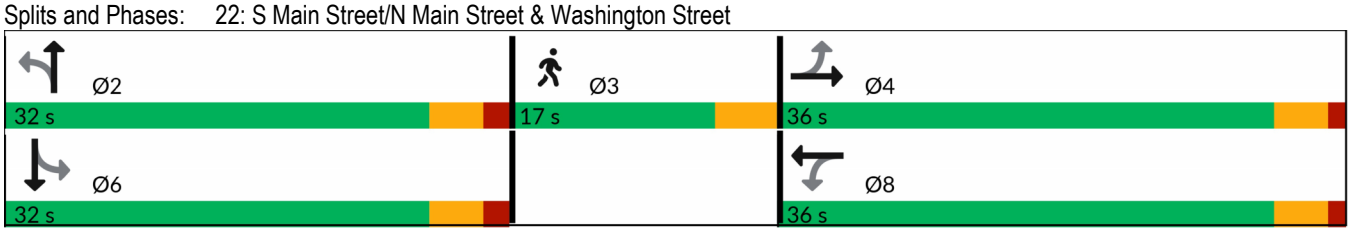
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	36.0	36.0		36.0	36.0		32.0	32.0		32.0	32.0	
Total Split (%)	42.4%	42.4%		42.4%	42.4%		37.6%	37.6%		37.6%	37.6%	
Maximum Green (s)	31.4	31.4		31.4	31.4		27.0	27.0		27.0	27.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	21.7	21.7			21.7			23.6		23.6	23.6	
Actuated g/C Ratio	0.33	0.33			0.33			0.36		0.36	0.36	
v/c Ratio	0.16	0.60			0.60			0.70		0.28	0.51	
Control Delay (s/veh)	22.4	28.0			27.7			31.3		24.4	24.4	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	22.4	28.0			27.7			31.3		24.4	24.4	
LOS	C	C			C			C		C	C	
Approach Delay (s/veh)		27.3			27.7			31.3			24.4	
Approach LOS		C			C			C			C	
90th %ile Green (s)	31.2	31.2		31.2	31.2		27.0	27.0		27.0	27.0	
90th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Max	Max	
70th %ile Green (s)	24.0	24.0		24.0	24.0		27.0	27.0		27.0	27.0	
70th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
50th %ile Green (s)	20.3	20.3		20.3	20.3		27.0	27.0		27.0	27.0	
50th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
30th %ile Green (s)	15.0	15.0		15.0	15.0		17.9	17.9		17.9	17.9	
30th %ile Term Code	Min	Min		Min	Min		Gap	Gap		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
10th %ile Term Code	Min	Min		Min	Min		Min	Min		Min	Min	
Queue Length 50th (ft)	15	138			140			157		25	114	
Queue Length 95th (ft)	38	223			223			#347		70	227	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	410	838			854			694		330	757	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	20%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.10	0.37			0.37			0.54		0.22	0.39	

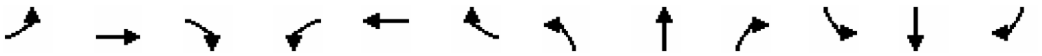
Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 66.1			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 27.7		Intersection LOS: C	
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 88.8			
70th %ile Actuated Cycle: 81.6			
50th %ile Actuated Cycle: 77.9			
30th %ile Actuated Cycle: 42.5			
10th %ile Actuated Cycle: 39.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



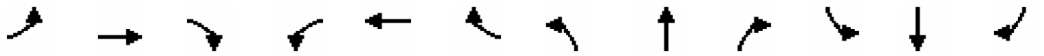
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	211	0	25	0	343	208	14	417	23
Future Volume (vph)	0	0	0	211	0	25	0	343	208	14	417	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				1.00	0.99			0.99			1.00	
Frt					0.967			0.943			0.992	
Flt Protected				0.950	0.962						0.999	
Satd. Flow (prot)	0	0	0	1549	1508	0	0	3103	0	0	3155	0
Flt Permitted				0.950	0.962						0.935	
Satd. Flow (perm)	0	0	0	1544	1504	0	0	3103	0	0	2952	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					98						8	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)	4		3	3		4	8		4	4		8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	7%	0%	8%	0%	12%	3%	21%	10%	14%
Adj. Flow (vph)	0	0	0	218	0	26	0	354	214	14	430	24
Shared Lane Traffic (%)				43%								
Lane Group Flow (vph)	0	0	0	124	120	0	0	568	0	0	468	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2		1	2	
Detector Template				Left	Thru			Thru		Left	Thru	
Leading Detector (ft)				20	100			100		20	100	
Trailing Detector (ft)				0	0			0		0	0	
Detector 1 Position(ft)				0	0			0		0	0	
Detector 1 Size(ft)				20	6			6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



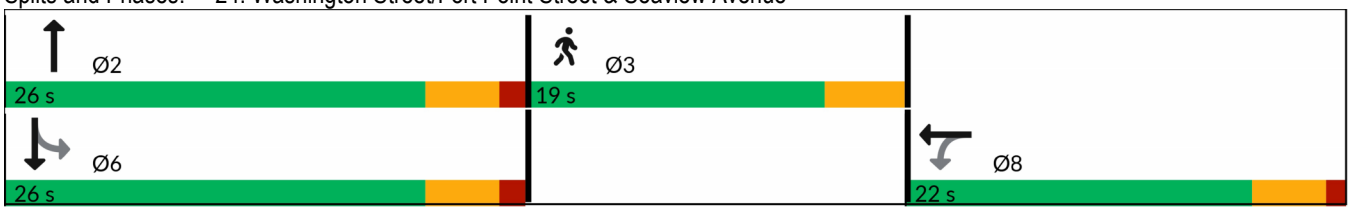
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA			NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8						6		
Detector Phase				8	8			2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0			15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7			20.0		20.0	20.0	
Total Split (s)				22.0	22.0			26.0		26.0	26.0	
Total Split (%)				32.8%	32.8%			38.8%		38.8%	38.8%	
Maximum Green (s)				17.3	17.3			21.0		21.0	21.0	
Yellow Time (s)				3.7	3.7			3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0			1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0			3.0		3.0	3.0	
Recall Mode				None	None			Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				10.6	10.6			24.2			24.2	
Actuated g/C Ratio				0.22	0.22			0.51			0.51	
v/c Ratio				0.36	0.29			0.36			0.31	
Control Delay (s/veh)				22.5	9.6			14.2			13.7	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				22.5	9.6			14.2			13.7	
LOS				C	A			B			B	
Approach Delay (s/veh)					16.1			14.2			13.7	
Approach LOS					B			B			B	
90th %ile Green (s)				16.2	16.2			21.0		21.0	21.0	
90th %ile Term Code				Gap	Gap			Max		Max	Max	
70th %ile Green (s)				12.2	12.2			20.1		20.1	20.1	
70th %ile Term Code				Gap	Gap			Gap		Hold	Hold	
50th %ile Green (s)				10.0	10.0			16.6		16.6	16.6	
50th %ile Term Code				Gap	Gap			Gap		Hold	Hold	
30th %ile Green (s)				7.0	7.0			15.0		15.0	15.0	
30th %ile Term Code				Min	Min			Min		Min	Min	
10th %ile Green (s)				0.0	0.0			30.0		30.0	30.0	
10th %ile Term Code				Skip	Skip			Dwell		Dwell	Dwell	
Queue Length 50th (ft)				20	3			35			27	
Queue Length 95th (ft)				94	48			158			128	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				626	668			1777			1694	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	28%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.20	0.18			0.32			0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 67			
Actuated Cycle Length: 47.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay (s/veh): 14.4		Intersection LOS: B	
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 69.9			
70th %ile Actuated Cycle: 65			
50th %ile Actuated Cycle: 36.3			
30th %ile Actuated Cycle: 31.7			
10th %ile Actuated Cycle: 35			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	0	18	0	0	1	0	382	0	1	403	0
Future Vol, veh/h	67	0	18	0	0	1	0	382	0	1	403	0
Conflicting Peds, #/hr	1	0	0	0	0	1	19	0	20	20	0	19
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	8	0	18	0	0	100	0	7	0	100	9	0
Mvmt Flow	69	0	19	0	0	1	0	394	0	1	415	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	812	-	415	831	831	415	-	0	0	414	0	0
Stage 1	418	-	-	414	414	-	-	-	-	-	-	-
Stage 2	395	-	-	418	418	-	-	-	-	-	-	-
Critical Hdwy	7.38	-	6.48	7.1	6.5	7.2	-	-	-	5.1	-	-
Critical Hdwy Stg 1	6.38	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.38	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	-	3.462	3.5	4	4.2	-	-	-	3.1	-	-
Pot Cap-1 Maneuver	278	0	597	291	307	472	0	-	-	768	-	0
Stage 1	587	0	-	620	597	-	0	-	-	-	-	0
Stage 2	605	0	-	617	594	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	276	-	597	276	301	462	-	-	-	753	-	-
Mov Cap-2 Maneuver	276	-	-	276	301	-	-	-	-	-	-	-
Stage 1	586	-	-	608	585	-	-	-	-	-	-	-
Stage 2	603	-	-	597	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	19.97	12.81	0	0.02
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	276	597	462	4	-
HCM Lane V/C Ratio	-	-	0.25	0.031	0.002	0.001	-
HCM Ctrl Dly (s/v)	-	-	22.3	11.2	12.8	9.8	0
HCM Lane LOS	-	-	C	B	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	0	0	-

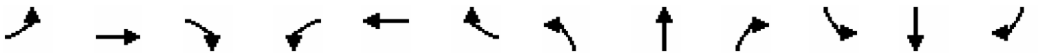
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	1	9	16	423	7	8	404	55
Future Vol, veh/h	0	0	0	6	1	9	16	423	7	8	404	55
Conflicting Peds, #/hr	8	0	11	11	0	8	23	0	24	24	0	23
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	6	8	0	0	9	9
Mvmt Flow	0	0	0	6	1	9	16	436	7	8	416	57

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	941	1009	472	496	0	0	467	0	0
Stage 1	497	497	-	-	-	-	-	-	-
Stage 2	444	513	-	-	-	-	-	-	-
Critical Hdwy	6	6.1	6	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	5	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	327	271	612	1047	-	-	1105	-	-
Stage 1	651	579	-	-	-	-	-	-	-
Stage 2	684	571	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	309	0	599	1047	-	-	1088	-	-
Mov Cap-2 Maneuver	309	0	-	-	-	-	-	-	-
Stage 1	627	0	-	-	-	-	-	-	-
Stage 2	670	0	-	-	-	-	-	-	-

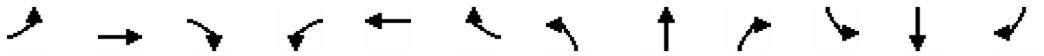
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	13.59	0.3	0.14
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	64	-	-	436	1088	-	-
HCM Lane V/C Ratio	0.016	-	-	0.038	0.008	-	-
HCM Ctrl Dly (s/v)	8.5	0	-	13.6	8.3	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	1	9	0	0	1	24	555	1	3	336	147
Future Volume (vph)	119	1	9	0	0	1	24	555	1	3	336	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		0%			-1%			-1%			-1%	
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.97			1.00			0.99	
Frt		0.991			0.865						0.959	
Flt Protected		0.956						0.998				
Satd. Flow (prot)	0	1758	0	0	1610	0	0	1726	0	0	1593	0
Flt Permitted		0.742						0.973			0.998	
Satd. Flow (perm)	0	1358	0	0	1610	0	0	1682	0	0	1590	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			365						33	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			175			356			363	
Travel Time (s)		9.7			4.8			9.7			9.9	
Confl. Peds. (#/hr)	3		1	1		3	24		11	11		24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	33%	0%	0%	0%	0%	3%	100%	33%	6%	5%
Adj. Flow (vph)	124	1	9	0	0	1	25	578	1	3	350	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	134	0	0	1	0	0	604	0	0	506	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.99	0.99	0.99	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



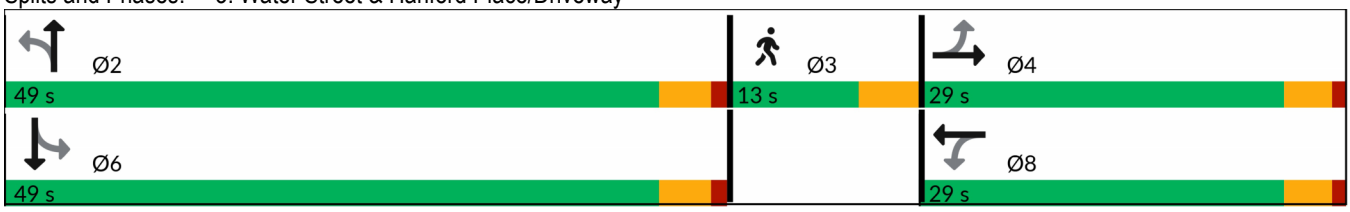
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		6.0	6.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.2	11.2		10.2	10.2		19.6	19.6		19.6	19.6	
Total Split (s)	29.0	29.0		29.0	29.0		49.0	49.0		49.0	49.0	
Total Split (%)	31.9%	31.9%		31.9%	31.9%		53.8%	53.8%		53.8%	53.8%	
Maximum Green (s)	24.8	24.8		24.8	24.8		44.4	44.4		44.4	44.4	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.1	1.1		1.1	1.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.2			4.2			4.6			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		12.7			12.4			36.3			36.3	
Actuated g/C Ratio		0.22			0.21			0.62			0.62	
v/c Ratio		0.45			0.00			0.58			0.51	
Control Delay (s/veh)		29.9			0.0			15.2			13.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		29.9			0.0			15.2			13.1	
LOS		C			A			B			B	
Approach Delay (s/veh)		29.9						15.2			13.1	
Approach LOS		C						B			B	
90th %ile Green (s)	19.8	19.8		19.8	19.8		44.4	44.4		44.4	44.4	
90th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
70th %ile Green (s)	15.3	15.3		15.3	15.3		37.5	37.5		37.5	37.5	
70th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Gap		Hold	Hold	
50th %ile Green (s)	12.2	12.2		12.2	12.2		30.5	30.5		30.5	30.5	
50th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Gap		Hold	Hold	
30th %ile Green (s)	8.7	8.7		8.7	8.7		20.2	20.2		20.2	20.2	
30th %ile Term Code	Gap	Gap		Hold	Hold		Dwell	Dwell		Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)		33			0			98			70	
Queue Length 95th (ft)		120			0			395			297	
Internal Link Dist (ft)		274			95			276			283	
Turn Bay Length (ft)												
Base Capacity (vph)		666			974			1319			1254	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	9.0
Minimum Split (s)	17.0
Total Split (s)	13.0
Total Split (%)	14%
Maximum Green (s)	9.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	6.0
Pedestrian Calls (#/hr)	39
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	13.0
90th %ile Term Code	Ped
70th %ile Green (s)	13.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.20			0.00			0.46			0.40	

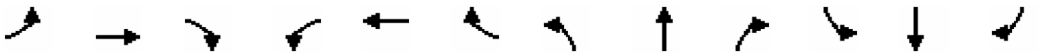
Intersection Summary			
Area Type:	Other		
Cycle Length: 91			
Actuated Cycle Length: 58.5			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay (s/veh): 15.9		Intersection LOS: B	
Intersection Capacity Utilization 67.0%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 78.6			
50th %ile Actuated Cycle: 51.5			
30th %ile Actuated Cycle: 37.7			
10th %ile Actuated Cycle: 34.6			

Splits and Phases: 3: Water Street & Hanford Place/Driveway



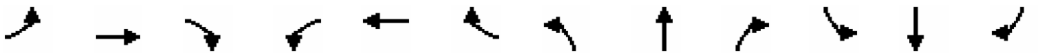
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	248	44	378	282	133	37	182	531	171	137	21
Future Volume (vph)	36	248	44	378	282	133	37	182	531	171	137	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	0.98		0.97		0.98		0.99	
Frt		0.982			0.952				0.850		0.991	
Flt Protected		0.995		0.950			0.950				0.975	
Satd. Flow (prot)	0	1813	0	1647	1684	0	1805	1863	1725	0	1741	0
Flt Permitted		0.917		0.314			0.549				0.685	
Satd. Flow (perm)	0	1664	0	539	1684	0	1009	1863	1698	0	1217	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		8			29				466			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			225			313	
Travel Time (s)		13.1			16.8			6.1			8.5	
Confl. Peds. (#/hr)	39		18	18		39	39		12	12		39
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	0%	7%	3%	2%	0%	2%	3%	1%	2%	0%
Adj. Flow (vph)	36	251	44	382	285	134	37	184	536	173	138	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	331	0	382	419	0	37	184	536	0	332	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



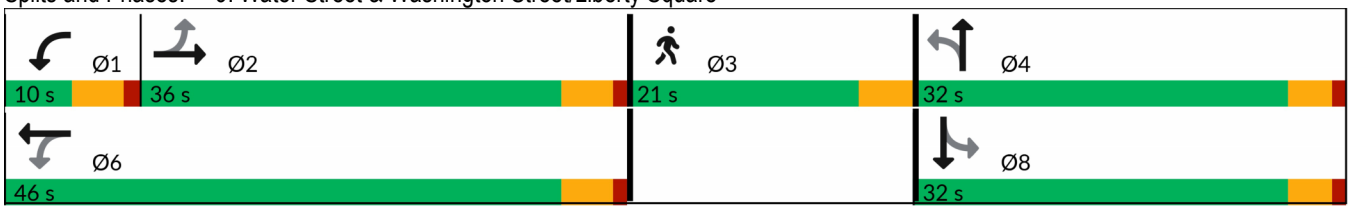
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	36.0	36.0		10.0	46.0		32.0	32.0		32.0	32.0	
Total Split (%)	36.4%	36.4%		10.1%	46.5%		32.3%	32.3%		32.3%	32.3%	
Maximum Green (s)	31.1	31.1		5.0	41.1		27.7	27.7		27.7	27.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		22.4		32.9	33.0		29.3	29.3	85.3		29.3	
Actuated g/C Ratio		0.26		0.39	0.39		0.34	0.34	1.00		0.34	
v/c Ratio		0.75		1.38	0.63		0.11	0.29	0.32		0.79	
Control Delay (s/veh)		41.1		218.3	26.3		28.0	27.7	0.5		47.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		41.1		218.3	26.3		28.0	27.7	0.5		47.5	
LOS		D		F	C		C	C	A		D	
Approach Delay (s/veh)		41.1			117.8			8.5			47.5	
Approach LOS		D			F			A			D	
90th %ile Green (s)	31.1	31.1		5.0	41.1		27.7	27.7		27.7	27.7	
90th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	27.9	27.9		5.0	37.9		27.7	27.7		27.7	27.7	
70th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	23.6	23.6		5.0	33.6		27.7	27.7		27.7	27.7	
50th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
30th %ile Green (s)	19.8	19.8		5.0	29.8		27.7	27.7		27.7	27.7	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
10th %ile Green (s)	11.5	11.5		5.0	21.5		27.7	27.7		27.7	27.7	
10th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
Queue Length 50th (ft)		187		~306	203		17	89	0		199	
Queue Length 95th (ft)		286		#530	309		46	164	0		#410	
Internal Link Dist (ft)		399			537			145			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		646		276	872		346	639	1698		418	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.51		1.38	0.48		0.11	0.29	0.32		0.79	

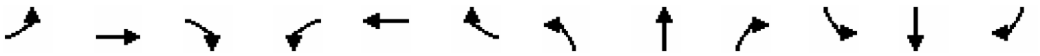
Intersection Summary			
Area Type:	Other		
Cycle Length: 99			
Actuated Cycle Length: 85.3			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.38			
Intersection Signal Delay (s/veh): 58.6		Intersection LOS: E	
Intersection Capacity Utilization 85.0%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 104			
70th %ile Actuated Cycle: 100.8			
50th %ile Actuated Cycle: 96.5			
30th %ile Actuated Cycle: 66.7			
10th %ile Actuated Cycle: 58.4			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



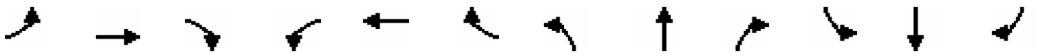
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	93	61	18	110	37	37	260	14	36	309	86
Future Volume (vph)	93	93	61	18	110	37	37	260	14	36	309	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.98			0.99			1.00	0.94
Frt		0.940			0.970			0.994				0.850
Flt Protected	0.950				0.995			0.994			0.995	
Satd. Flow (prot)	1620	1507	0	0	1740	0	0	1761	0	0	1798	1546
Flt Permitted	0.424				0.954			0.866			0.940	
Satd. Flow (perm)	712	1507	0	0	1659	0	0	1529	0	0	1692	1452
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	18		32	32		18	34		44	44		34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	14%	0%	5%	3%	24%	4%	0%	3%	6%	5%
Adj. Flow (vph)	103	103	68	20	122	41	41	289	16	40	343	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	171	0	0	183	0	0	346	0	0	383	96
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



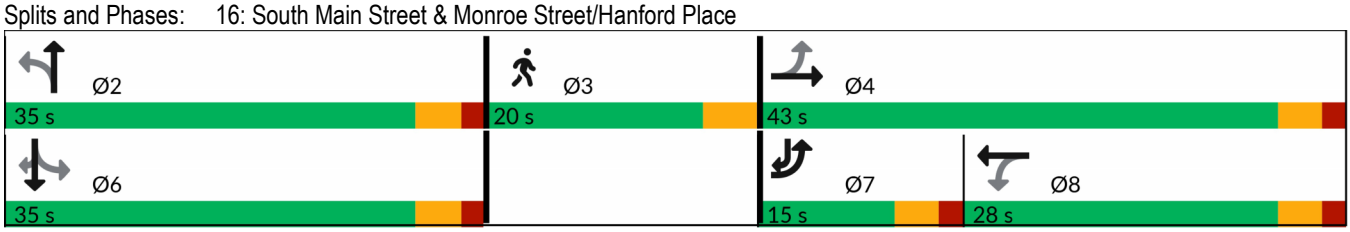
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	15.0	43.0		28.0	28.0		35.0	35.0		35.0	35.0	15.0
Total Split (%)	15.3%	43.9%		28.6%	28.6%		35.7%	35.7%		35.7%	35.7%	15.3%
Maximum Green (s)	10.1	38.1		23.1	23.1		30.1	30.1		30.1	30.1	10.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	27.4	27.4			16.6			28.1			28.1	39.9
Actuated g/C Ratio	0.35	0.35			0.21			0.36			0.36	0.51
v/c Ratio	0.27	0.33			0.52			0.63			0.63	0.13
Control Delay (s/veh)	23.0	23.9			39.8			33.1			32.3	9.2
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	23.0	23.9			39.8			33.1			32.3	9.2
LOS	C	C			D			C			C	A
Approach Delay (s/veh)		23.6			39.8			33.1			27.6	
Approach LOS		C			D			C			C	
90th %ile Green (s)	10.1	37.5		22.5	22.5		30.1	30.1		30.1	30.1	10.1
90th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
70th %ile Green (s)	10.1	33.2		18.2	18.2		30.1	30.1		30.1	30.1	10.1
70th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
50th %ile Green (s)	10.1	30.5		15.5	15.5		30.1	30.1		30.1	30.1	10.1
50th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Hold	Hold	Max
30th %ile Green (s)	10.0	27.7		12.8	12.8		27.4	27.4		27.4	27.4	10.0
30th %ile Term Code	Min	Hold		Gap	Gap		Gap	Gap		Hold	Hold	Min
10th %ile Green (s)	0.0	10.0		10.0	10.0		15.6	15.6		15.6	15.6	0.0
10th %ile Term Code	Skip	Hold		Min	Min		Gap	Gap		Hold	Hold	Skip
Queue Length 50th (ft)	44	78			104			181			201	16
Queue Length 95th (ft)	82	132			173			#336			#361	36
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	385	831			570			684			757	751
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.27	0.21			0.32			0.51			0.51	0.13

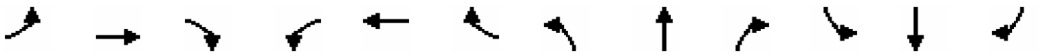
Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 78.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay (s/veh): 30.0		Intersection LOS: C	
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 101.4			
70th %ile Actuated Cycle: 97.1			
50th %ile Actuated Cycle: 94.4			
30th %ile Actuated Cycle: 64.9			
10th %ile Actuated Cycle: 35.4			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



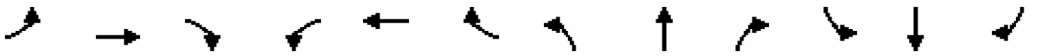
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	231	116	26	253	57	78	334	51	84	357	32
Future Volume (vph)	60	231	116	26	253	57	78	334	51	84	357	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.99			0.98		0.96	0.99	
Frt		0.950			0.977			0.985			0.988	
Flt Protected	0.950				0.996			0.992		0.950		
Satd. Flow (prot)	1676	1607	0	0	1779	0	0	1794	0	1660	1726	0
Flt Permitted	0.364				0.853			0.803		0.417		
Satd. Flow (perm)	638	1607	0	0	1521	0	0	1445	0	700	1726	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	10		25	25		10	47		75	75		47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	3%	10%	2%	0%	2%	3%	2%	1%	4%	3%
Adj. Flow (vph)	63	241	121	27	264	59	81	348	53	88	372	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	362	0	0	350	0	0	482	0	88	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



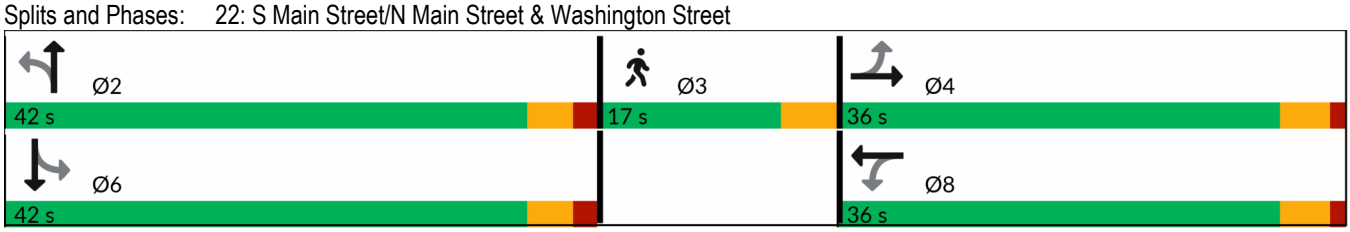
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	36.0	36.0		36.0	36.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.9%	37.9%		37.9%	37.9%		44.2%	44.2%		44.2%	44.2%	
Maximum Green (s)	31.4	31.4		31.4	31.4		37.0	37.0		37.0	37.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	23.7	23.7			23.7			37.5		37.5	37.5	
Actuated g/C Ratio	0.29	0.29			0.29			0.46		0.46	0.46	
v/c Ratio	0.34	0.78			0.80			0.73		0.28	0.51	
Control Delay (s/veh)	31.7	41.2			43.2			31.7		23.3	23.3	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	31.7	41.2			43.2			31.7		23.3	23.3	
LOS	C	D			D			C		C	C	
Approach Delay (s/veh)		39.8			43.2			31.7			23.3	
Approach LOS		D			D			C			C	
90th %ile Green (s)	31.4	31.4		31.4	31.4		37.0	37.0		37.0	37.0	
90th %ile Term Code	Max	Max		Max	Max		Max	Max		Max	Max	
70th %ile Green (s)	31.4	31.4		31.4	31.4		37.0	37.0		37.0	37.0	
70th %ile Term Code	Max	Max		Hold	Hold		Max	Max		Hold	Hold	
50th %ile Green (s)	25.8	25.8		25.8	25.8		37.0	37.0		37.0	37.0	
50th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
30th %ile Green (s)	16.8	16.8		16.8	16.8		35.7	35.7		35.7	35.7	
30th %ile Term Code	Gap	Gap		Hold	Hold		Gap	Gap		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		32.3	32.3		32.3	32.3	
10th %ile Term Code	Min	Min		Min	Min		Gap	Gap		Hold	Hold	
Queue Length 50th (ft)	30	200			195			253		35	185	
Queue Length 95th (ft)	69	307			302			#475		83	310	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	258	651			617			690		334	825	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	18%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.24	0.56			0.57			0.70		0.26	0.49	

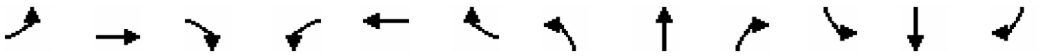
Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 82.1			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 33.6		Intersection LOS: C	
Intersection Capacity Utilization 97.7%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 99			
70th %ile Actuated Cycle: 99			
50th %ile Actuated Cycle: 93.4			
30th %ile Actuated Cycle: 62.1			
10th %ile Actuated Cycle: 56.9			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



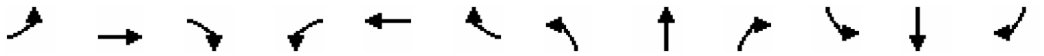
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	283	0	24	2	590	327	12	485	15
Future Volume (vph)	0	0	0	283	0	24	2	590	327	12	485	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.99	0.99			0.99			1.00	
Frt					0.977			0.947			0.996	
Flt Protected				0.950	0.960						0.999	
Satd. Flow (prot)	0	0	0	1609	1571	0	0	3315	0	0	3339	0
Flt Permitted				0.950	0.960			0.954			0.928	
Satd. Flow (perm)	0	0	0	1595	1559	0	0	3162	0	0	3102	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					98						4	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)	3		9	9		3	8		7	7		8
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	3%	0%	9%	0%	3%	0%	8%	5%	0%
Adj. Flow (vph)	0	0	0	289	0	24	2	602	334	12	495	15
Shared Lane Traffic (%)				45%								
Lane Group Flow (vph)	0	0	0	159	154	0	0	938	0	0	522	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2		1	2	
Detector Template				Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)				20	100		20	100		20	100	
Trailing Detector (ft)				0	0		0	0		0	0	
Detector 1 Position(ft)				0	0		0	0		0	0	
Detector 1 Size(ft)				20	6		20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



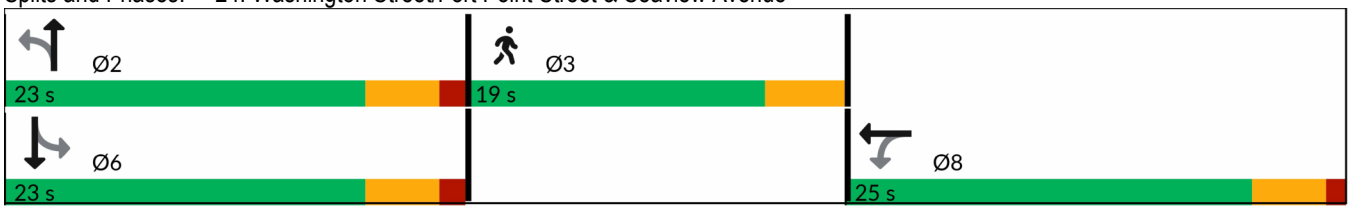
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA		Perm	NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2			6		
Detector Phase				8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7		20.0	20.0		20.0	20.0	
Total Split (s)				25.0	25.0		23.0	23.0		23.0	23.0	
Total Split (%)				37.3%	37.3%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)				20.3	20.3		18.0	18.0		18.0	18.0	
Yellow Time (s)				3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode				None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				11.2	11.2			21.7			21.7	
Actuated g/C Ratio				0.20	0.20			0.39			0.39	
v/c Ratio				0.49	0.39			0.75			0.43	
Control Delay (s/veh)				26.5	12.6			26.6			17.9	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				26.5	12.6			26.6			17.9	
LOS				C	B			C			B	
Approach Delay (s/veh)					19.7			26.6			17.9	
Approach LOS					B			C			B	
90th %ile Green (s)				17.6	17.6		18.0	18.0		18.0	18.0	
90th %ile Term Code				Gap	Gap		Max	Max		Max	Max	
70th %ile Green (s)				13.4	13.4		18.0	18.0		18.0	18.0	
70th %ile Term Code				Gap	Gap		Max	Max		Max	Max	
50th %ile Green (s)				11.3	11.3		18.0	18.0		18.0	18.0	
50th %ile Term Code				Gap	Gap		Max	Max		Hold	Hold	
30th %ile Green (s)				7.7	7.7		18.0	18.0		18.0	18.0	
30th %ile Term Code				Gap	Gap		Max	Max		Hold	Hold	
10th %ile Green (s)				7.0	7.0		28.6	28.6		28.6	28.6	
10th %ile Term Code				Min	Min		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)				57	18			~191			86	
Queue Length 95th (ft)				110	64			#356			150	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				626	671			1248			1227	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	28%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.25	0.23			0.75			0.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 67			
Actuated Cycle Length: 55			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 22.9		Intersection LOS: C	
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 68.3			
70th %ile Actuated Cycle: 64.1			
50th %ile Actuated Cycle: 62			
30th %ile Actuated Cycle: 35.4			
10th %ile Actuated Cycle: 45.3			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	0	29	0	0	0	0	684	0	0	477	0
Future Vol, veh/h	84	0	29	0	0	0	0	684	0	0	477	0
Conflicting Peds, #/hr	0	0	0	0	0	0	45	0	20	20	0	45
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	0	0	0	0	3	0	0	6	0
Mvmt Flow	87	0	30	0	0	0	0	705	0	0	492	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1197	-	492	1217	1217	725	-	0	0	725	0	0
Stage 1	492	-	-	725	725	-	-	-	-	-	-	-
Stage 2	705	-	-	492	492	-	-	-	-	-	-	-
Critical Hdwy	7.31	-	6.3	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.31	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.31	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	-	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	153	0	573	159	182	428	0	-	-	887	-	0
Stage 1	545	0	-	420	433	-	0	-	-	-	-	0
Stage 2	412	0	-	562	551	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	153	-	573	148	179	420	-	-	-	870	-	-
Mov Cap-2 Maneuver	153	-	-	148	179	-	-	-	-	-	-	-
Stage 1	545	-	-	412	425	-	-	-	-	-	-	-
Stage 2	412	-	-	533	551	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	44.25	0	0	0
HCM LOS	E	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	153	573	-	870	-
HCM Lane V/C Ratio	-	-	0.566	0.052	-	-	-
HCM Ctrl Dly (s/v)	-	-	55.5	11.6	0	0	-
HCM Lane LOS	-	-	F	B	A	A	-
HCM 95th %tile Q(veh)	-	-	2.9	0.2	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	11	33	736	1	2	485	66
Future Vol, veh/h	0	0	0	1	0	11	33	736	1	2	485	66
Conflicting Peds, #/hr	0	0	5	5	0	0	49	0	22	22	0	49
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	5	5
Mvmt Flow	0	0	0	1	0	11	33	743	1	2	490	67

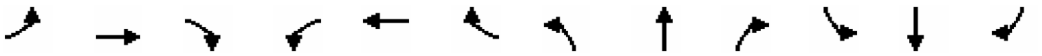
Major/Minor	Minor1		Major1				Major2		
Conflicting Flow All	1332	1442	766	606	0	0	766	0	0
Stage 1	833	833	-	-	-	-	-	-	-
Stage 2	499	610	-	-	-	-	-	-	-
Critical Hdwy	6	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	199	157	424	982	-	-	856	-	-
Stage 1	472	424	-	-	-	-	-	-	-
Stage 2	649	522	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	184	0	418	982	-	-	844	-	-
Mov Cap-2 Maneuver	184	0	-	-	-	-	-	-	-
Stage 1	439	0	-	-	-	-	-	-	-
Stage 2	644	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	14.85	0.38	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	77	-	-	378	844	-	-
HCM Lane V/C Ratio	0.034	-	-	0.032	0.002	-	-
HCM Ctrl Dly (s/v)	8.8	0	-	14.8	9.3	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	0	14	1	0	3	16	379	2	2	356	139
Future Volume (vph)	120	0	14	1	0	3	16	379	2	2	356	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		0%			-1%			-1%			-1%	
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.97			1.00			0.99	
Frt		0.986			0.899			0.999			0.962	
Flt Protected		0.957			0.988			0.998				
Satd. Flow (prot)	0	1734	0	0	1646	0	0	1703	0	0	1629	0
Flt Permitted		0.746			0.923			0.976			0.999	
Satd. Flow (perm)	0	1328	0	0	1537	0	0	1665	0	0	1627	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		75			75						30	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			175			356			363	
Travel Time (s)		9.7			4.8			9.7			9.9	
Confl. Peds. (#/hr)	12		2	2		12	16		12	12		16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	21%	0%	0%	0%	13%	4%	0%	0%	5%	2%
Adj. Flow (vph)	126	0	15	1	0	3	17	399	2	2	375	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	141	0	0	4	0	0	418	0	0	523	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.99	0.99	0.99	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



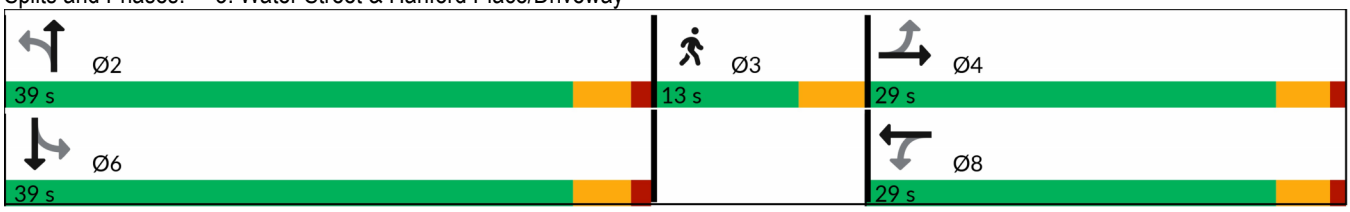
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		6.0	6.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.2	11.2		10.2	10.2		19.6	19.6		19.6	19.6	
Total Split (s)	29.0	29.0		29.0	29.0		39.0	39.0		39.0	39.0	
Total Split (%)	35.8%	35.8%		35.8%	35.8%		48.1%	48.1%		48.1%	48.1%	
Maximum Green (s)	24.8	24.8		24.8	24.8		34.4	34.4		34.4	34.4	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.1	1.1		1.1	1.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.2			4.2			4.6			4.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		9.9			9.6			30.2			30.2	
Actuated g/C Ratio		0.20			0.19			0.60			0.60	
v/c Ratio		0.44			0.01			0.42			0.53	
Control Delay (s/veh)		17.3			0.0			11.9			13.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		17.3			0.0			11.9			13.0	
LOS		B			A			B			B	
Approach Delay (s/veh)		17.3						11.9			13.0	
Approach LOS		B						B			B	
90th %ile Green (s)	15.0	15.0		15.0	15.0		34.4	34.4		34.4	34.4	
90th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	11.3	11.3		11.3	11.3		29.6	29.6		29.6	29.6	
70th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	8.6	8.6		8.6	8.6		23.2	23.2		23.2	23.2	
50th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	7.0	7.0		7.0	7.0		18.1	18.1		18.1	18.1	
30th %ile Term Code	Min	Min		Hold	Hold		Dwell	Dwell		Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)		13			0			44			56	
Queue Length 95th (ft)		76			0			219			286	
Internal Link Dist (ft)		274			95			276			283	
Turn Bay Length (ft)												
Base Capacity (vph)		766			882			1270			1248	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	9.0
Minimum Split (s)	17.0
Total Split (s)	13.0
Total Split (%)	16%
Maximum Green (s)	9.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	6.0
Pedestrian Calls (#/hr)	42
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	13.0
90th %ile Term Code	Ped
70th %ile Green (s)	13.0
70th %ile Term Code	Ped
50th %ile Green (s)	0.0
50th %ile Term Code	Skip
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.18			0.00			0.33			0.42	

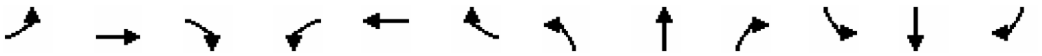
Intersection Summary			
Area Type:	Other		
Cycle Length: 81			
Actuated Cycle Length: 50.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay (s/veh): 13.1		Intersection LOS: B	
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 75.2			
70th %ile Actuated Cycle: 66.7			
50th %ile Actuated Cycle: 40.6			
30th %ile Actuated Cycle: 33.9			
10th %ile Actuated Cycle: 34.6			

Splits and Phases: 3: Water Street & Hanford Place/Driveway



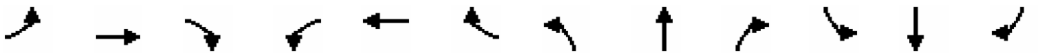
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	244	69	363	236	158	55	170	409	134	125	41
Future Volume (vph)	41	244	69	363	236	158	55	170	409	134	125	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99	0.97		0.94		0.99		0.98	
Frt		0.974			0.940				0.850		0.981	
Flt Protected		0.994		0.950			0.950				0.978	
Satd. Flow (prot)	0	1806	0	1695	1682	0	1703	1881	1708	0	1708	0
Flt Permitted		0.907		0.266			0.504				0.678	
Satd. Flow (perm)	0	1637	0	471	1682	0	847	1881	1686	0	1183	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		13			48				426			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			234			313	
Travel Time (s)		13.1			16.8			6.4			8.5	
Confl. Peds. (#/hr)	48		15	15		48	65		3	3		65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	4%	1%	0%	6%	1%	4%	0%	1%	3%
Adj. Flow (vph)	43	254	72	378	246	165	57	177	426	140	130	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	378	411	0	57	177	426	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



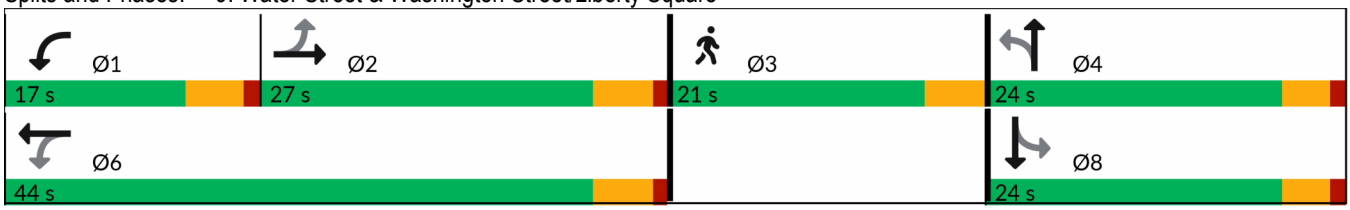
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	27.0	27.0		17.0	44.0		24.0	24.0		24.0	24.0	
Total Split (%)	30.3%	30.3%		19.1%	49.4%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.2		37.8	37.9		20.5	20.5	81.5		20.5	
Actuated g/C Ratio		0.25		0.46	0.47		0.25	0.25	1.00		0.25	
v/c Ratio		0.89		0.93	0.51		0.27	0.38	0.25		1.05	
Control Delay (s/veh)		56.0		54.7	18.6		34.5	32.3	0.4		103.9	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		56.0		54.7	18.6		34.5	32.3	0.4		103.9	
LOS		E		D	B		C	C	A		F	
Approach Delay (s/veh)		56.0			35.9			11.9			103.9	
Approach LOS		E			D			B			F	
90th %ile Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
90th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
70th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
50th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
30th %ile Green (s)	18.9	18.9		12.0	35.9		19.7	19.7		19.7	19.7	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
10th %ile Green (s)	14.9	14.9		12.0	31.9		19.7	19.7		19.7	19.7	
10th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
Queue Length 50th (ft)		210		~185	161		29	93	0		~236	
Queue Length 95th (ft)		#386		#344	254		67	157	0		#400	
Internal Link Dist (ft)		399			537			154			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		470		405	862		212	472	1686		297	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	24%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.79		0.93	0.48		0.27	0.38	0.25		1.05	

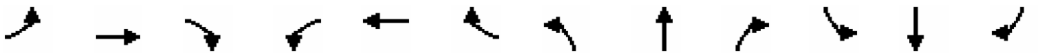
Intersection Summary			
Area Type:	Other		
Cycle Length: 89			
Actuated Cycle Length: 81.5			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay (s/veh): 41.9		Intersection LOS: D	
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 94			
70th %ile Actuated Cycle: 94			
50th %ile Actuated Cycle: 94			
30th %ile Actuated Cycle: 64.8			
10th %ile Actuated Cycle: 60.8			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



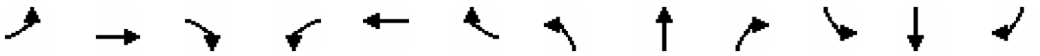
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	84	51	12	90	41	35	214	13	28	247	73
Future Volume (vph)	77	84	51	12	90	41	35	214	13	28	247	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.99			0.99			1.00	0.94
Frt		0.943			0.961			0.994				0.850
Flt Protected	0.950				0.996			0.993			0.995	
Satd. Flow (prot)	1652	1611	0	0	1774	0	0	1742	0	0	1818	1591
Flt Permitted	0.382				0.962			0.925			0.947	
Satd. Flow (perm)	658	1611	0	0	1710	0	0	1617	0	0	1723	1501
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	11		17	17		11	25		46	46		25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	1%	1%	2%	0%	4%	8%	0%	0%	5%	2%
Adj. Flow (vph)	86	93	57	13	100	46	39	238	14	31	274	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	150	0	0	159	0	0	291	0	0	305	81
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



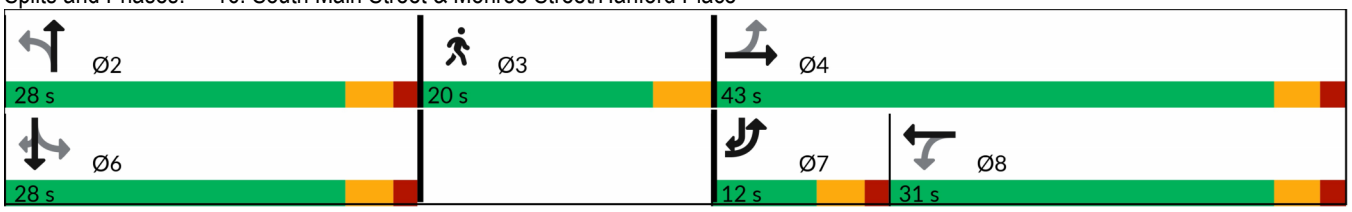
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	12.0	43.0		31.0	31.0		28.0	28.0		28.0	28.0	12.0
Total Split (%)	13.2%	47.3%		34.1%	34.1%		30.8%	30.8%		30.8%	30.8%	13.2%
Maximum Green (s)	7.1	38.1		26.1	26.1		23.1	23.1		23.1	23.1	7.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	22.6	24.3			15.5			27.8			27.8	30.1
Actuated g/C Ratio	0.35	0.38			0.24			0.43			0.43	0.47
v/c Ratio	0.23	0.25			0.39			0.42			0.41	0.11
Control Delay (s/veh)	20.7	20.9			32.4			26.4			26.0	9.4
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	20.7	20.9			32.4			26.4			26.0	9.4
LOS	C	C			C			C			C	A
Approach Delay (s/veh)		20.8			32.4			26.4			22.5	
Approach LOS		C			C			C			C	
90th %ile Green (s)	7.1	30.1		18.1	18.1		23.1	23.1		23.1	23.1	7.1
90th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
70th %ile Green (s)	7.1	26.8		14.8	14.8		23.1	23.1		23.1	23.1	7.1
70th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Hold	Hold	Max
50th %ile Green (s)	7.1	24.7		12.7	12.7		23.1	23.1		23.1	23.1	7.1
50th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Hold	Hold	Max
30th %ile Green (s)	7.1	22.0		10.0	10.0		15.7	15.7		15.7	15.7	7.1
30th %ile Term Code	Max	Hold		Min	Min		Gap	Gap		Hold	Hold	Max
10th %ile Green (s)	0.0	0.0		0.0	0.0		17.1	17.1		17.1	17.1	0.0
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	Skip
Queue Length 50th (ft)	32	59			77			129			135	14
Queue Length 95th (ft)	65	106			136			232			238	28
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	375	1019			848			747			796	714
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.23	0.15			0.19			0.39			0.38	0.11

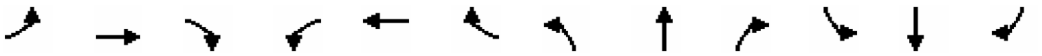
Intersection Summary			
Area Type:	Other		
Cycle Length: 91			
Actuated Cycle Length: 64.4			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay (s/veh): 24.7		Intersection LOS: C	
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 87			
70th %ile Actuated Cycle: 83.7			
50th %ile Actuated Cycle: 81.6			
30th %ile Actuated Cycle: 47.5			
10th %ile Actuated Cycle: 22			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



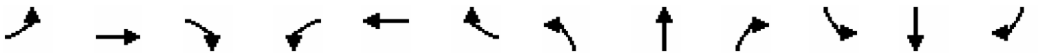
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	242	119	27	223	77	85	264	41	90	285	52
Future Volume (vph)	49	242	119	27	223	77	85	264	41	90	285	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99			0.98			0.99		0.98	0.99	
Frt		0.951			0.968			0.986			0.977	
Flt Protected	0.950				0.996			0.989		0.950		
Satd. Flow (prot)	1643	1631	0	0	1745	0	0	1797	0	1676	1744	0
Flt Permitted	0.419				0.920			0.754		0.447		
Satd. Flow (perm)	707	1631	0	0	1611	0	0	1360	0	770	1744	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	31		10	10		31	48		40	40		48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	1%	3%	9%	1%	3%	0%	3%	8%	0%	1%	2%
Adj. Flow (vph)	52	255	125	28	235	81	89	278	43	95	300	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	380	0	0	344	0	0	410	0	95	355	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



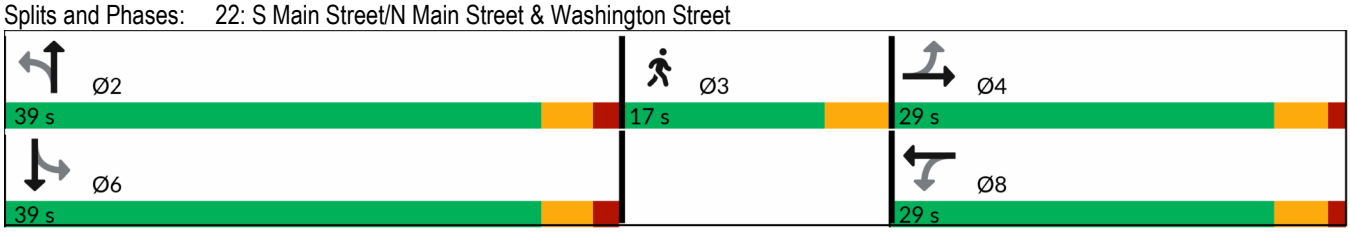
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	29.0	29.0		29.0	29.0		39.0	39.0		39.0	39.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		45.9%	45.9%		45.9%	45.9%	
Maximum Green (s)	24.4	24.4		24.4	24.4		34.0	34.0		34.0	34.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	22.1	22.1			22.1			26.8		26.8	26.8	
Actuated g/C Ratio	0.32	0.32			0.32			0.38		0.38	0.38	
v/c Ratio	0.23	0.74			0.67			0.79		0.32	0.53	
Control Delay (s/veh)	27.7	36.6			33.9			34.6		22.4	22.6	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	27.7	36.6			33.9			34.6		22.4	22.6	
LOS	C	D			C			C		C	C	
Approach Delay (s/veh)		35.5			33.9			34.6			22.6	
Approach LOS		D			C			C			C	
90th %ile Green (s)	24.4	24.4		24.4	24.4		34.0	34.0		34.0	34.0	
90th %ile Term Code	Max	Max		Max	Max		Max	Max		Hold	Hold	
70th %ile Green (s)	24.4	24.4		24.4	24.4		34.0	34.0		34.0	34.0	
70th %ile Term Code	Max	Max		Max	Max		Max	Max		Hold	Hold	
50th %ile Green (s)	24.4	24.4		24.4	24.4		31.5	31.5		31.5	31.5	
50th %ile Term Code	Max	Max		Max	Max		Gap	Gap		Hold	Hold	
30th %ile Green (s)	16.8	16.8		16.8	16.8		18.3	18.3		18.3	18.3	
30th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
10th %ile Term Code	Min	Min		Min	Min		Min	Min		Min	Min	
Queue Length 50th (ft)	22	193			170			200		37	152	
Queue Length 95th (ft)	55	#357			#311			#355		78	237	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	281	650			641			755		427	968	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	20%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.19	0.58			0.54			0.54		0.22	0.37	

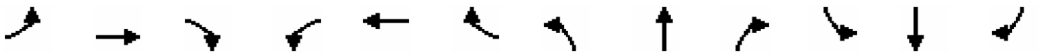
Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 69.8			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 31.4		Intersection LOS: C	
Intersection Capacity Utilization 92.6%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 89			
70th %ile Actuated Cycle: 89			
50th %ile Actuated Cycle: 86.5			
30th %ile Actuated Cycle: 44.7			
10th %ile Actuated Cycle: 39.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



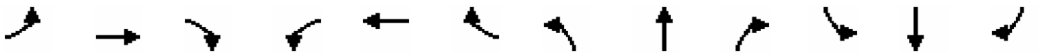
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	233	0	18	0	471	275	12	483	13
Future Volume (vph)	0	0	0	233	0	18	0	471	275	12	483	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.98	0.98			0.98			1.00	
Frt					0.979			0.945			0.996	
Flt Protected				0.950	0.959						0.999	
Satd. Flow (prot)	0	0	0	1641	1619	0	0	3274	0	0	3398	0
Flt Permitted				0.950	0.959						0.932	
Satd. Flow (perm)	0	0	0	1610	1593	0	0	3274	0	0	3170	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					98						4	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)	10		11	11		10	19		12	12		19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	3%	2%	0%	3%	8%
Adj. Flow (vph)	0	0	0	248	0	19	0	501	293	13	514	14
Shared Lane Traffic (%)				46%								
Lane Group Flow (vph)	0	0	0	134	133	0	0	794	0	0	541	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2			2		1	2	
Detector Template				Left	Thru			Thru		Left	Thru	
Leading Detector (ft)				20	100			100		20	100	
Trailing Detector (ft)				0	0			0		0	0	
Detector 1 Position(ft)				0	0			0		0	0	
Detector 1 Size(ft)				20	6			6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



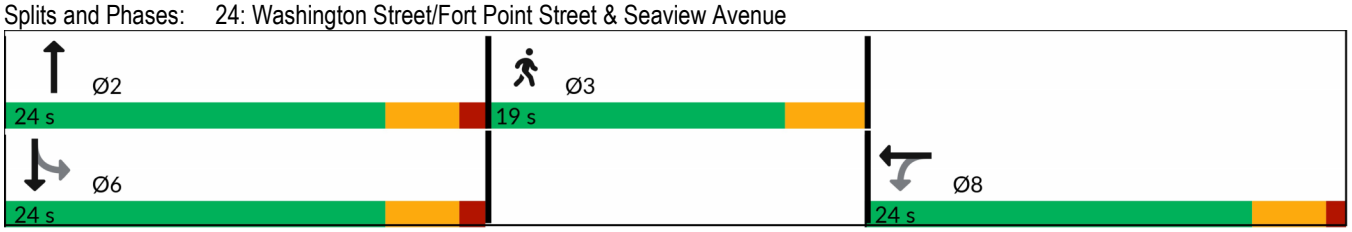
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA			NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8						6		
Detector Phase				8	8			2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0			15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7			20.0		20.0	20.0	
Total Split (s)				24.0	24.0			24.0		24.0	24.0	
Total Split (%)				35.8%	35.8%			35.8%		35.8%	35.8%	
Maximum Green (s)				19.3	19.3			19.0		19.0	19.0	
Yellow Time (s)				3.7	3.7			3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0			1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0			3.0		3.0	3.0	
Recall Mode				None	None			Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				10.7	10.7			24.6			24.6	
Actuated g/C Ratio				0.20	0.20			0.47			0.47	
v/c Ratio				0.41	0.33			0.52			0.36	
Control Delay (s/veh)				25.5	11.2			19.3			16.6	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				25.5	11.2			19.3			16.6	
LOS				C	B			B			B	
Approach Delay (s/veh)					18.3			19.3			16.6	
Approach LOS					B			B			B	
90th %ile Green (s)				16.1	16.1			19.0		19.0	19.0	
90th %ile Term Code				Gap	Gap			Max		Max	Max	
70th %ile Green (s)				12.2	12.2			19.0		19.0	19.0	
70th %ile Term Code				Gap	Gap			Max		Max	Max	
50th %ile Green (s)				10.4	10.4			19.0		19.0	19.0	
50th %ile Term Code				Gap	Gap			Max		Hold	Hold	
30th %ile Green (s)				7.3	7.3			15.0		15.0	15.0	
30th %ile Term Code				Gap	Gap			Min		Min	Min	
10th %ile Green (s)				0.0	0.0			30.0		30.0	30.0	
10th %ile Term Code				Skip	Skip			Dwell		Dwell	Dwell	
Queue Length 50th (ft)				48	11			142			87	
Queue Length 95th (ft)				96	53			#261			149	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				660	711			1622			1572	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	28%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.20	0.19			0.49			0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 67			
Actuated Cycle Length: 52.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay (s/veh): 18.2		Intersection LOS: B	
Intersection Capacity Utilization 44.3%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 67.8			
70th %ile Actuated Cycle: 63.9			
50th %ile Actuated Cycle: 62.1			
30th %ile Actuated Cycle: 32			
10th %ile Actuated Cycle: 35			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	88	0	39	1	0	1	0	548	0	0	499	1
Future Vol, veh/h	88	0	39	1	0	1	0	548	0	0	499	1
Conflicting Peds, #/hr	1	0	0	0	0	1	32	0	13	13	0	32
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	0	5	100	0	100	0	3	0	0	3	0
Mvmt Flow	91	0	40	1	0	1	0	565	0	0	514	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1113	-	547	1092	1125	579	-	0	0	578	0	0
Stage 1	547	-	-	578	578	-	-	-	-	-	-	-
Stage 2	566	-	-	514	547	-	-	-	-	-	-	-
Critical Hdwy	7.31	-	6.35	8.1	6.5	7.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.31	-	-	7.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.31	-	-	7.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	-	3.345	4.4	4	4.2	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	175	0	523	127	207	370	0	-	-	1006	-	-
Stage 1	507	0	-	365	504	-	0	-	-	-	-	-
Stage 2	495	0	-	400	520	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	-	510	115	199	365	-	-	-	993	-	-
Mov Cap-2 Maneuver	170	-	-	115	199	-	-	-	-	-	-	-
Stage 1	495	-	-	360	498	-	-	-	-	-	-	-
Stage 2	493	-	-	368	507	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	37.11	25.76	0	0
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	170	510	175	993	-	-
HCM Lane V/C Ratio	-	-	0.533	0.079	0.012	-	-	-
HCM Ctrl Dly (s/v)	-	-	47.9	12.7	25.8	0	-	-
HCM Lane LOS	-	-	E	B	D	A	-	-
HCM 95th %tile Q(veh)	-	-	2.7	0.3	0	0	-	-

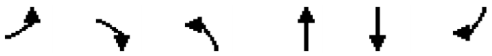
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	2	20	23	614	4	10	489	56
Future Vol, veh/h	0	0	0	6	2	20	23	614	4	10	489	56
Conflicting Peds, #/hr	10	0	16	16	0	10	29	0	25	25	0	29
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	3	0
Mvmt Flow	0	0	0	6	2	21	24	633	4	10	504	58

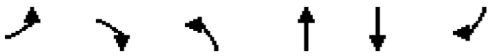
Major/Minor	Minor1		Major1				Major2		
Conflicting Flow All	1248	1319	670	591	0	0	662	0	0
Stage 1	707	707	-	-	-	-	-	-	-
Stage 2	541	611	-	-	-	-	-	-	-
Critical Hdwy	6	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	222	184	478	995	-	-	936	-	-
Stage 1	533	477	-	-	-	-	-	-	-
Stage 2	624	521	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	204	0	466	995	-	-	921	-	-
Mov Cap-2 Maneuver	204	0	-	-	-	-	-	-	-
Stage 1	505	0	-	-	-	-	-	-	-
Stage 2	605	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	15.89	0.31	0.16
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	65	-	-	359	921	-	-
HCM Lane V/C Ratio	0.024	-	-	0.08	0.011	-	-
HCM Ctrl Dly (s/v)	8.7	0	-	15.9	9	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	101	39	11	359	475	126	
Future Volume (vph)	101	39	11	359	475	126	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Grade (%)	0%			-1%	-1%		
Storage Length (ft)	150	150	150			150	
Storage Lanes	0	0	0			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.98			1.00	0.99		
Frt	0.962				0.972		
Flt Protected	0.965			0.999			
Satd. Flow (prot)	1460	0	0	1551	1552	0	
Flt Permitted	0.965			0.981			
Satd. Flow (perm)	1440	0	0	1523	1552	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	19				23		
Link Speed (mph)	25			25	25		
Link Distance (ft)	354			138	104		
Travel Time (s)	9.7			3.8	2.8		
Confl. Peds. (#/hr)	8	2	8			8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Heavy Vehicles (%)	18%	25%	9%	15%	11%	11%	
Adj. Flow (vph)	111	43	12	395	522	138	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	154	0	0	407	660	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1			2	2		
Detector Template	Left			Thru	Thru		
Leading Detector (ft)	20			100	100		
Trailing Detector (ft)	0			0	0		
Detector 1 Position(ft)	0			0	0		
Detector 1 Size(ft)	20			6	6		
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0			0.0	0.0		
Detector 1 Queue (s)	0.0			0.0	0.0		
Detector 1 Delay (s)	0.0			0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		

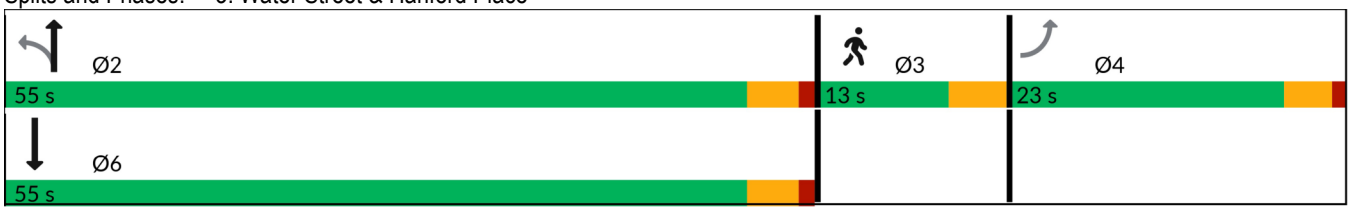


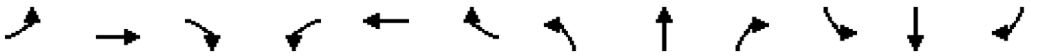
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Perm		Perm	NA	NA		
Protected Phases				2	6		3
Permitted Phases	4		2				
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	7.0		15.0	15.0	15.0		9.0
Minimum Split (s)	11.2		19.6	19.6	19.6		17.0
Total Split (s)	23.0		55.0	55.0	55.0		13.0
Total Split (%)	25.3%		60.4%	60.4%	60.4%		14%
Maximum Green (s)	18.8		50.4	50.4	50.4		9.0
Yellow Time (s)	3.2		3.5	3.5	3.5		4.0
All-Red Time (s)	1.0		1.1	1.1	1.1		0.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.2			4.6	4.6		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Don't Walk (s)							6.0
Pedestrian Calls (#/hr)							23
Act Effct Green (s)	12.4			35.5	35.5		
Actuated g/C Ratio	0.20			0.57	0.57		
v/c Ratio	0.51			0.47	0.74		
Control Delay (s/veh)	30.8			12.5	18.8		
Queue Delay	0.0			0.0	0.0		
Total Delay (s/veh)	30.8			12.5	18.8		
LOS	C			B	B		
Approach Delay (s/veh)	30.8			12.5	18.8		
Approach LOS	C			B	B		
90th %ile Green (s)	18.8		50.4	50.4	50.4		13.0
90th %ile Term Code	Max		Hold	Hold	Max		Ped
70th %ile Green (s)	16.1		48.1	48.1	48.1		13.0
70th %ile Term Code	Gap		Hold	Hold	Gap		Ped
50th %ile Green (s)	10.6		25.0	25.0	25.0		0.0
50th %ile Term Code	Gap		Hold	Hold	Gap		Skip
30th %ile Green (s)	8.6		21.1	21.1	21.1		0.0
30th %ile Term Code	Gap		Dwell	Dwell	Dwell		Skip
10th %ile Green (s)	7.0		30.0	30.0	30.0		0.0
10th %ile Term Code	Min		Dwell	Dwell	Dwell		Skip
Queue Length 50th (ft)	29			52	102		
Queue Length 95th (ft)	137			231	461		
Internal Link Dist (ft)	274			58	24		
Turn Bay Length (ft)	150						
Base Capacity (vph)	510			1246	1274		
Starvation Cap Reductn	0			0	0		
Spillback Cap Reductn	0			0	0		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Storage Cap Reductn	0			0	0		
Reduced v/c Ratio	0.30			0.33	0.52		

Intersection Summary			
Area Type:	Other		
Cycle Length: 91			
Actuated Cycle Length: 62.7			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 18.2		Intersection LOS: B	
Intersection Capacity Utilization 48.2%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 95			
70th %ile Actuated Cycle: 90			
50th %ile Actuated Cycle: 44.4			
30th %ile Actuated Cycle: 38.5			
10th %ile Actuated Cycle: 45.8			

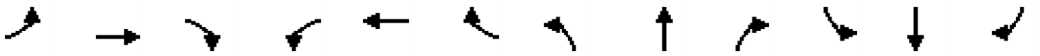
Splits and Phases: 3: Water Street & Hanford Place





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	155	35	506	343	171	26	151	371	64	124	9
Future Volume (vph)	13	155	35	506	343	171	26	151	371	64	124	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	0.99		0.98		0.99		0.99	
Frt		0.977			0.950				0.850		0.994	
Flt Protected		0.997		0.950			0.950				0.984	
Satd. Flow (prot)	0	1673	0	1560	1632	0	1671	1810	1506	0	1754	0
Flt Permitted		0.949		0.379			0.518				0.802	
Satd. Flow (perm)	0	1592	0	621	1632	0	897	1810	1483	0	1425	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		11			35				394			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			234			313	
Travel Time (s)		13.1			16.8			6.4			8.5	
Confl. Peds. (#/hr)	7		3	3		7	12		9	9		12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	11%	10%	13%	8%	5%	8%	5%	18%	2%	0%	33%
Adj. Flow (vph)	14	167	38	544	369	184	28	162	399	69	133	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	219	0	544	553	0	28	162	399	0	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1		2	
Detector Template		Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (ft)		100		20	100		20	100	20		100	
Trailing Detector (ft)		0		0	0		0	0	0		0	
Detector 1 Position(ft)		0		0	0		0	0	0		0	
Detector 1 Size(ft)		6		20	6		20	6	20		6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



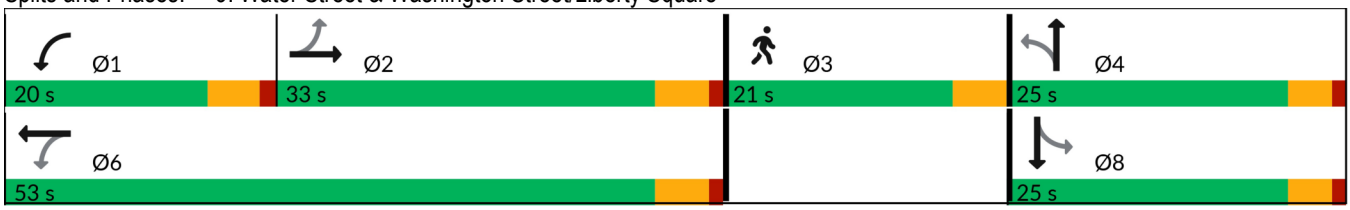
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	33.0	33.0		20.0	53.0		25.0	25.0		25.0	25.0	
Total Split (%)	33.3%	33.3%		20.2%	53.5%		25.3%	25.3%		25.3%	25.3%	
Maximum Green (s)	28.1	28.1		15.0	48.1		20.7	20.7		20.7	20.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.3		39.4	39.5		16.9	16.9	79.2		16.9	
Actuated g/C Ratio		0.22		0.50	0.50		0.21	0.21	1.00		0.21	
v/c Ratio		0.62		1.08	0.67		0.15	0.42	0.27		0.70	
Control Delay (s/veh)		37.6		87.3	23.0		34.4	35.4	0.4		47.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		37.6		87.3	23.0		34.4	35.4	0.4		47.0	
LOS		D		F	C		C	D	A		D	
Approach Delay (s/veh)		37.6			54.9			11.7			47.0	
Approach LOS		D			D			B			D	
90th %ile Green (s)	28.1	28.1		15.0	48.1		20.7	20.7		20.7	20.7	
90th %ile Term Code	Hold	Hold		Max	Max		Hold	Hold		Max	Max	
70th %ile Green (s)	21.9	21.9		15.0	41.9		20.7	20.7		20.7	20.7	
70th %ile Term Code	Hold	Hold		Max	Gap		Hold	Hold		Max	Max	
50th %ile Green (s)	17.3	17.3		15.0	37.3		20.2	20.2		20.2	20.2	
50th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	11.0	11.0		15.0	31.0		12.7	12.7		12.7	12.7	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	10.0	10.0		15.0	30.0		9.6	9.6		9.6	9.6	
10th %ile Term Code	Min	Min		Max	Hold		Hold	Hold		Gap	Gap	
Queue Length 50th (ft)		116		~327	266		13	82	0		115	
Queue Length 95th (ft)		192		#670	404		41	161	0		#245	
Internal Link Dist (ft)		399			537			154			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		633		506	1110		260	524	1483		413	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	31
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.35		1.08	0.50		0.11	0.31	0.27		0.51	

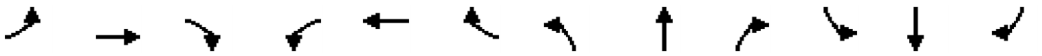
Intersection Summary			
Area Type:	Other		
Cycle Length: 99			
Actuated Cycle Length: 79.2			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay (s/veh): 40.3		Intersection LOS: D	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 104			
70th %ile Actuated Cycle: 97.8			
50th %ile Actuated Cycle: 92.7			
30th %ile Actuated Cycle: 52.9			
10th %ile Actuated Cycle: 48.8			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



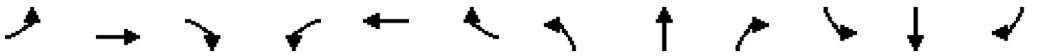
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	85	51	19	98	38	50	279	8	40	229	106
Future Volume (vph)	82	85	51	19	98	38	50	279	8	40	229	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98			0.99			1.00			1.00	0.97
Frt		0.943			0.967			0.997				0.850
Flt Protected	0.950				0.994			0.993			0.993	
Satd. Flow (prot)	1546	1355	0	0	1663	0	0	1497	0	0	1742	1449
Flt Permitted	0.436				0.949			0.886			0.898	
Satd. Flow (perm)	707	1355	0	0	1581	0	0	1335	0	0	1572	1410
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	5		22	22		5	5		19	19		5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	9%	24%	17%	7%	13%	0%	57%	20%	17%	8%	9%	12%
Adj. Flow (vph)	91	94	57	21	109	42	56	310	9	44	254	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	151	0	0	172	0	0	375	0	0	298	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2			2	1
Detector Template	Left	Thru			Thru			Thru			Thru	Right
Leading Detector (ft)	20	100			100			100			100	20
Trailing Detector (ft)	0	0			0			0			0	0
Detector 1 Position(ft)	0	0			0			0			0	0
Detector 1 Size(ft)	20	6			6			6			6	20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



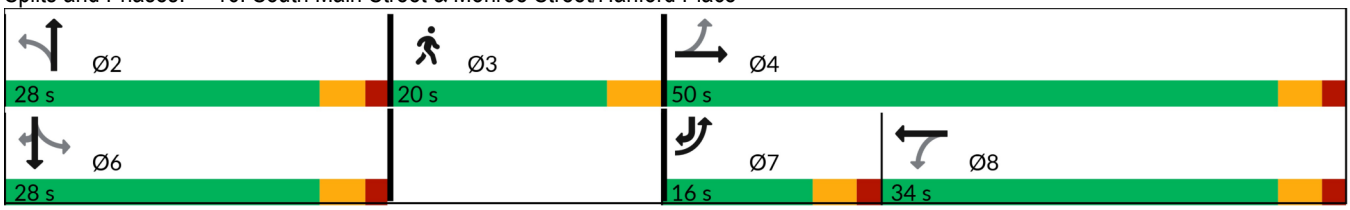
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	16.0	50.0		34.0	34.0		28.0	28.0		28.0	28.0	16.0
Total Split (%)	16.3%	51.0%		34.7%	34.7%		28.6%	28.6%		28.6%	28.6%	16.3%
Maximum Green (s)	11.1	45.1		29.1	29.1		23.1	23.1		23.1	23.1	11.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	26.6	26.6			15.1			25.3			25.3	36.6
Actuated g/C Ratio	0.36	0.36			0.20			0.34			0.34	0.49
v/c Ratio	0.24	0.31			0.54			0.83			0.56	0.17
Control Delay (s/veh)	19.8	21.0			38.0			48.6			32.5	9.8
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	19.8	21.0			38.0			48.6			32.5	9.8
LOS	B	C			D			D			C	A
Approach Delay (s/veh)		20.6			38.0			48.6			26.0	
Approach LOS		C			D			D			C	
90th %ile Green (s)	11.1	36.9		20.9	20.9		23.1	23.1		23.1	23.1	11.1
90th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
70th %ile Green (s)	11.1	33.0		17.0	17.0		23.1	23.1		23.1	23.1	11.1
70th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
50th %ile Green (s)	10.0	29.3		14.4	14.4		23.1	23.1		23.1	23.1	10.0
50th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Max	Max	Min
30th %ile Green (s)	10.0	26.9		12.0	12.0		23.1	23.1		23.1	23.1	10.0
30th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Max	Max	Min
10th %ile Green (s)	0.0	10.0		10.0	10.0		23.1	23.1		23.1	23.1	0.0
10th %ile Term Code	Skip	Hold		Min	Min		Max	Max		Hold	Hold	Skip
Queue Length 50th (ft)	34	60			88			~224			146	20
Queue Length 95th (ft)	67	107			155			#438			#291	41
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	392	883			675			452			533	714
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.23	0.17			0.25			0.83			0.56	0.17

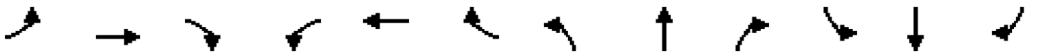
Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 74.5			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 33.7		Intersection LOS: C	
Intersection Capacity Utilization 65.6%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 93.8			
70th %ile Actuated Cycle: 89.9			
50th %ile Actuated Cycle: 86.2			
30th %ile Actuated Cycle: 59.8			
10th %ile Actuated Cycle: 42.9			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



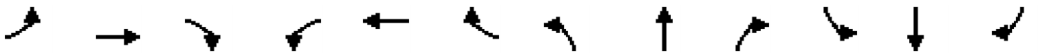
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	119	97	28	310	49	83	383	28	44	266	25
Future Volume (vph)	25	119	97	28	310	49	83	383	28	44	266	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99			1.00			0.99		0.99	1.00	
Frt		0.933			0.983			0.992			0.987	
Flt Protected	0.950				0.996			0.992		0.950		
Satd. Flow (prot)	1552	1535	0	0	1707	0	0	1671	0	1596	1651	0
Flt Permitted	0.331				0.965			0.849		0.372		
Satd. Flow (perm)	540	1535	0	0	1654	0	0	1426	0	621	1651	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	2		1	1		2	23		14	14		23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	4%	17%	7%	6%	12%	11%	29%	5%	8%	17%
Adj. Flow (vph)	27	129	105	30	337	53	90	416	30	48	289	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	234	0	0	420	0	0	536	0	48	316	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2		1	2	
Detector Template	Left	Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100			100			100		20	100	
Trailing Detector (ft)	0	0			0			0		0	0	
Detector 1 Position(ft)	0	0			0			0		0	0	
Detector 1 Size(ft)	20	6			6			6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



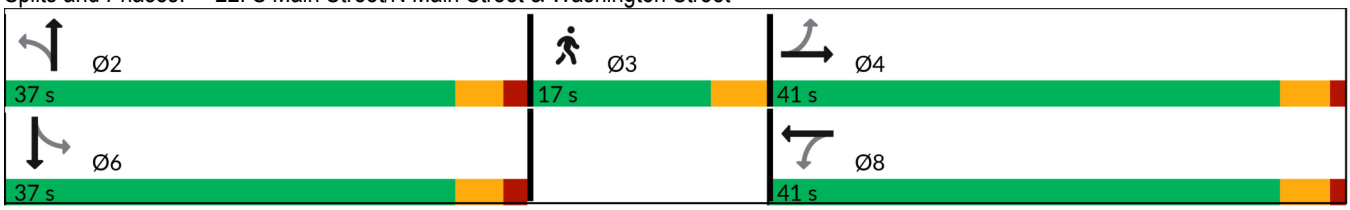
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	41.0	41.0		41.0	41.0		37.0	37.0		37.0	37.0	
Total Split (%)	43.2%	43.2%		43.2%	43.2%		38.9%	38.9%		38.9%	38.9%	
Maximum Green (s)	36.4	36.4		36.4	36.4		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	25.4	25.4			25.4			34.0		34.0	34.0	
Actuated g/C Ratio	0.32	0.32			0.32			0.42		0.42	0.42	
v/c Ratio	0.16	0.48			0.80			0.89		0.18	0.45	
Control Delay (s/veh)	24.2	26.8			38.8			47.0		24.7	24.7	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	24.2	26.8			38.8			47.0		24.7	24.7	
LOS	C	C			D			D		C	C	
Approach Delay (s/veh)		26.5			38.8			47.0			24.7	
Approach LOS		C			D			D			C	
90th %ile Green (s)	36.4	36.4		36.4	36.4		32.0	32.0		32.0	32.0	
90th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Max	Max	
70th %ile Green (s)	33.5	33.5		33.5	33.5		32.0	32.0		32.0	32.0	
70th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
50th %ile Green (s)	27.6	27.6		27.6	27.6		32.0	32.0		32.0	32.0	
50th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
30th %ile Green (s)	17.4	17.4		17.4	17.4		32.0	32.0		32.0	32.0	
30th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		32.0	32.0		32.0	32.0	
10th %ile Term Code	Min	Min		Min	Min		Max	Max		Hold	Hold	
Queue Length 50th (ft)	11	109			222			~339		19	142	
Queue Length 95th (ft)	32	176			334			#605		54	256	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	260	740			797			604		263	699	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	18%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	40
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.10	0.32			0.53			0.89		0.18	0.45	

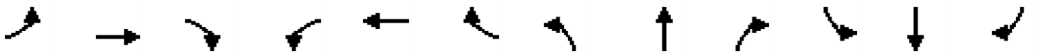
Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 80.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay (s/veh): 36.3		Intersection LOS: D	
Intersection Capacity Utilization 91.6%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 99			
70th %ile Actuated Cycle: 96.1			
50th %ile Actuated Cycle: 90.2			
30th %ile Actuated Cycle: 59			
10th %ile Actuated Cycle: 56.6			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



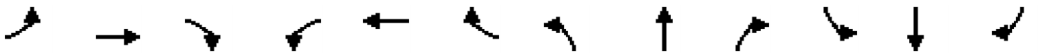
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	312	0	27	0	434	168	16	649	11
Future Volume (vph)	0	0	0	312	0	27	0	434	168	16	649	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.99	1.00			0.99			1.00	
Frt					0.976			0.958			0.998	
Flt Protected				0.950	0.960						0.999	
Satd. Flow (prot)	0	0	0	1579	1515	0	0	2977	0	0	3108	0
Flt Permitted				0.950	0.960						0.933	
Satd. Flow (perm)	0	0	0	1570	1508	0	0	2977	0	0	2902	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					99						3	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)			5	5			9		9	9		9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	5%	0%	23%	0%	17%	10%	44%	12%	27%
Adj. Flow (vph)	0	0	0	335	0	29	0	467	181	17	698	12
Shared Lane Traffic (%)				45%								
Lane Group Flow (vph)	0	0	0	184	180	0	0	648	0	0	727	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2			2			2	
Detector Template		Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)		100		20	100			100			100	
Trailing Detector (ft)		0		0	0			0			0	
Detector 1 Position(ft)				0	0			0			0	
Detector 1 Size(ft)				20	6			6			6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0			0.0	
Detector 1 Queue (s)				0.0	0.0			0.0			0.0	
Detector 1 Delay (s)				0.0	0.0			0.0			0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



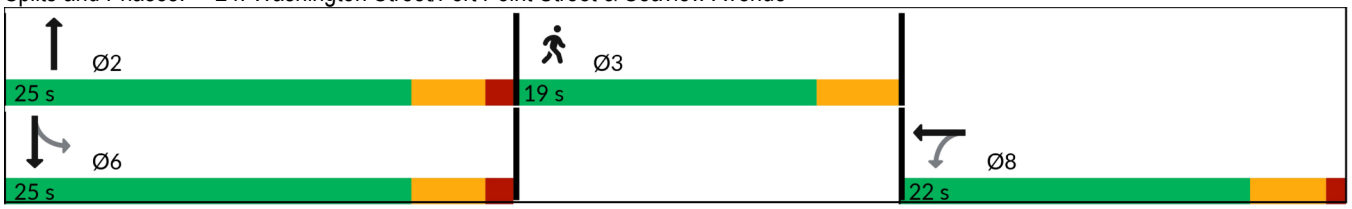
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA			NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8						6		
Detector Phase				8	8			2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0			15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7			20.0		20.0	20.0	
Total Split (s)				22.0	22.0			25.0		25.0	25.0	
Total Split (%)				33.3%	33.3%			37.9%		37.9%	37.9%	
Maximum Green (s)				17.3	17.3			20.0		20.0	20.0	
Yellow Time (s)				3.7	3.7			3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0			1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0			3.0		3.0	3.0	
Recall Mode				None	None			Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				12.4	12.4			19.8			19.8	
Actuated g/C Ratio				0.23	0.23			0.37			0.37	
v/c Ratio				0.51	0.43			0.59			0.68	
Control Delay (s/veh)				27.1	14.5			21.0			23.5	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				27.1	14.5			21.0			23.5	
LOS				C	B			C			C	
Approach Delay (s/veh)					20.9			21.0			23.5	
Approach LOS					C			C			C	
90th %ile Green (s)				17.3	17.3			20.0		20.0	20.0	
90th %ile Term Code				Max	Max			Max		Max	Max	
70th %ile Green (s)				16.3	16.3			20.0		20.0	20.0	
70th %ile Term Code				Gap	Gap			Max		Max	Max	
50th %ile Green (s)				12.8	12.8			20.0		20.0	20.0	
50th %ile Term Code				Gap	Gap			Max		Max	Max	
30th %ile Green (s)				8.4	8.4			15.0		15.0	15.0	
30th %ile Term Code				Gap	Gap			Min		Min	Min	
10th %ile Green (s)				7.0	7.0			16.5		16.5	16.5	
10th %ile Term Code				Min	Min			Dwell		Dwell	Dwell	
Queue Length 50th (ft)				71	29			119			139	
Queue Length 95th (ft)				131	82			#193			#254	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				567	608			1242			1213	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	29%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.32	0.30			0.52			0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 66			
Actuated Cycle Length: 54.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 22.0		Intersection LOS: C	
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 70			
70th %ile Actuated Cycle: 69			
50th %ile Actuated Cycle: 65.5			
30th %ile Actuated Cycle: 33.1			
10th %ile Actuated Cycle: 33.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	23	359	0	0	580
Future Vol, veh/h	10	23	359	0	0	580
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	25	390	0	0	630

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1021	390	0	0	390	0
Stage 1	390	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	262	658	-	-	1168	-
Stage 1	684	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	262	658	-	-	1168	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	531	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	13.66	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	451	1168	-
HCM Lane V/C Ratio	-	-	0.079	-	-
HCM Ctrl Dly (s/v)	-	-	13.7	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	1	16	0	0	3	0	494	2	0	577	0
Future Vol, veh/h	52	1	16	0	0	3	0	494	2	0	577	0
Conflicting Peds, #/hr	0	0	0	0	0	0	18	0	6	6	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	5	0	6	0	0	33	0	16	50	0	11	0
Mvmt Flow	57	1	18	0	0	3	0	543	2	0	634	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1177	1185	634	1185	1184	550	-	0	0	551	0	0
Stage 1	634	634	-	550	550	-	-	-	-	-	-	-
Stage 2	543	551	-	635	634	-	-	-	-	-	-	-
Critical Hdwy	7.35	6.7	6.36	7.1	6.5	6.53	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.35	5.7	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.35	5.7	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.354	3.5	4	3.597	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	155	178	464	167	191	480	0	-	-	1029	-	0
Stage 1	446	459	-	523	519	-	0	-	-	-	-	0
Stage 2	503	503	-	470	476	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	154	177	464	159	190	477	-	-	-	1023	-	-
Mov Cap-2 Maneuver	154	177	-	159	190	-	-	-	-	-	-	-
Stage 1	446	459	-	520	516	-	-	-	-	-	-	-
Stage 2	500	500	-	451	476	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	34.83	12.6	0	0
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	154	464	477	1023	-
HCM Lane V/C Ratio	-	-	0.371	0.038	0.007	-	-
HCM Ctrl Dly (s/v)	-	-	41.5	13.1	12.6	0	-
HCM Lane LOS	-	-	E	B	B	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.1	0	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	3	12	8	533	8	19	575	76
Future Vol, veh/h	0	0	0	7	3	12	8	533	8	19	575	76
Conflicting Peds, #/hr	1	0	5	5	0	1	18	0	13	13	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	14	33	0	0	14	0	11	11	12
Mvmt Flow	0	0	0	8	3	13	9	592	9	21	639	84

Major/Minor	Minor1		Major1				Major2		
Conflicting Flow All	1314	1411	611	741	0	0	614	0	0
Stage 1	627	627	-	-	-	-	-	-	-
Stage 2	686	784	-	-	-	-	-	-	-
Critical Hdwy	6.14	6.43	6	4.1	-	-	4.21	-	-
Critical Hdwy Stg 1	5.14	5.43	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.14	5.43	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.297	3.3	2.2	-	-	2.299	-	-
Pot Cap-1 Maneuver	191	139	515	875	-	-	923	-	-
Stage 1	547	462	-	-	-	-	-	-	-
Stage 2	516	396	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	178	0	510	875	-	-	915	-	-
Mov Cap-2 Maneuver	178	0	-	-	-	-	-	-	-
Stage 1	534	0	-	-	-	-	-	-	-
Stage 2	494	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	17.95	0.13	0.26
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	26	-	-	302	915	-	-
HCM Lane V/C Ratio	0.01	-	-	0.081	0.023	-	-
HCM Ctrl Dly (s/v)	9.2	0	-	18	9	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	-	-

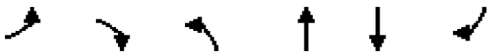
Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	371	12	91	411
Future Vol, veh/h	0	0	371	12	91	411
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	403	13	99	447

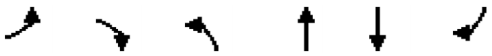
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1054	410	0	0	416	0
Stage 1	410	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	250	642	-	-	1143	-
Stage 1	670	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	221	642	-	-	1143	-
Mov Cap-2 Maneuver	221	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	462	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	1.53
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	326	-
HCM Lane V/C Ratio	-	-	-	0.087	-
HCM Ctrl Dly (s/v)	-	-	0	8.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.3	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	77	44	25	293	349	134	
Future Volume (vph)	77	44	25	293	349	134	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Grade (%)	0%			-1%	-1%		
Storage Length (ft)	150	150	150			150	
Storage Lanes	0	0	0			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.97			1.00	0.99		
Frt	0.951				0.962		
Flt Protected	0.969			0.996			
Satd. Flow (prot)	1526	0	0	1633	1565	0	
Flt Permitted	0.969			0.950			
Satd. Flow (perm)	1496	0	0	1557	1565	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	36				30		
Link Speed (mph)	25			25	25		
Link Distance (ft)	354			138	104		
Travel Time (s)	9.7			3.8	2.8		
Confl. Peds. (#/hr)	18	4	7			7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Heavy Vehicles (%)	6%	27%	17%	8%	9%	8%	
Adj. Flow (vph)	79	45	26	299	356	137	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	124	0	0	325	493	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1			2	2		
Detector Template	Left			Thru	Thru		
Leading Detector (ft)	20			100	100		
Trailing Detector (ft)	0			0	0		
Detector 1 Position(ft)	0			0	0		
Detector 1 Size(ft)	20			6	6		
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0			0.0	0.0		
Detector 1 Queue (s)	0.0			0.0	0.0		
Detector 1 Delay (s)	0.0			0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		

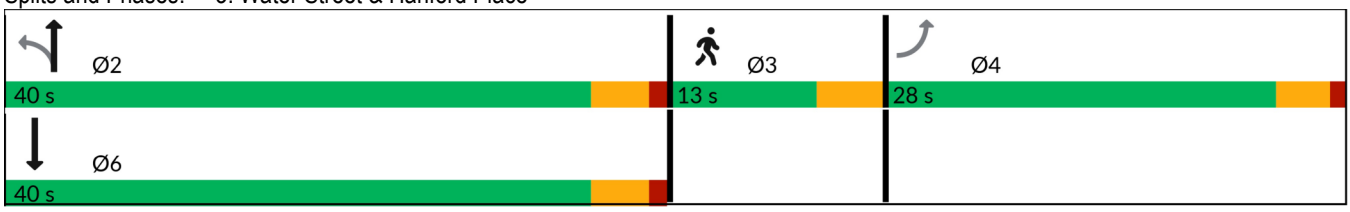


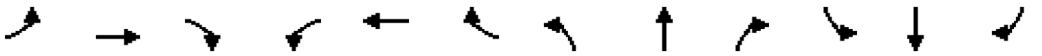
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Perm		Perm	NA	NA		
Protected Phases				2	6		3
Permitted Phases	4		2				
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	7.0		15.0	15.0	15.0		9.0
Minimum Split (s)	11.2		19.6	19.6	19.6		17.0
Total Split (s)	28.0		40.0	40.0	40.0		13.0
Total Split (%)	34.6%		49.4%	49.4%	49.4%		16%
Maximum Green (s)	23.8		35.4	35.4	35.4		9.0
Yellow Time (s)	3.2		3.5	3.5	3.5		4.0
All-Red Time (s)	1.0		1.1	1.1	1.1		0.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.2			4.6	4.6		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Don't Walk (s)							6.0
Pedestrian Calls (#/hr)							33
Act Effct Green (s)	9.8			29.6	29.6		
Actuated g/C Ratio	0.20			0.60	0.60		
v/c Ratio	0.38			0.35	0.52		
Control Delay (s/veh)	20.2			11.3	12.9		
Queue Delay	0.0			0.0	0.0		
Total Delay (s/veh)	20.2			11.3	12.9		
LOS	C			B	B		
Approach Delay (s/veh)	20.2			11.3	12.9		
Approach LOS	C			B	B		
90th %ile Green (s)	14.6		35.4	35.4	35.4		13.0
90th %ile Term Code	Gap		Hold	Hold	Max		Ped
70th %ile Green (s)	11.3		27.9	27.9	27.9		13.0
70th %ile Term Code	Gap		Hold	Hold	Gap		Ped
50th %ile Green (s)	7.9		15.6	15.6	15.6		0.0
50th %ile Term Code	Gap		Dwell	Dwell	Dwell		Skip
30th %ile Green (s)	7.0		24.5	24.5	24.5		0.0
30th %ile Term Code	Min		Dwell	Dwell	Dwell		Skip
10th %ile Green (s)	0.0		30.0	30.0	30.0		0.0
10th %ile Term Code	Skip		Dwell	Dwell	Dwell		Skip
Queue Length 50th (ft)	12			31	49		
Queue Length 95th (ft)	84			164	266		
Internal Link Dist (ft)	274			58	24		
Turn Bay Length (ft)	150						
Base Capacity (vph)	823			1211	1224		
Starvation Cap Reductn	0			0	0		
Spillback Cap Reductn	0			0	0		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Storage Cap Reductn	0			0	0		
Reduced v/c Ratio	0.15			0.27	0.40		

Intersection Summary			
Area Type:	Other		
Cycle Length: 81			
Actuated Cycle Length: 49.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay (s/veh): 13.3		Intersection LOS: B	
Intersection Capacity Utilization 50.5%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 75.8			
70th %ile Actuated Cycle: 65			
50th %ile Actuated Cycle: 32.3			
30th %ile Actuated Cycle: 40.3			
10th %ile Actuated Cycle: 34.6			

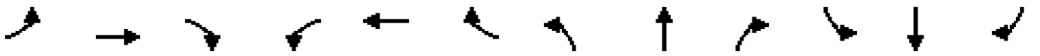
Splits and Phases: 3: Water Street & Hanford Place





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	195	70	318	241	113	42	119	312	80	127	12
Future Volume (vph)	26	195	70	318	241	113	42	119	312	80	127	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	0.99		0.96		0.99		0.99	
Frt		0.968			0.952				0.850		0.993	
Flt Protected		0.996		0.950			0.950				0.982	
Satd. Flow (prot)	0	1723	0	1588	1612	0	1752	1881	1615	0	1711	0
Flt Permitted		0.939		0.292			0.523				0.835	
Satd. Flow (perm)	0	1623	0	485	1612	0	923	1881	1594	0	1453	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		16			32				322			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			230			313	
Travel Time (s)		13.1			16.8			6.3			8.5	
Confl. Peds. (#/hr)	7		11	11		7	38		4	4		38
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	9%	4%	9%	11%	6%	14%	3%	1%	10%	5%	4%	0%
Adj. Flow (vph)	27	201	72	328	248	116	43	123	322	82	131	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	328	364	0	43	123	322	0	225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1		2	
Detector Template		Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (ft)		100		20	100		20	100	20		100	
Trailing Detector (ft)		0		0	0		0	0	0		0	
Detector 1 Position(ft)		0		0	0		0	0	0		0	
Detector 1 Size(ft)		6		20	6		20	6	20		6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



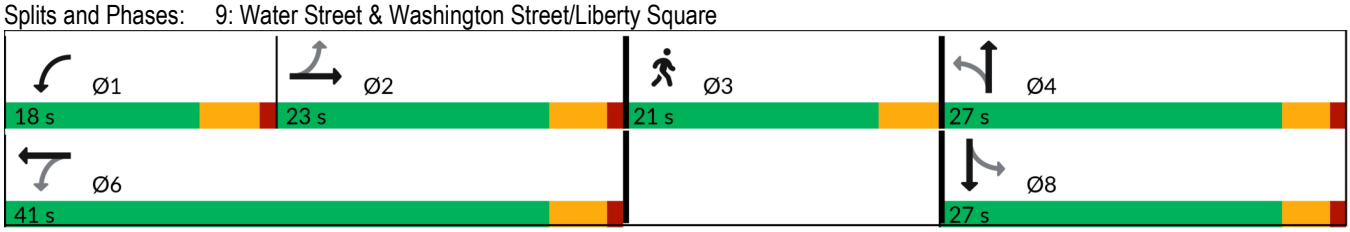
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	23.0	23.0		18.0	41.0		27.0	27.0		27.0	27.0	
Total Split (%)	25.8%	25.8%		20.2%	46.1%		30.3%	30.3%		30.3%	30.3%	
Maximum Green (s)	18.1	18.1		13.0	36.1		22.7	22.7		22.7	22.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		16.9		36.4	36.5		16.6	16.6	76.0		16.6	
Actuated g/C Ratio		0.22		0.48	0.48		0.22	0.22	1.00		0.22	
v/c Ratio		0.80		0.75	0.46		0.21	0.30	0.20		0.71	
Control Delay (s/veh)		49.4		33.9	19.3		31.2	30.2	0.3		43.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		49.4		33.9	19.3		31.2	30.2	0.3		43.4	
LOS		D		C	B		C	C	A		D	
Approach Delay (s/veh)		49.4			26.2			10.6			43.4	
Approach LOS		D			C			B			D	
90th %ile Green (s)	18.1	18.1		13.0	36.1		22.7	22.7		22.7	22.7	
90th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	18.1	18.1		13.0	36.1		22.5	22.5		22.5	22.5	
70th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	18.1	18.1		13.0	36.1		18.9	18.9		18.9	18.9	
50th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	15.2	15.2		13.0	33.2		11.9	11.9		11.9	11.9	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	11.7	11.7		13.0	29.7		8.8	8.8		8.8	8.8	
10th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
Queue Length 50th (ft)		159		139	142		20	60	0		121	
Queue Length 95th (ft)		#326		#287	244		50	108	0		201	
Internal Link Dist (ft)		399			537			150			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		433		438	850		300	613	1594		473	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	24%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.69		0.75	0.43		0.14	0.20	0.20		0.48	

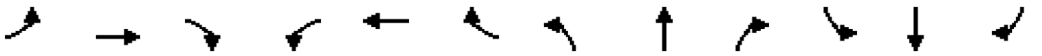
Intersection Summary			
Area Type:	Other		
Cycle Length: 89			
Actuated Cycle Length: 76			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 28.1		Intersection LOS: C	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 94			
70th %ile Actuated Cycle: 93.8			
50th %ile Actuated Cycle: 90.2			
30th %ile Actuated Cycle: 54.3			
10th %ile Actuated Cycle: 47.7			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



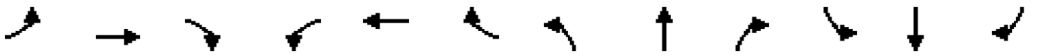
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	74	46	10	80	39	48	226	18	39	243	62
Future Volume (vph)	64	74	46	10	80	39	48	226	18	39	243	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.99			0.99			1.00	0.97
Frt		0.943			0.959			0.992				0.850
Flt Protected	0.950				0.996			0.992			0.993	
Satd. Flow (prot)	1465	1477	0	0	1625	0	0	1659	0	0	1756	1436
Flt Permitted	0.377				0.967			0.898			0.917	
Satd. Flow (perm)	578	1477	0	0	1573	0	0	1499	0	0	1616	1388
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	7		19	19		7	11		27	27		11
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	15%	14%	7%	20%	11%	7%	25%	9%	19%	8%	8%	13%
Adj. Flow (vph)	73	84	52	11	91	44	55	257	20	44	276	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	136	0	0	146	0	0	332	0	0	320	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2			2	1
Detector Template	Left	Thru			Thru			Thru			Thru	Right
Leading Detector (ft)	20	100			100			100			100	20
Trailing Detector (ft)	0	0			0			0			0	0
Detector 1 Position(ft)	0	0			0			0			0	0
Detector 1 Size(ft)	20	6			6			6			6	20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



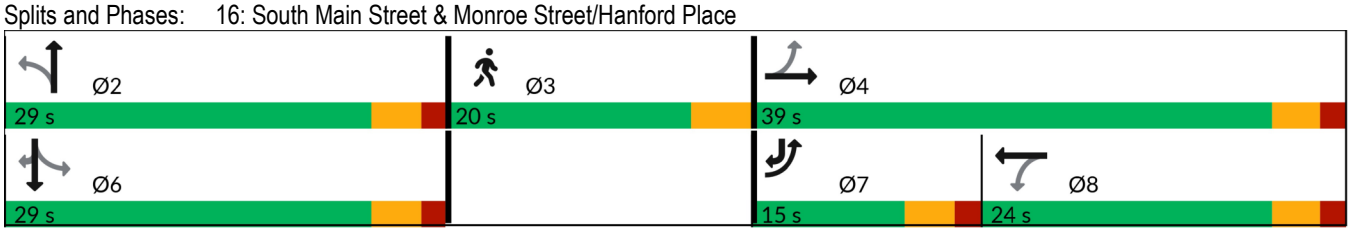
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	15.0	39.0		24.0	24.0		29.0	29.0		29.0	29.0	15.0
Total Split (%)	17.0%	44.3%		27.3%	27.3%		33.0%	33.0%		33.0%	33.0%	17.0%
Maximum Green (s)	10.1	34.1		19.1	19.1		24.1	24.1		24.1	24.1	10.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	25.1	25.1			14.0			32.4			32.4	37.9
Actuated g/C Ratio	0.35	0.35			0.19			0.45			0.45	0.52
v/c Ratio	0.22	0.27			0.48			0.50			0.45	0.10
Control Delay (s/veh)	20.7	21.2			37.7			30.4			28.6	9.0
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	20.7	21.2			37.7			30.4			28.6	9.0
LOS	C	C			D			C			C	A
Approach Delay (s/veh)		21.1			37.7			30.4			25.1	
Approach LOS		C			D			C			C	
90th %ile Green (s)	10.1	34.1		19.1	19.1		24.1	24.1		24.1	24.1	10.1
90th %ile Term Code	Max	Hold		Max	Max		Max	Max		Max	Max	Max
70th %ile Green (s)	10.1	30.5		15.5	15.5		24.1	24.1		24.1	24.1	10.1
70th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
50th %ile Green (s)	10.0	28.0		13.1	13.1		24.1	24.1		24.1	24.1	10.0
50th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
30th %ile Green (s)	10.0	24.9		10.0	10.0		24.1	24.1		24.1	24.1	10.0
30th %ile Term Code	Min	Hold		Min	Min		Max	Max		Hold	Hold	Min
10th %ile Green (s)	0.0	0.0		0.0	0.0		33.7	33.7		33.7	33.7	0.0
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	Skip
Queue Length 50th (ft)	28	54			75			165			155	12
Queue Length 95th (ft)	57	96			130			#319			#284	24
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	337	772			460			667			719	732
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.22	0.18			0.32			0.50			0.45	0.10

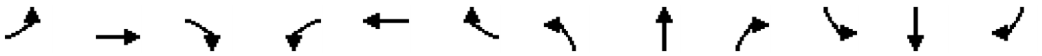
Intersection Summary			
Area Type:	Other		
Cycle Length: 88			
Actuated Cycle Length: 72.7			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay (s/veh): 27.6		Intersection LOS: C	
Intersection Capacity Utilization 57.0%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 92			
70th %ile Actuated Cycle: 88.4			
50th %ile Actuated Cycle: 85.9			
30th %ile Actuated Cycle: 58.8			
10th %ile Actuated Cycle: 38.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



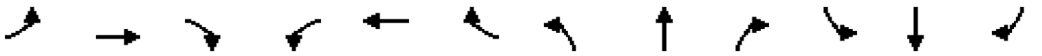
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	190	116	30	203	73	72	275	31	72	259	40
Future Volume (vph)	38	190	116	30	203	73	72	275	31	72	259	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.98			0.98			0.99		0.98	0.99	
Frt		0.943			0.968			0.989			0.980	
Flt Protected	0.950				0.995			0.991		0.950		
Satd. Flow (prot)	1596	1566	0	0	1686	0	0	1719	0	1538	1650	0
Flt Permitted	0.452				0.944			0.870		0.454		
Satd. Flow (perm)	739	1566	0	0	1596	0	0	1501	0	720	1650	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	36		32	32		36	30		30	30		30
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	3%	5%	17%	5%	3%	4%	9%	12%	9%	8%	5%
Adj. Flow (vph)	39	196	120	31	209	75	74	284	32	74	267	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	316	0	0	315	0	0	390	0	74	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2		1	2	
Detector Template	Left	Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100			100			100		20	100	
Trailing Detector (ft)	0	0			0			0		0	0	
Detector 1 Position(ft)	0	0			0			0		0	0	
Detector 1 Size(ft)	20	6			6			6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



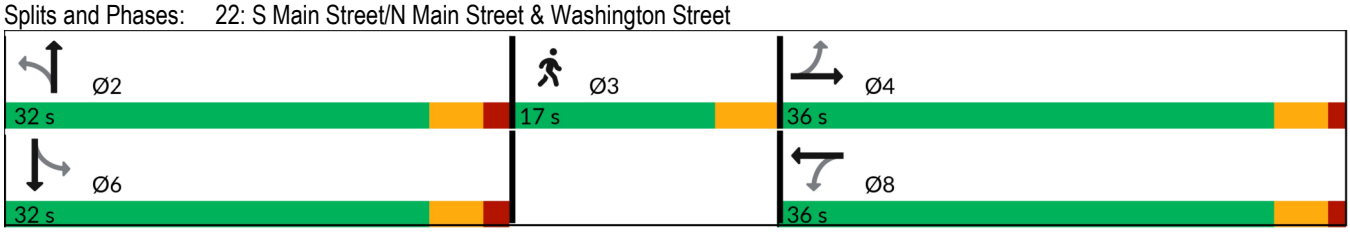
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	36.0	36.0		36.0	36.0		32.0	32.0		32.0	32.0	
Total Split (%)	42.4%	42.4%		42.4%	42.4%		37.6%	37.6%		37.6%	37.6%	
Maximum Green (s)	31.4	31.4		31.4	31.4		27.0	27.0		27.0	27.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	21.6	21.6			21.6			25.9		25.9	25.9	
Actuated g/C Ratio	0.32	0.32			0.32			0.38		0.38	0.38	
v/c Ratio	0.17	0.64			0.63			0.69		0.27	0.49	
Control Delay (s/veh)	22.6	29.3			28.7			30.7		24.3	24.1	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	22.6	29.3			28.7			30.7		24.3	24.1	
LOS	C	C			C			C		C	C	
Approach Delay (s/veh)		28.6			28.7			30.7			24.2	
Approach LOS		C			C			C			C	
90th %ile Green (s)	31.4	31.4		31.4	31.4		27.0	27.0		27.0	27.0	
90th %ile Term Code	Max	Max		Hold	Hold		Max	Max		Max	Max	
70th %ile Green (s)	25.5	25.5		25.5	25.5		27.0	27.0		27.0	27.0	
70th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
50th %ile Green (s)	20.6	20.6		20.6	20.6		27.0	27.0		27.0	27.0	
50th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
30th %ile Green (s)	15.0	15.0		15.0	15.0		23.1	23.1		23.1	23.1	
30th %ile Term Code	Min	Min		Min	Min		Gap	Gap		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		19.0	19.0		19.0	19.0	
10th %ile Term Code	Min	Min		Min	Min		Gap	Gap		Hold	Hold	
Queue Length 50th (ft)	15	142			141			165		26	119	
Queue Length 95th (ft)	39	228			225			#365		73	236	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	371	786			801			648		310	712	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	20%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.11	0.40			0.39			0.60		0.24	0.43	

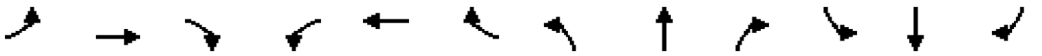
Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 68.3			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 28.0		Intersection LOS: C	
Intersection Capacity Utilization 88.7%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 89			
70th %ile Actuated Cycle: 83.1			
50th %ile Actuated Cycle: 78.2			
30th %ile Actuated Cycle: 47.7			
10th %ile Actuated Cycle: 43.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



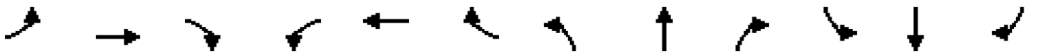
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	221	0	25	0	361	215	14	436	23
Future Volume (vph)	0	0	0	221	0	25	0	361	215	14	436	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				1.00	0.99			0.99			1.00	
Frt					0.969			0.944			0.993	
Flt Protected				0.950	0.962						0.999	
Satd. Flow (prot)	0	0	0	1549	1512	0	0	3106	0	0	3159	0
Flt Permitted				0.950	0.962						0.934	
Satd. Flow (perm)	0	0	0	1544	1508	0	0	3106	0	0	2953	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					98						8	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)	4		3	3		4	8		4	4		8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	7%	0%	8%	0%	12%	3%	21%	10%	14%
Adj. Flow (vph)	0	0	0	228	0	26	0	372	222	14	449	24
Shared Lane Traffic (%)				44%								
Lane Group Flow (vph)	0	0	0	128	126	0	0	594	0	0	487	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2			2			2	
Detector Template		Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)		100		20	100			100			100	
Trailing Detector (ft)		0		0	0			0			0	
Detector 1 Position(ft)				0	0			0			0	
Detector 1 Size(ft)				20	6			6			6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0			0.0	
Detector 1 Queue (s)				0.0	0.0			0.0			0.0	
Detector 1 Delay (s)				0.0	0.0			0.0			0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



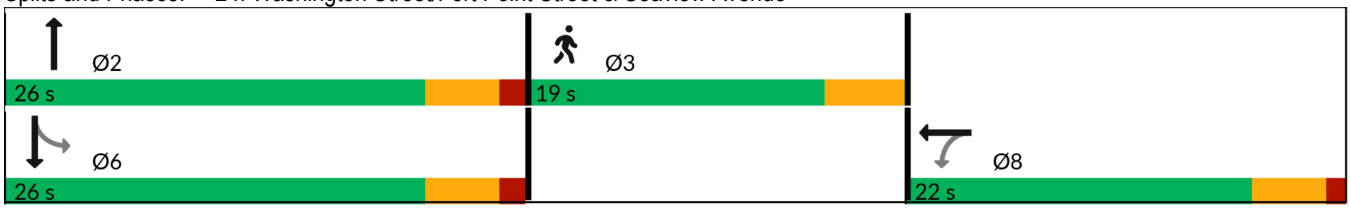
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA			NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8						6		
Detector Phase				8	8			2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0			15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7			20.0		20.0	20.0	
Total Split (s)				22.0	22.0			26.0		26.0	26.0	
Total Split (%)				32.8%	32.8%			38.8%		38.8%	38.8%	
Maximum Green (s)				17.3	17.3			21.0		21.0	21.0	
Yellow Time (s)				3.7	3.7			3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0			1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0			3.0		3.0	3.0	
Recall Mode				None	None			Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				10.7	10.7			25.2			25.2	
Actuated g/C Ratio				0.20	0.20			0.48			0.48	
v/c Ratio				0.41	0.33			0.40			0.34	
Control Delay (s/veh)				26.3	11.0			16.9			16.3	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				26.3	11.0			16.9			16.3	
LOS				C	B			B			B	
Approach Delay (s/veh)					18.7			16.9			16.3	
Approach LOS					B			B			B	
90th %ile Green (s)				16.5	16.5			21.0		21.0	21.0	
90th %ile Term Code				Gap	Gap			Max		Max	Max	
70th %ile Green (s)				12.5	12.5			20.9		20.9	20.9	
70th %ile Term Code				Gap	Gap			Gap		Hold	Hold	
50th %ile Green (s)				10.3	10.3			18.2		18.2	18.2	
50th %ile Term Code				Gap	Gap			Gap		Hold	Hold	
30th %ile Green (s)				7.1	7.1			15.0		15.0	15.0	
30th %ile Term Code				Gap	Gap			Min		Min	Min	
10th %ile Green (s)				0.0	0.0			30.0		30.0	30.0	
10th %ile Term Code				Skip	Skip			Dwell		Dwell	Dwell	
Queue Length 50th (ft)				46	9			99			77	
Queue Length 95th (ft)				96	51			168			135	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				564	613			1627			1551	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	28%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.23	0.21			0.37			0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 67			
Actuated Cycle Length: 52.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay (s/veh): 17.0		Intersection LOS: B	
Intersection Capacity Utilization 44.7%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 70.2			
70th %ile Actuated Cycle: 66.1			
50th %ile Actuated Cycle: 61.2			
30th %ile Actuated Cycle: 31.8			
10th %ile Actuated Cycle: 35			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	46	293	0	0	440
Future Vol, veh/h	19	46	293	0	0	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	50	318	0	0	478

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	797	318	0	0	318	0
Stage 1	318	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	356	722	-	-	1242	-
Stage 1	737	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	356	722	-	-	1242	-
Mov Cap-2 Maneuver	356	-	-	-	-	-
Stage 1	737	-	-	-	-	-
Stage 2	623	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.43	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	555	1242	-
HCM Lane V/C Ratio	-	-	0.127	-	-
HCM Ctrl Dly (s/v)	-	-	12.4	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	0	18	0	0	1	0	428	0	1	453	0
Future Vol, veh/h	67	0	18	0	0	1	0	428	0	1	453	0
Conflicting Peds, #/hr	1	0	0	0	0	1	19	0	20	20	0	19
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	8	0	18	0	0	100	0	7	0	100	9	0
Mvmt Flow	69	0	19	0	0	1	0	441	0	1	467	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	911	-	467	930	930	462	-	0	0	461	0	0
Stage 1	469	-	-	461	461	-	-	-	-	-	-	-
Stage 2	442	-	-	469	469	-	-	-	-	-	-	-
Critical Hdwy	7.38	-	6.48	7.1	6.5	7.2	-	-	-	5.1	-	-
Critical Hdwy Stg 1	6.38	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.38	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	-	3.462	3.5	4	4.2	-	-	-	3.1	-	-
Pot Cap-1 Maneuver	236	0	557	250	269	440	0	-	-	732	-	0
Stage 1	549	0	-	584	569	-	0	-	-	-	-	0
Stage 2	569	0	-	579	564	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	235	-	557	236	264	431	-	-	-	718	-	-
Mov Cap-2 Maneuver	235	-	-	236	264	-	-	-	-	-	-	-
Stage 1	548	-	-	573	558	-	-	-	-	-	-	-
Stage 2	567	-	-	558	563	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	23.4	13.37	0	0.02
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	235	557	431	4	-
HCM Lane V/C Ratio	-	-	0.294	0.033	0.002	0.001	-
HCM Ctrl Dly (s/v)	-	-	26.5	11.7	13.4	10	0
HCM Lane LOS	-	-	D	B	B	B	A
HCM 95th %tile Q(veh)	-	-	1.2	0.1	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	1	9	16	469	7	8	454	55
Future Vol, veh/h	0	0	0	6	1	9	16	469	7	8	454	55
Conflicting Peds, #/hr	8	0	11	11	0	8	23	0	24	24	0	23
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	6	8	0	0	9	9
Mvmt Flow	0	0	0	6	1	9	16	484	7	8	468	57

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	1040	1108	519	548	0	0	515	0	0
Stage 1	544	544	-	-	-	-	-	-	-
Stage 2	496	564	-	-	-	-	-	-	-
Critical Hdwy	6	6.1	6	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	5	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	289	239	577	1002	-	-	1061	-	-
Stage 1	622	555	-	-	-	-	-	-	-
Stage 2	651	545	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	272	0	564	1002	-	-	1045	-	-
Mov Cap-2 Maneuver	272	0	-	-	-	-	-	-	-
Stage 1	599	0	-	-	-	-	-	-	-
Stage 2	638	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	14.51	0.28	0.13
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	58	-	-	395	1045	-	-
HCM Lane V/C Ratio	0.016	-	-	0.042	0.008	-	-
HCM Ctrl Dly (s/v)	8.7	0	-	14.5	8.5	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	-	-

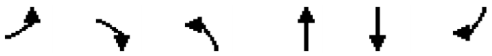
Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	318	10	70	299
Future Vol, veh/h	0	0	318	10	70	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	346	11	76	325

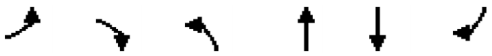
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	828	351	0	0	357	0
Stage 1	351	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	341	692	-	-	1202	-
Stage 1	713	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	314	692	-	-	1202	-
Mov Cap-2 Maneuver	314	-	-	-	-	-
Stage 1	713	-	-	-	-	-
Stage 2	576	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	1.55
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	341	-
HCM Lane V/C Ratio	-	-	-	0.063	-
HCM Ctrl Dly (s/v)	-	-	0	8.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.2	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	119	27	24	555	393	177	
Future Volume (vph)	119	27	24	555	393	177	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Grade (%)	0%			-1%	-1%		
Storage Length (ft)	150	150	150			150	
Storage Lanes	0	0	0			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.99			1.00	0.99		
Frt	0.975				0.958		
Flt Protected	0.961			0.998			
Satd. Flow (prot)	1671	0	0	1729	1593	0	
Flt Permitted	0.961			0.969			
Satd. Flow (perm)	1664	0	0	1678	1593	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	12				35		
Link Speed (mph)	25			25	25		
Link Distance (ft)	354			138	104		
Travel Time (s)	9.7			3.8	2.8		
Confl. Peds. (#/hr)	3	1	24			24	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	33%	0%	3%	6%	5%	
Adj. Flow (vph)	124	28	25	578	409	184	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	152	0	0	603	593	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1			2	2		
Detector Template	Left			Thru	Thru		
Leading Detector (ft)	20			100	100		
Trailing Detector (ft)	0			0	0		
Detector 1 Position(ft)	0			0	0		
Detector 1 Size(ft)	20			6	6		
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0			0.0	0.0		
Detector 1 Queue (s)	0.0			0.0	0.0		
Detector 1 Delay (s)	0.0			0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		

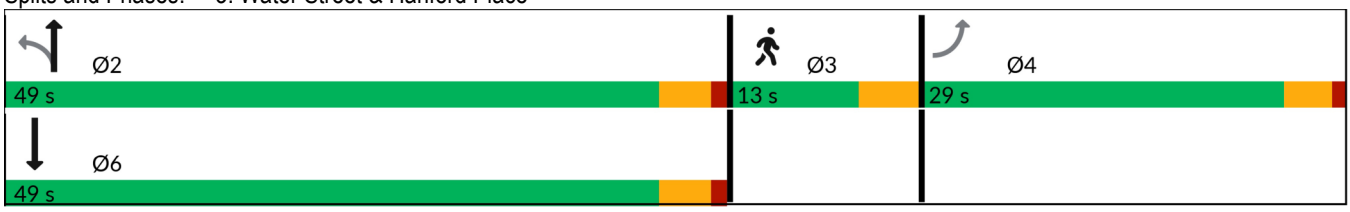


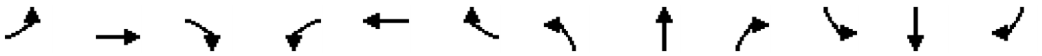
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Perm		Perm	NA	NA		
Protected Phases				2	6		3
Permitted Phases	4		2				
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	7.0		15.0	15.0	15.0		9.0
Minimum Split (s)	11.2		19.6	19.6	19.6		17.0
Total Split (s)	29.0		49.0	49.0	49.0		13.0
Total Split (%)	31.9%		53.8%	53.8%	53.8%		14%
Maximum Green (s)	24.8		44.4	44.4	44.4		9.0
Yellow Time (s)	3.2		3.5	3.5	3.5		4.0
All-Red Time (s)	1.0		1.1	1.1	1.1		0.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.2			4.6	4.6		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Don't Walk (s)							6.0
Pedestrian Calls (#/hr)							39
Act Effct Green (s)	11.9			35.3	35.3		
Actuated g/C Ratio	0.21			0.62	0.62		
v/c Ratio	0.43			0.58	0.59		
Control Delay (s/veh)	27.3			14.6	14.3		
Queue Delay	0.0			0.0	0.0		
Total Delay (s/veh)	27.3			14.6	14.3		
LOS	C			B	B		
Approach Delay (s/veh)	27.3			14.6	14.3		
Approach LOS	C			B	B		
90th %ile Green (s)	17.7		44.4	44.4	44.4		13.0
90th %ile Term Code	Gap		Max	Max	Max		Ped
70th %ile Green (s)	14.0		36.7	36.7	36.7		13.0
70th %ile Term Code	Gap		Hold	Hold	Gap		Ped
50th %ile Green (s)	11.3		30.0	30.0	30.0		0.0
50th %ile Term Code	Gap		Gap	Gap	Hold		Skip
30th %ile Green (s)	8.2		18.6	18.6	18.6		0.0
30th %ile Term Code	Gap		Dwell	Dwell	Dwell		Skip
10th %ile Green (s)	0.0		30.0	30.0	30.0		0.0
10th %ile Term Code	Skip		Dwell	Dwell	Dwell		Skip
Queue Length 50th (ft)	35			92	85		
Queue Length 95th (ft)	127			376	362		
Internal Link Dist (ft)	274			58	24		
Turn Bay Length (ft)	150						
Base Capacity (vph)	842			1333	1272		
Starvation Cap Reductn	0			0	0		
Spillback Cap Reductn	0			0	0		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Storage Cap Reductn	0			0	0		
Reduced v/c Ratio	0.18			0.45	0.47		

Intersection Summary			
Area Type:	Other		
Cycle Length: 91			
Actuated Cycle Length: 56.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay (s/veh): 15.9		Intersection LOS: B	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 87.9			
70th %ile Actuated Cycle: 76.5			
50th %ile Actuated Cycle: 50.1			
30th %ile Actuated Cycle: 35.6			
10th %ile Actuated Cycle: 34.6			

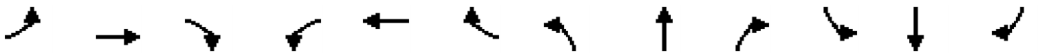
Splits and Phases: 3: Water Street & Hanford Place





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	248	47	401	284	133	42	211	569	171	152	21
Future Volume (vph)	36	248	47	401	284	133	42	211	569	171	152	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	0.98		0.97		0.98		0.99	
Frt		0.981			0.952				0.850		0.992	
Flt Protected		0.995		0.950			0.950				0.976	
Satd. Flow (prot)	0	1810	0	1647	1684	0	1805	1863	1725	0	1745	0
Flt Permitted		0.918		0.312			0.533				0.650	
Satd. Flow (perm)	0	1664	0	535	1684	0	981	1863	1698	0	1157	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		9			29				432			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			225			313	
Travel Time (s)		13.1			16.8			6.1			8.5	
Confl. Peds. (#/hr)	39		18	18		39	39		12	12		39
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	0%	7%	3%	2%	0%	2%	3%	1%	2%	0%
Adj. Flow (vph)	36	251	47	405	287	134	42	213	575	173	154	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	334	0	405	421	0	42	213	575	0	348	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1		2	
Detector Template		Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (ft)		100		20	100		20	100	20		100	
Trailing Detector (ft)		0		0	0		0	0	0		0	
Detector 1 Position(ft)		0		0	0		0	0	0		0	
Detector 1 Size(ft)		6		20	6		20	6	20		6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



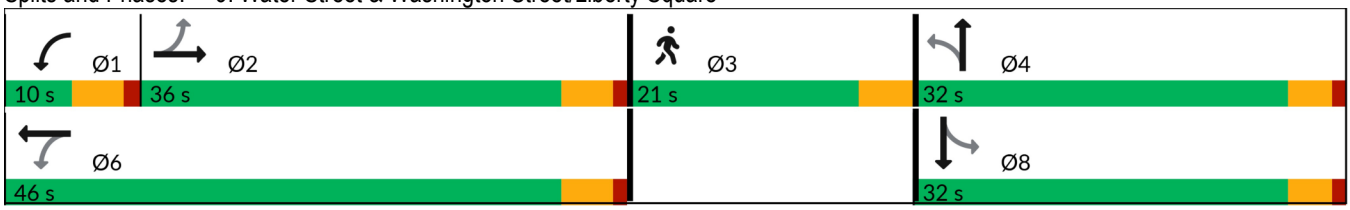
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	36.0	36.0		10.0	46.0		32.0	32.0		32.0	32.0	
Total Split (%)	36.4%	36.4%		10.1%	46.5%		32.3%	32.3%		32.3%	32.3%	
Maximum Green (s)	31.1	31.1		5.0	41.1		27.7	27.7		27.7	27.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		22.5		33.0	33.1		29.3	29.3	85.4		29.3	
Actuated g/C Ratio		0.26		0.39	0.39		0.34	0.34	1.00		0.34	
v/c Ratio		0.75		1.47	0.63		0.13	0.33	0.34		0.88	
Control Delay (s/veh)		41.1		255.5	26.4		28.3	28.3	0.5		57.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		41.1		255.5	26.4		28.3	28.3	0.5		57.3	
LOS		D		F	C		C	C	A		E	
Approach Delay (s/veh)		41.1			138.7			9.1			57.3	
Approach LOS		D			F			A			E	
90th %ile Green (s)	31.1	31.1		5.0	41.1		27.7	27.7		27.7	27.7	
90th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	28.0	28.0		5.0	38.0		27.7	27.7		27.7	27.7	
70th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	23.8	23.8		5.0	33.8		27.7	27.7		27.7	27.7	
50th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
30th %ile Green (s)	19.9	19.9		5.0	29.9		27.7	27.7		27.7	27.7	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
10th %ile Green (s)	11.6	11.6		5.0	21.6		27.7	27.7		27.7	27.7	
10th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
Queue Length 50th (ft)		189		~343	205		19	105	0		~235	
Queue Length 95th (ft)		289		#567	311		51	188	0		#447	
Internal Link Dist (ft)		399			537			145			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		646		275	871		336	639	1698		396	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.52		1.47	0.48		0.13	0.33	0.34		0.88	

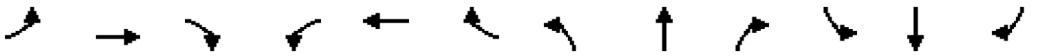
Intersection Summary			
Area Type:	Other		
Cycle Length: 99			
Actuated Cycle Length: 85.4			
Natural Cycle: 135			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.47			
Intersection Signal Delay (s/veh): 66.6		Intersection LOS: E	
Intersection Capacity Utilization 87.6%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 104			
70th %ile Actuated Cycle: 100.9			
50th %ile Actuated Cycle: 96.7			
30th %ile Actuated Cycle: 66.8			
10th %ile Actuated Cycle: 58.5			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



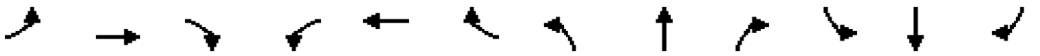
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	99	61	20	120	54	37	260	15	46	309	86
Future Volume (vph)	93	99	61	20	120	54	37	260	15	46	309	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.98			0.99			1.00	0.94
Frt		0.943			0.962			0.993				0.850
Flt Protected	0.950				0.995			0.994			0.994	
Satd. Flow (prot)	1620	1515	0	0	1722	0	0	1759	0	0	1797	1546
Flt Permitted	0.384				0.955			0.850			0.915	
Satd. Flow (perm)	646	1515	0	0	1644	0	0	1500	0	0	1647	1452
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	18		32	32		18	34		44	44		34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	14%	0%	5%	3%	24%	4%	0%	3%	6%	5%
Adj. Flow (vph)	103	110	68	22	133	60	41	289	17	51	343	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	178	0	0	215	0	0	347	0	0	394	96
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2			2	1
Detector Template	Left	Thru			Thru			Thru			Thru	Right
Leading Detector (ft)	20	100			100			100			100	20
Trailing Detector (ft)	0	0			0			0			0	0
Detector 1 Position(ft)	0	0			0			0			0	0
Detector 1 Size(ft)	20	6			6			6			6	20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



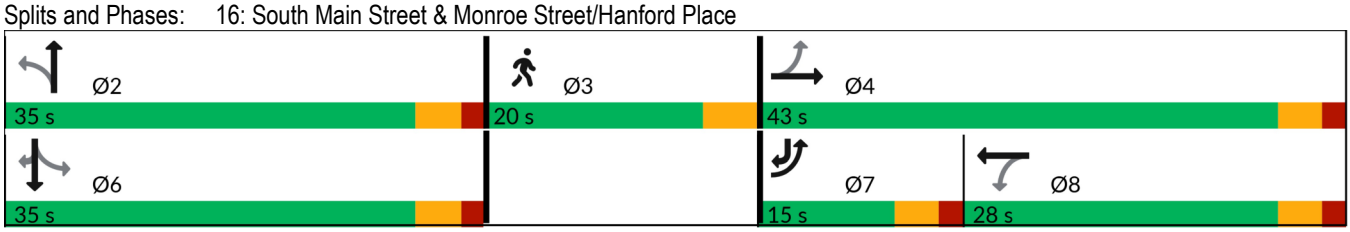
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	15.0	43.0		28.0	28.0		35.0	35.0		35.0	35.0	15.0
Total Split (%)	15.3%	43.9%		28.6%	28.6%		35.7%	35.7%		35.7%	35.7%	15.3%
Maximum Green (s)	10.1	38.1		23.1	23.1		30.1	30.1		30.1	30.1	10.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	28.6	28.6			17.8			29.3			29.3	40.9
Actuated g/C Ratio	0.35	0.35			0.22			0.36			0.36	0.50
v/c Ratio	0.28	0.33			0.60			0.64			0.66	0.13
Control Delay (s/veh)	22.9	23.8			41.4			34.4			34.3	9.5
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	22.9	23.8			41.4			34.4			34.3	9.5
LOS	C	C			D			C			C	A
Approach Delay (s/veh)		23.5			41.4			34.4			29.5	
Approach LOS		C			D			C			C	
90th %ile Green (s)	10.1	38.1		23.1	23.1		30.1	30.1		30.1	30.1	10.1
90th %ile Term Code	Max	Hold		Max	Max		Max	Max		Max	Max	Max
70th %ile Green (s)	10.1	35.8		20.8	20.8		30.1	30.1		30.1	30.1	10.1
70th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
50th %ile Green (s)	10.1	32.7		17.7	17.7		30.1	30.1		30.1	30.1	10.1
50th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Hold	Hold	Max
30th %ile Green (s)	10.0	29.6		14.7	14.7		30.1	30.1		30.1	30.1	10.0
30th %ile Term Code	Min	Hold		Gap	Gap		Max	Max		Hold	Hold	Min
10th %ile Green (s)	0.0	10.0		10.0	10.0		17.4	17.4		17.4	17.4	0.0
10th %ile Term Code	Skip	Min		Min	Min		Gap	Gap		Hold	Hold	Skip
Queue Length 50th (ft)	44	81			125			190			218	16
Queue Length 95th (ft)	82	136			203			#347			#390	36
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	368	817			542			645			708	748
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.28	0.22			0.40			0.54			0.56	0.13

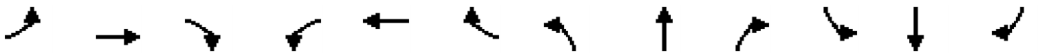
Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 81			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay (s/veh): 31.4		Intersection LOS: C	
Intersection Capacity Utilization 73.2%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 102			
70th %ile Actuated Cycle: 99.7			
50th %ile Actuated Cycle: 96.6			
30th %ile Actuated Cycle: 69.5			
10th %ile Actuated Cycle: 37.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



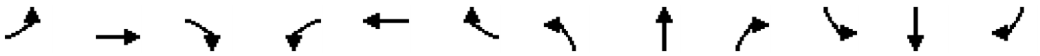
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	232	119	26	255	59	85	344	51	85	365	32
Future Volume (vph)	60	232	119	26	255	59	85	344	51	85	365	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.99			0.98		0.96	0.99	
Frt		0.949			0.977			0.986			0.988	
Flt Protected	0.950				0.996			0.991		0.950		
Satd. Flow (prot)	1676	1605	0	0	1779	0	0	1794	0	1660	1726	0
Flt Permitted	0.352				0.827			0.773		0.412		
Satd. Flow (perm)	617	1605	0	0	1475	0	0	1393	0	693	1726	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	10		25	25		10	47		75	75		47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	3%	10%	2%	0%	2%	3%	2%	1%	4%	3%
Adj. Flow (vph)	63	242	124	27	266	61	89	358	53	89	380	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	366	0	0	354	0	0	500	0	89	413	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2		1	2	
Detector Template	Left	Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100			100			100		20	100	
Trailing Detector (ft)	0	0			0			0		0	0	
Detector 1 Position(ft)	0	0			0			0		0	0	
Detector 1 Size(ft)	20	6			6			6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



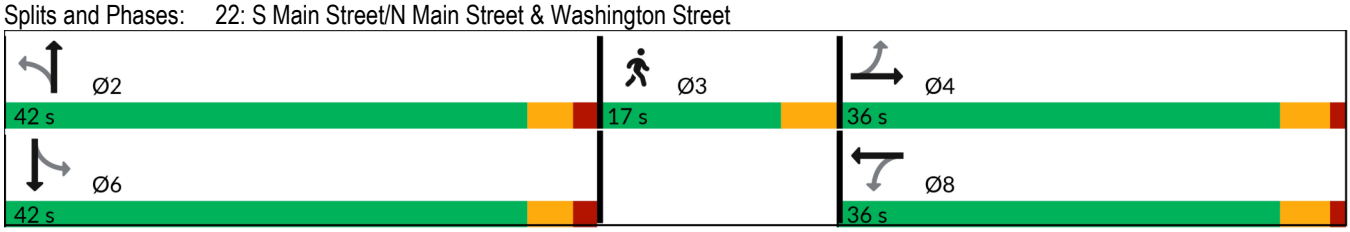
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	36.0	36.0		36.0	36.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.9%	37.9%		37.9%	37.9%		44.2%	44.2%		44.2%	44.2%	
Maximum Green (s)	31.4	31.4		31.4	31.4		37.0	37.0		37.0	37.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	23.7	23.7			23.7			38.8		38.8	38.8	
Actuated g/C Ratio	0.28	0.28			0.28			0.47		0.47	0.47	
v/c Ratio	0.36	0.80			0.84			0.77		0.28	0.51	
Control Delay (s/veh)	32.5	43.1			48.5			34.5		23.3	23.3	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	32.5	43.1			48.5			34.5		23.3	23.3	
LOS	C	D			D			C		C	C	
Approach Delay (s/veh)		41.5			48.5			34.5			23.3	
Approach LOS		D			D			C			C	
90th %ile Green (s)	31.4	31.4		31.4	31.4		37.0	37.0		37.0	37.0	
90th %ile Term Code	Max	Max		Max	Max		Max	Max		Max	Max	
70th %ile Green (s)	31.4	31.4		31.4	31.4		37.0	37.0		37.0	37.0	
70th %ile Term Code	Max	Max		Hold	Hold		Max	Max		Hold	Hold	
50th %ile Green (s)	26.2	26.2		26.2	26.2		37.0	37.0		37.0	37.0	
50th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
30th %ile Green (s)	16.9	16.9		16.9	16.9		37.0	37.0		37.0	37.0	
30th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		37.0	37.0		37.0	37.0	
10th %ile Term Code	Min	Min		Min	Min		Max	Max		Hold	Hold	
Queue Length 50th (ft)	30	203			199			276		36	191	
Queue Length 95th (ft)	69	311			#334			#515		84	318	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	243	633			581			647		322	802	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	18%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.26	0.58			0.61			0.77		0.28	0.51	

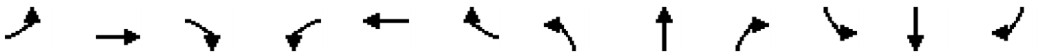
Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 83.4			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 35.8		Intersection LOS: D	
Intersection Capacity Utilization 99.3%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 99			
70th %ile Actuated Cycle: 99			
50th %ile Actuated Cycle: 93.8			
30th %ile Actuated Cycle: 63.5			
10th %ile Actuated Cycle: 61.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



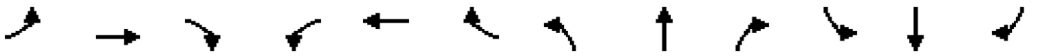
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	291	0	24	2	618	337	12	502	15
Future Volume (vph)	0	0	0	291	0	24	2	618	337	12	502	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.99	0.99			0.99			1.00	
Frt					0.977			0.947			0.996	
Flt Protected				0.950	0.959						0.999	
Satd. Flow (prot)	0	0	0	1609	1570	0	0	3315	0	0	3339	0
Flt Permitted				0.950	0.959			0.954			0.927	
Satd. Flow (perm)	0	0	0	1595	1558	0	0	3162	0	0	3098	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					98						4	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)	3		9	9		3	8		7	7		8
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	3%	0%	9%	0%	3%	0%	8%	5%	0%
Adj. Flow (vph)	0	0	0	297	0	24	2	631	344	12	512	15
Shared Lane Traffic (%)				45%								
Lane Group Flow (vph)	0	0	0	163	158	0	0	977	0	0	539	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2			2			2	
Detector Template		Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)		100		20	100			100			100	
Trailing Detector (ft)		0		0	0			0			0	
Detector 1 Position(ft)				0	0			0			0	
Detector 1 Size(ft)				20	6			6			6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0			0.0	
Detector 1 Queue (s)				0.0	0.0			0.0			0.0	
Detector 1 Delay (s)				0.0	0.0			0.0			0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



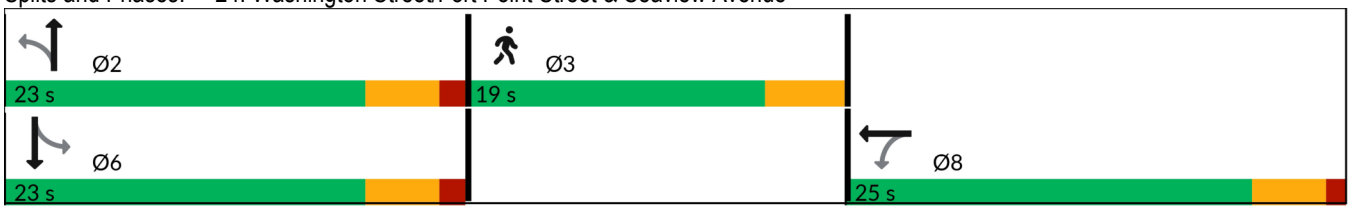
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA		Perm	NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8			2			6		
Detector Phase				8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7		20.0	20.0		20.0	20.0	
Total Split (s)				25.0	25.0		23.0	23.0		23.0	23.0	
Total Split (%)				37.3%	37.3%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)				20.3	20.3		18.0	18.0		18.0	18.0	
Yellow Time (s)				3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode				None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				11.4	11.4			21.4			21.4	
Actuated g/C Ratio				0.21	0.21			0.39			0.39	
v/c Ratio				0.49	0.39			0.79			0.44	
Control Delay (s/veh)				26.5	12.8			28.6			18.3	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				26.5	12.8			28.6			18.3	
LOS				C	B			C			B	
Approach Delay (s/veh)					19.8			28.6			18.3	
Approach LOS					B			C			B	
90th %ile Green (s)				17.9	17.9		18.0	18.0		18.0	18.0	
90th %ile Term Code				Gap	Gap		Max	Max		Max	Max	
70th %ile Green (s)				13.6	13.6		18.0	18.0		18.0	18.0	
70th %ile Term Code				Gap	Gap		Max	Max		Max	Max	
50th %ile Green (s)				11.5	11.5		18.0	18.0		18.0	18.0	
50th %ile Term Code				Gap	Gap		Max	Max		Max	Max	
30th %ile Green (s)				7.8	7.8		18.0	18.0		18.0	18.0	
30th %ile Term Code				Gap	Gap		Max	Max		Hold	Hold	
10th %ile Green (s)				7.0	7.0		26.6	26.6		26.6	26.6	
10th %ile Term Code				Min	Min		Dwell	Dwell		Dwell	Dwell	
Queue Length 50th (ft)				58	20			~221			90	
Queue Length 95th (ft)				112	66			#377			156	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				631	675			1235			1212	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	28%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.26	0.23			0.79			0.44	

Intersection Summary			
Area Type:	Other		
Cycle Length: 67			
Actuated Cycle Length: 54.8			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 24.0		Intersection LOS: C	
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 68.6			
70th %ile Actuated Cycle: 64.3			
50th %ile Actuated Cycle: 62.2			
30th %ile Actuated Cycle: 35.5			
10th %ile Actuated Cycle: 43.3			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	72	555	0	0	515
Future Vol, veh/h	30	72	555	0	0	515
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	78	603	0	0	560

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1163	603	0	0	603	0
Stage 1	603	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	215	499	-	-	974	-
Stage 1	546	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	215	499	-	-	974	-
Mov Cap-2 Maneuver	215	-	-	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	572	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	19.42	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	359	974	-
HCM Lane V/C Ratio	-	-	0.308	-	-
HCM Ctrl Dly (s/v)	-	-	19.4	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	0	29	0	0	0	0	756	0	0	520	0
Future Vol, veh/h	84	0	29	0	0	0	0	756	0	0	520	0
Conflicting Peds, #/hr	0	0	0	0	0	0	45	0	20	20	0	45
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	0	0	0	0	3	0	0	6	0
Mvmt Flow	87	0	30	0	0	0	0	779	0	0	536	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1315	-	536	1335	1335	799	-	0	0	799	0	0
Stage 1	536	-	-	799	799	-	-	-	-	-	-	-
Stage 2	779	-	-	536	536	-	-	-	-	-	-	-
Critical Hdwy	7.31	-	6.3	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.31	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.31	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	-	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	126	0	540	132	155	388	0	-	-	832	-	0
Stage 1	515	0	-	382	400	-	0	-	-	-	-	0
Stage 2	374	0	-	532	527	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	126	-	540	122	152	381	-	-	-	816	-	-
Mov Cap-2 Maneuver	126	-	-	122	152	-	-	-	-	-	-	-
Stage 1	515	-	-	375	393	-	-	-	-	-	-	-
Stage 2	374	-	-	503	527	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	63.09	0	0	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	126	540	-	816	-
HCM Lane V/C Ratio	-	-	0.688	0.055	-	-	-
HCM Ctrl Dly (s/v)	-	-	80.7	12.1	0	0	-
HCM Lane LOS	-	-	F	B	A	A	-
HCM 95th %tile Q(veh)	-	-	3.7	0.2	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	11	33	808	1	2	528	66
Future Vol, veh/h	0	0	0	1	0	11	33	808	1	2	528	66
Conflicting Peds, #/hr	0	0	5	5	0	0	49	0	22	22	0	49
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	5	5
Mvmt Flow	0	0	0	1	0	11	33	816	1	2	533	67

Major/Minor	Minor1		Major1				Major2		
Conflicting Flow All	1448	1558	839	649	0	0	839	0	0
Stage 1	905	905	-	-	-	-	-	-	-
Stage 2	542	653	-	-	-	-	-	-	-
Critical Hdwy	6	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	172	135	386	947	-	-	804	-	-
Stage 1	440	396	-	-	-	-	-	-	-
Stage 2	623	502	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	157	0	381	947	-	-	793	-	-
Mov Cap-2 Maneuver	157	0	-	-	-	-	-	-	-
Stage 1	406	0	-	-	-	-	-	-	-
Stage 2	618	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	15.96	0.35	0.03
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	71	-	-	341	793	-	-
HCM Lane V/C Ratio	0.035	-	-	0.036	0.003	-	-
HCM Ctrl Dly (s/v)	8.9	0	-	16	9.6	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	-	-

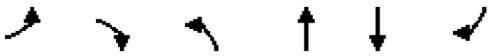
Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	580	8	61	350
Future Vol, veh/h	0	0	580	8	61	350
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	630	9	66	380

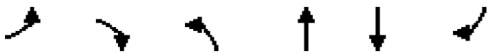
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1148	635	0	0	639	0
Stage 1	635	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	220	479	-	-	945	-
Stage 1	528	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	200	479	-	-	945	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	1.35
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	267	-
HCM Lane V/C Ratio	-	-	-	0.07	-
HCM Ctrl Dly (s/v)	-	-	0	9.1	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.2	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	120	29	16	379	397	152	
Future Volume (vph)	120	29	16	379	397	152	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Grade (%)	0%			-1%	-1%		
Storage Length (ft)	150	150	150			150	
Storage Lanes	0	0	0			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.98			1.00	0.99		
Frt	0.973				0.963		
Flt Protected	0.961			0.998			
Satd. Flow (prot)	1685	0	0	1704	1630	0	
Flt Permitted	0.961			0.973			
Satd. Flow (perm)	1659	0	0	1661	1630	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	16				30		
Link Speed (mph)	25			25	25		
Link Distance (ft)	354			138	104		
Travel Time (s)	9.7			3.8	2.8		
Confl. Peds. (#/hr)	12	2	16			16	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	1%	21%	13%	4%	5%	2%	
Adj. Flow (vph)	126	31	17	399	418	160	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	157	0	0	416	578	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1			2	2		
Detector Template	Left			Thru	Thru		
Leading Detector (ft)	20			100	100		
Trailing Detector (ft)	0			0	0		
Detector 1 Position(ft)	0			0	0		
Detector 1 Size(ft)	20			6	6		
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0			0.0	0.0		
Detector 1 Queue (s)	0.0			0.0	0.0		
Detector 1 Delay (s)	0.0			0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		

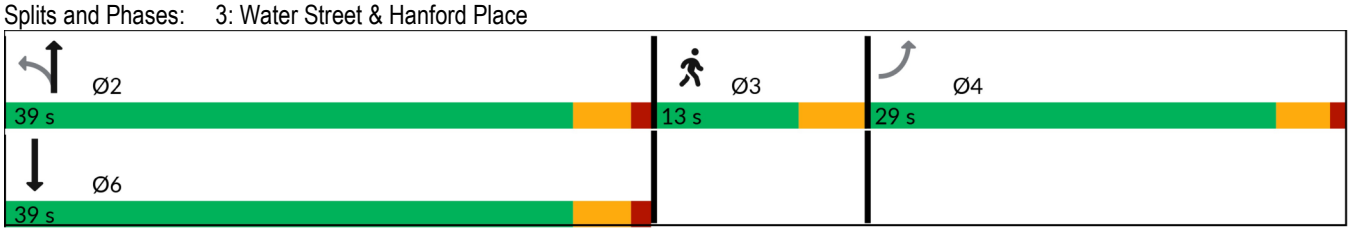


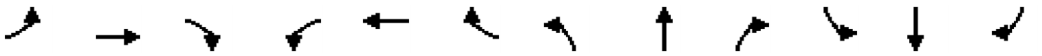
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Perm		Perm	NA	NA		
Protected Phases				2	6		3
Permitted Phases	4		2				
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	7.0		15.0	15.0	15.0		9.0
Minimum Split (s)	11.2		19.6	19.6	19.6		17.0
Total Split (s)	29.0		39.0	39.0	39.0		13.0
Total Split (%)	35.8%		48.1%	48.1%	48.1%		16%
Maximum Green (s)	24.8		34.4	34.4	34.4		9.0
Yellow Time (s)	3.2		3.5	3.5	3.5		4.0
All-Red Time (s)	1.0		1.1	1.1	1.1		0.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.2			4.6	4.6		
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Don't Walk (s)							6.0
Pedestrian Calls (#/hr)							42
Act Effct Green (s)	11.4			32.8	32.8		
Actuated g/C Ratio	0.20			0.57	0.57		
v/c Ratio	0.46			0.44	0.61		
Control Delay (s/veh)	27.0			14.3	17.3		
Queue Delay	0.0			0.0	0.0		
Total Delay (s/veh)	27.0			14.3	17.3		
LOS	C			B	B		
Approach Delay (s/veh)	27.0			14.3	17.3		
Approach LOS	C			B	B		
90th %ile Green (s)	16.6		34.4	34.4	34.4		13.0
90th %ile Term Code	Gap		Hold	Hold	Max		Ped
70th %ile Green (s)	13.4		34.4	34.4	34.4		13.0
70th %ile Term Code	Gap		Hold	Hold	Max		Ped
50th %ile Green (s)	11.3		28.3	28.3	28.3		13.0
50th %ile Term Code	Gap		Hold	Hold	Gap		Ped
30th %ile Green (s)	8.0		18.3	18.3	18.3		0.0
30th %ile Term Code	Gap		Dwell	Dwell	Dwell		Skip
10th %ile Green (s)	0.0		30.0	30.0	30.0		0.0
10th %ile Term Code	Skip		Dwell	Dwell	Dwell		Skip
Queue Length 50th (ft)	51			120	182		
Queue Length 95th (ft)	113			226	#365		
Internal Link Dist (ft)	274			58	24		
Turn Bay Length (ft)	150						
Base Capacity (vph)	825			1134	1122		
Starvation Cap Reductn	0			0	0		
Spillback Cap Reductn	0			0	0		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Storage Cap Reductn	0			0	0		
Reduced v/c Ratio	0.19			0.37	0.52		

Intersection Summary			
Area Type:	Other		
Cycle Length: 81			
Actuated Cycle Length: 57.1			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 17.5		Intersection LOS: B	
Intersection Capacity Utilization 48.7%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 76.8			
70th %ile Actuated Cycle: 73.6			
50th %ile Actuated Cycle: 65.4			
30th %ile Actuated Cycle: 35.1			
10th %ile Actuated Cycle: 34.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

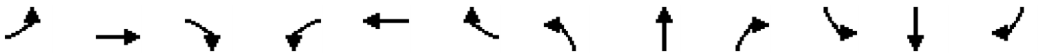
Splits and Phases: 3: Water Street & Hanford Place





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	244	71	382	238	158	57	182	425	134	138	41
Future Volume (vph)	41	244	71	382	238	158	57	182	425	134	138	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99	0.97		0.94		0.99		0.98	
Frt		0.973			0.940				0.850		0.982	
Flt Protected		0.994		0.950			0.950				0.979	
Satd. Flow (prot)	0	1804	0	1695	1682	0	1703	1881	1708	0	1713	0
Flt Permitted		0.907		0.264			0.486				0.657	
Satd. Flow (perm)	0	1636	0	467	1682	0	819	1881	1686	0	1148	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		13			48				415			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			234			313	
Travel Time (s)		13.1			16.8			6.4			8.5	
Confl. Peds. (#/hr)	48		15	15		48	65		3	3		65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	4%	1%	0%	6%	1%	4%	0%	1%	3%
Adj. Flow (vph)	43	254	74	398	248	165	59	190	443	140	144	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	371	0	398	413	0	59	190	443	0	327	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1		2	
Detector Template		Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (ft)		100		20	100		20	100	20		100	
Trailing Detector (ft)		0		0	0		0	0	0		0	
Detector 1 Position(ft)		0		0	0		0	0	0		0	
Detector 1 Size(ft)		6		20	6		20	6	20		6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



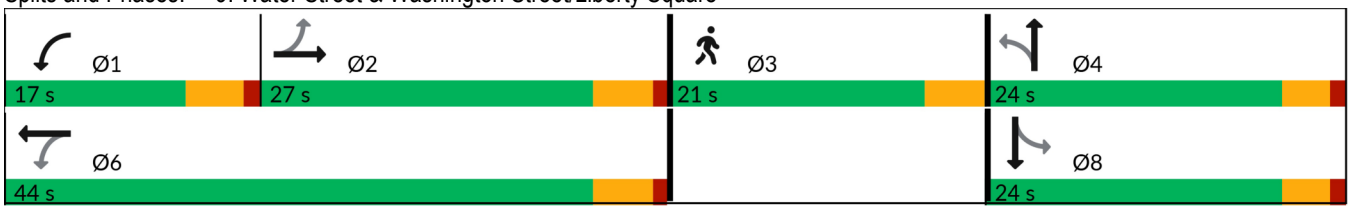
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	27.0	27.0		17.0	44.0		24.0	24.0		24.0	24.0	
Total Split (%)	30.3%	30.3%		19.1%	49.4%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.3		37.9	38.0		20.5	20.5	81.6		20.5	
Actuated g/C Ratio		0.25		0.46	0.47		0.25	0.25	1.00		0.25	
v/c Ratio		0.89		0.99	0.51		0.29	0.40	0.26		1.14	
Control Delay (s/veh)		56.4		66.2	18.6		35.1	32.8	0.4		129.6	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		56.4		66.2	18.6		35.1	32.8	0.4		129.6	
LOS		E		E	B		D	C	A		F	
Approach Delay (s/veh)		56.4			42.0			12.2			129.6	
Approach LOS		E			D			B			F	
90th %ile Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
90th %ile Term Code	Max	Max		Max	Hold		Max	Max		Max	Max	
70th %ile Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
70th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	22.1	22.1		12.0	39.1		19.7	19.7		19.7	19.7	
50th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
30th %ile Green (s)	19.1	19.1		12.0	36.1		19.7	19.7		19.7	19.7	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
10th %ile Green (s)	15.0	15.0		12.0	32.0		19.7	19.7		19.7	19.7	
10th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
Queue Length 50th (ft)		211		~191	162		30	100	0		~259	
Queue Length 95th (ft)		#388		#375	257		69	167	0		#425	
Internal Link Dist (ft)		399			537			154			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		469		404	862		205	472	1686		288	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	24%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.79		0.99	0.48		0.29	0.40	0.26		1.14	

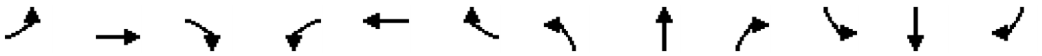
Intersection Summary			
Area Type:	Other		
Cycle Length: 89			
Actuated Cycle Length: 81.6			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay (s/veh): 48.1		Intersection LOS: D	
Intersection Capacity Utilization 86.1%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 94			
70th %ile Actuated Cycle: 94			
50th %ile Actuated Cycle: 94			
30th %ile Actuated Cycle: 65			
10th %ile Actuated Cycle: 60.9			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



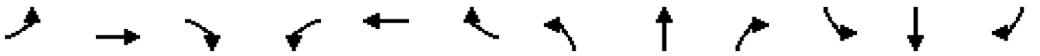
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	89	51	13	94	48	35	214	14	37	247	73
Future Volume (vph)	77	89	51	13	94	48	35	214	14	37	247	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-1%	
Storage Length (ft)	85		150	150		150	150		150	150		100
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99			0.99			0.99			0.99	0.94
Frt		0.945			0.958			0.993				0.850
Flt Protected	0.950				0.996			0.993			0.994	
Satd. Flow (prot)	1652	1615	0	0	1768	0	0	1740	0	0	1819	1591
Flt Permitted	0.361				0.961			0.924			0.927	
Satd. Flow (perm)	622	1615	0	0	1703	0	0	1614	0	0	1686	1501
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		354			318			363			273	
Travel Time (s)		9.7			8.7			9.9			7.4	
Confl. Peds. (#/hr)	11		17	17		11	25		46	46		25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	1%	1%	2%	0%	4%	8%	0%	0%	5%	2%
Adj. Flow (vph)	86	99	57	14	104	53	39	238	16	41	274	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	156	0	0	171	0	0	293	0	0	315	81
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2			2	1
Detector Template	Left	Thru			Thru			Thru			Thru	Right
Leading Detector (ft)	20	100			100			100			100	20
Trailing Detector (ft)	0	0			0			0			0	0
Detector 1 Position(ft)	0	0			0			0			0	0
Detector 1 Size(ft)	20	6			6			6			6	20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



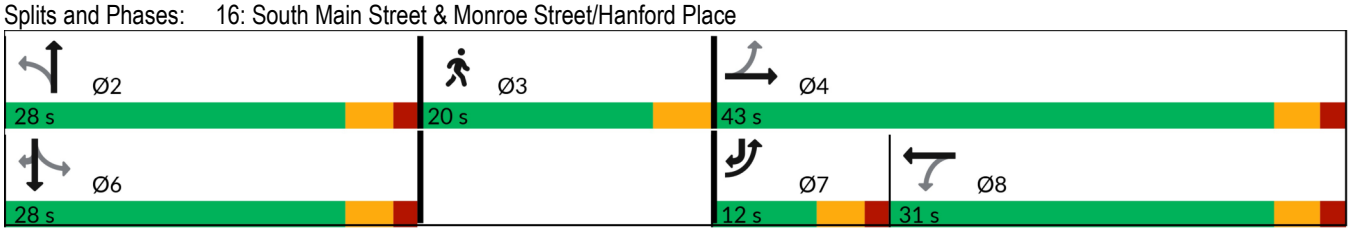
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	10.0
Minimum Split (s)	14.9	14.9		14.9	14.9		19.9	19.9		19.9	19.9	14.9
Total Split (s)	12.0	43.0		31.0	31.0		28.0	28.0		28.0	28.0	12.0
Total Split (%)	13.2%	47.3%		34.1%	34.1%		30.8%	30.8%		30.8%	30.8%	13.2%
Maximum Green (s)	7.1	38.1		26.1	26.1		23.1	23.1		23.1	23.1	7.1
Yellow Time (s)	3.2	3.2		3.2	3.2		3.3	3.3		3.3	3.3	3.2
All-Red Time (s)	1.7	1.7		1.7	1.7		1.6	1.6		1.6	1.6	1.7
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.9	4.9			4.9			4.9			4.9	4.9
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	23.2	25.0			16.4			28.1			28.1	30.1
Actuated g/C Ratio	0.36	0.39			0.25			0.43			0.43	0.46
v/c Ratio	0.23	0.25			0.40			0.42			0.43	0.11
Control Delay (s/veh)	20.6	20.8			32.3			26.9			26.9	9.5
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay (s/veh)	20.6	20.8			32.3			26.9			26.9	9.5
LOS	C	C			C			C			C	A
Approach Delay (s/veh)		20.7			32.3			26.9			23.4	
Approach LOS		C			C			C			C	
90th %ile Green (s)	7.1	31.1		19.1	19.1		23.1	23.1		23.1	23.1	7.1
90th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
70th %ile Green (s)	7.1	27.6		15.6	15.6		23.1	23.1		23.1	23.1	7.1
70th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Max	Max	Max
50th %ile Green (s)	7.1	25.3		13.3	13.3		23.1	23.1		23.1	23.1	7.1
50th %ile Term Code	Max	Hold		Gap	Gap		Max	Max		Hold	Hold	Max
30th %ile Green (s)	7.1	22.0		10.0	10.0		17.3	17.3		17.3	17.3	7.1
30th %ile Term Code	Max	Hold		Min	Min		Gap	Gap		Hold	Hold	Max
10th %ile Green (s)	0.0	0.0		0.0	0.0		15.3	15.3		15.3	15.3	0.0
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell		Dwell	Dwell	Skip
Queue Length 50th (ft)	32	61			83			132			143	14
Queue Length 95th (ft)	65	109			145			#239			#260	28
Internal Link Dist (ft)		274			238			283			193	
Turn Bay Length (ft)	85											100
Base Capacity (vph)	376	1009			836			738			771	710
Starvation Cap Reductn	0	0			0			0			0	0
Spillback Cap Reductn	0	0			0			0			0	0

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	16.0
Minimum Split (s)	24.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	20.0
90th %ile Term Code	Ped
70th %ile Green (s)	20.0
70th %ile Term Code	Ped
50th %ile Green (s)	20.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0			0	0
Reduced v/c Ratio	0.23	0.15			0.20			0.40			0.41	0.11

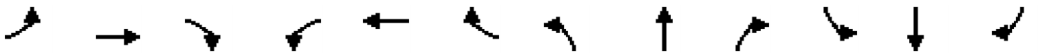
Intersection Summary			
Area Type:	Other		
Cycle Length: 91			
Actuated Cycle Length: 64.8			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay (s/veh): 25.1		Intersection LOS: C	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 88			
70th %ile Actuated Cycle: 84.5			
50th %ile Actuated Cycle: 82.2			
30th %ile Actuated Cycle: 49.1			
10th %ile Actuated Cycle: 20.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 16: South Main Street & Monroe Street/Hanford Place



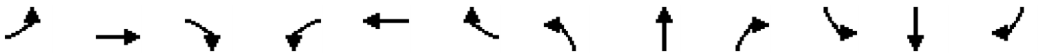
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	243	121	27	224	78	88	268	41	91	291	52
Future Volume (vph)	49	243	121	27	224	78	88	268	41	91	291	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99			0.98			0.99		0.98	0.99	
Frt		0.950			0.968			0.986			0.977	
Flt Protected	0.950				0.996			0.989		0.950		
Satd. Flow (prot)	1643	1629	0	0	1745	0	0	1798	0	1676	1744	0
Flt Permitted	0.414				0.908			0.739		0.445		
Satd. Flow (perm)	698	1629	0	0	1590	0	0	1334	0	767	1744	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	31		10	10		31	48		40	40		48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	1%	3%	9%	1%	3%	0%	3%	8%	0%	1%	2%
Adj. Flow (vph)	52	256	127	28	236	82	93	282	43	96	306	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	383	0	0	346	0	0	418	0	96	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2		1	2	
Detector Template	Left	Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100			100			100		20	100	
Trailing Detector (ft)	0	0			0			0		0	0	
Detector 1 Position(ft)	0	0			0			0		0	0	
Detector 1 Size(ft)	20	6			6			6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



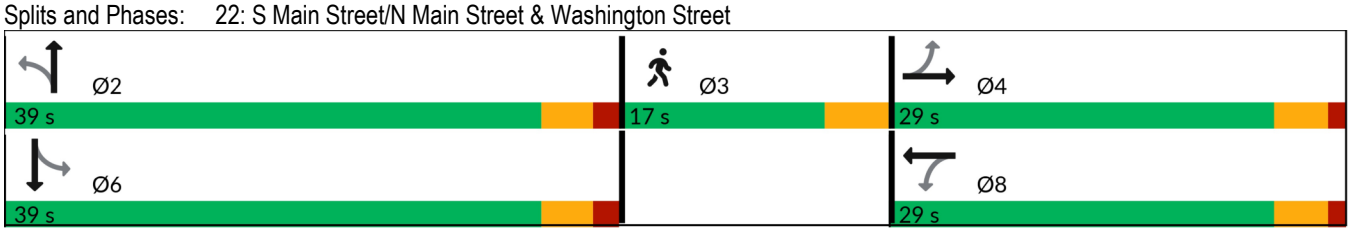
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	29.0	29.0		29.0	29.0		39.0	39.0		39.0	39.0	
Total Split (%)	34.1%	34.1%		34.1%	34.1%		45.9%	45.9%		45.9%	45.9%	
Maximum Green (s)	24.4	24.4		24.4	24.4		34.0	34.0		34.0	34.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	22.3	22.3			22.3			27.5		27.5	27.5	
Actuated g/C Ratio	0.32	0.32			0.32			0.39		0.39	0.39	
v/c Ratio	0.24	0.75			0.69			0.81		0.32	0.53	
Control Delay (s/veh)	28.0	37.6			35.1			36.2		22.3	22.5	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	28.0	37.6			35.1			36.2		22.3	22.5	
LOS	C	D			D			D		C	C	
Approach Delay (s/veh)		36.5			35.1			36.2			22.5	
Approach LOS		D			D			D			C	
90th %ile Green (s)	24.4	24.4		24.4	24.4		34.0	34.0		34.0	34.0	
90th %ile Term Code	Max	Max		Max	Max		Max	Max		Hold	Hold	
70th %ile Green (s)	24.4	24.4		24.4	24.4		34.0	34.0		34.0	34.0	
70th %ile Term Code	Max	Max		Max	Max		Max	Max		Hold	Hold	
50th %ile Green (s)	24.4	24.4		24.4	24.4		33.9	33.9		33.9	33.9	
50th %ile Term Code	Max	Max		Max	Max		Gap	Gap		Hold	Hold	
30th %ile Green (s)	17.6	17.6		17.6	17.6		19.8	19.8		19.8	19.8	
30th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
10th %ile Term Code	Min	Min		Min	Min		Min	Min		Min	Min	
Queue Length 50th (ft)	23	204			180			207		37	155	
Queue Length 95th (ft)	55	#361			#318			#371		80	241	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	273	637			622			728		418	951	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	20%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.19	0.60			0.56			0.57		0.23	0.38	

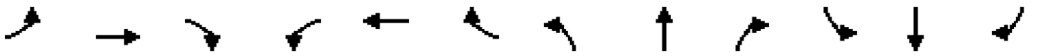
Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 70.7			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 32.3		Intersection LOS: C	
Intersection Capacity Utilization 93.4%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 89			
70th %ile Actuated Cycle: 89			
50th %ile Actuated Cycle: 88.9			
30th %ile Actuated Cycle: 47			
10th %ile Actuated Cycle: 39.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



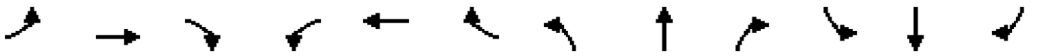
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	240	0	18	0	483	279	12	497	13
Future Volume (vph)	0	0	0	240	0	18	0	483	279	12	497	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	12	11	11	11
Grade (%)		0%			0%			0%			-2%	
Storage Length (ft)	0		0	150		150	150		150	150		150
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.99	0.99			0.99			1.00	
Frt					0.979			0.945			0.996	
Flt Protected				0.950	0.959						0.999	
Satd. Flow (prot)	0	0	0	1641	1619	0	0	3274	0	0	3398	0
Flt Permitted				0.950	0.959						0.932	
Satd. Flow (perm)	0	0	0	1622	1603	0	0	3274	0	0	3170	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					98						4	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		127			747			604			451	
Travel Time (s)		3.5			20.4			16.5			12.3	
Confl. Peds. (#/hr)	10		11	11		10	19		12	12		19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	3%	2%	0%	3%	8%
Adj. Flow (vph)	0	0	0	255	0	19	0	514	297	13	529	14
Shared Lane Traffic (%)				46%								
Lane Group Flow (vph)	0	0	0	138	136	0	0	811	0	0	556	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2			2			2	
Detector Template		Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)		100		20	100			100			100	
Trailing Detector (ft)		0		0	0			0			0	
Detector 1 Position(ft)				0	0			0			0	
Detector 1 Size(ft)				20	6			6			6	
Detector 1 Type				Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0			0.0			0.0	
Detector 1 Queue (s)				0.0	0.0			0.0			0.0	
Detector 1 Delay (s)				0.0	0.0			0.0			0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



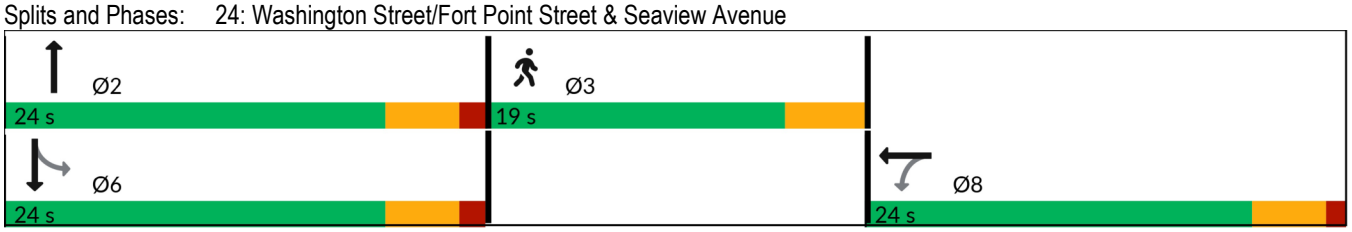
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA			NA		Perm	NA	
Protected Phases					8			2			6	
Permitted Phases				8						6		
Detector Phase				8	8			2		6	6	
Switch Phase												
Minimum Initial (s)				7.0	7.0			15.0		15.0	15.0	
Minimum Split (s)				11.7	11.7			20.0		20.0	20.0	
Total Split (s)				24.0	24.0			24.0		24.0	24.0	
Total Split (%)				35.8%	35.8%			35.8%		35.8%	35.8%	
Maximum Green (s)				19.3	19.3			19.0		19.0	19.0	
Yellow Time (s)				3.7	3.7			3.7		3.7	3.7	
All-Red Time (s)				1.0	1.0			1.3		1.3	1.3	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				4.7	4.7			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0			3.0		3.0	3.0	
Recall Mode				None	None			Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)				10.7	10.7			24.5			24.5	
Actuated g/C Ratio				0.20	0.20			0.47			0.47	
v/c Ratio				0.41	0.33			0.53			0.37	
Control Delay (s/veh)				25.5	11.4			19.6			16.7	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay (s/veh)				25.5	11.4			19.6			16.7	
LOS				C	B			B			B	
Approach Delay (s/veh)					18.5			19.6			16.7	
Approach LOS					B			B			B	
90th %ile Green (s)				16.2	16.2			19.0		19.0	19.0	
90th %ile Term Code				Gap	Gap			Max		Max	Max	
70th %ile Green (s)				12.3	12.3			19.0		19.0	19.0	
70th %ile Term Code				Gap	Gap			Max		Max	Max	
50th %ile Green (s)				10.5	10.5			19.0		19.0	19.0	
50th %ile Term Code				Gap	Gap			Max		Hold	Hold	
30th %ile Green (s)				7.3	7.3			15.0		15.0	15.0	
30th %ile Term Code				Gap	Gap			Min		Min	Min	
10th %ile Green (s)				0.0	0.0			30.0		30.0	30.0	
10th %ile Term Code				Skip	Skip			Dwell		Dwell	Dwell	
Queue Length 50th (ft)				50	12			146			91	
Queue Length 95th (ft)				98	55			#270			154	
Internal Link Dist (ft)		47			667			524			371	
Turn Bay Length (ft)				150								
Base Capacity (vph)				665	714			1621			1571	
Starvation Cap Reductn				0	0			0			0	
Spillback Cap Reductn				0	0			0			0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	23.0
Total Split (s)	19.0
Total Split (%)	28%
Maximum Green (s)	15.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	12.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	19.0
90th %ile Term Code	Ped
70th %ile Green (s)	19.0
70th %ile Term Code	Ped
50th %ile Green (s)	19.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn				0	0			0			0	
Reduced v/c Ratio				0.21	0.19			0.50			0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 67			
Actuated Cycle Length: 52.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay (s/veh): 18.5		Intersection LOS: B	
Intersection Capacity Utilization 44.8%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 67.9			
70th %ile Actuated Cycle: 64			
50th %ile Actuated Cycle: 62.2			
30th %ile Actuated Cycle: 32			
10th %ile Actuated Cycle: 35			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 24: Washington Street/Fort Point Street & Seaview Avenue



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	30	379	0	0	520
Future Vol, veh/h	13	30	379	0	0	520
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	33	412	0	0	565

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	977	412	0	0	412	0
Stage 1	412	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	278	640	-	-	1147	-
Stage 1	669	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	278	640	-	-	1147	-
Mov Cap-2 Maneuver	278	-	-	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	569	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	13.72	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	459	1147	-
HCM Lane V/C Ratio	-	-	0.102	-	-
HCM Ctrl Dly (s/v)	-	-	13.7	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	88	0	39	1	0	1	0	578	0	0	534	1
Future Vol, veh/h	88	0	39	1	0	1	0	578	0	0	534	1
Conflicting Peds, #/hr	1	0	0	0	0	1	32	0	13	13	0	32
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	-1	-	-	-1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	0	5	100	0	100	0	3	0	0	3	0
Mvmt Flow	91	0	40	1	0	1	0	596	0	0	551	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1180	-	583	1159	1192	610	-	0	0	609	0	0
Stage 1	583	-	-	609	609	-	-	-	-	-	-	-
Stage 2	597	-	-	551	584	-	-	-	-	-	-	-
Critical Hdwy	7.31	-	6.35	8.1	6.5	7.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.31	-	-	7.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.31	-	-	7.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	-	3.345	4.4	4	4.2	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	157	0	498	113	189	354	0	-	-	980	-	-
Stage 1	484	0	-	349	489	-	0	-	-	-	-	-
Stage 2	475	0	-	380	501	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	153	-	486	102	182	349	-	-	-	967	-	-
Mov Cap-2 Maneuver	153	-	-	102	182	-	-	-	-	-	-	-
Stage 1	472	-	-	345	482	-	-	-	-	-	-	-
Stage 2	474	-	-	348	489	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	44.39	28.09	0	0
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	153	486	158	967	-	-
HCM Lane V/C Ratio	-	-	0.594	0.083	0.013	-	-	-
HCM Ctrl Dly (s/v)	-	-	58.3	13.1	28.1	0	-	-
HCM Lane LOS	-	-	F	B	D	A	-	-
HCM 95th %tile Q(veh)	-	-	3.1	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	2	20	23	644	4	10	524	56
Future Vol, veh/h	0	0	0	6	2	20	23	644	4	10	524	56
Conflicting Peds, #/hr	10	0	16	16	0	10	29	0	25	25	0	29
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	3	0
Mvmt Flow	0	0	0	6	2	21	24	664	4	10	540	58

Major/Minor	Minor1		Major1				Major2		
Conflicting Flow All	1315	1386	701	627	0	0	693	0	0
Stage 1	738	738	-	-	-	-	-	-	-
Stage 2	577	648	-	-	-	-	-	-	-
Critical Hdwy	6	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	204	169	460	965	-	-	912	-	-
Stage 1	517	463	-	-	-	-	-	-	-
Stage 2	603	504	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	187	0	448	965	-	-	897	-	-
Mov Cap-2 Maneuver	187	0	-	-	-	-	-	-	-
Stage 1	489	0	-	-	-	-	-	-	-
Stage 2	584	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	16.62	0.3	0.15
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	62	-	-	339	897	-	-
HCM Lane V/C Ratio	0.025	-	-	0.085	0.011	-	-
HCM Ctrl Dly (s/v)	8.8	0	-	16.6	9.1	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	-	-

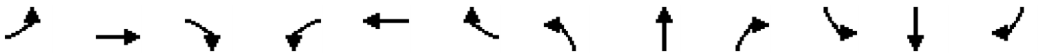
Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	398	7	50	362
Future Vol, veh/h	0	0	398	7	50	362
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	433	8	54	393

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	939	436	0	0	440	0
Stage 1	436	-	-	-	-	-
Stage 2	502	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	293	620	-	-	1120	-
Stage 1	652	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	275	620	-	-	1120	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	570	-	-	-	-	-

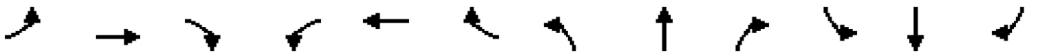
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	1.02
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	218	-
HCM Lane V/C Ratio	-	-	-	0.049	-
HCM Ctrl Dly (s/v)	-	-	0	8.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	155	35	506	343	171	26	151	371	64	124	9
Future Volume (vph)	13	155	35	506	343	171	26	151	371	64	124	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00	0.99		0.98		0.99		0.99	
Frt		0.977			0.950				0.850		0.994	
Flt Protected		0.997		0.950			0.950				0.984	
Satd. Flow (prot)	0	1673	0	1560	1632	0	1671	1810	1506	0	1754	0
Flt Permitted		0.947		0.344			0.503				0.771	
Satd. Flow (perm)	0	1588	0	564	1632	0	871	1810	1483	0	1370	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		10			35				394			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			234			313	
Travel Time (s)		13.1			16.8			6.4			8.5	
Confl. Peds. (#/hr)	7		3	3		7	12		9	9		12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	9%	11%	10%	13%	8%	5%	8%	5%	18%	2%	0%	33%
Adj. Flow (vph)	14	167	38	544	369	184	28	162	399	69	133	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	219	0	544	553	0	28	162	399	0	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1		2	
Detector Template		Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (ft)		100		20	100		20	100	20		100	
Trailing Detector (ft)		0		0	0		0	0	0		0	
Detector 1 Position(ft)		0		0	0		0	0	0		0	
Detector 1 Size(ft)		6		20	6		20	6	20		6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



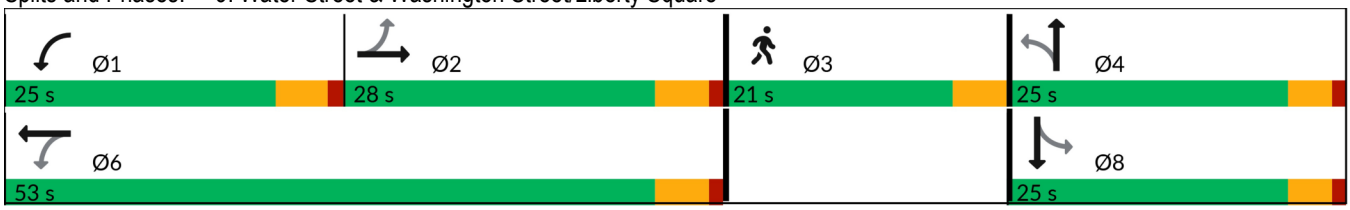
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	28.0	28.0		25.0	53.0		25.0	25.0		25.0	25.0	
Total Split (%)	28.3%	28.3%		25.3%	53.5%		25.3%	25.3%		25.3%	25.3%	
Maximum Green (s)	23.1	23.1		20.0	48.1		20.7	20.7		20.7	20.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		16.7		43.7	43.8		17.1	17.1	83.8		17.1	
Actuated g/C Ratio		0.20		0.52	0.52		0.20	0.20	1.00		0.20	
v/c Ratio		0.68		0.99	0.64		0.16	0.44	0.27		0.76	
Control Delay (s/veh)		44.1		60.1	21.7		35.9	37.3	0.4		53.9	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		44.1		60.1	21.7		35.9	37.3	0.4		53.9	
LOS		D		E	C		D	D	A		D	
Approach Delay (s/veh)		44.1			40.7			12.3			53.9	
Approach LOS		D			D			B			D	
90th %ile Green (s)	23.1	23.1		20.0	48.1		20.7	20.7		20.7	20.7	
90th %ile Term Code	Max	Max		Max	Max		Hold	Hold		Max	Max	
70th %ile Green (s)	21.5	21.5		20.0	46.5		20.7	20.7		20.7	20.7	
70th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	18.1	18.1		20.0	43.1		20.7	20.7		20.7	20.7	
50th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
30th %ile Green (s)	11.6	11.6		20.0	36.6		13.5	13.5		13.5	13.5	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	10.0	10.0		20.0	35.0		10.0	10.0		10.0	10.0	
10th %ile Term Code	Min	Min		Max	Hold		Hold	Hold		Gap	Gap	
Queue Length 50th (ft)		126		~333	269		15	89	0		126	
Queue Length 95th (ft)		206		#546	404		42	161	0		#252	
Internal Link Dist (ft)		399			537			154			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		482		552	1030		233	485	1483		367	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	31
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.45		0.99	0.54		0.12	0.33	0.27		0.58	

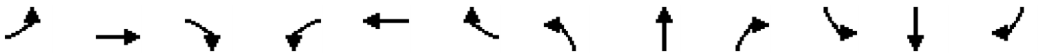
Intersection Summary			
Area Type:	Other		
Cycle Length: 99			
Actuated Cycle Length: 83.8			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay (s/veh): 34.5		Intersection LOS: C	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 104			
70th %ile Actuated Cycle: 102.4			
50th %ile Actuated Cycle: 99			
30th %ile Actuated Cycle: 59.3			
10th %ile Actuated Cycle: 54.2			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



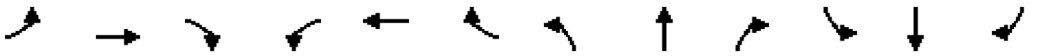
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	119	97	28	310	49	83	383	28	44	266	25
Future Volume (vph)	25	119	97	28	310	49	83	383	28	44	266	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99			1.00			0.99		0.99	1.00	
Frt		0.933			0.983			0.992			0.987	
Flt Protected	0.950				0.996			0.992		0.950		
Satd. Flow (prot)	1552	1535	0	0	1707	0	0	1672	0	1596	1651	0
Flt Permitted	0.308				0.965			0.868		0.384		
Satd. Flow (perm)	503	1535	0	0	1654	0	0	1458	0	641	1651	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	2		1	1		2	23		14	14		23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	4%	17%	7%	6%	12%	11%	29%	5%	8%	17%
Adj. Flow (vph)	27	129	105	30	337	53	90	416	30	48	289	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	234	0	0	420	0	0	536	0	48	316	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2		1	2	
Detector Template	Left	Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100			100			100		20	100	
Trailing Detector (ft)	0	0			0			0		0	0	
Detector 1 Position(ft)	0	0			0			0		0	0	
Detector 1 Size(ft)	20	6			6			6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



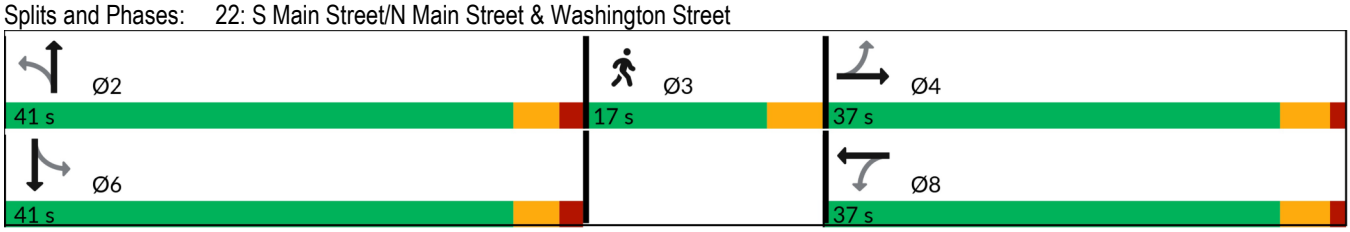
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	37.0	37.0		37.0	37.0		41.0	41.0		41.0	41.0	
Total Split (%)	38.9%	38.9%		38.9%	38.9%		43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	32.4	32.4		32.4	32.4		36.0	36.0		36.0	36.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	25.2	25.2			25.2			37.8		37.8	37.8	
Actuated g/C Ratio	0.30	0.30			0.30			0.45		0.45	0.45	
v/c Ratio	0.18	0.51			0.85			0.82		0.17	0.42	
Control Delay (s/veh)	27.3	29.8			45.5			37.9		22.5	22.7	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	27.3	29.8			45.5			37.9		22.5	22.7	
LOS	C	C			D			D		C	C	
Approach Delay (s/veh)		29.5			45.5			37.9			22.7	
Approach LOS		C			D			D			C	
90th %ile Green (s)	32.4	32.4		32.4	32.4		36.0	36.0		36.0	36.0	
90th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Hold	Hold	
70th %ile Green (s)	32.4	32.4		32.4	32.4		36.0	36.0		36.0	36.0	
70th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Hold	Hold	
50th %ile Green (s)	29.3	29.3		29.3	29.3		36.0	36.0		36.0	36.0	
50th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
30th %ile Green (s)	18.9	18.9		18.9	18.9		36.0	36.0		36.0	36.0	
30th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		36.0	36.0		36.0	36.0	
10th %ile Term Code	Min	Min		Min	Min		Max	Max		Hold	Hold	
Queue Length 50th (ft)	12	116			237			317		19	146	
Queue Length 95th (ft)	35	189			#383			#560		50	240	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	203	623			671			657		289	744	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	18%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	40
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.13	0.38			0.63			0.82		0.17	0.42	

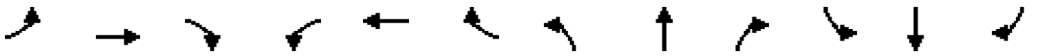
Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 83.8			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 35.0		Intersection LOS: D	
Intersection Capacity Utilization 91.6%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 99			
70th %ile Actuated Cycle: 99			
50th %ile Actuated Cycle: 95.9			
30th %ile Actuated Cycle: 64.5			
10th %ile Actuated Cycle: 60.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



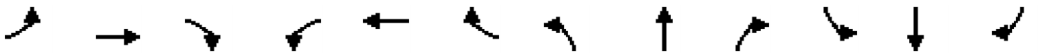
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	248	47	401	284	133	42	211	569	171	152	21
Future Volume (vph)	36	248	47	401	284	133	42	211	569	171	152	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.99	0.98		0.97		0.98		0.99	
Frt		0.981			0.952				0.850		0.992	
Flt Protected		0.995		0.950			0.950				0.976	
Satd. Flow (prot)	0	1809	0	1647	1682	0	1805	1863	1725	0	1745	0
Flt Permitted		0.916		0.289			0.534				0.652	
Satd. Flow (perm)	0	1658	0	496	1682	0	984	1863	1698	0	1161	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		8			28				432			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			225			313	
Travel Time (s)		13.1			16.8			6.1			8.5	
Confl. Peds. (#/hr)	39		18	18		39	39		12	12		39
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	0%	7%	3%	2%	0%	2%	3%	1%	2%	0%
Adj. Flow (vph)	36	251	47	405	287	134	42	213	575	173	154	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	334	0	405	421	0	42	213	575	0	348	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1		2	
Detector Template		Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (ft)		100		20	100		20	100	20		100	
Trailing Detector (ft)		0		0	0		0	0	0		0	
Detector 1 Position(ft)		0		0	0		0	0	0		0	
Detector 1 Size(ft)		6		20	6		20	6	20		6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



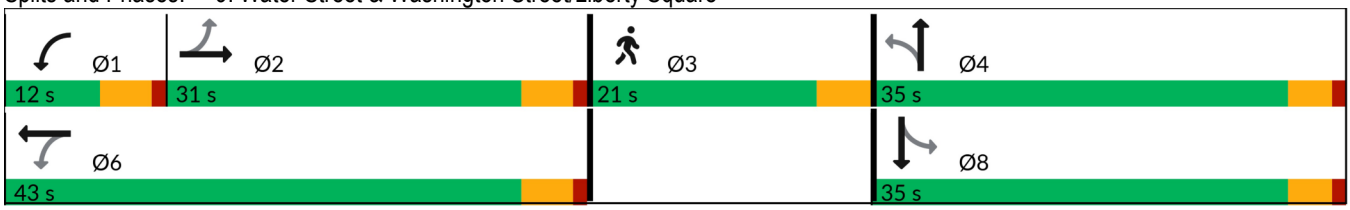
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	31.0	31.0		12.0	43.0		35.0	35.0		35.0	35.0	
Total Split (%)	31.3%	31.3%		12.1%	43.4%		35.4%	35.4%		35.4%	35.4%	
Maximum Green (s)	26.1	26.1		7.0	38.1		30.7	30.7		30.7	30.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		22.3		34.8	34.9		32.0	32.0	90.0		32.0	
Actuated g/C Ratio		0.25		0.39	0.39		0.36	0.36	1.00		0.36	
v/c Ratio		0.80		1.43	0.63		0.12	0.32	0.34		0.84	
Control Delay (s/veh)		48.5		234.8	27.9		27.2	27.4	0.5		52.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		48.5		234.8	27.9		27.2	27.4	0.5		52.2	
LOS		D		F	C		C	C	A		D	
Approach Delay (s/veh)		48.5			129.3			8.8			52.2	
Approach LOS		D			F			A			D	
90th %ile Green (s)	26.1	26.1		7.0	38.1		30.7	30.7		30.7	30.7	
90th %ile Term Code	Max	Max		Max	Max		Hold	Hold		Max	Max	
70th %ile Green (s)	26.1	26.1		7.0	38.1		30.7	30.7		30.7	30.7	
70th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	25.8	25.8		7.0	37.8		30.7	30.7		30.7	30.7	
50th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
30th %ile Green (s)	21.5	21.5		7.0	33.5		30.7	30.7		30.7	30.7	
30th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
10th %ile Green (s)	12.8	12.8		7.0	24.8		30.7	30.7		30.7	30.7	
10th %ile Term Code	Gap	Gap		Max	Hold		Hold	Hold		Max	Max	
Queue Length 50th (ft)		203		~352	217		20	112	0		~235	
Queue Length 95th (ft)		#343		#571	328		49	180	0		#423	
Internal Link Dist (ft)		399			537			145			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		507		284	758		350	662	1698		412	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	21%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.66		1.43	0.56		0.12	0.32	0.34		0.84	

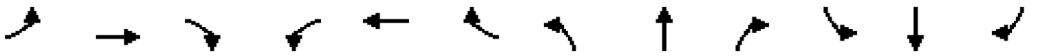
Intersection Summary			
Area Type:	Other		
Cycle Length: 99			
Actuated Cycle Length: 90			
Natural Cycle: 135			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.43			
Intersection Signal Delay (s/veh): 63.5		Intersection LOS: E	
Intersection Capacity Utilization 87.6%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 104			
70th %ile Actuated Cycle: 104			
50th %ile Actuated Cycle: 103.7			
30th %ile Actuated Cycle: 73.4			
10th %ile Actuated Cycle: 64.7			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



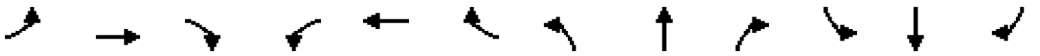
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	232	119	26	255	59	85	344	51	85	365	32
Future Volume (vph)	60	232	119	26	255	59	85	344	51	85	365	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	10	11	11
Grade (%)		1%			2%			-1%			1%	
Storage Length (ft)	0		150	150		150	150		150	70		150
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98			0.99			0.98		0.96	0.99	
Frt		0.949			0.977			0.986			0.988	
Flt Protected	0.950				0.996			0.991		0.950		
Satd. Flow (prot)	1676	1606	0	0	1779	0	0	1793	0	1660	1726	0
Flt Permitted	0.368				0.866			0.754		0.404		
Satd. Flow (perm)	645	1606	0	0	1545	0	0	1357	0	678	1726	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		391			295			592			347	
Travel Time (s)		10.7			8.0			16.1			9.5	
Confl. Peds. (#/hr)	10		25	25		10	47		75	75		47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	3%	10%	2%	0%	2%	3%	2%	1%	4%	3%
Adj. Flow (vph)	63	242	124	27	266	61	89	358	53	89	380	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	366	0	0	354	0	0	500	0	89	413	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.10	1.10	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.05	1.05
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2			2		1	2	
Detector Template	Left	Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100			100			100		20	100	
Trailing Detector (ft)	0	0			0			0		0	0	
Detector 1 Position(ft)	0	0			0			0		0	0	
Detector 1 Size(ft)	20	6			6			6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



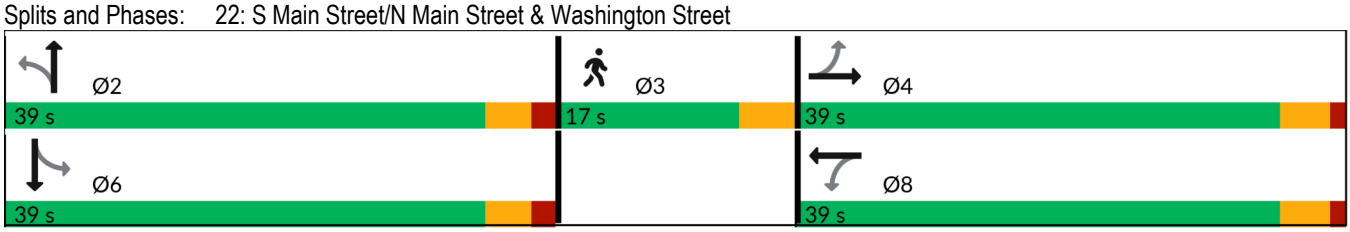
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	19.6	19.6		19.6	19.6		20.0	20.0		20.0	20.0	
Total Split (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Total Split (%)	41.1%	41.1%		41.1%	41.1%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	34.4	34.4		34.4	34.4		34.0	34.0		34.0	34.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.6	4.6			4.6			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	23.8	23.8			23.8			35.9		35.9	35.9	
Actuated g/C Ratio	0.30	0.30			0.30			0.45		0.45	0.45	
v/c Ratio	0.33	0.77			0.78			0.83		0.30	0.54	
Control Delay (s/veh)	29.5	38.8			39.7			39.7		25.0	24.8	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)	29.5	38.8			39.7			39.7		25.0	24.8	
LOS	C	D			D			D		C	C	
Approach Delay (s/veh)		37.5			39.7			39.7			24.8	
Approach LOS		D			D			D			C	
90th %ile Green (s)	34.4	34.4		34.4	34.4		34.0	34.0		34.0	34.0	
90th %ile Term Code	Max	Max		Max	Max		Max	Max		Max	Max	
70th %ile Green (s)	30.8	30.8		30.8	30.8		34.0	34.0		34.0	34.0	
70th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
50th %ile Green (s)	25.3	25.3		25.3	25.3		34.0	34.0		34.0	34.0	
50th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
30th %ile Green (s)	16.2	16.2		16.2	16.2		34.0	34.0		34.0	34.0	
30th %ile Term Code	Gap	Gap		Hold	Hold		Max	Max		Hold	Hold	
10th %ile Green (s)	15.0	15.0		15.0	15.0		34.0	34.0		34.0	34.0	
10th %ile Term Code	Min	Min		Min	Min		Max	Max		Hold	Hold	
Queue Length 50th (ft)	28	193			187			275		36	188	
Queue Length 95th (ft)	65	296			290			#550		89	335	
Internal Link Dist (ft)		311			215			512			267	
Turn Bay Length (ft)										70		
Base Capacity (vph)	290	723			696			604		301	768	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	17.0
Total Split (%)	18%
Maximum Green (s)	13.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	10.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	17.0
90th %ile Term Code	Ped
70th %ile Green (s)	17.0
70th %ile Term Code	Ped
50th %ile Green (s)	17.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.22	0.51			0.51			0.83		0.30	0.54	

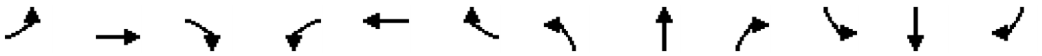
Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 80.5			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 35.0		Intersection LOS: C	
Intersection Capacity Utilization 99.3%		ICU Level of Service F	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 99			
70th %ile Actuated Cycle: 95.4			
50th %ile Actuated Cycle: 89.9			
30th %ile Actuated Cycle: 59.8			
10th %ile Actuated Cycle: 58.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 22: S Main Street/N Main Street & Washington Street



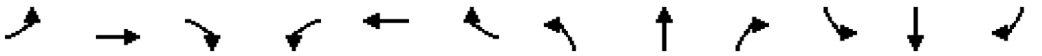
Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	244	71	382	238	158	57	182	425	134	138	41
Future Volume (vph)	41	244	71	382	238	158	57	182	425	134	138	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	12	12	15	11	11	11
Grade (%)		-1%			-2%			0%			0%	
Storage Length (ft)	150		150	500		150	85		85	150		150
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99	0.97		0.94		0.99		0.98	
Frt		0.973			0.940				0.850		0.982	
Flt Protected		0.994		0.950			0.950				0.979	
Satd. Flow (prot)	0	1803	0	1695	1680	0	1703	1881	1708	0	1716	0
Flt Permitted		0.907		0.259			0.493				0.666	
Satd. Flow (perm)	0	1634	0	458	1680	0	833	1881	1686	0	1166	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		13			46				415			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		479			617			234			313	
Travel Time (s)		13.1			16.8			6.4			8.5	
Confl. Peds. (#/hr)	48		15	15		48	65		3	3		65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	4%	1%	0%	6%	1%	4%	0%	1%	3%
Adj. Flow (vph)	43	254	74	398	248	165	59	190	443	140	144	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	371	0	398	413	0	59	190	443	0	327	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.03	1.03	1.03	1.00	1.00	0.88	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1		2	
Detector Template		Thru		Left	Thru		Left	Thru	Right		Thru	
Leading Detector (ft)		100		20	100		20	100	20		100	
Trailing Detector (ft)		0		0	0		0	0	0		0	
Detector 1 Position(ft)		0		0	0		0	0	0		0	
Detector 1 Size(ft)		6		20	6		20	6	20		6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Free	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		Free	8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.9	20.9		15.0	20.9		20.3	20.3		20.3	20.3	
Total Split (s)	25.0	25.0		17.0	42.0		26.0	26.0		26.0	26.0	
Total Split (%)	28.1%	28.1%		19.1%	47.2%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	20.1	20.1		12.0	37.1		21.7	21.7		21.7	21.7	
Yellow Time (s)	3.9	3.9		3.9	3.9		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.0		1.1	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.9		5.0	4.9		4.3	4.3			4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.6		37.9	38.0		22.3	22.3	83.6		22.3	
Actuated g/C Ratio		0.25		0.45	0.45		0.27	0.27	1.00		0.27	
v/c Ratio		0.90		1.02	0.52		0.27	0.38	0.26		1.05	
Control Delay (s/veh)		59.7		77.1	20.1		32.8	31.0	0.4		101.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)		59.7		77.1	20.1		32.8	31.0	0.4		101.5	
LOS		E		E	C		C	C	A		F	
Approach Delay (s/veh)		59.7			48.1			11.5			101.5	
Approach LOS		E			D			B			F	
90th %ile Green (s)	20.1	20.1		12.0	37.1		21.7	21.7		21.7	21.7	
90th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
70th %ile Green (s)	20.1	20.1		12.0	37.1		21.7	21.7		21.7	21.7	
70th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	20.1	20.1		12.0	37.1		21.7	21.7		21.7	21.7	
50th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
30th %ile Green (s)	20.1	20.1		12.0	37.1		21.7	21.7		21.7	21.7	
30th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
10th %ile Green (s)	20.1	20.1		12.0	37.1		21.7	21.7		21.7	21.7	
10th %ile Term Code	Max	Max		Max	Hold		Hold	Hold		Max	Max	
Queue Length 50th (ft)		~233		~207	170		29	97	0		~241	
Queue Length 95th (ft)		#410		#391	268		67	162	0		#407	
Internal Link Dist (ft)		399			537			154			233	
Turn Bay Length (ft)				500			85		85			
Base Capacity (vph)		412		390	789		221	500	1686		310	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	

Lane Group	Ø3
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	17.0
Minimum Split (s)	26.0
Total Split (s)	21.0
Total Split (%)	24%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	50
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
90th %ile Green (s)	22.0
90th %ile Term Code	Ped
70th %ile Green (s)	22.0
70th %ile Term Code	Ped
50th %ile Green (s)	22.0
50th %ile Term Code	Ped
30th %ile Green (s)	0.0
30th %ile Term Code	Skip
10th %ile Green (s)	0.0
10th %ile Term Code	Skip
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	

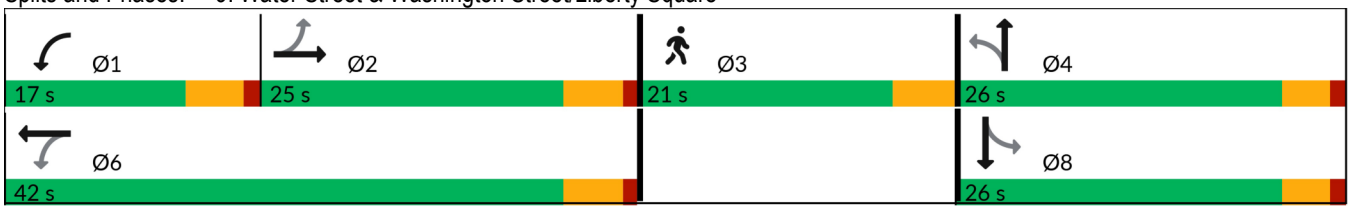
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.90		1.02	0.52		0.27	0.38	0.26		1.05	

Intersection Summary			
Area Type:	Other		
Cycle Length: 89			
Actuated Cycle Length: 83.6			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay (s/veh): 46.5		Intersection LOS: D	
Intersection Capacity Utilization 86.1%		ICU Level of Service E	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 94			
70th %ile Actuated Cycle: 94			
50th %ile Actuated Cycle: 94			
30th %ile Actuated Cycle: 68			
10th %ile Actuated Cycle: 68			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Water Street & Washington Street/Liberty Square



Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

APPENDIX E

CRASH DATA SUMMARY

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
633500	41.098155	-73.416188	1/3/2020	1:11:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	1	0	WATER ST RT 136	Elizabeth Street	Utility Pole/Light Support	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Non-Junction	Not at Intersection
633510	41.096546	-73.418852	1/4/2020	22:03:00	Property Damage Only	No Apparent Injury (O)	1	0	SOUTH MAIN ST	HANFORD PL	Other Fixed Object (wall, building, tunnel, etc.)	Not Applicable	Rain	Dark-Lighted	Wet	None	None	Intersection	Four-Way Intersection
643906	41.099728	-73.411864	43850	0.86875	Property Damage Only	No Apparent Injury (O)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
651919	41.096587	-73.419006	2/11/2020	21:05:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	SOUTH MAIN ST	MONROE ST	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
653449	41.096592	-73.418975	1/28/2020	15:41:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	MONROE ST	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	Unknown	Unknown	Intersection	Four-Way Intersection
656487	41.09968	-73.412063	43884	0.56597222	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
671361	41.098913	-73.418836	43891	0.36666667	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	SOUTH MAIN ST	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
672011	41.099022	-73.418795	43893	0.75694444	Property Damage Only	No Apparent Injury (O)	1	0	NORTH MAIN ST	SOUTH MAIN ST	Bridge Overhead Structure	Not Applicable	Rain	Dark-Lighted	Wet	None	None	Intersection	Four-Way Intersection
681463	41.09898	-73.414701	43968	0.76319444	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	On a Bridge	Not at Intersection
688686	41.099076	-73.413988	43991	0.57430556	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
690173	41.099618	-73.410905	44003	0.39861111	Property Damage Only	No Apparent Injury (O)	2	0	SEAVIEW AV		Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Acceleration / Deceleration Lane	Not at Intersection
692155	41.096556	-73.419308	6/19/2020	23:33:00	Property Damage Only	No Apparent Injury (O)	2	0	MONROE ST		Motor Vehicle in Operation	Rear to rear	Clear	Dark-Lighted	Dry	None	None	Other	Not at Intersection
694156	41.098891	-73.416035	6/21/2020	18:35:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH WATER ST	Motor Vehicle in Operation	Other	Clear	Daylight	Dry	None	None	Other	Not at Intersection
701776	41.098887	-73.41611	7/20/2020	12:57:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH WATER ST	Motor Vehicle in Operation	Unknown	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
702291	41.0998	-73.4128	44033	0.66875	Property Damage Only	No Apparent Injury (O)	2	0	GOLDSTEIN PL	LIBERTY SQ	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
703615	41.099588	-73.41219	44034	0.77708333	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	1	1	SEAVIEW AV		Other Non-Collision	Not Applicable	Clear	Daylight	Dry	None	None	Driveway Access-Related	Not at Intersection
704008	41.098835	-73.415257	7/18/2020	9:59:00	Property Damage Only	No Apparent Injury (O)	1	0	WASHINGTON ST		Other Fixed Object (wall, building, tunnel, etc.)	Not Applicable	Clear	Daylight	Dry	None	None	On a Bridge	Not at Intersection
707416	41.098873	-73.416079	7/17/2020	19:30:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH WATER ST	Motor Vehicle in Operation	Other	Clear	Daylight	Dry	None	None	Other	Not at Intersection
707435	41.098853	-73.416067	8/8/2020	18:42:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	WASHINGTON ST	NORTH WATER ST	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
708710	41.098862	-73.415625	7/24/2020	21:32:00	Property Damage Only	No Apparent Injury (O)	3	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Through Roadway	Not at Intersection
708887	41.100043	-73.411537	44049	0.525	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	1	1	136-N		Other Non-Fixed Object	Not Applicable	Clear	Daylight	Dry	None	None	Acceleration / Deceleration Lane	Not at Intersection
712037	41.0989	-73.4146	44057	0.81805556	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
714515	41.099144	-73.418831	44068	0.80347222	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
717137	41.098879	-73.415106	9/2/2020	16:27:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
717483	41.099057	-73.418925	44072	0.96458333	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	NORTH MAIN ST	SOUTH MAIN ST	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection-Related	Four-Way Intersection
723564	41.099722	-73.411662	44096	0.53680556	Property Damage Only	No Apparent Injury (O)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
727973	41.099	-73.4188	44063	0.30902778	Property Damage Only	No Apparent Injury (O)	1	0	SOUTH MAIN ST		Bridge Overhead Structure	Not Applicable	Clear	Daylight	Dry	None	Rut, Holes, Bumps	Intersection-Related	Four-Way Intersection
730471	41.098927	-73.416532	9/26/2020	8:25:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Sideswipe, opposite direction	Clear	Daylight	Dry	None	None	Acceleration / Deceleration Lane	Not at Intersection
734036	41.098987	-73.418836	44044	0.95694444	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	NORTH MAIN ST	SOUTH MAIN ST	Motor Vehicle in Operation	Front to front	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
735495	41.098967	-73.414632	44136	0.53333333	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, same direction	Rain	Daylight	Wet	None	Backup Due to Prior Non-Recurring Incident	On a Bridge	Not at Intersection
737866	41.099	-73.4188	44135	0.50763889	Property Damage Only	No Apparent Injury (O)	1	0	NORTH MAIN ST	SOUTH MAIN ST	Bridge Rail	Not Applicable	Clear	Daylight	Dry	Other	Other	Intersection	Four-Way Intersection
757825	41.096337	-73.415775	11/16/2020	9:25:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HANFORD PL	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	Work Zone (construction / maintenance / utility)	Intersection	T-Intersection
758047	41.0988	-73.416	11/17/2020	19:41:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH WATER ST	Unknown	Unknown	Clear	Dark-Lighted	Dry	Unknown	Unknown	Intersection	Four-Way Intersection
758557	41.097188	-73.415902	11/9/2020	12:26:00	Property Damage Only	No Apparent Injury (O)	1	0	WATER ST RT 136		Other Non-Fixed Object	Not Applicable	Clear	Daylight	Dry	None	None	Crossover-Related	Not at Intersection
762308	41.098891	-73.416035	11/28/2020	17:47:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	1	1	WASHINGTON ST	NORTH WATER ST	Pedestrian	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
764028	41.096484	-73.418965	12/4/2020	10:50:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Front to rear	Cloudy	Daylight	Dry	None	None	Driveway Access	Not at Intersection
772495	41.099589	-73.412211	44159	0.45763889	Property Damage Only	No Apparent Injury (O)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Driveway Access-Related	Not at Intersection
773387	41.098905	-73.416299	11/21/2020	17:02:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Unknown	Clear	Dark-Lighted	Dry	None	None	Other	Not at Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
774365	41.09902	-73.418828	44187	0.95694444	Property Damage Only	No Apparent Injury (O)	1	0	NORTH MAIN ST	SOUTH MAIN ST	Other Fixed Object (wall, building, tunnel, etc.)	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
776729	41.099057	-73.418925	44198	0.62013889	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	NORTH MAIN ST	SOUTH MAIN ST	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
777325	41.097366	-73.416266	1/3/2021	22:48:00	Property Damage Only	No Apparent Injury (O)	2	0	ELIZABETH ST		Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Through Roadway	Not at Intersection
778158	41.099954	-73.41273	44196	0.71458333	Property Damage Only	No Apparent Injury (O)	2	0	GOLDSTEIN PL	LIBERTY SQ	Motor Vehicle in Operation	Rear to side	Clear	Dark-Lighted	Dry	None	None	Service or Rest Area	Not at Intersection
779887	41.096531	-73.415659	1/8/2021	15:39:00	Property Damage Only	No Apparent Injury (O)	1	0	WATER ST RT 136		Curb	Not Applicable	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
780537	41.09683412	-73.41934509	12/18/2020	17:28:00	Property Damage Only	No Apparent Injury (O)	1	0	MONROE ST		Other Fixed Object (wall, building, tunnel, etc.)	Not Applicable	Clear	Dark-Lighted	Dry	Unknown	None	Other	Not at Intersection
781200	41.099762	-73.411938	44180	0.75902778	Property Damage Only	No Apparent Injury (O)	2	0	SEAVIEW AV		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None	Other	Not at Intersection
781744	41.09683412	-73.41934509	1/5/2021	11:04:00	Property Damage Only	No Apparent Injury (O)	2	0	MONROE ST		Motor Vehicle in Operation	Rear to rear	Cloudy	Daylight	Dry	None	None	Intersection	T-Intersection
789056	41.0979	-73.4155	2/12/2021	7:55:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
790781	41.099043	-73.418826	44239	0.81041667	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
792770	41.099734	-73.411849	44258	0.68333333	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Other	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
797764	41.097314	-73.415996	3/25/2021	21:14:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	ELIZABETH ST	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
799065	41.098892	-73.416042	3/24/2021	21:42:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH WATER ST	Motor Vehicle in Operation	Angle	Rain	Dark-Unknown Lighting	Wet	None	None	Intersection	Four-Way Intersection
801562	41.09898	-73.418808	44297	0.78680556	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	SOUTH MAIN ST	Motor Vehicle in Operation	Front to rear	Rain	Dark-Lighted	Wet	Unknown	Unknown	Other	Not at Intersection
806592	41.096516	-73.418953	4/11/2021	13:10:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Sideswipe, same direction	Rain	Daylight	Wet	None	None	Through Roadway	Not at Intersection
811925	41.096549	-73.418944	5/7/2021	21:10:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
812724	41.09683412	-73.41934509	5/15/2021	21:03:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	MONROE ST	Motor Vehicle in Operation	Angle	Clear	Unknown	Dry	Unknown	Unknown	Intersection	Four-Way Intersection
818249	41.09683412	-73.41934509	5/19/2021	8:03:00	Property Damage Only	No Apparent Injury (O)	2	0	1 MONROE ST		Motor Vehicle in Operation	Other	Clear	Daylight	Dry	None	None	Other	Not at Intersection
821213	41.0988	-73.416	6/1/2021	10:10:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	WATER ST RT 136	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
821797	41.0989	-73.415233	6/21/2021	18:22:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	136-N		Unknown	Unknown	Clear	Daylight	Dry	Unknown	Unknown	Other	Not at Intersection
822843	41.09893	-73.41663	6/24/2021	15:05:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	3	0	WASHINGTON ST		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	Unknown	None	Intersection-Related	Four-Way Intersection
826563	41.098155	-73.416188	6/20/2021	13:49:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HAVILAND ST	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
828069	41.096619	-73.418991	7/8/2021	8:51:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Other	None	Work Zone (construction / maintenance / utility)	Intersection-Related	Four-Way Intersection
829600	41.09683412	-73.41934509	7/12/2021	13:33:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Rear to side	Cloudy	Daylight	Dry	None	None	Other	Not at Intersection
832464	41.0988	-73.416	7/14/2021	20:54:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N	N Water St	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	Unknown	Unknown	Non-Junction	Not at Intersection
834378	41.096609	-73.418953	7/21/2021	7:33:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
835710	41.099057	-73.418925	44412	0.70694444	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	WASHINGTON ST	NORTH MAIN ST	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
844927	41.098855	-73.415838	8/20/2021	10:47:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	On a Bridge	Not at Intersection
845951	41.098776	-73.416214	8/5/2021	12:17:00	Property Damage Only	No Apparent Injury (O)	1	0	WATER ST RT 136		Utility Pole/Light Support	Not Applicable	Cloudy	Daylight	Dry	None	None	HOV Lane	Not at Intersection
846498	41.099064	-73.418805	44438	0.38888889	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	NORTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
846499	41.098943	-73.41652	9/6/2021	13:46:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
848016	41.09888	-73.416078	9/18/2021	17:11:00	Injury of any type (Serious, Minor, Possible)	Suspected Serious Injury (A)	1	2	WASHINGTON ST	NORTH WATER ST	Pedestrian	Not Applicable	Clear	Daylight	Dry	Visual Obstruction(s)	None	Non-Junction	Not at Intersection
853242	41.099005	-73.418807	44446	0.59375	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
855955	41.098924	-73.414566	44477	0.81388889	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Unknown	Unknown	Clear	Dark-Lighted	Dry	Unknown	Unknown	Acceleration / Deceleration Lane	Not at Intersection
856113	41.099	-73.4188	44426	0.5	Property Damage Only	No Apparent Injury (O)	1	0	WASHINGTON ST	NORTH MAIN ST	Bridge Overhead Structure	Not Applicable	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
856963	41.098155	-73.416188	10/8/2021	16:41:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HAVILAND ST	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
858472	41.099057	-73.418925	44485	0.86666667	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Sideswipe, opposite direction	Clear	Daylight	Dry	None	None	Driveway Access	Not at Intersection
861812	41.096446	-73.415762	10/16/2021	22:07:00	Property Damage Only	No Apparent Injury (O)	1	0	WATER ST RT 136		Other Fixed Object (wall, building, tunnel, etc.)	Not Applicable	Rain	Dark-Lighted	Wet	None	None	Other	Not at Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
862619	41.09904	-73.41605	10/23/2021	19:08:00	Property Damage Only	No Apparent Injury (O)	2	0	NORTH WATER ST		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
868540	41.096902	-73.415878	11/6/2021	11:21:00	Property Damage Only	No Apparent Injury (O)	1	0	WATER ST RT 136		Cable Barrier	Not Applicable	Clear	Daylight	Dry	None	None	Other	Not at Intersection
869793	41.096796	-73.418982	11/11/2021	23:00:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	1	1	SOUTH MAIN ST	HANFORD PL	Pedestrian	Not Applicable	Clear	Dark-Lighted	Wet	None	None	Intersection-Related	Four-Way Intersection
871004	41.09813	-73.41655	11/13/2021	21:11:00	Property Damage Only	No Apparent Injury (O)	2	0	HAVILAND ST		Parked Motor Vehicle	Front to rear	Clear	Dark-Lighted	Dry	None	None	Through Roadway	Not at Intersection
871182	41.09885	-73.41582	11/19/2021	7:54:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
871930	41.099057	-73.418925	44509	0.57916667	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
873067	41.09642	-73.41893	11/18/2021	11:18:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
876550	41.096619	-73.418991	11/30/2021	15:59:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	SOUTH MAIN ST	MONROE ST	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
878858	41.098979	-73.416059	12/10/2021	19:00:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	4	0	WASHINGTON ST	NORTH WATER ST	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	Unknown	Unknown	Through Roadway	Not at Intersection
879314	41.096478	-73.418939	12/5/2021	19:00:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
889906	41.099004	-73.418868	44560	0.03541667	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	1	0	NORTH MAIN ST	WASHINGTON ST	Unknown	Not Applicable	Unknown	Unknown	Unknown	Unknown	Unknown	Intersection	Four-Way Intersection
890505	41.098856	-73.415567	12/29/2021	15:09:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
891826	41.097323	-73.416136	12/27/2021	14:14:00	Property Damage Only	No Apparent Injury (O)	2	0	ELIZABETH ST		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
897492	41.099058	-73.418828	44582	0.45486111	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	WASHINGTON ST	Other Non-Fixed Object	Front to rear	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
898200	41.098878	-73.416074	1/13/2022	8:58:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH WATER ST	Other Non-Fixed Object	Front to rear	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
899439	41.0994	-73.4125	44588	0.64166667	Property Damage Only	No Apparent Injury (O)	2	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
907743	41.09884	-73.4159	1/29/2022	2:06:00	Property Damage Only	No Apparent Injury (O)	1	0	136-N		Other Fixed Object (wall, building, tunnel, etc.)	Not Applicable	Blowing Snow	Dark-Lighted	Snow	None	None	Through Roadway	Not at Intersection
908672	41.099057	-73.418925	44560	0.30277778	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Front to rear	Clear	Dawn	Dry	None	None	Intersection	T-Intersection
909745	41.096593	-73.419275	2/14/2022	17:38:00	Property Damage Only	No Apparent Injury (O)	2	0	MONROE ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dusk	Dry	None	None	Non-Junction	Not at Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
910310	41.098938	-73.416059	2/20/2022	22:26:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	WATER ST RT 136	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
911861	41.09661	-73.418966	2/16/2022	19:23:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	MONROE ST	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
913808	41.098891	-73.416035	2/10/2022	10:37:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH WATER ST	Other Non-Fixed Object	Angle	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
917754	41.098984	-73.418806	44579	0.77847222	Property Damage Only	No Apparent Injury (O)	1	0	NORTH MAIN ST	WASHINGTON ST	Bridge Overhead Structure	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
918134	41.09871	-73.41604	3/17/2022	19:07:00	Property Damage Only	No Apparent Injury (O)	1	0	WATER ST RT 136		Curb	Not Applicable	Cloudy	Dark-Lighted	Wet	None	None	Through Roadway	Not at Intersection
919056	41.099547	-73.412238	44634	0.64861111	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
921357	41.098297	-73.416179	12/26/2021	9:32:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Unknown	Front to rear	Clear	Daylight	Wet	None	None	Acceleration / Deceleration Lane	Not at Intersection
922273	41.099638	-73.412046	44649	0.49861111	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Driveway Access	Not at Intersection
924783	41.09661	-73.41889	4/10/2022	20:09:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
926482	41.09895	-73.41883	44664	0.90347222	Property Damage Only	No Apparent Injury (O)	1	0	NORTH MAIN ST	WASHINGTON ST	Bridge Overhead Structure	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
928107	41.0989	-73.4146	44675	0.08680556	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None	On a Bridge	Not at Intersection
929115	41.097341	-73.415983	4/16/2022	18:26:00	Injury of any type (Serious, Minor, Possible)	Suspected Serious Injury (A)	2	0	ELIZABETH ST		Motor Vehicle in Operation	Angle	Rain	Daylight	Wet	None	None	Through Roadway	Not at Intersection
929914	41.099414	-73.412554	44679	0.78611111	Property Damage Only	No Apparent Injury (O)	3	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Other	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
931120	41.099057	-73.418925	44684	0.92222222	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	SOUTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
933349	41.09907	-73.41895	44691	0.9125	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
934128	41.099016	-73.418826	44689	0.95069444	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	NORTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Front to front	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
934132	41.09902	-73.41883	44694	0.82777778	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
936000	41.09632	-73.41897	5/4/2022	9:19:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Other Non-Fixed Object	Front to rear	Rain	Daylight	Wet	None	None	Through Roadway	Not at Intersection
936019	41.09977	-73.4117	44701	0.77777778	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N		Motor Vehicle in Operation	Other	Clear	Daylight	Wet	Weather Conditions	None	Intersection	T-Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
940067	41.098136	-73.416296	5/29/2022	17:44:00	Property Damage Only	No Apparent Injury (O)	2	0	HAVILAND ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Other	Not at Intersection
940076	41.099057	-73.418925	44716	0.10277778	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	1	0	NORTH MAIN ST	WASHINGTON ST	Overturn/Rollover	Not Applicable	Clear	Dark-Lighted	Dry	Unknown	None	Intersection	Four-Way Intersection
940411	41.098873	-73.41883	44698	0.41666667	Property Damage Only	No Apparent Injury (O)	1	0	SOUTH MAIN ST		Bridge Overhead Structure	Not Applicable	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
941048	41.09892	-73.41606	6/3/2022	17:20:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
946010	41.096737	-73.415827	6/23/2022	10:10:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
946743	41.09903	-73.41888	44733	0.56597222	Property Damage Only	No Apparent Injury (O)	1	0	NORTH MAIN ST	WASHINGTON ST	Bridge Overhead Structure	Not Applicable	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
950923	41.099645	-73.411339	44751	0.37152778	Property Damage Only	No Apparent Injury (O)	2	0	SEAVIEW AV		Motor Vehicle in Operation	Rear to rear	Clear	Daylight	Dry	Unknown	Unknown	Other	Not at Intersection
951666	41.0987	-73.4159	7/9/2022	11:10:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	Traffic Circle
951784	41.09691	-73.41895	6/10/2022	1:46:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Non-Junction	Not at Intersection
956229	41.09737	-73.41605	7/4/2022	22:11:00	Property Damage Only	No Apparent Injury (O)	1	1	WATER ST RT 136	ELIZABETH ST	Pedalcycle/Pedalcyclist	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
956234	41.099758	-73.411902	44768	0.92222222	Property Damage Only	No Apparent Injury (O)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
957542	41.099454	-73.412485	44773	0.54097222	Property Damage Only	No Apparent Injury (O)	2	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
958771	41.09869	-73.41618	8/2/2022	12:59:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Driveway Access	Not at Intersection
959746	41.09905	-73.41874	44774	0.36527778	Property Damage Only	No Apparent Injury (O)	1	0	NORTH MAIN ST	WASHINGTON ST	Bridge Overhead Structure	Not Applicable	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
960419	41.10005	-73.41159	44777	0.92291667	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	SEAVIEW AV		Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Non-Junction	Not at Intersection
961417	41.099362	-73.41259	44779	0.87291667	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
962582	41.09893	-73.41649	8/16/2022	10:00:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
964257	41.096236	-73.41573	8/22/2022	14:14:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HANFORD PL	Motor Vehicle in Operation	Other	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
965955	41.099598	-73.41215	44801	0.08263889	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Dark-Not Lighted	Dry	None	None	Acceleration / Deceleration Lane	Not at Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
968510	41.097369	-73.416174	9/1/2022	17:35:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	ELIZABETH ST	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
968695	41.09661801	-73.41898863	8/17/2022	6:58:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
968802	41.09624	-73.41585	7/16/2022	19:23:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Other	Not at Intersection
971378	41.098872	-73.416207	9/11/2022	15:17:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH WATER ST	Parked Motor Vehicle	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
973984	41.096619	-73.418991	9/15/2022	11:52:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	MONROE ST	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
974617	41.09891	-73.41647	9/19/2022	20:43:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Front to front	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
977308	41.09901	-73.418818	44827	0.81319444	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	WASHINGTON ST	Motor Vehicle in Operation	Other	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
981203	41.098912	-73.416374	9/24/2022	2:04:00	Injury of any type (Serious, Minor, Possible)	Suspected Serious Injury (A)	1	0	WASHINGTON ST		Other Fixed Object (wall, building, tunnel, etc.)	Not Applicable	Clear	Dark-Lighted	Dry	Unknown	Unknown	Through Roadway	Not at Intersection
982658	41.099028	-73.418991	44841	0.60763889	Property Damage Only	No Apparent Injury (O)	1	0	NORTH MAIN ST	WASHINGTON ST	Bridge Overhead Structure	Not Applicable	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
983139	41.0994	-73.4125	44850	0.56944444	Property Damage Only	No Apparent Injury (O)	2	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
987974	41.098891	-73.416035	10/29/2022	18:31:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH WATER ST	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
991910	41.099011	-73.418705	44863	0.56597222	Property Damage Only	No Apparent Injury (O)	1	0	WASHINGTON ST		Bridge Overhead Structure	Not Applicable	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
992750	41.098952	-73.416587	11/11/2022	19:45:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
995851	41.099788	-73.412588	44884	0.69027778	Property Damage Only	No Apparent Injury (O)	2	0	GOLDSTEIN PL	LIBERTY SQ	Motor Vehicle in Operation	Sideswipe, opposite direction	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1000567	41.09641205	-73.41575166	12/5/2022	6:59:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HANFORD PL	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
1001894	41.096472	-73.418958	12/3/2022	12:10:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	MONROE ST		Motor Vehicle in Operation	Front to rear	Rain	Daylight	Wet	None	None	Through Roadway	Not at Intersection
1008064	41.099566	-73.412209	44905	0.93472222	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Through Roadway	Not at Intersection
1008907	41.099042	-73.418818	44918	0.33194444	Property Damage Only	No Apparent Injury (O)	2	0	NORTH MAIN ST	WASHINGTON ST	Other Non-Fixed Object	Rear to side	Cloudy	Daylight	Wet	None	None	Intersection-Related	Four-Way Intersection
1013417	41.098897	-73.418834	44931	0.60208333	Property Damage Only	No Apparent Injury (O)	1	0	SOUTH MAIN ST		Bridge Overhead Structure	Not Applicable	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
1014508	41.0987	-73.4164	1/11/2023	12:40:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	WATER ST RT 136	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
1020435	41.096388	-73.418941	2/2/2023	18:57:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
1020637	41.099064	-73.418799	44964	0.71875	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH MAIN ST	Motor Vehicle in Operation	Angle	Clear	Dusk	Dry	None	None	Intersection	Four-Way Intersection
1022624	41.09891	-73.416386	2/2/2023	14:06:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	WATER ST RT 136	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
1023437	41.099447	-73.412457	44974	0.85	Property Damage Only	No Apparent Injury (O)	2	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
1025256	41.098935	-73.41648	2/11/2023	2:08:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None	Through Roadway	Not at Intersection
1028386	41.099048	-73.416024	2/24/2023	23:44:00	Property Damage Only	No Apparent Injury (O)	1	0	WASHINGTON ST	N WATER ST6	Unknown	Not Applicable	Clear	Dark-Lighted	Dry	Unknown	Unknown	Intersection	Four-Way Intersection
1029295	41.099117	-73.418836	44988	0.94375	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH MAIN ST	Motor Vehicle in Operation	Sideswipe, same direction	Freezing Rain or Freezing Drizzle	Dark-Lighted	Wet	None	None	Intersection	Four-Way Intersection
1029848	41.099048	-73.41604	3/2/2023	21:59:00	Property Damage Only	No Apparent Injury (O)	2	0	NORTH WATER ST		Motor Vehicle in Operation	Sideswipe, opposite direction	Clear	Dark-Lighted	Dry	None	None	Through Roadway	Not at Intersection
1031066	41.096387	-73.415733	3/8/2023	8:42:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	WATER ST RT 136	HANFORD PL	Other Non-Fixed Object	Front to rear	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
1032628	41.0987	-73.4164	3/11/2023	17:15:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
1032940	41.096619	-73.418991	3/2/2023	8:03:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Sideswipe, same direction	Cloudy	Daylight	Wet	None	None	Intersection	Four-Way Intersection
1033647	41.0994	-73.4125	44997	0.63402778	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Acceleration / Deceleration Lane	Not at Intersection
1033673	41.096376	-73.415817	3/12/2023	12:17:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HANFORD PL	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
1038502	41.098891	-73.416035	3/28/2023	16:58:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	WATER ST RT 136	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1038506	41.096451	-73.418935	4/7/2023	21:10:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection-Related	Four-Way Intersection
1039748	41.099057	-73.418925	44997	0.12569444	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH MAIN ST	Motor Vehicle in Operation	Other	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
1043624	41.096897	-73.419113	4/23/2023	2:59:00	Property Damage Only	No Apparent Injury (O)	1	0	SOUTH MAIN ST		Other Fixed Object (wall, building, tunnel, etc.)	Not Applicable	Rain	Dark-Lighted	Wet	Other	None	Driveway Access-Related	Not at Intersection
1044055	41.10002	-73.411726	45031	0.80555556	Property Damage Only	No Apparent Injury (O)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Front to rear	Clear	Dusk	Dry	None	None	Intersection	T-Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
1047090	41.099987	-73.411751	45041	0.48125	Property Damage Only	No Apparent Injury (O)	2	0	136-N	LIBERTY SQ	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1048058	41.098844	-73.416051	5/13/2023	0:37:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N	WATER ST RT 136	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
1053224	41.100021	-73.411725	45062	0.86527778	Property Damage Only	No Apparent Injury (O)	2	0	136-N	Liberty Square	Motor Vehicle in Operation	Sideswipe, opposite direction	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
1056560	41.098419	-73.41564	5/28/2023	12:56:00	Property Damage Only	No Apparent Injury (O)	2	0	50 Water St		Motor Vehicle in Operation	Unknown	Clear	Unknown	Dry	None	None	Other	Not at Intersection
1057354	41.098982	-73.416206	6/4/2023	1:50:00	Property Damage Only	No Apparent Injury (O)	1	0	136-N	NORTH WATER ST	Other Post, Pole or Support	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
1059702	41.0989	-73.4146	45091	0.34027778	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Through Roadway	Not at Intersection
1060504	41.09655763	-73.4192435	6/18/2023	11:19:00	Property Damage Only	No Apparent Injury (O)	2	0	MONROE ST		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
1060775	41.097944	-73.415656	6/18/2023	12:04:00	Property Damage Only	No Apparent Injury (O)	2	0	68 WATER ST		Motor Vehicle in Operation	Unknown	Clear	Daylight	Dry	None	None	Other	Not at Intersection
1062952	41.099686	-73.412173	45102	0.79444444	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
1063623	41.096246	-73.41571669	6/21/2023	10:37:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Other	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
1064179	41.096428	-73.418884	6/20/2023	12:03:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
1065440	41.098984	-73.416542	4/22/2023	13:37:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Sideswipe, same direction	Cloudy	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1068681	41.09644012	-73.41895502	7/1/2023	15:58:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Front to rear	Cloudy	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
1070189	41.09886501	-73.41567563	7/20/2023	14:23:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1071930	41.098856	-73.415881	7/22/2023	2:34:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N (Washington Street)		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	Backup Due to Prior Crash	Intersection-Related	Four-Way Intersection
1071937	41.09866929	-73.41619013	7/28/2023	17:34:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
1072833	41.098843	-73.415955	7/22/2023	2:24:00	Property Damage Only	No Apparent Injury (O)	1	0	136-N		Other Traffic Barrier	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Intersection-Related	Four-Way Intersection
1073877	41.09892	-73.416135	8/6/2023	8:33:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	WASHINGTON ST	WATER ST RT 136	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1074535	41.09625523	-73.41573369	7/31/2023	13:04:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
1074759	41.09733045	-73.41597977	7/31/2023	12:59:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	ELIZABETH ST	Motor Vehicle in Operation	Other	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
1076109	41.0998	-73.411806	45148	0.43958333	Property Damage Only	No Apparent Injury (O)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
1077718	41.09894	-73.41657	8/2/2023	13:38:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Driveway Access-Related	Not at Intersection
1079919	41.09642	-73.415773	8/25/2023	11:38:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HANFORD PL	Motor Vehicle in Operation	Front to rear	Cloudy	Daylight	Wet	Other	None	Intersection	T-Intersection
1083844	41.096255	-73.415719	8/23/2023	16:22:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	Unknown	Unknown	Intersection	T-Intersection
1083847	41.098975	-73.416244	9/10/2023	1:29:00	Property Damage Only	No Apparent Injury (O)	1	0	WASHINGTON ST	WATER ST RT 136	Other Fixed Object (wall, building, tunnel, etc.)	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
1085703	41.09711816	-73.4153874	9/13/2023	19:42:00	Property Damage Only	No Apparent Injury (O)	2	0	100 N WATER ST		Motor Vehicle in Operation	Unknown	Clear	Dark-Lighted	Dry	None	None	Non-Junction	Not at Intersection
1086189	41.09733334	-73.41623608	9/13/2023	13:55:00	Property Damage Only	No Apparent Injury (O)	2	0	ELIZABETH ST		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1086463	41.09906	-73.418987	45187	0.42569444	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH MAIN ST	Motor Vehicle in Operation	Angle	Rain	Daylight	Wet	None	None	Intersection	Four-Way Intersection
1093549	41.096628	-73.415789	10/10/2023	8:19:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1095891	41.099446	-73.412473	45201	0.79722222	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
1097760	41.09659471	-73.41900575	10/17/2023	10:21:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1097910	41.098742	-73.415809	10/13/2023	15:32:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	Y-Intersection
1097912	41.09654032	-73.41581741	10/15/2023	19:56:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection-Related	T-Intersection
1098697	41.09967965	-73.41162991	45226	0.77361111	Property Damage Only	No Apparent Injury (O)	2	0	SEAVIEW AV		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection-Related	T-Intersection
1101763	41.098904	-73.41638	11/5/2023	16:15:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Front to rear	Clear	Dusk	Dry	None	None	Intersection-Related	Four-Way Intersection
1105154	41.096424	-73.41579592	11/14/2023	11:52:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HANFORD PL	Motor Vehicle in Operation	Sideswipe, opposite direction	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1105176	41.096307	-73.416142	10/20/2023	9:57:00	Property Damage Only	No Apparent Injury (O)	2	0	123 WATER ST		Motor Vehicle in Operation	Front to rear	Rain	Daylight	Wet	None	None	Unknown	Not at Intersection
1109402	41.09810252	-73.41645633	11/30/2023	17:15:00	Property Damage Only	No Apparent Injury (O)	1	0	HAVILAND ST		Other Post, Pole or Support	Not Applicable	Clear	Dark-Lighted	Dry	Unknown	None	Non-Junction	Not at Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
1110429	41.096608	-73.418715	12/5/2023	17:25:00	Property Damage Only	No Apparent Injury (O)	2	0	HANFORD PL		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	Unknown	Unknown	Intersection-Related	Four-Way Intersection
1110742	41.099838	-73.412401	45070	0.66388889	Property Damage Only	No Apparent Injury (O)	2	0	205 LIBERTY SQ		Motor Vehicle in Operation	Sideswipe, opposite direction	Clear	Daylight	Dry	None	None	Other	Not at Intersection
1118160	41.10001159	-73.41165771	45289	0.62708333	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
1128049	41.098897	-73.416288	1/29/2024	13:33:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Front to rear	Cloudy	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
1130900	41.09638955	-73.41895211	1/19/2024	14:03:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Front to rear	Blowing Snow	Daylight	Wet	None	None	Intersection-Related	Four-Way Intersection
1132077	41.099015	-73.414098	45325	0.92916667	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, opposite direction	Cloudy	Dark-Lighted	Dry	None	None	On a Bridge	Not at Intersection
1132780	41.09888	-73.415833	2/13/2024	7:49:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Blowing Snow	Daylight	Snow	Weather Conditions	Road Surface Condition (wet, icy, snow, slush, etc.)	Intersection-Related	Four-Way Intersection
1134333	41.098953	-73.416549	2/17/2024	19:33:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	1	0	WASHINGTON ST		Utility Pole/Light Support	Not Applicable	Clear	Dark-Lighted	Dry	Unknown	Unknown	Non-Junction	Not at Intersection
1137110	41.096314	-73.418983	2/26/2024	20:51:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Front to front	Clear	Dark-Lighted	Dry	None	None	Non-Junction	Not at Intersection
1140801	41.100092	-73.4116	45363	0.75694444	Property Damage Only	No Apparent Injury (O)	2	0	136-N (FORT POINT ST)		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dusk	Dry	None	None	Non-Junction	Not at Intersection
1141435	41.099331	-73.41274	45345	0.96736111	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to front	Clear	Dark-Lighted	Dry	None	None	Non-Junction	Not at Intersection
1141436	41.098948	-73.416673	3/6/2024	16:55:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Front to rear	Rain	Daylight	Wet	None	None	Non-Junction	Not at Intersection
1147885	41.096618	-73.418928	4/9/2024	18:01:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	Other	None	Intersection	Four-Way Intersection
1148804	41.097378	-73.415976	3/25/2024	14:15:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	WATER ST RT 136	ELIZABETH ST	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
1149714	41.09657286	-73.41924801	4/11/2024	17:30:00	Property Damage Only	No Apparent Injury (O)	2	0	MONROE ST		Curb	Other	Rain	Daylight	Wet	None	None	Intersection-Related	Four-Way Intersection
1152228	41.0987888	-73.41567556	4/23/2024	6:59:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	Glare	None	Non-Junction	Not at Intersection
1152245	41.10015532	-73.41157717	45391	0.63402778	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Driveway Access	Not at Intersection
1153313	41.098426	-73.415628	4/24/2024	17:51:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	50 WATER ST		Motor Vehicle in Operation	Unknown	Clear	Daylight	Dry	Unknown	Unknown	Other	Not at Intersection
1153803	41.09819112	-73.41622814	4/24/2024	9:23:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HAVILAND ST	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	T-Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
1155784	41.099246	-73.412804	45400	0.01944444	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	1	0	136-N	GOLDSTEIN PL	Bridge Rail	Not Applicable	Rain	Dark-Lighted	Wet	Weather Conditions	Unknown	Intersection	Four-Way Intersection
1156160	41.09639243	-73.41893476	5/5/2024	15:08:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Sideswipe, same direction	Rain	Daylight	Wet	None	None	Non-Junction	Not at Intersection
1156295	41.097576	-73.416037	4/29/2024	8:31:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1156798	41.09909646	-73.41889651	45417	0.0875	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH MAIN ST	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Wet	Unknown	Unknown	Intersection	Four-Way Intersection
1156878	41.099537	-73.412295	45414	0.42083333	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
1157246	41.09938865	-73.41267125	45422	0.88958333	Property Damage Only	No Apparent Injury (O)	2	0	136-N	BUSHBAUM BLVD (PRIV)	Motor Vehicle in Operation	Angle	Rain	Dark-Lighted	Wet	None	None	Intersection	T-Intersection
1159416	41.09826849	-73.41619067	5/16/2024	14:53:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST		Motor Vehicle in Operation	Front to rear	Cloudy	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1161006	41.09631476	-73.41897625	5/15/2024	22:00:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	3	0	SOUTH MAIN ST		Motor Vehicle in Operation	Front to front	Rain	Dark-Lighted	Wet	None	None	Non-Junction	Not at Intersection
1163476	41.09937346	-73.41263073	45438	0.6625	Property Damage Only	No Apparent Injury (O)	2	0	136-N	Goldstein Pl	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1163478	41.096621	-73.415828	5/29/2024	15:29:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
1164851	41.09983	-73.41186	45446	0.52430556	Property Damage Only	No Apparent Injury (O)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
1169257	41.099	-73.414232	45461	0.67569444	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	Work Zone (construction / maintenance / utility)	On a Bridge	Not at Intersection
1172005	41.100055	-73.411537	45461	0.67083333	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1172393	41.096531	-73.418936	6/25/2024	14:22:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1172639	41.098834	-73.415643	6/27/2024	12:19:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
1173438	41.099008	-73.416087	6/15/2024	13:43:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	1	1	NORTH WATER ST		Pedalcycle/Pedalcyclist	Other	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
1176176	41.09988145	-73.41246027	45484	0.36805556	Property Damage Only	No Apparent Injury (O)	2	0	LIBERTY SQ		Parked Motor Vehicle	Angle	Clear	Daylight	Dry	None	Non-Highway Work	Non-Junction	Not at Intersection
1176371	41.099932	-73.411749	45476	0.96180556	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N		Motor Vehicle in Operation	Front to front	Cloudy	Dark-Lighted	Dry	None	None	Intersection-Related	T-Intersection
1176809	41.096529	-73.418978	7/4/2024	21:35:00	Property Damage Only	No Apparent Injury (O)	4	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
1186919	41.097077	-73.415933	7/22/2024	18:27:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1189450	41.096619	-73.418974	8/11/2024	23:30:00	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
1189673	41.09702	-73.415889	7/26/2024	20:39:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	1	1	WATER ST RT 136		Pedestrian	Not Applicable	Clear	Dark-Lighted	Dry	None	None	Non-Junction	Not at Intersection
1191676	41.0996316	-73.41105354	45493	0.52152778	Property Damage Only	No Apparent Injury (O)	2	0	SEAVIEW AV		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection
1194508	41.09868002	-73.41600909	8/30/2024	13:08:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection
1196759	41.099714	-73.411969	45541	0.95902778	Property Damage Only	No Apparent Injury (O)	2	0	136-N	SEAVIEW AV	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
1197319	41.0962843	-73.41574812	8/9/2024	18:16:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136		Motor Vehicle in Operation	Rear to side	Rain	Daylight	Wet	None	None	Driveway Access-Related	Not at Intersection
1199133	41.0981464	-73.41601174	9/13/2024	10:07:00	Property Damage Only	No Apparent Injury (O)	2	0	50 Water ST		Motor Vehicle in Operation	Sideswipe, opposite direction	Clear	Daylight	Dry	None	None	Other	Not at Intersection
1199734	41.09658	-73.419198	8/31/2024	19:55:00	Property Damage Only	No Apparent Injury (O)	2	0	MONROE ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None	Intersection-Related	T-Intersection
1200259	41.096632	-73.418914	9/3/2024	19:56:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Angle	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
1205217	41.09890904	-73.4146006	45537	0.65208333	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	1	0	136-N		Fell/Jumped from Vehicle	Not Applicable	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1212748	41.09948465	-73.41254876	45586	0.75555556	Property Damage Only	No Apparent Injury (O)	2	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Other	Clear	Daylight	Dry	None	None	Intersection	T-Intersection
1212751	41.096626	-73.419055	10/26/2024	18:51:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST	HANFORD PL	Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None	Intersection	Four-Way Intersection
1221939	41.098888	-73.415877	11/25/2024	14:50:00	Property Damage Only	No Apparent Injury (O)	2	0	136-N		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1222001	41.09916008	-73.41885209	45622	0.48819444	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH MAIN ST	Motor Vehicle in Operation	Sideswipe, opposite direction	Rain	Daylight	Wet	None	None	Intersection	Four-Way Intersection
1223043	41.09818467	-73.41619291	11/23/2024	19:24:00	Property Damage Only	No Apparent Injury (O)	2	0	WATER ST RT 136	HAVILAND ST	Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection	T-Intersection
1224039	41.099649	-73.411288	45622	0.64166667	Property Damage Only	No Apparent Injury (O)	2	0	SEAVIEW AV		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Non-Junction	Not at Intersection
1225301	41.09692301	-73.41900466	12/6/2024	16:52:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Sideswipe, same direction	Clear	Dark-Lighted	Dry	None	None	Intersection-Related	Four-Way Intersection
1229458	41.09655083	-73.41917419	12/19/2024	9:52:00	Property Damage Only	No Apparent Injury (O)	2	0	MONROE ST		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	Four-Way Intersection

CRASH DATA SUMMARY TABLE

Crash Id	Latitude	Longitude	Date Of Crash	Time of Crash	Crash Severity	Most Severe Injury	Number Of Motor Vehicles	Number Of Non-Motorist	Roadway Name	Intersecting Roadway Name	First Harmful Event	Manner of Crash / Collision Impact	Weather Condition	Light Condition	Road Surface Condition	Contributing Circumstances, Environment	Contributing Circumstances, Road	Crash Specific Location	Type of Intersection
1232198	41.098919	-73.416644	12/10/2024	18:53:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST		Motor Vehicle in Operation	Front to rear	Rain	Dark-Lighted	Wet	None	None	Non-Junction	Not at Intersection
1233778	41.098852	-73.416069	12/28/2024	23:55:00	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	North Water Street	Motor Vehicle in Operation	Angle	Fog, Smog, Smoke	Dark-Unknown Lighting	Wet	None	None	Intersection	Four-Way Intersection
1233870	41.099032	-73.418799	45659	0.56319444	Property Damage Only	No Apparent Injury (O)	2	0	WASHINGTON ST	NORTH MAIN ST	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	Visual Obstruction(s)	None	Intersection	Four-Way Intersection
1236246	41.096774	-73.418991	1/6/2025	21:26:00	Property Damage Only	No Apparent Injury (O)	2	0	SOUTH MAIN ST		Motor Vehicle in Operation	Front to rear	Clear	Dark-Lighted	Dry	None	None	Intersection-Related	Four-Way Intersection
1246252	41.100034	-73.411676	45678	0.37986111	Injury of any type (Serious, Minor, Possible)	Suspected Serious Injury (A)	1	0	136-N	LIBERTY SQ	Fell/Jumped from Vehicle	Not Applicable	Clear	Daylight	Sand	None	Road Surface Condition (wet, icy, snow, slush, etc.)	Intersection-Related	T-Intersection
1247000	41.098822	-73.416149	2/7/2025	15:16:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	1	1	WASHINGTON ST	WATER ST RT 136	Pedestrian	Not Applicable	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1253711	41.09944108	-73.41256986	45724	0.61875	Injury of any type (Serious, Minor, Possible)	Possible Injury (C)	2	0	136-N	GOLDSTEIN PL	Motor Vehicle in Operation	Angle	Clear	Daylight	Dry	None	None	Intersection	Four-Way Intersection
1265604	41.098956	-73.416577	3/27/2025	18:22:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	1	1	WASHINGTON ST		Pedestrian	Not Applicable	Clear	Daylight	Dry	Glare	None	Non-Junction	Not at Intersection
1267647	41.09661	-73.415829	4/6/2025	13:31:00	Injury of any type (Serious, Minor, Possible)	Suspected Minor Injury (B)	3	0	WATER ST RT 136		Motor Vehicle in Operation	Front to rear	Clear	Daylight	Dry	None	None	Intersection-Related	T-Intersection

Parking Hourly Distribution - Weekday							
Land Use Code	221	710	822	931	-	-	Total Time of Day Parking Distribution
Land Use	Residential	Office	Personal Service	Restaurant	Marine Supply	Boat Slips	
Time of Day	Weekday/Saturday Composite	Weekday	Monday-Thursday	Monday-Thursday	All	All	
Size	59 Units	110,899 SF	3,444 SF	3,823 SF	2,254 SF	14 Total	
Maximum Daily Parking Demand (Weighted Average)	41	175	9	38	4	14	
12:00 - 1:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
1:00 - 2:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
2:00 - 3:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
3:00 - 4:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
4:00 - 5:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
5:00 - 6:00 AM	96.0%	0.0%	0.0%	0.0%	0.0%	29.0%	43
6:00 - 7:00 AM	86.0%	0.0%	0.0%	0.0%	100.0%	100.0%	53
7:00 - 8:00 AM	77.0%	13.0%	0.0%	0.0%	100.0%	100.0%	72
8:00 - 9:00 AM	66.0%	47.0%	19.0%	0.0%	100.0%	100.0%	129
9:00 - 10:00 AM	60.0%	87.0%	33.0%	0.0%	100.0%	100.0%	198
10:00 - 11:00 AM	57.0%	99.0%	47.0%	0.0%	100.0%	100.0%	219
11:00 - 12:00 PM	55.0%	100.0%	55.0%	17.0%	100.0%	100.0%	227
12:00 - 1:00 PM	52.0%	86.0%	89.0%	39.0%	100.0%	100.0%	213
1:00 - 2:00 PM	50.0%	84.0%	100.0%	53.0%	100.0%	100.0%	215
2:00 - 3:00 PM	52.0%	93.0%	73.0%	47.0%	100.0%	100.0%	227
3:00 - 4:00 PM	51.0%	93.0%	73.0%	35.0%	100.0%	100.0%	222
4:00 - 5:00 PM	57.0%	85.0%	66.0%	41.0%	100.0%	100.0%	212
5:00 - 6:00 PM	62.0%	57.0%	70.0%	50.0%	100.0%	100.0%	168
6:00 - 7:00 PM	65.0%	21.0%	75.0%	70.0%	100.0%	100.0%	115
7:00 - 8:00 PM	68.0%	0.0%	70.0%	94.0%	100.0%	100.0%	88
8:00 - 9:00 PM	75.0%	0.0%	54.0%	100.0%	0.0%	100.0%	88
9:00 - 10:00 PM	82.0%	0.0%	48.0%	87.0%	0.0%	100.0%	85
10:00 - 11:00 PM	87.0%	0.0%	0.0%	57.0%	0.0%	100.0%	71
11:00 - 12:00 AM	91.0%	0.0%	0.0%	0.0%	0.0%	100.0%	51

*Parking Distributions obtained from Institute of Transportation Engineers Parking Generation Manual, 5th Edition

Parking Hourly Distribution - Friday							
Land Use Code	221	710	822	822	-	-	Total Time of Day Parking Distribution
Land Use	Residential	Office	Personal Service	Restaurant	Marine Supply	Boat Slips	
Time of Day	Weekday/Saturday Composite	Weekday	Friday	Friday	All	All	
Size	59 Units	110,899 SF	3,444 SF	3,823 SF	2,254 SF	14 Total	
Maximum Daily Parking Demand (Weighted Average)	41	175	9	38	4	14	
12:00 - 1:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
1:00 - 2:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
2:00 - 3:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
3:00 - 4:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
4:00 - 5:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	45
5:00 - 6:00 AM	96.0%	0.0%	0.0%	0.0%	0.0%	29.0%	43
6:00 - 7:00 AM	86.0%	0.0%	0.0%	0.0%	100.0%	100.0%	53
7:00 - 8:00 AM	77.0%	13.0%	0.0%	0.0%	100.0%	100.0%	72
8:00 - 9:00 AM	66.0%	47.0%	19.0%	0.0%	100.0%	100.0%	129
9:00 - 10:00 AM	60.0%	87.0%	40.0%	0.0%	100.0%	100.0%	198
10:00 - 11:00 AM	57.0%	99.0%	44.0%	0.0%	100.0%	100.0%	219
11:00 - 12:00 PM	55.0%	100.0%	52.0%	13.0%	100.0%	100.0%	225
12:00 - 1:00 PM	52.0%	86.0%	96.0%	38.0%	100.0%	100.0%	213
1:00 - 2:00 PM	50.0%	84.0%	96.0%	43.0%	100.0%	100.0%	210
2:00 - 3:00 PM	52.0%	93.0%	84.0%	39.0%	100.0%	100.0%	224
3:00 - 4:00 PM	51.0%	93.0%	52.0%	32.0%	100.0%	100.0%	219
4:00 - 5:00 PM	57.0%	85.0%	50.0%	33.0%	100.0%	100.0%	207
5:00 - 6:00 PM	62.0%	57.0%	63.0%	41.0%	100.0%	100.0%	164
6:00 - 7:00 PM	65.0%	21.0%	49.0%	78.0%	100.0%	100.0%	115
7:00 - 8:00 PM	68.0%	0.0%	100.0%	95.0%	100.0%	100.0%	91
8:00 - 9:00 PM	75.0%	0.0%	94.0%	100.0%	0.0%	100.0%	91
9:00 - 10:00 PM	82.0%	0.0%	73.0%	88.0%	0.0%	100.0%	88
10:00 - 11:00 PM	87.0%	0.0%	0.0%	64.0%	0.0%	100.0%	74
11:00 - 12:00 AM	91.0%	0.0%	0.0%	0.0%	0.0%	100.0%	51

*Parking Distributions obtained from Institute of Transportation Engineers Parking Generation Manual, 5th Edition

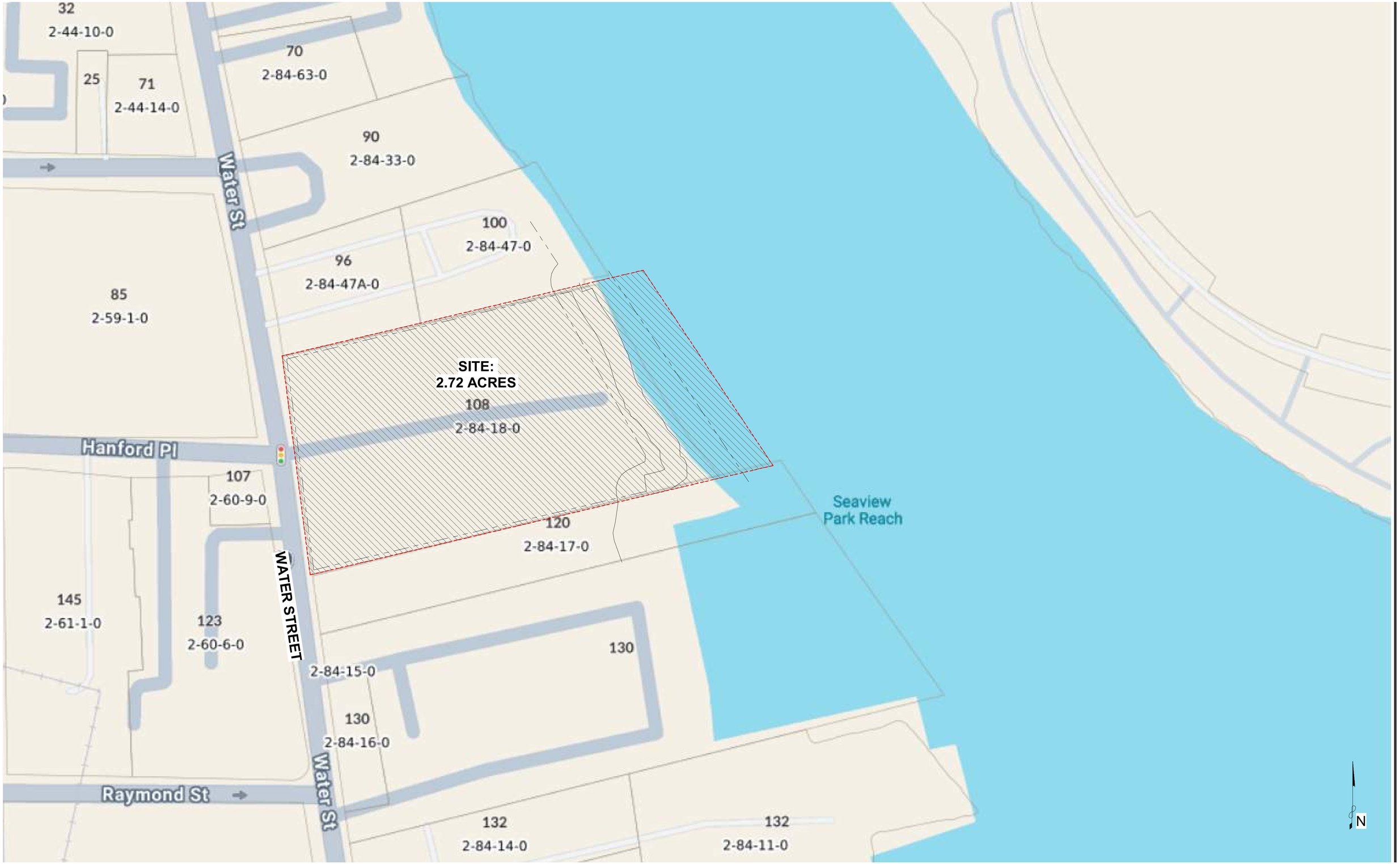
Parking Hourly Distribution - Saturday							
Land Use Code	221	710	822	822	-	-	Total Time of Day Parking Distribution
Land Use	Residential	Office	Personal Service	Restaurant	Marine Supply	Boat Slips	
Time of Day	Weekday/Saturday Composite	Weekday	Saturday	Saturday	All	All	
Size	59 Units	110,899 SF	3,444 SF	3,823 SF	2,254 SF	14 Total	
Maximum Daily Parking Demand (Weighted Average)	45	0	10	54	4	14	
12:00 - 1:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	49
1:00 - 2:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	49
2:00 - 3:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	49
3:00 - 4:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	49
4:00 - 5:00 AM	100.0%	0.0%	0.0%	0.0%	0.0%	29.0%	49
5:00 - 6:00 AM	96.0%	0.0%	0.0%	0.0%	0.0%	29.0%	47
6:00 - 7:00 AM	86.0%	0.0%	0.0%	0.0%	100.0%	100.0%	57
7:00 - 8:00 AM	77.0%	13.0%	0.0%	0.0%	100.0%	100.0%	53
8:00 - 9:00 AM	66.0%	47.0%	0.0%	0.0%	100.0%	100.0%	48
9:00 - 10:00 AM	60.0%	87.0%	38.0%	0.0%	100.0%	100.0%	49
10:00 - 11:00 AM	57.0%	99.0%	55.0%	0.0%	100.0%	100.0%	49
11:00 - 12:00 PM	55.0%	100.0%	66.0%	20.0%	100.0%	100.0%	60
12:00 - 1:00 PM	52.0%	86.0%	85.0%	40.0%	100.0%	100.0%	72
1:00 - 2:00 PM	50.0%	84.0%	100.0%	62.0%	100.0%	100.0%	84
2:00 - 3:00 PM	52.0%	93.0%	96.0%	69.0%	100.0%	100.0%	88
3:00 - 4:00 PM	51.0%	93.0%	79.0%	49.0%	100.0%	100.0%	75
4:00 - 5:00 PM	57.0%	85.0%	66.0%	66.0%	100.0%	100.0%	86
5:00 - 6:00 PM	62.0%	57.0%	64.0%	79.0%	100.0%	100.0%	95
6:00 - 7:00 PM	65.0%	21.0%	67.0%	85.0%	100.0%	100.0%	100
7:00 - 8:00 PM	68.0%	0.0%	70.0%	99.0%	100.0%	100.0%	109
8:00 - 9:00 PM	75.0%	0.0%	70.0%	99.0%	0.0%	100.0%	108
9:00 - 10:00 PM	82.0%	0.0%	51.0%	100.0%	0.0%	100.0%	110
10:00 - 11:00 PM	87.0%	0.0%	0.0%	88.0%	0.0%	100.0%	101
11:00 - 12:00 AM	91.0%	0.0%	0.0%	0.0%	0.0%	100.0%	55

*Parking Distributions obtained from Institute of Transportation Engineers Parking Generation Manual, 5th Edition

108 WATER ST

BEINFIELD ARCHITECTURE

06/18/2025



1 SD0.01 LOCATION MAP
1" = 50'-0"

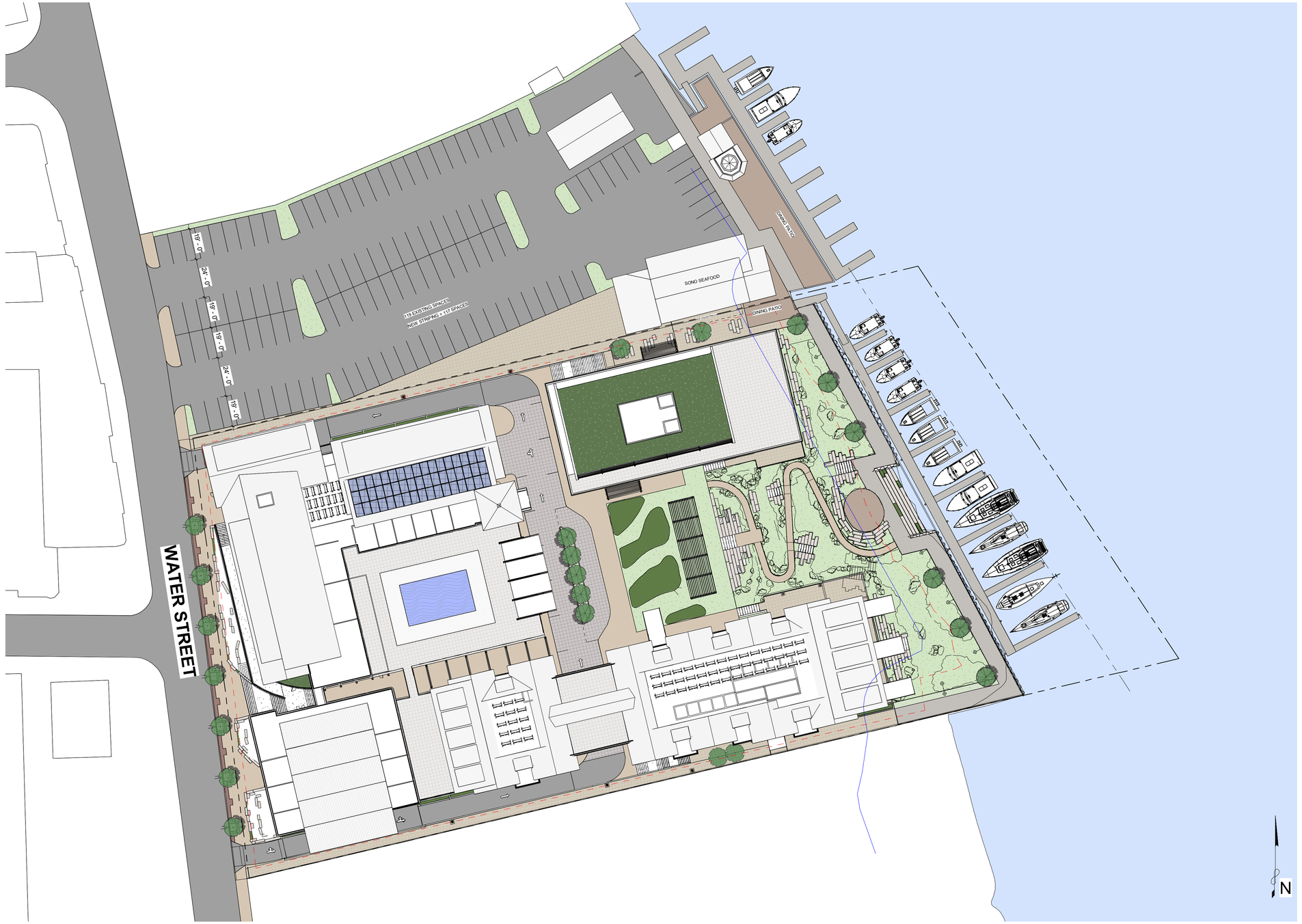
BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2025 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD0.02 CONNECTIVITY MAP
1" = 30'-0"

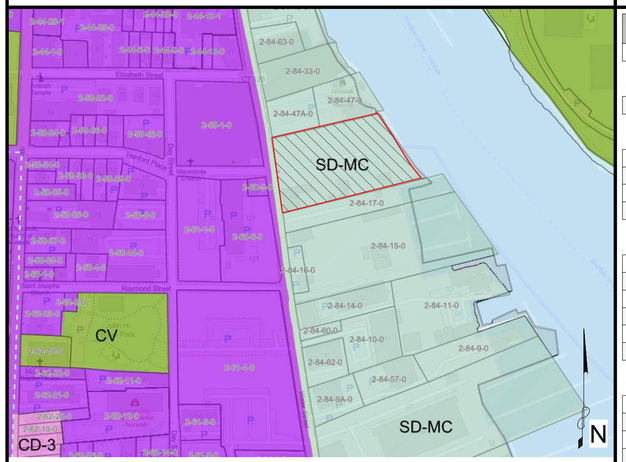
©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC

ZONING MAP



PARKING ANALYSIS

PARKING SCHEDULE

STALL TYPE	COUNT
LVL 1 - MEZZ.	
ST - PARKING SPACE: 7 x 22 PARALLEL	11
ST - PARKING SPACE: 8.5 x 19	46
ST - PARKING SPACE: 8.5 x 19_EV	25
ST - PARKING SPACE: 10' x 19' ADA CAR	3
ST - PARKING SPACE: 11 x 19 ADA Space (VAN / CAR)	1
LVL 1 - PARKING	
ST - PARKING SPACE: 8.5 x 19	159
ST - PARKING SPACE: 10' x 19' ADA CAR	4
TOTAL PARKING SPACES	**249**

BICYCLE PARKING: 39 SPACES REQUIRED

AREA SCHEDULES (BY PROGRAM)

BUILDING AREAS (RESIDENTIAL)

Level	Area
RESIDENTIAL	
LEVEL_02	18,131 SF
LEVEL_03	22,332 SF
LEVEL_04	22,335 SF
LEVEL_04.5	13,174 SF
	75,972 SF
RESIDENTIAL - AMENITY	
LEVEL_01 - PARKING	596 SF
LEVEL_01 - MEZZ.	2,019 SF
LEVEL_02	3,701 SF
	6,317 SF
RESIDENTIAL - CIRCULATION	
LEVEL_01 - PARKING	840 SF
LEVEL_01 - MEZZ.	1,841 SF
LEVEL_02	1,785 SF
LEVEL_03	1,952 SF
LEVEL_04	1,952 SF
	8,371 SF
RESIDENTIAL - MECH	
LEVEL_01 - PARKING	2,731 SF
LEVEL_01 - MEZZ.	1,115 SF
LEVEL_02	317 SF
LEVEL_03	451 SF
LEVEL_04	447 SF
LEVEL_04.5	737 SF
	5,798 SF
	96,458 SF

AREA SCHEDULES (BY PROGRAM)

BUILDING AREAS (OFFICE)

Level	Area
BLDG B (OFFICE - AMENITY)	
LEVEL_01 - MEZZ.	2,254 SF
	2,254 SF
BLDG B (OFFICE - BOH)	
LEVEL_01 - MEZZ.	251 SF
LEVEL_02	243 SF
LEVEL_03	243 SF
LEVEL_04	243 SF
	979 SF
BLDG B (OFFICE - CIRCULATION)	
LEVEL_01 - PARKING	1,299 SF
LEVEL_01 - MEZZ.	642 SF
LEVEL_02	673 SF
LEVEL_03	673 SF
LEVEL_04	673 SF
LEVEL_04.5	267 SF
	4,228 SF
BLDG B (OFFICE - MECH)	
LEVEL_01 - PARKING	290 SF
LEVEL_01 - MEZZ.	362 SF
LEVEL_02	449 SF
LEVEL_03	449 SF
LEVEL_04	449 SF
LEVEL_04.5	336 SF
	2,334 SF
BLDG B (OFFICE)	
LEVEL_01 - MEZZ.	2,743 SF
LEVEL_02	8,768 SF
LEVEL_03	8,768 SF
LEVEL_04	8,768 SF
LEVEL_04.5	3,616 SF
	32,662 SF
BLDG C (OFFICE - AMENITY)	
LEVEL_01 - MEZZ.	3,823 SF
	3,823 SF
BLDG C (OFFICE - CIRCULATION)	
LEVEL_01 - PARKING	750 SF
LEVEL_01 - MEZZ.	208 SF
LEVEL_02	254 SF
LEVEL_03	254 SF
LEVEL_04	254 SF
LEVEL_04.5	254 SF
	1,974 SF
BLDG C (OFFICE - MECH)	
LEVEL_01 - MEZZ.	707 SF
	707 SF
BLDG C (OFFICE)	
LEVEL_01 - MEZZ.	4,484 SF
LEVEL_02	15,554 SF
LEVEL_03	15,554 SF
LEVEL_04	15,554 SF
LEVEL_04.5	10,791 SF
	61,936 SF
	110,899 SF

AREA SCHEDULE (BY LEVEL)

BUILDING AREAS (BY LEVEL)

Comments	Area
LEVEL_01 - PARKING	
BLDG B (OFFICE - CIRCULATION)	1,299 SF
BLDG B (OFFICE - MECH)	290 SF
BLDG C (OFFICE - CIRCULATION)	750 SF
RESIDENTIAL - AMENITY	596 SF
RESIDENTIAL - CIRCULATION	840 SF
RESIDENTIAL - MECH	2,731 SF
	6,506 SF
LEVEL_01 - MEZZ.	
BLDG B (OFFICE - AMENITY)	2,254 SF
BLDG B (OFFICE - BOH)	251 SF
BLDG B (OFFICE - CIRCULATION)	642 SF
BLDG B (OFFICE - MECH)	362 SF
BLDG B (OFFICE)	2,743 SF
BLDG C (OFFICE - AMENITY)	3,823 SF
BLDG C (OFFICE - CIRCULATION)	208 SF
BLDG C (OFFICE - MECH)	707 SF
BLDG C (OFFICE)	4,484 SF
PERSONAL SERVICES	3,444 SF
RESIDENTIAL - AMENITY	2,019 SF
RESIDENTIAL - CIRCULATION	1,841 SF
RESIDENTIAL - MECH	1,115 SF
	23,893 SF
LEVEL_02	
BLDG B (OFFICE - BOH)	243 SF
BLDG B (OFFICE - CIRCULATION)	673 SF
BLDG B (OFFICE - MECH)	449 SF
BLDG B (OFFICE)	8,768 SF
BLDG C (OFFICE - CIRCULATION)	254 SF
BLDG C (OFFICE)	15,554 SF
RESIDENTIAL	18,131 SF
RESIDENTIAL - AMENITY	3,701 SF
RESIDENTIAL - CIRCULATION	1,785 SF
RESIDENTIAL - MECH	317 SF
	49,876 SF
LEVEL_03	
BLDG B (OFFICE - BOH)	243 SF
BLDG B (OFFICE - CIRCULATION)	673 SF
BLDG B (OFFICE - MECH)	449 SF
BLDG B (OFFICE)	8,768 SF
BLDG C (OFFICE - CIRCULATION)	254 SF
BLDG C (OFFICE)	15,554 SF
RESIDENTIAL	22,332 SF
RESIDENTIAL - CIRCULATION	1,952 SF
RESIDENTIAL - MECH	451 SF
	50,675 SF
LEVEL_04	
BLDG B (OFFICE - BOH)	243 SF
BLDG B (OFFICE - CIRCULATION)	673 SF
BLDG B (OFFICE - MECH)	449 SF
BLDG B (OFFICE)	8,768 SF
BLDG C (OFFICE - CIRCULATION)	254 SF
BLDG C (OFFICE)	15,554 SF
RESIDENTIAL	22,335 SF
RESIDENTIAL - CIRCULATION	1,952 SF
RESIDENTIAL - MECH	447 SF
	50,675 SF
LEVEL_04.5	
BLDG B (OFFICE - CIRCULATION)	267 SF
BLDG B (OFFICE - MECH)	336 SF
BLDG B (OFFICE)	3,616 SF
BLDG C (OFFICE - CIRCULATION)	254 SF
BLDG C (OFFICE)	10,791 SF
RESIDENTIAL	13,174 SF
RESIDENTIAL - MECH	737 SF
	29,175 SF
	210,800 SF

UNIT SCHEDULES

~80,000 SF RESIDENTIAL / 59 UNITS =

~1,355 SF / UNIT

UNIT SCHEDULE

UNIT TYPE	COUNT
LEVEL_02	
1 BR	8
2 BR	5
3 BR	4
	17
LEVEL_03	
1 BR	10
2 BR	7
3 BR	4
	21
LEVEL_04	
1 BR	7
2 BR	5
3 BR	5
4 BR	4
	21
	59

UNIT MIX

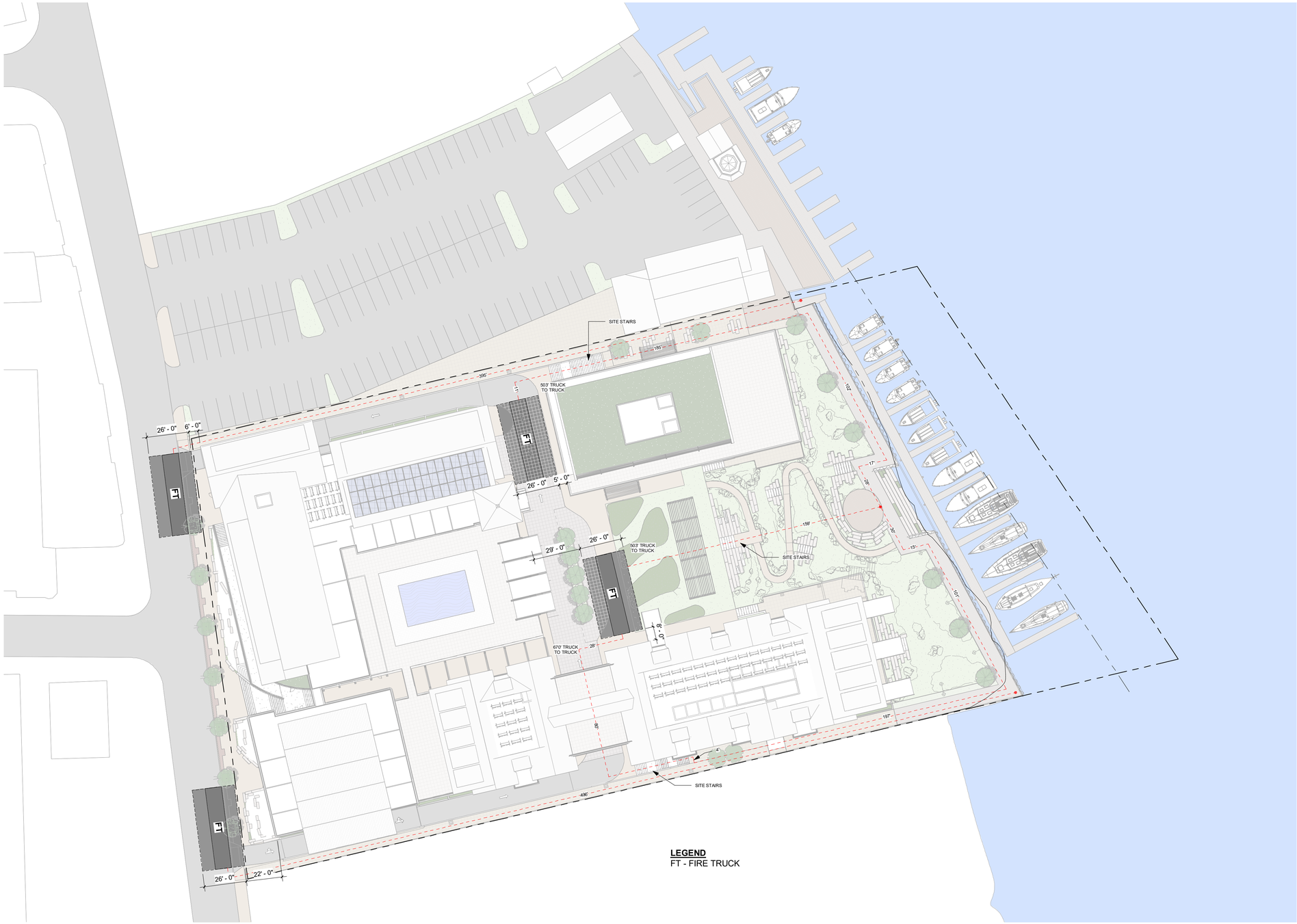
UNIT TYPE	COUNT	PERCENTAGE
1 BR	25	42%
2 BR	17	29%
3 BR	13	22%
4 BR	4	7%
	59	100%

BUILDING SUMMARY

BUILDING SUMMARY

GROSS SF	TOTAL NRSF	AMENITY SF	UNIT COUNT	PARKING COUNT
210,800 SF	80,543 SF	13,108 SF	59 UNITS	249 SPACES

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD0.30 AERIAL FIRE TRUCK ACCESS PLAN
1" = 30'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

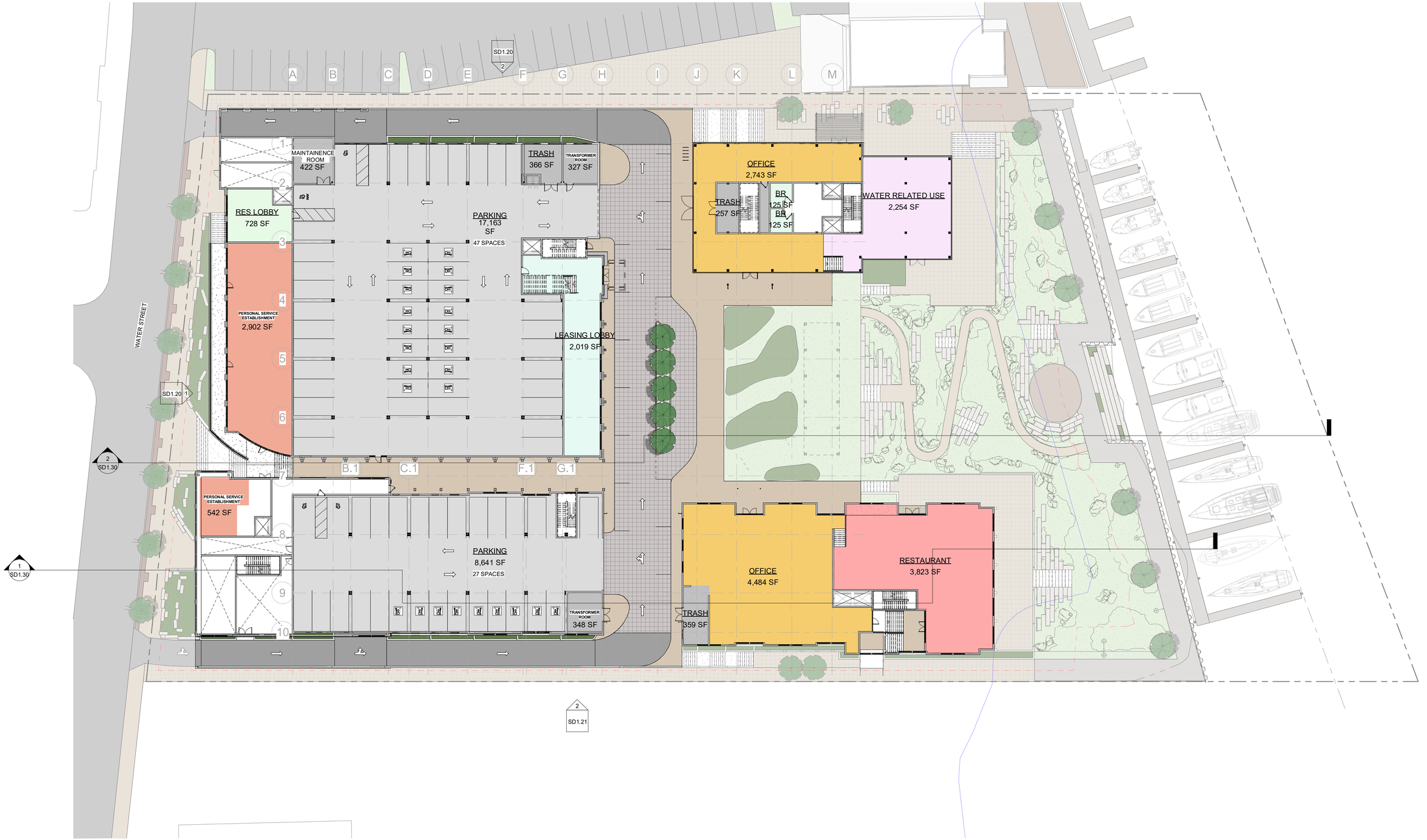
©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD1.10 OVERALL - LEVEL_01.1 - PARKING
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD1.11 OVERALL - LEVEL 01.2 - MEZZ.
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD1.12 OVERALL - LEVEL_02
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD1.13 OVERALL - LEVEL_03
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD1.14 OVERALL - LEVEL_04
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

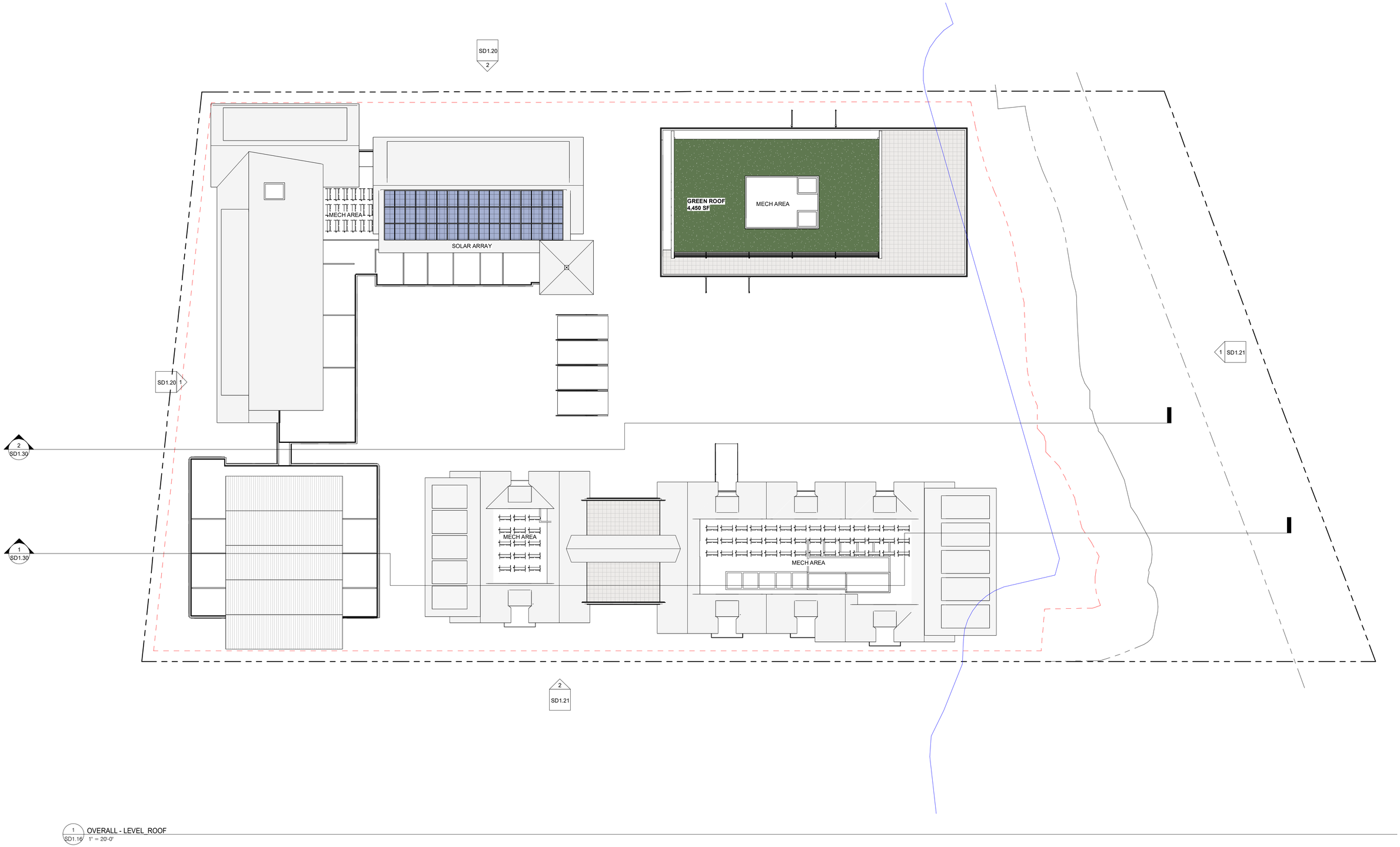
©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD1.15 OVERALL - LEVEL 04.5
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



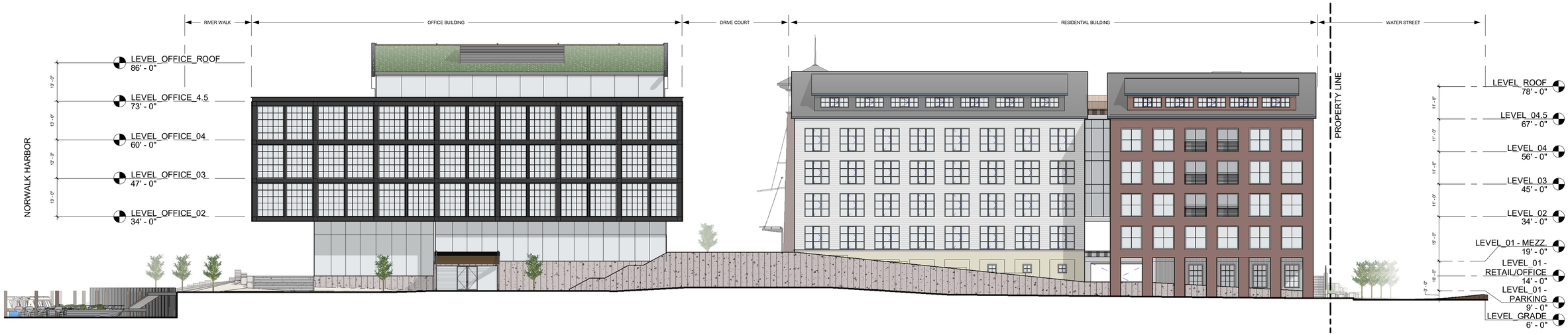
1 SD1.16 OVERALL - LEVEL ROOF
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



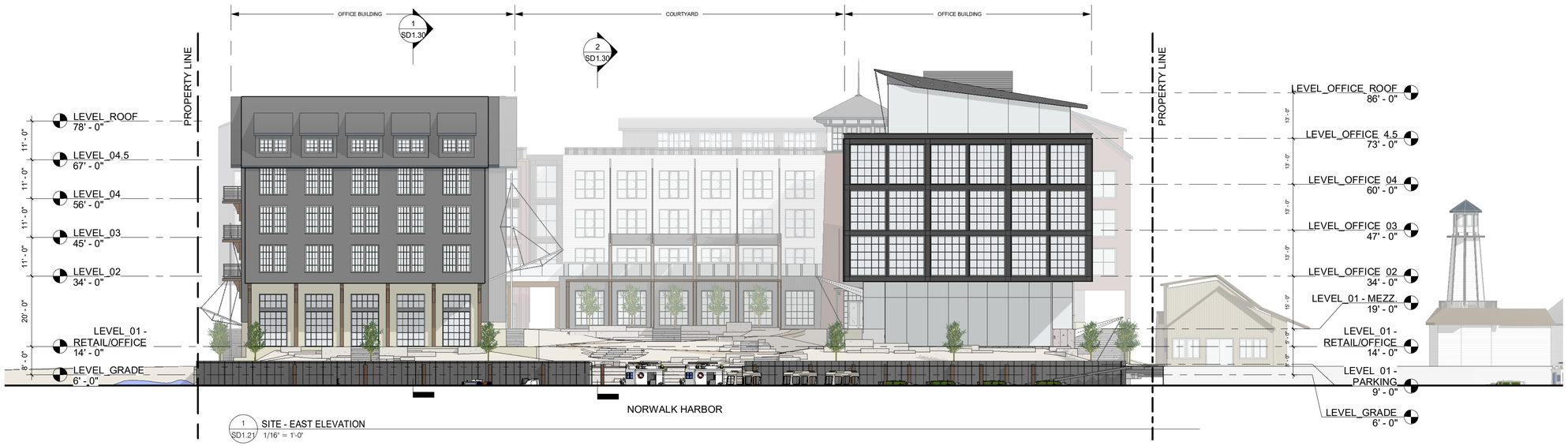
1 SD1.20 SITE -WEST ELEVATION
1/16" = 1'-0"



2 SD1.20 SITE - NORTH ELEVATION
1/16" = 1'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



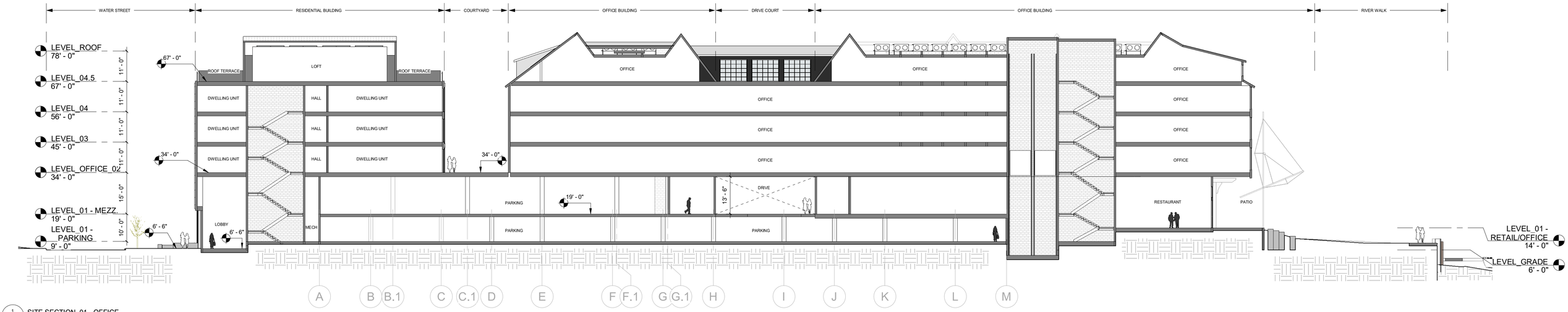
1 SD1.21 SITE - EAST ELEVATION
1/16" = 1'-0"



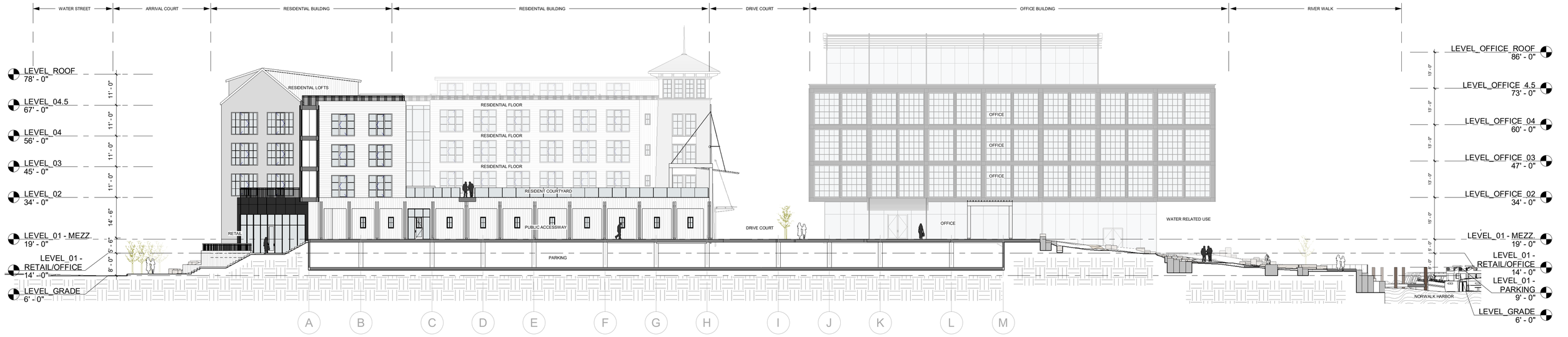
2 SD1.21 SITE - SOUTH ELEVATION
1/16" = 1'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SITE SECTION_01 - OFFICE
SD1.30 1/16" = 1'-0"



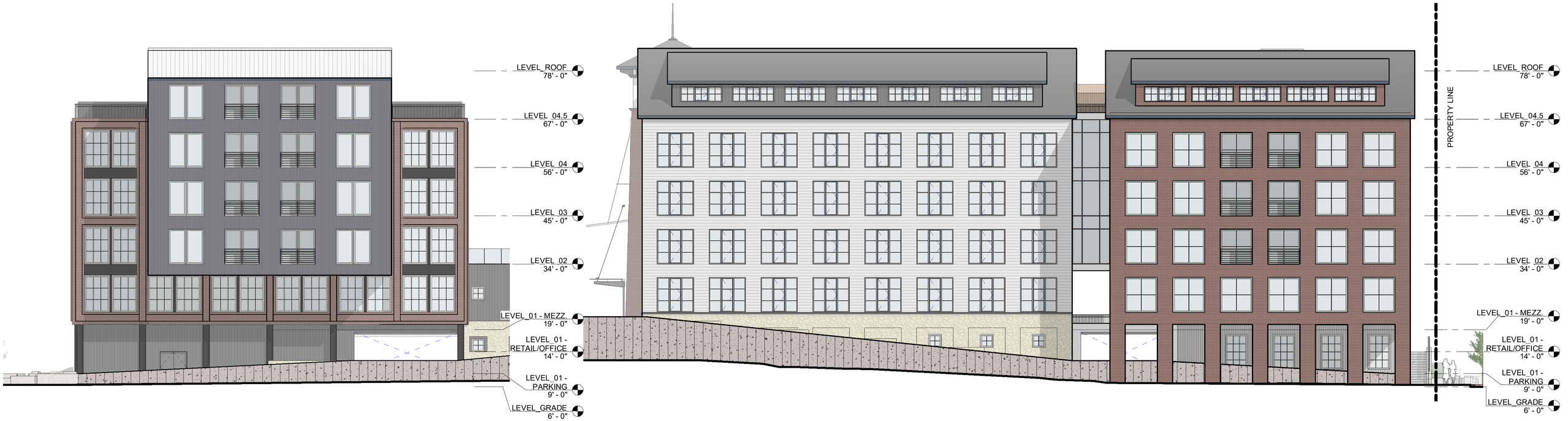
2 SITE SECTION_02
SD1.30 1/16" = 1'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD2.10 RESIDENTIAL - WEST ELEVATION - WATER STREET
1" = 10'-0"



3 SD2.10 RESIDENTIAL - SOUTH ELEVATION
1" = 10'-0"

2 SD2.10 RESIDENTIAL - NORTH ELEVATION
1" = 10'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD2.11 RESIDENTIAL - EAST ELEVATION
1" = 10'-0"



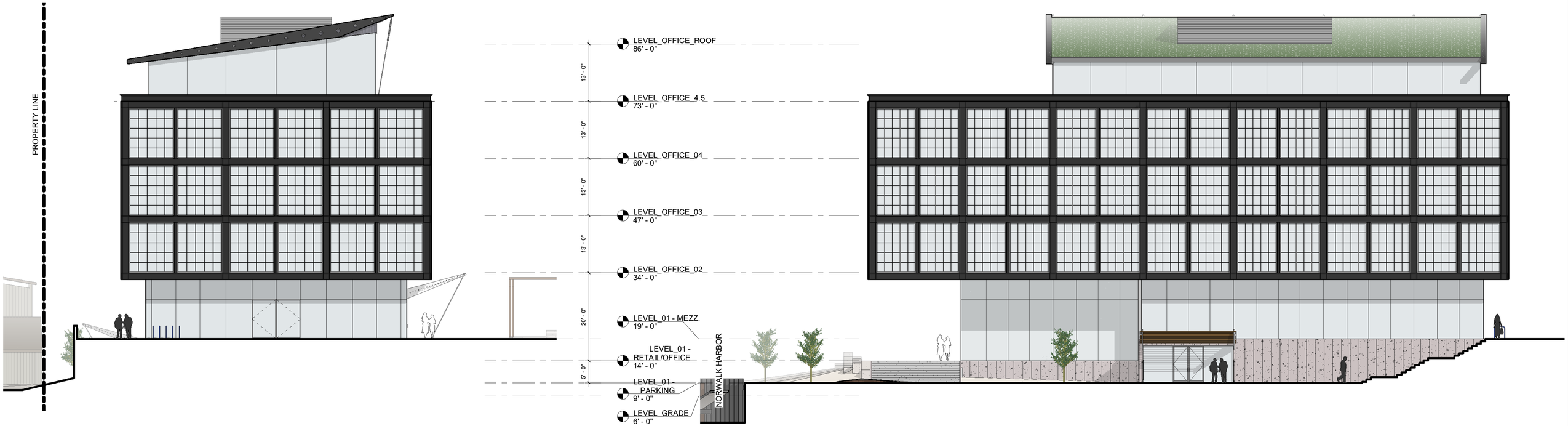
3 SD2.11 RESIDENTIAL - COURTYARD SOUTH ELEVATION
1" = 10'-0"



2 SD2.11 RESIDENTIAL - COURTYARD EAST ELEVATION
1" = 10'-0"

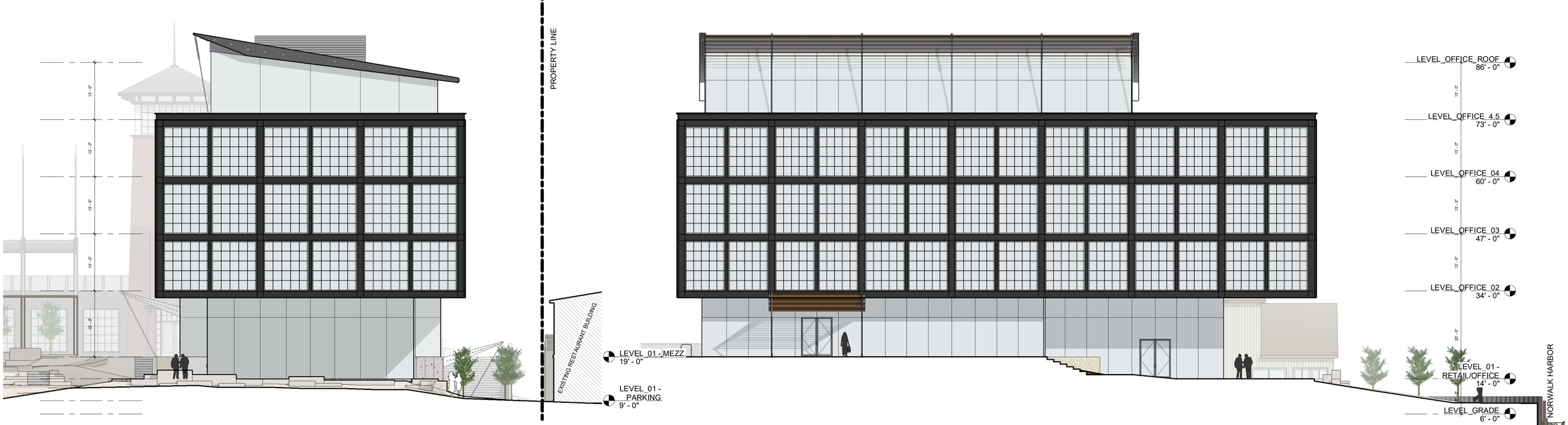
BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



2 SD3.20 OFFICE - WEST ELEVATION
1" = 10'-0"

1 SD3.20 OFFICE - NORTH ELEVATION
1" = 10'-0"



4 SD3.20 OFFICE - EAST ELEVATION
1" = 10'-0"

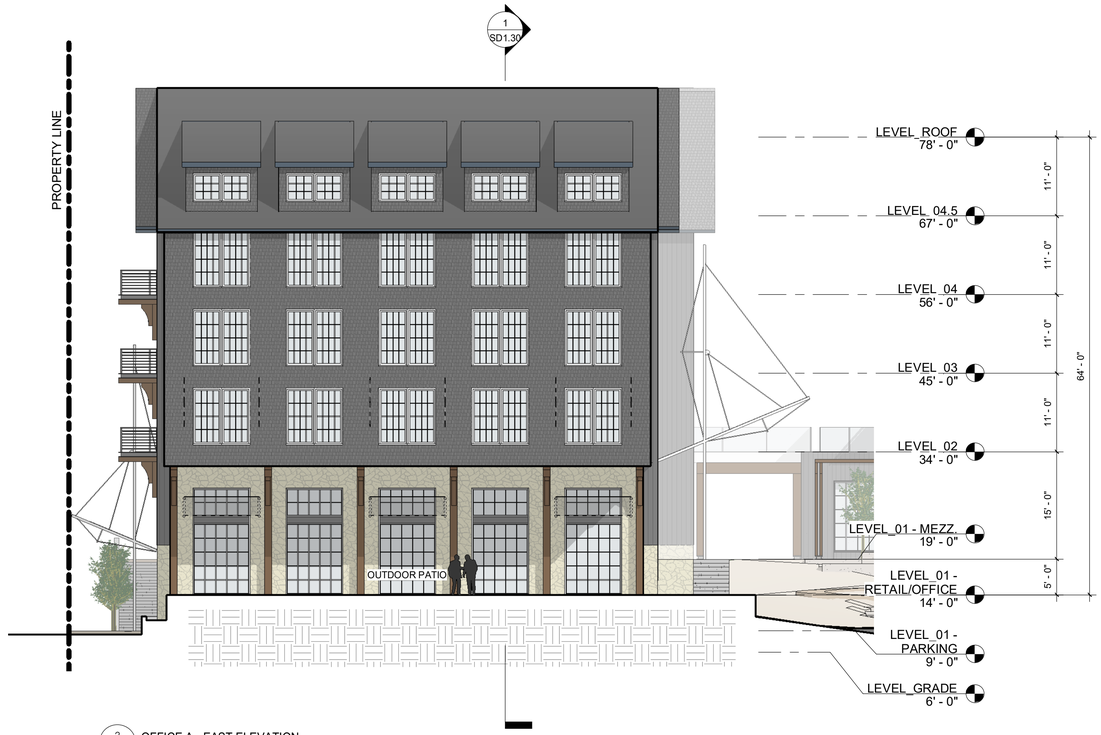
3 SD3.20 OFFICE - SOUTH ELEVATION
1" = 10'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD4.20 OFFICE A - NORTH ELEVATION
1" = 10'-0"



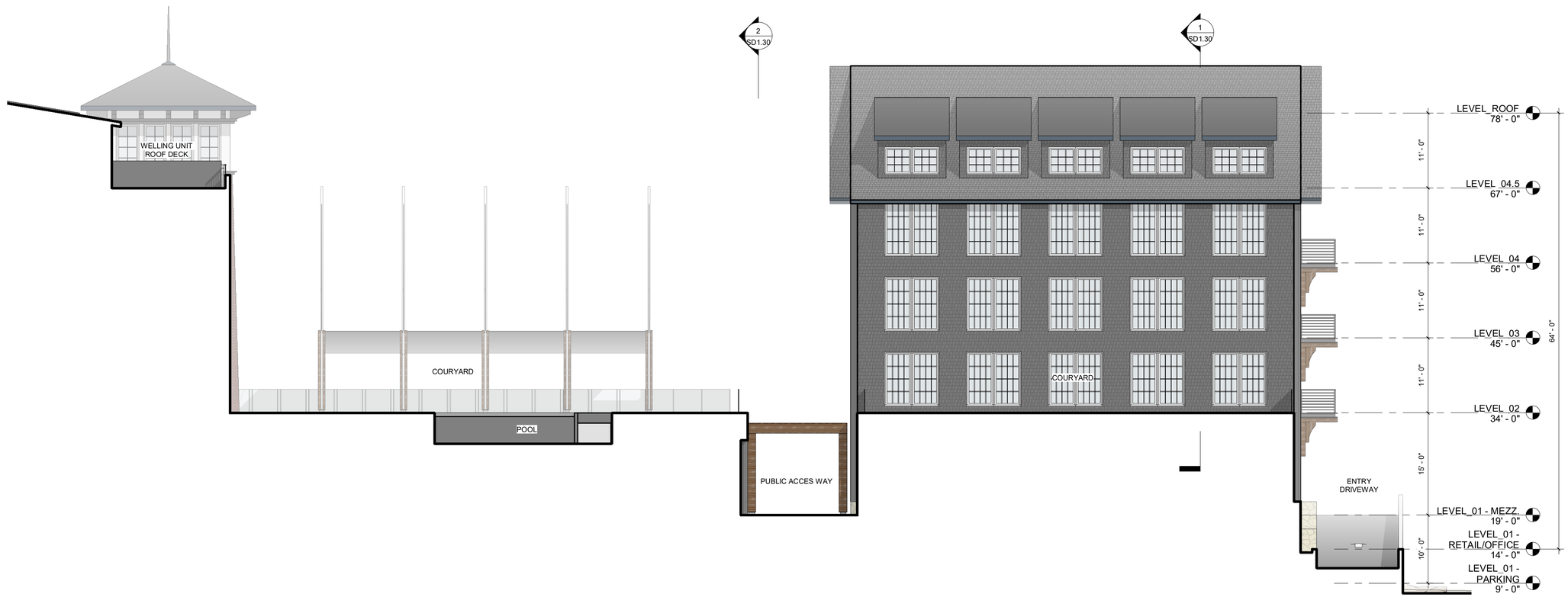
2 SD4.20 OFFICE A - EAST ELEVATION
1" = 10'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



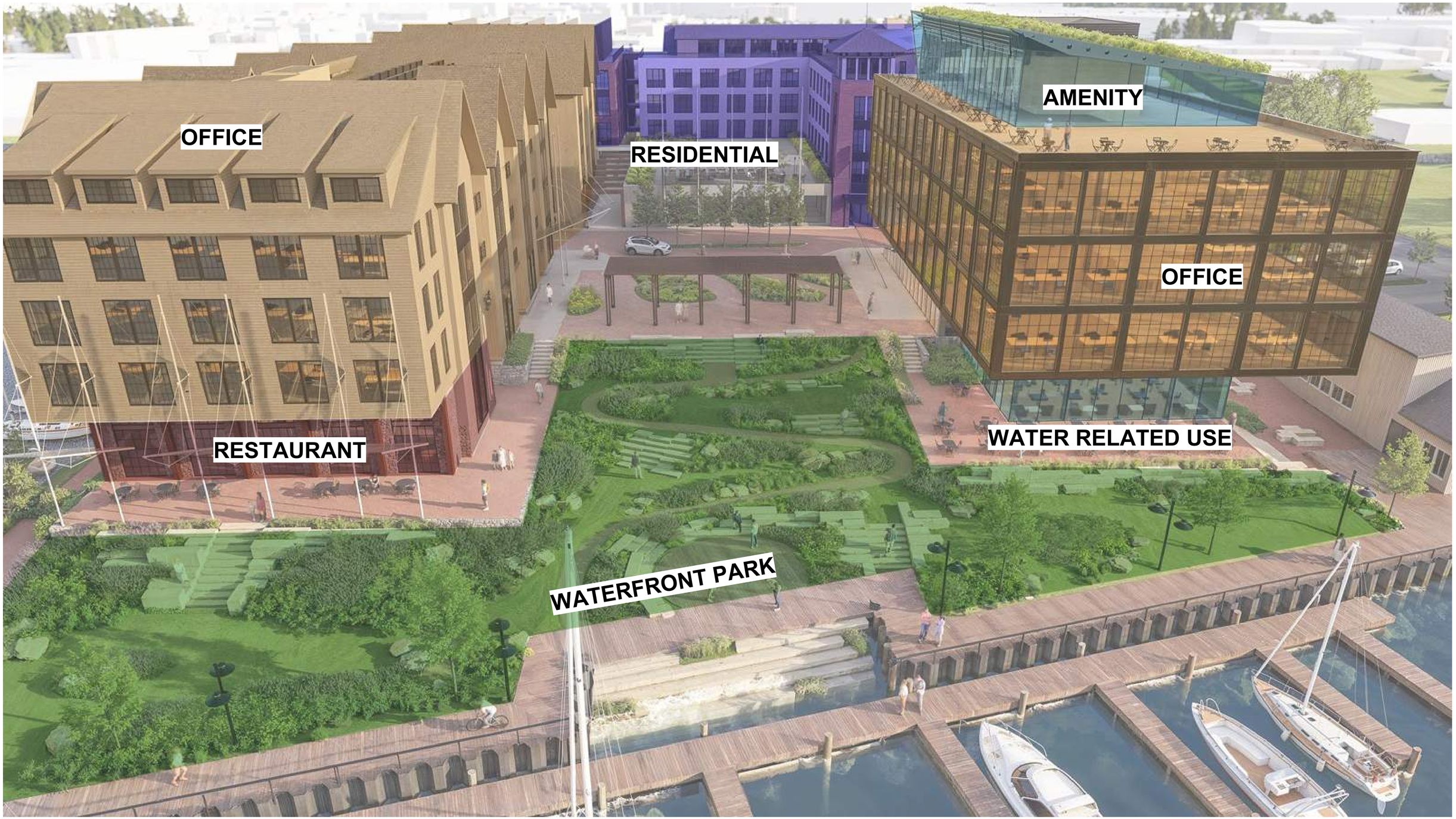
1 SD4.21 OFFICE A - SOUTH ELEVATION
1" = 10'-0"



2 SD4.21 OFFICE A - WEST ELEVATION
1/8" = 1'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



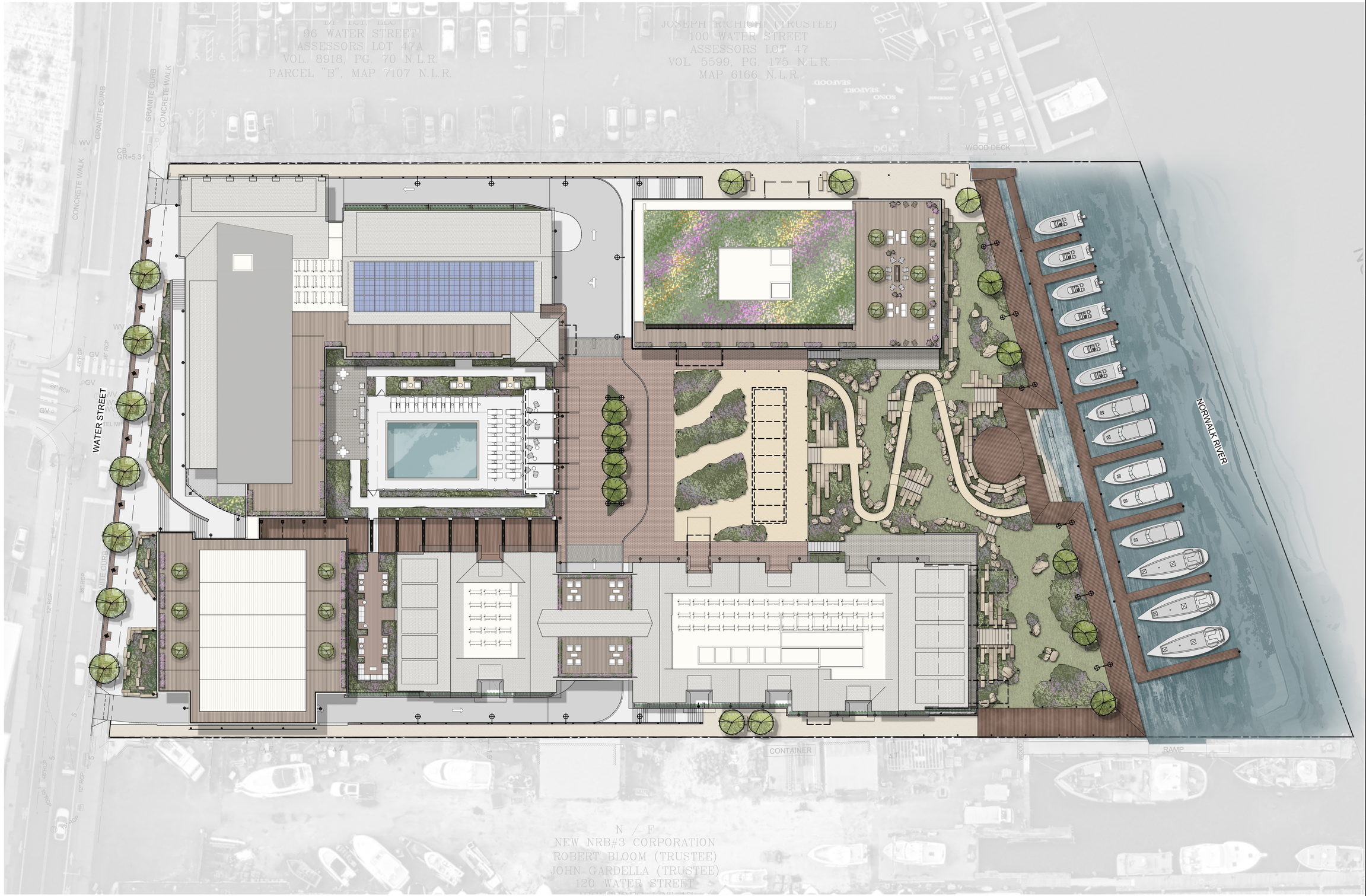
BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



GRAPHIC SCALE

20 0 10 20 40 80

SCALE: 1" = 20'-0"

erla eric rains landscape architecture, llc
11a N Main Street SoNo, CT 203.354.6500 www.ericrains.com

NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		
1		

PROJECT
108 WATER STREET
WATER STREET
NORWALK, CT

DWG TITLE
SITE PLAN
RENDERING

JOB NO.

DATE

SCALE
1"=20'-0"

SPL-R

DT 121, LLC
96 WATER STREET
ASSESSORS LOT 47A
VOL. 8918, PG. 70 N.L.R.
PARCEL "B", MAP 7107 N.L.R.

JOSEPH RICHICHI (TRUSTEE)
100 WATER STREET
ASSESSORS LOT 47
VOL. 5599, PG. 175 N.L.R.
MAP 6166 N.L.R.

GREEN ROOF TRAY SYSTEM ON ROOF (REFER TO PLANTING PLAN)

BONDED AGGREGATE PAVING (TYP.)

STACKED STONE SEATING (TYP.)

BRICK PAVERS (TYP.)

BONDED AGGREGATE PAVING (TYP.)

CITY STANDARD CONCRETE SIDEWALK WITH PRECAST CONCRETE PAVER BAND (TYP.)

CITY STANDARD STREET TREE PLANTING IN FLEXI-PAVE TREE SURROUND

STACKED STONE WALL / SEATING (TYP.)

CONCRETE SIDEWALK (TYP.)

BRICK PAVERS (TYP.)

PROPOSED BUILDING

PROPOSED BUILDING

WOOD DECK

STACKED STONE SEATING (TYP.)

NATURALS BOULDERS (TYP.)

PILE (TYP.)

SOLID STONE STEPS WITH ILLUMINATED HANDRAIL (TYP.)

WOODEN BOARDWALK AND DOCK (TYP.)

NORWALK RIVER

STACKED STONE SEATING (TYP.)

SOLID STONE STEPS WITH ILLUMINATED HANDRAIL (TYP.)

CONCRETE PIER

WATER STREET

CONCRETE WALK

WOOD DECKING TO MATCH BOARDWALK (TYP.)

PROPOSED BUILDING

PROPOSED BUILDING

SHADE STRUCTURE

BONDED AGGREGATE PAVING (TYP.)

BRICK PAVERS (TYP.)

BONDED AGGREGATE WALKWAY (TYP.)

PROPOSED BUILDING

STACKED STONE WALL / SEATING (TYP.)

BONDED AGGREGATE PAVING (TYP.)

STACKED STONE SEATING (TYP.)

RAMP

WOOD

NATURAL BOULDERS (TYP.)

SOLID STONE STEPS WITH ILLUMINATED HANDRAIL (TYP.)

STACKED STONE SEATING (TYP.)

BONDED AGGREGATE PAVING (TYP.)

N / F
NEW NRB#3 CORPORATION
ROBERT BLOOM (TRUSTEE)
JOHN GARDELLA (TRUSTEE)
120 WATER STREET
ASSESSORS LOT 47

GRAPHIC SCALE
20 0 10 20 40 80
SCALE: 1" = 20'-0"

eric raines landscape architecture, llc
11a N Main Street SoNo, CT 203.354.6500 www.ericraines.com

NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		
1	MUNICIPAL REVIEW	25.06.13

PROJECT
108 WATER STREET
WATER STREET
NORWALK, CT

DWG. TITLE
OVERALL SITE MATERIALS PLAN

JOB NO.

DATE
2025.06.13

SCALE
1"=20'-0"

SPL-1.0

DT 121, LLC
96 WATER STREET
ASSESSORS LOT 47A
VOL. 8918, PG. 70 N.L.R.
PARCEL "B", MAP 7107 N.L.R.

JOSEPH RICHICHI (TRUSTEE)
100 WATER STREET
ASSESSORS LOT 47
VOL. 5599, PG. 175 N.L.R.
MAP 6166 N.L.R.

(2) BN

4" DEPTH EXTENSIVE GREEN ROOF TRAY SYSTEM (ON ROOF)

ASSORTED ORNAMENTAL SHRUB AND PERENNIAL PLANTINGS (TYP. - SEE PLANTING SCHEDULE)

(54) IG

WOOD DECK

GRANITE CURB

CONCRETE WALK

GRANITE CURB

CONCRETE WALK

WV

CB
GR=5.31

(7) GB

ASSORTED ORNAMENTAL SHRUB AND PERENNIAL PLANTINGS (TYP. - SEE PLANTING SCHEDULE)

PROPOSED BUILDING

ASSORTED ORNAMENTAL SHRUB AND PERENNIAL PLANTINGS (TYP. - SEE PLANTING SCHEDULE)

PROPOSED BUILDING

PILE (TYP.)

(3) AR

ASSORTED ORNAMENTAL SHRUB AND PERENNIAL PLANTINGS (TYP. - SEE PLANTING SCHEDULE)

CLOVER LAWN

WV

GV

48"RCP

36" RCP

24" RCP

GV

WV

WV

WV

TEL MH

WATER STREET

4" DEPTH EXTENSIVE GREEN ROOF TRAY SYSTEM (ON ROOF)

POOL

CLOVER LAWN

CLOVER LAWN

NORWALK RIVER

CONCRETE PIER

(3) AR

CLOVER LAWN

ASSORTED ORNAMENTAL SHRUB AND PERENNIAL PLANTINGS (TYP. - SEE PLANTING SCHEDULE)

PROPOSED BUILDING

PROPOSED BUILDING

(4) LT

ASSORTED ORNAMENTAL SHRUB AND PERENNIAL PLANTINGS (TYP. - SEE PLANTING SCHEDULE)

PROPOSED BUILDING

ASSORTED ORNAMENTAL SHRUB AND PERENNIAL PLANTINGS (TYP. - SEE PLANTING SCHEDULE)

WOOD

RAMP

36" RCP

12" RCP

12" RCP

48"RCP

15"RCP

12" RCP

15" RCP

(59) IG

(54) IG

(2) BN

(45) IG

N / F
NEW NRB#3 CORPORATION
ROBERT BLOOM (TRUSTEE)
JOHN GARDELLA (TRUSTEE)
120 WATER STREET
ASSESSORS LOT 47

GRAPHIC SCALE
20 0 10 20 40 80
SCALE: 1" = 20'-0"

eric rains landscape architecture, llc
11a N Main Street SoNo, CT 203.354.6500 www.ericrains.com

NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		25.06.13
1	MUNICIPAL REVIEW	

PROJECT
108 WATER STREET
WATER STREET
NORWALK, CT

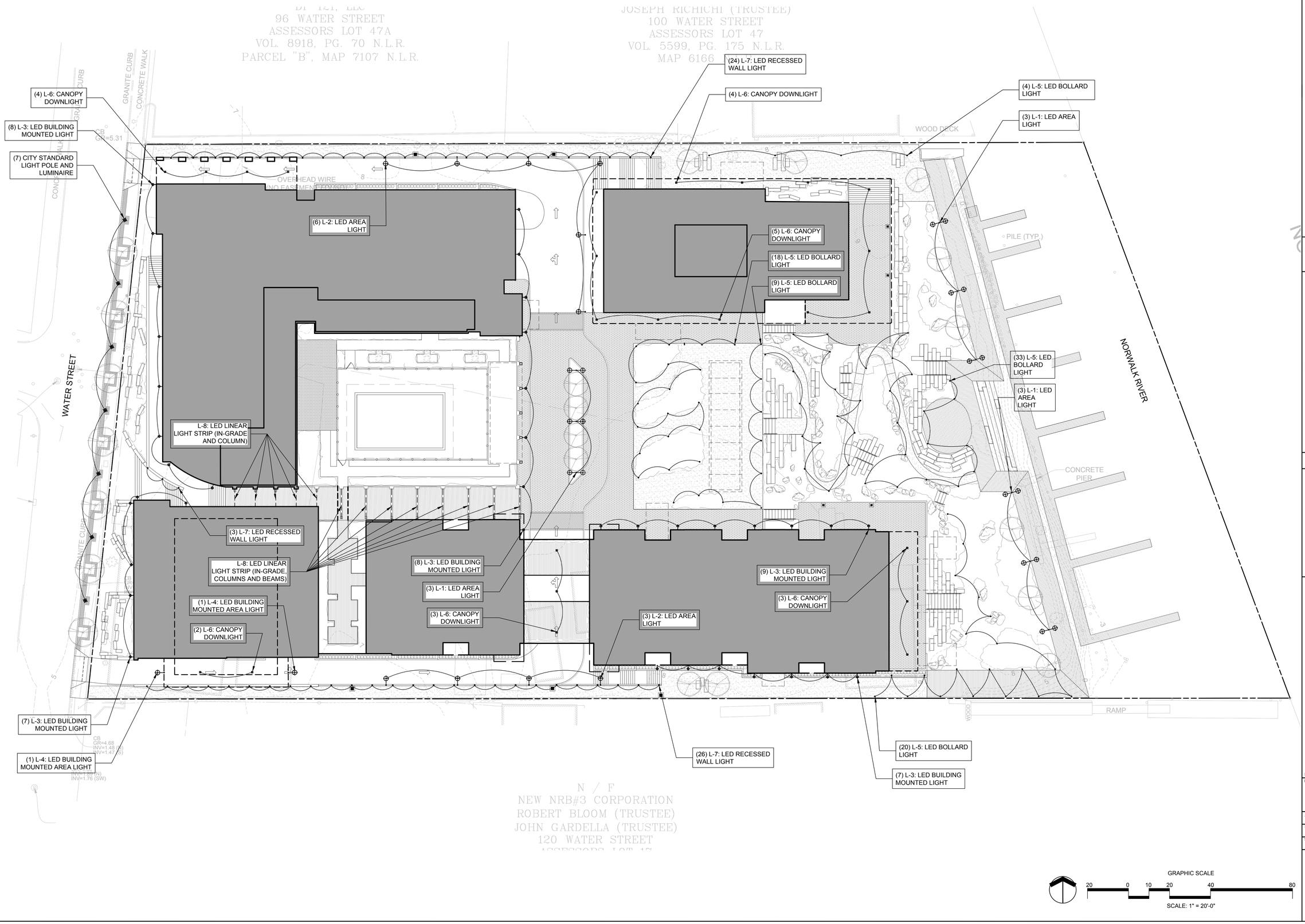
DWG TITLE
OVERALL PLANTING PLAN

JOB NO.

DATE
2025.06.13

SCALE
1"=20'-0"

SPL-2.0



GRAPHIC SCALE
20 0 10 20 40 80
SCALE: 1" = 20'-0"

eric raines landscape architecture, llc
11a N Main Street SoNo, CT 203.354.6500 www.ericraines.com

NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		
1	MUNICIPAL REVIEW	25.06.13

PROJECT
108 WATER STREET
WATER STREET
NORWALK, CT

DWG TITLE
OVERALL SITE LIGHTING PLAN

JOB NO.

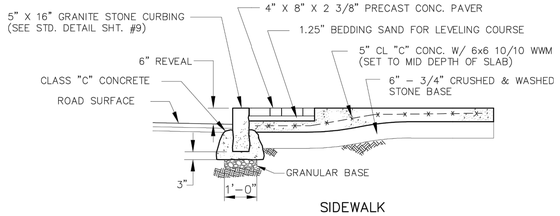
DATE
2025.06.13

SCALE
1"=20'-0"

SPL-3.0

SITE MATERIALS SCHEDULE

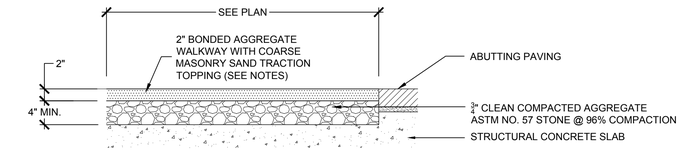
SYM	DESCRIPTION
A	CONCRETE SIDEWALK: 4000 PSI
B	CITY STANDARD BRICK PAVER - TYPE: HOLLAND STONE, SIZE: 4" x 8" (NOM.). COLORS: RED AND CHARCOAL. DISTRIBUTED BY O&G INDUSTRIES, CONTACT ANDREW AMATURO, PHONE: 860-559-3400.
C	BONDED AGGREGATE WALKWAY - STONE BLEND: RI BEIGE. BINDER: Profi DEKO. CONTACT HENRI HILLMANN - PHONE: (860) 840-4637.
D	BRICK PAVERS - TYPE: CLAY. COLOR: RED / RED BLEND AND GREY. SIZE: 4" x 8" NOM. DISTRIBUTED BY O&G INDUSTRIES, CONTACT ANDREW AMATURO, PHONE: 860-559-3400.
E	STONE STEPS - TYPE: GRANITE. COLOR: NATURAL. FINISH: THERMAL (ALL EXPOSED SIDES). DISTRIBUTED BY O&G INDUSTRIES, CONTACT ANDREW AMATURO, PHONE: 860-559-3400.
F	STACKED STONE - TYPE: GRANITE. COLOR: NATURAL. FINISH: SPLIT. DISTRIBUTED BY O&G INDUSTRIES, CONTACT ANDREW AMATURO, PHONE: 860-559-3400.



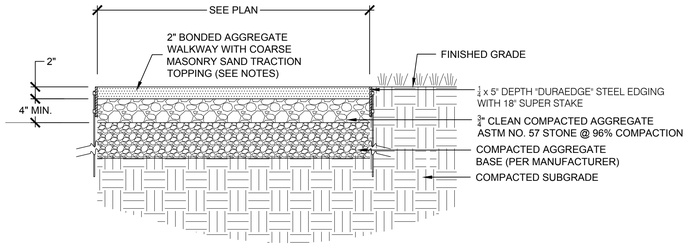
SIDEWALK
SECTION A–A

1 SIDEWALK SECTION (CITY STANDARD)

SCALE: NTS



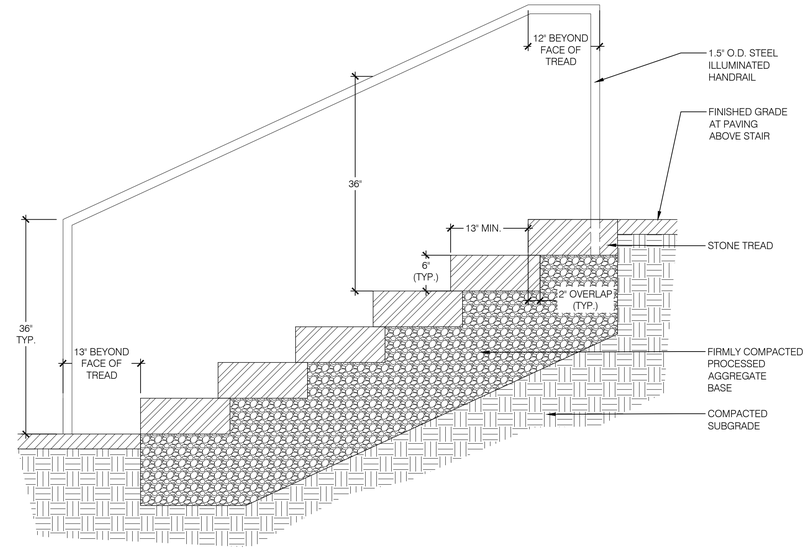
ON STRUCTURE



ON - GRADE

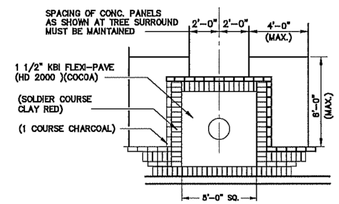
4 BONDED AGGREGATE PAVING

SCALE: NTS



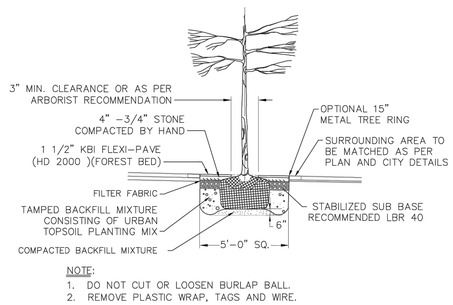
5 SOLID STONE STEPS

SCALE: NTS



2 TREE PIT FLEXI-PAVE DETAIL (CITY STANDARD)

SCALE: NTS

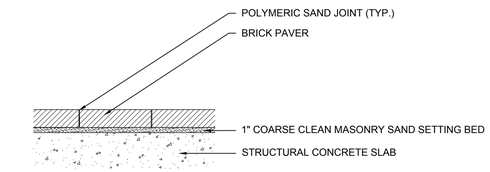


NOTE:
1. DO NOT CUT OR LOOSEN BURLAP BALL.
2. REMOVE PLASTIC WRAP, TAGS AND WIRE.

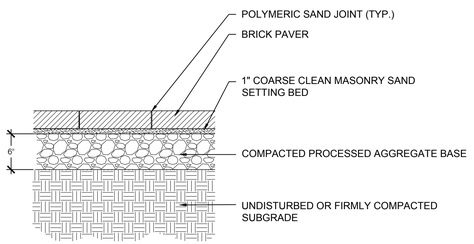
KBI FLEXI–PAVE
TREE SURROUND DETAIL

3 TREE PIT DETAIL (CITY STANDARD)

SCALE: NTS



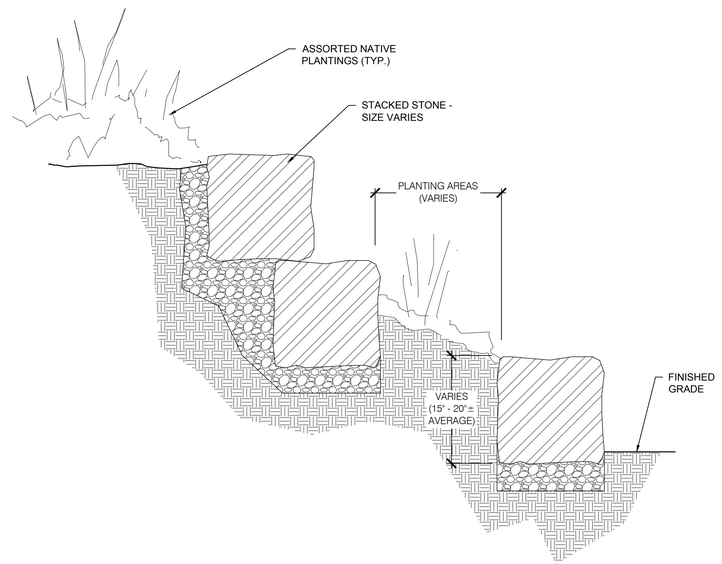
ON STRUCTURE



ON - GRADE

6 BRICK PAVING

SCALE: NTS



7 STACKED STONE - SCHEMATIC SECTION / DETAIL

SCALE: NTS

eric rains landscape architecture, llc
11a N Main Street SoNo, CT 203.354.6500 www.ericrains.com

NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		
1	MUNICIPAL REVIEW	25.06.13

PROJECT
108 WATER STREET
WATER STREET
NORWALK, CT

DWG TITLE
DETAILS

JOB NO:

DATE
2025.06.13

SCALE
1"=20'-0"

SPL-4.0

SITE PLANTING SCHEDULE

SYM	QTY	BOTANICAL NAME	COMMON NAME	ROOT	MIN. SIZE	COMMENTS
TREES						
AR	6	Acer rubrum 'October Glory'	October Glory Red Maple	B&B	4 - 4.5" CAL.	Full, Branching at 6'-0" Min.
BN	4	Betula nigra 'Heritage'	Heritage River Birch	B&B	3.5 - 4" CAL.	Single Trunk, Branching at 6'-0" Min.
GB	7	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	B&B	4 - 4.5" CAL.	Full, Branching at 6'-0" Min.
LT	4	Liriodendron tulipifera 'Fastigiatum'	Fastigiate Tulip	B&B	3.5 - 4" CAL.	Full, Branching at 6'-0" Min.
FOUNDATION SHRUBS						
IG	60	Ilex glabra 'Gem Box'	Gem Box Inkberry	Cont.	#5	Full, Heavy
ASSORTED NATIVE SHRUBS, GRASSES AND PERENNIALS						
SHRUBS						
--	--	Amelanchier canadensis	Serviceberry	CONT.	#5	Final locations and quantities TBD
--	--	Clethra alnifolia	Sweet Pepperbush	CONT.	#5	Final locations and quantities TBD
--	--	Cornus sericea	Redosier Dogwood	CONT.	#5	Final locations and quantities TBD
--	--	Ilex glabra spp.	Inkberry	CONT.	#5	Final locations and quantities TBD
--	--	Myrica pennsylvanica spp.	Northern Bayberry	CONT.	#5	Final locations and quantities TBD
--	--	Rosa caroliniana spp.	Carolina Rose	CONT.	#5	Final locations and quantities TBD
--	--	Rosa virginiana spp.	Virginia Rose	CONT.	#5	Final locations and quantities TBD
GRASSES						
--	--	Andropogon gerardii	Big Bluestem	CONT.	#1	Final locations and quantities TBD
--	--	Carex pennsylvanica	Pennsylvania sedge	CONT.	#1	Final locations and quantities TBD
--	--	Deschampsia cespitosa	Tufted Hairgrass	CONT.	#1	Final locations and quantities TBD
--	--	Panicum virgatum	Switchgrass	CONT.	#1	Final locations and quantities TBD
--	--	Schizachyrium scoparium	Little Bluestem	CONT.	#1	Final locations and quantities TBD
PERENNIALS						
--	--	Baptista spp.	False Indigo	CONT.	#1	Final locations and quantities TBD
--	--	Eupatorium purpurea	Joe Pye-Weed	CONT.	#1	Final locations and quantities TBD
--	--	Eurybia spectabilis	Eastern Showy Aster	CONT.	#1	Final locations and quantities TBD
--	--	Iris versicolor	Norther Blue Flag	CONT.	#1	Final locations and quantities TBD
--	--	Echinacea purpurea	Coneflower	CONT.	#1	Final locations and quantities TBD
--	--	Gaura lindheimeri	Bee Blossom	CONT.	#1	Final locations and quantities TBD
--	--	Rudbeckia hirta	Black-Eyed Susan	CONT.	#1	Final locations and quantities TBD
--	--	Solidago Sempervirens	Goldenrod	CONT.	#1	Final locations and quantities TBD

PLANTING NOTES:

1. THE CONTRACTOR SHALL PROVIDE A SOIL TEST RESULT FOR ALL PLANTING AND LAWN AREAS THAT MINIMALLY INDICATE PH, SOIL TYPE AND NUTRIENT LEVELS. THE CONTRACTOR SHALL AMEND SOILS AS REQUIRED TO PROVIDE APPROPRIATE CONDITIONS FOR THE PLANTS AND OR SEED INDICATED ON THE PLANS

2. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE REPRESENTATIVE SAMPLE OF EACH PLANT VARIETY WITH AN ATTACHED LABEL INDICATING THE NAME, SIZE, AND ORIGIN, OF ALL PLANT MATERIALS

3. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT MATERIALS AT ANY POINT PRIOR TO INSTALLATION. ALL MATERIALS SHALL CONFORM TO THE AMERICAN STANDARDS FOR NURSERY STOCK" ANSI Z60.1-2014 (AVAILABLE AT AMERIHORT.ORG)

4. THE LAYOUT OF ALL BED LINES AND LOCATION OF ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.

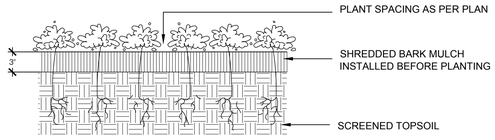
5. ALL PLANT MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS ON THE DRAWINGS

6. PLANTING BEDS SHALL BE MULCHED WITH A 2" (TWO-INCH) MINIMUM OF SHREDDED AGED HARDWOOD BARK UNLESS OTHERWISE NOTED

7. ALL VEGETATION SHOWN ON THE DRAWINGS SHALL BE MAINTAINED IN A HEALTHY CONDITION THROUGHOUT THE DURATION OF THE PROJECT OR PROJECT PHASE

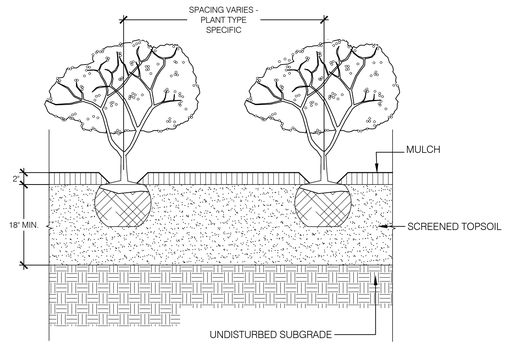
8. ALL PLANT MATERIAL SHALL BE COVERED BY A ONE-YEAR FULL REPLACEMENT WARRANTEE THAT SHALL INCLUDE ALL MATERIALS AND LABOR. THE CONTRACTOR SHALL REPLACE PLANTS AS SOON AS WEATHER AND SEASONAL CONDITIONS PERMIT

9. IF THERE IS A DIFFERENCE IN COUNT OR SIZE OF PLANT MATERIALS BETWEEN THE PLAN AND THE LIST THE HIGHER NUMBER AND OR SIZE SHALL PREVAIL



1 GROUNDCOVER DETAIL

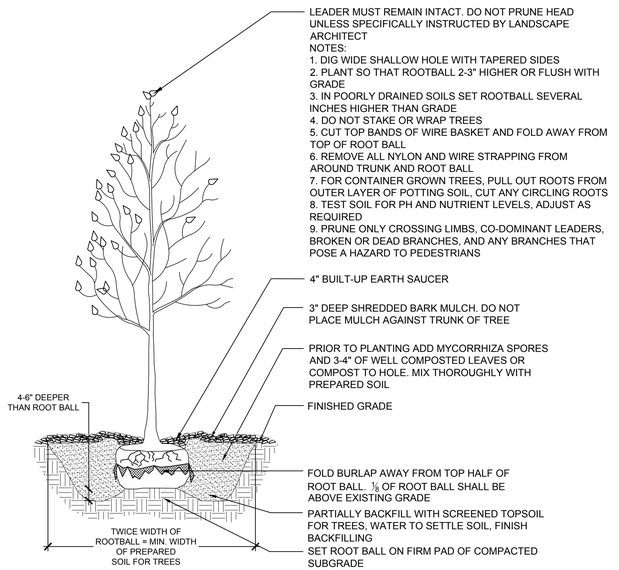
SCALE: NTS



NOTE: PLANTS ARE TO BE SPACED AS REQUIRED BY PLANTING SCHEDULE

2 SHRUB PLANTING DETAIL

SCALE: NTS



3 TREE PLANTING DETAIL

SCALE: NTS

COLUMBIA GREEN TECHNOLOGIES

TECHNICAL INFORMATION SHEET

Pre-Grown Tray System

(Patented: 7,603,808)

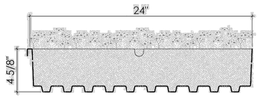
Product Number: PL4300



Description:

The pre-grown tray provides a turnkey solution that meets or exceeds all guidelines for Green Roofs. The trays are easy to install and feature interlocking edges which prevent shifting or migration of growing media onto the roof membrane. At 24" x 24" x 4.625" deep, the pre-grown tray is appropriate for extensive and semi-intensive vegetative roof profiles. The modules are pre-grown with plants (most commonly sedum) selected by the project designer and shipped to the job site with approximately 90%+ vegetation coverage.

Comprised of a heavy duty recycled polypropylene, the Columbia Green Technologies' Tray system is designed with a channelized bottom to maximize stormwater retention. It can reduce both the amount and rate of stormwater run-off and is capable of retaining up to 70% of annual precipitation. Detailed stormwater retention calculations and hydrographs are available upon request.



Planting Options:

- Plants are grown per the project specifications, provided they are appropriate for the local climate zone and sufficient lead time has been provided. Please contact Columbia Green Technologies for more information.

LEED Information:

- Post-Consumer Recycled Content: 88%
- Manufacturing Location: Washougal, WA 98671

Declare Label for Materials Transparency:

Declare.

The Declare Label is a voluntary disclosure of building material ingredients which offers Living Building Challenge and other project teams concerned about building product ingredients a guide for product specification. We are pleased to announce that our tray system is 'Red List Free' which means it doesn't contain "worst in class" materials, chemicals, and elements known to pose serious risks to human health and the greater ecosystem.
www.declareproducts.com

Wind Uplift:

- *ANSI/SPRI RP-14 Wind Design Standard for Vegetative Roof Systems* is the only Wind Uplift standard for the United States.
- Due to the interlocking design, The Planted-In-Place Tray is considered a #2 Ballast system (Increased wind uplift resistance).
- Please request a copy of the ANSI/SPRI RP-14 User Guide.

4 PRE-GROWN EXTENSIVE GREEN ROOF TRAY SYSTEM

SCALE: NTS

eric raines landscape architecture, llc
11a N Main Street SoNo, CT 203.354.6500 www.ericraines.com

NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		
1	MUNICIPAL REVIEW	25.06.13

PROJECT
108 WATER STREET
WATER STREET
NORWALK, CT

DWG TITLE
SITE PLANTING DETAILS

JOB NO:

DATE
2025.06.13

SCALE
AS NOTED

SPL-4.1

SITE LIGHTING SCHEDULE

SYM	QTY.	DESCRIPTION
L-1	9	LED AREA LIGHT (DUAL) - MODEL: LBW-2-SD27-LED-x34-BW-BLP-A-TR5-12-010-MT. TEMP: 2700K LED. HEIGHT: 12'-0" POLE. COLOR: BLACK. BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-2	10	LED AREA LIGHT (SINGLE) - MODEL: LBW-1-SD27-LED-x34-BW-BLP-A-TR5-12-010-MT. TEMP: 2700K LED. HEIGHT: 12'-0" POLE. COLOR: BLACK. BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-3	37	LED BUILDING MOUNT LIGHT - MODEL: BWM-SD12-LED-L13-BLP-A-DT-CTW. TEMP: 2700K LED. BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-4	2	LED BUILDING MOUNT AREA LIGHT - MODEL: LBW-SD27-LED-x43-BLP-A-CTW. TEMP: 2700K LED. BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-5	98	LED BOLLARD LIGHT - MODEL: APB-36-LED-x52-BLP-A-CF1-MSH-D10-MT. TEMP: 2700K LED. BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-6	24	RECESSED CANOPY LIGHT - MODEL: F3SS-2-F-TM-WH-90W-11A-27-60-04-IC-PH1. TEMP: 2700K LED. BY LUCIFER LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-7	52	RECESSED WALL LIGHT - MODEL: B24210-ADA. TEMP: 2700K LED. BY BEGA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-8	LF	LED LINEAR IN-GRADE LIGHT - MODEL: ZNLT-SH-xx-ZGBL-24V-95C-27T-MG. TEMP: 2700K LED. BY PRECISE LED. CONTACT: CLIFF GILBERT. (203) 788-0814
L-9	LF	LED ILLUMINATED HANDRAIL - MODEL: LR6P-LED-SS-INT-ME-ES-ASYM-DIM. TEMP: 3000K LED. BY COLE LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814

LBW POLE MOUNT - TR5 (LBW-TR5) — IP65 RATED

DATE: | PROJECT: | TYPE:

CATALOG NUMBER LOGIC:



*Finish to match fixture.
**Eliminates glow in window above shade. Finish to match fixture.

CATALOG NUMBER LOGIC
Example: LBW - 1 - SD27 - LED - x44 - BW - BZP - A - DT - TR5 - 12 - 010 - MT
MATERIAL
Aluminum
SERIES
LBW - LBW Pole Mount
MOUNTING
1 - Single LBW
2 - Dual LBW
STYLE
SD27 - 27 Inch Shade
SOURCE
LED - Chip on Board (COB) Technology
LED TYPE
x43 - 34W LED/2700K x46 - 42W LED/2700K x49 - 57W LED/2700K
x44 - 34W LED/3000K x47 - 42W LED/3000K x50 - 57W LED/3000K
x45 - 34W LED/4000K x48 - 42W LED/4000K x51 - 57W LED/4000K
OPTIC
BW - Batwing
FIXTURE FINISH (See page 2 for full-color swatches)
Standard Finishes (BZP, BZW, BLP, BLW, WHP, WHW, SAP, VER)
Premium Finish (ABP, AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRM, HUG, NBP, OCP, RMG, SDS, SMG, TXF, WCP, WIR)
(Also available in RAL Finishes. See submittal SUB-1439-00)
RINGS
A - Aluminum*
ACCESSORIES (Select one)
DT - Dark Top **
HS - House Side Shield*
MSH - Mesh Screen*
POLE
TR5 - 5" Tapered Round Pole
HEIGHT
12 - 12 Foot
14 - 14 Foot
16 - 16 Foot
18 - 18 Foot
20 - 20 Foot
CONTROL TYPE
010 - 0-10V Dimming Driver
INPUT VOLTAGE
MT - 120-277 VAC Input

LARGE BEACON WALL MOUNT — IP65 RATED

DATE: | PROJECT: | TYPE:

CATALOG NUMBER LOGIC:



Driver Housing Required. Configure and Price Seperately.

*Stainless rings are provided in Natural (NAT) regardless of finish choice.
**Eliminates glow in supper window. Material and finish to match fixture.
***Material and finish to match fixture.
****Only available for Copper Material.

CATALOG NUMBER LOGIC
Example: LBW - SD27 - LED - x44 - BW - A - WHP - MSH
MATERIAL
(Blank) - Aluminum C - Copper
SERIES
LBW - Large Beacon Wall Mount
STYLE
SD27 - 27" Shade
SOURCE
LED - Chip on Board Technology
LED TYPE
x43 - 34W LED/2700K x46 - 42W LED/2700K x49 - 57W LED/2700K
x44 - 34W LED/3000K x47 - 42W LED/3000K x50 - 57W LED/3000K
x45 - 34W LED/4000K x48 - 42W LED/4000K x51 - 57W LED/4000K
OPTIC
BW - Batwing
FINISH (See page 2 for full-color swatches)
Standard Finishes (BZP, BZW, BLP, BLW, WHP, WHW, SAP, VER)
Premium Finish (ABP, AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRM, HUG, NBP, OCP, RMG, SDS, SMG, TXF, WCP, WIR)
Also available in RAL Finishes
Copper Finishes (NAT, BP, GP)
RINGS
A - Aluminum
B - Brass
S - Stainless Steel*
ACCESSORIES
DT - Dark Top Shield**
MSH - Mesh Screen***
OPTION**
CLR - Clear Coat Protection (Available on NAT finish only)

1 L-1/ L-2: LED AREA LIGHT — SCALE: NTS

3 L-4: LED BUILDING MOUNTED SCONCE — SCALE: NTS

BEACON WALL MOUNT — IP65 RATED

DATE: | PROJECT: | TYPE:

CATALOG NUMBER LOGIC:



*120V only.
**Finish to match fixture.
***Stainless rings are provided in Natural (NAT) finish regardless of finish choice.
****Eliminates glow in supper window. Material and finish to match fixture.
*****Material and finish to match fixture.
******Only available for Copper Material.

CATALOG NUMBER LOGIC
Example: BWM - SD12 - LED - L11 - BZW - A - MSH - CTW
MATERIAL
(Blank) - Aluminum C - Copper
SERIES
BWM - Beacon Wall Mount
STYLE
SD10 - 10" Disk
SD12 - 12" Shade
SD15 - 15" Shade
SOURCE
LED - Line Voltage*
LED TYPE
L10 - 10W LED/2700K
L11 - 10W LED/3000K
L12 - 10W LED/4000K
L13 - 10W LED 2200K-3500K (Warm Dimming)
L15 - 20W LED/2700K
L16 - 20W LED/3000K
L17 - 20W LED/4000K
L18 - 20W LED/2200-3500K (Warm Dimming)
FINISH (See page 2 for full-color swatches)
Standard Finishes (BZP, BZW, BLP, BLW, WHP, WHW, SAP, VER)
Premium Finish (ABP, AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRM, HUG, NBP, OCP, RMG, SDS, SMG, TXF, WCP, WIR)
Also available in RAL Finishes
Copper Finishes (NAT, BP, GP)
RINGS
A - Aluminum**
B - Brass**
S - Stainless Steel***
ACCESSORIES (select one)
DT - Dark Top Shield*****
MSH - Mesh Screen******
OPTION*****
CLR - Clear Coat Protection (Available on NAT finish only)
CANOPY
CRW - Round Canopy
CQW - Square Canopy
CTW - Rectangular Canopy

2 L-3: LED BUILDING MOUNTED LIGHT — SCALE: NTS

APOLLO BOLLARD — IP66 RATED

DATE: | PROJECT: | TYPE:

CATALOG NUMBER LOGIC:



*Stainless steel rings are provided in Natural (NAT) finish regardless of finish choice.
**Material and finish to match fixture
***For use with 0-10 dimmer. Driver wattage must match fixture wattage.

CATALOG NUMBER LOGIC
Example: APB - 36 - LED - x52 - BZW - A - CD1 - MSH - D10 - MT - EMB
MATERIAL
(Blank) - Aluminum C - Copper
SERIES
APB - Apollo Bollard
BASE HEIGHT (specify inches)
32" (Standard), 36", 40", 44" or 48"
SOURCE
LED - Chip on Board Technology
LED TYPE
x52 - 10W LED/2700K x92 - 16W LED/2700K
x53 - 10W LED/3000K x93 - 16W LED/3000K
x54 - 10W LED/4000K x94 - 16W LED/4000K
FINISH (See page 2 for full-color swatches)
Standard Finishes (BZP, BZW, BLP, BLW, WHP, WHW, SAP, VER)
Premium Finish (ABP, AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRM, HUG, NBP, OCP, RMG, SDS, SMG, TXF, WCP, WIR)
Also available in RAL Finishes
Copper Finishes (NAT, BP, GP)
RINGS
A - Aluminum
B- Brass
S - Stainless Steel*
CAP STYLE
CC1 - Cone Cap**
CD1 - Dome Cap**
CF1 - Flat Cap**
ACCESSORIES
HS - House Side Shield**
MSH - Mesh Screen**
DRIVER TYPE* **
D10 - 10W Dimming Driver
D16 - 16W Dimming Driver
INPUT VOLTAGE
MT - 120-277 Multi Tap
OPTIONS
CLR - Clear Coat Protection (Available on NAT finish only)
EMB - Emergency Backup
HLS - Hi/Low Switching-motion Sensor
SGP-120 - 120V Surge Protection
SGP-277 - 277V Surge Protection

4 L-5: LED BOLLARD LIGHT — SCALE: NTS

FRAXION®3 SLIM SHALLOW REGRESS

- Max output of 2882lm at 80+ CRI
- Baffle options in round and square featuring UGR as low as 4
- Integral drivers for tunable white with our 2 ranges, 1800K to 4000K and 2700K to 5000K
- Now available for remodel and concrete pour applications. See separate spec sheet.

PROJECT NAME: | TYPE:



ORDERING INFORMATION - FIXTURE

JA8-2022 INDICATED BY SHADING

SHAPE	RATING	TYPE	FINISH	BAFFLE FINISH	CRI	WATTAGE	CCT	OPTIC (UGR)	MEDIA	INSTALL TYPE	CEILING THICKNESS	DRIVER
F3SS	**2**	**F**	**WH**	**WH**	**90S**	**11A**	**30**	**60**	**04**	**IC**	**1**	**INTEGRAL / REMOTE**
F3RS - Round Shallow Regress F3SS - Square Shallow Regress F3TS - Square Transitional Shallow Regress* *Not available in wallwash	1 IP20 Dry/Damp 2 IP44 Wet** **Available in IC-rated fixtures also, see submittal	A - Adjustable F - Fixed W - Wallwash	POWDERCOAT MICROFLANGE WH - White AB - Architectural Bronze SB - Satin Silver AU - Cashmere Gold BB - Burnt Bronze BK - Black PR - Primer CF - Custom Finish* *Consult Factory TRIMLESS TB - Trimless Tunable White TW - Trimless Millwork	POWDERCOAT WH - White AB - Architectural Bronze SB - Satin Silver AU - Cashmere Gold BB - Burnt Bronze BK - Black PR - Primer CF - Custom Finish* *Consult Factory	STATIC WHITE 80S - 80+ 90S - 90+ 95S - 95+	STATIC WHITE 5A - 500lm* 7A - 700lm* 9A - 900lm* 11A - 1100lm 15A - 1500lm 18A - 1800lm *Not available in WH wallwash Not available for TR-CRI or Adjustable Internal WARM DIM 11A - 9.5+ CRI, 11 Watts 15A - 9.5+ CRI, 15 Watts Incandescent Profile 11A Lumens (9w) - 707 15A Lumens (9w) - 707 Halogen Profile 11A Lumens (9w) - 772 15A Lumens (9w) - 1071 SEE PAGE 4 FOR DETAILED WARM DIM PROFILE COMPARISON. TUNABLE WHITE 11A - 11W Warm Profile: 400K - 1800K 1071 Lm Cool Profile: 5000K - 2700K 1035 Lm LUMEN DELIVERED OUTPUTS REFLECT 80+ CRI / 3000K PAIRED WITH 20° OPTIC AND SOFT FOCUS LENS	2K - 2200K* 27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K *Only available for WH wallwash WARM DIM 2K - 2200K - 2700K* 27 - 2700K - 2700K 30 - 3000K - 2700K WD - 2700K (11W / 15W) - 2700K - 1800K *Requires 4D MOL mold WW - Wallwash* *Requires 4D MOL mold TUNABLE WHITE TB - 4200K - 1800K TW - 5000K - 2700K	15 - 15° 20 - 20° 25 - 25° 40 - 40° 60 - 60° 80 - 80° * Requires 4D MOL mold WW - Wallwash* *Requires IW or Wallwash 20 - 20° 25 - 25° 40 - 40° 60 - 60° 80 - 80° * Requires 4D MOL mold WW - Wallwash* *Requires IW or Wallwash 15 - 15° 20 - 20° 25 - 25° 40 - 40° 60 - 60° 80 - 80° * Requires 4D MOL mold WW - Wallwash* *Requires IW or Wallwash	04 - STANDARD MEDIA SL - Soft Focus Lens* *Required for "6" Optic NC - No Lens* *Not available in IC-rated fixtures, or Warm Dim 02 - Clear Glass Lens* *Not available for Warm Dim FG - Frosted Glass Lens SF - Frosted Soft Focus Lens LE - Frosted Linear Spread Lens WA - Wide Distribution Lens* *Required and only available for 80° optic WG - Adjustable Honeycomb Louver and Soft Focus Lens * *Not available for IP44, Wet Location, 27K, Fixed Fixtures, or Warm Dim NL - No Lens * *Not available for IP44 Wet Location or Warm Dim. ALTERNITE MEDIA IW - Honeycomb Louver* *Not available for IP44, Wet Location, 27K, Fixed Fixtures, or Warm Dim	IC - IC NC - NC AT - IC Airtight CP - CCEA Chicago Plenum RC - IC Remote NR - NC Remote AR - IC Airtight Remote CR - CCEA Chicago Plenum Remote	1 - 0.50" -1.25" 2 - 1.375"- 2.125" *Adjustable only for 80° and 90° optic 3 - 0.50" -2.125" *Adjustable only for 80° and 90° optic. 4 - 1.375"- 2.125" *Includes adjustable housing height bracket, recommended for 2" thick applications 5 - 1.25" -2.125" *Includes adjustable housing height bracket, recommended for 2" thick applications. Not available for Millwork 107116	INTEGRAL / REMOTE FW - Forward Throw w/ Phase, 2%, 120V* *Consult factory for 208V. SG3 - eldoLED, ECOdrive 1%, 0-10V, LOG, 120V-277V SN3 - eldoLED, ECOdrive 1%, 0-10V, LIN, 120V-277V SD1 - eldoLED, SOLOdrive 0.1% 0-10V, LOG, 120V-277V SN1 - eldoLED, SOLOdrive 0.1% 0-10V, LIN, 120V-277V SD1 - eldoLED, SOLOdrive 0.1% DALI-2, LOG, 120V-277V LP1 - Lutron, Hi-Lume Premier 0.1% Fade to Black, 120V or 277V* *Not available for 208V. Not available for 2700K or IC, AT, and CP install types) AS1 / ASR - Athena Control eldoLED, SOLOdrive 0.1%, 120V-277V* *Includes Athena Node. Extended lead time, consult factory. ASR includes DR Shield) CS1 / CSR - Casambi Control eldoLED, SOLOdrive 0.1%, 120V-277V* *Includes Casambi Node. Extended lead time, consult factory. CSR includes DR Shield) TUNABLE WHITE INTEGRAL (TEB-277R) WD1 - 0.1%-0-10V, LOG WN1 - 0.1%-0-10V, LIN WD2 - 0.1% DALI-2 DT8, LOG DM1 / ARR* - Athena Control 0.1% DMX* *Includes Athena Node. Extended lead time, consult factory. ARR includes DR Shield) CM1 / CMR* - Casambi Control 0.1% DMX* *Includes Casambi Node. Extended lead time, consult factory. CMR includes DR Shield) SEE PAGE 4 FOR ELOQUED TUNABLE WHITE DRIVER OPTIONS.

WHI White Powder Coat | JA8 Architectural Bronze Powder Coat | JA12 Satin Silver Powder Coat
JA10 Cashmere Gold Powder Coat | BBB Burnt Bronze Powder Coat | BBK Black Powder Coat

5 L-6: RECESSED CANOPY LIGHT — SCALE: NTS

ZENLITE® Tile

LED Lighting System for New Construction

preciseLED — Precision Through Innovation

Project Name:
Fixture Type:

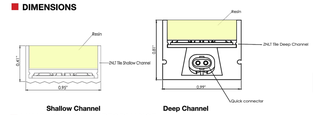
DESCRIPTION

ZENLITE® Tile is an LED Lighting System for 3/8" tile floors/walls/ceilings. This system is floor rated and waterproof, utilizing resin technology. It can be integrated with other ZENLITE products to achieve a seamless line of light across floors, walls and ceilings. The channel is installed between tiles and held down by thinset and uses a remote driver. The fixture has been tested using standard cleaning solverts and comes in two versions, shallow/deep. The shallow version has the thickness of standard 3/8" tile plus thinset; the deep version comes with a quick wire connector, allowing for running wiring inside the fixture that are longer than 8 feet.



Walk Over Glow Rated | IK10 Rated | IP68 Rated

DIMENSIONS



Shallow Channel — Deep Channel

LUMEN OUTPUT PERFORMANCE

PRODUCT	Light Module	30K
ZNLT-TL-SH	ZGBL	125.64 lm/ft
ZNLT-TL-DP	ZGBL	123.45 lm/ft

Color Temp	27K	30K	35K	40K
Multiplier	0.82	1	1.13	1.22

* Estimated value

ORDERING CODE

Example: **ZNLT-TL-SH-XX14-ZGBL-24V-95C-27T-MG**

Product	Type	Length	Light Module (Cuttable Length | Watts Per Foot	Volt	CRI	Color Temperature	Driver
ZNLT-TL			ZGBL	24V	95C		
ZNLT-TL	**SH** Shallow* **DP** Deep *Shallow channel has a maximum run length of 8ft	**XX** Length in inches only. Lengths can be specified down to 1.2 inch. Minimum channel length is **6 inches.**	**ZGBL** ZG Beam Low | 1.2 in | 2 W/ft	**24V**- 24V	**95C** ≥ 95 CRI	**27T** 2700K **30T** 3000K **35T** 3500K **40T** 4000K	**MG** (1% Magnetic Dimming) **ZD** (1% 0-10V Dimming) **NN** Non Dimming **L3** Lutron Hi-lume 1% 3-wire/EcoSystem (40W Max) **LP** Lutron Hi-lume Premier 0.1% Fade To Black EcoSystem/3-wire

WIRING OPTIONS

First Run	Wire Length			
		BGFD Beginning Feed	**BGSF** Beginning Side Feed	**BGBF** Beginning Bottom Feed
Connection (within max run of tape light.) (Only for ZNLT-TL-DP)	Wire Length (Only for Jumper cable)	**JPFD** Jumper Feed (This will be hidden in the race track)	**JPSF** Jumper Side Feed	**JPBF** Jumper Bottom Feed

6 L-7: RECESSED WALL LIGHT — SCALE: NTS

Application
Recessed wall luminaire with shielded light distribution for glare-free illumination of ground surfaces, building entrances, stairs and pathways.

Materials
BEGA Tricoat ®, a 3-layer finishing technology for increased corrosion protection

NRTL listed to North American Standards, suitable for wet locations Protection class IP 65

Weight: 3.3 lbs.

Electrical

Operating voltage	120-277 V AC
Minimum start temperature	-30° C
LED module wattage	7.7 W
System wattage	11.0 W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	565 lm
LED service life (L70)	60000 hrs

LED color temperature
☐ 4000K (K4)
☐ 3500K (K35)
☐ 3000K (K3)
☐ 2700K (K27)

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

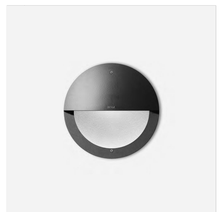
Finish
All BEGA standard finishes are matte, textured powder coat with minimum 3 mil thickness. BEGA Unicure® finish provides superior fade protection in Black, Bronze, and Silver. BEGA standard White is a super durable polyester powder. Optionally available RAL, custom, and premium colors provided in polyester powder and/or liquid paint.

Available colors
☐ Black (BLK)
☐ Silver (SLV)
☐ Natural Bronze (NTB)
☐ CUS:
☐ Bronze (BRZ)
☐ White (WHT)
☐ RAL:

Type:
BEGA Product:
Project:
Modified:

Available options
☐ CUS Custom finish
☐ MOU Marine grade undercoat
☐ NTB Natural bronze (premium finish)
☐ RAL RAL finish

Included (available for pre-shipment)
☐ BB24012 Installation housing





Recessed wall luminaire : Shielded

		LED	A	B	C
B24102	BLK	7.7 W	7 9/16	5 1/16	1 1/4

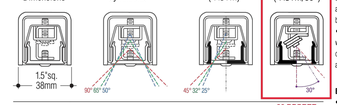
G23

7 L-8: LED LINEAR LIGHT STRIP (IN-GRADE AND COLUMN) — SCALE: NTS

CATALOG NUMBER

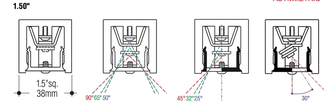
Formed Stainless Steel

1.50"



Extruded Aluminum — 30 DEGREE ASYMMETRIC

1.50"

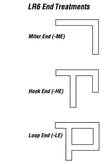


Catalog Number	Stainless Steel (-SS)	Aluminum (-AL)
Post mounted, integral driver	☐ LR6P-LED-SS-INT	☐ LR6P-LED-AL-INT
Post mounted, remote driver	☐ LR6P-LED-SS-REM	☐ LR6P-LED-AL-REM
Wall mounted, integral driver	☐ LR6W-LED-SS-INT	☐ LR6W-LED-AL-INT
Wall mounted, remote driver	☐ LR6W-LED-SS-REM	☐ LR6W-LED-AL-REM

Options

Ends: Add suffix. Miter ☐ **-ME**. Loop ☐ **-LE**. Hook ☐ **-HE**.
Baseplate: Nominal 4" diameter or 4" square baseplate + four mounting holes. Add suffix ☐ **-BP**.
Escutcheon: Add suffix ☐ **-ES**.
Frosted lens: (clear diffuser std.). Add suffix ☐ **-FL**.
Emergency battery: Provides up to 90 min. operation (remote only). Add suffix ☐ **-EM**.
Asymmetric distribution: 50% opaque lens (not available on all models). Add suffix ☐ **-ASYM**.
4100°K Color temperature: (3000°K standard). Add suffix ☐ **-4K**.
Beam spread: (90° standard). 65°, Add suffix ☐ **-65**. 50°, Add suffix ☐ **-50**.
Dimming: Universal voltage 0 -10V driver.
Add suffix ☐ **-DIM**.
Color: FWC Turtle compiliant, 590 nm, Amber. Add suffix ☐ **-AMB**.

LR6 End Treatments



Lightrail - LR6

Construction
• Available in formed stainless steel with welded and blended joints for a seamless appearance or extruded aluminum • The flat lens design minimizes visible brightness at sides and is available in clear or frosted • Each rail is tailored to fit existing stairs, ramps, and walkways • Aluminum rails supplied with a powder coat or anodized finish • Stainless steel rails supplied with a #4 satin finish, passivated.

Electrical
• LED modules are 24 VDC constant voltage at 2.5 watts and 205 source lumens per foot. Available in 3000°K or 4000°K color temperatures. Beam spreads in 50°, 65°, and 90° patterns • LEDs are configured to allow uninterrupted illumination • Electrical feed locations are pre-determined at time of submittal • Universal voltage LED drivers may be integral in the posts or railing (120V only), or may be remote if required •Dimmable drivers are available upon request

How to Specify
Every Lightrail is custom designed and fabricated to your specific project conditions. Drawings will be submitted on each project requesting specific dimensions to assure proper fit. Plans and elevation drawings are required for pricing and submittal drawing production.
1. Submit catalog number, options, and voltage; (example: LR6P-LED-SS/1.9-INT-277).
2. Add special features and requirements necessary to complete specification.

COLE Lighting

C.W. Cole & Company, Inc.
2560 Rosemead Boulevard
South El Monte, CA 91733-1593
Tel. (626) 443-2473
Fax (626) 443-9253
info@colelighting.com
www.colelighting.com

8 L-9: LED ILLUMINATE HANDRAIL — SCALE: NTS

eric trains landscape architecture, llc
11a N Main Street SoNo, CT 203.354.6500 www.ericrains.com

erla

NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		
1	MUNICIPAL REVIEW	25.06.13

108 WATER STREET
WATER STREET NORWALK, CT

PROJECT

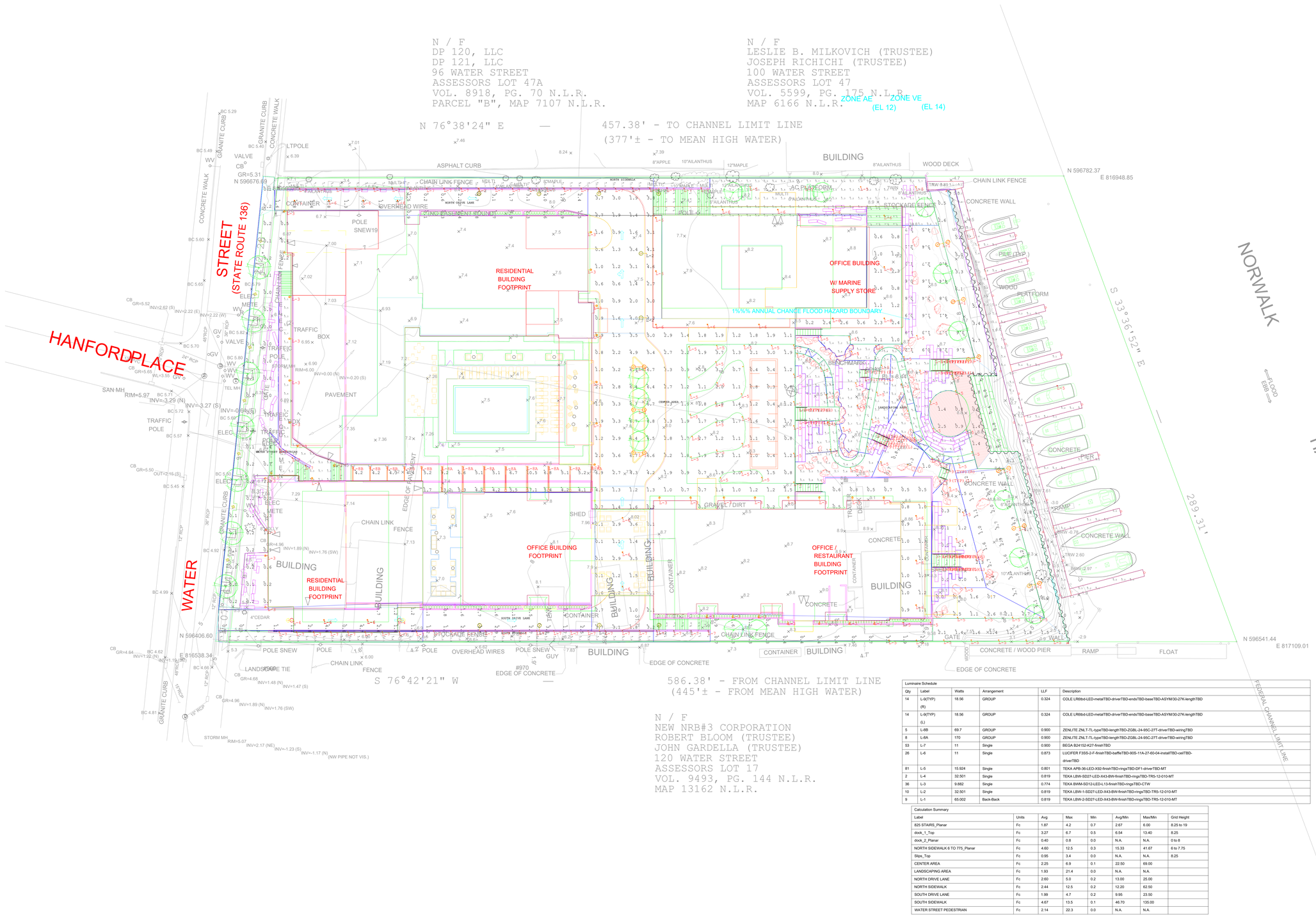
DWG. TITLE
SITE LIGHTING DETAILS

JOB NO.

DATE
2025.06.13

SCALE
AS NOTED

SPL-4.2



Luminaire Schedule					
Qty	Label	Watts	Arrangement	LLF	Description
14	L-9(TYP) (R)	18.56	GROUP	0.324	COLE LR6Bxd-LED-metalTBD-driverTBD-endsTBD-baseTBD-ASYM30-27K-lengthTBD
14	L-9(TYP) (L)	18.56	GROUP	0.324	COLE LR6Bxd-LED-metalTBD-driverTBD-endsTBD-baseTBD-ASYM30-27K-lengthTBD
5	L-8B	69.7	GROUP	0.900	ZENLITE ZNLT-TL-typeTBD-lengthTBD-ZGBL-24-95C-27T-driverTBD-wiringTBD
8	L-8A	170	GROUP	0.900	ZENLITE ZNLT-TL-typeTBD-lengthTBD-ZGBL-24-95C-27T-driverTBD-wiringTBD
53	L-7	11	Single	0.900	BEGA 84415Z-K27-finishTBD
26	L-6	11	Single	0.873	LUCIFER F3SS-2-F-finishTBD-baffleTBD-90S-11A-27-60-04-installTBD-ceilTBD-driverTBD
81	L-5	15.924	Single	0.801	TEKA APB-36-LED-X92-finishTBD-ringsTBD-DF1-driverTBD-MT
2	L-4	32.501	Single	0.819	TEKA LBW-SD27-LED-X43-BW-finishTBD-ringsTBD-TRS-12-010-MT
36	L-3	9.882	Single	0.774	TEKA BWM-SD12-LED-L13-finishTBD-ringsTBD-CTW
10	L-2	32.501	Single	0.819	TEKA LBW-1-SD27-LED-X43-BW-finishTBD-ringsTBD-TRS-12-010-MT
9	L-1	65.002	Back-Back	0.819	TEKA LBW-2-SD27-LED-X43-BW-finishTBD-ringsTBD-TRS-12-010-MT

Calculation Summary							
Label	Units	Avg	Max	Min	Avg/Min	Max/Min	Grid Height
825 STAIRS_Planar	Fc	1.87	4.2	0.7	2.67	6.00	8.25 to 19
dock_1_Top	Fc	3.27	6.7	0.5	6.54	13.40	8.25
dock_2_Planar	Fc	0.40	0.8	0.0	N.A.	N.A.	0 to 8
NORTH SIDEWALK 6 TO 775_Planar	Fc	4.60	12.5	0.3	15.33	41.67	6 to 7.75
Slips_Top	Fc	0.95	3.4	0.0	N.A.	N.A.	8.25
CENTER AREA	Fc	2.25	6.9	0.1	22.50	69.00	
LANDSCAPING AREA	Fc	1.93	21.4	0.0	N.A.	N.A.	
NORTH DRIVE LANE	Fc	2.60	5.0	0.2	13.00	25.00	
NORTH SIDEWALK	Fc	2.44	12.5	0.2	12.20	62.50	
SOUTH DRIVE LANE	Fc	1.99	4.7	0.2	9.95	23.50	
SOUTH SIDEWALK	Fc	4.67	13.5	0.1	46.70	135.00	
WATER STREET PEDESTRIAN	Fc	2.14	22.3	0.0	N.A.	N.A.	

Project:
25148 - 108 Water Street

Contact:
Cliff Gilbert
Specifications - Southern CT
(203) 788-0814
cgilbert@illuminatene.com

Detail: Photometric Calculation
Date: ----
Revision:----
Scale: 1" = 20'-0"
Drawn By: ----

illuminate
263 Winn Street
Burlington, MA 01803
(781) 935-8500

333 Pleasant Valley Road
South Windsor, CT 06074
(860) 282-0597

Drawing Number:

L-1

Sheet 1 of 1

CITY OF NORWALK

ASSESSOR'S PARCEL VERIFICATION & TAX CLEARANCE FORM

To verify payment of taxes, please bring the form to the tax collector's office.

Ownership and Mailing Address:

108 WATER STREET SOUTH NORWALK LLC
C/O PROSPECT ENTERPRISES LLC
231 FARMINGTON AVE
FARMINGTON CT 06032

Property Location: 108 WATER ST

District: 2

Map/Block/Lot: 2 84 18 0

Map/Block/Lot (subdivided lot/new lot):

Unique ID: 2-84-18-0

Shiela M Miller
Assessor/Representative

5/29/2025
Date Signed

OFFICE OF THE TAX COLLECTOR

The Real Estate taxes for the property identified on this form have been paid to date and in accordance with Connecticut General Statute 7-148 (c) (2) (B). A building permit may be issued for this property.

Tax Collector/Representative

TAXES PAID
JUN 30 2025
CERTIFIED BY TAX COLLECTOR
CITY OF NORWALK

5/29/25
Date Signed

Date Printed: 05/29/2025

AUTHORIZATION

To Whom It May Concern:

Please be advised that **108 Water Street South Norwalk, LLC** (hereinafter, the "Owner") is the owner of real property commonly known as 108 Water Street, Norwalk, Connecticut. Spinnaker Acquisitions LLC is the contract purchaser of said property. As such, Owner hereby grants Spinnaker Acquisitions LLC, as contract purchaser, authority to submit various land use applications (including but not limited to a Site Plan Application & CAM Application) and obtain any necessary approvals in connection with such applications, for said property located at 108 Water Street. A fax or copy of this Authorization shall be valid as an original.

108 Water Street South Norwalk, LLC

By: Eliot B. Gersten
Its: Manager

Dated: June 17, 2025

AUTHORIZATION

To Whom It May Concern:

Please be advised that Adam Blank, Esq. and his firm, Wofsey, Rosen, Kweskin & Kuriansky, LLP, have been retained by the undersigned to act on **Spinnaker Acquisitions LLC's** behalf in any and all land use applications and approvals concerning property located at 108 Water Street, Norwalk, Connecticut. Spinnaker Acquisitions LLC is the contract purchaser of said property. This authorization includes but is not limited to the preparation and filing of a Site Plan Application & CAM Application for the above-referenced property. A fax or copy of this Authorization shall be valid as an original.

Spinnaker Acquisitions LLC



By: Matthew Edvardsen
Its: Manager

Dated: June 20, 2025

108 Water Street
AFFORDABILITY PLAN

Spinnaker Acquisitions LLC ("Spinnaker Acquisitions") submits this Workforce Housing Affordability Plan in conjunction with its application to the City of Norwalk Planning & Zoning Commission for approval for development of 108 Water Street, a project in Norwalk, Connecticut, in accordance with the Zoning Regulations of the City of Norwalk.

This plan describes how affordability will be determined, administered and maintained pursuant to the Article 6 Section 6.12 of the Zoning Regulations.

Definitions.

"Commission." The Norwalk Planning and Zoning Commission, and its successors and assigns.

"Statewide Median Income ("SMI")." The annual income for the State of Connecticut determined using the statistics published and annually revised by the U.S. Department of Housing and Urban Development ("HUD").

"Workforce Household." A household with an annual income which does not exceed eighty percent (80%) or, where required, sixty percent (60%) or one hundred percent (100%) of the State of Connecticut median income, as adjusted for family size, as published by the United States Census Bureau and annually updated by the U.S. Department of Housing and Urban Development (HUD). Household eligibility determinations shall be made in accordance with the income criteria in §8-30g-8 of the regulations of Connecticut State Agencies.

"Workforce Housing Unit." A dwelling unit occupied by a workforce household where the maximum sales price or rent shall be restricted in perpetuity for the life of the unit in accordance with the maximum housing payment calculations as described in §8-30g-8 of the regulations of Connecticut State Agencies.

1. Project Description.

Spinnaker Acquisitions proposes to create a total of fifty-nine (59) units associated site improvements, at 108 Water Street in Norwalk, Connecticut. Spinnaker Acquisitions proposes to designate a total of ten percent (10 %) of the rental units as Workforce Housing Units which meet the criteria under the Zoning Regulations for households whose annual income does not exceed eighty (80%) percent of the SMI in accordance with Article 6 Section 6.12 "Workforce Housing" of the City of Norwalk Zoning Regulations. In total, three (3) units will be designated as Workforce Housing Units.[1] All units will be located on site.

[1] Pursuant to the current Zoning Regulations, two-bedroom Dwelling Units count as 1.5 Workforce Housing Units, and three-bedroom Dwelling Units count as 2 Workforce Housing Units. Thus, this plan provides for a total of 5 Workforce Housing Units, since one (1) one-bedroom and two (2) three-bedroom affordable units are proposed.

Spinnaker Acquisitions has designated the specific units that will be Workforce Housing Units on Appendix A. Designation of particular units may change over time, and updated schedules will be provided to the Commission, or its designee, should that occur. Those units so designated shall be subject to the terms set out in this Plan and in Section 6.12 of the Norwalk Zoning Regulations.

2. Unit Standards.

The Workforce Housing Units shall be comparable in size, fit and finish to market-rate units and will be consistent with construction standards for new housing. The bedroom mix has been provided in comparable percentages to those in the market rate units.

3. Duration of Restrictions.

The Workforce Housing Units shall be so designated in perpetuity, upon the issuance of a certificate of occupancy for the rental units on the Property and continuing for the life of each unit in accordance with the maximum housing payment calculations set out in Sec. 8-30g-8 of the regulations of Connecticut State Agencies. A deed restriction in substantially the form set forth in Appendix D attached or in such other form acceptable to the Commission, shall be recorded on the Norwalk Land Records contemporaneously with the issuance of the certificate of occupancy or at the time of the unit's designation as set forth above, whichever is earlier to ensure affordability. The deed restriction will outline the rental restrictions, including the maximum rental price unit, the affirmative marketing procedures, residency requirements, reporting requirements, as well as remedies for breach.

4. Pro Rata Construction.

The Workforce Housing Units shall be completed on a *pro rata basis* as construction proceeds. It is the intent of this Plan that the workforce housing units shall be developed simultaneously with or prior to the development of the market rate units.

5. Affirmative Fair Marketing.

Spinnaker Acquisitions or its agent will market the Workforce Housing Units through the Housing Development Fund, Mutual Housing or another similar agency ("HDF or other"), which will maintain a list of income/credit-qualified persons in accordance with Section 6.12.4.8 of the Norwalk Zoning Regulations. HDF or other will be retained to undertake all of the activities related to verifying the income/credit eligibility of applicants. HDF or other will perform income/credit verifications and coordinate the applicant pool. An Affirmative Marketing Plan is incorporated into this document outlining selection systems and marketing strategy.

6. Affordability Calculation.

The rental price of the Workforce Housing Units will be calculated based upon 80% of the SMI in accordance with the State of Connecticut's Affordable Housing Appeals Procedures

as defined in Section 8-30g of the Connecticut General Statutes. The maximum rental amounts will be adjusted annually in accordance with changes in the SMI and in accordance with the Connecticut Department of Economic and Community Development's Affordable Housing Appeals Procedure.

7. Administration and Compliance.

This Plan will be administered by HDF or other, or its successors and assigns ("Administrator"), who will be responsible for:

- Ensuring that households applying for Workforce Housing Units qualify within applicable maximum income limits;
- Assuring the accuracy of rental prices, and providing documentation where necessary to buyers, sellers and financing institutions;
- Reporting compliance to the municipality; and
- Executing the affirmative fair housing marketing plan.

The Administrator shall submit a written status report to the Commission or designee regarding compliance with this Plan and the above-referenced factors annually on or before January 31. The role of the Administrator may be transferred or assigned to another entity. In the event of any such transfer or assignment, Spinnaker Acquisitions or its agent will provide forty-five (45) days prior written notice to the Commission or designee. The Commission shall be given a reasonable opportunity to object, but will not do so unreasonably.

8. Affirmative Fair Housing Marketing Plan and Notice of Initial Sale of Workforce Housing Units.

The availability of Workforce Housing Units shall be publicized, using the provisions of Regulations of Connecticut State Agencies §8-37-ee-1 *et seq*. (particularly Sections 8-37-ee-301 and 302) for affirmative fair housing marketing programs as guidelines. The Administrator shall have the responsibility for compliance with this section. Notices of initial availability of the Workforce Housing Units shall be provided, at a minimum, by advertising at least two times in a newspaper of general circulation in the City of Norwalk. The Administrator shall also provide such notices to the Commission, the Norwalk Town Clerk, City of Norwalk, and the Norwalk Board of Education. Such notices shall include a description of the available Workforce Housing Units, the eligibility criteria for potential tenants and owners, the Maximum Rental Price (as hereinafter defined), and the availability of application forms and additional information.

Using the above-referenced State regulations as guidelines, dissemination of information about available Workforce Housing Units shall include, at a minimum:

- Analyzing census and other data to identify racial and ethnic groups least represented in the population;

- Announcements/advertisements in publications and other media that will reach minority populations;
- Announcements to social service agencies and other community contacts serving low-income minority families in the region (including churches, civil rights organizations, housing authorities, and legal services organization);

- Assistance to minority applicants in processing applications;

- Marketing efforts in geographic areas of high minority concentrations within the housing market area;

- Beginning marketing efforts prior to general marketing of units, and repeating during initial marketing, at 50% completion, and thereafter at reasonable intervals; and

- Collection of basic racial and ethnic information for all residents and persons on the wait list for the development.

All notices shall comply with the federal Fair Housing Act, 42 U.S.C. §§3601 et seq. and Connecticut General Statutes §§46a-64b and 64c.

9. Tenant Eligibility.

Eligibility of families or households to rent Workforce Housing Units shall be determined by the Administrator in accordance with this Plan and the Regulations, as amended.

10. Application Process.

A family or household seeking to rent a Workforce Housing Unit ("Applicant") must complete an application to determine eligibility. The application form and process shall comply with the Fair Housing Act.

a) Application Form.

The application form shall be provided by the Administrator and shall include an income certification form. In general, income for purposes of determining an Applicant's qualification shall include the Applicant family's total anticipated income from all sources for the twelve (12) month period following the date the application is submitted ("Application Date"). If the Applicant's financial disclosures indicate that the Applicant may experience a significant change in the Applicant's future income during the twelve (12) month period, the Administrator shall not consider this change unless there is a reasonable assurance that the change will in fact occur. In determining what is and is not to be included in the definition of family annual income, the Administrator shall use the criteria set forth by HUD and listed in Appendix B, attached hereto.[2]

[2] See 24 C.F.R. § 5.609. Federal regulations are subject to change, and it is the intent of this Plan to use as guidelines HUD regulations with respect to income certification, as such regulations may be amended from time to time.

b) Applicant Interview.

The Administrator shall interview an Applicant upon submission of the completed application. Specifically, the Administrator shall, during the interview, undertake the following:

1. Review with the Applicant all the information provided on the application.

2. Explain to the Applicant the requirements for eligibility, verification procedures, and the penalties for supplying false information.

3. Verify that all sources of family income and family assets have been listed in the application. Make clear that the term "family" includes all individuals who are to occupy the home, and that no relationship by blood or marriage is required.

4. Request the Applicant to sign the necessary release forms to be used in verifying income. Inform the Applicant of what verification and documentation must be provided before the application is deemed complete.

5. Inform the Applicant that a decision as to eligibility cannot be made until all items on the application have been verified.

C. Verification of Applicant's Income.

Where it is evident from the income certification form provided by the Applicant that the Applicant is not eligible, additional verification procedures shall not be necessary. However, if the Applicant appears to be eligible, the Administrator shall require verification of the Applicant's reported income. In accordance with § 6.12.4.7, the annual income of workforce households shall be reviewed and certified by the Commission or its designee, in accordance with the procedure established in advance and approved by the Commission.

If applicable, the Applicant shall provide to the Administrator the documentation listed in Appendix C attached hereto. This list is not exclusive, and the Administrator may require any other verification or documentation as the Administrator deems necessary.

11. <u>Prioritization of Applicants for Rental.</u>

If, after publication of the Notice of Initial Rental, the number of qualified Applicants exceeds the number of Workforce Housing Units, the Administrator shall establish priority categories of applicants, subject to the applicant's income pre-certification eligibility and the preferences as established below.

A separate priority list shall be maintained for the rental units. Each priority list shall be divided based upon the following priority categories: (1) Existing tenants

displaced by the proposed new development or the immediate past tenants that previously occupied any of the properties where existing housing units are to be removed (2) Employees of the City of Norwalk and the Norwalk Board of Education; (3) Residents of the City of Norwalk who have resided in the City of Norwalk a minimum of one (1) year prior to the issuance of a certificate of occupancy; (4) Persons employed in the City of Norwalk; and (5) all others. In the event that there are insufficient units available to satisfy the number of applicants in a particular priority category, the units shall be assigned by a lottery system approved in advance by the Commission. As specified in §6.12.4.8 & 9, all qualified applicants in a given category of priority shall be exhausted prior to proceeding to a lower category of priority.

These preference categories are set forth in the Zoning Regulations, but are subject to revision as may be required by the federal Office of Fair Housing and Equal Opportunity. Excluding initial priority given to those displace tenants, the priority categories shall be in effect for all subsequent Workforce Housing rentals in perpetuity.

12. <u>Maximum Monthly Rental Payment.</u>

Calculation of the Maximum Monthly Rental Payment shall be based upon the SMI. The Maximum Monthly Rental Payment shall be calculated using the following methodology, consistent with Zoning Regulations §6.12.4.12 (definition of Workforce Housing Unit) and Connecticut Agencies Regulations §8-30g-8.

Calculation steps for rental of units at maximum of 80 percent of SMI.

1. Determine the SMI.

2. Adjust median income identified in Step 1 by family size by assuming that 1.5 persons will occupy each bedroom of a Workforce Housing Unit, except in the case of a studio or zero-bedroom unit, in which case 1.0 person shall be assumed. Family size adjustment shall be made with reference to the following percentages:

- 1 Person in family: 70%
- 2 Persons in family: 80%
- 3 Persons in family: 90%
- 4 Persons in family: 100% (BASE)
- 5 Persons in family: 108%
- 6 Persons in family: 116%
- 7 Persons in family: 124%
- 8 Persons in family: 132%

The family size adjustment that involves a half person (such as 4.5 persons) shall be calculated by taking the midpoint between the relevant figures above and below the half. For example, the adjustment for a 4.5 person household is 104 percent.

3. Calculate eighty percent (80%) of Step 2.

4. Calculate thirty percent (30%) of Step 3, representing that portion of household income deemed to be used for housing costs.

5. Divide Step 4 by twelve (12) months to determine the maximum monthly housing payment.

6. Determine the fair market rent for a unit with the same number of bedrooms in the subject municipality as published by the U.S. Department of Housing and Urban Development.

7. The maximum monthly housing payment for occupants of the subject rental unit shall be the lesser of the calculations on Steps 5 and 6.

8. Determine by reasonable estimate monthly expenses for heat and utility costs for which the tenant is directly responsible, excluding television, telecommunications, and information technology services, but including any other periodic fees for which the tenant is directly responsible, such as common charges in the case of a common interest ownership community.

9. Deduct the estimate of tenant-paid utilities and fees determined in Step 8 from the maximum monthly housing payment in Step 7, which will result in the maximum amount that the developer/owner may charge for this rental unit as the monthly contract rent.

13. Principal Residence.

Workforce Housing Units shall be occupied only by the selected Workforce Household. Subleasing shall be prohibited.

14. Requirement To Maintain Condition.

All owners and tenants of the Workforce Housing Units are required to maintain their unit. The owners and tenants shall not destroy damage or impair the unit, allow the unit to deteriorate, or commit waste on the unit. When the Workforce Housing Unit is offered again for rental, the Administrator shall cause the unit to be inspected.

15. Standard Lease Provision.

Each lease for a Workforce Housing Unit will contain substantially the following provision:

"This apartment is being rented as a "workforce housing unit" as defined in the Norwalk Zoning Regulations. This development has been approved by the Planning and Zoning Commission of the City of Norwalk based in part on the condition that a defined percentage of units will be rented as workforce housing units. The Property Manager is required by law to strictly enforce the Norwalk Zoning Regulations set out in Article 6 Section 6.12 concerning Workforce Housing.

16. Change in Income or Qualifying Status.

In the event that a Workforce Household's income changes so as to exceed the qualifying maximum, or if the Workforce Household otherwise becomes disqualified, such tenant must provide notice to the Administrator within seven (7) days of the disqualification. Upon being disqualified, such tenant, following the procedures set forth below, shall have the option to vacate the unit within ninety (90) days, or to remain in the unit paying a market rate rent. Within fifteen (15) days of receiving notice of a Workforce Household's disqualification, the Administrator shall provide written notice to the tenant of the market rate rent for the unit. The tenant shall notify the Administrator within fifteen (15) days of receipt of such notice whether the tenant will accept the market rate rent or vacate. If the tenant elects to remain in the unit at the market rate, the Administrator shall offer the next available unit of the equivalent number of bedrooms as a Workforce Housing Unit, if necessary, in order for the development to comply with the minimum set aside for Workforce Housing Units. These procedures must be followed in order to ensure that the Project shall not be out of compliance with the ten percent (10%) minimum designated units.

17. Enforcement.

A violation of this Affordability Plan shall not result in a forfeiture of title, but the Norwalk Planning and Zoning Commission, or its designated agent, shall otherwise retain all enforcement powers granted by the General Statutes, including Section 8-12, which powers include, but are not limited to, the authority, at any reasonable time, to inspect the property and to examine the books and records of the Administrator to determine compliance of Workforce Housing Units with the Regulations.

18. Binding Effect.

This Plan shall be binding on Spinnaker Acquisitions LLC, successors, heirs and assigns.

APPENDIX A
(Unit to be provided prior to commencement of marketing)
(TO BE PROVIDED REFER TO ARCHITECTURAL PLAN SET FOR UNIT LOCATIONS)

APPENDIX B
DEFINITIONS AND ELEMENTS OF ANNUAL FAMILY INCOME

1. Annual income shall be calculated with reference to 24 C.F.R. § 5.609, and includes, but is not limited to, the following:

a. The full amount, before any payroll deductions, of wages and salaries, overtime pay, commissions, fees, tips, bonuses and other compensation for personal services;

b. The net income from operations of a business or profession, before any capital expenditures but including any allowance for depreciation expense;

c. Interest, dividends, and other net income of any kind from real or personal property;

d. The full amount of periodic payments received from social security, annuities, insurance policies, retirement funds, pensions, disability or death benefits, or other similar types of periodic payments;

e. Payments in lieu of earnings, such as unemployment and disability compensation, worker's compensation, and severance pay;

f. Welfare assistance. If the welfare assistance payments include an amount specifically designated for shelter and utilities that is subject to adjustment by the welfare assistance agency in accordance with the actual cost of shelter and utilities, the amount of welfare assistance to be included as income consists of the following:

(1) The amount of the allowance exclusive of the amounts designated for shelter or utilities, plus

(2) The maximum amount that the welfare assistance agency could in fact allow the family for shelter and utilities;

g. Periodic and determinable allowances, such as alimony and child support payments, and regular contributions or gifts received from persons not residing with the Applicant (e.g. periodic gifts from family members, churches, or other sponsored group, even if the gifts are designated as rental or other assistance);

h. All regular pay, special pay and allowances of a member of the armed forces;

i. Any assets not earning a verifiable income shall have an imputed interest income using a current average annual savings interest rate.

2. Excluded from the definition of family annual income are the following:

a. Income from employment of children under the age of 18;

b. Payments received for the care of foster children;

c. Lump-sum additions to family assets, such as inheritances, insurance payments, capital gains and settlement for personal or property losses;

d. Amounts received that are specifically for, or in reimbursement of, the cost of medical expense for any family member;

e. Amounts of educational scholarships paid directly to the student or to the educational institution, and amounts paid by the government to a veteran in connection with education costs;

f. Amounts received under training programs funded by HUD;

g. Food stamps; and

h. Temporary, nonrecurring or sporadic income (including gifts that are not regular or periodic).

3. Net family assets for purposes of imputing annual income include the following:

a. Cash held in savings and checking accounts, safety deposit boxes, etc.;

b. The current market value of a trust for which any household member has an interest;

c. The current market value, less any outstanding loan balances of any rental property or other capital investment;

d. The current market value of all stocks, bonds, treasury bills, certificates of deposit and money market funds;

e. The current value of any individual retirement, 401K or Keogh account;

f. The cash value of a retirement or pension fund which the family member can withdraw without terminating employment or retiring;

g. Any lump-sum receipts not otherwise included in income (i.e., inheritances, capital gains, one-time lottery winnings, and settlement on insurance claims);

h. The current market value of any personal property held for investment (i.e., gems, jewelry, coin collections); and

i. Assets disposed of within two (2) years before the Application Date, but only to the extent consideration received was less than the fair market value of the asset at the time it was sold.

4. Net family assets do not include the following:

a. Necessary personal property (clothing, furniture, cars, etc.);

b. Vehicles equipped for handicapped individuals;

c. Life insurance policies;

d. Assets which are part of an active business, not including rental properties; and

e. Assets that are not accessible to the Applicant and provide no income to the Applicant.

APPENDIX C
REQUIRED DOCUMENTATION OF INCOME

The following documents shall be provided, where applicable, to the Administrator to determine income eligibility:

1. Employment Income. Verification forms must request the employer to specify the frequency of pay, the effective date of the last pay increase, and the probability and effective date of any increase during the next twelve (12) months. Acceptable forms of verification (of which at least one must be included in the Applicant file) include:

a. An employment verification form completed by the employer.

b. Check stubs or earnings statement showing Applicant's gross pay per pay period and frequency of pay.

c. W-2 forms if the Applicant has had the same job for at least two years and pay increases can be accurately projected.

d. Notarized statements, affidavits or income tax returns signed by the Applicant describing self-employment and amount of income, or income from tips and other gratuities.

2. Social Security, Pensions, Supplementary Security Income, Disability Income.

a. Benefit verification form completed by agency providing the benefits.

b. Award or benefit notification letters prepared and signed by the authorizing agency. (Since checks or bank deposit slips show only net amounts remaining after deducting SSI or Medicare, they may be used only when award letter cannot be obtained.)

c. If a local Social Security Administration ("SSA") office refuses to provide written verification, the Administrator should meet with the SSA office supervisor. If the supervisor refuses to complete the verification forms in a timely manner, the Administrator may accept a check or automatic deposit slip as interim verification of Social Security or SSI benefits as long as any Medicare or state health insurance withholdings are included in the annual income.

3. Unemployment Compensation.

a. Verification form completed by the unemployment compensation agency.

b. Records from unemployment office stating payment dates and amounts.

4. Government Assistance.

a. All Government Assistance Programs. Agency's written statements as to type and amount of assistance Applicant is now receiving, and any changes in assistance expected during the next twelve (12) months.

b. Additional Information for "As-paid" Programs: Agency's written schedule or statement that describes how the "as-paid" system works, the maximum amount the Applicant may receive for shelter and utilities and, if applicable, any factors used to ratably reduce the Applicant's grant.

5. Alimony or Child Support Payments.

a. Copy of a separation or settlement agreement or a divorce decree stating amount and type of support and payment schedules.

b. A letter from the person paying the support.

c. Copy of latest check. The date, amount, and number of the check must be documented.

d. Applicant's notarized statement or affidavit of amount received or that support payments are not being received and the likelihood of support payments being received in the future.

6. Net Income from a Business. The following documents show income for the prior years. The Administrator must consult with Applicant and use this data to estimate income for the next twelve (12) months.

a. IRS Tax Return, Form 1040, including any:

(1) Schedule C (Small Business)

(2) Schedule E (Rental Property Income)

(3) Schedule F (Farm Income)

b. An accountant's calculation of depreciation expense, computed using straight-line depreciation rules. (Required when accelerated depreciation was used on the tax return or financial statement.)

c. Audited or unaudited financial statement(s) of the business.

d. A copy of a recent loan application listing income derived from the business during the previous twelve (12) months.

e. Applicant's notarized statement or affidavit as to net income realized from the business during previous years.

7. Recurring Gifts.

a. Notarized statement or affidavit signed by the person providing the assistance. Must give the purpose, dates and value of gifts.

b. Applicant's notarized statement or affidavit that provides the information above.

8. Scholarships, Grants, and Veterans Administration Benefits for Education.

a. Benefactor's written confirmation of amount of assistance, and educational institution's written confirmation of expected cost of the student's tuition, fees, books and equipment for the next twelve (12) months. To the extent the amount of assistance received is less than or equal to actual educational costs, the assistance payments will be excluded from the Applicant's gross income. Any excess will be included in income.

b. Copies of latest benefit checks, if benefits are paid directly to student. Copies of canceled checks or receipts for tuition, fees, books, and equipment, if such income and expenses are not expected to change for the next twelve (12) months.

c. Lease and receipts or bills for rent and utility costs paid by students living away from home.

9. Family Assets Currently Held. For non-liquid assets, collect enough information to determine the current cash value (i.e., the net amount the Applicant would receive if the asset were converted to cash).

a. Verification forms, letters, or documents from a financial institution, broker, etc.

b. Passbooks, checking account statements, certificates of deposit, bonds, or financial statements completed by a financial institution or broker.

c. Quotes from a stock broker or realty agent as to net amount Applicant would receive if Applicant liquidated securities or real estate.

d. Real estate tax statements if tax authority uses approximate market value.

e. Copies of closing documents showing the selling price, the distribution of the sales proceeds and the net amount to the borrower.

f. Appraisals of personal property held as an investment.

g. Applicant's notarized statements or signed affidavits describing assets or verifying the amount of cash held at the Applicant's home or in safe deposit boxes.

10. Assets Disposed of for Less Than Fair Market Value ("FMV") During Two Years Preceding Application Date.

a. Applicant's certification as to whether it has disposed of assets for less than FMV during the two (2) years preceding the Application Date.

b. If the Applicant states that it did dispose of assets for less than FMV, then a written statement by the Applicant must include the following:

(1) A list of all assets disposed of for less than FMV;

(2) The date Applicant disposed of the assets;

(3) The amount the Applicant received; and

(4) The market value to the asset(s) at the time of disposition.

11. Savings Account Interest Income and Dividends.

a. Account statements, passbooks, certificates of deposit, etc., if they show enough information and are signed by the financial institution.

b. Broker's quarterly statements showing value of stocks or bonds and the earnings credited the Applicant.

c. If an IRS Form 1099 is accepted from the financial institution for prior year earnings, the Affordable Housing Manager must adjust the information to project earnings expected for the next twelve (12) months.

12. Rental Income from Property Owned by Applicant. The following, adjusted for changes expected during the next twelve (12) months, may be used:

a. IRS Form 1040 with Schedule E (Rental Income).

b. Copies of latest rent checks, leases, or utility bills.

c. Documentation of Applicant's income and expenses in renting the property (tax statements, insurance premiums, receipts for reasonable maintenance and utilities, bank statements or amortization schedule showing monthly interest expense).

d. Lessee's written statement identifying monthly payments due the Applicant and Applicant's affidavit as to net income realized.

13. Full-Time Student Status.

a. Written verification from the registrar's office or appropriate school official.

b. School records indicating enrollment for sufficient number of credits to be considered a full-time student by the school.

DEED RESTRICTION

DECLARATION OF RESTRICTIONS

DECLARATION MADE this _____ day of _____, 2025 by **Spinnaker Acquisitions LLC**, a Connecticut limited liability company with an office located at 1 North Water Street, Suite 100 in Norwalk Connecticut 06854, (the "**Declarant**").

RECITALS:

A. Declarant is the owner of a certain property known as 108 Water Street, Norwalk, Connecticut (District 2, Block 84, Lot 18) and more particularly described in Schedule A attached hereto (the "**Property**").

B. Declarant obtained approval from the Norwalk Planning and Zoning Commission (the "**Commission**") on _____, effective _____ in File _____ (the "**Approval**"), which Approval permits, *inter alia*, construction and occupancy of _____(__) residential units on the Property.

C. Pursuant to the Approvals and to the Norwalk Zoning Regulations Article 6 Section 6.12, three (3) units of the fifty-nine (59) units are to be designated as "workforce housing units" as said term is defined in the Norwalk Zoning Regulations in effect on _____ 2025. All three (3) units will be located on-site. There will be one (1) one-bedroom and two (2) three-bedroom units within the structure.

D. Declarant executes this Declaration of Restrictions and a Workforce Housing Affordability Plan with the intent to satisfy Condition of the Approval and the Norwalk Zoning Regulations Article 6 Section 6.12.5.4.

NOW, THEREFORE, in consideration of $1.00, the aforementioned Approval and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged by Declarant, Declarant hereby declares as follows:

1. This development contains "workforce housing units" as that term is defined in City of Norwalk Code Article 6 Section 6.12 in effect on _____ 2025 and is therefore subject to limitations on the maximum annual income of the household that may rent the designated workforce housing units, and on the maximum rental that may be charged for such workforce housing units. These limitations shall be strictly enforced, and may be enforced by the zoning enforcement authority of the City of Norwalk against the record owner of the development or the person identified in the affordability plan as responsible for the administration of these limitations.

For the duration of this covenant or restriction, no less than ten (10%) percent of the dwelling units in this development, and no less than one (1) one-bedroom and two (2) three-bedroom units shall be rented to persons and families whose annual income is less than or equal

to eighty (80%) percent of the median income as defined in subsection 8-30g-1(10) of the Regulations of Connecticut State Agencies, and such units may be rented only at a rental equal to or less than the rental determined using the formula for maximum monthly rental amounted stated in §8-30g-8(d) of the Regulations of Connecticut State Agencies.

2. A violation of this Declaration of Restrictions or of the Workforce Housing Affordability Plan shall not result in a forfeiture of title, but the Commission or its designated agent shall otherwise retain all enforcement powers granted by the Connecticut General Statutes, including §8-12, which powers include, but are not limited to, the authority, at any reasonable time, to inspect the workforce housing units and to examine the books and records of the Administrator to determine compliance of the workforce housing unit with the applicable affordable housing statutes and regulations.

3. A copy of the Workforce Housing Affordability Plan of this development is on file and available for inspection in the office of the Planning and Zoning Department of the City of Norwalk, 125 East Avenue, Norwalk, Connecticut.

4. This Declaration of Restrictions is perpetual for the life of the residential development on the Property, and shall run with the land and be binding upon Declarant and its successors and assigns.

5. This Declaration of Restrictions shall not be modified or terminated without the express written permission of the Norwalk Planning and Zoning Commission, which shall be set out in an amendment to this Declaration, signed by authorized representatives of the parties hereto and filed on the Land Records, all in the same manner as this document.

IN WITNESS WHEREOF, Declarant has set its hand and seal as of the date first above written.

Spinnaker Acquisitions LLC

_____ By:_____

Name:

Title: Manager

_____

STATE OF CONNECTICUT:
: ss: Norwalk _____, 20
COUNTY OF FAIRFIELD :

Personally appeared _____, a Connecticut limited liability company, acting herein by _____, its _____, duly authorized, signer and sealer of the foregoing instrument, who acknowledged the same to be his and its free act and deed, before me.

_____
Commissioner of the Superior Court
Notary Public



1 SD1.12 OVERALL - LEVEL_02
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD1.13 OVERALL - LEVEL_03
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD1.14 OVERALL - LEVEL_04
1" = 20'-0"

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC

2-59-1-0
SONO SQUARE ASSOCIATES LLC 25% &D
-
WESTPORT, CT 06880-0000

2-60-6-0
TREV MTK HARBOURSIDE LLC
2 SCHOOL ST
RYE, NY 10580-0000

2-60-9-0
PHYL-VIC LLC
7 MURIEL ST.
NORWALK, CT 06851

2-84-15-0
NORWEST MARINE INC
C/O AUSTIN IODICE
FAIRFIELD, CT 06824-7031

2-84-17-0
BLOOM NORMAN R ESTATE OF (1/6TH INT)
120 WATER ST
NORWALK, CT 06854-3067

2-84-47-0
MILKOVICH LESLIE B &
46 COVE AVE
NORWALK, CT 06855

2-84-47A-0
SONO SQUARE ASSOCIATES LLC 25% &D
57 WILTON ROAD
WESTPORT, CT 06880-0000



N
W E
S

SCALE: 1" = 100'

0 50 100 200
Feet

108 Water Street
2-84-18-0

Aerial photographs taken April, 2019

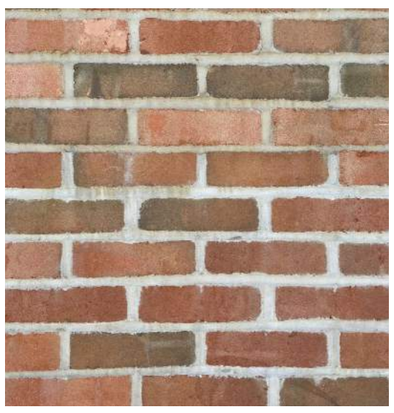
Document Name: 108 Water St - Aerial Image Request

108 Water Street

BEINFIELD ARCHITECTURE

06.26.2025





1. Brick



2. Aluminum Panel



3. Corrugated Metal Vertical Roofing



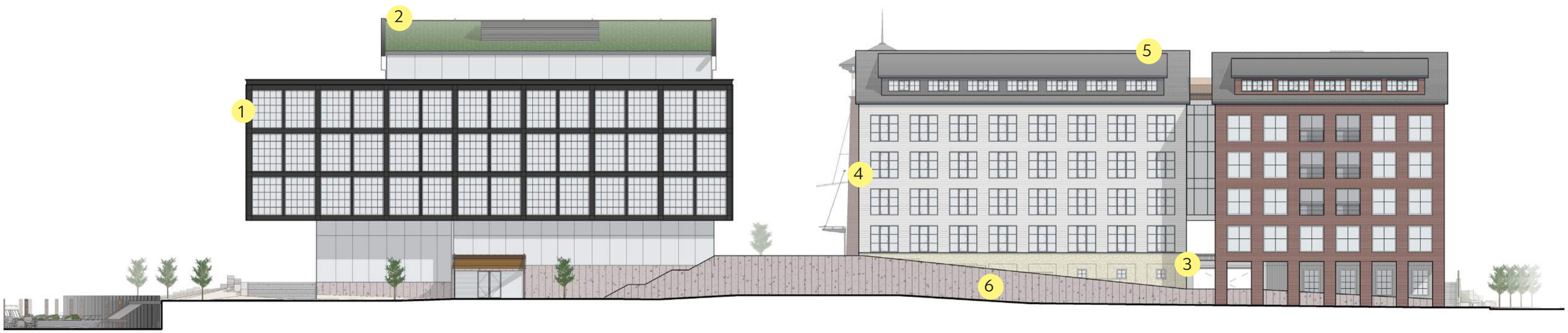
4. Asphalt Shingles



5. Vertical Wood Plank

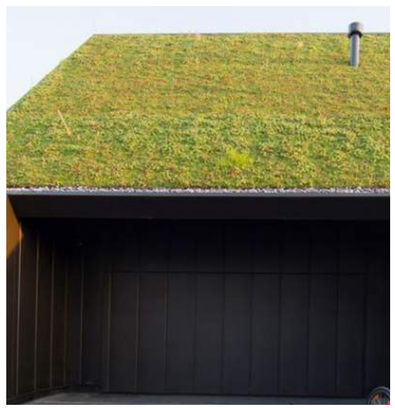
BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC

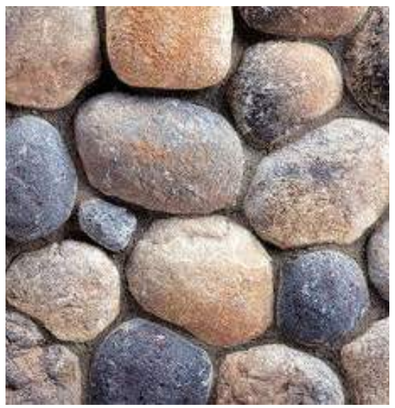




1. Windows



2.Green Roof



3. Stone Foundation



4. Hardie Plank Clapboard Siding



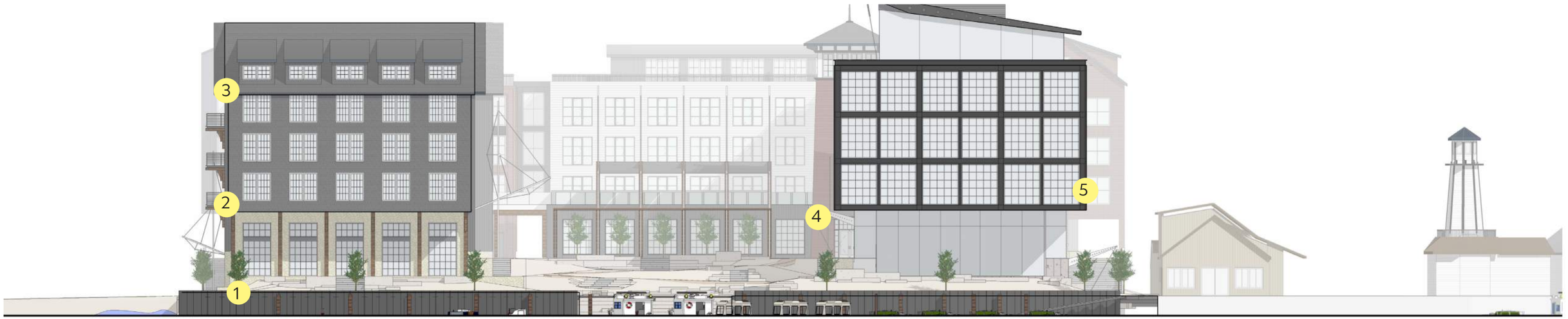
5. Asphalt Roof



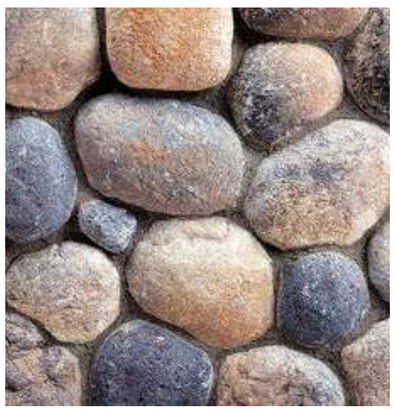
6. Concrete Panel

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC



1 SD1.21 SITE - EAST ELEVATION
1/16" = 1'-0"



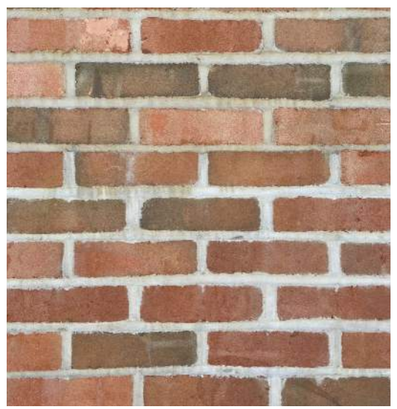
1. Stone Foundation



2.Grey Washed Cedar Shakes



3. Asphalt Roof



4 Brick

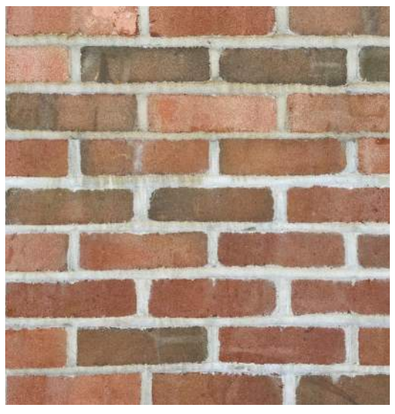


5. Window

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC





1. Brick



2. Vertical Grey Washed Cedar Siding



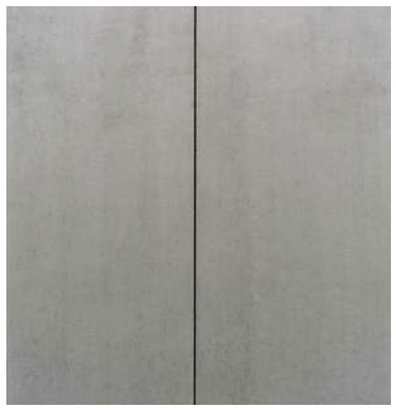
3. Grey Washed Cedar Shakes



4. Stone Foundation



5. Asphalt Shingles



6. Concrete Panel

BEINFIELD ARCHITECTURE PC
203.838.5789 | 11 Chestnut Street #102 | South Norwalk, CT 06854

©2022 BEINFIELD ARCHITECTURE PC EXPRESSLY RESERVES ITS COMMON-LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MATTER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPXRESS WRITTEN PERMISSION AND CONSENT OF BEINFIELD ARCHITECTURE PC

Special Permit Application

City of Norwalk Planning & Zoning Commission
Phone: 203-854-7780
www.norwalkct.gov

Date Received:

Per Section 8.4.8 of the Norwalk Zoning Regulations, Special Permits are for Uses, Buildings, or Structures that are considered to be generally appropriate in the applicable District, but because of their potential for impacts with Adjacent Uses, Buildings, or Structures, require individual review for specific locations.

1. **Address of Subject Property(s):**
   220 Gregory Boulevard, Norwalk, CT
2. District: 3 Block: 73 Lot(s): 2
3. Zone: CD-1M, Overlay/Village District: coastal/flood hazard
4. Historic Structure(s): ☑ No ☐ Yes
5. Flood Hazard Zone: ☐ No ☑ Yes, Flood Zone(s) AE12
6. Coastal Area Management Zone: ☐ No ☑ Yes If yes, include application for Coastal Site Plan Review or specify Section allowing exemption: _____
7. Existing Use of Property:
   See Schedule A attached hereto and made a part hereof.
8. Proposed Use of Property as Identified per **Table 4.3.9.A:** Building, Lot & Building Site Principal Uses:
   See Schedule A attached hereto and made a part hereof.

Applicant Information

Applicant Name: The Norwalk Country Club Company and Shore & Country Club, Inc.
Billing Address: 220 Gregory Boulevard, Norwalk, CT 06855
Phone Number: c/o Elizabeth A.B. Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth A.B. Suchy, Esq. - esuchy@carmodylaw.com
Signature: _____

Property Owner Information and Authorization

Owner of Record: The Norwalk Country Club Company
Billing Address: 220 Gregory Boulevard, Norwalk, CT 06855
Phone Number: c/o Elizabeth A.B. Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth A.B. Suchy, Esq. - esuchy@carmodylaw.com
* Signature: Carmody Torrance Sandak & Hennessey LLP

**By signing, the property owner confirms that the Applicant has been authorized to apply for Planning & Zoning approval, and attests that all information provided is true and accurate.*

*See letter of consent attached hereto.

THE NORWALK COUNTRY CLUB COMPANY / SHORE & COUNTRY CLUB, INC.
APPLICATION FOR SPECIAL PERMIT
220 GREGORY BOULEVARD, EAST NORWALK, CT
NARRATIVE
SCHEDULE A

I. OVERVIEW

The Norwalk Country Club Company is the owner of 8.4± acres (366,539± sq.ft.) of real property with the improvements thereon located at 220 Gregory Boulevard in East Norwalk, CT (hereinafter the "Property"). Designated as Tax Lot 2 in Block 73 of the Third Taxing District, the Property is situated in the CD-1M zone[1] and within the boundary of the coastal area management (CAM) zone.[2] The Property falls within the AE12, AE14 and VE14 flood zones as established by the Federal Emergency Management Agency (FEMA). (Refer to "Zoning Location Survey of Property Prepared For The Shore & Country Club #220 Gregory Boulevard, Norwalk, Connecticut Scale: 1"=40' dated Sept. 7, 2023, revised to May 20, 2025" ["Survey"] prepared by Arcamone Land Surveyors, attached hereto and made a part hereof). The Norwalk Country Club Company and Shore & Country Club, Inc., which was formed in 1933 and is the tenant under a long-term lease, are collectively the "Applicant." The Shore & Country Club is a longstanding, water-dependent recreational use.

The Property is improved with a 2½ story, 14,000± sq.ft. club house with dining and gathering facilities constructed in 1908, a bathhouse with 220± lockers, changing areas and dining space reconstructed in 2017, 10 tennis courts, a 98-slip marina in Charles Creek, a freshwater pool and kiddy pool, among other amenities. At the southern side of the Property (its zoning "rear"), there is an existing seawall constructed in the late 1950s or early 1960s. The club is generally open from March through December, with the high season from June through August. The Applicant has 15 staff from January 15 to March 15, approximately 60 staff from March 15 to May 31 and from September 1 to December 31, and 100 employees during the June 1 to August 31 busy season.

II. PROJECT

The Applicant proposes to commence revisions to the Property in connection with a long-term master plan to modernize and upgrade club facilities, structures and grounds to better serve its membership while preserving the overall character and operational continuity of the club. This application centers around three (3) component parts of the proposed master plan: the construction, use and occupancy of a new tennis pro shop and viewing area in generally the same location as the existing pro shop, new asphalt courts for junior tennis and pickleball play, and revisions to the parking lot layout in the northwest and north sides of the Property. (Refer to "Site Layout Plan (Sheet C-1.0)" ["Site Layout Plan"] dated 6/12/2024 revised to 5/19/25 prepared by LandTech Consult and "Proposed Site Plan (Sheet SP1.00) dated May 15, 2025 prepared by Rogers McCagg Architects/Planners, attached hereto made a part hereof). Other improvements are also proposed, including installation of underground utilities and new perimeter fencing along with selecting grading and landscaping. Other components of the overall master plan will be presented to this Commission, if necessary, in upcoming months. "This proposal represents a low-impact improvement to an existing water-dependent recreational facility, enhancing the site's recreational offerings while respecting the sensitive coastal setting and regulatory framework

[1]Prior to the February 19, 2024 effective date of the new zoning map and regulations, the Property had been zoned A Residence.
[2]Both proposed structures are outside the LIMWA one.
{S7627809}

established under the Connecticut Coastal Management Act" (p. 4 Coastal Area Management Environmental Analysis Recreational Facility Improvements" ["Coastal Report"].

a. Tennis Pro Shop

The replacement tennis pro shop structure is approximately 1,589± sq.ft., which includes the building area and viewing deck and contains restrooms, ADA-compliant wheelchair lift and ramp, retail area, office and utility room, which will replace a nonconforming shed that currently houses utilities. (Refer to "Proposed Tennis Pro-Shop Section, Floor Plan & Roof Plan (Sheet No. A1.00)," and "Proposed Site Section & Pro-Shop Elevations (Sheet No. A2.00)" all dated 5-15-2025 prepared by Rogers McCagg, attached hereto and made a part hereof). The new tennis pro shop structure will be located at El. 14 (including all duct work, utility systems, etc.), thereby meeting the requirements for the AE El. 12 zone, established by FEMA, plus two (2') feet per the zoning regulations. Flood vents have been incorporated into the design. The existing pro shop and shed would be demolished.

b. Interior Circulation/Parking

As part of this application, the Applicant proposes revisions to the interior circulation pattern and parking on site. First, the entrance to the Property where the guard house is located will be slightly reduced in size and improved with new landscaping. The tennis courts in the northwest section of the lot will be removed and relocated to the northern section of the property. New parking – 78 spaces - will be created adjacent to the main clubhouse, with requisite parking lot plantings in accordance with the requirements of the zoning regulations. Other parking areas will be repaved and restriped. (Refer to Survey and Site Layout Plan, attached hereto and made a part hereof.)

c. Tennis/Pickleball Courts

The asphalt parking area along the northeast perimeter closest to Gregory Boulevard will be removed and replaced with two (2) asphalt tennis/pickleball courts, occupying space where there is an existing asphalt parking. The courts comply with the required setbacks and will be fenced and screened. (Refer to Survey and Site Layout Plan, attached hereto and made a part hereof.) Other asphalt along the northern property line near the marsh will be replaced with gravel and lawn.

STANDARDS OF REVIEW

The Applicant submits this application for special permit pursuant to Sec. 8.4.8 (Special Permits), Sec. 6.9.1 (Flood Hazard Zone Overlay) and Sec. 6.10.1 (Coastal Area Management Overlay) of the Norwalk Zoning Regulations ("zoning regulations"). Accordingly, the Applicant submits that the proposal meets or exceeds the standards of review as follows:

Special Permit Standards

(a) Density of use and bulk of buildings. The density of use of the existing building and proposed addition, as well as the bulk of the building will comply with city zoning regulations. (Refer to Survey and "Cover Sheet (Sheet No. G1.0)" dated 5/15/25 prepared by Rogers McCagg, attached hereto and made a part hereof).

(b) All proposed uses for which a site plan is required shall provide for ingress and egress to the site which does not adversely impact the normal flow of traffic or normal safe conditions for

the roadways. Site plans shall be referred to the Department of Public Works and the Transportation, Mobility and Parking department for review and recommendations. Refer to Proposed Site Plan attached hereto and made a part hereof.

(c) The Commission may require such reasonable improvements as may be necessary to accommodate traffic increases caused by the proposed development to maintain existing levels of service and to improve traffic safety. Since there is no increase in membership proposed or anticipated as a result of application, a traffic impact analysis should not be required.

(d) Availability of mass transit facilities and provision of sidewalks within a minimum clearance of five (5) feet without obstructions. The East Norwalk Metro-North railroad station is about 1.5 miles to the north. The Norwalk Transit District Wheels Route 7 bus travels along Gregory Boulevard to the intersection with 5th Street, then continues on Calf Pasture Beach Road to Calf Pasture Beach. There are no Wheels buses that travel closer to the Applicant's Property.

(e) Availability and compatibility of utilities. The site is and will continue to be served the city water, sewer and other utilities. (Refer to Survey, and "Site Utility Plan (C-2.0)" dated 6/12/2024 revised to 5/19/25 prepared by LandTech Consult, attached hereto and made a part hereof).

(f) Signs of size and design that are in harmony with the neighborhood. No new or additional signs are proposed. Should the Applicant propose new or additional signage, it will comply with the signage regulations set for the in the zoning regulations.

(g) Adequacy of yards and open space, screening and buffering. The site complies with all zoning requirements for yards and open space, screening and buffering. Any pre-existing legal nonconformities will remain. (Refer to "Proposed Landscape Site Plan (LSP1.0)" and "Proposed Pro-Shop Landscape Plan (LSP1.1)" both dated 5-15-2025 and prepared by Williams C. Rutherford, LLA LLC, attached hereto and made a part hereof).

(h) Impact on neighborhood properties, as compared to uses and structures permitted as a matter of right. The Shore & Country Club has existed in the neighborhood for more than 115 years. The proposed revisions to the parking lot, construction of a new tennis hut in generally the same location as existing, and new tennis/pickleball courts are not expected to have an impact on neighborhood properties.

(i) Existing land use in the area. The surrounding streets are generally improved with single-family dwellings (west side of Gregory Boulevard, Sylvester Court and Decker Street), and a large multi-family condominium adjacent to the north perimeter of the Property.

(j) Proximity of community facilities. Calf Pasture Beach is about a two-mile walk or drive, and City of Norwalk Ludlow Park is located about ¾ of a mile to the north.

(k) Compliance with the zoning regulations and the Plan of Conservation and Development. The proposed use complies with the advisory Plan of Conservation and Development.

(l) Utilization of green infrastructure and other sustainability measures. Various features have been added for green infrastructure and sustainability including vegetated swales in parking lot islands. (Refer to Stormwater Report and Site Layout Plan, attached hereto and made a part hereof.)

(m) Conservation of wetlands, watercourses and other ecologically viable lands. There are no inland wetlands or watercourses on the site. All redevelopment and construction activities are located landward of the coastal jurisdiction and mean high tide lines.

(n) No zoning violation exists on the property. There are no zoning violations on the Property.

The Shore and Country Club, Inc.
www.shorecc.com

220 Gregory Boulevard
East Norwalk, CT 06855

Phone (203) 838-7507
Fax (203) 866-5157

Wednesday, May 28th, 2025

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: ***The Norwalk Country Club & Shore & Country Club***
220 Gregory Boulevard – East Norwalk, CT
Applications for Special Permit & Coastal Site Plan Review

Dear Chairwoman Wells:

This letter is to advise you that The Norwalk Country Club Company, as owner, and Shore & Country Club, Inc. as tenant, hereby consent to the preparation, filing and presentation of an applications for special permit and coastal site plan review by Carmody Torrance Sandak & Hennessey LLP for the proposed revisions to the club property including a new proshop, relocated tennis courts and other site improvements.

Should you have any questions, please do not hesitate to contact me.

Very truly yours,

The Norwalk Country Club Company
Shore & Country Club, Inc.

By _____

Its General Manager, Duly Authorized

{S7636593}

Planning & Zoning Commission

APPLICATION FOR COASTAL SITE PLAN REVIEW

Application must be accompanied by two (2) printed and one (1) digital set of all documents, and appropriate filing fee. Filing Fee: $310.00 for single or two family use; $810.00 for all other uses.

Date Stamp

Application Completion Date: Official Receipt Date: Fee Paid:

1. **Property Address:** 220 Gregory Boulevard, Norwalk, CT 06855 **2.** D/B/L/U: 3/73/2

3. Proposed Work: New tennis/pickleball court, revised parking and access **4.** Zone: CD-1M

5. Applicant Identification:

Applicant Name: The Norwalk Country Club Company and Shore & Country Club, Inc.

Address: 220 Gregory Boulevard, Norwalk, CT 06855

Phone Number: c/o Elizabeth A.B. Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth A.B. Suchy, Esq. - esuchy@carmodylaw.com

Interest in Property: ☑ fee simple ☐ option ☐ lessee ☐ easement ☐ other (specify): _____

List primary contact for correspondence *if other than applicant* (Agent or Attorney):

Name: Elizabeth A.B. Suchy, Esq., Carmody Torrance Sandak & Hennessey LLP

Address: 1055 Washington Boulevard, 4th Floor, Stamford, CT 06901

Business Phone: 203-252-2656 Email: esuchy@carmodylaw.com

6. Property Owner, if different than applicant:

Owner Name: Same as applicant

Address: _____

Phone Number: _____ Email: _____

7. Project Information:

Please check the appropriate box to identify the plan or application that has resulted in this Coastal Site Plan Review:

- ○ Coastal Site Plan for Zoning Compliance/Zoning Permit
- ○ Subdivision or Resubdivision Application
- ◉ Special Permit or Special Exception Application
- ○ Site Plan Review Application
- ○ Variance Application
- ○ Municipal Project (CGS Section 8-24)

6. Project Site Plans:

Please provide project site plans that clearly and accurately depict the following information, and check the appropriate boxes to indicate that the plans are included in this application:

- ☑ Project location
- ☑ Existing and proposed conditions, including buildings and topography
- ☑ **All** coastal resources on and contiguous to the site
- ☑ High tide line [as defined in CGS Section 22a-359(c)] and mean high water mark elevation contours (for parcels abutting coastal waters and/or tidal wetlands only)
- ☑ Soil erosion and sediment controls
- ☑ Storm water management & treatment practices
- ☑ Ownership and type of use on adjacent properties
- ☑ Reference datum (i.e., National Geodetic Vertical Datum, Mean Sea Level, etc.)
- ☑ Landscaping and planting plan (existing & proposed)
- ☑ Utility Plan (existing & proposed: water, drainage, sanitary sewers, electric & gas lines)
- ☑ Easements (utility, sight preservation, conservation, pedestrian)

7. Site Information:

a) Street Address or Geographical Description:
220 Gregory Boulevard, Norwalk, CT 06855

b) Is project or activity proposed at a waterfront site (includes tidal wetlands frontage)? ○YES ○NO

c) Name of on-site, adjacent, or downstream coastal, tidal, or navigable waters, if applicable:
Norwalk Harbor to the west and south; Charles Creek to the east.

d) Identify and describe the existing land use in and adjacent to the site. Include description of any existing structures and significant features on the project site:
The property has been developed as the Shore and Country Club since 1908. Facilities at the site include a club house, a 2-story bath house, tennis courts, a swimming pool facility, a beach area, recreational marina, and associated parking. The entire parcel is approximately 8.416 acres. The site fronts the tidal waters along the west, south, and east.

e) Indicate the area of the project site: 3.67± acres **or** 159,650± square feet

f) Check the appropriate box below to indicate total land area of disturbance of the project or activity (please also see Question #9 regarding proposed stormwater best management practices):

- ○ Project or activity will disturb five (5) or more total acres of land area on the site. *Registration for CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities required.*
- ◉ Project or activity will disturb land, but less than five (5) total acres of land area would be disturbed. *A soil erosion and sedimentation control plan must be submitted.*
- ○ Project or activity will not disturb any land area.

g) Does the project include a shoreline flood and erosion control structure as defined in CGS section 22a-109(d)? ○Yes ◉No

8. Description of Proposed Project or Activity:

Describe the proposed project or activity including its purpose and related activities such as site clearing, grading, demolition, and other site preparations; percentage of increase or decrease in impervious cover over existing conditions resulting from the project; phasing, timing and method of proposed construction; and new uses and changes from existing uses (*attach additional pages if necessary*):

The project involves the reconfiguration of the existing site to improve the functional layout of the property. Specifically, the existing tennis courts will be removed and reconstructed along the northeast corner of the property so that all of the facilities tennis courts will be proximate to each other. A new parking area will be constructed to the north of the existing club in the location of the existing two tennis courts. The existing tennis courts require extensive repairs so the club is looking to redesign the existing layout to better facilitate the use of the existing land. The proposed parking area will be more proximate to the existing club house which will provide better access to members and guests visiting.
The existing pro shop will also be demolished and rebuilt so that it is FEMA compliant. The area around the existing pro shop will also have landscaping installed. Stormwater management will be designed to meet the requirements of the City of Norwalk Engineering standards and the 2024 CTDEEP Stormwater Quality Manual.

9. Description of Proposed Stormwater Best Management Practices:

Describe the stormwater best management practices that will be utilized to ensure that the volume of runoff generated by the first inch of rainfall is retained on-site, especially if the site or stormwater discharge is adjacent to tidal wetlands. If runoff cannot be retained on-site, describe the site limitations that prevent such retention and identify how stormwater will be treated before it is discharged from the site. Also demonstrate that the loadings of total suspended solids from the site will be reduced by 80 percent on an average annual basis, and that post-development stormwater runoff rates and volumes will not exceed pre-development runoff rates and volumes (*attach additional pages if necessary*):

Stormwater management will include the installation of hydrodynamic separator and underground stormwater detention chambers in the area of the former tennis courts that are being removed. The proposed stormwater management system will meet the requirements of the City of Norwalk's stormwater management regulations and the 2024 CTDEEP Stormwater Quality Manual.

10. Identification of Applicable Coastal Resources and Coastal Resource Policies:

Identify the coastal resources and associated policies that apply to the project by placing a check mark in the appropriate box(es) in the following table.

Coastal Resources	On-site	Adjacent	Off-site but within the influence of project	Not Applicable
General Coastal Resources* - Definition: CGS Section 22a-93(7); Policy: CGS Section 22a-92(a)(2)	☐	☐	☐	☐
Beaches & Dunes - Definition: CGS Section 22a-93(7)(C); Policies: CGS Sections 22a-92-(b)(2)(C) and 22a-92(c)(1)(K)	☑	☑	☐	☐
Bluffs & Escarpments - Definition: CGS Section 22a-93(7)(A); Policy: CGS Section 22a-92(b)(2)(A)	☐	☐	☐	☑
Coastal Hazard Area - Definition: CGS Section 22a-93(7)(H); Policies: CGS Sections 22a-92(a)(2), 22a-92(a)(5), 22a-92(b)(2)(F), 22a-92(b)(2)(J), and 22a-92(c)(2)(B)	☑	☑	☐	☐
Coastal Waters, Estuarine Embayments, Nearshore Waters, Offshore Waters - Definition: CGS Sections 22a-93(5), 22a-93(7)(G), and 22a-93(7)(K), and 22a-93(7)(L) respectively; Policies: CGS Sections 22a-92(a)(2) and 22a-92(c)(2)(A)	☑	☑	☐	☐
Developed Shorefront - Definition: CGS Section 22a-93(7)(I); Policy: 22a-92(b)(2)(G)	☑	☐	☐	☐
Freshwater Wetlands and Watercourses - Definition: CGS Section 22a-93(7)(F); Policy: CGS Section 22a-92(a)(2)	☐	☐	☐	☑
Intertidal Flats - Definition: CGS Section 22a-93(7)(D); Policies: 22a-92(b)(2)(D) and 22a-92(c)(1)(K)	☐	☐	☐	☑
Islands - Definition: CGS Section 22a-93(7)(J); Policy: CGS Section 22a-92(b)(2)(H)	☐	☐	☐	☑
Rocky Shorefront - Definition: CGS Section 22a-93(7)(B); Policy: CGS Section 22a-92(b)(2)(B)	☐	☐	☑	☐
Shellfish Concentration Areas - Definition: CGS Section 22a-93(7)(N); Policy: CGS Section 22a-92(c)(1)(I)	☐	☐	☐	☑
Shorelands - Definition: CGS Section 22a-93(7)(M); Policy: CGS Section 22a-92(b)(2)(I)	☐	☐	☐	☑
Tidal Wetlands - Definition: CGS Section 22a-93(7)(E); Policies: CGS Sections 22a-92(a)(2), 22a-92(b)(2)(E), and 22a-92(c)(1)(B)	☑	☑	☐	☐

* General Coastal Resource policy is applicable to all proposed activities

11. Consistency with Applicable Coastal Resource Policies and Standards:

Describe the location and condition of the coastal resources identified in Question #10 and explain how the proposed project or activity is consistent with all of the applicable coastal resource policies and standards; also see adverse impacts assessment in Question #14 below (*attach additional pages if necessary*):

See additional pages.

12. Identification of Applicable Coastal Use and Activity Policies and Standards:

Identify all coastal policies and standards in or referenced by CGS Section 22a-92 applicable to the proposed project or activity:

- [x] General Development* - CGS Sections 22a-92(a)(1), 22a-92(a)(2), and 22a-92(a)(9)
- [x] Water-Dependent Uses** - CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A); Definition CGS Section 22a-93(16)
- [ ] Ports and Harbors - CGS Section 22a-92(b)(1)(C)
- [ ] Coastal Structures and Filling - CGS Section 22a-92(b)(1)(D)
- [ ] Dredging and Navigation - CGS Sections 22a-92(c)(1)(C) and 22a-92(c)(1)(D)
- [ ] Boating - CGS Section 22a-92(b)(1)(G)
- [ ] Fisheries - CGS Section 22a-92(c)(1)(I)
- [x] Coastal Recreation and Access - CGS Sections 22a-92(a)(6), 22a-92(C)(1)(j) and 22a-92(c)(1)(K)
- [ ] Sewer and Water Lines - CGS Section 22a-92(b)(1)(B)
- [ ] Fuel, Chemicals and Hazardous Materials - CGS Sections 22a-92(b)(1)(C), 22a-92(b)(1)(E) and 22a-92(c)(1)(A)
- [ ] Transportation - CGS Sections 22a-92(b)(1)(F), 22a-92(c)(1)(F), 22a-92(c)(1)(G), and 22a-92(c)(1)(H)
- [ ] Solid Waste - CGS Section 22a-92(a)(2)
- [ ] Dams, Dikes and Reservoirs - CGS Section 22a-92(a)(2)
- [ ] Cultural Resources - CGS Section 22a-92(b)(1)(J)
- [ ] Open Space and Agricultural Lands - CGS Section 22a-92(a)(2)

* General Development policies are applicable to all proposed activities

** Water-dependent Use policies are applicable to all activities proposed at waterfront sites, including those with tidal wetlands frontage.

13. Consistency With Applicable Coastal Use Policies and Standards:

Explain how the proposed activity or use is consistent with all of the applicable coastal use and activity policies and standards identified in Question #12. **For projects proposed at waterfront sites (including those with tidal wetlands frontage)**, particular emphasis should be placed on the evaluation of the project's consistency with the water-dependent use policies and standards contained in CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A) -- also see adverse impacts assessment in Question #15 below (attach additional pages if necessary):

The project is consistent with applicable policies (referenced in Part V) as it is consistent with the lands capabilities and it does not impact any existing coastal resources.

14. Identification of Potential Adverse Impacts on Coastal Resources: (*Must be completed for ALL projects.*)
Identify the adverse impact categories below that apply to the proposed project or activity.

The **'applicable'** column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(15). If an adverse impact **may result** from the proposed project or activity, please use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Coastal Resources	Applicable	Not Applicable
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☑
Degrading existing circulation patterns of coastal water through the significant alteration of patterns of tidal exchange or flushing rates, freshwater input, or existing basin characteristics and channel contours - CGS Section 22a-93(15)(B)	☐	☑
Degrading natural or existing drainage patterns through the significant alteration of groundwater flow and recharge and volume of runoff - CGS Section 22a-93(15)(D)	☐	☑
Degrading natural erosion patterns through the significant alteration of littoral transport of sediments in terms of deposition or source reduction - CGS Section 22a-93(15)(C)	☐	☑
Degrading visual quality through significant alteration of the natural features of vistas and view points - CGS Section 22a-93(15)(F)	☐	☑
Degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen or salinity - CGS Section 22a-93(15)(A)	☐	☑
Degrading or destroying essential wildlife, finfish, or shellfish habitat through significant alteration of the composition, migration patterns, distribution, breeding or other population characteristics of the natural species or significant alterations of the natural components of the habitat - CGS Section 22a-93(15)(G)	☐	☑
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☑

15. **Identification of Potential Adverse Impacts on Water-dependent Uses:** ***(Complete only if the project/activity is proposed at a waterfront site.)***

a) Identify the adverse impact categories below that apply to the proposed project or activity. The applicable column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(17). If an adverse impact **may result** from the proposed project or activity, use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Future Water-dependent Development Opportunities and Activities	Applicable	Not Applicable
Locating a non-water-dependent use at a site physically suited for or planned for location of a water-dependent use - CGS Section 22a-93(17)	☐	☑
Replacing an existing water-dependent use with a non-water-dependent use - CGS Section 22a-93(17)	☐	☑
Siting a non-water-dependent use which would substantially reduce or inhibit existing public access to marine or tidal waters - CGS Section 22a-93(17)	☐	☑

b) Identification of existing and/or proposed Water-dependent Uses:

Describe the features or characteristics of the proposed activity or project that qualify as water-dependent uses as defined in CGS Section 22a-93(16). If general public access to coastal waters is provided, please identify the legal mechanisms used to ensure public access in perpetuity, and describe any provisions for parking or other access to the site and proposed amenities associated with the access (e.g., boardwalk, benches, trash receptacles, interpretative signage, etc.) *:

There is an existing recreational boat marina at the site. No changes are being proposed waterward of the high tide line as part of this proposal.

*If there are no water-dependent use components, describe how the project site is not appropriate for the development of a water-dependent use.

16. Mitigation of Potential Adverse Impacts:

Explain how all potential adverse impacts on coastal resources and/or future water-dependent development opportunities and activities identified in Questions #14 & #15 have been avoided, eliminated, or minimized (*attach additional pages if necessary*):

The proposed project will not have any potential adverse impacts on any coastal resources and will not preclude any future water dependent development opportunities. The property was developed as the Shore & Country Club in 1908. The proposed changes do not expand the site disturbance at the property and only consist of the redevelopment of the existing land. Mitigation will include the use of erosion and sediment controls during the construction phase of the project. Long-term mitigation includes the installation of stormwater management facilities that will meet the requirements of the City of Norwalk Engineering Standards and the 2024 CTDEEP stormwater quality manual. The project is consistent with the Connecticut Coastal Management Manual since it does not degrade water quality, degrade circulation pattersn, degrade erosion or drainage patterns through significant alteration of groundwater flow, degrade any natural features, increase the hazard of coastal flooding, or degrade wildlife and fin fish habitat.

17. Remaining Adverse Impacts:

Explain why any remaining adverse impacts resulting from the proposed activity or use have not been mitigated and why the project as proposed is consistent with the Connecticut Coastal Management Act (*attach additional pages if necessary*):

There are no remaining adverse impacts associated with this proposal. All aspects of the project are being constructed in areas of the property that have already been disturbed as part of the past development of the club. Proposed stormwater mitigation measures will attenuate any impervious areas associated with this application.

By signing this application, the applicant or his/her agent certifies that they are familiar with the information provided in this application and are aware of the penalties for obtaining a permit through deception or by submission of inaccurate or misleading information.

By signing this application, permission is hereby given to necessary and proper inspection of the subject property by the Commissioners and designated staff of the Commission or consultants to the Commission, at reasonable times, during the pendency of the application.

* **Applicant's Signature:** _____ **DATE:** 5/29/2025

Agent's Signature: Carmody Torrance Sandak Hennessey LLP **DATE:** 5/29/2025

*See letter of consent attached hereto.

THE NORWALK COUNTRY CLUB COMPANY / SHORE & COUNTRY CLUB, INC.
APPLICATION FOR COASTAL SITE PLAN REVIEW
220 GREGORY BOULEVARD, EAST NORWALK, CT
NARRATIVE

I. OVERVIEW

The Norwalk Country Club Company is the owner of 8.4± acres (366,539± sq.ft.) of real property located at 220 Gregory Boulevard in East Norwalk, CT (hereinafter the "Property"). Designated as Tax Lot 2 in Block 73 of the Third Taxing District, the Property is situated in the CD-1M zone and within the boundary of the coastal area management (CAM) zone,[1] located at the confluence of the Norwalk Harbor and Charles Creek which are tidally influenced coastal waterbodies. The Property lies within the AE12, AE14 and VE 14 zones as established by the Federal Emergency Management Agency (FEMA). (Refer to "Zoning Location Survey of Property Prepared For The Shore & Country Club #220 Gregory Boulevard, Norwalk, Connecticut Scale: 1" = 40' dated Sept. 7, 2023, revised to 5/20/25" prepared by Arcamone Land Surveyors, and "Existing Site Photos (Sheet EX1.00 and EX1.01) by Rogers McCagg, attached hereto and made a part hereof). The Norwalk Country Club Company and Shore & Country Club, Inc., which was formed in 1933 and is the tenant under a long-term lease, are collectively the "Applicant."

The Property is improved with a 2½ story, 14,000± sq.ft. club house with dining and gathering facilities constructed in 1908, a bathhouse with 220± lockers, changing areas and dining space reconstructed in 2017, 10 tennis courts, a 98-slip marina in Charles Creek, a freshwater pool and kiddy pool, among other amenities. The Property is largely impervious consisting of paved surfaces, concrete walkways and wood decking with limited lawn or planted buffer zones. At the southern side of the Property (its zoning "rear"), there is an existing seawall constructed in the late 1950s or early 1960s. The club is generally open from March through December, with the high season from June through August. The Applicant has 15 staff from January 15 to March 15, approximately 60 staff from March 15 to May 31 and from September 1 to December 31, and 100 employees during the June 1 to August 31 busy season.

II. PROJECT

The Applicant proposes to commence revisions to the Property in connection with a long-term master plan to modernize and improve the overall recreational character and operational continuity of the Property. This application centers around three (3) component parts of the initial phase of the proposed master plan: the construction, use and occupancy of a new pro shop and viewing area in generally the same location as the existing pro shop, reconfiguration of the northwestern and northern existing parking lot, and the installation of new asphalt tennis and pickleball courts for the junior program.[2] (Refer to "Site Layout Plan (Sheet C-1.0)" dated 6/12/2024 revised to 5/19/25 prepared by LandTech Consult, and "Proposed Site Plan (Sheet SP1.0)" dated 5-15-2025 prepared by Rogers McCagg, attached hereto and made a part hereof). The area of the project is about 3.67+\- acres and the activity is designed to improve the functional layout of the Property. In addition, new underground utilities will be installed along with new perimeter fencing and selective grading and landscaping, but no work is proposed waterward of the coastal jurisdiction line or within any onsite tidal wetlands.

---

[1]Both proposed structures are outside the LIMWA one.
[2]Variances for building height of the marina building and to permit service/utility equipment below the minimum FEMA flood elevation were granted by the Zoning Board of Appeals ("ZBA") in 1999 (ZBA File #16-0407-04) and then for setbacks (ZBA File #16-0407-04) for the new bathhouse in 2016.
{S7627810;2}

Pro Shop

The existing, nonconforming pro-shop will be demolished and replaced with a new structure that complies with the minimum flood elevation established by the Federal Emergency Management Agency (FEMA) plus two (2') feet, as required by the City of Norwalk Zoning Regulations ("zoning regulations"). The area around the pro shop will be landscaped with native, salt-tolerant species. No change of grade will occur with any of the proposed site improvements. (Refer to "Proposed Landscape Site Plan (Sheet No. LSP1.0)" and "Proposed Pro-Shop Landscape Plan (Sheet No. LSP1.1)" both dated 5-15-2025 and prepared by William C. Rutherford LLA LLC, attached hereto and made a part hereof).

The replacement pro shop structure is approximately 1,589± sq.ft., which includes ground level storage, the new structure, viewing deck, restrooms, ADA-compliant wheelchair lift and ramp, retail area, office and utility room. In addition, a nonconforming shed that currently houses utilities will be demolished. (Refer to "Proposed Pro-Shop, Section, Floor Plan, & Roof Plan (Sheet A1.00)" and "Proposed Site Sections & Pro-Shop Elevations (Sheet A2.00)" both dated 5-15-2025 prepared by Rogers McCagg, and "Proposed Pro-Shop Landscape Plan (Sheet LSP1.1)" dated 5-15-2025 prepared by William C. Rutherford LLA LLC, all attached hereto and made a part hereof). The structure will be located at El. 14 (including all duct work, utility systems, etc.) thereby meeting the requirements for the AE El. 12 zone established by FEMA, plus two (2') feet per the zoning regulations. Flood vents have been incorporated into the design.

Site Landscaping, Parking and Circulation

To improve the functional layout of the Property, a new parking area containing 78 spaces will be created to the north of the main clubhouse where two (2) tennis courts currently exist. Since these courts require extensive repairs, the Applicant proposed to reuse this space to create a parking area more proximate to the existing clubhouse, resulting in better access to it for members and guests. (Refer to "Proposed Landscape Site Plan (Sheet LSP1.0)" and "Proposed Pro Shop Lighting Plan (Sheet No. SPL1.1)" both dated 5-15-2025 prepared by William C. Rutherford LLA LLC and Rogers McCagg, respectively, attached hereto and made a part hereof.)

Tennis and Pickleball Courts

The project also include relocation of the two (2) tennis courts currently adjacent to the clubhouse, to an area in the northern section of the Property so that all of club's tennis courts will be proximate to each other. New site lighting and landscaping is proposed near these courts. (Refer to "Proposed Site Plan (Sheet SP1.00)" and "Proposed Site Lighting Plan (Sheet SPL1.0)," dated 5-15-2025 prepared by Rogers McCagg, attached hereto and made a part hereof). Further, other asphalt along the northern property line near the marsh will be removed and replaced with gravel and lawn.

III. COASTAL ANALYSIS

Coastal resources on, adjacent to the Property, or off-site but within the influence of the project include beaches, hazard areas, coastal waters, tidal wetlands, nearshore waters, developed shorefront and shorelands. (Refer to p.4 of "Coastal Area Management Environmental Analysis Recreational Facility Improvements" May 2025 ["Coastal Report"] prepared by LandTech, attached hereto and made a part hereof). The Norwalk Harbor is located to the west and south of the Property, with Charles Creek to the east. The coastal use and activity policies and standards applicable to the project are general development, water-dependent uses and coastal recreation and access.

Stormwater management will include the installation of a subsurface infiltration system, designed to retain the first inch of rainfall on-site, thereby reducing runoff volumes, improving water quality volume standards and serving as a primary pollutant treatment mechanism. (p. 5, Coastal Report). Runoff from the renovated parking area and proposed tennis courts will discharge to the proposed underground detention system via a series of catch basins, channel drains and collection piping. Additional water quality volume will be provided with vegetated swales constructed in the parking islands in the renovated parking lot, with discharge via sheet flow. The proposed stormwater management system "will comply with the applicable rules and regulations of the City of Norwalk including the Norwalk Department of Public Works 2017 Stormwater Manual, as amended." (Refer to "Stormwater Management Report for 220 Gregory Boulevard Norwalk, CT" dated July 12, 2024, revised to May 19, 2025 prepared by LandTech, attached hereto and made a part hereof.)

"The project represents a modest and environmentally responsible enhancement to a long-standing water-dependent recreational use and is consistent with both the historic development of the sit and the coastal resource protection policies of the State of Connecticut." (p. 1 Coastal Report). All work for this minimally-impactful enhancement project is confined to previously disturbed areas, adheres to FEMA floodplain standards, integrates stormwater best management practices. Moreover, the project avoids impacts to coastal resources and is consistent with state and local coastal policies. (P. 6-8, Coastal Report).

The Shore and Country Club, Inc.
www.shorecc.com

220 Gregory Boulevard
East Norwalk, CT 06855

Phone (203) 838-7507
Fax (203) 866-5157

Wednesday, May 28th, 2025

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: ***The Norwalk Country Club & Shore & Country Club***
220 Gregory Boulevard – East Norwalk, CT
Applications for Special Permit & Coastal Site Plan Review

Dear Chairwoman Wells:

This letter is to advise you that The Norwalk Country Club Company, as owner, and Shore & Country Club, Inc. as tenant, hereby consent to the preparation, filing and presentation of an applications for special permit and coastal site plan review by Carmody Torrance Sandak & Hennessey LLP for the proposed revisions to the club property including a new proshop, relocated tennis courts and other site improvements.

Should you have any questions, please do not hesitate to contact me.

Very truly yours,

The Norwalk Country Club Company
Shore & Country Club, Inc.

By _____

Its General Manager, Duly Authorized

{S7636593}

DATE	DESCRIPTION	BY
05/20/25	PROPOSED PRO SHOP & PARKING AND AMENDED ZONING REGULATIONS	AAT
07/23/24	UPDATE PATIOS & WALKS	AAT
05/30/24	NEW ZONING REGULATIONS & ADDITIONAL UTILITIES	AAT

REVISIONS

LEGEND

- YARD DRAIN
- MANHOLE
- CATCH BASIN
- LIGHT POLE
- UTLITY POLE
- EXISTING 1' CONTOURS
- WATER SHUT OFF
- WATER VALVE
- WATER LINE (approx. location)
- GAS LINE (approx. location)
- GAS VALVE
- STORM DRAIN LINE (approx. location)
- SANITARY SEWER LINE (approx. location)
- UNKNOWN UTILITY LINE (approx. location)
- ELECTRIC LINE (approx. location)
- COMMUNICATIONS LINE (approx. location)

MAP NORTH #11451 N.L.R.

N/F
DORLONS TERRACE CONDOMINIUMS

GREGORY BOULEVARD — GRASS AREA

DORLON STREET — EDGE OF PAVEMENT

S 51°20'00" E 319.57'

N 41°38'35" E 163.27'

S 51°42'50" E 436.64'

PROPOSED FENCE

PROPOSED ASPHALT TENNIS COURTS

CHAIN LINK FENCE (typ.)

TENNIS BACK BOARD

TENNIS COURTS

NAIL SET IN CONCRETE BLOCK ON PROPERTY LINE

PIN SET

PIN SET

MEAN HIGH WATER LINE– NAVD 88 elev. = 3.3'
HIGH WATER LINE elev. = 4.7' AND COASTAL JURISDICTION LINE elev. = 5.4'
RUN ALONG BULKHEAD

PILING (typ.)

LOT AREA
366,539 S.F.±
8.4146 Ac.±

VINYL FENCE

GARAGE

SHED

gas meter

propane storage

WOOD FENCE

overhead service wire (typ.)

STONE WALL (typ.)

VAULT

PUMP

GUARD HOUSE

RAMP

CONCRETE SUPPORT

CRANE

DOCK

TIDAL WETLAND LINE

MEAN HIGH WATER LINE elev. = 3.3'

HIGH WATER LINE elev. = 4.7'

TENNIS COURTS TO BE RELOCATED
78 PARKING SPACES PROPOSED

ASPHALT PARKING AREA
43 PARKING SPACES PROPOSED

ASPHALT PARKING AREA

FENCE RUNS ALONG EDGE OF PAVEMENT

MEAN HIGH WATER LINE elev. = 3.3', HIGH WATER LINE elev. = 4.7' AND COASTAL JURISDICTION LINE elev. = 5.4' RUN ALONG SEA WALL

**TIDAL WETLANDS FLAGGED ON 11/17/15 BY THOMAS RYDER SENIOR ASSOCIATE WETLAND SCIENTIST, "LANDTECH"

PROPOSED 2 STORY PRO SHOP ff elev. to be 14.0'

REST ROOMS

PROPOSED DECK

SHED ff el. = 9.4'

clean out

EDGE OF ASPHALT

CONC. CURB

ASPHALT CURB

TENNIS COURTS

POOL AREA

CONCRETE

ASPHALT PARKING AREA

"CHARLES CREEK"

~ NORWALK HARBOR ~
THE WATERS OF LONG ISLAND SOUND

EXISTING 2 1/2 STORY CLUB HOUSE ff el. = 10.3'

ROOF OVERHANG

FLAGPOLE

PATIO

CONC. PATIO

WALK

SHOWER

CONC. WALL W/ METAL FENCING

"KIDDIE" POOL

BRICK PAVERS

1 STORY CONC. BLDG.

ROOFED PICNIC AREA

PLAYGROUND AREA

SAND BEACH AREA

CONCRETE SEAWALL

EXISTING 2 STORY BATH HOUSE elevated on piles
f.f. main level el. 15.7'
f.f. boardwalk el. 10.1'
f.f. ground level el. 6.4'

2nd LEVEL DECK

DECK

BOARDWALK

ROOFED PICNIC AREA

CONC. BLOCK WALL (typ)

COASTAL JURISDICTION LINE elev. = 5.4'

MEAN HIGH WATER AUG. 31, 2010

MEAN HIGH WATER LINE elev. = 3.3'

TIDAL WETLAND LINE

FLAGPOLE

LIGHT POLE (typ.)

JETTY (typ.)

HIGH WATER LINE elev. = 4.7'

STONE & MASONRY RETAINING WALL (typ.)

COASTAL JURISDICTION LINE elev. = 5.4'

SEA GRASS

SEA LAVENDER

WAVE DIFFUSER

X 10.0 = EXISTING SPOT ELEVATION – DATUM IS REFERENCED TO N.A.V.D 1988

THIS SURVEY MEETS THE STANDARD OF A CLASS "A–2" SURVEY, CLASS "V–2" VERTICAL ACCURACY.

SURVEY TYPE : ZONING LOCATION SURVEY
BOUNDARY DETERMINATION : RESURVEY

THIS SURVEY AND MAP WERE PREPARED IN ACCORDANCE WITH THE "RECOMMENDED STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT". SEC. 20–300b–1 to 20–300b–20. EFFECTIVE; JUNE 21,1996 AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS INC., SEPTEMBER 26, 1996

THE CERTIFICATION SHOWN ABOVE RUNS TO THE PERSON(S) FOR WHOM THE SURVEY WAS PREPARED AND ANY GOVERNMENTAL AGENCY, TITLE INSURANCE CO., OR LENDING INSTITUTION WHOSE NAME APPEARS ABOVE. CERTIFICATION IS NOT TRANSFERABLE & ANY UNAUTHORIZED USE IN WHOLE OR IN PART IS STRICTLY PROHIBITED.

UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS IF ANY, ARE NOT DEPICTED

WETLAND OR WETLAND SOIL TYPES IF ANY, ARE NOT DEPICTED

THIS MAP IS INVALID WITHOUT A LIVE SIGNATURE AND EMBOSSED SEAL.

REFERENCES TO THE ABOVE PROPERTY ARE MADE TO MAP No. 11451 N.L.R.

TAX MAP 24SW DISTRICT 2 BLOCK 73 TAX LOT 2

PROPERTY IS LOCATED IN ZONE : "CD–1M" SUB–URBAN MEDIUM LOT COMMUNITY DISTRICT

F.I.R.M. ZONES : "VE" (el. 14) , "AE" (el. 12) & "AE" (el. 14) PANEL 534 of 626 MAP #09001C0534G DATE 7/08/13

PROPERTY LIES WITHIN THE COASTAL AREA MANAGEMENT BOUNDARY

DISTANCES SHOWN ARE FROM BUILDINGS TO PROPERTY LINES ARE NOT TO BE USED TO ESTABLISH BOUNDARIES.

"TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON"

15773
CONNECTICUT REG # 15773
WAYNE J. ARCAMONE, LAND SURVEYOR, NORWALK, CONN.

NOTE: EXISTING BUILDING OVER 3 YEARS OLD

		REQUIRED/ALLOWED		CLUBHOUSE EXISTING	PROPOSED PRO SHOP
FRONT SETBACK (20' OPEN PORCH)		30'	MIN.	AS DEPICTED	AS DEPICTED
REAR		20'	MIN.		
SIDE		10'	MIN.		
LOT WIDTH		100'	MIN.	VARIES	VARIES
LOT AREA		12,500sf	MIN.	366,539sf	366,539sf
HEIGHT	MID ROOF	35'	MAX.	25'±*	21'±*
	PEAK ROOF	40'	MAX.	39'±*	26'±*
# OF STORIES		2 1/2	MAX.	2 1/2**	2**
BUILDING SITE AREA :		25%/91,635sf	MAX.	7.7%/28,173sf	8.1%/29,809sf
IMPERVIOUS SURFACE COVERAGE :		35%/128,289sf	MAX.	75.5%/276,682sf	72.4%/265,340sf
ACCESSORY BUILDINGS :					
FRONT SETBACK		50'	MIN.	AS DEPICTED	
REAR		5'	MIN.		
SIDE		10'	MIN.		
HEIGHT	MID ROOF	15'	MAX.		
	PEAK ROOF	20'	MAX.		
# OF STORIES		1 1/2	MAX.		

* USING FINISHED GRADE MEASURED BY AVERAGING THE LOWEST EXTERIOR GROUND ELEVATIONS ON THE SAME LOT OR BUILDING SITE WITHIN 10' OF DESIGNATED SAMPLE POINTS, SUCH SAMPLE POINTS BEING LOCATED APPROXIMATELY 5' APART ALONG A LINE LOCATED 10' OUTSIDE OF THE BUILDING AND/OR STRUCTURE.
(8.1) = SAMPLE ELEVATION USED
AVERAGE EXISTING GRADE AROUND CLUBHOUSE = 7.4'
AVERAGE EXISTING GRADE AROUND PROPOSED PRO SHOP = 6.4'
** AVERAGE GRADE AT CLUBHOUSE = 6.7'

ZONING LOCATION SURVEY

OF PROPERTY PREPARED FOR

THE SHORE & COUNTRY CLUB

#220 GREGORY BOULEVARD, NORWALK, CONNECTICUT

SCALE: 1" = 40' DATE: SEPT. 7, 2023

BY "ARCAMONE LAND SURVEYORS LLC"
4 TAFT STREET, UNIT A–2B
S. NORWALK, CT. 06854
PHONE : 203–866–2058
FAX : 203–838–1217
www.ArcamoneSurveyors.com

0' 40' 80' 120'
GRAPHIC SCALE

NO USE, REPRODUCTION OR DISSEMINATION MAY BE MADE OF THIS DRAWING WITHOUT THE PRIOR WRITTEN CONSENT OF ARCAMONE LAND SURVEYORS, LLC

TAX MAP 24SW DISTRICT 3 BLOCK 73 TAX LOT 2

ShoreCountryUpdate2023-NEWRESS.DWG

SHORE & COUNTRY CLUB
NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
NORWALK, CT 06854

ISSUED FOR PLANNING & ZONING COMMISSION
MAY 15, 2025

ZONING INFORMATION: CITY OF NORWALK ZONING REGULATIONS EFFECTIVE 02/19/2024 AND AMENDED 12/15/2024				REMARKS
ZONE	**CD-1M : WATERFRONT CLUB**			
ARTICLE 4: BUILDING & LOT/SITE STANDARDS	REQUIRED	EXISTING	PROPOSED	
CD-1M TABLE 4.3.1-B DISTRICT STANDARDS: SUB-URBAN MEDIUM LOT COMMUNITY DISTRICT				
ARTICLE 4.3.9.G.4.cn. WATERFRONT CLUBS (2)(e)	THE NUMBER OF PRINCIPAL BUILDINGS MAY EXCEED ONE (1), PROVIDED THAT THE TOTAL BUILDING COVERAGE DOES NOT EXCEED 25% OF THE LOT OR BUILDING SITE AREA.			
LOT AREA	12,500 SF	8.4146 ACRES (366,539 SF)	NO CHANGE	
SETBACKS				
PRINCIPAL BUILDING:	PRINCIPAL BUILDING - WATERFRONT CLUB			
FRONT SETBACK, PRINCIPLE FRONTAGE	30' MIN		NO CHANGE	
FRONT SETBACK, SECONDARY FRONTAGE	30' MIN		NO CHANGE	
SIDE SETBACK, EACH SIDE	10' MIN		NO CHANGE	
REAR SETBACK	20' MIN		NO CHANGE	
BUILDING HEIGHT	PRINCIPAL BUILDING - WATERFRONT CLUB			
PRINCIPAL BUILDING:	STORIES: 2.5 MAX., BUILDING HEIGHT: 35 FT MAX., TOTAL BUILDING HEIGHT: 40 FT MAX.			SEE DEFINITIONS BELOW
CEILING HEIGHT:	FIRST STORY MAY NOT EXCEED 14 FT FROM FINISHED FLOOR TO FINISHED CEILING. SECOND STORY MAY NOT EXCEED 11 FT FROM FINISHED FLOOR TO FINISHED FLOOR, AND IN THE ABSENCE OF FLOOR, THEN THE FINISHED CEILING.			
FACADE:	NR			
ROOF TYPE & PITCH:	NR			
BUILDING MATERIALS:	NR			
ARTICLE 4: BUILDING & LOT/BUILDING SITE STANDARDS 4.3.17 PRIVATE LIGHTING STANDARDS				
4.3.17.B. 2.	A LIGHTING STANDARD SHALL BE OF A HEIGHT AND DESIGN CONSISTENT WITH THE SURROUNDING AREA BUILDINGS BUT IN NO EVENT HIGHER THAN 30 FEET IN NON-RESIDENTIAL PARKING AREAS AND PARKING LOTS OR 15 FEET IN OTHER AREAS.			
4.3.17.B. 3.	STANDARDS SHALL BE LOCATED AT DISTANCES OF 4 TIMES THEIR HEIGHT.			
TABLE 4.3.17.C.1 (PRIVATE LIGHTING STANDARDS) MIN/MAX LIGHTING LEVEL AT FRONTAGE LINE	0-1.0 FC			
ARTICLE 9: DEFINITIONS				
STORY:	A LEVEL WITHIN A BUILDING, BEING THAT PORTION BETWEEN THE SURFACE OF ANY FLOOR AND THE SURFACE OF THE NEXT FLOOR ABOVE IT. IF THERE IS NO FLOOR ABOVE IT, THEN THE SPACE BETWEEN THE FLOOR AND NEXT CEILING ABOVE, UNLESS THAT SPACE IS A HALF STORY. THE NUMBER OF STORIES SHALL BE MEASURED FROM THE FINISHED GRADE ALONG THE PRINCIPAL FRONTAGE OF A STRUCTURE AND/OR BUILDING. 5. A BASEMENT IS A STORY WHEN THE CEILING HEIGHT IS MORE THAN THREE (3) FEET ABOVE THE FINISHED GRADE MEASURED ALONG THE PRINCIPAL FRONTAGE OF THE STRUCTURE AND/OR BUILDING; EXCEPT THAT, WITHIN THE SPECIAL FLOOD HAZARD AREA, THE LOWEST LEVEL IS NOT A STORY PROVIDED THAT: A. IT IS UNINHABITABLE SPACE AND CAN ONLY BE USED FOR PARKING OR STORAGE; AND B. MORE THAN FIFTY PERCENT (50%) OF THE FLOOR HEIGHT IS BELOW THE BASE FLOOD ELEVATION. 6. FOR STRUCTURE(S) ON PILINGS WITHIN THE SPECIAL FLOOD HAZARD AREA, THE AREA BETWEEN THE GROUND AND FLOOR NEXT ABOVE IT SHALL NOT COUNT AS A STORY, PROVIDED THAT FIFTY PERCENT (50%) OF THE EXISTING GRADE IS BELOW THE BASE FLOOD ELEVATION.			

DRAWING LIST

NO.	NAME
GENERAL	
G1.0	COVERSHEET
ARCHITECTURAL	
SP1.00	PROPOSED SITE PLAN
A1.00	PROPOSED PRO-SHOP SECTION, FLOOR PLAN, & ROOF PLAN
A2.00	PROPOSED SITE SECTION & PRO-SHOP ELEVATIONS
LSP1.0	PROPOSED LANDSCAPE SITE PLAN
LSP1.1	PROPOSED PRO-SHOP LANDSCAPE PLAN
SPL1.0	PROPOSED SITE LIGHTING PLAN
SPL1.1	PROPOSED PRO-SHOP LIGHTING PLAN
M1.00	MATERIALS
EX1.00	EXISTING SITE PHOTOS
EX1.01	EXISTING SITE PHOTOS

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

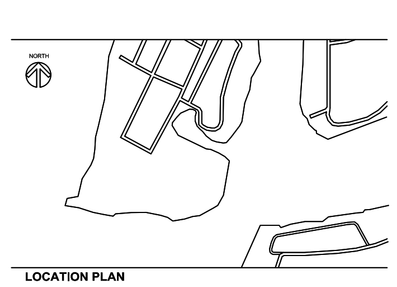
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

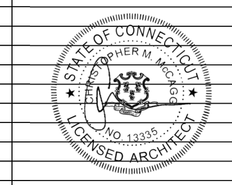
THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

NO.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

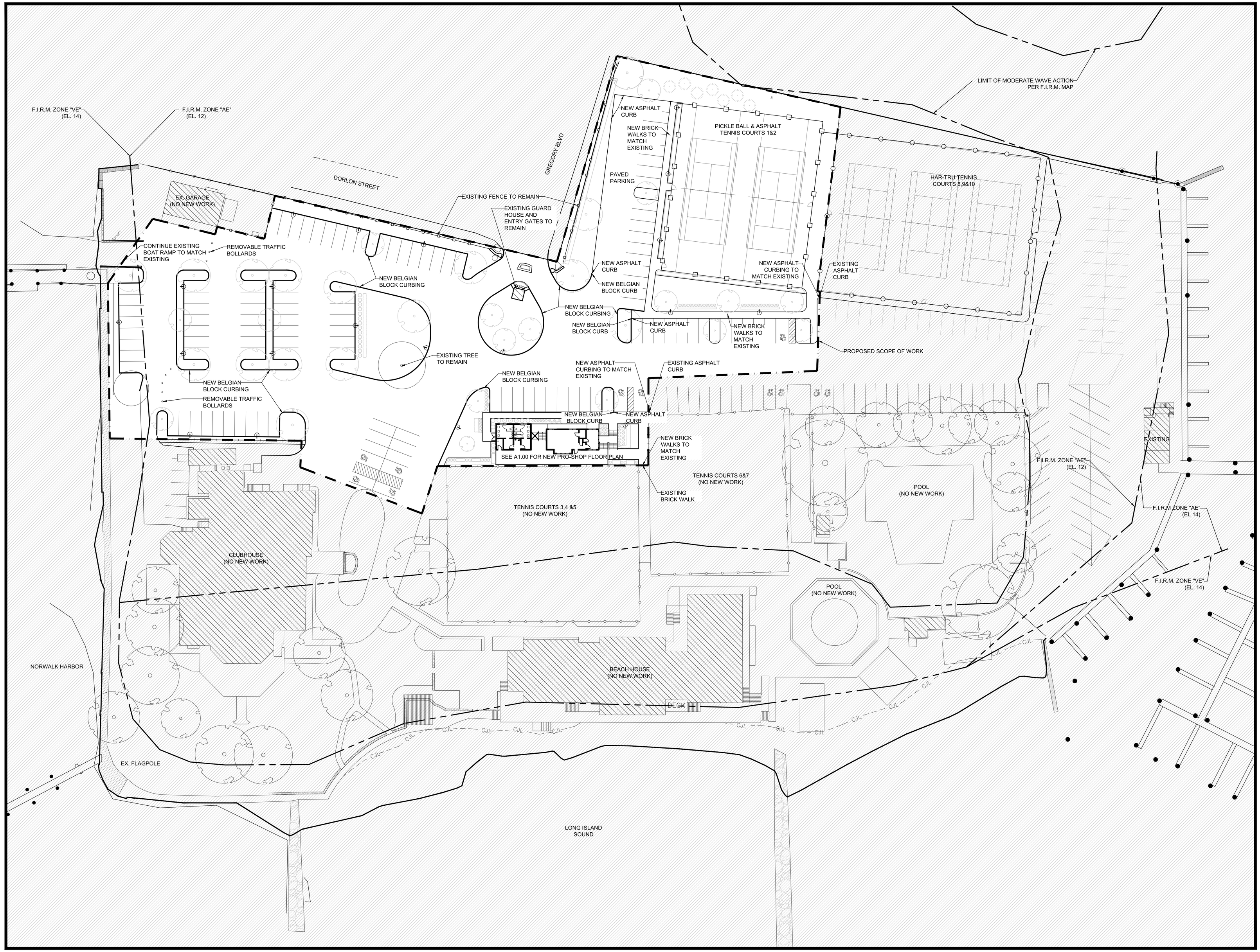


SCALE	DATE
AS NOTED	05/15/2025

SHEET TITLE

COVER SHEET

PROJECT No.	SHEET No.
S&C 02.00	G1.0



5/16/2025 8:52:28 AM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_sp1.0_proposed site plan.dwg

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

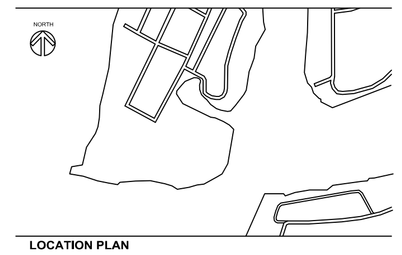
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

No.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

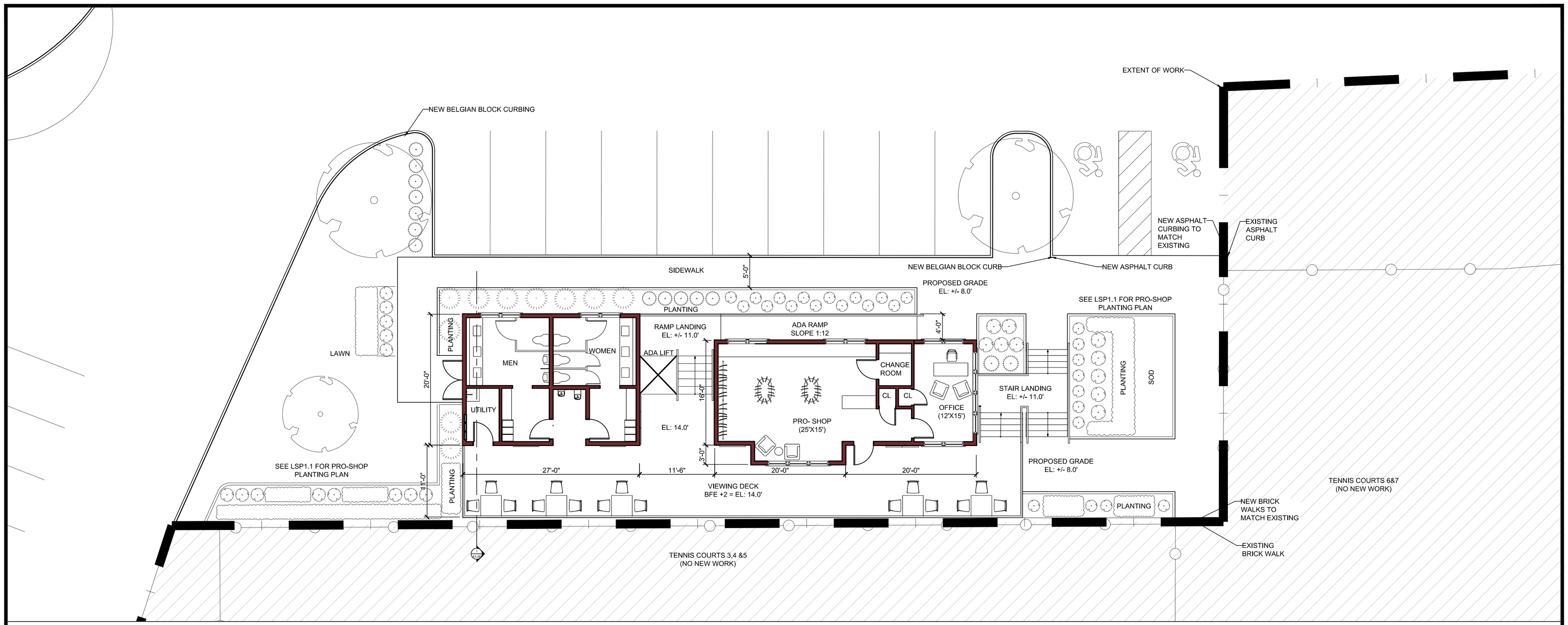
STATE OF CONNECTICUT · CHRISTOPHER M. MCCAGG · NO. 13235 · LICENSED ARCHITECT

SCALE	DATE
1/32" = 1' - 0"	05/15/2025

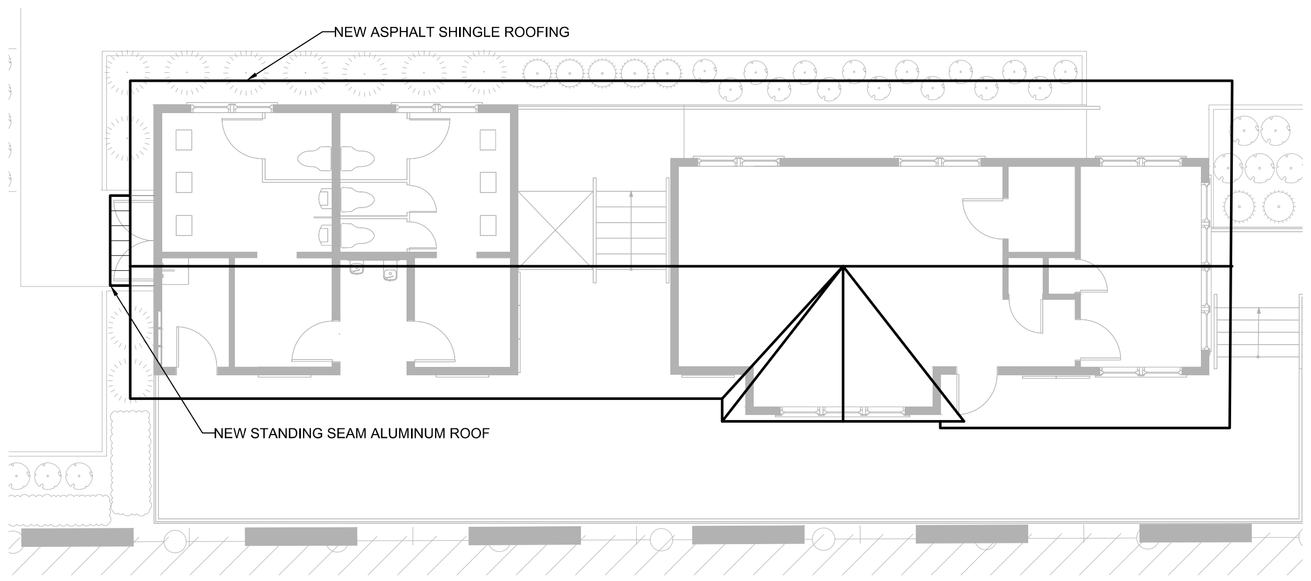
SHEET TITLE

PROPOSED SITE PLAN

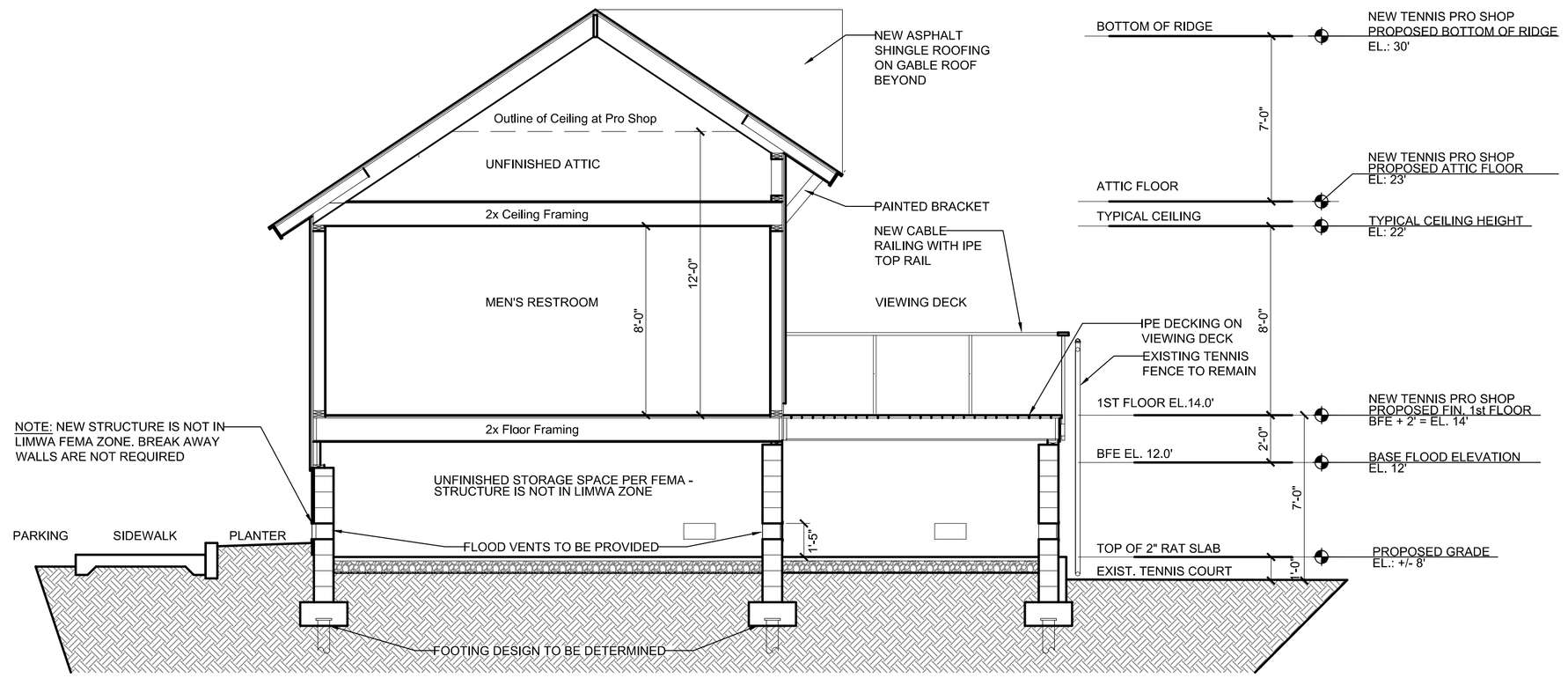
PROJECT No.	SHEET No.
S&C 02.00	SP1.00



3 PROPOSED PRO-SHOP FLOOR PLAN
1/8" = 1'-0"



2 PROPOSED PRO-SHOP ROOF PLAN
1/8" = 1'-0"



1 PROPOSED PRO SHOP SECTION
1/4" = 1'-0"

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

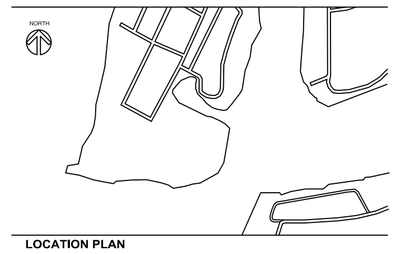
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

No.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

STATE OF CONNECTICUT · CHRISTOPHER M. MCCAGG · REG. NO. 13925 · LICENSED ARCHITECT

SCALE	DATE
1/8" = 1' - 0"	05/15/2025

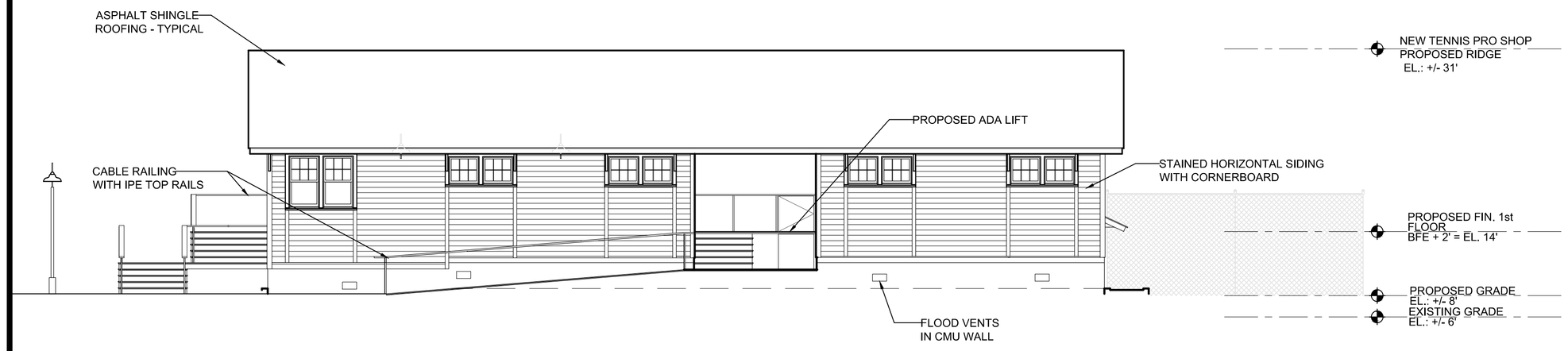
SHEET TITLE

PROPOSED PRO-SHOP SECTION, FLOOR PLAN, & ROOF PLAN

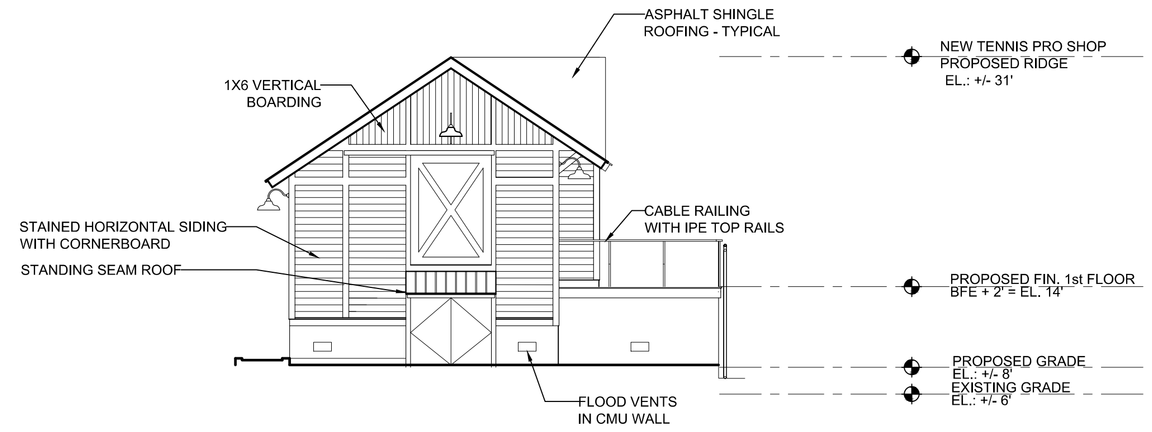
PROJECT No.	SHEET No.
S&C 02.00	A1.00

5/16/2025 8:51:55 AM

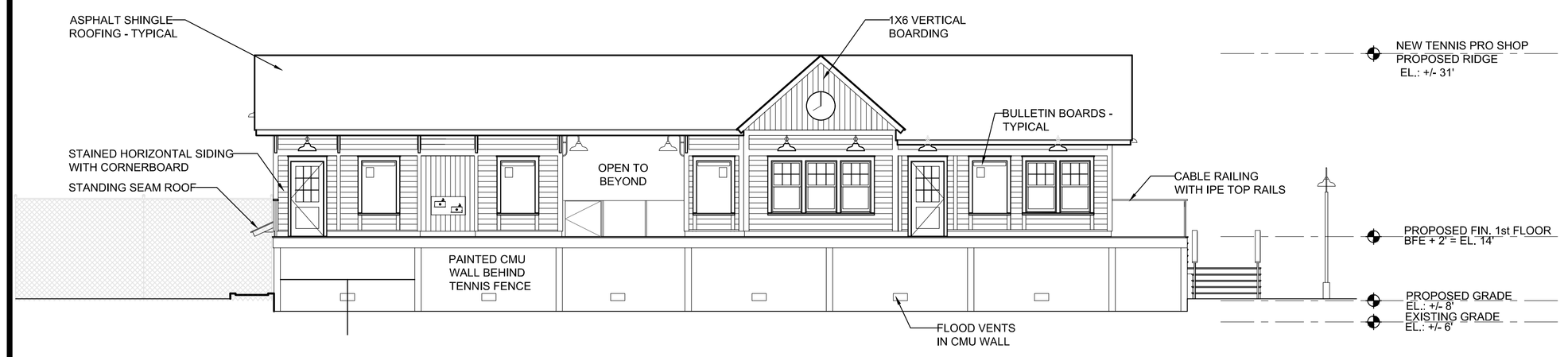
p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_a1.00_ proposed tennis pro shop floor plan.dwg



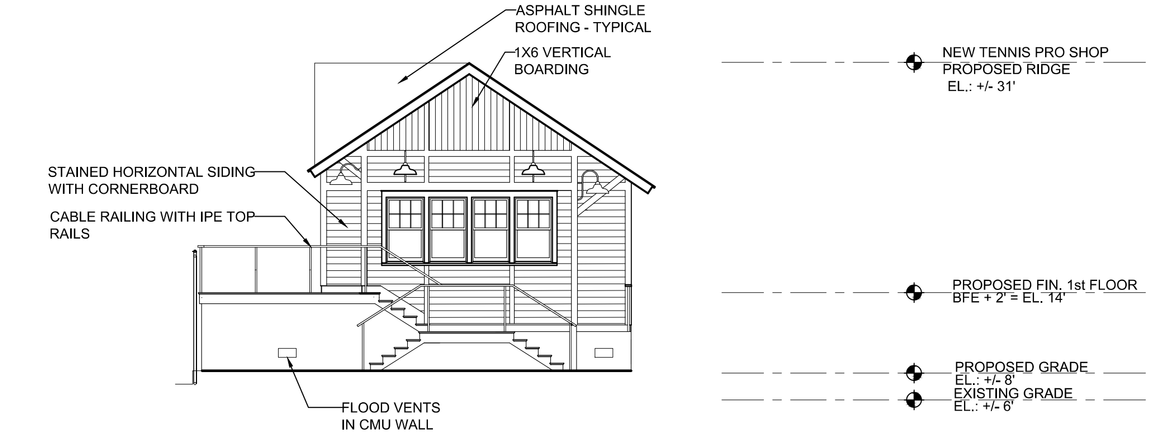
6 NORTH ELEVATION
1/8" = 1'-0"



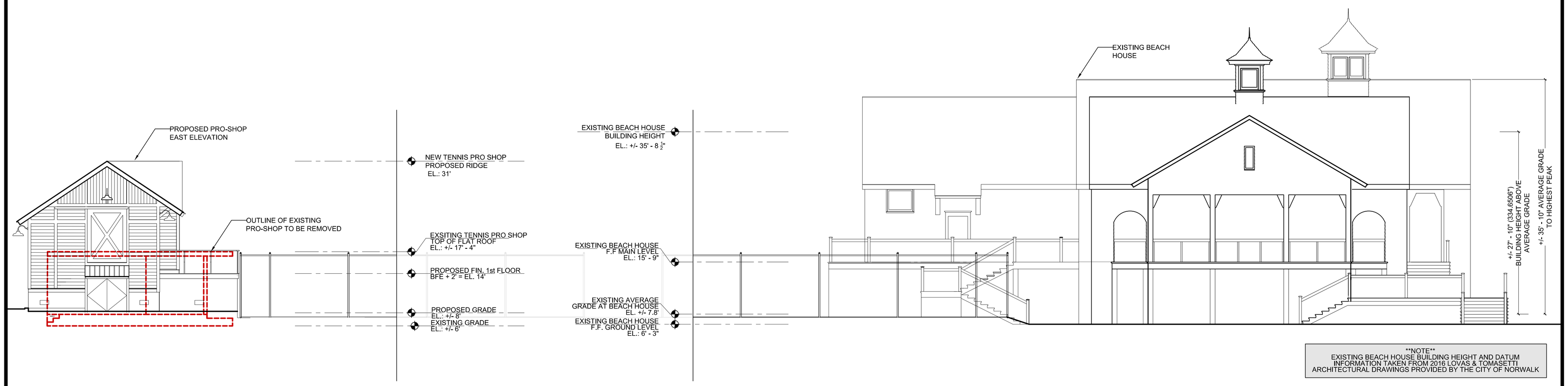
5 EAST ELEVATION
1/8" = 1'-0"



4 SOUTH ELEVATION
1/8" = 1'-0"



3 WEST ELEVATION
1/8" = 1'-0"



NOTE
EXISTING BEACH HOUSE BUILDING HEIGHT AND DATUM INFORMATION TAKEN FROM 2016 LOVAS & TOMASETTI ARCHITECTURAL DRAWINGS PROVIDED BY THE CITY OF NORWALK

2 PROPOSED TENNIS PRO SHOP
1/8" = 1'-0"

1 EXISTING BEACH HOUSE
1/8" = 1'-0"

5/16/2025 9:05:47 AM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_a2.00_proposed site section & tennis pro shop elevations.dwg

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

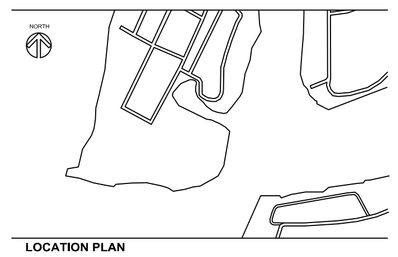
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

NO.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

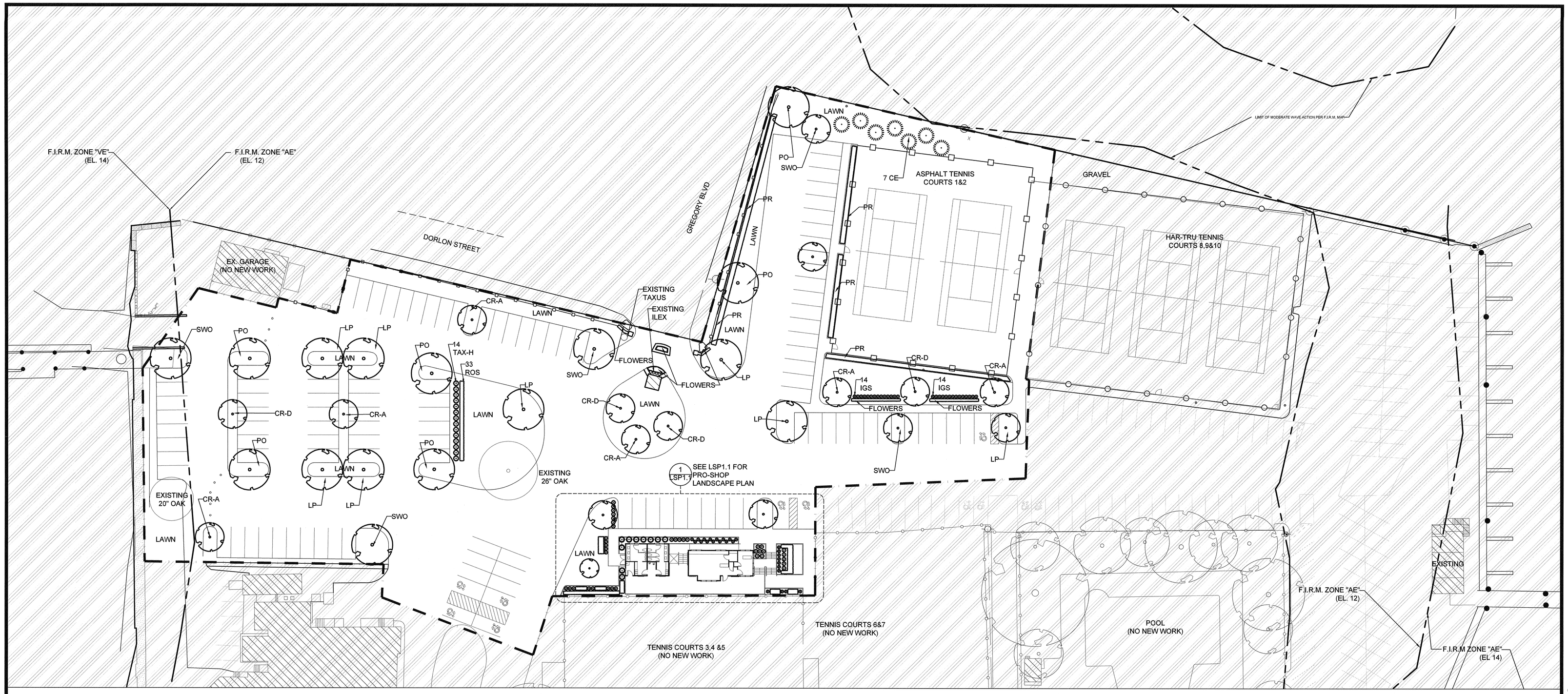
STATE OF CONNECTICUT · CHRISTOPHER M. MCCAGG · LICENSED ARCHITECT · NO. 13935

SCALE	DATE
1/8" = 1' - 0"	05/15/2025

SHEET TITLE

PROPOSED SITE SECTION & PRO-SHOP ELEVATIONS

PROJECT No.	SHEET No.
S&C 02.00	A2.00



1 PROPOSED LANDSCAPE SITE PLAN
1/32" = 1'-0"

PLANT LIST

SYMBOL	QTY.	BOTANICAL NAME COMMON NAME	SIZE
TREES:			
CE	7	Juniperus Virginiana Brodie Eastern Red Cedar	8'-9' HT.
CR-A	6	Malus - High Branched Adams Crabapple	2.5"-3" cal
CR-D	4	Malus - High Branched Donald Wyman Crabapple	2.5"-3" cal
LP	8	Platanus Acerifolia Exclamation Plane Tree	3.5"-4" cal
PO	6	Quercus Palustris Pin Oak	3.5"-4" cal
SWO	5	Quercus Bicolor Swamp White Oak	3.5"-4" cal

SYMBOL	QTY.	BOTANICAL NAME COMMON NAME	SIZE
SHRUBS:			
IGS	28	Iex Glabra Shamrock Shamrock Inkberry Holly	5 gal.
PR	185	Ligustrum Privet	3.5'-4' hgt.
ROS	33	Rosa Knock Out Light Pink Knock Out Rose	3 gal.
TAX-H	14	Taxus Media Hatfieldii Hatfield Yew	3'-3.5' hgt.

NOTE	KEY LEGEND
IF SPECIFIED PLANTING IS UNAVAILABLE AN APPROVED EQUAL WILL BE PROVIDED IN PLACE ***SEE LSP1.01 FOR TENNIS PRO SHOP PLANTING***	EXISTING TREE TO BE REMOVED EXISTING TREE TO REMAIN NEW PLANTING NEW EVERGREENS OUTLINE OF EXISTING PLANTING BED

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

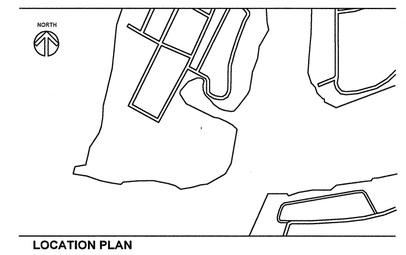
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

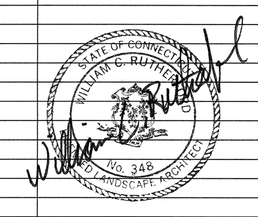
THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

No.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC



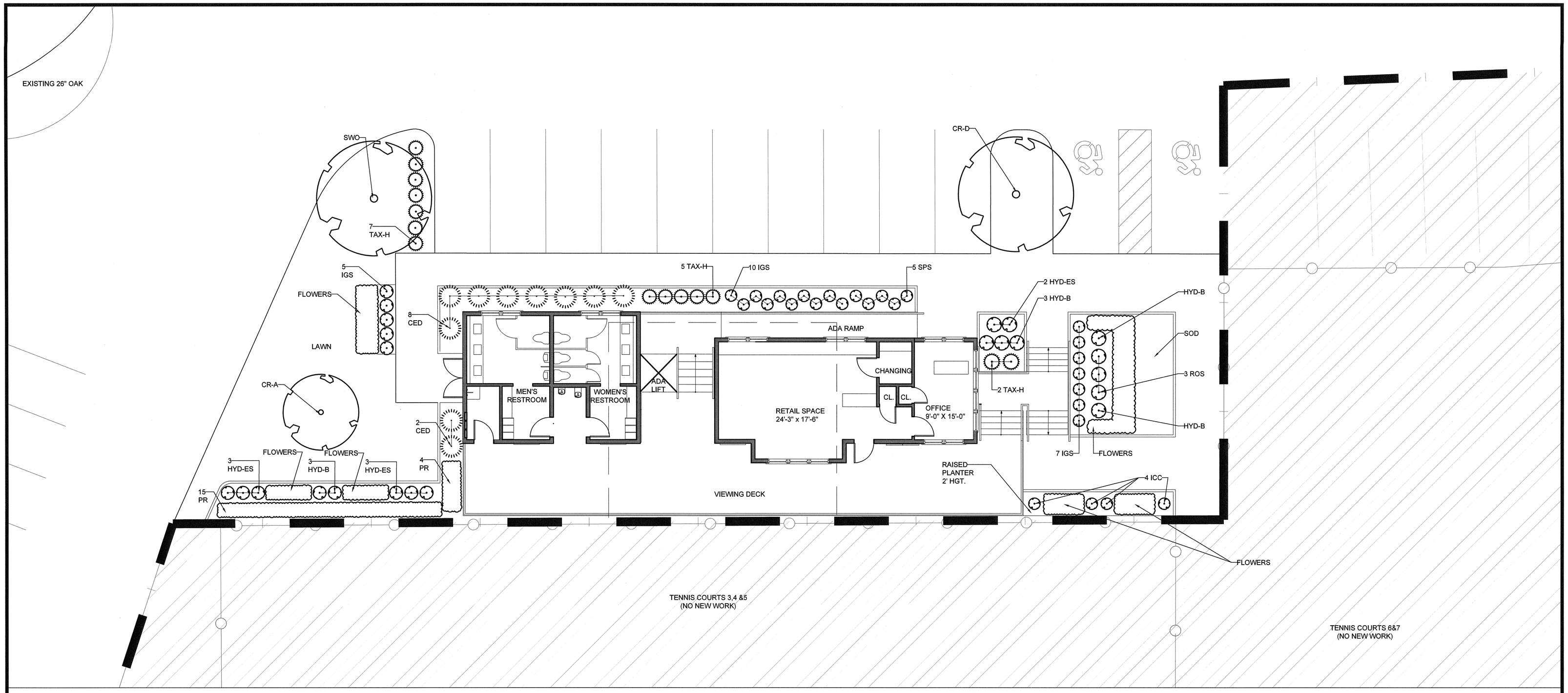
SCALE	DATE
1/32" = 1' - 0"	05/15/2025

SHEET TITLE

PROPOSED LANDSCAPE SITE PLAN

PROJECT No.	SHEET No.
S&C 02.00	LSP1.0

5/13/2025 5:48:20 PM



1 PROPOSED PRO-SHOP LANDSCAPE PLAN
1/8" = 1'-0"

PLANT LIST

SYMBOL	QTY.	BOTANICAL NAME COMMON NAME	SIZE
TREES:			
CED	10	Juniperus Virginiana Brodie Eastern Red Cedar	6'-7' HT.
CR-D	1	Malus - High Branched Donald Wyman Crabapple	2.5"-3" cal
CR-A	1	Malus - High Branched Adams Crabapple	2.5"-3" cal

SYMBOL	QTY.	BOTANICAL NAME COMMON NAME	SIZE
SHRUBS:			
IGS	22	Ilex glabra Shamrock Inkberry	7 gal.
ICC	4	Ilex Crenata Compacta Compact Holly	5 gal.
HYD-B	8	Hydrangea Paniculata Bobo hydrangea	5 gal.
HYD-ES	8	Hydrangea Macrophylla Endless Summer Hydrangea	5 gal.
PR	19	Ligustrum Privet	3.5'-4' hgt.
ROS	3	Rosa Knock Out Light Pink Knock Out Rose	3 gal.
SPS	5	Spiraea Shirobana Shibori Spirea	5 gal.
TAX-H	14	Taxus Media Hatfieldii Hatfield Yew	3'-3.5' hgt.

****NOTE****

IF SPECIFIED PLANTING IS UNAVAILABLE AN APPROVED EQUAL WILL BE PROVIDED IN PLACE

SEE LSP1.01 FOR TENNIS PRO SHOP PLANTING

KEY LEGEND

- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO REMAIN
- NEW PLANTING
- NEW EVERGREENS
- OUTLINE OF EXISTING PLANTING BED

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

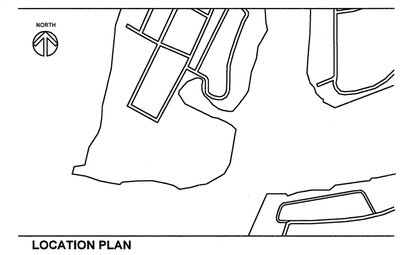
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

NO.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

STATE OF CONNECTICUT
WILLIAM C. RUTHERFORD
No. 349
REGISTERED LANDSCAPE ARCHITECT

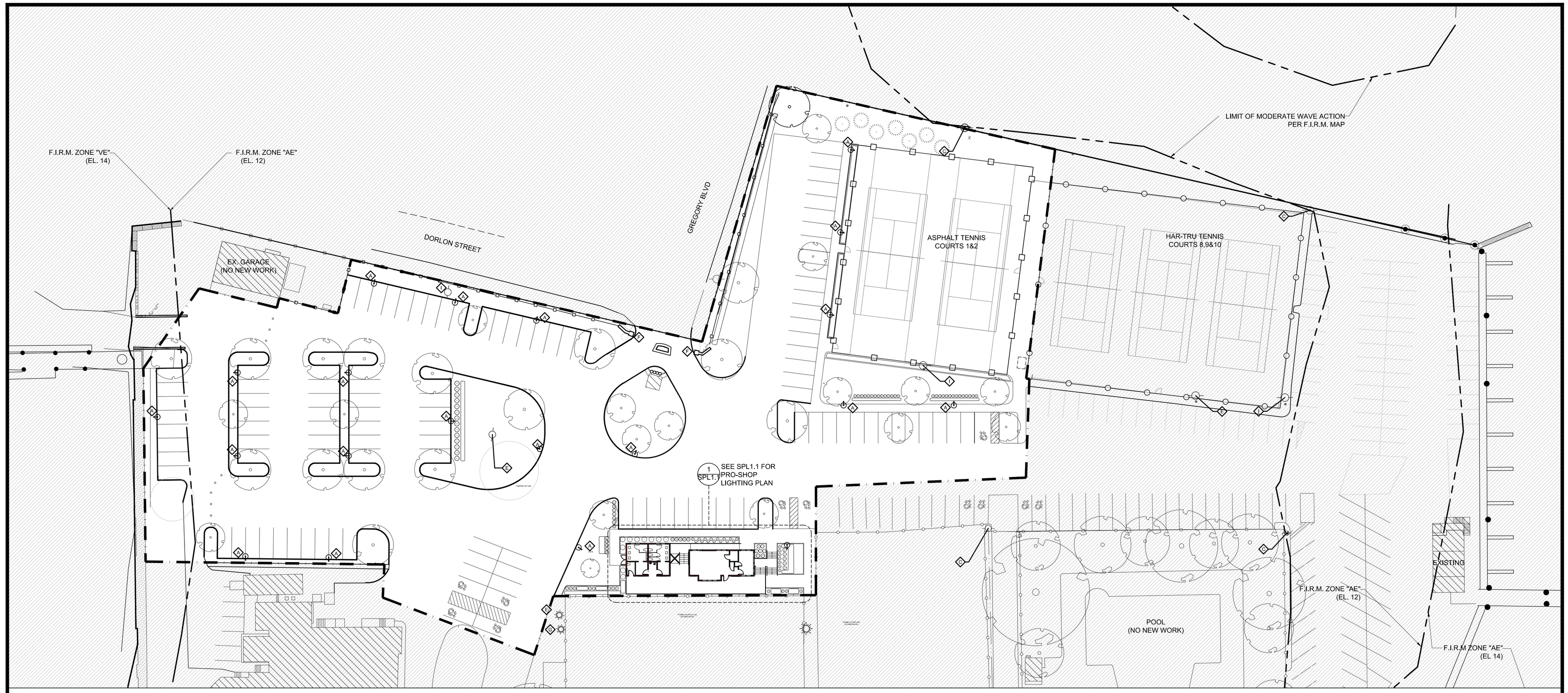
SCALE	DATE
1/8" = 1' - 0"	05/15/2025

SHEET TITLE

PROPOSED PRO-SHOP LANDSCAPE PLAN

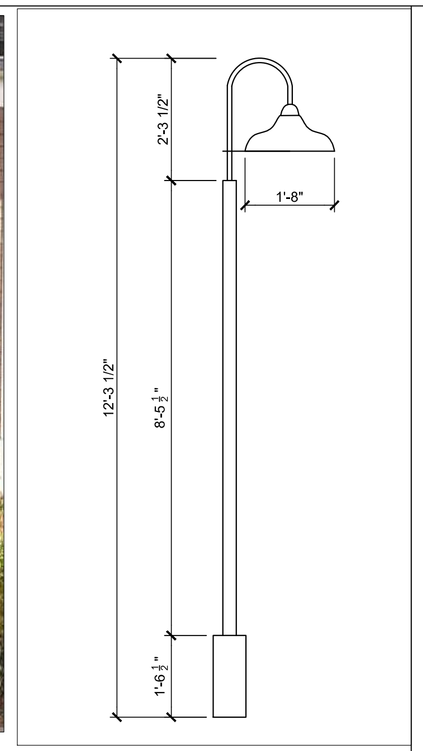
PROJECT No.	SHEET No.
S&C 02.00	LSP1.1

5/13/2025 5:48:20 PM



1 PROPOSED LIGHTING SITE PLAN
1/32" = 1'-0"





LANDSCAPE LIGHTING FIXTURE SCHEDULE:

	FIXTURE TYPE	MANUFACTURER	MODEL NAME
A	LAMP POST A	REJUVENATION	CARSON SHEPHERD'S HOOK POST LIGHT
B	WALL SCONCE	REJUVENATION	CARSON GOOSENECK SCONCE
C	WALL SCONCE	REJUVENATION	SHEPHERD'S HOOK SCONCE
D			
E	EXISTING LIGHT & UTILITY POLE TO BE REMOVED		
F	EXISTING LIGHT AT ENTRY GATE		
G	EXISTING TENNIS LIGHT TO REMAIN		
H	HANDRAIL LIGHTING		
I	EXISTING UTILITY POLE TO BE REMOVED		



LAMP POST 'A'

EXISTING LIGHT "F" AT CLUB ENTRANCE TO REMAIN

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

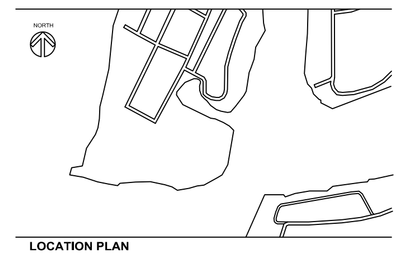
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

No.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

STATE OF CONNECTICUT
CHRISTOPHER M. McCAGG
NO. 13225
LICENSED ARCHITECT

SCALE	DATE
1/32" = 1' - 0"	05/15/2025

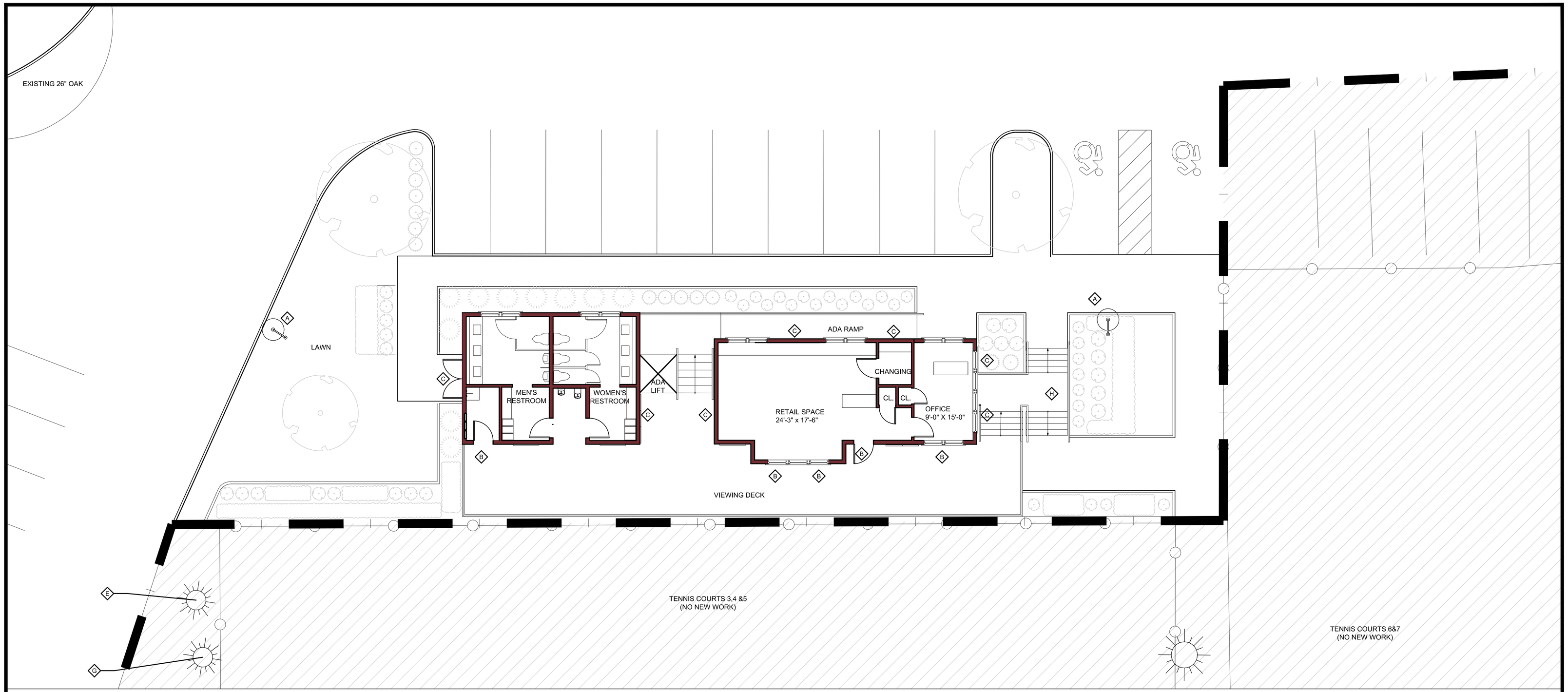
SHEET TITLE

PROPOSED SITE LIGHTING PLAN

PROJECT No.	SHEET No.
S&C 02.00	SPL1.0

5/16/2025 9:07:28 AM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_spl1.0_proposed site plan lighting v2a.dwg



1 PROPOSED PRO-SHOP LIGHTING PLAN
1/8" = 1'-0"

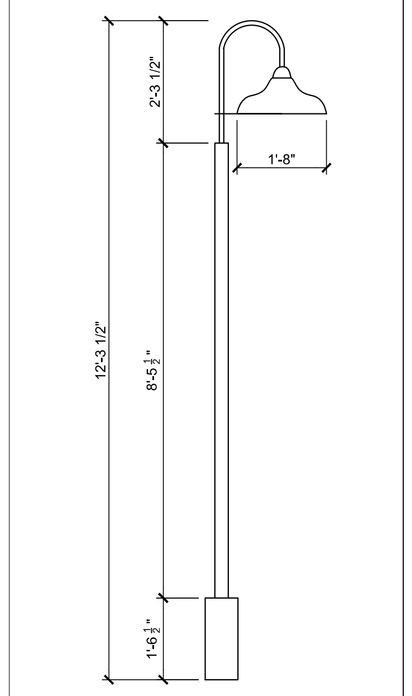


WALL SCONCE 'C'



WALL SCONCE 'B'





LAMP POST 'A'

LANDSCAPE LIGHTING FIXTURE SCHEDULE:

	FIXTURE TYPE	MANUFACTURER	MODEL NAME
A	LAMP POST A	REJUVENATION	CARSON SHEPHERD'S HOOK POST LIGHT
B	WALL SCONCE	REJUVENATION	CARSON GOOSENECK SCONCE
C	WALL SCONCE	REJUVENATION	SHEPHERD'S HOOK SCONCE
D			
E	EXISTING LIGHT & UTILITY POLE TO BE REMOVED		
F	EXISTING LIGHT AT ENTRY GATE		
G	EXISTING TENNIS LIGHT TO REMAIN		
H	HANDRAIL LIGHTING		

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

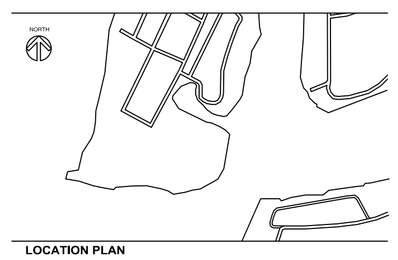
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

No.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

STATE OF CONNECTICUT · CHRISTOPHER M. McCAGG · REG. NO. 13225 · LICENSED ARCHITECT

SCALE	DATE
1/8/" = 1' - 0"	05/15/2025

SHEET TITLE

PROPOSED PRO SHOP LIGHTING PLAN

PROJECT No.	SHEET No.
S&C 02.00	SPL1.1

5/16/2025 9:07:28 AM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_spl1.0_ proposed site plan lighting v2a.dwg



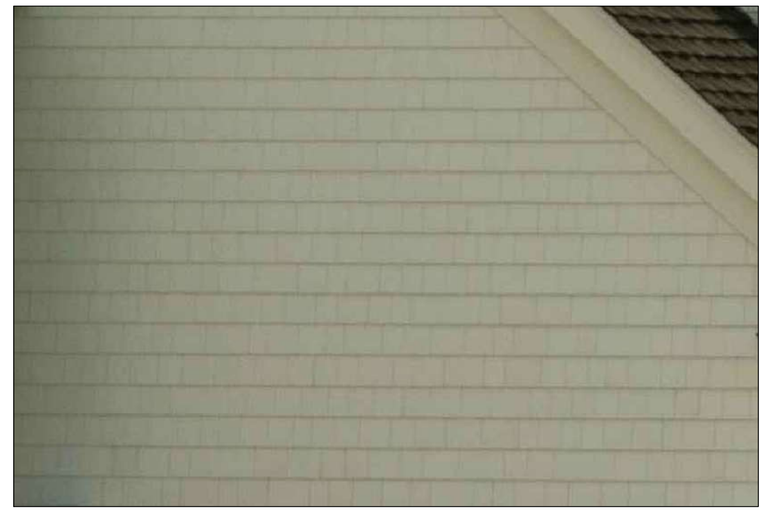
1. ASPHALT ROOFING SHINGLE



2. STANDING SEAM ALUMINUM ROOFING



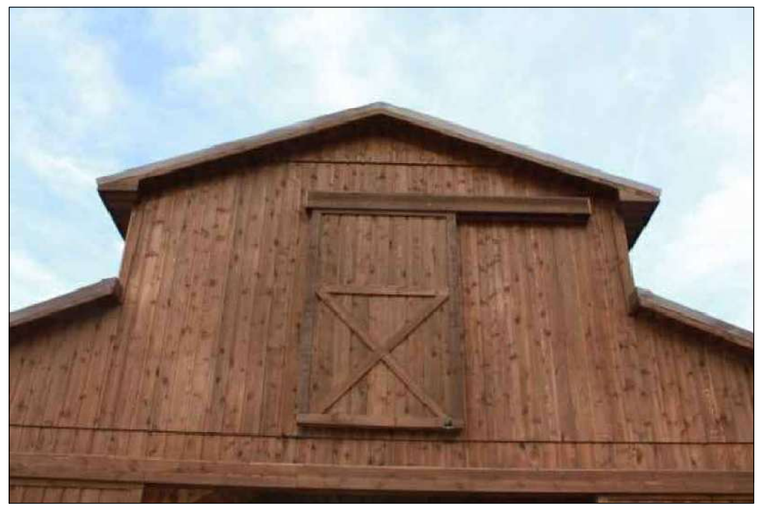
3. RAKEBOARD AND EAVES



4. SHINGLE SIDING



5. CABLE RAILING AND VIEWING DECK



6. HAY LOFT BARN DOOR



7. REVERSE COTTAGE WINDOW



8. EXTERIOR DOOR



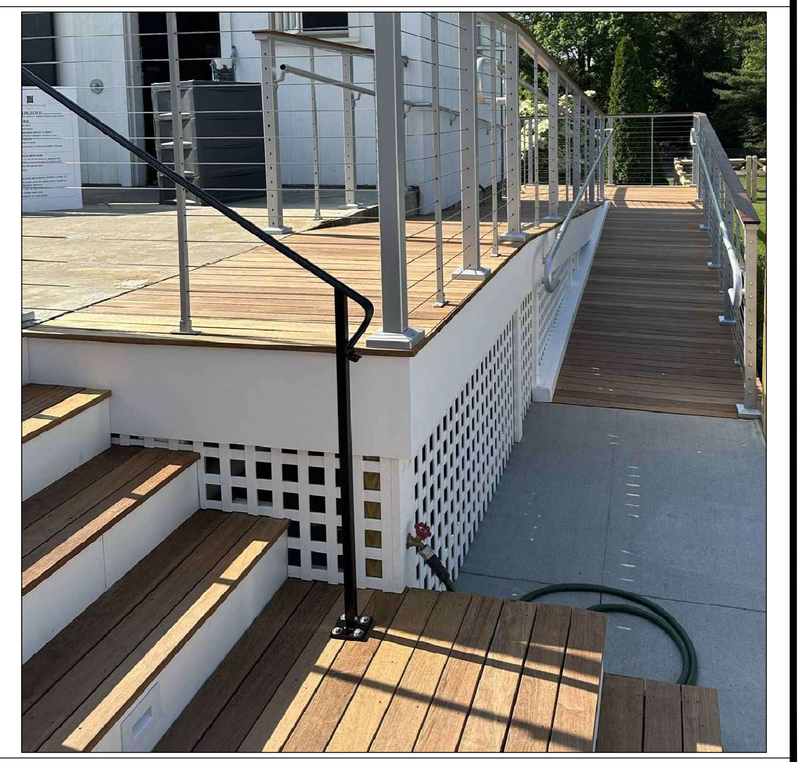
9. ASPHALT CURBING



10. BELGIAN BLOCK CURBING



11. BRICK PAVING



12. RAMPS & STAIRS

ROGERS McCAGG

ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

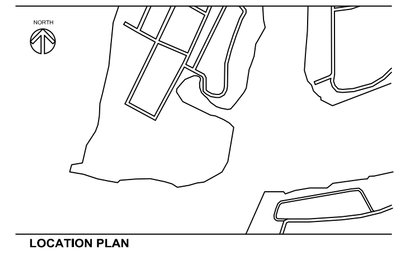
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

NO.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

STATE OF CONNECTICUT
CHRISTOPHER M. MCCAGG
REG. NO. 13935
LICENSED ARCHITECT

SCALE

DATE
05/15/2025

SHEET TITLE

MATERIALS

PROJECT No.
S&C 02.00

SHEET No.
M1.00

5/16/2025 9:07:29 AM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_m1.00_ materials.dwg



1. VIEW LOOKING SOUTH DOWN GREGORY BLVD AT ENTRANCE



2. VIEW LOOKING NORTH FROM ENTRANCE



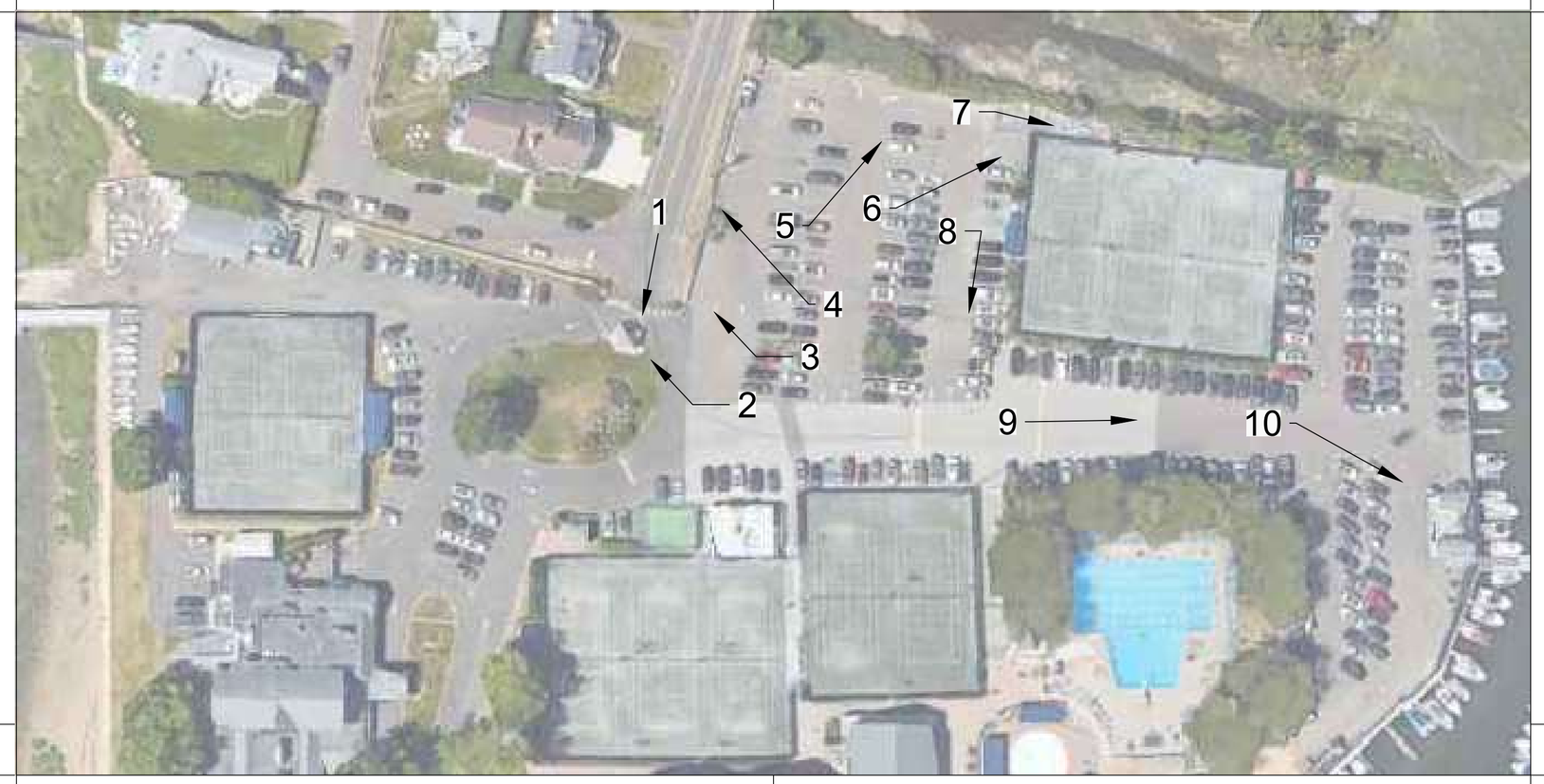
3. VIEW LOOKING NORTH WEST TOWARD GREGORY BLVD



4. VIEW LOOKING WEST TOWARD GREGORY BLVD



5. VIEW NORTH EAST LOOKING TOWARD EXISTING TENNIS COURTS 8,9,10





6. VIEW EAST LOOKING TOWARD EXISTING TENNIS COURTS 8,9,10



7. VIEW EAST AT PROPERTY LINE AND EXISTING TENNIS COURT 8,9,10



8. VIEW LOOKING SOUTH TOWARD EXISTING BEACH HOUSE AND TENNIS PRO SHOP



9. VIEW NORTH EAST LOOKING TOWARD EXISTING TENNIS COURTS 8,9,10



10. VIEW LOOKING EAST TOWARD MARINA

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

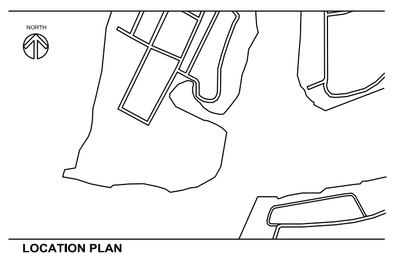
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

NO.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

STATE OF CONNECTICUT
CHRISTOPHER M. McCAGG
REG. NO. 13205
LICENSED ARCHITECT

SCALE

DATE
05/15/2025

SHEET TITLE

EXISTING SITE PHOTOS

PROJECT No.
S&C 02.00

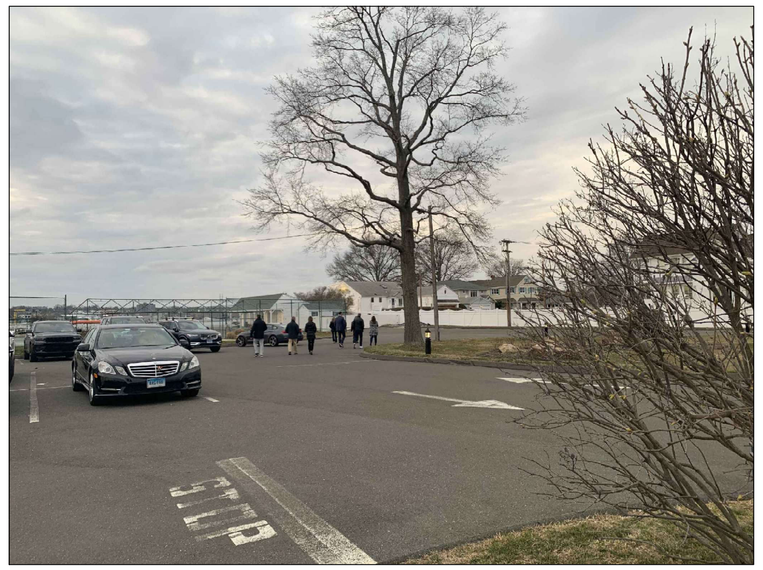
SHEET No.
EX1.00

5/16/2025 9:07:35 AM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_ex1.0_ ex photos.dwg



11. VIEW LOOKING WEST FROM POOL PARKING



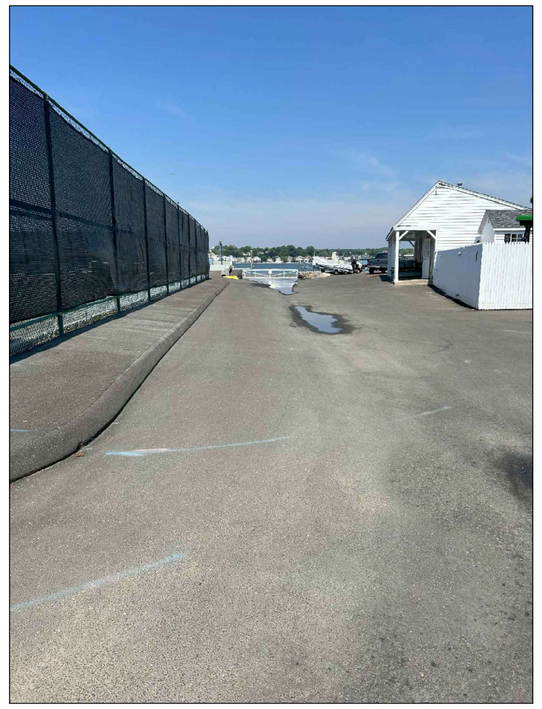
12. VIEW LOOKING NORTH WEST TOWARD EXISTING TREE TO REMAIN



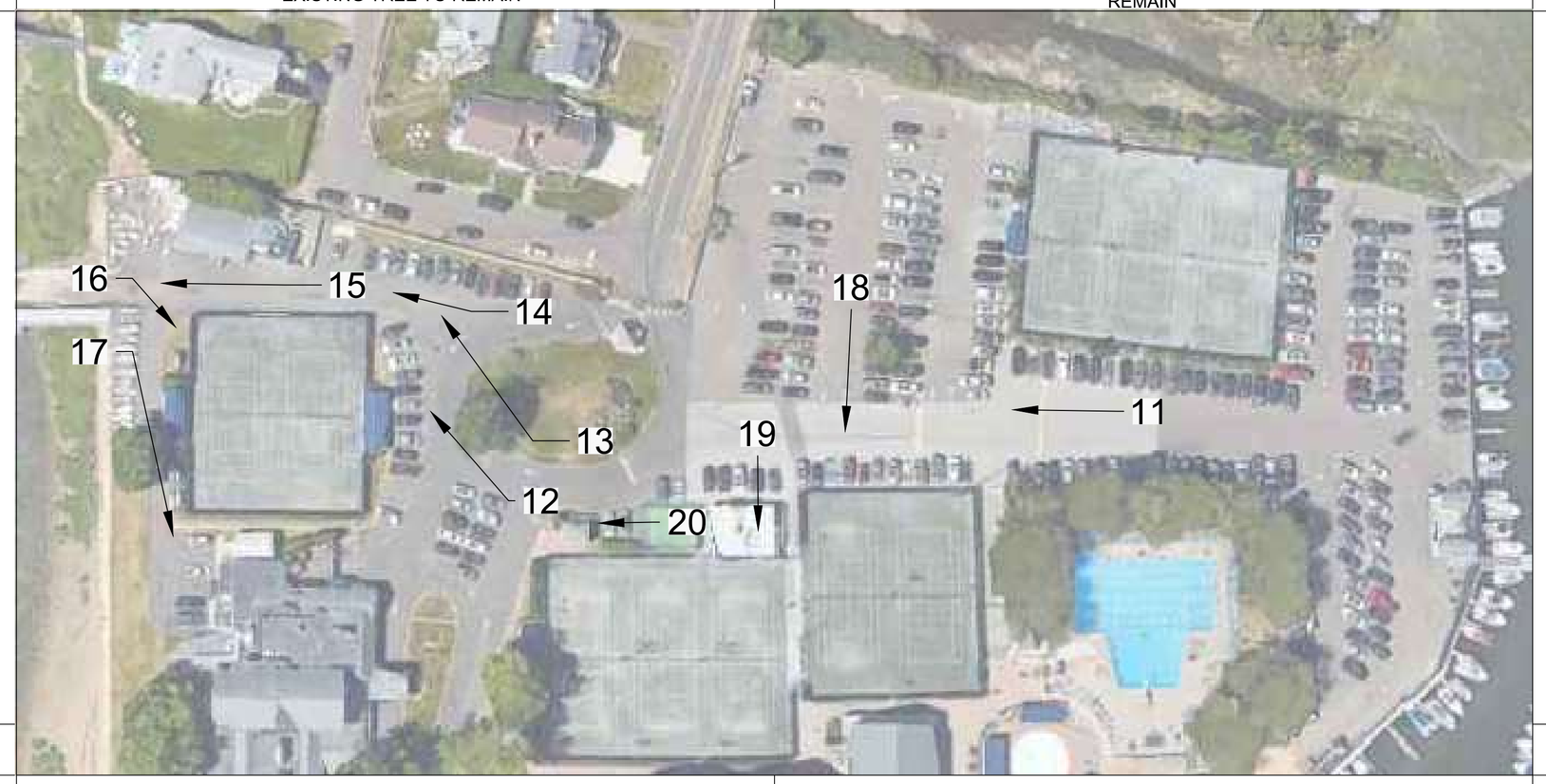
13. VIEW LOOKING NORTH WEST BEYOND EXISTING TREE TO REMAIN



14. VIEW LOOKING WEST TOWARD SAILS SCHOOL AND BOAT RAMP



15. VIEW LOOKING WEST TOWARD SAILS SCHOOL AND BOAT RAMP





16. VIEW LOOKING SOUTH EAST TOWARD EXISTING TENNIS COURTS 1&2



17. VIEW SOUTH TOWARD EXISTING TREE TO REMAIN



18. VIEW SOUTH OF EXISTING BEACH HOUSE AND TENNIS PRO SHOP NORTH ELEVATION



19. EXISTING TENNIS PRO SHOP NORTH ELEVATION



20. EXISTING ELECTRICAL SHED EAST ELEVATION

ROGERS McCAGG

ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

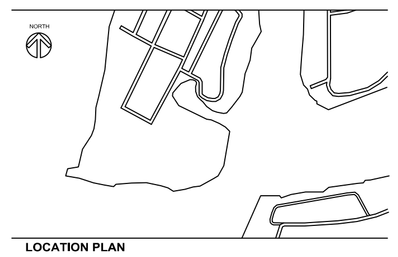
LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

NO.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

STATE OF CONNECTICUT
CHRISTOPHER M. McCAGG
NO. 13225
LICENSED ARCHITECT

SCALE

DATE
05/15/2025

SHEET TITLE

EXISTING SITE PHOTOS

PROJECT No.
S&C 02.00

SHEET No.
EX1.01

5/16/2025 9:07:35 AM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_ex1.0_ ex photos.dwg

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 220 GREGORY BOULEVARD TAKEN FROM ZONING LOCATION SURVEY PREPARED BY ARCAMONE LAND SURVEYORS LLC DATED SEPTEMBER 7, 2023, REVISED TO JULY 23, 2024.
2. DATUM: NAVD 1988
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. PROPERTY IS LOCATED IN FLOOD ZONE AE12 BFE=12.0, AE 14 BFE=14.0, VE 14 BFE=14.0, PER FEMA FLOOD MAP 09001C0534G EFFECTIVE JULY 8, 2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS.

PARKING REQUIREMENTS			
USE: WATERFRONT CLUB			
	SPACES REQUIRED	EXISTING SPACES	SPACES PROVIDED
ADMIN SPACE 1,620 SF	1 SPACE PER 200 SF ADMIN AREA 1620 / 200 = 9 SPACES	289 SPACES	260 SPACES
BOAT SLIPS 98 SLIPS	1 SPACE PER 10 BOAT SLIPS 98 / 10 = 10 SPACES		
	TOTAL = 19 SPACES		

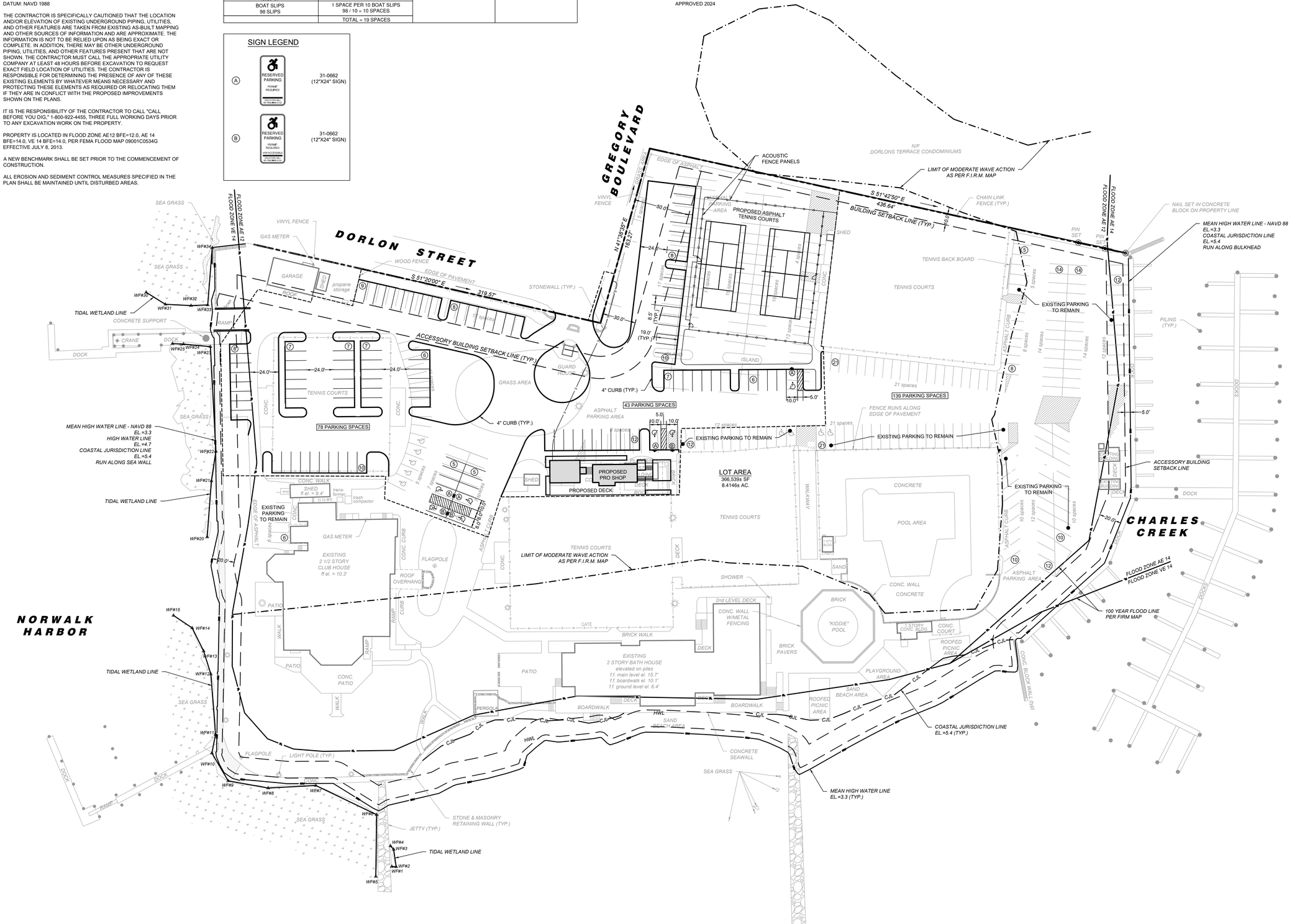
SIGN LEGEND

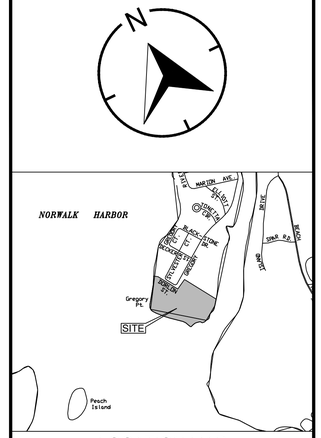
(A) RESERVED PARKING — PERMIT REQUIRED — VIOLATORS WILL BE TOWED (C.G.S. 14-250) — 31-0662 (12"X24" SIGN)

(B) RESERVED PARKING — PERMIT REQUIRED — VAN ACCESSIBLE — VIOLATORS WILL BE TOWED (C.G.S. 14-250) — 31-0662 (12"X24" SIGN)

PRIOR VARIANCES

VARIANCE No.	DESCRIPTION
99-0506-03 APPROVED 2024	INCREASE HEIGHT FROM 15 TO 19.6 (EXISTING) AND LOCATE SERVICE/UTILITY EQUIPMENT BELOW FLOOD ELEVATION
16-0407-04 APPROVED 2024	REAR SETBACK FOR REPLACEMENT BATHHOUSE STRUCTURE





LOCATION MAP
(NTS)

REVISION DATE	ISSUE
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

THE SHORE & COUNTRY CLUB

PROJECT LOCATION:

220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:

SITE LAYOUT PLAN

PROJECT No. 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: 1" = 40'

IN FEET
0 40 80 120

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

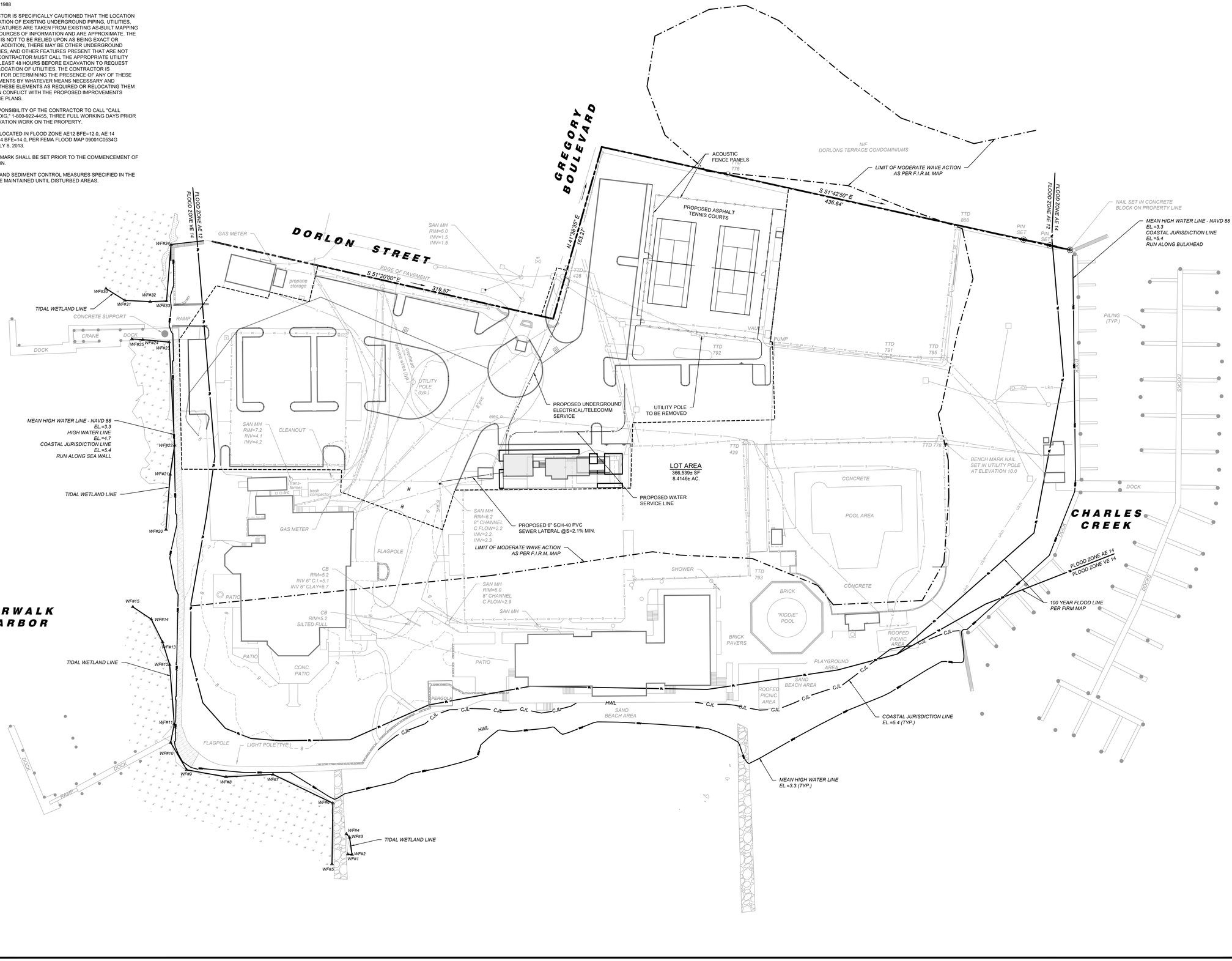
STATE OF CONNECTICUT — ANDY SOUWLIS — 27803 LICENSED PROFESSIONAL ENGINEER

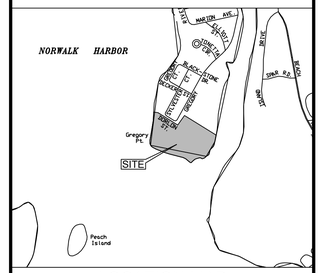
C-1.0

T:\ ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD, NORWALK\DRAWINGS\CAM SITE PLAN APP\SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 220 GREGORY BOULEVARD TAKEN FROM ZONING LOCATION SURVEY PREPARED BY ARCAMONE LAND SURVEYORS LLC DATED SEPTEMBER 7, 2023 REVISED TO JULY 23, 2024.
2. DATUM: NAVD 1988
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. PROPERTY IS LOCATED IN FLOOD ZONE AE12 BFE=12.0, AE 14 BFE=14.0, VE 14 BFE=14.0, PER FEMA FLOOD MAP 09001C0534G EFFECTIVE JULY 8, 2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS.





LOCATION MAP
(NTS)

REVISION DATE	ISSUE
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

THE SHORE & COUNTRY CLUB

PROJECT LOCATION:

220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:

SITE UTILITY PLAN

PROJECT No. 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: 1" = 40'

IN FEET
0 40 80 120

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

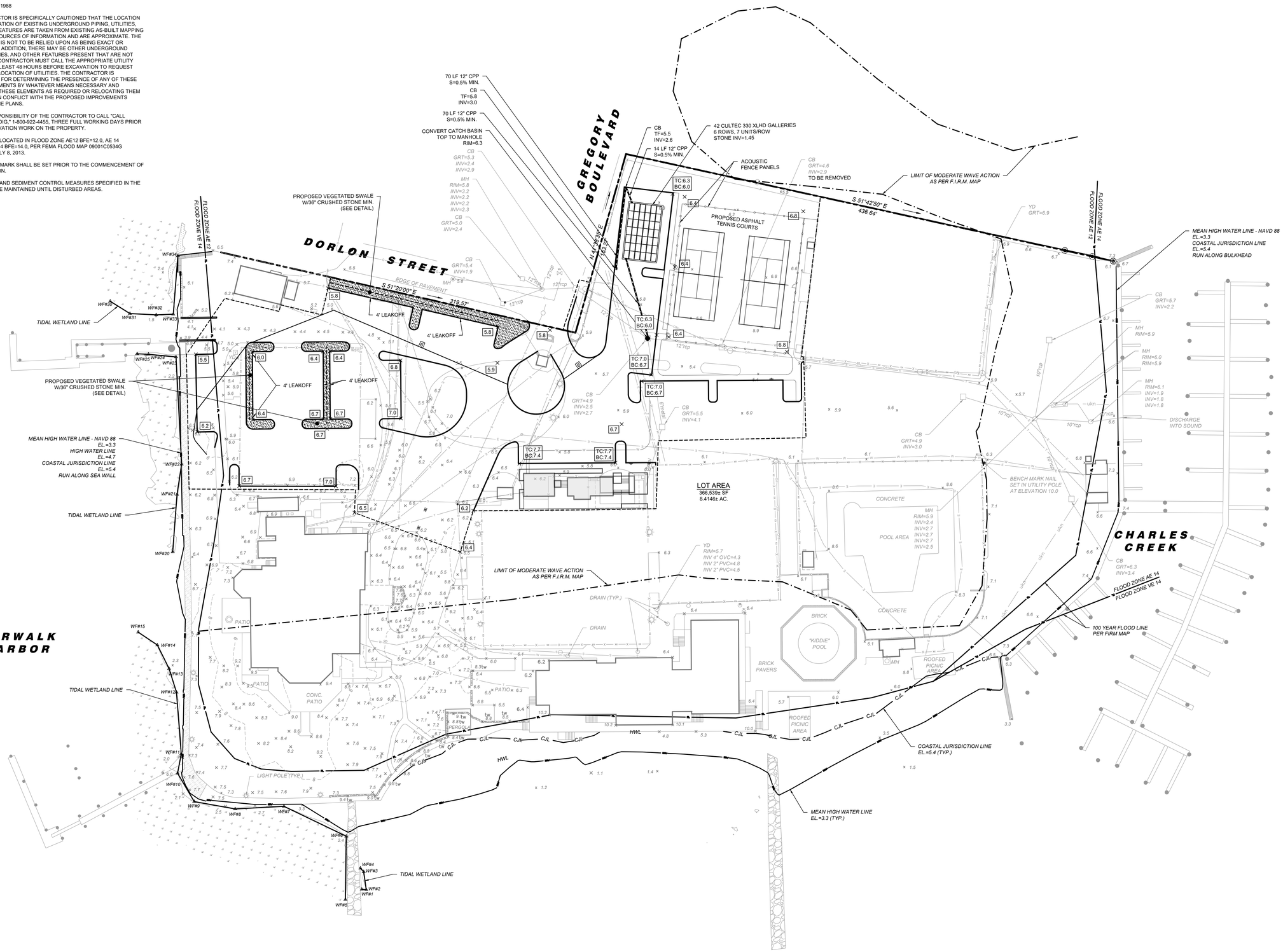
STATE OF CONNECTICUT ANDREW S. SOUWLIDIS 27803 LICENSED PROFESSIONAL ENGINEER

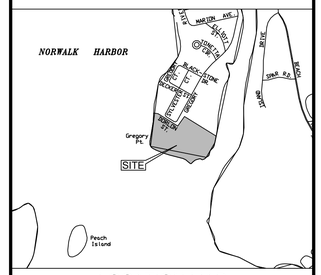
C-2.0

T:\ ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - NORWALK\DRAWINGS\CAM SITE PLAN\APPSHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 220 GREGORY BOULEVARD TAKEN FROM ZONING LOCATION SURVEY PREPARED BY ARCAMONE LAND SURVEYORS LLC DATED SEPTEMBER 7, 2023 REVISED TO JULY 23, 2024.
2. DATUM: NAVD 1988
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. PROPERTY IS LOCATED IN FLOOD ZONE AE12 BFE=12.0, AE 14 BFE=14.0, VE 14 BFE=14.0, PER FEMA FLOOD MAP 09001C0534G EFFECTIVE JULY 8, 2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS.





LOCATION MAP
(NTS)

REVISION DATE	ISSUE
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:
THE SHORE & COUNTRY CLUB

PROJECT LOCATION:
220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:
SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:
SITE GRADING & DRAINAGE PLAN

PROJECT No. 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: 1" = 40'
IN FEET
0 40 80 120

PROJECT STATUS:
DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

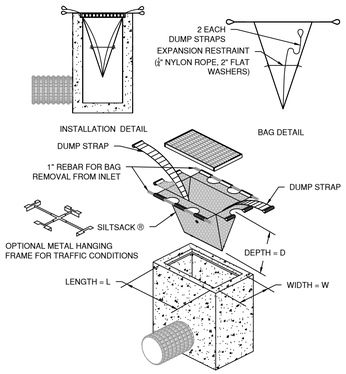
STATE OF CONNECTICUT · SCOTT M. SOUWLOS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-3.0

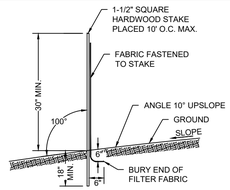
T:\ ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD., NORWALK\DRAWINGS\CAM\ SITE PLAN\ APP\SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

GENERAL EROSION AND SEDIMENT CONTROL NOTES

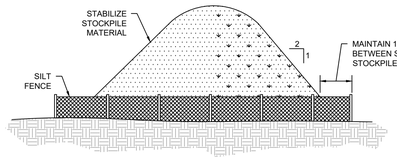
1. LAND DISTURBANCE WILL BE KEPT TO A MINIMUM; RESTABILIZATION WILL BE SCHEDULED AS SOON AS POSSIBLE.
2. SILT FENCE WILL BE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES, SOIL STOCKPILE AREAS, AND IN THOSE AREAS SHOWN ON THE PLAN.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE STATE OF CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL 2002.
4. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO LAND DISTURBANCE WHENEVER POSSIBLE.
5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED UNTIL STABILIZATION HAS BEEN ACHIEVED.
6. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD IF NECESSARY OR REQUIRED. A MINIMUM OF 50 FEET OF SILT FENCE SHALL BE STORED AT THE SITE FOR EMERGENCY USE.
7. ANY EXCAVATIONS THAT MUST BE DEWATERED WILL BE PUMPED INTO A 15'x15' DIRTBAG ON-SITE. THE INLETS OF ALL PUMPS ARE TO BE FLOATED A MINIMUM OF 24 INCHES OFF THE BOTTOM OF THE EXCAVATION. THE CONTRACTOR SHALL KEEP A MINIMUM OF (2) 15'x15' DIRTBAGS ON-SITE THROUGHOUT THE EXCAVATION OF PROPOSED FOUNDATIONS.
8. WATER AND CALCIUM CHLORIDE SHALL BE APPLIED TO UNPAVED ACCESSWAYS TO PREVENT WIND GENERATED SEDIMENTS AND DUST.
9. DEBRIS AND OTHER WASTES RESULTING FROM EQUIPMENT MAINTENANCE AND CONSTRUCTION ACTIVITIES WILL NOT BE DISCARDED ON-SITE.
10. SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE DISPOSED OF IN A MANNER WHICH IS CONSISTENT WITH INTENT OF THE PLAN.
11. SILT FENCES SHALL HAVE SEDIMENT REMOVED WHEN THE DEPTH OF THE SEDIMENT IS EQUAL TO ½ TO ⅔ THE HEIGHT OF THE FENCE. FENCES SHALL BE PROPERLY INSTALLED AND RIPPED FENCE OR BROKEN POSTS REPAIRED AS SOON AS PRACTICAL.
12. ANTI-TRACKING PADS AND GRAVEL CHECK DAMS SHALL BE REPLACED WHEN VOID SPACES ARE FULL OR STRUCTURES ARE BREACHED, AS APPLICABLE.
13. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE SOIL SURFACE STABILIZED WHEN CONSTRUCTION IS COMPLETE AND THE SOIL SURFACES ARE PERMANENTLY STABILIZED. STRUCTURAL COMPONENTS SHALL BE CLEANED OF ALL SEDIMENT UPON COMPLETION OF CONSTRUCTION.
14. THE OWNER IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES INSTALLATION AND MAINTENANCE OF CONTROL MEASURES. INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFYING THE PLANNING AND ZONING COMMISSION OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT PLAN IF AND WHEN THE TITLE OF LAND IS TRANSFERRED.



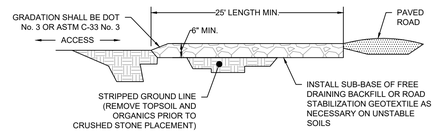
SILTSACK® CATCH BASIN INSERT
(NTS)

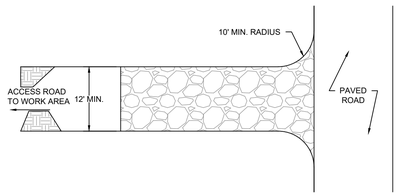


GEOTEXTILE SILT FENCE
(NTS)

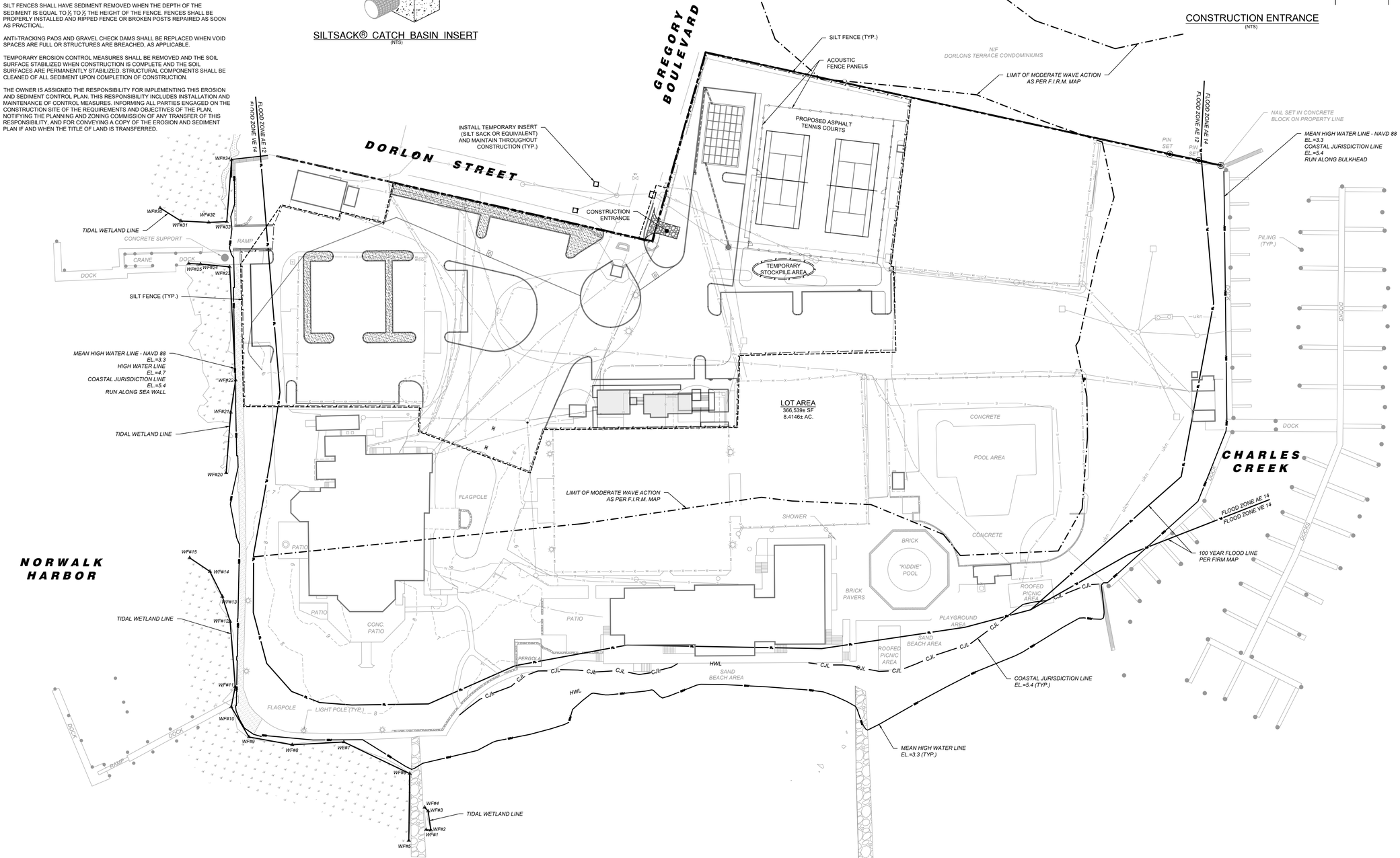


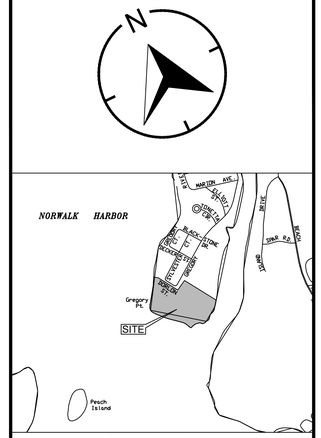
STOCKPILE DETAIL
(NTS)





CONSTRUCTION ENTRANCE
(NTS)





LOCATION MAP
(NTS)

REVISION DATE	ISSUE
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

THE SHORE & COUNTRY CLUB

PROJECT LOCATION:

220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:

EROSION & SEDIMENT CONTROL PLAN

PROJECT No.		
24033-01		
DATE: 6/12/2024	DESIGNED BY: SM	CHECKED BY: AS

SCALE: 1" = 40'

IN FEET
0 40 80 120

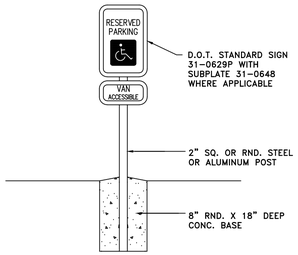
PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

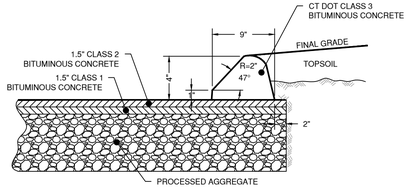
STATE OF CONNECTICUT · SCOTT M. SOUWLOS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-4.0

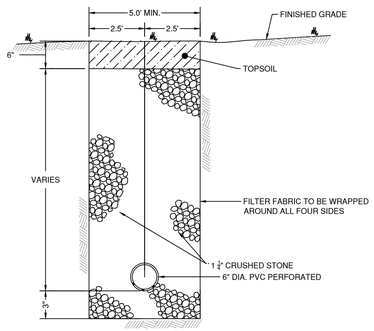
T:\1. ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - NORWALK\DRAWINGS\CAM SITE PLAN (APSHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG



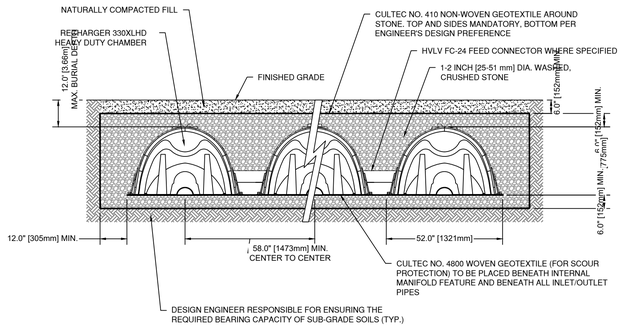
DISABLED PARKING SIGN
(NTS)



PARKING LOT PAVEMENT AND BIT. CURB TYPICAL CROSS SECTION
(NTS)



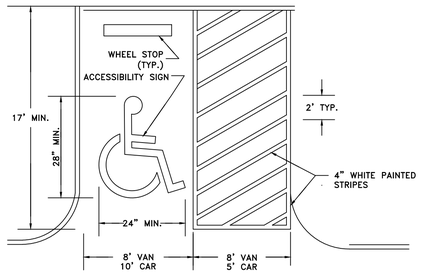
VEGETATED SWALE
(NTS)



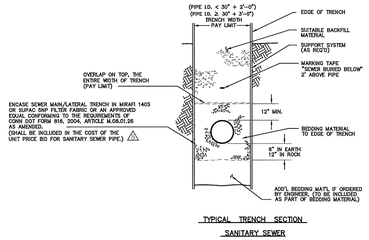
GENERAL NOTES
RECHARGER 330XL HD BY CULTEC, INC. OF BROOKFIELD, CT.
STORAGE PROVIDED = 11.32 CF/FT [1.05 m^3/m] PER DESIGN UNIT.
REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES.
THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS

ALL RECHARGER 330XL HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
ALL RECHARGER 330XL HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

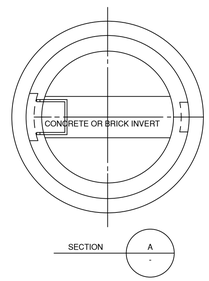
CULTEC RECHARGER 330XLHD HEAVY DUTY (NON-TRAFFIC APP.) TYPICAL CROSS SECTION
(NTS)

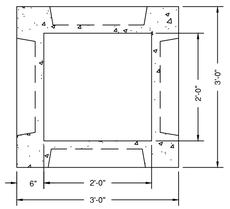


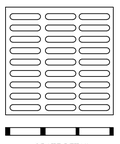
DISABLED PARKING MARKING
(NTS)

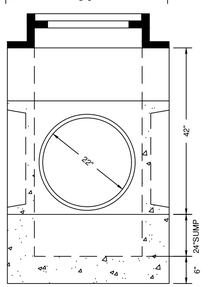


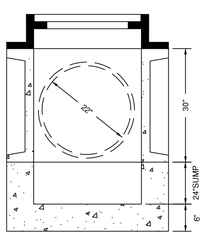
TYPICAL TRENCH SECTION
SANITARY SEWER





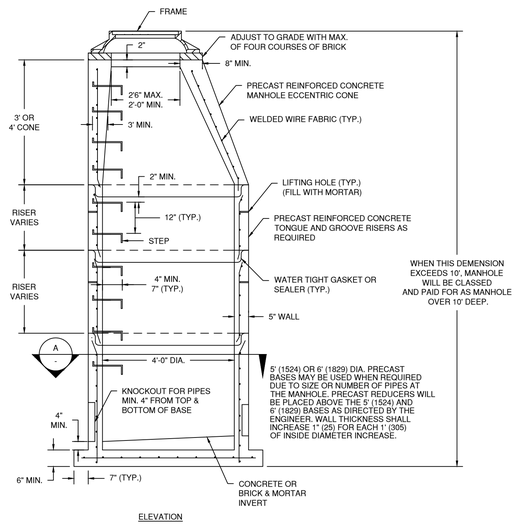






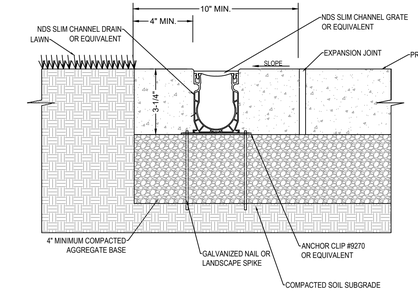
GENERAL NOTES
1. REINFORCED 6 X 6 X 10 GUAGE MESH OR TO SPECIFICATIONS.
2. GRATE - STEEL OR CAST IRON.
3. 4' HIGH SUMP HAS TWO KNOCKOUTS LOW AND 2 KNOCKOUTS UP HIGH.
4. APPROXIMATE WEIGHTS:
   3' - 2100 LBS.
   4' - 2800LBS.

2' X 2' PRECAST CONCRETE CATCH BASIN
(NTS)



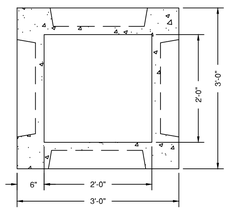
ELEVATION

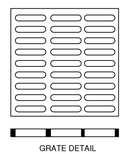
CT DOT REINFORCED PRECAST CONCRETE MANHOLE
(NTS)

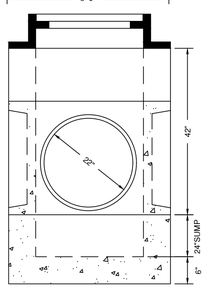


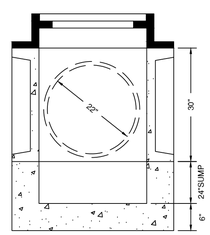
GENERAL NOTES
1. EXISTING SOILS SHOULD BE EVALUATED TO ENSURE PROPER STRUCTURAL AND PERMEABILITY PROPERTIES.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. DO NOT SCALE THIS DRAWING
4. THIS IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY.
5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED.

2" DRAIN CHANNEL DETAIL
(NTS)









GENERAL NOTES
1. REINFORCED 6 X 6 X 10 GUAGE MESH OR TO SPECIFICATIONS.
2. GRATE - STEEL OR CAST IRON.
3. 4' HIGH SUMP HAS TWO KNOCKOUTS LOW AND 2 KNOCKOUTS UP HIGH.
4. APPROXIMATE WEIGHTS:
   3' - 2100 LBS.
   4' - 2800LBS.

2' X 2' PRECAST CONCRETE CATCH BASIN
(NTS)

REVISION DATE	ISSUE
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:
THE SHORE & COUNTRY CLUB

PROJECT LOCATION:
220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:
SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:
NOTES AND DETAILS

PROJECT No.: 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: N.T.S.

PROJECT STATUS:
DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDY SOUMELIDIS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-5.0

T:\1. ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD, NORWALK\DRAWINGS\CAM SITE PLAN APP\SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG
LANDTECH

LANDTECH

Civil Engineering · Site Planning
Environmental Science & Engineering
Landscape Architecture · Land Surveying
Permit Coordination & Management
Construction Management & Financing

COASTAL AREA MANAGEMENT

ENVIRONMENTAL ANALYSIS
RECREATIONAL FACILITY IMPROVEMENTS



Prepared for:
The Shore & Country Club
220 Gregory Boulevard
Norwalk, Connecticut

518 Riverside Avenue · Westport CT 06880 · www.landtechconsult.com · info@landtechconsult.com · 203-454-2110

COASTAL AREA MANAGEMENT (CAM) APPLICATION – PROJECT NARRATIVE
Proposed Improvements at 220 Gregory Boulevard, Norwalk, CT
Prepared for: The Shore & Country Club
Prepared by: LANDTECH

1. INTRODUCTION

This Coastal Area Management (CAM) Application is submitted on behalf of The Shore & Country Club in support of proposed improvements to its recreational facilities located at 220 Gregory Boulevard, Norwalk, Connecticut. The site is a waterfront parcel of approximately 8.41 acres (366,539± square feet) located at the confluence of Charles Creek and Norwalk Harbor, both of which are tidally influenced coastal waterbodies within the jurisdiction of the Connecticut Coastal Management Act (CCMA). The parcel lies entirely within the State's designated Coastal Boundary and contains delineated tidal wetlands, is subject to the Coastal Jurisdiction Line (CJL), and falls within FEMA-designated Flood Zones AE12, AE14, and VE14, as identified on FEMA Map 09001C0534G effective July 8, 2013.

The Shore & Country Club is a well-established private recreational facility that includes a clubhouse, tennis courts, swimming pools, docks, a beach area, and associated parking and landscaped grounds. The proposed improvements include the demolition of existing tennis courts, the construction of new asphalt tennis courts, a new single-story pro shop building with a wooden deck, acoustic and perimeter fencing, and the installation of new underground utilities including electric, sewer, water, and telecommunications infrastructure. All improvements are located within previously developed areas and have been carefully planned to minimize disturbance to coastal resources and avoid impacts to wetlands or regulated shoreline areas.

The purpose of the project is to modernize and improve the club's existing tennis facilities to better serve its membership while preserving the overall recreational character and operational continuity of the site. The project does not involve any change in use, expansion into undeveloped coastal areas, or modification of the shoreline, and is limited to upland portions of the site outside of regulated wetland or aquatic resource areas.

Design and construction have been coordinated to ensure compliance with coastal site plan review requirements, the City of Norwalk Zoning Regulations, applicable flood hazard mitigation standards, and the goals of the Connecticut Coastal Management Act. Additionally, stormwater management practices and erosion and sedimentation controls have been incorporated to protect adjacent watercourses and wetlands during and after construction.

The project represents a modest and environmentally responsible enhancement to a long-standing water-dependent recreational use and is consistent with both the historic development of the site and the coastal resource protection policies of the State of Connecticut.

2. EXISTING CONDITIONS

The subject property at 220 Gregory Boulevard is an 8.41-acre developed waterfront parcel located within the City of Norwalk's coastal boundary, categorized as both Developed Shorefront and Shorelands under Connecticut General Statutes (CGS) §22a-93(7). The site falls within FEMA-designated Flood Zones AE12, AE14, and VE14, as shown on FIRM Panel 09001C0534G (Effective July 8, 2013). The Base Flood Elevations (BFEs) range from 12.0 to 14.0 feet NAVD88, and portions of the site lie within the Limit of Moderate Wave Action (LiMWA) and VE zones, indicating exposure to high-velocity wave impacts.

The site is currently developed with a range of recreational and support facilities, including:

- Multiple existing tennis courts located along the eastern portion of the site;
- A multi-level clubhouse and dining area;
- A bathhouse elevated on piles adjacent to the shoreline;
- Concrete patios and boardwalks, wood-framed decking, and walkways;
- Dock infrastructure and launching ramps on Norwalk Harbor and Charles Creek;
- Designated parking areas totaling approximately 289 spaces, as shown on the Site Plan;
- Beach areas, including active use zones and vegetated dune areas with sea grass;
- Landscaped greenspace, fencing, utility structures, and accessory features.

The site is bordered to the east by Dorlon's Terrace Condominiums, to the west and south by Norwalk Harbor and Charles Creek, and to the north by residential and institutional properties accessed via Gregory Boulevard. The shoreline contains existing tidal wetlands, the Mean High Water Line (MHWL, EL 3.3), and the Coastal Jurisdiction Line (CJL, EL 5.4), all of which are delineated on the project plans.

The developed areas are largely impervious, consisting of paved surfaces, concrete walkways, and wood decking, with limited lawn or planted buffer zones. Utilities serving the site include underground and overhead electric, public water and sanitary sewer, and site lighting, as reflected on the utility plans. The site's topography slopes gently to the south and east toward the shoreline, and drainage patterns generally follow the paved accessways and lawn gradients.

The presence of tidal wetlands, the CJL, and mapped flood hazards necessitates a careful and coordinated site planning approach, which the proposed project has adopted to ensure continued compliance with local zoning, coastal, and floodplain regulations.

3. PROPOSED DEVELOPMENT

The proposed project entails the renovation and enhancement of existing tennis facilities at The Shore & Country Club, located at 220 Gregory Boulevard in Norwalk, Connecticut. The project is part of a broader effort to modernize recreational amenities for Club members while maintaining compliance with local, state, and federal coastal and floodplain regulations. All work will be performed within

previously developed and actively managed areas of the site, with no direct impacts to tidal wetlands, coastal waters, or undeveloped shoreline zones.

The proposed scope includes the following key components:

- Demolition and removal of existing tennis courts and surface infrastructure, including associated pavement, fencing, and utility connections;

- Construction of two (2) new regulation-size asphalt tennis courts, complete with subbase drainage improvements and integrated subsurface stormwater management infrastructure to control runoff quantity and quality;

- Construction of a new single-story pro shop building, designed with durable, flood-resistant materials and a finished floor elevation that meets or exceeds the applicable FEMA Base Flood Elevation (BFE) for Flood Zone AE14. The pro shop will serve as a support facility for tennis operations and include a wood-framed deck providing spectator seating and gathering space;

- Installation of new underground utility services, including:
    - Water service tied into the municipal system;
    - Sanitary sewer connection to the existing municipal network;
    - Underground electric and telecommunications conduit, designed to replace overhead service and enhance storm resilience;

- Installation of new perimeter fencing, including:
    - Acoustic fence panels along key sections to buffer sound for adjacent uses;
    - Chain-link security fencing for player safety and access control;

- Selective grading and landscaping within the project footprint to restore disturbed areas, enhance visual quality, and maintain stormwater function. No tree clearing or shoreline modification is proposed.

The entire development is situated landward of the Coastal Jurisdiction Line (CJL) and outside the limits of tidal wetlands. No fill is proposed in regulated floodplains or floodways. The project design ensures that all structures and utilities are either flood-resistant or elevated above FEMA-designated BFE (ranging from EL 12.0 to EL 14.0 NAVD88), in compliance with both City of Norwalk Flood Hazard Regulations and FEMA requirements.

Erosion and sedimentation control measures, such as silt fencing and stabilized construction entrances, will be deployed throughout the duration of construction to ensure protection of adjacent coastal resources. The site will be stabilized with lawn or plantings post-construction, and all disturbed areas will be fully restored.

This proposal represents a low-impact improvement to an existing water-dependent recreational facility, enhancing the site's recreational offerings while respecting the sensitive coastal setting and regulatory framework established under the Connecticut Coastal Management Act.

4. COASTAL RESOURCES AND ENVIRONMENTAL CONSIDERATIONS

The project site at 220 Gregory Boulevard contains and is adjacent to multiple coastal resources as defined in Connecticut General Statutes (CGS) §22a-93(7) and regulated under the Connecticut Coastal Management Act (CCMA). These resources have been field-delineated and are documented in the accompanying plan set. The project has been carefully designed to avoid adverse impacts to these features, and all proposed activities are restricted to previously developed upland areas, landward of the Coastal Jurisdiction Line (CJL).

Identified coastal resources and considerations include:

- Coastal Waters:The property borders both Norwalk Harbor and Charles Creek, which are tidally influenced coastal waters. These resources serve multiple functions, including navigation, recreation, ecological habitat, and tidal exchange. The proposed work is entirely upland and does not involve any dredging, filling, or construction within the water column or below the Mean High Water Line (EL 3.3 NAVD88). No new discharge points are proposed, and the project will not alter tidal exchange or water quality.

- Tidal Wetlands: A delineated tidal wetland boundary exists along the site's southern and eastern perimeter and is fully preserved in the proposed design. No grading, filling, or structural activity is proposed within or adjacent to these wetlands. Stormwater generated by the proposed improvements will be retained and treated upland of the wetlands, preventing potential pollutant loading or hydrologic alteration.

- Developed Shorefront and Shorelands: The Shore & Country Club is an established water-dependent recreational use, consistent with the CCMA's classification of the property as both Developed Shorefront and Shorelands. All work is confined to previously disturbed recreational and impervious surfaces, including tennis courts, walkways, and utility corridors. The project does not extend into natural shoreline or undisturbed coastal habitat areas.

- Coastal Hazard Areas (Flood Zones VE14, AE14, and AE12): The project lies within FEMA-designated Special Flood Hazard Areas, including Coastal High Hazard (VE14) and Inland Flood Zones (AE14 and AE12). The proposed structures and utility infrastructure are designed in accordance with FEMA construction standards, with all elevations meeting or exceeding Base Flood Elevations (BFEs). Where required, structures will be constructed with flood-resistant materials, and underground utilities will be waterproofed or elevated in conformance with the City of Norwalk Flood Hazard Regulations.

Summary of Protective Measures:

- No work is proposed waterward of the CJL or within tidal wetlands.

- The project footprint is entirely upland and confined to areas of previous development.
- Stormwater management has been designed to retain and treat runoff on-site, preventing erosion, sedimentation, or nutrient enrichment of coastal resources.
- Erosion and sedimentation controls will be deployed and maintained throughout the duration of construction to protect adjacent wetland and water resources.

Overall, the project is consistent with the coastal resource protection goals of the CCMA and does not result in significant alteration or degradation of any on-site or adjacent coastal resources.

5. STORMWATER BEST MANAGEMENT PRACTICES (BMPs)

The proposed development at 220 Gregory Boulevard incorporates a comprehensive stormwater management strategy that is fully consistent with the 2020 Connecticut Stormwater Quality Manual, the objectives of the Connecticut Coastal Management Act (CCMA), and the City of Norwalk's engineering and zoning requirements. The system is designed to protect adjacent coastal waters and tidal wetlands by minimizing runoff, preventing erosion, and ensuring pollutant removal from impervious surfaces associated with the proposed tennis facility.

The following Best Management Practices (BMPs) have been integrated into the site design:

Subsurface Infiltration System: A stormwater infiltration system will be installed beneath the newly constructed asphalt tennis courts. This system is engineered to retain the first inch of rainfall on-site, consistent with state and local water quality volume (WQV) standards. This practice significantly reduces runoff volumes and improves groundwater recharge, while also serving as a primary pollutant treatment mechanism.

Erosion and Sediment Controls (During Construction): A full suite of temporary erosion and sedimentation (E&S) controls will be deployed throughout the construction period. These include:

- Silt fencing along downgradient perimeters;
- Stabilized construction entrances to prevent off-site sediment tracking;
- Stockpile containment zones protected with perimeter controls and cover;
- Ongoing site monitoring and maintenance to ensure performance and compliance.

Reduction of Impervious Surface Footprint: Although the proposed tennis courts are impervious, portions of existing paved areas will be removed and replaced with permeable decking and landscaped surfaces surrounding the pro shop and deck area. This results in a net redistribution of impervious area that promotes better infiltration and site hydrology, while improving visual aesthetics and reducing the heat island effect.

Post-Construction Stormwater Performance: The drainage system is designed to ensure that peak flow rates and volumes for post-development conditions do not exceed pre-development levels, consistent with state and municipal standards. Additionally, the stormwater treatment system is expected to

achieve an average annual Total Suspended Solids (TSS) removal rate of 80% or greater, effectively controlling sediment, debris, and associated pollutants generated from recreational use of the courts.

Environmental Benefits:

- No direct discharge of stormwater will occur to tidal wetlands, Norwalk Harbor, or Charles Creek;
- Runoff will be infiltrated, filtered, and detained before any potential overflow reaches downstream systems;
- The design prevents erosion, protects nearby sensitive aquatic and vegetated habitats, and complies with current regulatory performance standards.
- Collectively, these BMPs represent a best-in-class stormwater management approach that both supports the operational goals of the Club and ensures long-term environmental protection of adjacent coastal resources.

6. CONSISTENCY WITH COASTAL POLICIES

The proposed improvements at 220 Gregory Boulevard have been designed to be fully consistent with the goals and policies of the Connecticut Coastal Management Act (CCMA) as outlined in Connecticut General Statutes (CGS) §22a-92. The project supports the continued use of an existing water-dependent facility while avoiding impacts to coastal resources and incorporating flood resiliency and stormwater quality controls.

The project aligns with the following specific CCMA policy provisions:

CGS §22a-92(a)(2): Protection of Coastal Resources

The project preserves existing tidal wetlands, coastal waters, and the natural shoreline by confining all proposed development to previously disturbed upland areas. No encroachment on the Coastal Jurisdiction Line (CJL) or wetland boundary is proposed, and the project includes stormwater management features that prevent runoff into adjacent coastal waters.

CGS §22a-92(b)(1)(A): Promotion of Water-Dependent Uses

The site's continued function as a private waterfront club—supporting recreational boating, swimming, tennis, and shoreline access—is a direct reflection of water-dependent land use policy objectives. The improvements enhance the facility's long-term recreational viability without altering the character or access to coastal resources.

CGS §22a-92(b)(2)(F): Flood Hazard Mitigation

The project is located within FEMA Flood Zones AE and VE, and it has been designed in accordance with FEMA's floodplain development criteria and the City of Norwalk Flood Hazard Regulations. Structures are elevated or flood-resistant, and utilities are either waterproofed or placed above the

Base Flood Elevation (BFE). No fill is proposed in the floodway, and the improvements do not increase flood risk to surrounding properties.

CGS §22a-92(c)(1)(B): Avoidance of Adverse Impacts to Coastal Resources

The design maintains adequate setbacks from tidal wetlands and coastal waters, avoids topographic disruption near sensitive areas, and employs erosion and sedimentation controls to protect downstream and adjacent ecosystems during construction. No grading or clearing is proposed within or adjacent to wetland boundaries.

CGS §22a-92(c)(1)(J): Promotion of Public and Recreational Use of Shoreline

By improving recreational facilities, including tennis courts and support amenities, the project enhances the ability of the Club to offer outdoor, shoreline-based recreation to its membership. These improvements align with coastal policy goals of encouraging continued recreational use and responsible development of existing facilities in coastal areas.

Conclusion:

The proposed project represents a low-impact, resilient, and water-compatible enhancement to an established recreational use. It protects sensitive coastal resources, maintains conformity with floodplain and water quality regulations, and advances the core objectives of the CCMA. As such, the project is both appropriate for its location and fully consistent with applicable state coastal management policies.

7. POTENTIAL ADVERSE IMPACTS AND MITIGATION

The proposed development at 220 Gregory Boulevard has been specifically designed to avoid adverse impacts to coastal resources, in full accordance with CGS §22a-93(15). The project has been reviewed in the context of on-site natural resource constraints, flood risk, and water-dependent uses, and appropriate best management practices have been incorporated to eliminate or minimize any potential short- or long-term effects.

No adverse impacts are expected to the following coastal resource types:

- Tidal wetlands
- Coastal waters (Norwalk Harbor and Charles Creek)
- Shorelands or developed shorefront
- Shellfish habitats or spawning grounds
- Navigation, recreation, or public access areas
- Flood storage or water quality functions

The following mitigation strategies have been implemented to avoid or minimize impacts:

- Restriction of construction to previously developed and disturbed upland areas, ensuring that no work occurs in or adjacent to undisturbed wetland or shoreline zones;

- Installation of temporary erosion and sedimentation controls (e.g., silt fencing, stabilized construction entrances, sediment basins) during all phases of construction, in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control;
- Avoidance of fill, grading, or vegetation clearing within tidal wetlands, the floodway, or below the Coastal Jurisdiction Line (CJL);
- Construction of buildings and utilities that comply with FEMA flood zone requirements, including elevated finished floors, flood-resistant materials, and appropriate waterproofing of underground systems;
- Management of stormwater through subsurface infiltration and vegetated swales, preventing new discharge points to coastal waters and ensuring that water quality volume is treated on-site.

Summary:
The project represents a low-impact improvement within a fully developed waterfront recreational facility. With appropriate design measures in place, the development will not adversely affect water-dependent functions, ecological integrity, flood protection, or public coastal resources. No shellfish beds, finfish spawning grounds, or public trust tidelands are affected. The proposed work is consistent with the principles of coastal resource protection and sustainable shoreline development.

8. CONCLUSION

The proposed improvements at The Shore & Country Club, located at 220 Gregory Boulevard, have been carefully planned and engineered to meet the requirements of the Connecticut Coastal Management Act (CCMA). The project represents a minimal-impact enhancement to a long-established recreational facility, improving the Club's tennis infrastructure and support facilities without expanding into undeveloped or sensitive shoreline areas.

All work is confined to previously disturbed upland areas, fully landward of the Coastal Jurisdiction Line (CJL) and outside of delineated tidal wetlands. The design adheres to FEMA floodplain standards, integrates state-compliant stormwater Best Management Practices (BMPs), and ensures protection of adjacent coastal waters, wetlands, and habitat areas.

The project:

- Avoids direct and indirect impacts to regulated coastal resources;
- Supports a continued water-dependent use that aligns with CCMA goals;
- Enhances the site's flood resiliency and stormwater performance;
- Promotes responsible stewardship of the shoreline environment.

In summary, the Shore & Country Club project is consistent with all applicable coastal policies, poses no adverse impacts to coastal resources or public access, and reflects the principles of sustainable, low-impact coastal development.

Planning & Zoning Commission

APPLICATION FOR COASTAL SITE PLAN REVIEW

Application must be accompanied by two (2) printed and one (1) digital set of all documents, and appropriate filing fee. Filing Fee: $310.00 for single or two family use; $810.00 for all other uses.

Date Stamp

Application Completion Date: Official Receipt Date: Fee Paid:

1. Property Address: 220 Gregory Blvd **2.** D/B/L/U: 3/73/2

3. Proposed Work: Reconfigure parking lot and tennis courts, and new pro shop **4.** Zone: CD-1M

5. Applicant Identification:

Applicant Name: Norwalk Country Club

Address: 220 Gregory Blvd, Norwalk, CT 06855

Phone Number: 203.838.7507 Ext. 119 Email: jnicaj@shorecc.com

Interest in Property: ☑ fee simple ☐ option ☐ lessee ☐ easement ☐ other (specify): _____

List primary contact for correspondence *if other than applicant* (Agent or Attorney):

Name: _____

Address: _____

Business Phone: _____ Email: _____

6. Property Owner, if different than applicant:

Owner Name: _____

Address: _____

Phone Number: _____ Email: _____

7. Project Information:

Please check the appropriate box to identify the plan or application that has resulted in this Coastal Site Plan Review:

- ☐ Coastal Site Plan for Zoning Compliance/Zoning Permit
- ☐ Subdivision or Resubdivision Application
- ☐ Special Permit or Special Exception Application
- ☐ Site Plan Review Application
- ☐ Variance Application
- ☐ Municipal Project (CGS Section 8-24)

6. Project Site Plans:

Please provide project site plans that clearly and accurately depict the following information, and check the appropriate boxes to indicate that the plans are included in this application:

- ☑ Project location
- ☑ Existing and proposed conditions, including buildings and topography
- ☑ **All** coastal resources on and contiguous to the site
- ☑ High tide line [as defined in CGS Section 22a-359(c)] and mean high water mark elevation contours (for parcels abutting coastal waters and/or tidal wetlands only)
- ☑ Soil erosion and sediment controls
- ☑ Storm water management & treatment practices
- ☑ Ownership and type of use on adjacent properties
- ☑ Reference datum (i.e., National Geodetic Vertical Datum, Mean Sea Level, etc.)
- ☑ Landscaping and planting plan (existing & proposed)
- ☑ Utility Plan (existing & proposed: water, drainage, sanitary sewers, electric & gas lines)
- ☑ Easements (utility, sight preservation, conservation, pedestrian)

7. Site Information:

a) Street Address or Geographical Description:
220 Gregory Avenue

b) Is project or activity proposed at a waterfront site (includes tidal wetlands frontage)? ○YES ○NO

c) Name of on-site, adjacent, or downstream coastal, tidal, or navigable waters, if applicable:
Norwalk Harbor to the west and south; Charles Creek to the east.

d) Identify and describe the existing land use in and adjacent to the site. Include description of any existing structures and significant features on the project site:
~~The property has been developed as the Shore and Country Club since 1908. Facilities at~~ the site include a club house, a 2 story bath house, tennis courts, a swimming pool facility, a beach area, recreational marina and associated parking. The entire parcel is approximately ~~8.416 acres. The site fronts the tidal waters along the west, south, and east.~~

e) Indicate the area of the project site: 2.22 acres **or** 96,857 square feet

f) Check the appropriate box below to indicate total land area of disturbance of the project or activity (please also see Question #9 regarding proposed stormwater best management practices):

- ○ Project or activity will disturb five (5) or more total acres of land area on the site. *Registration for CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities required.*
- ◉ Project or activity will disturb land, but less than five (5) total acres of land area would be disturbed. *A soil erosion and sedimentation control plan must be submitted.*
- ○ Project or activity will not disturb any land area.

g) Does the project include a shoreline flood and erosion control structure as defined in CGS section 22a-109(d)? ○Yes ○No

8. Description of Proposed Project or Activity:

Describe the proposed project or activity including its purpose and related activities such as site clearing, grading, demolition, and other site preparations; percentage of increase or decrease in impervious cover over existing conditions resulting from the project; phasing, timing and method of proposed construction; and new uses and changes from existing uses (*attach additional pages if necessary*):

The project involves the reconfiguration of the existing site to improve the functional layout of the property. Specifically, the existing tennis courts will be removed and reconstructed along the northeast corner of the property so that all of the facilities tennis courts will be proximate to each other. A new parking area will be constructed to the north of the existing club in the location of the existing two tennis courts. The proposed parking area will be more proximate to the existing club house which will provide better access to members and guests visiting the facility for events.

The existing pro-shop will also be demolished and rebuilt so that it is FEMA compliant. The area around the existing pro shop will also have landscaping installed. No significant change of grade will occur with any of the proposed site improvements. Stormwater management will be designed to meet the requirements of the City of Norwalk Engineering standards and the 2024 CTDEEP Stormwater Quality Manual.

9. Description of Proposed Stormwater Best Management Practices:

Describe the stormwater best management practices that will be utilized to ensure that the volume of runoff generated by the first inch of rainfall is retained on-site, especially if the site or stormwater discharge is adjacent to tidal wetlands. If runoff cannot be retained on-site, describe the site limitations that prevent such retention and identify how stormwater will be treated before it is discharged from the site. Also demonstrate that the loadings of total suspended solids from the site will be reduced by 80 percent on an average annual basis, and that post-development stormwater runoff rates and volumes will not exceed pre-development runoff rates and volumes (*attach additional pages if necessary*):

Stormwater management will include the installation of several vegetated bioswales and underground stormwater detention chambers in the area of the former tennis courts that are being removed. The proposed stormwater management system will meet the requirements of the City of Norwalk's stormwater management regulations the 2024 CTDEEP Stormwater Quality Manual.

10. Identification of Applicable Coastal Resources and Coastal Resource Policies:

Identify the coastal resources and associated policies that apply to the project by placing a check mark in the appropriate box(es) in the following table.

Coastal Resources	On-site	Adjacent	Off-site but within the influence of project	Not Applicable
General Coastal Resources* - Definition: CGS Section 22a-93(7); Policy: CGS Section 22a-92(a)(2)	☐	☐	☐	☐
Beaches & Dunes - Definition: CGS Section 22a-93(7)(C); Policies: CGS Sections 22a-92-(b)(2)(C) and 22a-92(c)(1)(K)	☑	☑	☐	☐
Bluffs & Escarpments - Definition: CGS Section 22a-93(7)(A); Policy: CGS Section 22a-92(b)(2)(A)	☐	☐	☐	☑
Coastal Hazard Area - Definition: CGS Section 22a-93(7)(H); Policies: CGS Sections 22a-92(a)(2), 22a-92(a)(5), 22a-92(b)(2)(F), 22a-92(b)(2)(J), and 22a-92(c)(2)(B)	☑	☑	☐	☐
Coastal Waters, Estuarine Embayments, Nearshore Waters, Offshore Waters - Definition: CGS Sections 22a-93(5), 22a-93(7)(G), and 22a-93(7)(K), and 22a-93(7)(L) respectively; Policies: CGS Sections 22a-92(a)(2) and 22a-92(c)(2)(A)	☑	☑	☐	☐
Developed Shorefront - Definition: CGS Section 22a-93(7)(I); Policy: 22a-92(b)(2)(G)	☑	☐	☐	☐
Freshwater Wetlands and Watercourses - Definition: CGS Section 22a-93(7)(F); Policy: CGS Section 22a-92(a)(2)	☐	☐	☐	☑
Intertidal Flats - Definition: CGS Section 22a-93(7)(D); Policies: 22a-92(b)(2)(D) and 22a-92(c)(1)(K)	☐	☐	☐	☑
Islands - Definition: CGS Section 22a-93(7)(J); Policy: CGS Section 22a-92(b)(2)(H)	☐	☐	☐	☑
Rocky Shorefront - Definition: CGS Section 22a-93(7)(B); Policy: CGS Section 22a-92(b)(2)(B)	☐	☐	☑	☐
Shellfish Concentration Areas - Definition: CGS Section 22a-93(7)(N); Policy: CGS Section 22a-92(c)(1)(I)	☐	☐	☐	☑
Shorelands - Definition: CGS Section 22a-93(7)(M); Policy: CGS Section 22a-92(b)(2)(I)	☐	☐	☐	☑
Tidal Wetlands - Definition: CGS Section 22a-93(7)(E); Policies: CGS Sections 22a-92(a)(2), 22a-92(b)(2)(E), and 22a-92(c)(1)(B)	☑	☑	☐	☐

* General Coastal Resource policy is applicable to all proposed activities

11. Consistency with Applicable Coastal Resource Policies and Standards:

Describe the location and condition of the coastal resources identified in Question #10 and explain how the proposed project or activity is consistent with all of the applicable coastal resource policies and standards; also see adverse impacts assessment in Question #14 below (*attach additional pages if necessary*):

See Additional Page(s)

12. Identification of Applicable Coastal Use and Activity Policies and Standards:

Identify all coastal policies and standards in or referenced by CGS Section 22a-92 applicable to the proposed project or activity:

- [x] General Development* - CGS Sections 22a-92(a)(1), 22a-92(a)(2), and 22a-92(a)(9)
- [x] Water-Dependent Uses** - CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A); Definition CGS Section 22a-93(16)
- [ ] Ports and Harbors - CGS Section 22a-92(b)(1)(C)
- [ ] Coastal Structures and Filling - CGS Section 22a-92(b)(1)(D)
- [ ] Dredging and Navigation - CGS Sections 22a-92(c)(1)(C) and 22a-92(c)(1)(D)
- [ ] Boating - CGS Section 22a-92(b)(1)(G)
- [ ] Fisheries - CGS Section 22a-92(c)(1)(I)
- [x] Coastal Recreation and Access - CGS Sections 22a-92(a)(6), 22a-92(C)(1)(j) and 22a-92(c)(1)(K)
- [ ] Sewer and Water Lines - CGS Section 22a-92(b)(1)(B)
- [ ] Fuel, Chemicals and Hazardous Materials - CGS Sections 22a-92(b)(1)(C), 22a-92(b)(1)(E) and 22a-92(c)(1)(A)
- [ ] Transportation - CGS Sections 22a-92(b)(1)(F), 22a-92(c)(1)(F), 22a-92(c)(1)(G), and 22a-92(c)(1)(H)
- [ ] Solid Waste - CGS Section 22a-92(a)(2)
- [ ] Dams, Dikes and Reservoirs - CGS Section 22a-92(a)(2)
- [ ] Cultural Resources - CGS Section 22a-92(b)(1)(J)
- [ ] Open Space and Agricultural Lands - CGS Section 22a-92(a)(2)

* General Development policies are applicable to all proposed activities

** Water-dependent Use policies are applicable to all activities proposed at waterfront sites, including those with tidal wetlands frontage.

13. Consistency With Applicable Coastal Use Policies and Standards:

Explain how the proposed activity or use is consistent with all of the applicable coastal use and activity policies and standards identified in Question #12. **For projects proposed at waterfront sites (including those with tidal wetlands frontage)**, particular emphasis should be placed on the evaluation of the project's consistency with the water-dependent use policies and standards contained in CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A) -- also see adverse impacts assessment in Question #15 below (attach additional pages if necessary):

The project is consistent with applicable policies (referenced in Part V) as it is consistent with the lands capabilities and it does not impact any existing coastal resources.

14. Identification of Potential Adverse Impacts on Coastal Resources: (*Must be completed for ALL projects.*)
Identify the adverse impact categories below that apply to the proposed project or activity.

The **'applicable'** column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(15). If an adverse impact **may result** from the proposed project or activity, please use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Coastal Resources	Applicable	Not Applicable
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☑
Degrading existing circulation patterns of coastal water through the significant alteration of patterns of tidal exchange or flushing rates, freshwater input, or existing basin characteristics and channel contours - CGS Section 22a-93(15)(B)	☐	☑
Degrading natural or existing drainage patterns through the significant alteration of groundwater flow and recharge and volume of runoff - CGS Section 22a-93(15)(D)	☐	☑
Degrading natural erosion patterns through the significant alteration of littoral transport of sediments in terms of deposition or source reduction - CGS Section 22a-93(15)(C)	☐	☑
Degrading visual quality through significant alteration of the natural features of vistas and view points - CGS Section 22a-93(15)(F)	☐	☑
Degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen or salinity - CGS Section 22a-93(15)(A)	☐	☑
Degrading or destroying essential wildlife, finfish, or shellfish habitat through significant alteration of the composition, migration patterns, distribution, breeding or other population characteristics of the natural species or significant alterations of the natural components of the habitat - CGS Section 22a-93(15)(G)	☐	☑
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☑

15. Identification of Potential Adverse Impacts on Water-dependent Uses: ***(Complete only if the project/activity is proposed at a waterfront site.)***

a) Identify the adverse impact categories below that apply to the proposed project or activity. The applicable column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(17). If an adverse impact **may result** from the proposed project or activity, use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Future Water-dependent Development Opportunities and Activities	Applicable	Not Applicable
Locating a non-water-dependent use at a site physically suited for or planned for location of a water-dependent use - CGS Section 22a-93(17)	☐	☑
Replacing an existing water-dependent use with a non-water-dependent use - CGS Section 22a-93(17)	☐	☑
Siting a non-water-dependent use which would substantially reduce or inhibit existing public access to marine or tidal waters - CGS Section 22a-93(17)	☐	☑

b) Identification of existing and/or proposed Water-dependent Uses:

Describe the features or characteristics of the proposed activity or project that qualify as water-dependent uses as defined in CGS Section 22a-93(16). If general public access to coastal waters is provided, please identify the legal mechanisms used to ensure public access in perpetuity, and describe any provisions for parking or other access to the site and proposed amenities associated with the access (e.g., boardwalk, benches, trash receptacles, interpretative signage, etc.) *:

There is an existing recreational boat marina at the site. No other improvements or changes to the existing facility which would represent a water dependent use are being proposed. No changes are being proposed waterward of the high tide line as part of this proposal.

*If there are no water-dependent use components, describe how the project site is not appropriate for the development of a water-dependent use.

16. Mitigation of Potential Adverse Impacts:

Explain how all potential adverse impacts on coastal resources and/or future water-dependent development opportunities and activities identified in Questions #14 & #15 have been avoided, eliminated, or minimized (*attach additional pages if necessary*):

The proposed project will not have any potential adverse impacts on any coastal resources and will not preclude any future water dependent development opportunities. The property was developed as the Shore & Country Club in 1908. The proposed changes do not expand the site disturbance at the property and only consist of the redevelopment of the existing land. Mitigation will include the use of erosion and sediment controls during the construction phase of the project. Long-term mitigation includes the installation of stormwater management facilities that will meet the requirements of the City of Norwalk Engineering Standards and the 2024 CTDEEP stormwater quality manual. The project is consistent with the Connecticut Coastal Management Manual since it does not degrade water quality, degrade circulation patterns, degrade erosion or drainage patters through significant alteration of groundwater flow, degrade any natural features, increase the hazard of coastal flooding, or degrade wildlife and fin fish habitat.

17. Remaining Adverse Impacts:

Explain why any remaining adverse impacts resulting from the proposed activity or use have not been mitigated and why the project as proposed is consistent with the Connecticut Coastal Management Act (*attach additional pages if necessary*):

There are no remaining adverse impacts associated with this proposal. All aspects of the project are being constructed in areas of the property that have all ready been disturbed as part of the past development of the club. Proposed stormwater mitigation measures will attenuate any impervious areas associated with this application.

By signing this application, the applicant or his/her agent certifies that they are familiar with the information provided in this application and are aware of the penalties for obtaining a permit through deception or by submission of inaccurate or misleading information.

By signing this application, permission is hereby given to necessary and proper inspection of the subject property by the Commissioners and designated staff of the Commission or consultants to the Commission, at reasonable times, during the pendency of the application.

Applicant's Signature: _____ **DATE:** _____

Agent's Signature: _____ **DATE:** _____

Instructions for Coastal Site Plan Review Application

Notification of Neighbors

Coastal Site Plan Reviews require the applicant make three actions to notice to neighbors during the review of the application: 1) initial notification of the application submittal, 2) notice of public hearing (if applicable), and 3) legal notice of the public hearing in the newspaper (if applicable).

1) **Notice of Application Submittal:** ALL applications shall notify *by a certificate of mailing* the owners of land withing 100 feet of the subject parcel *within ten (10) days of submitting an application* to the Planning & Zoning Commission. The name of the owners shall be taken from the latest Tax Assessor records. *Proof of mailings shall be evidenced by providing a certificate of mailing* that must be submitted to the Planning & Zoning staff immediately following mailing. See Sample Letter below.
2) **Public Hearing Notice:** Any application for which a public hearing is required, the applicant shall notify *by certified mail, return receipt requested at least ten (10) days prior to the public hearing*, the owners of land that abut or are directly across the street from the subject parcel. The name of the owners shall be taken from the latest Tax Assessor records. See Sample Letter below.
   When a condominium is located across the street or abuts the subject proposal notification may be sent to the condominium association in lieu of the individual unit owners. Evidence of certified mailings shall be submitted by the applicant on or before the public hearing date.
3) **Legal Notice Payment:** When a public hearing is required, applicants shall be responsible for payment of three legal notices in The Hour newspaper. Two notices will advertise the application's public hearing date and one will advertise the Commission's action on the application.
   The Planning & Zoning staff will provide the required legal notices to The Hour. Applicants must contact The Hour at the number given below to arrange for payment in advance of the publication date.
   Classified Advertising Manager
   The HOUR
   Phone: (203) 354-1100 or 846-3281
   Fax: (203) 846 – 9897

Application Decision Publication

Decisions on ALL Coastal Site Review Applications must be published in The Hour. All application decisions must be published as a Legal Notice in The Hour. The applicant is responsible for payment of the Legal Notice of Decision. The Planning & Zoning staff will provide the required legal notices to The Hour. Applicants must contact The Hour at the number given below to arrange for payment.
Classified Advertising Manager
The HOUR
Phone: (203) 354-1100 or 846-3281
Fax: (203) 846 – 9897

Sample Letter: APPLICATION SUBMITTAL NOTIFICATION

Dear _____,

Be advised that _____ has applied for a Coastal Site Plan
(Applicant)

application for property located at the following address: _____

_____
(Street name and number and District, Block and Lot numbers)

The proposal is for _____
(Description of Proposal)

_____

You are being notified because your property abuts the property or is located directly across the street from the subject parcel. The application is on file in the Planning & Zoning Office located at City Hall, 125 East Avenue, Room 129, Norwalk, Connecticut 06856. The application materials can be reviewed on the City webpage at https://www.norwalkct.gov/1746/Pending-Application-Materials. If you have any questions regarding this application, you can email the staff person noted on the pending application webpage or you can call the Planning & Zoning Office at (203) 854-7780.

_____
Signature of applicant

Applicant must sign above and provide contact information below.
(THIS FORM IS TO BE COMPLETED BY APPLICANT)

Sample Letter: PUBLIC HEARING NOTIFICATION

Dear _____,

Be advised that **[Applicant Name]** has applied for a Coastal Site Plan Review application for property located at the following address: **[Project Address – street name and number]** and **[District/Block/Lot number]**.

The proposal is for **[Description of Proposal]**.

The Norwalk Planning & Zoning Commission will conduct a public hearing on this proposal on **[Day, Date, Time, and Location of Public Hearing].**

You are being notified because your property abuts the property or is located directly across the street from the subject parcel. The application is on file in the Planning & Zoning Office located at City Hall, 125 East Avenue, Room 129, Norwalk, Connecticut 06856. The application materials can be reviewed on the City webpage at https://www.norwalkct.gov/1746/Pending-Application-Materials. If you have any questions regarding this application, you can email the staff person noted on the pending application webpage or you can call the Planning & Zoning Office at (203) 854-7780.

_____
Signature of applicant

Applicant must sign above and provide contact information below.
(THIS FORM IS TO BE COMPLETED BY APPLICANT)

11. CONSISTENCY WITH APPLICABLE COASTAL RESOURCE POLICIES AND STANDARDS

LOCATION AND CONDITION OF COASTAL RESOURCES

The Shore & Country Club, located at 220 Gregory Boulevard on the northern shore of Long Island Sound in Norwalk, Connecticut, contains and is adjacent to a range of coastal resources as defined by CGS §22a-93(7). These include:

1. Wetlands
    - Location: Tidal wetlands are present along the southern and eastern perimeters of the club's waterfront property, primarily in low-lying zones adjacent to Charles Creek and Norwalk Harbor.
    - Condition: These wetlands are in fair to good ecological condition, supporting native marsh grasses and sedges, functioning as habitat, storm buffers, and water filtration zones.
2. Beaches
    - Location: Sandy beach areas are located along the immediate shoreline fronting Long Island Sound and along the Harbor shoreline within the property.
    - Condition: The beaches are well-maintained, though subject to periodic storm-related erosion and minor debris deposition. They support shorebird activity and have seasonal recreational use.
3. Dunes
    - Location: Low dune formations exist behind beach areas, forming a transitional buffer between upland lawns and shoreline.
    - Condition: The dunes are in stable condition, vegetated with American beachgrass (Ammophila breviligulata) and serving as natural flood protection features.
4. Tidal Flats
    - Location: Intertidal flats are exposed at low tide along the edge of Charles Creek and parts of Norwalk Harbor within view of the site.
    - Condition: These flats are ecologically productive, supporting invertebrates, wading birds, and fish nurseries, with no proposed impact from site activities.
5. Estuarine Waters
    - Location: The property is bordered on two sides by the estuarine waters of Norwalk Harbor and Long Island Sound.
    - Condition: These waters are of generally good quality, supporting shellfish beds, recreational boating, and diverse marine life. No direct discharge or waterward construction is proposed.Consistency with Coastal Resource Policies and Project Implementation

The proposed project is fully consistent with the Connecticut Coastal Management Act (CCMA), specifically the policy framework under CGS §22a-92, as follows:

1. Wetlands Protection (CGS §22a-92(a)(2), (b)(1)(D))
    - Policy Objective: Preserve and protect tidal wetlands as ecological, flood attenuation, and water quality resources.
    - Consistency: No activities are proposed within or adjacent to delineated wetlands. A buffer is maintained, and stormwater BMPs will prevent sedimentation and protect wetland functions.
2. Beach Conservation (CGS §22a-92(b)(2)(D))
    - Policy Objective: Preserve beaches for ecological and recreational purposes, manage erosion, and prevent overuse.
    - Consistency: The project does not disturb beach areas. Existing access is maintained, and educational signage and erosion control measures will be implemented where needed.
3. Dune Preservation (CGS §22a-92(b)(2)(C))
    - Policy Objective: Maintain dune systems as storm surge buffers and ecological features.
    - Consistency: No grading or construction will occur in dune areas. Vegetation is preserved, and access will be controlled to prevent degradation.
4. Tidal Flat Protection (CGS §22a-92(b)(2)(B))
    - Policy Objective: Protect tidal flats due to their high habitat value and productivity.
    - Consistency: The project avoids any alteration of intertidal flats. Construction activities are confined upland and timed to avoid sensitive periods, with strict runoff controls in place.
5. Estuarine Water Quality and Marine Resources (CGS §22a-92(a)(9), (c)(1)(B)
    - Policy Objective: Ensure water quality protection and preserve estuarine ecosystems.
    - Consistency: The project includes subsurface infiltration BMPs and vegetated swales to treat stormwater on-site before it enters the estuarine system. No dredging, filling, or direct discharge is proposed.

CONCLUSION:

The Shore & Country Club's proposed recreational improvements are consistent with the CCMA's policies for protecting coastal resources. The project enhances existing facilities without encroaching on sensitive environmental features, ensures stormwater quality management, and maintains the ecological and recreational integrity of the site's coastal setting.

220 Gregory Blvd



WEST COG

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Regional Map Viewer makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.



Map Scale: 1:2,780 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 2, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
238C	Hinckley-Urban land complex, 3 to 15 percent slopes	2.5	12.0%
306	Udorthents-Urban land complex	8.5	41.3%
313	Beaches, sand	0.9	4.6%
875	Pishagqua mucky silt loam, intertidal	0.3	1.6%
876	Pishagqua mucky silt loam, subtidal	0.6	2.7%
911	Noank fine sand, intertidal	2.0	9.9%
925	Water, dredge channel	1.8	8.7%
930	Anguilla sand, intertidal	2.6	12.6%
947	Sulfaquents, 0 to 2 percent slopes, very frequently flooded	1.3	6.2%
W	Water	0.1	0.5%
Totals for Area of Interest		**20.6**	**100.0%**

Property Location 220 GREGORY BLVD | Map ID 3/ 73/ 2/ 0/ | Bldg Name | Valuation Method C
Vision ID 9101 | Parcel Status: Active | Bldg # 1 of 4 | Sec # 1 of 1 | Card # 1 of 4 | Print Date 1/28/2024 1:19:24 AM

CURRENT OWNER

NORWALK COUNTRY CLUB

220 GREGORY BLVD

NORWALK CT 06855-0000

TOPO		UTILITIES		STRT / ROAD		LAND INFL.	
1	Level	2	Sewer	9	Paved with Cu		
		3	Water	5	Heavy		
		9	Gas & El				

SUPPLEMENTAL DATA

Alt Parcel I	0	Tax D #1	3 - 100%
Assr Map	24SW	Tax D #2	
Survey Ma	13795	Mixed Use	N
Dev Map		Grbge P/U	U:Unknown
Minor Flag		Sewer Bill	2:Sewer
Census	4000		
Gis ID	3-73-2-0	Associated P	

CURRENT ASSESSMENT

Norwalk, CT

Description	Code	Appraised	Assessed
COM LAND	2-1	13,264,830	9,285,380
COM BLDG	2-2	761,990	937,510
COM CONDO	2-4	1,007,740	705,420
Total		15,034,560	10,928,310

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
NORWALK COUNTRY CLUB	332	269	03-31-1948	U	I	0	25
NORWALK COUNTRY CLUB,	120	386	03-20-1908	U	I	0	25

PREVIOUS ASSESSMENTS (HISTORY)

Year	Use	I/F	Total Assessed	Outbuilding	Land	Total Value
2023	201V	I	937510	705420	9285380	10928310
2022	201V	I	898960	598070	8477970	9975000
2022	201V	I	899010	598070	8477920	9975000
2021	201V	F	899010	598070	8477920	9975000
2020	201V	I	6423186	598073	2953741	9975000

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD	NBHD Name	Neighborhood	Nbhd.	
0001			C451	S. 95 W. EAST AVE

NOTES

SHORE & COUNTRY CLUB HOUSE

NORWALK COUNTRY CLUB 2023 EST GATED/NO TRESPASSING

RESTRIC=FLOODPLAINRESID

MULTIPLE HEAT SYSTEMS

2016 SITE IMPROVEMENT MAP FOR BATH

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	442,630
Appraised XF (B) Value (Bldg)	319,360
Appraised OB (B) Value (Bldg)	1,007,740
Appraised Land Value (Bldg)	13,264,830
Special Land Value	0
Total Appraised Parcel Value	15,034,560
Valuation Method	C
Exemption	0
Adjustment	
Total Appraised Parcel Value	15,034,560

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Est. Cost	Asr. Insp Da	Asr. % Cmpt	Comments
B17-0507	05-25-2017	ALT	Alteration	106,500	01-22-2018	100	Install 1 dumbwaiter
B16-1075	10-19-2016	AD	Addition	6,004,000	01-22-2018	100	replacement bathhou
D16-0032	08-22-2016	DE	Demolish	45,000	01-22-2018	100	Demo - beach house
B14-0279	04-16-2014	OT	Other	22,000	12-26-2014	100	Construct 23 X 22 pe
B12-0305	04-09-2012	OT	Other	40,000	06-05-2012	100	ALTERATION TO EX
B11-0842	10-07-2011	OT	Other	34,970	12-28-2012	100	MISCELLANEOUS;
B11-0307	05-03-2011	RF	Roofing	110,000			ROOFING/SIDING;

VISIT / CHANGE HISTORY

Date	Type	IS	ID	Cd	Purpost/Result
05-08-2023			ES	07	No Trespassing
12-16-2021					
12-16-2021			PK	84	Court Stipulation
12-11-2018			SS	81	Change - Hearing
10-25-2018			JV	86	Commercial Final Revi
01-22-2018			850	2	Permit Visit
12-15-2016			120	16	Map Maintenance

LAND LINE VALUATION SECTION

B	Use co	Description	Zone	D	Land	Land Type	Units		Unit Price	Sz. A	S.A.	Ac Di	Inf. Fac	Nbhd.	Adj	Notes	Special Pricing					Land Value
																	Special Pri		Special Calcs			
1	201V	Commercial I	A1	3	P		102,000	SF	8.44	1.000	C	1.000	1.00	C451	2.30			0	NHAR	1.50	1.000	2,970,030
1	201V	Commercial I			E		6.000	AC	746,000.0	1.000	0	1.000	1.00	C451	2.30			0			1.000	10,294,800
1	201V	Commercial I			P		3,105.000	FF	0.00	1.000	0	1.000	0.75		1.00	RESTRI		0			1.000	0
1	201V	Commercial I	A1	3	P		2,287.330	WF	0.00	1.000	0	1.000	1.00		1.00			0			1.000	0
Total Card Land Units							8.34	AC	Parcel Total Land Area:			8.34									Total Land Value	13,264,830

Property Location 220 GREGORY BLVD | Map ID 3/ 73/ 2/ 0/ | Bldg Name | Valuation Method C
Vision ID 9101 | Parcel Status: Active | Bldg # 1 of 4 | Sec # 1 of 1 | Card # 1 of 4 | Print Date 1/28/2024 1:19:24 AM

CONSTRUCTION DETAIL

Element	Cd	Description
Style	77	Clubs/Lodges
Model	94	Commercial
Grade	11	B
Stories:	2.50	
Occupancy	1.00	
Exterior Wall 1	25	Vinyl Siding
Exterior Wall 2		
Roof Structure	03	Gable
Roof Cover	07	Arch. Shingles
Interior Wall 1	05	Drywall
Interior Wall 2		
Interior Floor 1	14	Carpet
Interior Floor 2	03	Concrete
Heating Fuel	03	Gas
Heating Type	05	Hot Water
AC Percent	100	
Heat Percent	100	
Bldg Use	201V	Commercial Improved
Total Rooms	0	
Bedrooms	0	
Full Baths	10	
	0	
	11	
Heat/AC	01	Heat/AC Pkg
Frame	01	Wood
Plumbing	02	Average
Foundation	05	Stone
Partitions	02	Average
Wall Height	9.00	0.0000
% Sprinkler	0.00	

CONSTRUCTION DETAIL (CONTINUED)

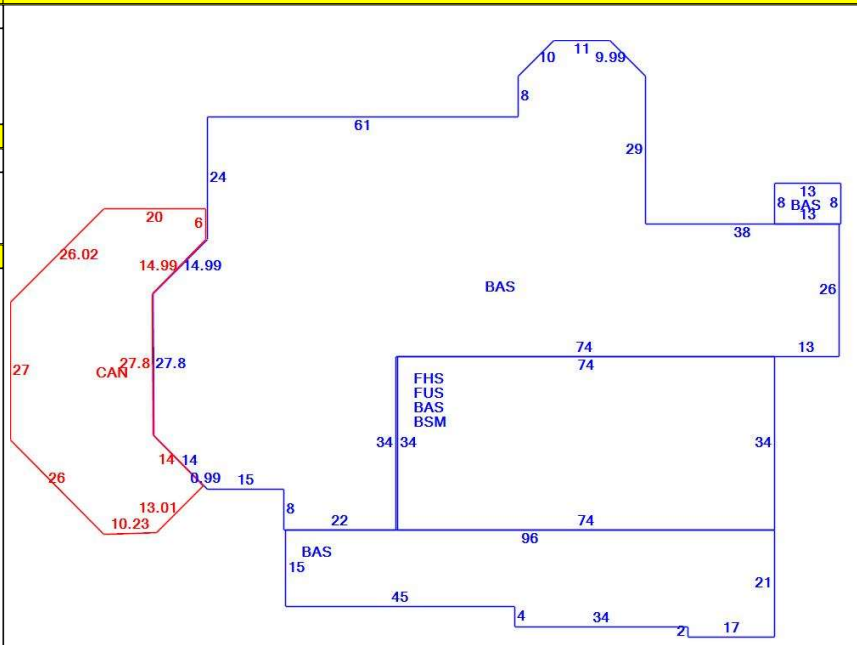
Element	Cd	Description
# of Heat Syste	3	
Insulation	2	Typical

MIXED USE

Code	Description	Percentage
201V	Commercial Improved	100
		0
		0

COST / MARKET VALUATION

Adjusted Base Rate	117.60
Section RCN	
Net Other Adj	
Replacement Cost	
Actual Year Built	1902
Effective Year Built	1995
Depreciation Code	E
Remodel Rating	
Year Remodeled	
Depreciation %	28
Functional Obsolescence	95
External Obsolescence	
Cost Trend Factor	1
Condition	
% Complete	
	5
Deprec Value	93,760
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	





OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	Su	Sub Type	L/B	Units	Unit Price	Year	Pct	Depre	Cnd.	Qu	Qual	Apprais Va
PAV1	Paving Asph.			L	150,	2.60	1970	50	0.00	5	3	1.00	195,000
GAR1	Garage	FR	Frame	L	1,09	30.00	1965	50	0.00	5	3	1.00	16,380
PAT1	Patio	CR	Concrete	L	1,18	10.00	1959	50	0.00	5	3	1.00	5,920
PAT1	Patio	CR	Concrete	L	168	10.00	1959	50	0.00	5	3	1.00	840
SHD1	Shed	CB	CindBk/Fr	L	72	17.50	1965	50	0.00	5	3	1.00	630
SLIP	Boat Slip	M	Boat Slip	L	74	10500.00		50	0.00	5	3	1.00	388,500
TEN	Tennis Court			L	1	45000.00	1950	50	0.00	5	3	1.00	225,000
SHD1	Shed	FR	Frame	L	328	18.50	1940	50	0.00	5	3	1.00	3,030
SHD1	Shed	FR	Frame	L	81	18.50	1960	75	0.00	6	3	1.00	1,120
PAT1	Patio	CR	Concrete	L	2,40	10.00	1990	50	0.00	5	3	1.00	12,000

BUILDING SUB-AREA SUMMARY SECTION

Subarea	Description	Liv./Leasable	Gross	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	11,208	11,208	11,208	117.60	1,318,083
BSM	Basement	0	2,516	881	41.18	103,607
CAN	Canopy	0	1,655	83	5.90	9,761
FHS	Finished Half Story	1,258	2,516	1,258	58.80	147,943
FUS	Finished Upper Story	2,516	2,516	2,516	117.60	295,887
	Ttl Gross Liv / Lease Area	14,982	20,411	15,946		

Property Location GREGORY BLVD | Map ID 3/ 73/ 2/ 0/ | Bldg Name | Valuation Method C
Vision ID 9101 | Parcel Status: Active | Bldg # 2 of 4 | Sec # 1 of 1 | Card # 2 of 4 | Print Date 1/28/2024 1:19:24 AM

CURRENT OWNER

NORWALK COUNTRY CLUB

220 GREGORY BLVD

NORWALK CT 06855-0000

TOPO		UTILITIES		STRT / ROAD		LAND INFL.	
1	Level	2	Sewer	9	Paved with Cu		
		3	Water	5	Heavy		
		9	Gas & El				

SUPPLEMENTAL DATA

Alt Parcel I	0	Tax D #1	3 - 100%
Assr Map	24SW	Tax D #2	
Survey Ma	13795	Mixed Use	N
Dev Map		Grbge P/U	U:Unknown
Minor Flag		Sewer Bill	2:Sewer
Census	4000		
Gis ID	3-73-2-0	Associated P	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
COM LAND	2-1	13,264,830	9,285,380
COM BLDG	2-2	761,990	937,510
COM CONDO	2-4	1,007,740	705,420
Total		15,034,560	10,928,310

Norwalk, CT

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
NORWALK COUNTRY CLUB	332	269	03-31-1948	U	I	0	25
NORWALK COUNTRY CLUB,	120	386	03-20-1908	U	I	0	25

PREVIOUS ASSESSMENTS (HISTORY)

Year	Use	I/F	Total Assessed	Outbuilding	Land	Total Value
2023	201V	I	937510	705420	9285380	10928310
2022	201V	I	898960	598070	8477970	9975000
2022	201V	I	899010	598070	8477920	9975000
2021	201V	F	899010	598070	8477920	9975000
2020	201V	I	6423186	598073	2953741	9975000

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD	NBHD Name	Neighborhood	Nbhd.
0001			

NOTES

SHORE & COUNTRY CLUB

RESTRIC=FLOODPLAINRESID DEVLP=17 LOTS X

$150K+WTRFRT

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	442,630
Appraised XF (B) Value (Bldg)	319,360
Appraised OB (B) Value (Bldg)	1,007,740
Appraised Land Value (Bldg)	13,264,830
Special Land Value	0
Total Appraised Parcel Value	15,034,560
Valuation Method	C
Exemption	0
Adjustment	
Total Appraised Parcel Value	15,034,560

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Est. Cost	Asr. Insp Da	Asr. % Cmpt		Comments

VISIT / CHANGE HISTORY

Date	Type	IS	ID	Cd	Purpost/Result
10-25-2018			JV	86	Commercial Final Revi
01-25-2018			850	85	Data Update

LAND LINE VALUATION SECTION

B	Use co	Description	Zone	D	Land	Land Type	Units		Unit Price	Sz. A	S.A.	Ac Di	Inf. Fac	Nbhd.	Adj	Notes	Special Pricing					Land Value
																	Special Pri		Special Calcs			
2	201V	Commercial I	A1	3	P		0	SF	0.00	1.000	0	1.000	1.00		1.00			0			1.000	0
Total Card Land Units							0.00	AC	Parcel Total Land Area:			8.34									Total Land Value	0

CONSTRUCTION DETAIL

Element	Cd	Description
Style	P1	Pavilion
Model	94	Commercial
Grade	11	B
Stories:	2.5	
Occupancy	1.00	
Exterior Wall 1	14	Wood Shingle
Exterior Wall 2	06	Board & Batten
Roof Structure	03	Gable
Roof Cover	07	Arch. Shingles
Interior Wall 1	05	Drywall
Interior Wall 2		
Interior Floor 1	22	Tile
Interior Floor 2	15	Quarry Tile
Heating Fuel	03	Gas
Heating Type	04	Forced Air
AC Percent	100	
Heat Percent	100	
Bldg Use	201V	Commercial Improved
Total Rooms	12	
Bedrooms	0	
Full Baths	2	
	12	
	25	
Heat/AC	01	Heat/AC Pkg
Frame	06	Fireproof Stl
Plumbing	03	Above Avg
Foundation	08	Poured Conc
Partitions	03	Above Average
Wall Height	11.00	0.0000
% Sprinkler	100.00	

CONSTRUCTION DETAIL (CONTINUED)

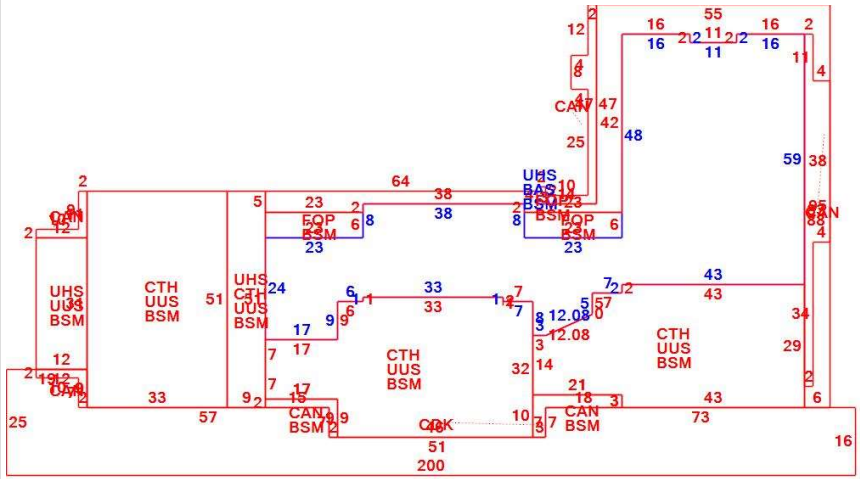
Element	Cd	Description
# of Heat Syste	2	
Insulation	3	Extensive

MIXED USE

Code	Description	Percentage
201V	Commercial Improved	100
		0
		0

COST / MARKET VALUATION

Adjusted Base Rate	493.33
Section RCN	
Net Other Adj	
Replacement Cost	
Actual Year Built	2017
Effective Year Built	2023
Depreciation Code	G
Remodel Rating	
Year Remodeled	
Depreciation %	0
Functional Obsolescence	95
External Obsolescence	
Cost Trend Factor	1
Condition	
% Complete	
	5
Deprec Value	341,680
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	





OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	Su	Sub Type	L/B	Units	Unit Price	Year	Pct	Depre	Cnd.	Qu	Qual	Apprais Va
SPL1	InGround Po	VN	Vinyl	L	3,36	45.00	1970	50	0.00	5	3	1.00	75,600
SPL1	InGround Po	VN	Vinyl	L	648	45.00	1970	50	0.00	5	3	1.00	14,580
DOC	Dock	MD	Medium	L	1,05	94.00	1959	50	0.00	5	3	1.00	49,630
DOC	Dock	MD	Medium	L	320	94.00	1959	50	0.00	5	3	1.00	15,040
ELV1	Commercial		Pass Elev	B	2	25000.00	2017	50	1.00	5	4	1.10	27,500
SPR	Sprinklers	CS	Conceiled	B	10,3	5.50	2017	50	1.00	5	4	1.10	31,240
SPR	Sprinklers	WT	Wet	B	18,0	5.00	2017	50	1.00	5	4	1.10	49,620
DW	Dumbwaiter		Electric	B	2	10000.00	2017	50	1.00	5	4	1.10	11,000
FDN	Foundation	CE	Res Floo	B	14,1	100.00	2017	50	1.00	5	4	1.10	200,000

BUILDING SUB-AREA SUMMARY SECTION

Subarea	Description	Liv./Leasable	Gross	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	4,270	4,270	4,270	493.33	2,106,533
BSM	Basement	0	12,033	4,212	172.69	2,077,919
CAN	Canopy	0	684	34	24.52	16,773
CDK	Concrete Deck	0	3,014	301	49.27	148,493
CTH	Cathedral	0	5,524	552	49.30	272,320
FOP	Framed Open Porch	0	1,735	260	73.93	128,267
UHS	Unfinished Half Story	0	5,101	1,275	123.31	629,000
UUS	Unfinished Upper Story	0	5,896	2,948	246.67	1,454,346
	Ttl Gross Liv / Lease Area	4,270	38,257	13,852		

Property Location GREGORY BLVD | Map ID 3/ 73/ 2/ 0/ | Bldg Name | Valuation Method C
Vision ID 9101 | Parcel Status: Active | Bldg # 3 of 4 | Sec # 1 of 1 | Card # 3 of 4 | Print Date 1/28/2024 1:19:25 AM

CURRENT OWNER

NORWALK COUNTRY CLUB

220 GREGORY BLVD

NORWALK CT 06855-0000

TOPO		UTILITIES		STRT / ROAD		LAND INFL.	
1	Level	2	Sewer	9	Paved with Cu		
		3	Water	5	Heavy		
		9	Gas & El				

SUPPLEMENTAL DATA

Alt Parcel I	0	Tax D #1	3 - 100%
Assr Map	24SW	Tax D #2	
Survey Ma	13795	Mixed Use	N
Dev Map		Grbge P/U	U:Unknown
Minor Flag		Sewer Bill	2:Sewer
Census	4000		
Gis ID	3-73-2-0	Associated P	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
COM LAND	2-1	13,264,830	9,285,380
COM BLDG	2-2	761,990	937,510
COM CONDO	2-4	1,007,740	705,420
Total		15,034,560	10,928,310

Norwalk, CT

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
NORWALK COUNTRY CLUB	332	269	03-31-1948	U	I	0	25
NORWALK COUNTRY CLUB,	120	386	03-20-1908	U	I	0	25

PREVIOUS ASSESSMENTS (HISTORY)

Year	Use	I/F	Total Assessed	Outbuilding	Land	Total Value
2023	201V	I	937510	705420	9285380	10928310
2022	201V	I	898960	598070	8477970	9975000
2022	201V	I	899010	598070	8477920	9975000
2021	201V	F	899010	598070	8477920	9975000
2020	201V	I	6423186	598073	2953741	9975000

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD	NBHD Name	Neighborhood	Nbhd.
0001			

NOTES

SHORE & COUNTRY CLUB

RESTRIC=FLOODPLAINRESID DEVLP=17 LOTS X

$150K+WTRFRT

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	442,630
Appraised XF (B) Value (Bldg)	319,360
Appraised OB (B) Value (Bldg)	1,007,740
Appraised Land Value (Bldg)	13,264,830
Special Land Value	0
Total Appraised Parcel Value	15,034,560
Valuation Method	C
Exemption	0
Adjustment	
Total Appraised Parcel Value	15,034,560

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Est. Cost	Asr. Insp Da	Asr. % Cmpt		Comments

VISIT / CHANGE HISTORY

Date	Type	IS	ID	Cd	Purpost/Result

LAND LINE VALUATION SECTION

B	Use co	Description	Zone	D	Land	Land Type	Units		Unit Price	Sz. A	S.A.	Ac Di	Inf. Fac	Nbhd.	Adj	Notes	Special Pricing					Land Value
																	Special Pri		Special Calcs			
3	201V	Commercial I	A1	3	P		0	SF	0.00	1.000	0	1.000	1.00		1.00			0			1.000	0
Total Card Land Units							0.00	AC	Parcel Total Land Area:			8.34								Total Land Value		0

Property Location GREGORY BLVD | Map ID 3/ 73/ 2/ 0/ | Bldg Name | Valuation Method C
Vision ID 9101 | Parcel Status: Active | Bldg # 3 of 4 | Sec # 1 of 1 | Card # 3 of 4 | Print Date 1/28/2024 1:19:25 AM

CONSTRUCTION DETAIL

Element	Cd	Description
Style	77	Clubs/Lodges
Model	94	Commercial
Grade	07	C-
Stories:	2.00	
Occupancy	1.00	
Exterior Wall 1	08	Wood
Exterior Wall 2		
Roof Structure	03	Gable
Roof Cover	03	Asphalt Shingl
Interior Wall 1	04	Prefab Panel
Interior Wall 2		
Interior Floor 1	09	Pine/Soft Wood
Interior Floor 2	02	Minimum/Plywd
Heating Fuel	00	None
Heating Type	01	None
AC Percent	0	
Heat Percent	100	
Bldg Use	201V	Commercial Improved
Total Rooms	0	
Bedrooms	0	
Full Baths	2	
	0	
	2	
Heat/AC	00	None
Frame	01	Wood
Plumbing	02	Average
Foundation	08	Poured Conc
Partitions	02	Average
Wall Height	8.00	0.0000
% Sprinkler	0.00	

CONSTRUCTION DETAIL (CONTINUED)

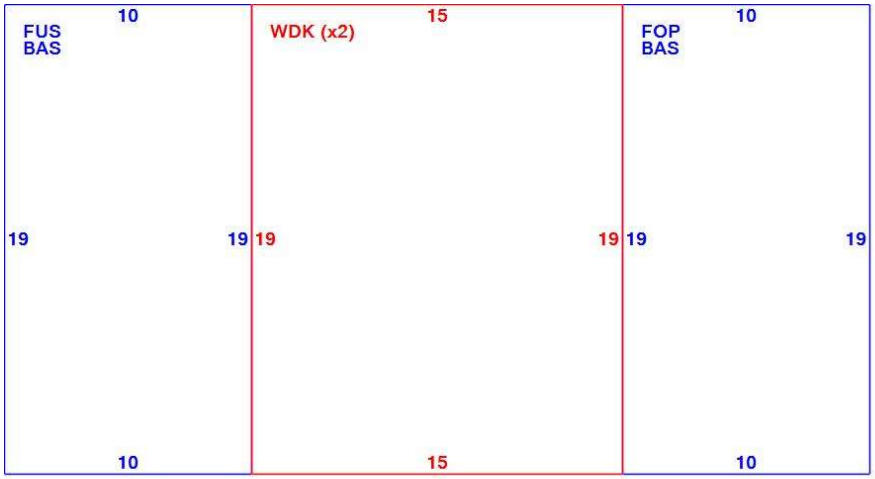
Element	Cd	Description
# of Heat Syste	0	
Insulation	2	Typical

MIXED USE

Code	Description	Percentage
201V	Commercial Improved	100
		0
		0

COST / MARKET VALUATION

Adjusted Base Rate	112.90
Section RCN	
Net Other Adj	
Replacement Cost	
Actual Year Built	1992
Effective Year Built	1998
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	25
Functional Obsolescence	95
External Obsolescence	
Cost Trend Factor	1
Condition	
% Complete	
	5
Deprec Value	3,770
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	Su	Sub Type	L/B	Units	Unit Price	Year	Pct	Depre	Cnd.	Qu	Qual	Apprais Va
SHD1	Shed	BR	Brick/Fra	L	150	21.50	1992	50	0.00	5	3	1.00	1,610
PAV1	Paving Asph.			L	2,20	2.60	1992	50	0.00	5	3	1.00	2,860

BUILDING SUB-AREA SUMMARY SECTION

Subarea	Description	Liv./Leasable	Gross	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	380	380	380	112.90	42,904
FOP	Framed Open Porch	0	190	29	17.23	3,274
FUS	Finished Upper Story	190	190	190	112.90	21,452
WDK	Wood Deck	0	570	68	13.47	7,677
	Ttl Gross Liv / Lease Area	570	1,330	667		



Property Location GREGORY BLVD | Map ID 3/ 73/ 2/ 0/ | Bldg Name | Valuation Method C
Vision ID 9101 | Parcel Status: Active | Bldg # 4 of 4 | Sec # 1 of 1 | Card # 4 of 4 | Print Date 1/28/2024 1:19:25 AM

CURRENT OWNER

NORWALK COUNTRY CLUB

220 GREGORY BLVD

NORWALK CT 06855-0000

TOPO		UTILITIES		STRT / ROAD		LAND INFL.	
1	Level	2	Sewer	9	Paved with Cu		
		3	Water	5	Heavy		
		9	Gas & El				

SUPPLEMENTAL DATA

Alt Parcel I	0	Tax D #1	3 - 100%
Assr Map	24SW	Tax D #2	
Survey Ma	13795	Mixed Use	N
Dev Map		Grbge P/U	U:Unknown
Minor Flag		Sewer Bill	2:Sewer
Census	4000		
Gis ID	3-73-2-0	Associated P	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
COM LAND	2-1	13,264,830	9,285,380
COM BLDG	2-2	761,990	937,510
COM CONDO	2-4	1,007,740	705,420
Total		15,034,560	10,928,310

Norwalk, CT

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
NORWALK COUNTRY CLUB	332	269	03-31-1948	U	I	0	25
NORWALK COUNTRY CLUB,	120	386	03-20-1908	U	I	0	25

PREVIOUS ASSESSMENTS (HISTORY)

Year	Use	I/F	Total Assessed	Outbuilding	Land	Total Value
2023	201V	I	937510	705420	9285380	10928310
2022	201V	I	898960	598070	8477970	9975000
2022	201V	I	899010	598070	8477920	9975000
2021	201V	F	899010	598070	8477920	9975000
2020	201V	I	6423186	598073	2953741	9975000

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD	NBHD Name	Neighborhood	Nbhd.
0001			

NOTES

SHORE & COUNTRY CLUB

RESTRIC=FLOODPLAINRESID DEVLP=17 LOTS X

$150K+WTRFRT

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	442,630
Appraised XF (B) Value (Bldg)	319,360
Appraised OB (B) Value (Bldg)	1,007,740
Appraised Land Value (Bldg)	13,264,830
Special Land Value	0
Total Appraised Parcel Value	15,034,560
Valuation Method	C
Exemption	0
Adjustment	
Total Appraised Parcel Value	15,034,560

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Est. Cost	Asr. Insp Da	Asr. % Cmpt		Comments

VISIT / CHANGE HISTORY

Date	Type	IS	ID	Cd	Purpost/Result

LAND LINE VALUATION SECTION

B	Use co	Description	Zone	D	Land	Land Type	Units		Unit Price	Sz. A	S.A.	Ac Di	Inf. Fac	Nbhd.	Adj	Notes	Special Pricing					Land Value
																	Special Pri		Special Calcs			
4	201V	Commercial I	A1	3	P		0	SF	0.00	1.000	0	1.000	1.00		1.00			0			1.000	0
Total Card Land Units							0.00	AC	Parcel Total Land Area:			8.34								Total Land Value		0

CONSTRUCTION DETAIL

Element	Cd	Description
Style	77	Clubs/Lodges
Model	94	Commercial
Grade	07	C-
Stories:	1.00	
Occupancy	1.00	
Exterior Wall 1	08	Wood
Exterior Wall 2		
Roof Structure	01	Flat
Roof Cover	04	Tar and Gravel
Interior Wall 1	05	Drywall
Interior Wall 2		
Interior Floor 1	09	Pine/Soft Wood
Interior Floor 2		
Heating Fuel	00	None
Heating Type	01	None
AC Percent	0	
Heat Percent	100	
Bldg Use	201V	Commercial Improved
Total Rooms	0	
Bedrooms	0	
Full Baths	0	
	0	
	0	
Heat/AC	00	None
Frame	01	Wood
Plumbing	02	Average
Foundation	01	Piers
Partitions	02	Average
Wall Height		0.0000
% Sprinkler	0.00	

CONSTRUCTION DETAIL (CONTINUED)

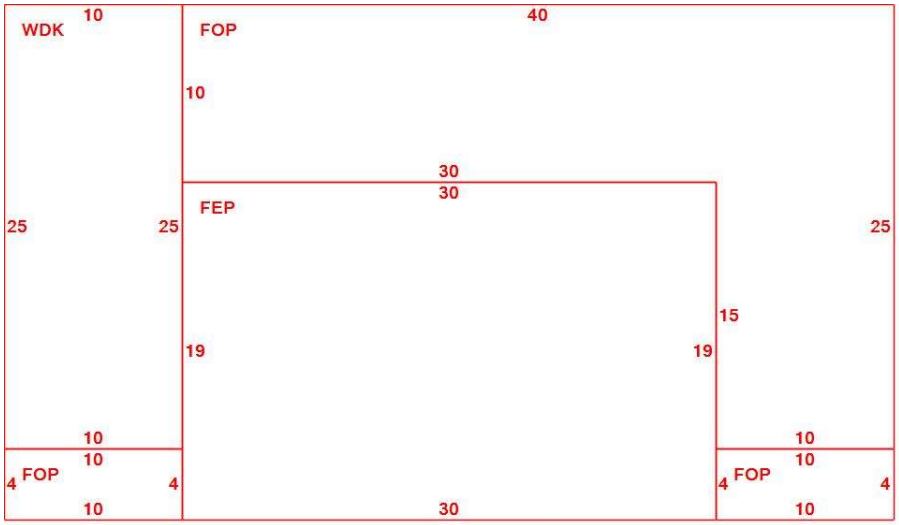
Element	Cd	Description
# of Heat Syste	0	
Insulation	2	Typical

MIXED USE

Code	Description	Percentage
201V	Commercial Improved	100
		0
		0

COST / MARKET VALUATION

Adjusted Base Rate	146.39
Section RCN	
Net Other Adj	
Replacement Cost	
Actual Year Built	1959
Effective Year Built	1980
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	43
Functional Obsolescence	95
External Obsolescence	
Cost Trend Factor	1
Condition	
% Complete	
	5
Deprec Value	3,420
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	Su	Sub Type	L/B	Units	Unit Price	Year	Pct	Depre	Cnd.	Qu	Qual	Apprais Va

BUILDING SUB-AREA SUMMARY SECTION

Subarea	Description	Liv./Leasable	Gross	Eff Area	Unit Cost	Undeprec Value
FEP	Enclosed Porch	0	570	342	87.83	50,064
FOP	Framed Open Porch	0	630	95	22.07	13,907
WDK	Wood Deck	0	250	30	17.57	4,392
Ttl Gross Liv / Lease Area		0	1,450	467		

STORMWATER MANAGEMENT REPORT

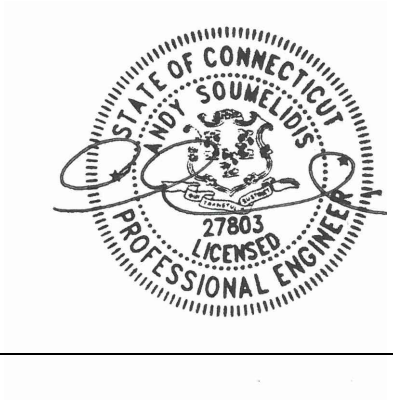
for

220 Gregory Boulevard

Norwalk, CT

July 12, 2024

Revised: May 19, 2025



Narrative:

The owner of 220 Gregory Boulevard, Norwalk, CT proposes to new tennis courts, pro shop and renovations to an existing parking lot and related site improvements on an existing developed property. The site currently supports the existing Shore & Country Club. Improvements are limited to the areas related to the construction of the above-listed structures and lawn areas as shown on the site plans prepared by LANDTECH.

The property is 8.415± acres in size. The property is located to the south of the Gregory Boulevard and Dorlon Street intersection. The property currently drains entirely to the Norwalk Harbor.

The NRCS soils map indicates the upland soils in the vicinity of the proposed improvements to be Udorthents-Urban land complex which is a well-drained soil in Hydrologic Soil Group B. The site also contains Hinckley-Urban land complex which is a well-drained soil in Hydrologic Soil Group A.

The property drains entirely to the Norwalk Harbor, therefore no reduction of the discharge rate for the 2, 10, 25, 100-year storm events is proposed, only water quality for the impervious areas. This will be achieved through the implementation of a proposed underground detention system. Runoff from the renovated parking areas and proposed tennis courts will discharge to the proposed underground detention system via a system of catch basins and collection piping. Additional water quality volume will be provided by several proposed vegetated swales constructed in the landscape islands of the renovated parking lot. Discharge from areas of the renovated parking lot will discharge to the vegetated swales via sheet flow. Additionally, the site is currently serviced via an existing water quality chamber that is to remain.

Water quality for the site is currently provided via an existing water quality chamber which is to remain.

Table 1 summarizes the required and proposed water quality flow (WQF).

TABLE 1 – TOTAL WATER QUALITY VOLUME (WQv)		
	PRE-DEV/ REQUIRED	POST DEV
WATER QUALITY (cf)	6,911.34	8,478.20

It is our professional opinion that upon construction of the proposed improvements, stormwater discharge from the site will comply with the applicable rules and regulations of the City of Norwalk including the Norwalk Department of Public Works 2017 Stormwater Manual, as amended.

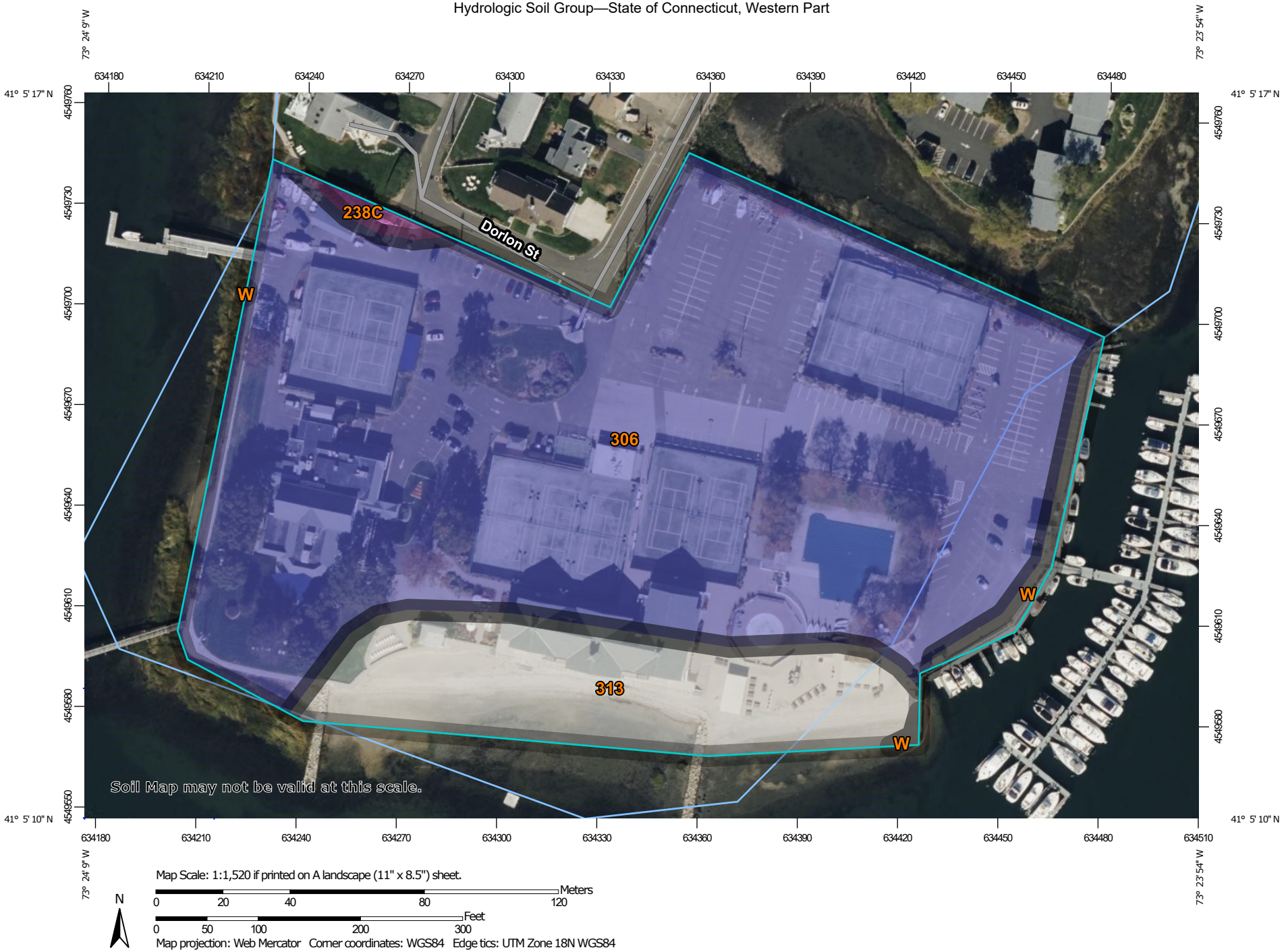
Exhibits:

- NRCS Soils Report
- Water Quality Flow Calculations
- Groundwater Recharge Calculations

NRCS Soils Report

518 RIVERSIDE AVENUE WESTPORT, CONNECTICUT 06880 P 203.454.2110 F 203.454.4971
WWW.LANDTECHCONSULT.COM

Hydrologic Soil Group—State of Connecticut, Western Part



Map Scale: 1:1,520 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 1, Sep 15, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
238C	Hinckley-Urban land complex, 3 to 15 percent slopes	A	0.1	0.6%
306	Udorthents-Urban land complex	B	7.5	82.0%
313	Beaches, sand		1.5	16.0%
W	Water		0.1	1.4%
Totals for Area of Interest			**9.2**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Water Quality Volume Calculations

518 RIVERSIDE AVENUE WESTPORT, CONNECTICUT 06880 P 203.454.2110 F 203.454.4971
WWW.LANDTECHCONSULT.COM

Project:	**220 Gregory Boulevard**	By:	**SM**	Date:	**7/11/2024**
	Norwalk, CT	Checked:	**AS**	Revised:	**5/19/2025**

1. Water Quality Volume

a. Compute volumetric runoff coefficient, R R = 0.05+0.009(*I*)

	Proposed	
Total Drainage Area, *A*	2.529	acres
Total Impervious Area	1.975	acres
Percentage of Impervious Area, *I*	78.1%	
Runoff Coefficient, *R*	0.753	

b. Compute water quality volume, WQV WQV = [(1")(*R*)(*A*)]/12

Total Project Area, *A*	2.529	acres
Runoff Coefficient, *R*	0.753	
Water Quality Volume, *WQV*	0.159	acre-foot
Water Quality Volume, *WQV*	**6,911.34**	**cf**

Vegetated Swale Volume

Swale Area=	4046 sf
Stone Depth=	3 ft
Voids=	40%
=	4855.2 cf

WQV in INF-1	**3,623.00**	**cf**	
WQV in Vegetated Swale	**4,855.20**	**cf**	
Total WQV	**8,478.20**	**cf**	***Provided***

Water Quality Volume provided > required

Groundwater Recharge Volume

518 RIVERSIDE AVENUE WESTPORT, CONNECTICUT 06880 P 203.454.2110 F 203.454.4971
WWW.LANDTECHCONSULT.COM

Project:	**220 Gregory Boulevard**	By:	**SM**	Date:	**7/11/2024**
	Norwalk, CT	Checked:	**AS**	Revised:	**5/19/2025**

1. Water Quality Volume

a. Compute volumetric runoff coefficient, R R = 0.05+0.009(*I*)

	Proposed		Existing	
Total Drainage Area, *A*	2.529	acres	2.529	acres
Total Impervious Area	1.975	acres	2.131	acres
Percentage of Impervious Area, *I*	78.1%		84.3%	
Runoff Coefficient, *R*	0.753		0.808	

b. Compute water quality volume, WQV WQV = [(1")(*R*)(*A*)]/12

Total Project Area, *A*	2.529	acres	
Runoff Coefficient, *R*	0.753		
Water Quality Volume, *WQV*	0.159	acre-foot	
Water Quality Volume, *WQV*	**6,911.34**	**cf**	***Required***
WQV Provided	**8,478.20**	**cf**	***Provided***

Water Quality Volume provided > required

2. Groundwater Recharge Volume

Compute the groundwater recharge volume (GRV) using the hydrologic soil group approach.

a. Read runoff depth to be recharged, *D* (Table 1-1 of 2017 Rev. City of Norwalk Stormwater Drainage Manual)

Runoff Depth to be recharged, *D*	0.35	inches	(B Soils)

b. Compute net increase in site imperviousness *I* (proposed) - *I* (existing

Net Increase, *Delta I*	-0.056

c. Compute groundwater recharge volume, *GRV* *GRV* = [(*D*)(*A*)(*I*)]/12

Runoff Depth to be recharged, *D*	0.35	inches
Total Drainage Area, *A*	2.529	acres
Net Increase, *Delta I*	-0.056	
GRV	-0.00410	acre-foot
GRV	**-178**	**cf**

Retention Volume provided = 8478 cf > -178 cf

Operations and Maintenance Plan

220 Gregory Boulevard, Norwalk, CT
July 12, 2024

Scope:

The purpose of the Operations and Maintenance Plan is to ensure that the existing and proposed stormwater components installed at **220 Gregory Boulevard.** are maintained in operational condition throughout the life of the project. The service procedures associated with this plan shall be performed as required by the parties legally responsible for their maintenance.

Recommended Frequency of Service:

As further defined below, all stormwater components should be checked on a periodic basis and kept in full working order. Ultimately, the required frequency of inspection and service will depend on runoff quantities, pollutant loading, and clogging due to debris. At a minimum, we recommend that all stormwater components be inspected and serviced twice per year, once before winter begins and once during spring cleanup.

Qualified Inspector:

The inspections must be completed by an individual experienced in the construction and maintenance of stormwater drainage systems. Once every five years the inspections must be completed by a professional engineer.

Service Procedures:

1. Catch Basins & Drainage Inlets:

    a. Catch basins and drainage inlets shall be completely cleaned of accumulated debris and sediments at the completion of construction.
    b. For the first year, catch basins and drainage inlets shall be inspected on a quarterly basis.
    c. Any accumulated debris within the catch basins/inlets shall be removed and any repairs as required.
    d. From the second year onward, visual inspections shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
    e. Accumulated debris within the catch basins/inlets shall be removed and repairs made as required.
    f. Accumulated sediments shall be removed at which time they are within 12 inches of the invert of the outlet pipe.
    g. Any additional maintenance required per the manufacturer's specifications shall also be completed.

2. Storm Drainage Piping and Manholes/Junction Boxes:

    a. All storm drainage piping shall be completely flushed of debris and accumulated sediment at the completion of construction.
    b. Manholes/Junction Boxes shall be inspected and repaired on an annual basis.
    c. Unless system performance indicates degradation of piping, comprehensive video inspection of storm drainage piping shall occur once every ten years.
    d. Any additional maintenance required per the manufacturer's specifications shall also be completed.

3. Stormwater Control Structures:

    a. All control structures (orifice, weir, etc.) shall be completely cleaned of accumulated debris and sediments at the completion of construction. Any repairs shall be performed.
    b. For the first year, control structures (orifice, weir, etc.) shall be inspected on a quarterly basis.
    c. Any accumulated debris shall be removed and any repairs made to the control structures (orifice, weir, etc.) as required.
    d. From the second year onward, visual inspections shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
    e. Accumulated debris shall be removed and repairs made as required.
    f. Any additional maintenance required per the manufacturer's specifications shall also be completed.

4. Drywells and Infiltration Systems:

    a. All drywells/infiltrators shall be completely cleaned of accumulated debris and sediments upon the completion of construction.
    b. For the first year, the drywells/infiltrators shall be inspected on a quarterly basis.
    c. Any accumulated debris within the drywells/infiltrators shall be removed and any repairs made to the units as required.
    d. From the second year onward, visual inspection shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
    e. Accumulated debris within the units shall be removed and repairs made as required.
    f. Any additional maintenance required per the manufacturer's specifications shall also be completed.

5. Roof Gutters:

    a. Remove accumulated debris and inspect for damage. Any damage should be repaired as required.

6. Bioretention/Biofiltration Basins and Rain Gardens:

    a. Bioretention/Biofiltration basins and rain gardens shall be cleaned of debris and sediments upon the completion of construction. Any filter media (bioretention soil) impacted by the construction activities shall be removed and replaced at this time.
    b. The filter media (bioretention soil) shall be visually inspected on a monthly basis for the first 6 months. Any erosion or displacement of the filter media (bioretention soil) shall be promptly repaired and the cause of the problem shall be identified and corrected. Monthly inspections shall continue until successful operation of the system is confirmed.
    c. Bioretention/Biofiltration areas and rain gardens with grass shall not be mowed more than twice during the growing season, preferably only in late October. More frequent mowing will eliminate native forbs and sedges from the meadow cover.
    d. Bioretention/Biofiltration areas and rain gardens with mulch and plantings shall be inspected during spring cleanup and one just prior to the winter season.
    e. All dead plants and missing mulch shall be replaced and any necessary pruning of vegetation shall be completed.
    f. The surface of these structures shall be inspected on a quarterly basis after the first six months of successful operation and after heavy runoff events (e.g. >3.0" in a 24-hour

period). One inspection shall occur immediately following the completion of winter sanding and subsequent sweeping operations, and one shall occur just prior to the winter season. Any accumulated debris and sediments shall be removed.

g. Check draining time of bioretention/biofiltration areas and rain gardens annually. Check within 72 hours after a minimum one inch rain event. If there is no standing water, infiltration is acceptable. If draining time is excessive, quantitatively determine infiltration rate. Use a double ring infiltrometer or monitor drop in water level after a significant storm. If infiltration rate <0.5 in. /hour, remedial action shall be taken.
h. A soil-core investigation may be used to identify the clogged portion of stormwater facility and depth of clogging. Remedial measures may include removal of clogged soil layer and replacement with suitable media, aeration, and mixing upper strata with lower soil strata. After corrective measures have been implemented, infiltration rate and draining time shall be retested.

Disposal of Debris and Sediment:

All debris and sediment removed from the stormwater structures and bioretention/biofiltration basins shall be disposed of legally. There shall be no dumping of silt or debris into or in proximity to any inland or tidal wetlands.

Maintenance Records:

The Owners(s) must maintain all records (logs, invoices, reports, data, etc.) and have them readily available for inspection at all times.

Operations and Maintenance Log (Page 1 of 3)

220 Gregory Boulevard, Norwalk, CT
July 12, 2024

Type of Inspection: ☐ Spring ☐ Fall ☐ Other

Inspector's Name:_____ Date of Inspection:_____

Affiliation:_____ Phone #:_____

Catch Basins & Drainage Inlets:

- Has accumulated debris been removed from grates? ☐ Yes ☐ No ☐ N/A
- Do any basins require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Have sumps been cleaned of sediment? ☐ Yes ☐ No ☐ N/A

Notes:

Storm Drainage Piping and Manholes/Junction Boxes:

- Has accumulated debris been removed? ☐ Yes ☐ No ☐ N/A
- Do any manholes require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Is there any evidence of stormwater piping failure? ☐ Yes ☐ No ☐ N/A
- Has a comprehensive video inspection been completed? ☐ Yes ☐ No ☐ N/A

Notes:

Stormwater Control Structures:

- Has accumulated debris been removed? ☐ Yes ☐ No ☐ N/A
- Are any repairs required? (identify below): ☐ Yes ☐ No ☐ N/A
- Have orifices and weirs been cleaned of debris? ☐ Yes ☐ No ☐ N/A

Notes:

Operations and Maintenance Log (Page 2 of 3)

220 Gregory Boulevard, Norwalk, CT
July 12, 2024

Drywells and Infiltration Systems:

- Have units been cleared of debris/sediments? ☐ Yes ☐ No ☐ N/A
- Do units require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Has draining times of system been verified? ☐ Yes ☐ No ☐ N/A

Notes:

Roof Gutters:

- Has accumulated debris been removed from gutters? ☐ Yes ☐ No ☐ N/A
- Do any gutters require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A

Notes:

Bioretention/Biofiltration Basins/Rain Gardens:

- Have basins been cleared of debris/sediments? ☐ Yes ☐ No ☐ N/A
- Have draining times of basins been verified? ☐ Yes ☐ No ☐ N/A
- Has vegetation been mowed (twice/year max.)? ☐ Yes ☐ No ☐ N/A
- Has plantings and mulch been replaced (twice/year)? ☐ Yes ☐ No ☐ N/A

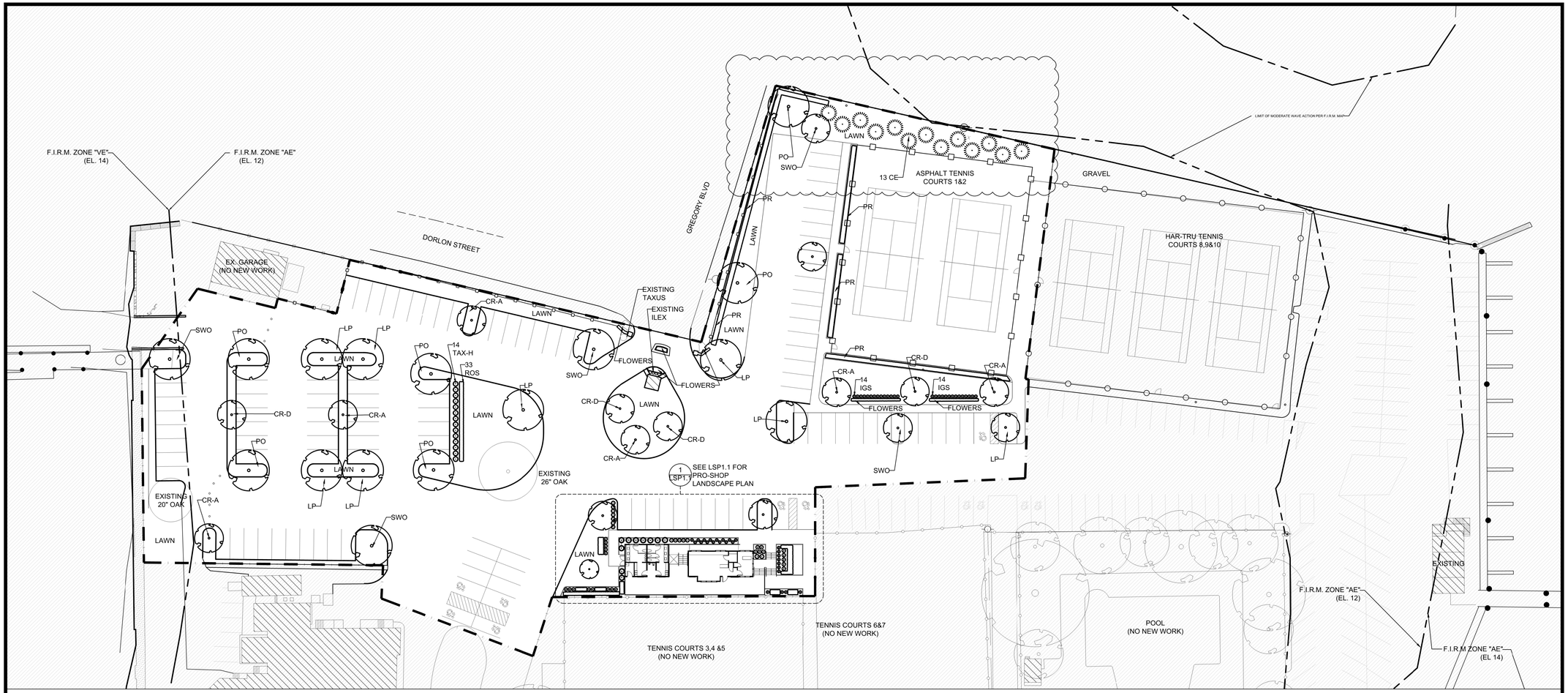
Notes:

Operations and Maintenance Log (Page 3 of 3)

220 Gregory Boulevard, Norwalk, CT
July 12, 2024

Please make additional notes/observations and particular concerns below. Also record any additional maintenance that has been performed:

Signature of Inspector: **Date:**



1 PROPOSED LANDSCAPE SITE PLAN
1/32" = 1'-0"

PLANT LIST

SYMBOL	QTY.	BOTANICAL NAME COMMON NAME	SIZE
TREES:			
CE	13	Juniperus Virginiana Brodie Eastern Red Cedar	8'-9' HT.
CR-A	6	Malus - High Branched Adams Crabapple	2.5"-3" cal
CR-D	4	Malus - High Branched Donald Wyman Crabapple	2.5"-3" cal
LP	8	Platanus Acerifolia Exclamation Plane Tree	3.5"-4" cal
PO	6	Quercus Palustris Pin Oak	3.5"-4" cal
SWO	5	Quercus Bicolor Swamp White Oak	3.5"-4" cal

SYMBOL	QTY.	BOTANICAL NAME COMMON NAME	SIZE
SHRUBS:			
IGS	28	Iex Glabra Shamrock Shamrock Inkberry Holly	5 gal.
PR	209	Ligustrum Privet	3.5'-4' hgt.
ROS	33	Rosa Knock Out Light Pink Knock Out Rose	3 gal.
TAX-H	14	Taxus Media Hatfieldii Hatfield Yew	3'-3.5' hgt.

****NOTE****

IF SPECIFIED PLANTING IS UNAVAILABLE AN APPROVED EQUAL WILL BE PROVIDED IN PLACE

SEE LSP1.01 FOR TENNIS PRO SHOP PLANTING

KEY LEGEND

- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO REMAIN
- NEW PLANTING
- NEW EVERGREENS
- OUTLINE OF EXISTING PLANTING BED

7/1/2025 4:13:35 PM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_lsp1.0_proposed landscape plan.dwg

ROGERS
McCAGG

ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

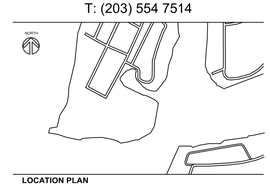
CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LIGHTING DESIGNER
GORECKI DESIGN ASSOCIATES, LLC
123 MAIN STREET
THOMASTON, ME 04861
T: (203) 641 6721

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

NO.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC
	2025 07 01	REVISION 1: ISSUED PER ZONING STAFF COMMENTS

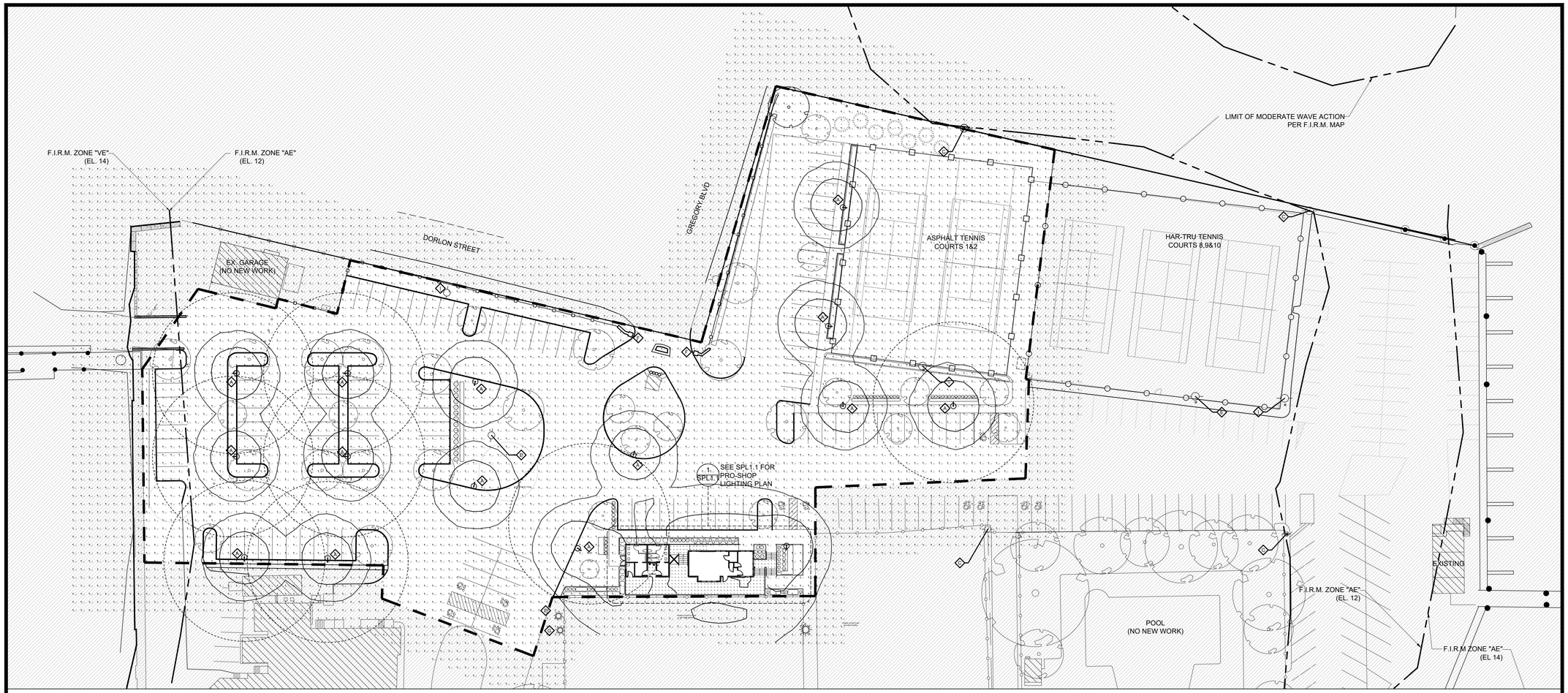


SCALE	DATE
1/32" = 1' - 0"	05/15/2025

SHEET TITLE

PROPOSED LANDSCAPE SITE PLAN

PROJECT No.	SHEET No.
S&C 02.00	LSP1.0



1 PROPOSED PHOTOMETRIC LIGHTING SITE PLAN
1/32" = 1'-0"

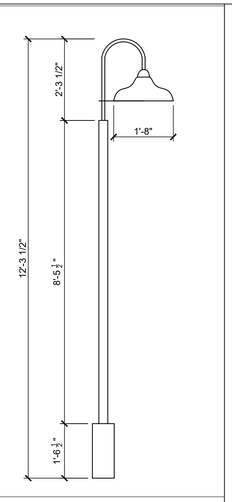
Luminaire Schedule

Symbol	Qty	Label	Description	LLF	Luminaire Lumens
	7	B	SBW16M024LDDW40K	.90	3209
	5	C	SBW16M024LDDW40K	.90	3209
	15	A	SBW18M031LDNW40K	.90	2743

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Ground	Fc	0.28	8.2	0.0	N.A.	N.A.
Viewing Deck	Fc	5.94	23.5	0.0	N.A.	N.A.
Stair Landing	Fc	9.51	14.0	4.0	2.38	3.50
ADA Ramp	Fc	9.06	13.2	3.8	2.38	3.47





LAMP POST 'A'

LANDSCAPE LIGHTING FIXTURE SCHEDULE:

	FIXTURE TYPE	MANUFACTURER	MODEL NAME
A	LAMP POST A	ANP LIGHTING	SBW18
B	WALL SCONCE	ANP LIGHTING	SBW16
C	WALL SCONCE	ANP LIGHTING	SBW16
D			
E	EXISTING LIGHT & UTILITY POLE TO BE REMOVED		
F	EXISTING LIGHT AT ENTRY GATE		
G	EXISTING TENNIS LIGHT TO REMAIN		
H	HANDRAIL LIGHTING		
I	EXISTING UTILITY POLE TO BE REMOVED		



EXISTING LIGHT "F" AT CLUB ENTRANCE TO REMAIN

6/3/2025 9:37:47 AM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\ppz\s&c2.00_spl1.0_proposed site plan lighting_gda.dwg

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

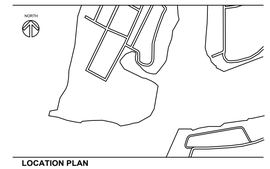
CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LIGHTING DESIGNER
GORECKI DESIGN ASSOCIATES, LLC
123 MAIN STREET
THOMASTON, ME 04861
T: (203) 641 6721

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

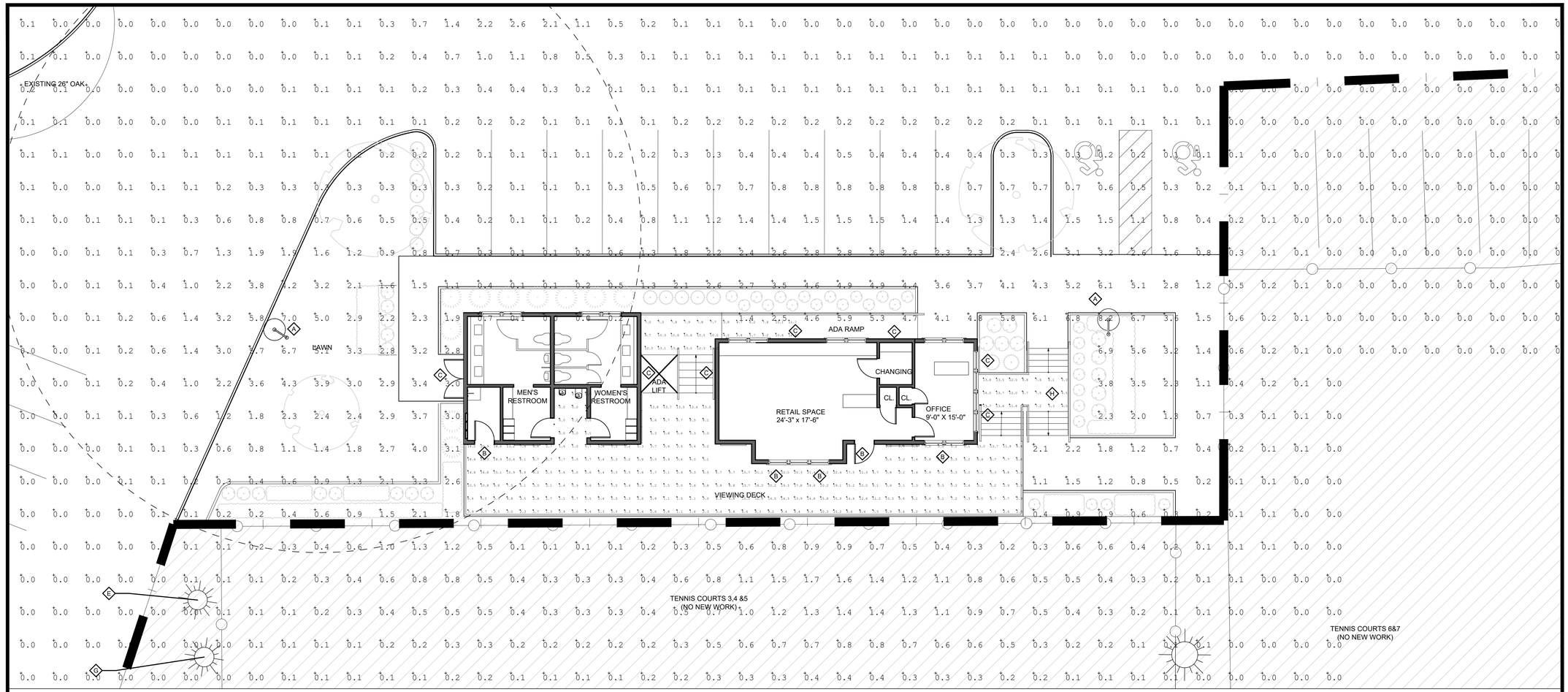
NO.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

SCALE	DATE
1/32" = 1' - 0"	05/15/2025

SHEET TITLE

PROPOSED SITE LIGHTING PHOTOMETRIC PLAN

PROJECT No.	SHEET No.
S&C 02.00	SPL2.0



1 PROPOSED PRO-SHOP SITE PHOTOMETRIC LIGHTING PLAN
1/8" = 1'-0"

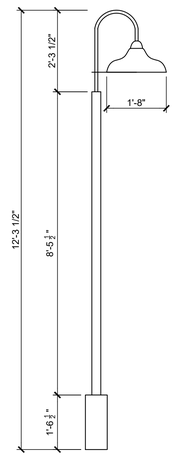


WALL SCONCE 'C'



WALL SCONCE 'B'





LAMP POST 'A'

LANDSCAPE LIGHTING FIXTURE SCHEDULE:

	FIXTURE TYPE	MANUFACTURER	MODEL NAME
A	LAMP POST A	ANP LIGHTING	SBW18
B	WALL SCONCE	ANP LIGHTING	SBW16
C	WALL SCONCE	ANP LIGHTING	SBW16
D			
E	EXISTING LIGHT & UTILITY POLE TO BE REMOVED		
F	EXISTING LIGHT AT ENTRY GATE		
G	EXISTING TENNIS LIGHT TO REMAIN		
H	HANDRAIL LIGHTING		
I	EXISTING UTILITY POLE TO BE REMOVED		

Luminaire Schedule

Symbol	Qty	Label	Description	LLF	Luminaire Lumens
	7	B	SBW16M024LDDW40K	.90	3209
	5	C	SBW16M024LDDW40K	.90	3209
	15	A	SBW18M031LDNW40K	.90	2743

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Ground	Fc	0.28	8.2	0.0	N.A.	N.A.
Viewing Deck	Fc	5.94	23.5	0.0	N.A.	N.A.
Stair Landing	Fc	9.51	14.0	4.0	2.38	3.50
ADA Ramp	Fc	9.06	13.2	3.8	2.38	3.47

ROGERS McCAGG
ARCHITECTS | PLANNERS
INTERIOR DESIGNERS
44 North Main Street, South Norwalk CT 06854
T 203 354 5200 F 203 354 5201
www.rm-arch.com

LAND SURVEYOR
ARCEMONE LAND SURVEYORS, LLC
4 TAFT STREET, UNIT A - 2B,
SOUTH NORWALK, CT 06854
T: (203) 866 - 2058

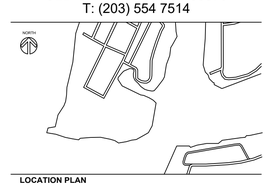
CIVIL ENGINEER
LANDTECH
518 RIVERSIDE AVENUE
WESTPORT, CT 06880
T: (203) 454-2110

STRUCTURAL ENGINEER
TO BE DETERMINED

MECHANICAL ENGINEER
TO BE DETERMINED

LIGHTING DESIGNER
GORECKI DESIGN ASSOCIATES, LLC
123 MAIN STREET
THOMASTON, ME 04861
T: (203) 641 6721

LANDSCAPE ARCHITECT
WILLIAM C. RUTHERFORD LLA, LLC
P.O BOX 101
OLD GREENWICH, CT 06870
T: (203) 554 7514



LOCATION PLAN

THE SHORE & COUNTRY CLUB

NEW TENNIS PRO SHOP

220 GREGORY BOULEVARD
EAST NORWALK, CT 06855

ISSUE & REVISIONS

NO.	DATE	DESCRIPTION
	2025 05 31	DRAFT 1 ZBA SUBMISSION
	2025 06 13	ZBA SUBMISSION
	2025 03 26	ISSUED FOR REVIEW
	2025 05 15	ISSUED FOR PZC

SCALE 1/8" = 1' - 0"
DATE 05/15/2025

SHEET TITLE
PROPOSED PRO SHOP PHOTOMETRIC LIGHTING PLAN

PROJECT No. S&C 02.00
SHEET No. SPL2.1

6/3/2025 9:37:47 AM

p:\s&c - shore and country club\s&c02.00\02 drawings\01 cad\02 sheets\pzc\s&c2.00_spl1.0_proposed site plan lighting_gda.dwg

CITY OF NORWALK
Planning and Zoning

www.norwalkct.gov

P: 203-854-7780

Norwalk City Hall
Room 129
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

June 6, 2025

Elizabeth A.B. Suchy, Esq.
Carmody Torrance Sandak & Hennessey LLP
1055 Washington Boulevard, 4th Floor
Stamford, CT 06901

Re: 220 Gregory Boulevard
Preliminary Review of Special Permit and CAM Site Plan Application #2025-43
New pro shop and associated site improvements at the Shore & Country Club.

Dear Attorney Suchy:

I have preliminarily reviewed the referenced plans. Tentatively, the Commission is scheduled to review the application and open the Public Hearing at their July 16, 2025, meeting. The below reflects my initial comments and the Commission may continue their review of the application at their regularly scheduled meetings that follow.

Please submit or comment on the following.

1) Proof of the required notice sign must be provided at least fifteen (15) days prior to the Public Hearing and proof of mailing notices to properties within 100' must be provided at least ten (10) days prior. Staff will coordinate the legal notice publication.

2) As of December 2024, the parking calculation for Waterfront Clubs is 1 space per 4 members– please revise the parking chart to reflect the current regulations.

3) Waterfront Clubs, including parking and loading facilities, shall be effectively screened from view from adjacent streets and properties per section 4.3.9.G.cp.1.d of the regulations. Would it be possible to extend the vinyl fence and have it replace the chain link fence along the Northern property boundary?

4) I have referred this application to the Conservation Office and Harbor Management Commission. Please provide comments/approvals from the Health Department, DPW, WPCA etc. The link to the webpage can be found here.

The application is still being reviewed and requests for further information or clarification may be forthcoming. Please email (amelia.williams@norwalkct.gov) or call (203-854-7259) if you have any questions regarding your application or the application process.

Sincerely,



Amelia Williams
Land Use Planner

ROGERS McCAGG

ARCHITECTS | PLANNERS | INTERIOR DESIGNERS

July 1, 2025

Elizabeth A.B. Suchy, Esq.
Carmody Torrance Sandak and Hennessey LLP
1055 Washington Boulevard, 4th Floor
Stamford, CT 06901

Re: 220 Gregory Boulevard
Preliminary Review of Special Permit and CAM Site Plan Application #2025-43
New Pro Shop and associated Site Improvements at the Shore & Country Club

Dear Liz,
After reviewing the staff comments on the above application, Rogers McCagg Architect and William C. Rutherford Landscape Architect would like to suggest the following in response to item 3 in the letter dated June 6, 2025, from Amelia Williams, Land Use Planner.

Instead of extending the white, vinyl fence along the northern property line to screen the new parking and asphalt tennis courts, we recommend adding salt tolerant and native planting as a screen. See the attached Landscape Plan LSP1.0. The following changes are proposed:

- Extend the privet hedge north along the Gregory Boulevard property line to the corner.
- Return the privet hedge 32-feet along the northern property line to screen below the canopies of the Pin Oak and Swamp Oak trees.
- Add (6) 8ft. to 10ft. tall cedars between the new asphalt tennis courts and the northern property line as far as the existing tennis court fence.

No changes are proposed to Tennis Courts 8, 9 and 10 in the northeast corner of the site, with this application. The existing chain-link fence on the north side of the existing Tennis Courts will remain.

A copy of this letter will be provided to the City of Norwalk Zoning Staff, along with (2) paper copies of the revised Landscape Plan.

Sincerely,

Mella Kernan, AIA
Principal

cc Amelia Williams, Land Use Planner
Joe Nicaj, GM, Shore & Country Club
Bill Rutherford, Landscape Architect
Andy Soumelidis, Landtech

CITY OF NORWALK
Planning & Zoning Commission
Norwalk City Hall, Room 129
125 East Avenue,
Norwalk, CT 06856-5125

MEMORANDUM July 8th, 2025

TO: Planning and Zoning Commission – Galen Wells, Chair

FROM: Amelia Williams, Land Use Planner

SUBJECT: #2025 - 43 CAM – The Norwalk Country Club Company and Shore & Country Club, Inc. – 220 Gregory Boulevard – New pro shop and associated site improvements.

District: 3 **Block:** 73 **Lot:** 2 **Zone:** CD-1M **Flood Zone:** Coastal AE-14 and AE-12

ZONING HISTORY:
The Shore and Country Club is a Waterfront Club per the definition in the zoning regulations. It is a private club that is comprised of numerous buildings on the same lot. The property is now in the CD-1M zone, which allows only one principal structure and does not regulate the number of accessory structures. Accessory structures are limited to a height of 1 ½ stories, but the applicant obtained a variance to allow 2 stories for accessory structures.

PROPOSED USE/STRUCTURE:
This application is the second phase of a large renovation of the property. Currently proposed is the construction of a new tennis pro shop and viewing area in generally the same location as the pro shop exists now, and associated site improvements including reconfiguring the locations of two tennis courts and 78 parking spaces in the North and Northwest areas of the property.
A variance was granted to allow 2 stories for the tennis pro shop. There is minimal grading proposed with these site improvements, and stormwater management is designed to meet City requirements.

STAFF COMMENTS:
- The parking chart on the site plan needs to be revised to reflect the current calculation for Waterfront Clubs of 1 space per 4 members.
- Staff would recommend the vinyl fence be extended and replace the chain link fence along the Northern property boundary to comply with section 4.3.9.G.cp.1.d of the regulations which require Waterfront Clubs, including parking and loading facilities, be effectively screened from view from adjacent streets and properties.
- The Harbor Management Commission found this scope of work consistent with the Harbor Management Plan.
- Staff do not think this proposal will cause any adverse impacts to coastal resources and find it consistent with the goals and policies of the CAM act.

ZONING BOARD OF APPEALS: A variance application (#V24-0718-01) was partially approved in August of 2024. The ZBA granted variances for the number of stories (2 stories

proposed, maximum 1½ stories allowed) for Accessory Buildings (Tennis Pro Shop & Marina/Dock Building) and EV charging stations (27 required, 0 proposed).

SIGN-OFFS: Department approvals/comments have been received from the Fire Marshal, SNEW, TMP, Department of Public Works, and Harbor Management Commission.

VIOLATIONS: There are no zoning violations currently on the property.

The following resolutions are offered:

DRAFT RESOLUTION TO APPROVE

BE IT RESOLVED that application #2025 – 43 SP CAM – The Norwalk Country Club Company and Shore & Country Club, Inc. – 220 Gregory Boulevard – New pro shop and associated site improvements be **APPROVED** subject to the following conditions:

1. That the building and site be developed in accordance with the following plans:

    a. Per site plan set dated 6/12/2024 and revised 6/26/2025 prepared by LANDTECH, Westport, CT, provided that the parking chart be updated to reflect the current calculation for Waterfront Clubs of 1 space per 4 members

    b. Per architectural and landscape plans dated 5/15/2025 prepared by Rogers McCagg, Norwalk, CT

    c. Per revised lighting plans dated 5/15/2025 prepared by Rogers McCagg, Norwalk, CT

    d. Per zoning location survey dated 9/7/2023 and revised 5/20/2025 prepared by Arcamone Land Surveyors, LLC, Norwalk, CT

2. That all department sign-offs are obtained prior to issuance of any Zoning Permit; and

3. That all required soil sedimentation and erosion controls are in place prior to the start of any construction; and

4. That any additional needed soil sedimentation and erosion controls be installed at the direction of Staff; and

5. That any changes to the plans be reviewed by Staff prior to implementation; and

6. That the vinyl fence be extended and replace the chain link fence along the Northern property boundary to comply with section 4.3.9.G.cp.1.d of the regulations; and

7. That any utilities comply with setbacks and flood regulations; and

8. That flood certifications be submitted prior to issuance of a zoning permit and prior to obtaining a Certificate of Zoning Compliance (COZC), prepared by a CT licensed engineer or architect; and

9. That flood compliance be achieved and demonstrated with a FEMA elevation certificate prior to COZC; and

10. That all plantings be implemented prior to COZC; and

11. That all plantings be maintained, and any dead plantings must be replaced in accordance with the approved planting plan; and

12. That no changes to the seawall are permitted without City review and DEEP approval; and

13. Nothing in this permit shall obviate the requirements for the applicant to obtain any other assents, permits or licenses required by law or regulation by the City of Norwalk, State of Connecticut, or the Government of the United States, including any approval required by the Connecticut Department of Environmental Protection and U.S. Army Corps of Engineers- obtaining such assents, permits or licenses is the sole responsibility of the applicant; and

BE IT FURTHER RESOLVED that this proposal complies with all applicable coastal resource and use policies and with all applicable sections of the Zoning Regulations for the City of Norwalk; and

BE IT FURTHER RESOLVED that this the preceding conditions and modifications of this application are integral to the Commission's approval because, if not for those conditions and modifications, the Commission would have denied this application.

BE IT FURTHER RESOLVED that the effective date of this approval shall be July 25th, 2025.

You must obtain a zoning approval and a building permit prior to any work on the site.

DRAFT RESOLUTION TO DENY

BE IT RESOLVED that application #2025 – 43 SP CAM – The Norwalk Country Club Company and Shore & Country Club, Inc. – 220 Gregory Boulevard – New pro shop and associated site improvements as shown on site plan set dated 6/12/2024 and revised 6/26/2025 prepared by LANDTECH, Westport, CT, provided that the parking chart be updated to reflect the current calculation for Waterfront Clubs of 1 space per 4 members, architectural and landscape plans dated 5/15/2025 prepared by Rogers McCagg, Norwalk, CT, revised lighting plans dated 5/15/2025 prepared by Rogers McCagg, Norwalk, CT, and zoning location survey dated 9/7/2023 and revised 5/20/2025 prepared by Arcamone Land Surveyors, LLC, Norwalk, CT, be **DENIED** subject to the following reasons:

1.
2.

BE IT FURTHER RESOLVED that the effective date of this denial shall be July 25th, 2025.

CITY OF NORWALK
Transportation Mobility & Parking
P: 203-854-7335
Norwalk City Hall
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

Sent via email to: esuchy@carmodylaw.com

To: Elizabeth A.B. Suchy, Esq. – Carmody Torrance Sandak & Hennessey LLP

From: Benjamin Yeung, P.E., Senior Traffic Engineer – Norwalk TMP

Date: June 13, 2025

Subject: 220 Gregory Boulevard – Site Improvements, New Tennis Courts and Pro Shop – Site Plan & Traffic Study – TMP Signoff

The City of Norwalk Transportation, Mobility, and Parking (TMP) Department has completed a substantive review of the following documents related to the Special Permit Application for the proposed site improvements at 220 Gregory Boulevard:

- Site Plan Review Application
- Site Layout Plan, created by LANDTECH, dated 6/12/2024, revised 5/19/25.

The aforementioned documents are in compliance with the current City Standards in relation to transportation, mobility, and parking. TMP takes no exception to the project moving forward.

This letter signifies final departmental sign-off from TMP. Should you have any questions, please do not hesitate to contact me.

Sincerely,

Benjamin Yeung

Benjamin Yeung, P.E., Senior Traffic Engineer – TMP

James Travers, Director – TMP

Cc: DPW Permits
Jay Habansky – Chief of Economic and Community Development
James Travers, Director – TMP
Garrett Bolella, P.E., PTOE, RSP1, Assistant Director – TMP
Nathan Fankhanel, E.I.T., Junior Engineer – TMP
Vanessa Valadares, P.E., Chief of Department of Public Works
Wilber Giron, P.E., Permit Engineer – Department of Public Works
Christine Cardascia, PE, Assistant Engineer – Department of Public Works
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Land Use Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement
Ralph Kolb, P.E., Sr. Environmental Engineer – WPCA
Christopher Cavaliere, Junior Engineer – WPCA
Alexis Cherichetti, Senior Environmental Officer – Conservation Office
William Mooney, Assistant Director of Health – Health Department
Troy Donohue, Deputy Fire Marshal – Fire Department

W:\Roads\CityRoads\G\GregoryBoulevard\DevelopmentReview\220GregoryBlvd\Correspondence\20250604_TMPSignoff\20250613_220 GregoryBlvd_TMPSignoff.docx

DEPARTMENT OF ENGINEERING

CITY OF NORWALK
Christine Cardascia, P.E.
Assistant Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Permits: (203) 854-4161
www.norwalkct.gov
ccardascia@norwalkct.gov
dpwpermits@norwalkct.gov

June 13, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 220 Gregory Blvd (District 3, Block 73, Lot 2)
Site Improvements for Proposed Tennis Courts
Department of Engineering's Plan Review Comments

Dear Mr. Larsen:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Site Plan titled "Site Improvements for Proposed Tennis Courts," dated 06/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Drainage Report titled "Stormwater Management Report for 220 Gregory Boulevard Norwalk, CT," dated 07/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Architectural plans titled "Partial Survey & Proposed Floor Plan," dated 12/12/2023 and last revised 06/01/2024, prepared by Crozier Gedney Architects, P.C.
- Survey Map titled "Zoning Location Survey of Property prepared for The Shore & Country Club, #220 Gregory Boulevard, Norwalk, Connecticut," dated 09/07/2023, prepared by Arcamone Land Surveyors LLC

The following are the Department of Engineering's review comments highlighting sections that will require revision or additional information prior to our departmental sign-off:

1. The Plan shall clarify the intend of the existing sanitary sewer lateral. Should the existing lateral be abandoned, then the plan shall include the proposed abandonment detail, in conformance with the City's Standard Detail Drawings.

2. The proposed asphalt curb detail in accordance with the current 2021 DPW Standard Detail Drawings shall be added to the plans for all curbing proposed in the City ROW.
3. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
    a. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.

Please note this is a preliminary review of the submitted documents. Additional comments may be forthcoming once the requested information is received.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Christine Cardascia

Christine Cardascia, P.E.
Assistant Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Wilber Giron, P.E., Permit Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Garrett Bolella, P.E., Assistant Director – Transportation, Mobility and Parking
Benjamin Yeung, P.E., Senior Traffic Engineer – Transportation, Mobility and Parking
Nathan Fankhanel, Junior Engineer – Transportation, Mobility and Parking
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Tammy Maldonado, Zoning Enforcement Officer – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer/Assistant Director – Conservation and Planning and Zoning

DEPARTMENT OF ENGINEERING

CITY OF NORWALK
Christine Cardascia, P.E.
Assistant Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Permits: (203) 854-4161
www.norwalkct.gov
ccardascia@norwalkct.gov
dpwpermits@norwalkct.gov

June 16, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 220 Gregory Blvd (District 3, Block 73, Lot 2)
Site Improvements for Proposed Tennis Courts
Department of Engineering's Plan Review Comments

Dear Mr. Larsen:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Site Plan titled "Site Improvements for Proposed Tennis Courts," dated 06/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Drainage Report titled "Stormwater Management Report for 220 Gregory Boulevard Norwalk, CT," dated 07/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Architectural plans titled "Shore & Country Club New Tennis Pro Shop," dated 05/15/2025, prepared by Rogers McCagg Architects
- Survey Map titled "Zoning Location Survey of Property prepared for The Shore & Country Club, #220 Gregory Boulevard, Norwalk, Connecticut," dated 09/07/2023, prepared by Arcamone Land Surveyors LLC

The following are the Department of Engineering's review comments highlighting sections that will require revision or additional information prior to our departmental sign-off:

1. The Plan shall clarify the intend of the existing sanitary sewer lateral. Should the existing lateral be abandoned, then the plan shall include the proposed abandonment detail, in conformance with the City's Standard Detail Drawings.

2. The proposed asphalt curb detail in accordance with the current 2021 DPW Standard Detail Drawings shall be added to the plans for all curbing proposed in the City ROW.
3. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
    a. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.

Please note this is a preliminary review of the submitted documents. Additional comments may be forthcoming once the requested information is received.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Christine Cardascia

Christine Cardascia, P.E.
Assistant Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Wilber Giron, P.E., Permit Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Garrett Bolella, P.E., Assistant Director – Transportation, Mobility and Parking
Benjamin Yeung, P.E., Senior Traffic Engineer – Transportation, Mobility and Parking
Nathan Fankhanel, Junior Engineer – Transportation, Mobility and Parking
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Tammy Maldonado, Zoning Enforcement Officer – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer/Assistant Director – Conservation and Planning and Zoning

DEPARTMENT OF ENGINEERING

CITY OF NORWALK
Wilber Giron, P.E.
Permit Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Office: (203) 854-7801
Permits: (203) 854-4161
www.norwalkct.gov
wgiron@norwalkct.gov
dpwpermits@norwalkct.gov

July 9, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 220 Gregory Blvd (District 3, Block 73, Lot 2)
Site Improvements for Proposed Tennis Courts
Department of Engineering's Plan Review Sign-Off

Dear Ms. Suchy:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Site Plan titled "Site Improvements for Proposed Tennis Courts," dated 06/12/24 and last revised 06/26/2025, prepared by Landtech, LLC
- Drainage Report titled "Stormwater Management Report for 220 Gregory Boulevard Norwalk, CT," dated 07/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Architectural plans titled "Shore & Country Club New Tennis Pro Shop," dated 05/15/2025, prepared by Rogers McCagg Architects
- Survey Map titled "Zoning Location Survey of Property prepared for The Shore & Country Club, #220 Gregory Boulevard, Norwalk, Connecticut," dated 09/07/2023, prepared by Arcamone Land Surveyors LLC
- Response Letter prepared by Landtech, LLC, dated 06/26/2025

The aforementioned documents are in compliance with the City's current standards and Drainage Manual. Therefore, the Department of Engineering has no objection to the project moving forward with the following condition(s):

1. A DPW Encroachment and Driveway Permit, in conformance with DPW's Permit Provisions, is required for the proposed work. The contractor shall email DPWpermits@norwalkct.gov to obtain the required permit(s) prior to the commencement of the work.
    a. Road restoration requirements shall be determined at the time of permitting.
    b. A Building and Code Enforcement permit shall be required for sanitary sewer work performed within the property.
    c. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
        i. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.
2. The property owner is responsible for confirming with each City department if approval is required prior to the commencement of work.
3. The following must be submitted prior to the issuance of a Certificate of Occupancy/Compliance.
    a. A set of as-built plans shall be submitted along with a certificate from a licensed professional stating that the construction has been built according to City standards.
    b. The size and quantity of existing/proposed water meter(s) for the project.
4. This sign-off shall be valid for a period of 12-months from the date stamped on the plan. Any permit issued on the basis of this sign-off must be issued within such 12-month period. Any renewal of the plan sign-off will be based on the then existing conditions and current applicable regulations, ordinances and standards of practice in effect at the time of the renewal.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Wilber Giron, P.E.
Permit Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Christine Cardascia, P.E., Assistant Civil Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Mario Pizighelli, P.E., Stormwater Systems Manager – Water Pollution Control Authority
Garrett Bolella, P.E., Assistant Director – Transportation, Mobility and Parking
Benjamin Yeung, P.E., Senior Traffic Engineer – Transportation, Mobility and Parking
Nathan Fankhanel, Junior Engineer – Transportation, Mobility and Parking
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Tammy Maldonado, Zoning Enforcement Officer – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer/Assistant Director – Conservation and Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 220 GREGORY BOULEVARD TAKEN FROM ZONING LOCATION SURVEY PREPARED BY ARCAMONE LAND SURVEYORS LLC DATED SEPTEMBER 7, 2023, REVISED TO JULY 23, 2024.
2. DATUM: NAVD 1988
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. PROPERTY IS LOCATED IN FLOOD ZONE AE12 BFE=12.0, AE 14 BFE=14.0, VE 14 BFE=14.0, PER FEMA FLOOD MAP 09001C0534G EFFECTIVE JULY 8, 2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS.

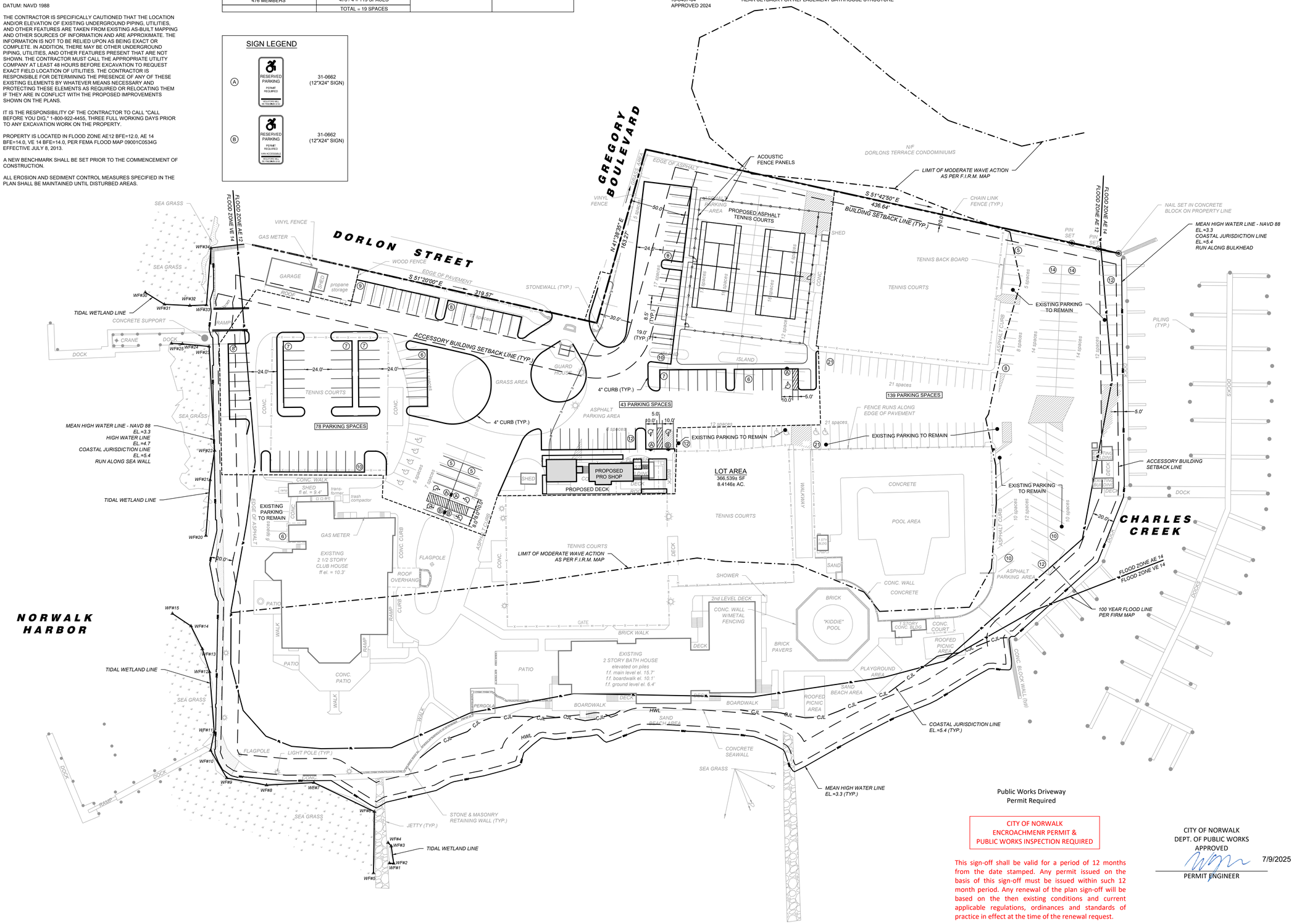
PARKING REQUIREMENTS			
USE: WATERFRONT CLUB			
	SPACES REQUIRED	EXISTING SPACES	SPACES PROVIDED
WATERFRONT CLUB 476 MEMBERS	1 SPACE PER 4 MEMBERS 476 / 4 = 119 SPACES	289 SPACES	260 SPACES
	TOTAL = 19 SPACES		

SIGN LEGEND

A	RESERVED PARKING PERMIT REQUIRED VIOLATORS WILL BE TOWED AT O/V	31-0662 (12"X24" SIGN)
B	RESERVED PARKING PERMIT REQUIRED VAN ACCESSIBLE VIOLATORS WILL BE TOWED AT O/V	31-0662 (12"X24" SIGN)

PRIOR VARIANCES

VARIANCE No.	DESCRIPTION
99-0506-03 APPROVED 2024	INCREASE HEIGHT FROM 15 TO 19.6 (EXISTING) AND LOCATE SERVICE/UTILITY EQUIPMENT BELOW FLOOD ELEVATION
16-0407-04 APPROVED 2024	REAR SETBACK FOR REPLACEMENT BATHHOUSE STRUCTURE

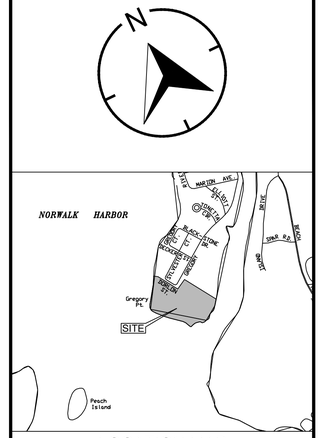


Public Works Driveway
Permit Required

CITY OF NORWALK
ENCROACHMENR PERMIT &
PUBLIC WORKS INSPECTION REQUIRED

This sign-off shall be valid for a period of 12 months from the date stamped. Any permit issued on the basis of this sign-off must be issued within such 12 month period. Any renewal of the plan sign-off will be based on the then existing conditions and current applicable regulations, ordinances and standards of practice in effect at the time of the renewal request.

CITY OF NORWALK
DEPT. OF PUBLIC WORKS
APPROVED
7/9/2025
PERMIT ENGINEER



LOCATION MAP
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:
THE SHORE & COUNTRY CLUB

PROJECT LOCATION:
220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:
SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:
SITE LAYOUT PLAN

PROJECT No.		
24033-01		
DATE: 6/12/2024	DESIGNED BY: SM	CHECKED BY: AS

SCALE: 1" = 40'
IN FEET
0 40 80 120

PROJECT STATUS:
DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

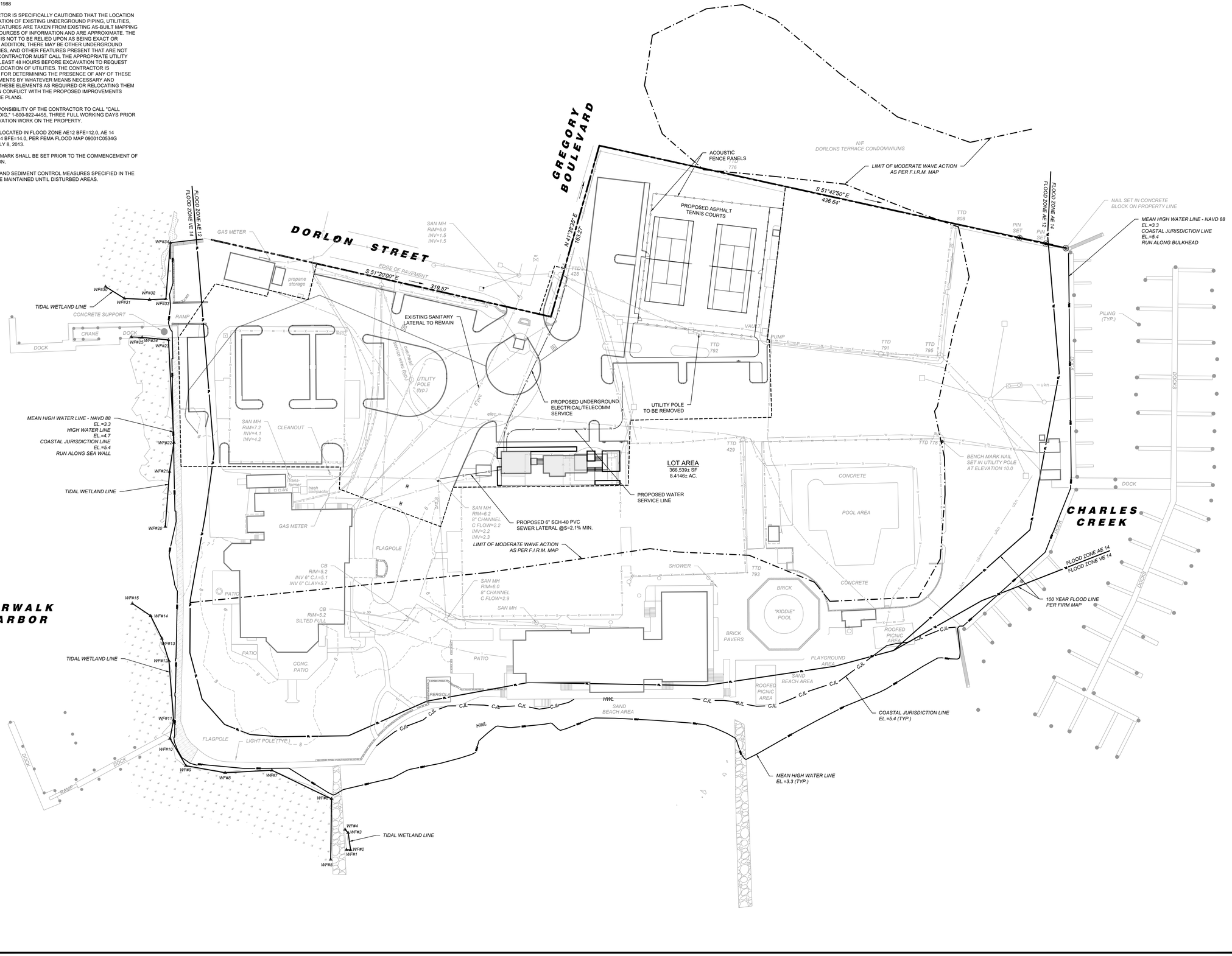
STATE OF CONNECTICUT · SCOTT M. SOUWLOS · 27803 · LICENSED PROFESSIONAL ENGINEER

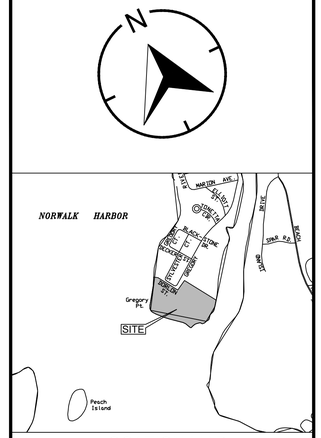
C-1.0

T:\1. ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD., NORWALK\DRAWINGS\CAM SITE PLAN (APPS)\THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 220 GREGORY BOULEVARD TAKEN FROM ZONING LOCATION SURVEY PREPARED BY ARCAMONE LAND SURVEYORS LLC DATED SEPTEMBER 7, 2023 REVISED TO JULY 23, 2024.
2. DATUM: NAVD 1988
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. PROPERTY IS LOCATED IN FLOOD ZONE AE12 BFE=12.0, AE 14 BFE=14.0, VE 14 BFE=14.0, PER FEMA FLOOD MAP 09001C0534G EFFECTIVE JULY 8, 2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS.





LOCATION MAP
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

THE SHORE & COUNTRY CLUB

PROJECT LOCATION:

220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:

SITE UTILITY PLAN

PROJECT No.		
24033-01		
DATE: 6/12/2024	DESIGNED BY: SM	CHECKED BY: AS

SCALE: 1" = 40'

IN FEET
0 40 80 120

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

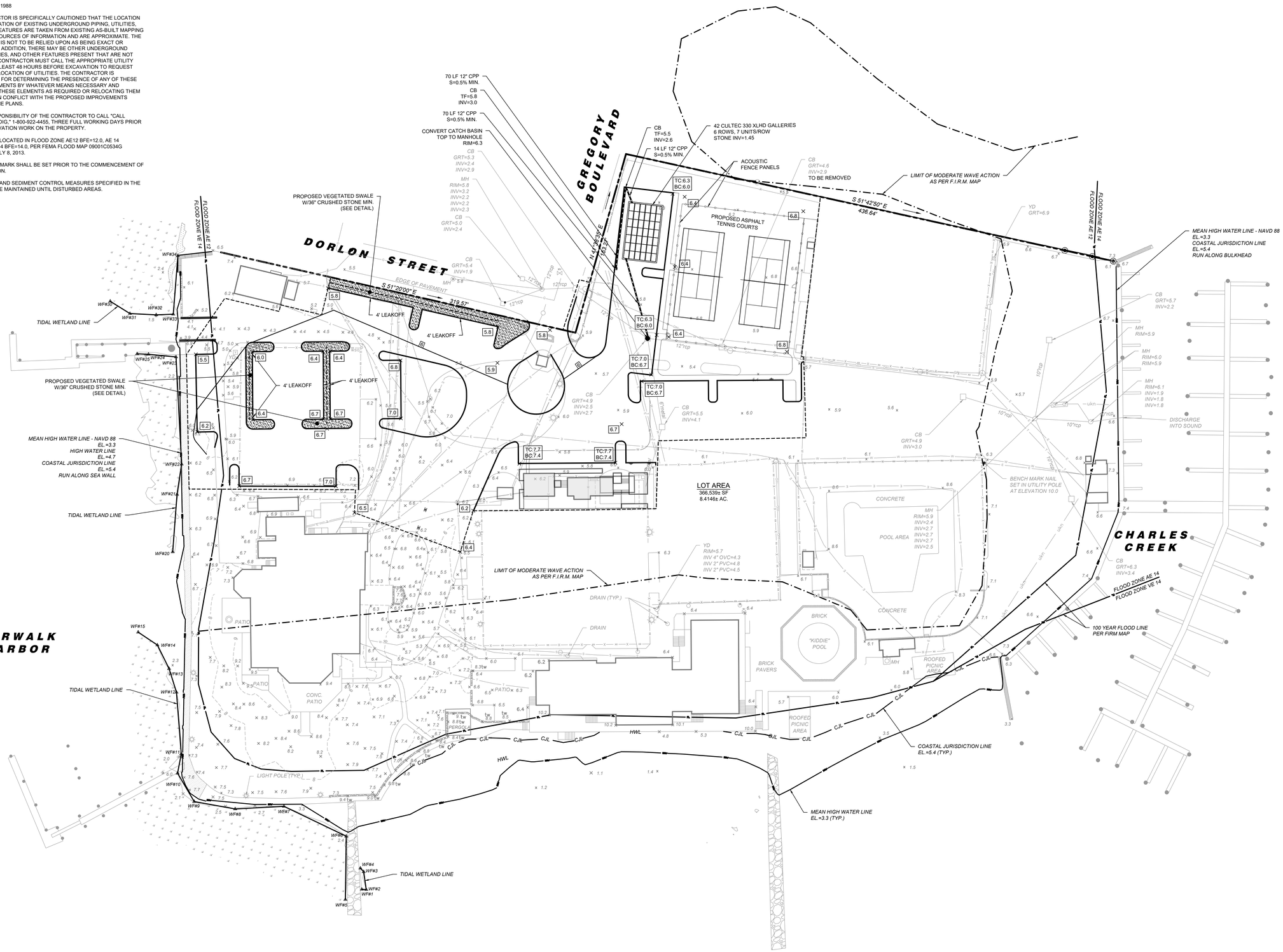
STATE OF CONNECTICUT · ANDY SOUWLIDIS · 27803 · LICENSED PROFESSIONAL ENGINEER

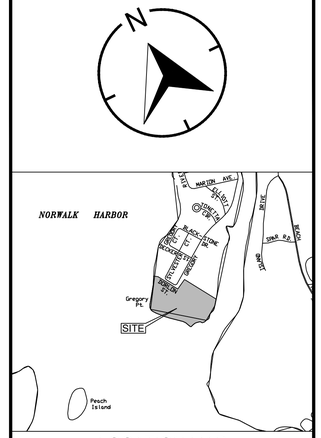
C-2.0

T:\ ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - NORWALK\DRAWINGS\CAM SITE PLAN\APPSHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 220 GREGORY BOULEVARD TAKEN FROM ZONING LOCATION SURVEY PREPARED BY ARCAMONE LAND SURVEYORS LLC DATED SEPTEMBER 7, 2023 REVISED TO JULY 23, 2024.
2. DATUM: NAVD 1988
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. PROPERTY IS LOCATED IN FLOOD ZONE AE12 BFE=12.0, AE 14 BFE=14.0, VE 14 BFE=14.0, PER FEMA FLOOD MAP 09001C0534G EFFECTIVE JULY 8, 2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS.





LOCATION MAP
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

THE SHORE & COUNTRY CLUB

PROJECT LOCATION:

220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:

SITE GRADING & DRAINAGE PLAN

PROJECT No. 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: 1" = 40'

IN FEET
0 40 80 120

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

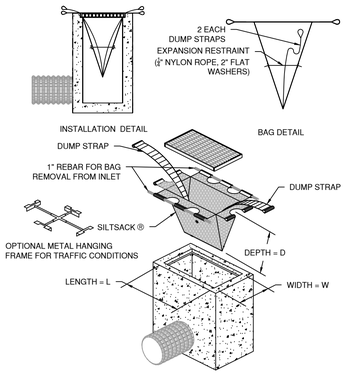
STATE OF CONNECTICUT · SCOTT · SOUWLOS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-3.0

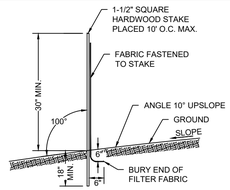
T:\ ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - NORWALK\DRAWINGS\CAM\ SITE PLAN\ APSHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

GENERAL EROSION AND SEDIMENT CONTROL NOTES

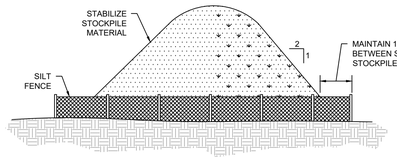
1. LAND DISTURBANCE WILL BE KEPT TO A MINIMUM; RESTABILIZATION WILL BE SCHEDULED AS SOON AS POSSIBLE.
2. SILT FENCE WILL BE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES, SOIL STOCKPILE AREAS, AND IN THOSE AREAS SHOWN ON THE PLAN.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE STATE OF CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL 2002.
4. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO LAND DISTURBANCE WHENEVER POSSIBLE.
5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED UNTIL STABILIZATION HAS BEEN ACHIEVED.
6. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD IF NECESSARY OR REQUIRED. A MINIMUM OF 50 FEET OF SILT FENCE SHALL BE STORED AT THE SITE FOR EMERGENCY USE.
7. ANY EXCAVATIONS THAT MUST BE DEWATERED WILL BE PUMPED INTO A 15'x15' DIRTBAG ON-SITE. THE INLETS OF ALL PUMPS ARE TO BE FLOATED A MINIMUM OF 24 INCHES OFF THE BOTTOM OF THE EXCAVATION. THE CONTRACTOR SHALL KEEP A MINIMUM OF (2) 15'x15' DIRTBAGS ON-SITE THROUGHOUT THE EXCAVATION OF PROPOSED FOUNDATIONS.
8. WATER AND CALCIUM CHLORIDE SHALL BE APPLIED TO UNPAVED ACCESSWAYS TO PREVENT WIND GENERATED SEDIMENTS AND DUST.
9. DEBRIS AND OTHER WASTES RESULTING FROM EQUIPMENT MAINTENANCE AND CONSTRUCTION ACTIVITIES WILL NOT BE DISCARDED ON-SITE.
10. SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE DISPOSED OF IN A MANNER WHICH IS CONSISTENT WITH INTENT OF THE PLAN.
11. SILT FENCES SHALL HAVE SEDIMENT REMOVED WHEN THE DEPTH OF THE SEDIMENT IS EQUAL TO ½ TO ⅔ THE HEIGHT OF THE FENCE. FENCES SHALL BE PROPERLY INSTALLED AND RIPPED FENCE OR BROKEN POSTS REPAIRED AS SOON AS PRACTICAL.
12. ANTI-TRACKING PADS AND GRAVEL CHECK DAMS SHALL BE REPLACED WHEN VOID SPACES ARE FULL OR STRUCTURES ARE BREACHED, AS APPLICABLE.
13. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE SOIL SURFACE STABILIZED WHEN CONSTRUCTION IS COMPLETE AND THE SOIL SURFACES ARE PERMANENTLY STABILIZED. STRUCTURAL COMPONENTS SHALL BE CLEANED OF ALL SEDIMENT UPON COMPLETION OF CONSTRUCTION.
14. THE OWNER IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES INSTALLATION AND MAINTENANCE OF CONTROL MEASURES. INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFYING THE PLANNING AND ZONING COMMISSION OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT PLAN IF AND WHEN THE TITLE OF LAND IS TRANSFERRED.



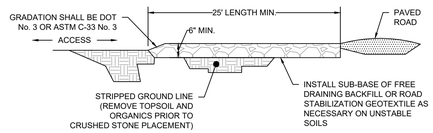
SILTSACK® CATCH BASIN INSERT
(NTS)

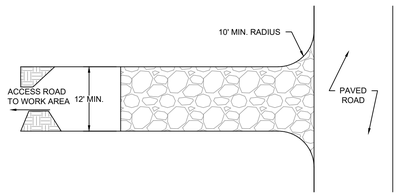


GEOTEXTILE SILT FENCE
(NTS)

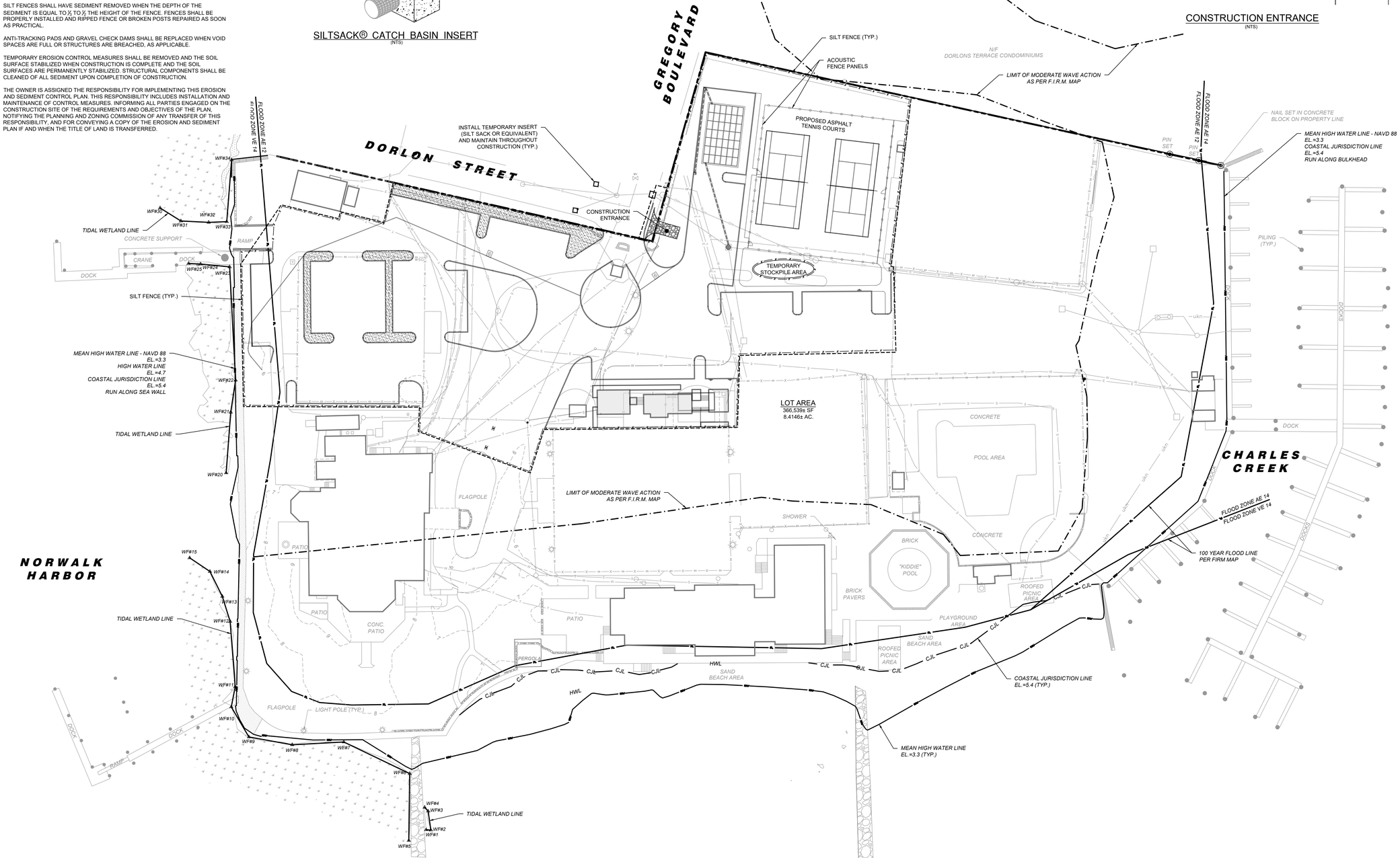


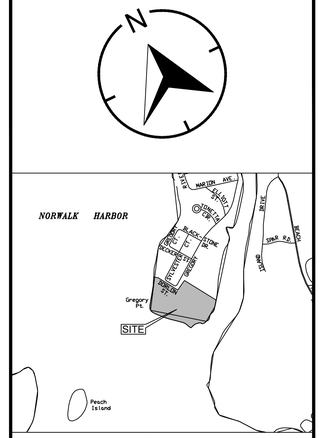
STOCKPILE DETAIL
(NTS)





CONSTRUCTION ENTRANCE
(NTS)





LOCATION MAP
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

THE SHORE & COUNTRY CLUB

PROJECT LOCATION:

220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:

EROSION & SEDIMENT CONTROL PLAN

PROJECT No.		
24033-01		
DATE: 6/12/2024	DESIGNED BY: SM	CHECKED BY: AS

SCALE: 1" = 40'

IN FEET
0 40 80 120

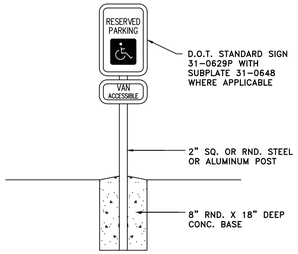
PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

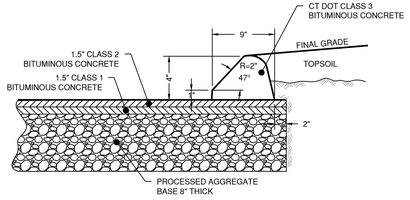
STATE OF CONNECTICUT · SCOTT M. SOUWLOS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-4.0

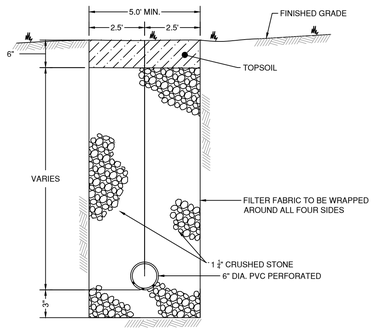
T:\1. ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - NORWALK\DRAWINGS\CAM SITE PLAN (APSHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG



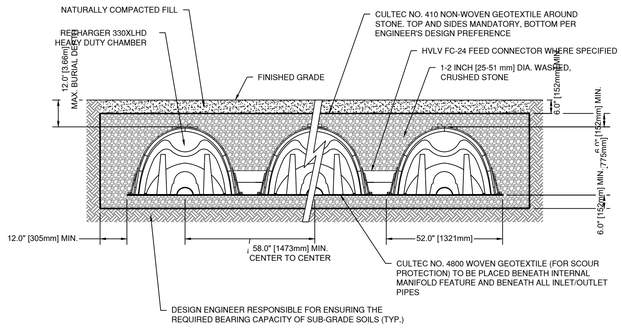
DISABLED PARKING SIGN
(NTS)



PARKING LOT PAVEMENT AND BIT. CURB TYPICAL CROSS SECTION
(NTS)



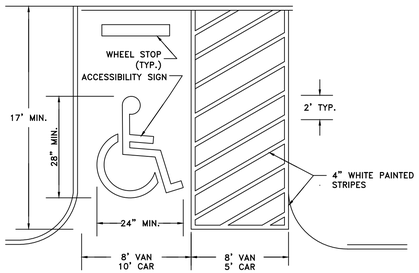
VEGETATED SWALE
(NTS)



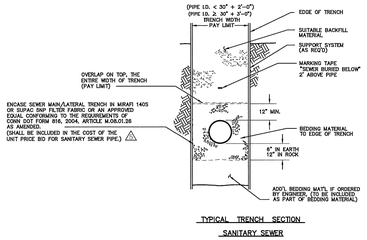
GENERAL NOTES
RECHARGER 330XL HD BY CULTEC, INC. OF BROOKFIELD, CT.
STORAGE PROVIDED = 11.32 CF/FT [1.05 m^3/m] PER DESIGN UNIT.
REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES.
THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS

ALL RECHARGER 330XL HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
ALL RECHARGER 330XL HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

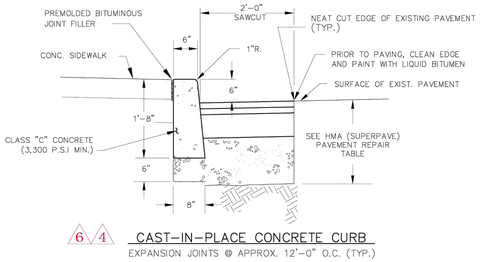
CULTEC RECHARGER 330XLHD HEAVY DUTY (NON-TRAFFIC APP.) TYPICAL CROSS SECTION
(NTS)



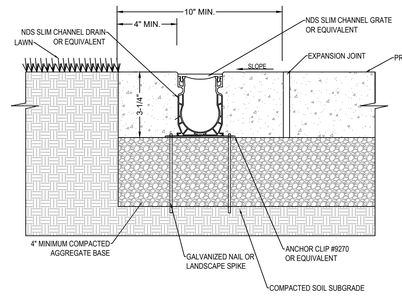
DISABLED PARKING MARKING
(NTS)



TYPICAL TRENCH SECTION
SANITARY SEWER

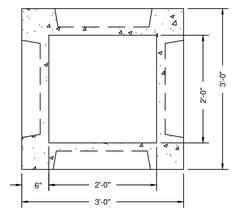


6 4 CAST-IN-PLACE CONCRETE CURB
EXPANSION JOINTS @ APPROX. 12'-0" O.C. (TYP.)
(EXISTING PAVEMENT)
NOT IN ROAD RECONSTRUCTION AREA

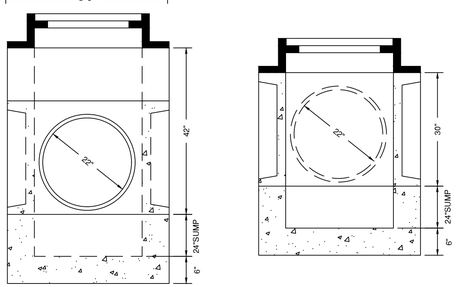


GENERAL NOTES
1. EXISTING SOILS SHOULD BE EVALUATED TO ENSURE PROPER STRUCTURAL AND PERMEABILITY PROPERTIES.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. DO NOT SCALE THIS DRAWING
4. THIS IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY.
5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED.

2" DRAIN CHANNEL DETAIL
(NTS)

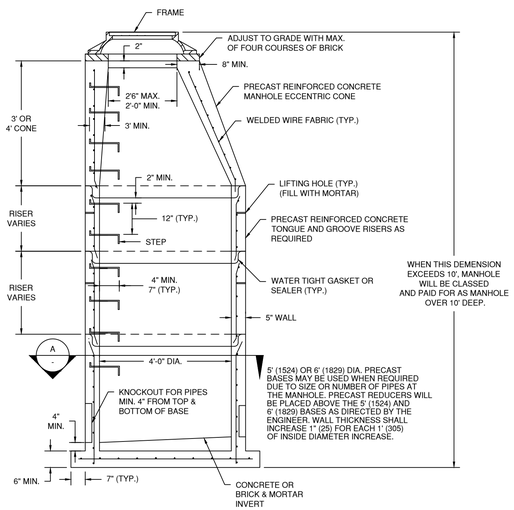


GRATE DETAIL



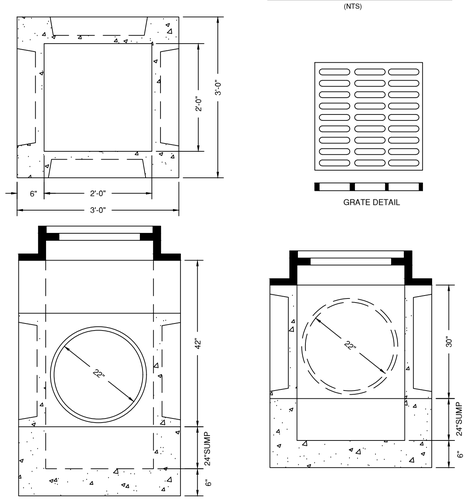
GENERAL NOTES
1. REINFORCED 6 X 6 X 10 GUAGE MESH OR TO SPECIFICATIONS.
2. GRATE - STEEL OR CAST IRON.
3. 4' HIGH SUMP HAS TWO KNOCKOUTS LOW AND 2 KNOCKOUTS UP HIGH.
4. APPROXIMATE WEIGHTS:
   3' - 2100 LBS.
   4' - 2800LBS.

2' X 2' PRECAST CONCRETE CATCH BASIN
(NTS)



ELEVATION

CT DOT REINFORCED PRECAST CONCRETE MANHOLE
(NTS)



GRATE DETAIL

GENERAL NOTES
1. REINFORCED 6 X 6 X 10 GUAGE MESH OR TO SPECIFICATIONS.
2. GRATE - STEEL OR CAST IRON.
3. 4' HIGH SUMP HAS TWO KNOCKOUTS LOW AND 2 KNOCKOUTS UP HIGH.
4. APPROXIMATE WEIGHTS:
   3' - 2100 LBS.
   4' - 2800LBS.

2' X 2' PRECAST CONCRETE CATCH BASIN
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:
THE SHORE & COUNTRY CLUB

PROJECT LOCATION:
220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:
SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:
NOTES AND DETAILS

PROJECT No.: 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: N.T.S.

PROJECT STATUS:
DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDY SOUMELIDIS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-5.0

T:\1. ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD, NORWALK\DRAWINGS\CAM SITE PLAN APP\SHORE AND COUNTRY CLUB - 220 GREGORY BLVD. - SITE PLAN.DWG

CITY OF NORWALK
Harbor Management Commission

www.norwalkct.gov

Norwalk City Hall
Room 129
125 East Avenue, PO Box 5125
Norwalk, CT 06851

VIA EMAIL
Amelia.williams@norwalkct.gov

July 9, 2025

Ms. Amelia Williams
Land-Use Planner
City of Norwalk
Conservation and Planning & Zoning Department
125 East Ave.
Norwalk, CT 06851

Subject: **Coastal Area Management Application by The Norwalk Country Club Company and Shore & Country Club, Inc. for work at 220 Gregory Blvd., Norwalk CT.**

Dear Ms. Williams:

The Norwalk Harbor Management Commission (NHMC) has reviewed the above-referenced application for Coastal Site Plan Review submitted to the Planning and Zoning Commission by The Norwalk Country Club Company and Shore & Country Club, Inc. (the Applicant), 220 Gregory Blvd., Norwalk, CT. The Applicant seeks approval for proposed work at the same address involving reconfiguration of the site to improve its functional layout; relocation of the existing tennis courts; construction of a new parking area; rebuilding of the existing pro shop to FEMA standards; addition of new landscaping; and construction of storm water management features.

As the proposed project is located within the coastal boundary and affects property on, in, or contiguous to Norwalk Harbor, it is subject to review by the NHMC to determine its consistency with the Norwalk Harbor Management Plan. The requirements of this review are specified in Sec. 22a-113p of the Connecticut General Statutes and the Harbor Management Plan.

The NHMC discussed this matter during its meeting on June 25, 2025 with the understanding, based on information provided by the Applicant, that the proposed project meets all FEMA requirements for flood zone construction and all City requirements for storm water management. Following discussion, the NHMC approved a motion finding the Applicant's proposal is **consistent with the Norwalk Harbor Management Plan** insofar as the proposed project is

expected to reduce the vulnerability of existing development to coastal flood hazards and result in a significant improvement to existing storm water and water quality conditions on the site.

In addition, on behalf of the NHMC, I hereby transmit the following comments and recommendations relevant to review and approval of the Applicant's application.

Comments and Recommendations:

1. The Applicant should be required to employ appropriate Best Management Practices during construction to ensure that the proposed work, including removal of debris, does not cause any significant adverse impacts on environmental quality, including water quality, in the Harbor Management Area.

2. The NHMC is concerned about the potential adverse impacts of storm water runoff from impervious areas draining into Norwalk Harbor. The Harbor Management Plan calls for protection and improvement of water quality in the Harbor Management Area and encourages and supports appropriate Best Management Practices to avoid or otherwise mitigate nonpoint source (storm water) pollution.

3. The NHMC encourages and supports runoff reduction and low impact development practices in all coastal area development projects, including new development and significant site improvement projects, pursuant to the City's National Pollutant Discharge Elimination System (NPDES) permit issued by the State of Connecticut.

Please be advised that the NHMC reserves its right to continue to review and comment on the Applicant's proposal at such time as it may be modified, additional information may be available, or the proposal is the subject of a public hearing.

If you have any questions, please contact me (203) 984-5339 or pintoj@optonline.net.

Sincerely,

John Thomas Pinto

John Thomas Pinto, Ph.D.
Chairman, NHMC Application Review Committee

cc:
Steve Bartush, Chairman, Norwalk Shellfish Commission
Mary-Beth Hart, CT DEEP
William Ireland, Norwalk Building Department
Alan Kibbe, Chairman, Norwalk Harbor Management Commission
Elizabeth A.B. Suchy, Esq., Carmody Torrance Sandak & Hennessey LLP.

South Norwalk Electric and Water
A Municipal Utility System
Serving the Needs of the Community

ALAN E HUTH, General Manager

ELIZABETH BURNS, Director of Water Operations
SCOTT MURPHY, Director of Electric Operations

Justin Andriopoulos
Water Technical Specialist
South Norwalk Electric and Water
164 Water Street, Norwalk CT 06854
(203) 866-3366 Ext. 256

June 18, 2025

Norwalk Department of Planning & Zoning
125 East Avenue
Room 129
Norwalk, CT. 06856

Re: Utility Signoff for –**220 Gregory Blvd.**

To whom it may concern:

This letter shall be considered confirmation that I have reviewed the Coastal Site Plan for the new pro shop and associated site improvements. SNEW has no objections for the project moving forward. This property is currently served with an 8" D.I. combination fire/ domestic water service. Should you have any questions or concerns, feel free to contact me at the number above.

Sincere Regards,

Justin Andriopoulos

Justin Andriopoulos

CITY OF NORWALK
Transportation Mobility & Parking
P: 203-854-7335
Norwalk City Hall
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

Sent via email to: esuchy@carmodylaw.com

To: Elizabeth A.B. Suchy, Esq. – Carmody Torrance Sandak & Hennessey LLP

From: Benjamin Yeung, P.E., Senior Traffic Engineer – Norwalk TMP

Date: June 13, 2025

Subject: 220 Gregory Boulevard – Site Improvements, New Tennis Courts and Pro Shop – Site Plan & Traffic Study – TMP Signoff

The City of Norwalk Transportation, Mobility, and Parking (TMP) Department has completed a substantive review of the following documents related to the Special Permit Application for the proposed site improvements at 220 Gregory Boulevard:

- Site Plan Review Application
- Site Layout Plan, created by LANDTECH, dated 6/12/2024, revised 5/19/25.

The aforementioned documents are in compliance with the current City Standards in relation to transportation, mobility, and parking. TMP takes no exception to the project moving forward.

This letter signifies final departmental sign-off from TMP. Should you have any questions, please do not hesitate to contact me.

Sincerely,

Benjamin Yeung

Benjamin Yeung, P.E., Senior Traffic Engineer – TMP

James Travers, Director – TMP

Cc: DPW Permits
Jay Habansky – Chief of Economic and Community Development
James Travers, Director – TMP
Garrett Bolella, P.E., PTOE, RSP1, Assistant Director – TMP
Nathan Fankhanel, E.I.T., Junior Engineer – TMP
Vanessa Valadares, P.E., Chief of Department of Public Works
Wilber Giron, P.E., Permit Engineer – Department of Public Works
Christine Cardascia, PE, Assistant Engineer – Department of Public Works
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Land Use Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement
Ralph Kolb, P.E., Sr. Environmental Engineer – WPCA
Christopher Cavaliere, Junior Engineer – WPCA
Alexis Cherichetti, Senior Environmental Officer – Conservation Office
William Mooney, Assistant Director of Health – Health Department
Troy Donohue, Deputy Fire Marshal – Fire Department

W:\Roads\CityRoads\G\GregoryBoulevard\DevelopmentReview\220GregoryBlvd\Correspondence\20250604_TMPSignoff\20250613_220 GregoryBlvd_TMPSignoff.docx

DEPARTMENT OF ENGINEERING

CITY OF NORWALK
Christine Cardascia, P.E.
Assistant Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Permits: (203) 854-4161
www.norwalkct.gov
ccardascia@norwalkct.gov
dpwpermits@norwalkct.gov

June 13, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 220 Gregory Blvd (District 3, Block 73, Lot 2)
Site Improvements for Proposed Tennis Courts
Department of Engineering's Plan Review Comments

Dear Mr. Larsen:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Site Plan titled "Site Improvements for Proposed Tennis Courts," dated 06/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Drainage Report titled "Stormwater Management Report for 220 Gregory Boulevard Norwalk, CT," dated 07/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Architectural plans titled "Partial Survey & Proposed Floor Plan," dated 12/12/2023 and last revised 06/01/2024, prepared by Crozier Gedney Architects, P.C.
- Survey Map titled "Zoning Location Survey of Property prepared for The Shore & Country Club, #220 Gregory Boulevard, Norwalk, Connecticut," dated 09/07/2023, prepared by Arcamone Land Surveyors LLC

The following are the Department of Engineering's review comments highlighting sections that will require revision or additional information prior to our departmental sign-off:

1. The Plan shall clarify the intend of the existing sanitary sewer lateral. Should the existing lateral be abandoned, then the plan shall include the proposed abandonment detail, in conformance with the City's Standard Detail Drawings.

2. The proposed asphalt curb detail in accordance with the current 2021 DPW Standard Detail Drawings shall be added to the plans for all curbing proposed in the City ROW.
3. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
    a. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.

Please note this is a preliminary review of the submitted documents. Additional comments may be forthcoming once the requested information is received.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Christine Cardascia

Christine Cardascia, P.E.
Assistant Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Wilber Giron, P.E., Permit Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Garrett Bolella, P.E., Assistant Director – Transportation, Mobility and Parking
Benjamin Yeung, P.E., Senior Traffic Engineer – Transportation, Mobility and Parking
Nathan Fankhanel, Junior Engineer – Transportation, Mobility and Parking
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Tammy Maldonado, Zoning Enforcement Officer – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer/Assistant Director – Conservation and Planning and Zoning

DEPARTMENT OF ENGINEERING

CITY OF NORWALK
Christine Cardascia, P.E.
Assistant Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Permits: (203) 854-4161
www.norwalkct.gov
ccardascia@norwalkct.gov
dpwpermits@norwalkct.gov

June 16, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 220 Gregory Blvd (District 3, Block 73, Lot 2)
Site Improvements for Proposed Tennis Courts
Department of Engineering's Plan Review Comments

Dear Mr. Larsen:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Site Plan titled "Site Improvements for Proposed Tennis Courts," dated 06/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Drainage Report titled "Stormwater Management Report for 220 Gregory Boulevard Norwalk, CT," dated 07/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Architectural plans titled "Shore & Country Club New Tennis Pro Shop," dated 05/15/2025, prepared by Rogers McCagg Architects
- Survey Map titled "Zoning Location Survey of Property prepared for The Shore & Country Club, #220 Gregory Boulevard, Norwalk, Connecticut," dated 09/07/2023, prepared by Arcamone Land Surveyors LLC

The following are the Department of Engineering's review comments highlighting sections that will require revision or additional information prior to our departmental sign-off:

1. The Plan shall clarify the intend of the existing sanitary sewer lateral. Should the existing lateral be abandoned, then the plan shall include the proposed abandonment detail, in conformance with the City's Standard Detail Drawings.

2. The proposed asphalt curb detail in accordance with the current 2021 DPW Standard Detail Drawings shall be added to the plans for all curbing proposed in the City ROW.
3. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
    a. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.

Please note this is a preliminary review of the submitted documents. Additional comments may be forthcoming once the requested information is received.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Christine Cardascia

Christine Cardascia, P.E.
Assistant Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Wilber Giron, P.E., Permit Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Garrett Bolella, P.E., Assistant Director – Transportation, Mobility and Parking
Benjamin Yeung, P.E., Senior Traffic Engineer – Transportation, Mobility and Parking
Nathan Fankhanel, Junior Engineer – Transportation, Mobility and Parking
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Tammy Maldonado, Zoning Enforcement Officer – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer/Assistant Director – Conservation and Planning and Zoning

DEPARTMENT OF ENGINEERING

CITY OF NORWALK
Wilber Giron, P.E.
Permit Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Office: (203) 854-7801
Permits: (203) 854-4161
www.norwalkct.gov
wgiron@norwalkct.gov
dpwpermits@norwalkct.gov

July 9, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 220 Gregory Blvd (District 3, Block 73, Lot 2)
Site Improvements for Proposed Tennis Courts
Department of Engineering's Plan Review Sign-Off

Dear Ms. Suchy:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Site Plan titled "Site Improvements for Proposed Tennis Courts," dated 06/12/24 and last revised 06/26/2025, prepared by Landtech, LLC
- Drainage Report titled "Stormwater Management Report for 220 Gregory Boulevard Norwalk, CT," dated 07/12/24 and last revised 05/19/2025, prepared by Landtech, LLC
- Architectural plans titled "Shore & Country Club New Tennis Pro Shop," dated 05/15/2025, prepared by Rogers McCagg Architects
- Survey Map titled "Zoning Location Survey of Property prepared for The Shore & Country Club, #220 Gregory Boulevard, Norwalk, Connecticut," dated 09/07/2023, prepared by Arcamone Land Surveyors LLC
- Response Letter prepared by Landtech, LLC, dated 06/26/2025

The aforementioned documents are in compliance with the City's current standards and Drainage Manual. Therefore, the Department of Engineering has no objection to the project moving forward with the following condition(s):

1. A DPW Encroachment and Driveway Permit, in conformance with DPW's Permit Provisions, is required for the proposed work. The contractor shall email DPWpermits@norwalkct.gov to obtain the required permit(s) prior to the commencement of the work.
    a. Road restoration requirements shall be determined at the time of permitting.
    b. A Building and Code Enforcement permit shall be required for sanitary sewer work performed within the property.
    c. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
        i. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.
2. The property owner is responsible for confirming with each City department if approval is required prior to the commencement of work.
3. The following must be submitted prior to the issuance of a Certificate of Occupancy/Compliance.
    a. A set of as-built plans shall be submitted along with a certificate from a licensed professional stating that the construction has been built according to City standards.
    b. The size and quantity of existing/proposed water meter(s) for the project.
4. This sign-off shall be valid for a period of 12-months from the date stamped on the plan. Any permit issued on the basis of this sign-off must be issued within such 12-month period. Any renewal of the plan sign-off will be based on the then existing conditions and current applicable regulations, ordinances and standards of practice in effect at the time of the renewal.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Wilber Giron, P.E.
Permit Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Christine Cardascia, P.E., Assistant Civil Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Mario Pizighelli, P.E., Stormwater Systems Manager – Water Pollution Control Authority
Garrett Bolella, P.E., Assistant Director – Transportation, Mobility and Parking
Benjamin Yeung, P.E., Senior Traffic Engineer – Transportation, Mobility and Parking
Nathan Fankhanel, Junior Engineer – Transportation, Mobility and Parking
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Tammy Maldonado, Zoning Enforcement Officer – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer/Assistant Director – Conservation and Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 220 GREGORY BOULEVARD TAKEN FROM ZONING LOCATION SURVEY PREPARED BY ARCAMONE LAND SURVEYORS LLC DATED SEPTEMBER 7, 2023, REVISED TO JULY 23, 2024.
2. DATUM: NAVD 1988
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. PROPERTY IS LOCATED IN FLOOD ZONE AE12 BFE=12.0, AE 14 BFE=14.0, VE 14 BFE=14.0, PER FEMA FLOOD MAP 09001C0534G EFFECTIVE JULY 8, 2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS.

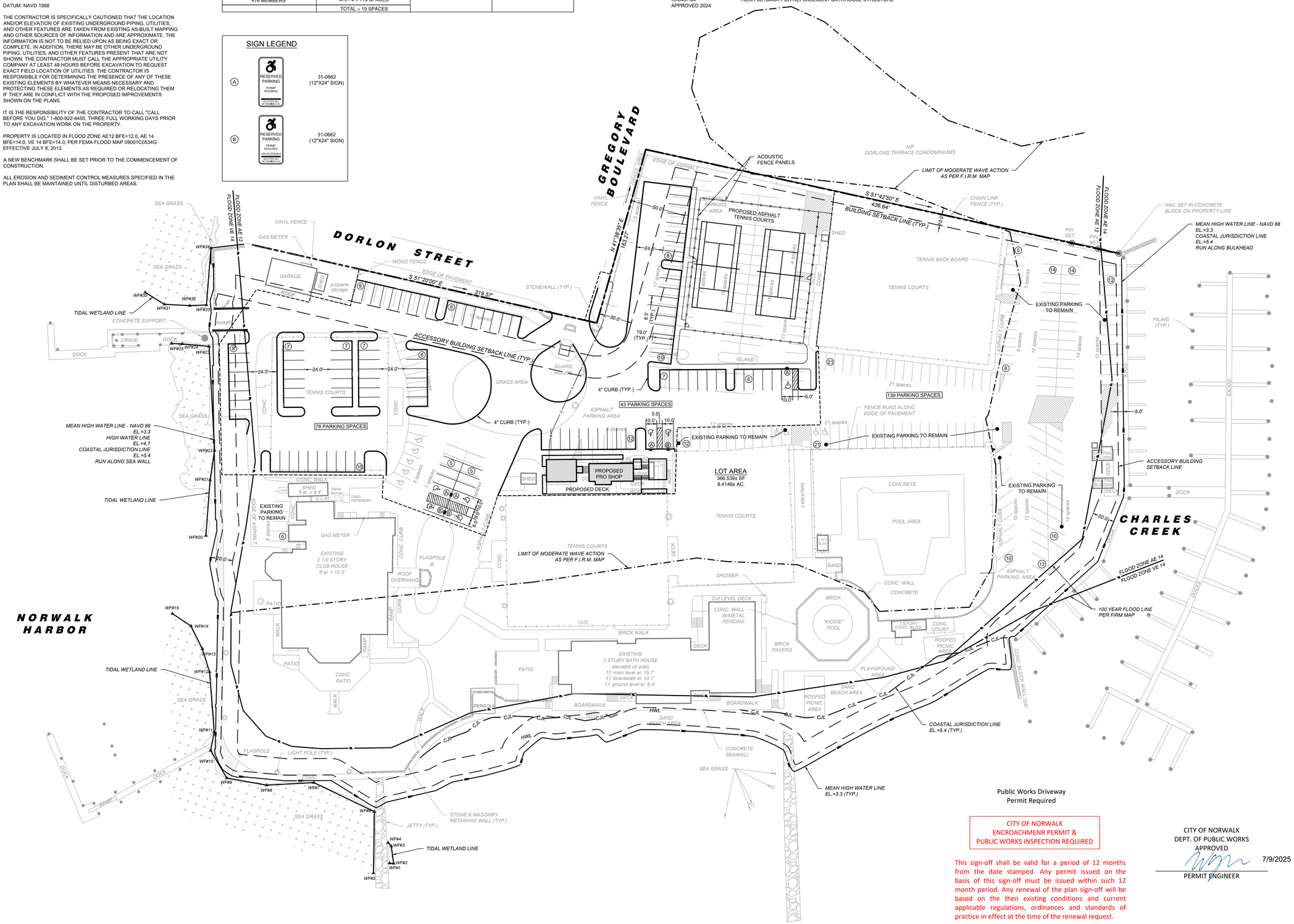
PARKING REQUIREMENTS			
USE: WATERFRONT CLUB			
	SPACES REQUIRED	EXISTING SPACES	SPACES PROVIDED
WATERFRONT CLUB 476 MEMBERS	1 SPACE PER 4 MEMBERS 476 / 4 = 119 SPACES	289 SPACES	260 SPACES
	TOTAL = 19 SPACES		

SIGN LEGEND

A	RESERVED PARKING PERMIT REQUIRED VIOLATORS WILL BE TOWED AT O/V	31-0662 (12"X24" SIGN)
B	RESERVED PARKING PERMIT REQUIRED VAN ACCESSIBLE VIOLATORS WILL BE TOWED AT O/V	31-0662 (12"X24" SIGN)

PRIOR VARIANCES

VARIANCE No.	DESCRIPTION
99-0506-03 APPROVED 2024	INCREASE HEIGHT FROM 15 TO 19.6 (EXISTING) AND LOCATE SERVICE/UTILITY EQUIPMENT BELOW FLOOD ELEVATION
16-0407-04 APPROVED 2024	REAR SETBACK FOR REPLACEMENT BATHHOUSE STRUCTURE

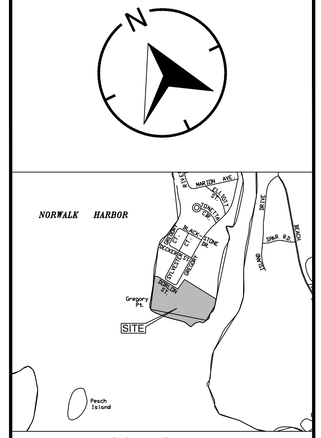


Public Works Driveway Permit Required

CITY OF NORWALK
ENCROACHMENR PERMIT &
PUBLIC WORKS INSPECTION REQUIRED

This sign-off shall be valid for a period of 12 months from the date stamped. Any permit issued on the basis of this sign-off must be issued within such 12 month period. Any renewal of the plan sign-off will be based on the then existing conditions and current applicable regulations, ordinances and standards of practice in effect at the time of the renewal request.

CITY OF NORWALK
DEPT. OF PUBLIC WORKS
APPROVED
7/9/2025
PERMIT ENGINEER



LOCATION MAP
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:
THE SHORE & COUNTRY CLUB

PROJECT LOCATION:
220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:
SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:
SITE LAYOUT PLAN

PROJECT No.: 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: 1" = 40'
IN FEET
0 40 80 120

PROJECT STATUS:
DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

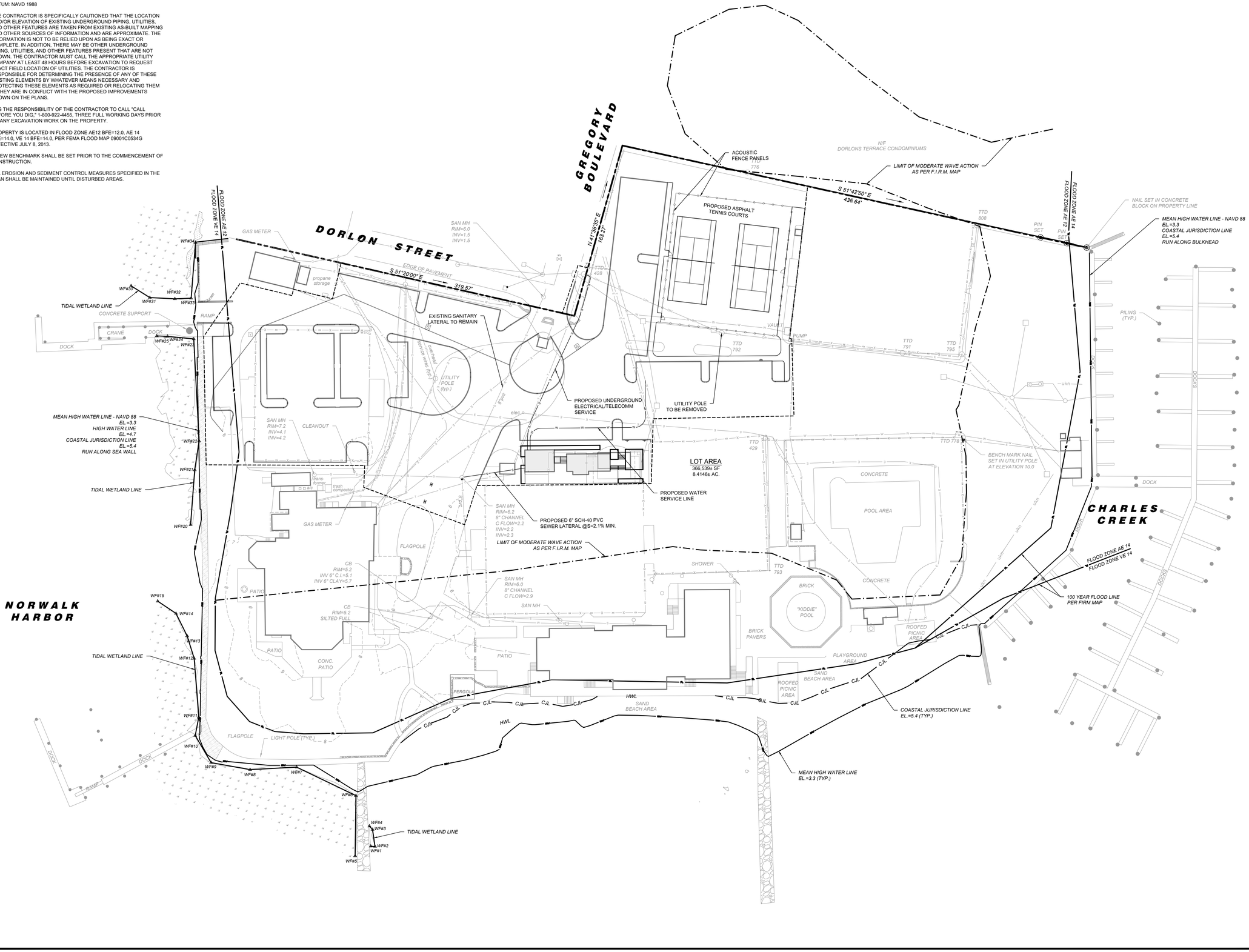
STATE OF CONNECTICUT · ROBERT SOUWLOS · 27803 · LICENSED PROFESSIONAL ENGINEER

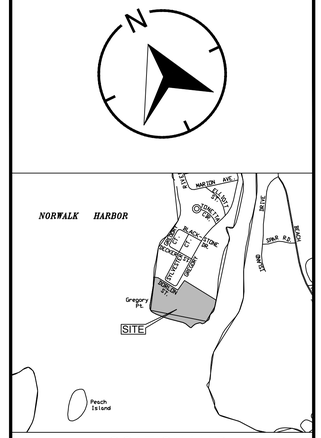
C-1.0

T:\1. ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD., NORWALK\DRAWINGS\CAM SITE PLAN JUPSHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 220 GREGORY BOULEVARD TAKEN FROM ZONING LOCATION SURVEY PREPARED BY ARCAMONE LAND SURVEYORS LLC DATED SEPTEMBER 7, 2023 REVISED TO JULY 23, 2024.
2. DATUM: NAVD 1988
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. PROPERTY IS LOCATED IN FLOOD ZONE AE12 BFE=12.0, AE 14 BFE=14.0, VE 14 BFE=14.0, PER FEMA FLOOD MAP 09001C0534G EFFECTIVE JULY 8, 2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS.





LOCATION MAP
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

THE SHORE & COUNTRY CLUB

PROJECT LOCATION:

220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:

SITE UTILITY PLAN

PROJECT No.		
24033-01		
DATE: 6/12/2024	DESIGNED BY: SM	CHECKED BY: AS

SCALE: 1" = 40'

IN FEET
0 40 80 120

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

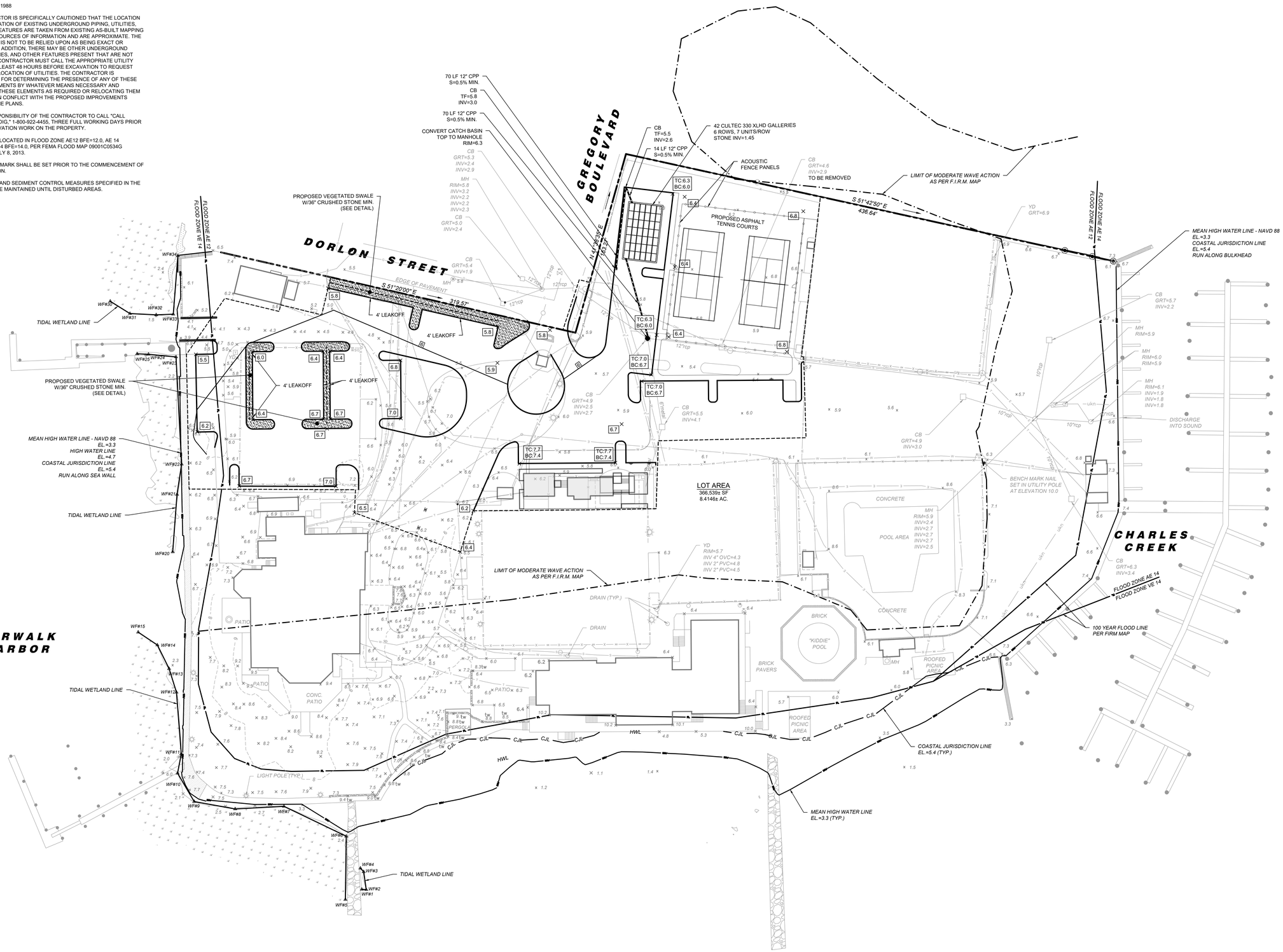
STATE OF CONNECTICUT · SCOTT SOUWLIDIS · 27803 · LICENSED PROFESSIONAL ENGINEER

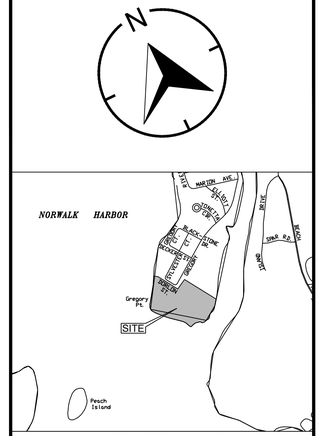
C-2.0

T:\ ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - NORWALK\DRAWINGS\CAM SITE PLAN\APPSHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 220 GREGORY BOULEVARD TAKEN FROM ZONING LOCATION SURVEY PREPARED BY ARCAMONE LAND SURVEYORS LLC DATED SEPTEMBER 7, 2023 REVISED TO JULY 23, 2024.
2. DATUM: NAVD 1988
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. PROPERTY IS LOCATED IN FLOOD ZONE AE12 BFE=12.0, AE 14 BFE=14.0, VE 14 BFE=14.0, PER FEMA FLOOD MAP 09001C0534G EFFECTIVE JULY 8, 2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS.





LOCATION MAP
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

THE SHORE & COUNTRY CLUB

PROJECT LOCATION:

220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:

SITE GRADING & DRAINAGE PLAN

PROJECT No. 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: 1" = 40'

IN FEET
0 40 80 120

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

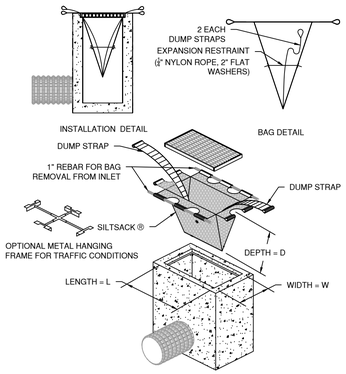
STATE OF CONNECTICUT · SCOTT M. SOUWLIDIS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-3.0

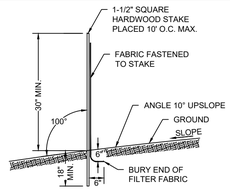
T:\ ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD., NORWALK\DRAWINGS\CAM\ SITE PLAN\ APP\SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

GENERAL EROSION AND SEDIMENT CONTROL NOTES

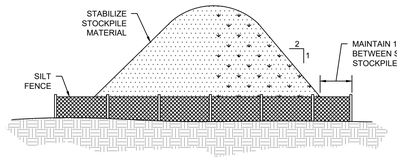
1. LAND DISTURBANCE WILL BE KEPT TO A MINIMUM; RESTABILIZATION WILL BE SCHEDULED AS SOON AS POSSIBLE.
2. SILT FENCE WILL BE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES, SOIL STOCKPILE AREAS, AND IN THOSE AREAS SHOWN ON THE PLAN.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE STATE OF CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL 2002.
4. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO LAND DISTURBANCE WHENEVER POSSIBLE.
5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED UNTIL STABILIZATION HAS BEEN ACHIEVED.
6. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD IF NECESSARY OR REQUIRED. A MINIMUM OF 50 FEET OF SILT FENCE SHALL BE STORED AT THE SITE FOR EMERGENCY USE.
7. ANY EXCAVATIONS THAT MUST BE DEWATERED WILL BE PUMPED INTO A 15'x15' DIRTBAG ON-SITE. THE INLETS OF ALL PUMPS ARE TO BE FLOATED A MINIMUM OF 24 INCHES OFF THE BOTTOM OF THE EXCAVATION. THE CONTRACTOR SHALL KEEP A MINIMUM OF (2) 15'x15' DIRTBAGS ON-SITE THROUGHOUT THE EXCAVATION OF PROPOSED FOUNDATIONS.
8. WATER AND CALCIUM CHLORIDE SHALL BE APPLIED TO UNPAVED ACCESSWAYS TO PREVENT WIND GENERATED SEDIMENTS AND DUST.
9. DEBRIS AND OTHER WASTES RESULTING FROM EQUIPMENT MAINTENANCE AND CONSTRUCTION ACTIVITIES WILL NOT BE DISCARDED ON-SITE.
10. SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE DISPOSED OF IN A MANNER WHICH IS CONSISTENT WITH INTENT OF THE PLAN.
11. SILT FENCES SHALL HAVE SEDIMENT REMOVED WHEN THE DEPTH OF THE SEDIMENT IS EQUAL TO ½ TO ⅔ THE HEIGHT OF THE FENCE. FENCES SHALL BE PROPERLY INSTALLED AND RIPPED FENCE OR BROKEN POSTS REPAIRED AS SOON AS PRACTICAL.
12. ANTI-TRACKING PADS AND GRAVEL CHECK DAMS SHALL BE REPLACED WHEN VOID SPACES ARE FULL OR STRUCTURES ARE BREACHED, AS APPLICABLE.
13. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE SOIL SURFACE STABILIZED WHEN CONSTRUCTION IS COMPLETE AND THE SOIL SURFACES ARE PERMANENTLY STABILIZED. STRUCTURAL COMPONENTS SHALL BE CLEANED OF ALL SEDIMENT UPON COMPLETION OF CONSTRUCTION.
14. THE OWNER IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES INSTALLATION AND MAINTENANCE OF CONTROL MEASURES. INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFYING THE PLANNING AND ZONING COMMISSION OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT PLAN IF AND WHEN THE TITLE OF LAND IS TRANSFERRED.



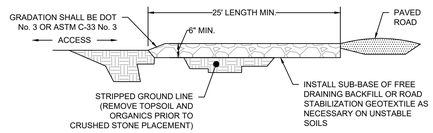
SILTSACK® CATCH BASIN INSERT
(NTS)

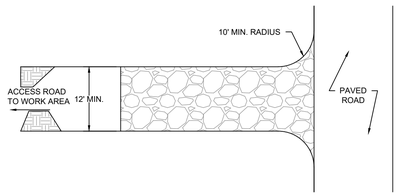


GEOTEXTILE SILT FENCE
(NTS)

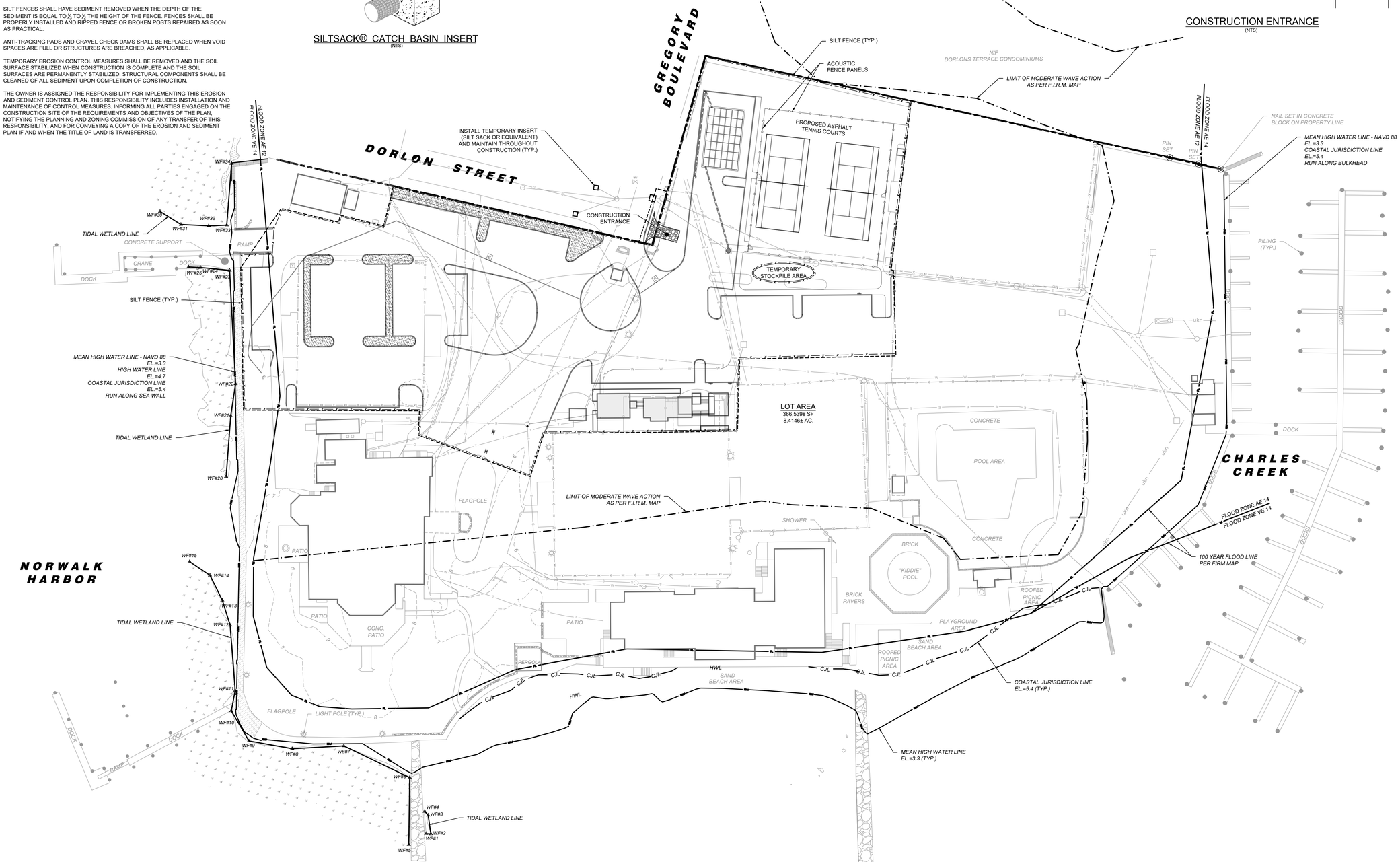


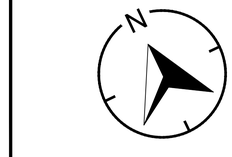
STOCKPILE DETAIL
(NTS)

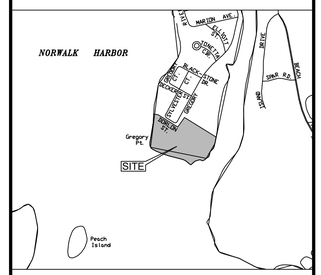




CONSTRUCTION ENTRANCE
(NTS)







LOCATION MAP
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

THE SHORE & COUNTRY CLUB

PROJECT LOCATION:

220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:

EROSION & SEDIMENT CONTROL PLAN

PROJECT No. 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: 1" = 40'

IN FEET
0 40 80 120

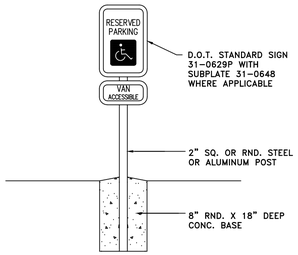
PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

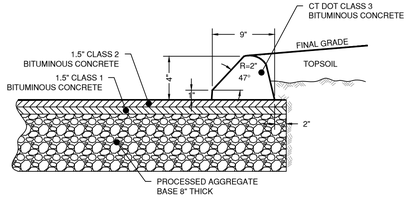
STATE OF CONNECTICUT · SCOTT MICHAEL SOUWLOS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-4.0

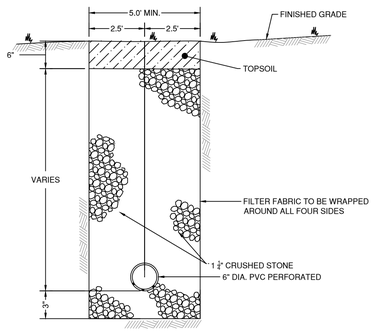
T:\1. ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - NORWALK\DRAWINGS\CAM SITE PLAN (APS)\SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG



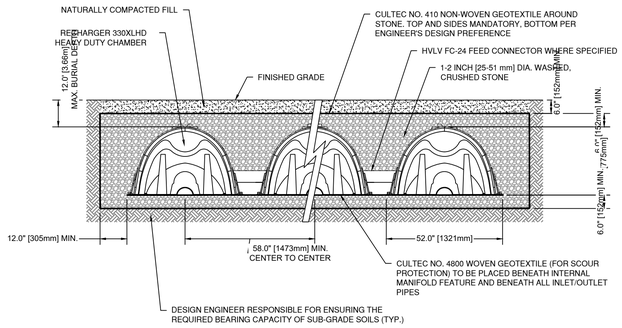
DISABLED PARKING SIGN
(NTS)



PARKING LOT PAVEMENT AND BIT. CURB TYPICAL CROSS SECTION
(NTS)



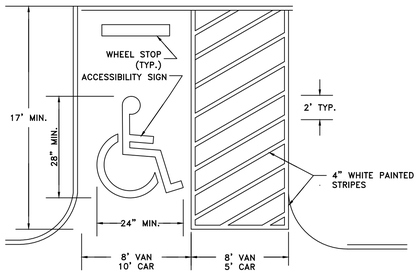
VEGETATED SWALE
(NTS)



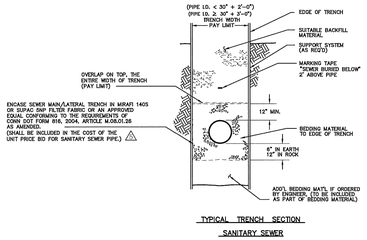
GENERAL NOTES
RECHARGER 330XL HD BY CULTEC, INC. OF BROOKFIELD, CT.
STORAGE PROVIDED = 11.32 CF/FT [1.05 m^3/m] PER DESIGN UNIT.
REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES.
THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS

ALL RECHARGER 330XL HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
ALL RECHARGER 330XL HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

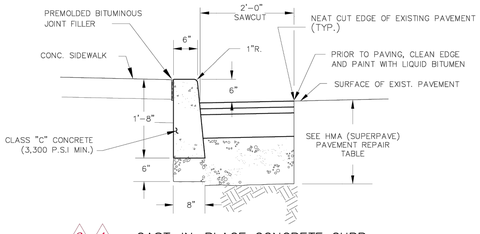
CULTEC RECHARGER 330XLHD HEAVY DUTY (NON-TRAFFIC APP.) TYPICAL CROSS SECTION
(NTS)



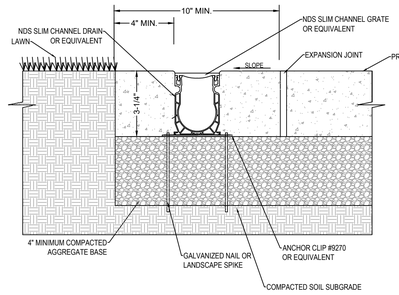
DISABLED PARKING MARKING
(NTS)



TYPICAL TRENCH SECTION
SANITARY SEWER

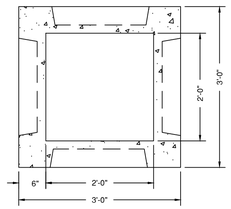


6 4 CAST-IN-PLACE CONCRETE CURB
EXPANSION JOINTS @ APPROX. 12'-0" O.C. (TYP.)
(EXISTING PAVEMENT)
NOT IN ROAD RECONSTRUCTION AREA

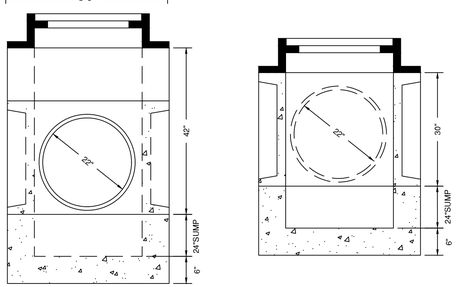


GENERAL NOTES
1. EXISTING SOILS SHOULD BE EVALUATED TO ENSURE PROPER STRUCTURAL AND PERMEABILITY PROPERTIES.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. DO NOT SCALE THIS DRAWING
4. THIS IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY.
5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED.

2" DRAIN CHANNEL DETAIL
(NTS)

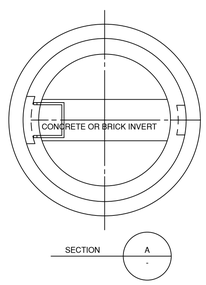


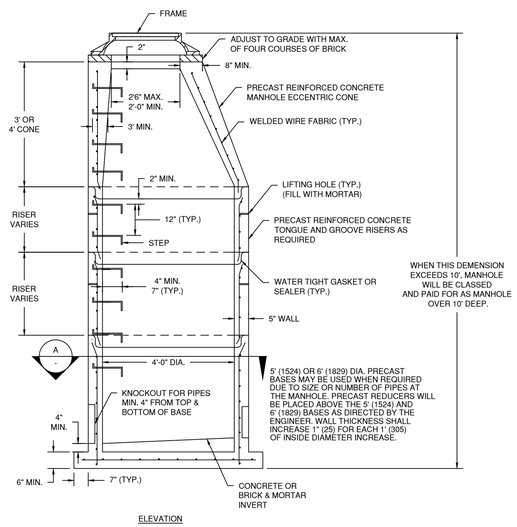
GRATE DETAIL



GENERAL NOTES
1. REINFORCED 6 X 6 X 10 GUAGE MESH OR TO SPECIFICATIONS.
2. GRATE - STEEL OR CAST IRON.
3. 4' HIGH SUMP HAS TWO KNOCKOUTS LOW AND 2 KNOCKOUTS UP HIGH.
4. APPROXIMATE WEIGHTS:
   3' - 2100 LBS.
   4' - 2800LBS.

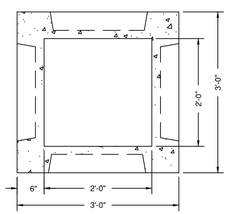
2' X 2' PRECAST CONCRETE CATCH BASIN
(NTS)



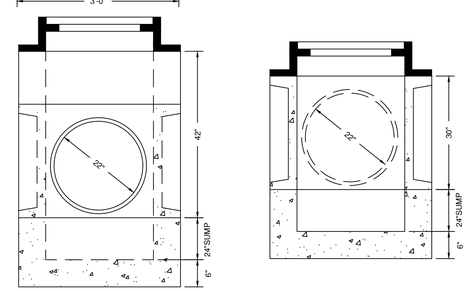


ELEVATION

CT DOT REINFORCED PRECAST CONCRETE MANHOLE
(NTS)



GRATE DETAIL



GENERAL NOTES
1. REINFORCED 6 X 6 X 10 GUAGE MESH OR TO SPECIFICATIONS.
2. GRATE - STEEL OR CAST IRON.
3. 4' HIGH SUMP HAS TWO KNOCKOUTS LOW AND 2 KNOCKOUTS UP HIGH.
4. APPROXIMATE WEIGHTS:
   3' - 2100 LBS.
   4' - 2800LBS.

2' X 2' PRECAST CONCRETE CATCH BASIN
(NTS)

REVISION DATE	ISSUE
6/26/25	REVISED PER DPW COMMENTS
5/19/25	CAM SUBMISSION
4/4/25	ISSUED FOR PRICING
8/5/24	REVISED PER ZBA COMMENTS

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:
THE SHORE & COUNTRY CLUB

PROJECT LOCATION:
220 GREGORY BOULEVARD
NORWALK, CT

PROJECT TITLE:
SITE IMPROVEMENTS FOR PROPOSED TENNIS COURTS

DRAWING TITLE:
NOTES AND DETAILS

PROJECT No. 24033-01

DATE:	DESIGNED BY:	CHECKED BY:
6/12/2024	SM	AS

SCALE: N.T.S.

PROJECT STATUS:
DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDY SOUMELIDIS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-5.0

T:\1. ACTIVE PROJECTS\24033-01 THE SHORE AND COUNTRY CLUB - 220 GREGORY BLVD, NORWALK\DRAWINGS\CAM SITE PLAN APP\SHORE AND COUNTRY CLUB - 220 GREGORY BLVD - SITE PLAN.DWG

CITY OF NORWALK
Harbor Management Commission

www.norwalkct.gov

Norwalk City Hall
Room 129
125 East Avenue, PO Box 5125
Norwalk, CT 06851

VIA EMAIL
Amelia.williams@norwalkct.gov

July 9, 2025

Ms. Amelia Williams
Land-Use Planner
City of Norwalk
Conservation and Planning & Zoning Department
125 East Ave.
Norwalk, CT 06851

Subject: **Coastal Area Management Application by The Norwalk Country Club Company and Shore & Country Club, Inc. for work at 220 Gregory Blvd., Norwalk CT.**

Dear Ms. Williams:

The Norwalk Harbor Management Commission (NHMC) has reviewed the above-referenced application for Coastal Site Plan Review submitted to the Planning and Zoning Commission by The Norwalk Country Club Company and Shore & Country Club, Inc. (the Applicant), 220 Gregory Blvd., Norwalk, CT. The Applicant seeks approval for proposed work at the same address involving reconfiguration of the site to improve its functional layout; relocation of the existing tennis courts; construction of a new parking area; rebuilding of the existing pro shop to FEMA standards; addition of new landscaping; and construction of storm water management features.

As the proposed project is located within the coastal boundary and affects property on, in, or contiguous to Norwalk Harbor, it is subject to review by the NHMC to determine its consistency with the Norwalk Harbor Management Plan. The requirements of this review are specified in Sec. 22a-113p of the Connecticut General Statutes and the Harbor Management Plan.

The NHMC discussed this matter during its meeting on June 25, 2025 with the understanding, based on information provided by the Applicant, that the proposed project meets all FEMA requirements for flood zone construction and all City requirements for storm water management. Following discussion, the NHMC approved a motion finding the Applicant's proposal is **consistent with the Norwalk Harbor Management Plan** insofar as the proposed project is

expected to reduce the vulnerability of existing development to coastal flood hazards and result in a significant improvement to existing storm water and water quality conditions on the site.

In addition, on behalf of the NHMC, I hereby transmit the following comments and recommendations relevant to review and approval of the Applicant's application.

Comments and Recommendations:

1. The Applicant should be required to employ appropriate Best Management Practices during construction to ensure that the proposed work, including removal of debris, does not cause any significant adverse impacts on environmental quality, including water quality, in the Harbor Management Area.

2. The NHMC is concerned about the potential adverse impacts of storm water runoff from impervious areas draining into Norwalk Harbor. The Harbor Management Plan calls for protection and improvement of water quality in the Harbor Management Area and encourages and supports appropriate Best Management Practices to avoid or otherwise mitigate nonpoint source (storm water) pollution.

3. The NHMC encourages and supports runoff reduction and low impact development practices in all coastal area development projects, including new development and significant site improvement projects, pursuant to the City's National Pollutant Discharge Elimination System (NPDES) permit issued by the State of Connecticut.

Please be advised that the NHMC reserves its right to continue to review and comment on the Applicant's proposal at such time as it may be modified, additional information may be available, or the proposal is the subject of a public hearing.

If you have any questions, please contact me (203) 984-5339 or pintoj@optonline.net.

Sincerely,

John Thomas Pinto

John Thomas Pinto, Ph.D.
Chairman, NHMC Application Review Committee

cc:
Steve Bartush, Chairman, Norwalk Shellfish Commission
Mary-Beth Hart, CT DEEP
William Ireland, Norwalk Building Department
Alan Kibbe, Chairman, Norwalk Harbor Management Commission
Elizabeth A.B. Suchy, Esq., Carmody Torrance Sandak & Hennessey LLP.

South Norwalk Electric and Water
A Municipal Utility System
Serving the Needs of the Community

ALAN E HUTH, General Manager

ELIZABETH BURNS, Director of Water Operations
SCOTT MURPHY, Director of Electric Operations

Justin Andriopoulos
Water Technical Specialist
South Norwalk Electric and Water
164 Water Street, Norwalk CT 06854
(203) 866-3366 Ext. 256

June 18, 2025

Norwalk Department of Planning & Zoning
125 East Avenue
Room 129
Norwalk, CT. 06856

Re: Utility Signoff for –**220 Gregory Blvd.**

To whom it may concern:

This letter shall be considered confirmation that I have reviewed the Coastal Site Plan for the new pro shop and associated site improvements. SNEW has no objections for the project moving forward. This property is currently served with an 8" D.I. combination fire/ domestic water service. Should you have any questions or concerns, feel free to contact me at the number above.

Sincere Regards,

Justin Andriopoulos

Justin Andriopoulos

Baker, Bryan

From: Elizabeth A.B. Suchy <ESuchy@carmodylaw.com>
Sent: Friday, June 13, 2025 7:39 AM
To: Williams, Amelia
Subject: Fw: The Norwalk Country Club / Shore & Country Club

CAUTION: EXTERNAL Email: Don't open links or attachments from untrusted senders

Please see attached.

Get Outlook for iOS

Elizabeth A.B. Suchy | Bio
Carmody Torrance Sandak & Hennessey LLP
1055 Washington Blvd., 4th Floor | Stamford, CT 06901-2218
Direct: 203-252-2656 | Fax: 203-325-8608
ESuchy@carmodylaw.com | www.carmodylaw.com



From: Donohue, Troy <TDonohue@norwalkct.gov>
Sent: Friday, June 13, 2025 7:12:39 AM
To: Kleppin, Steven <skleppin@norwalkct.gov>
Cc: Elizabeth A.B. Suchy <ESuchy@carmodylaw.com>
Subject: [EXTERNAL] The Norwalk Country Club / Shore & Country Club

Good morning,

At this time the Norwalk Fire Marshal's office has no issue with the submitted proposal for the new tennis courts, pro shop, and renovations at the property of 220 Gregory Blvd, Norwalk, Ct.

Respectfully,

Troy J. Donohue
Fire Marshal
City of Norwalk Fire Department
121 Connecticut Avenue
Norwalk, CT 06854
Office 203-854-0226
Mobile 203-807-3166
Email TDonohue@norwalkct.gov



This electronic message contains information from Carmody Torrance Sandak & Hennessey LLP, or its attorneys, which may be confidential, privileged or otherwise protected from disclosure. The information is intended to be used solely by the recipient(s) named. If you are not an intended recipient, be aware that any review, disclosure, copying, distribution or use of this transmission or its contents is prohibited. If you have received this transmission in error, please notify us immediately at 203-573-1200 or at the reply email address. For more information about Carmody Torrance Sandak & Hennessey LLP, please go to http://www.carmodylaw.com
---

Ernest A. S. Bothwell
Trustee
P.O. Box 1685
New Canaan, CT 06840
July 8, 2025

Norwalk Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06856

Re: Special Permit Application #2025-46 SP CAM – LaJoie Auto Wrecking Company, Inc.
40 Meadow Street, Norwalk, CT

Dear Chairwoman Wells and Members of the Commission,

I am writing in support of the above-referenced application on behalf of my family, who have owned the property at 139 Woodward Avenue in Norwalk since 1988. For nearly four decades, our family has been part of Norwalk's industrial and commercial fabric, and we've witnessed firsthand the evolution of the area and the businesses that operate within it.

Throughout that time, we have known Donald and Jimmy LaJoie both personally and professionally. They have consistently demonstrated themselves to be honest, hardworking business owners who take pride in their word and follow through on their commitments. Their word is not lip service, nor a transactional phrase — it's a reflection of their values and a bond that has stood the test of time.

The LaJoie family has long been a fixture in Norwalk's industrial community, and their proposed redevelopment of 40 Meadow Street into a modern recycling facility reflects a thoughtful, forward-looking investment in the city's future. Based on our long history with them, we are confident that this project will be executed with integrity and professionalism.

We respectfully support their application and appreciate your time and consideration.

Sincerely,
Ernest A. S. Bothwell
Trustee, 139 Woodward Avenue. A Ernest Bothwell Trust
P.O. Box 1685
New Canaan, CT 06840

June 23, 2025

Galen Wells
Chairwoman
City of Norwalk
Planning & Zoning Commission

125 East Avenue
Norwalk, CT 06851

Re: The Shore & Country Club, Inc. 220 Gregory Boulevard, East Norwalk, Ct
Applications for Special Permit and Coastal Site Plan
The Planning and Zoning Commission – public hearing July 16, 2025

Dear Chairman Wells:

I am the owner of both 14 Sylvester Court and 212 Gregory Boulevard in East Norwalk, Connecticut. I understand that The Shore & Country Club, our neighbor, plans to address some renovations at the club, including replacing the tennis pro shop and adding two hard courts. We are unable to attend the July 16, 2025, public hearing but wanted to submit our support of The Shore and Country Club's project.

Accordingly, we urge the Planning and Zoning Commissiong to approve the applications.

Very truly yours,

Daniel Kuelzow

Timothy & Silvana Buono
1 Dorlon Street
Norwalk, CT 06855

June 30, 2025

Galen Wells
Chairwoman
City of Norwalk
Planning & Zoning Commission

125 East Avenue
Norwalk, CT 06851

Re: The Shore & Country Club, Inc. 220 Gregory Boulevard, East Norwalk, Ct
Applications for Special Permit and Coastal Site Plan
The Planning and Zoning Commission – public hearing July 16, 2025

Dear Chairman Wells:

We are the owners of 1 Dorlon Street in East Norwalk, Connecticut. I understand that The Shore & Country Club, our neighbor, plans to address some renovations at the club, including replacing the tennis pro shop and adding two hard courts. We are unable to attend the July 16, 2025 public hearing but wanted to submit our support of The Shore and Country Club's project.

Accordingly, we urge the Planning and Zoning Commissiong to approve the applications.

Very truly yours,

Timothy M. Buono

Silvana G. Buono

June 23, 2025

Galen Wells
Chairwoman
City of Norwalk
Planning & Zoning Commission

125 East Avenue
Norwalk, CT 06851

Re: The Shore & Country Club, Inc. 220 Gregory Boulevard, East Norwalk, Ct
Applications for Special Permit and Coastal Site Plan
The Planning and Zoning Commission – public hearing July 16, 2025

Dear Chairman Wells:

I am the owner of both 14 Sylvester Court and 212 Gregory Boulevard in East Norwalk, Connecticut. I understand that The Shore & Country Club, our neighbor, plans to address some renovations at the club, including replacing the tennis pro shop and adding two hard courts. We are unable to attend the July 16, 2025, public hearing but wanted to submit our support of The Shore and Country Club's project.

Accordingly, we urge the Planning and Zoning Commissiong to approve the applications.

Very truly yours,

Daniel Kuelzow

Timothy & Silvana Buono
1 Dorlon Street
Norwalk, CT 06855

June 30, 2025

Galen Wells
Chairwoman
City of Norwalk
Planning & Zoning Commission

125 East Avenue
Norwalk, CT 06851

Re: The Shore & Country Club, Inc. 220 Gregory Boulevard, East Norwalk, Ct
Applications for Special Permit and Coastal Site Plan
The Planning and Zoning Commission – public hearing July 16, 2025

Dear Chairman Wells:

We are the owners of 1 Dorlon Street in East Norwalk, Connecticut. I understand that The Shore & Country Club, our neighbor, plans to address some renovations at the club, including replacing the tennis pro shop and adding two hard courts. We are unable to attend the July 16, 2025 public hearing but wanted to submit our support of The Shore and Country Club's project.

Accordingly, we urge the Planning and Zoning Commissiong to approve the applications.

Very truly yours,

Timothy M. Buono

Silvana G. Buono

Special Permit Application

City of Norwalk Planning & Zoning Commission
Phone: 203-854-7780
www.norwalkct.gov

Date Received:

Per Section 8.4.8 of the Norwalk Zoning Regulations, Special Permits are for Uses, Buildings, or Structures that are considered to be generally appropriate in the applicable District, but because of their potential for impacts with Adjacent Uses, Buildings, or Structures, require individual review for specific locations.

1. **Address of Subject Property(s):**
   40 Meadow Street, Norwalk, CT
2. District: 2 Block: 91 Lot(s): 51
3. Zone: SD-LI, Overlay/Village District: CAM
4. Historic Structure(s): ☐ No ☑ Yes
5. Flood Hazard Zone ☐ No ☑ Yes, Flood Zone(s) AE11
6. Coastal Area Management Zone: ☐ No ☑ Yes If yes, include application for Coastal Site Plan Review or specify Section allowing exemption: Submitted herewith
7. Existing Use of Property:
   Various commercial buildings constructed for Lajoie Auto Wrecking business, along with associated on-site activities.
   See Schedule A attached hereto and made a part hereof.
8. Proposed Use of Property as Identified per **Table 4.3.9.A:** Building, Lot & Building Site Principal Uses:
   Recycling facility - use permitted by special permit. See Schedule A attached hereto and made a part hereof.

Applicant Information

Applicant Name: Lajoie Auto Wrecking Company, Inc.
Billing Address: 40 Meadow Street, Norwalk, CT 06854
Phone Number: c/o Elizabeth Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth Suchy, Esq. - esuchy@carmodylaw.com
Signature: By Carmody Torrance Sandak & Hennessey, LLP As Attorneys

Property Owner Information and Authorization

Owner of Record: D & R Incorporated of Norwalk and DLJ Associates Inc.
Billing Address: 40 Meadow Street, Norwalk, CT 06854
Phone Number: c/o Elizabeth Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth Suchy, Esq. - esuchy@carmodylaw.com
* Signature: Carmody Torrance Sandak & Hennessey, LLP As Attorneys

By signing, the property owner confirms that the Applicant has been authorized to apply for Planning & Zoning approval, and attests that all information provided is true and accurate.

*See Letter of Consent attached hereto.

D&R INCORPORATED OF NORWALK AND DLJ ASSOCIATES, INC.
40 MEADOW STREET, NORWALK, CONNECTICUT
APPLICATION FOR SPECIAL PERMIT
NARRATIVE – SCHEDULE A

BACKGROUND

D&R Incorporated of Norwalk and DLJ Associates, Inc. (hereinafter collectively the "Owner") are the owners of real property with the improvements thereon located at 40 Meadow Street in Norwalk, CT (the "Property"). Designated as Tax Lot 51 in Block 91 of the Second Taxing District, the Property is 3.587± acres and is zoned SD-LI.[1] It is located within the boundary of the coastal area management (CAM) zone, with a minimum flood elevation of 11 feet, as established by the Federal Emergency Management Agency (FEMA). The Property is improved with a one-story, 5,800+ sf commercial/industrial building constructed around 1945 and other structures including storage bays for recycled projects, an automobile crusher, and other structures. It is nearly all impervious. (Refer to "Zoning Location & Topographic Survey" ["ZLS"] dated 4-11-2024 revised to 6/2/25 prepared by LandTech Consult, attached hereto and made a part hereof). LaJoie Auto Wrecking Company, Inc. is the applicant on this special permit application.[2]

LaJoie's has been in existence in Norwalk for more than 100 years and the neighborhood has developed and evolved around it. The company was started by Francois LaJoie who began collecting and recycling rags and paper, and then developed the profitable business of recycling used auto parts and scrap metal. In its century of existence and operation in Norwalk, LaJoie's has served local residents and businesses, as well as large companies with government contracts such as Sikorsky Aircraft, Pratt & Whitney and Hubbell, municipalities throughout Fairfield County, and various police and fire departments. Furthermore, the majority of the extended LaJoie family continues to reside in Norwalk – raising their families here, paying taxes here, spending their time working here, and patronizing local businesses.

LaJoie's is a recycling facility per the City of Norwalk Zoning Regulations ("zoning regulations") effective February 19, 2024 and is so classified by the State of Connecticut Department of Motor Vehicles under Permit No. J4151. It accepts vehicles for scrap as well as all sorts of metal such as steel; cast iron; copper wire, tubing and sheeting; aluminum rims, siding and windows; brass; bronze; and other recyclable items, and then separates, sorts, processes and packages this scrap material for sale to and reuse in the building trades and other industries. For example, LaJoie's sells aluminum scrap to Pennex (whose products contain 80% recycled aluminum), Alcoa (a major US producer and recycler of aluminum) and Novelis (the world's largest recycler of aluminum). Copper, including wire and tubing and the chips manufactured at the Property, are purchased by Revere Copper (which turns scrap metal into copper coil), Acupowder International (a manufacturer of non-ferrous metal powders) and Cambridge-Lee Industries (a manufacturer and distributor of copper tubing). Steel scrap such as girders from the former Maritime Aquarium, is purchased by Commercial Metals, McWane Ductile, Sims Metals

[1]Prior to November 2022, the Property had been zoned Industrial No. 1, which permitted commercial junkyards. With the rezoning in 2022, the use became legally nonconforming. As part of the citywide zoning rewrite in 2023-2024, the regulations included recycling facilities as a use permitted by special permit.

[2]An application for coastal site plan review is submitted simultaneously herewith.

Management. LaJoie's works hand-in-hand with firms such as Rizzo Companies, Ducci, Cianbro, Middlesex and Manafort in connection with the recycling of guardrails, signs and light poles from I-95 and the Merritt Parkway and will assist with the reclamation and recycling of scrap metals from the Walk Bridge replacement project in South Norwalk.

PROPOSAL

The Applicant submits this special permit application[3] for the redevelopment of the site as a recycling facility. Specifically, the Applicant proposes the construction, use and occupancy of a 36,000± sq.ft. two-story building. (Refer to "Zoning Improvement Survey (SV-1.1)" ["Improvement Survey"] and "Site Layout Plan (C.1-1)" ["Site Plan"] all dated 6/2/25 prepared by LandTech Consult, attached hereto and made a part hereof). The structure will have the finished first floor located at 13.1 feet, so as to comply with both the FEMA 11.0 flood elevation and the additional two (2') as required by the City of Norwalk zoning regulations.

The first floor will offer space for materials and product receiving, processing and shipping; business maintenance operations such as welding and garage; offices; restrooms and space for a "museum" to house the LaJoie family racing collection and memorabilia. A second floor is proposed above the western section of the building for additional administrative office space, conference room and restrooms. (Refer to "First Floor Plan (Drawing No. A-1)," "Roof Plan (Drawing No. A-2)," "Administration Front & Right Elevations (Drawing No. A-3)," and "Rear and Left Elevation (Drawing No. A-4)" all dated 10/29/24 revised to 5/30/2025, prepared by Andriopoulos Design Associates, LLC, attached hereto and made a part hereof). A metal building along the southern boundary will be demolished and the existing asphalt at the rear of the site will be milled and paved. In addition, a "museum" showcase area is proposed at the front of the building visible to the public, which will house memorabilia from the LaJoie businesses and family car racing career.

The existing nonconforming imperious area will be decreased by approximately five (5%) percent, thereby reducing peak runoff rates during all storm events. Runoff from existing and proposed impervious surfaces will be directed to a hydrodynamic separator to provide water quality treatment for "first flush" volumes. In addition, the 2, 10-, 25-, 50- and 100-year storm events were analyzed to ensure that peak runoff rates for these events are maintained or decreased post development. (Refer to "Stormwater Management Report" dated June 2, 2025, prepared by LandTech Consult, ZLS and Site Plan, attached hereto and made a part hereof).

This application is submitted pursuant to Sections 4.3.9.A, 4.3.9.D, 4.3.9.G.1.4.bo, 4.3.1-L, 6.10.1, and 8.4.8G of the zoning regulations. In connection therewith, the Applicant submits that the application meets or exceeds the general conditions and standards for this use as set forth in Sec. 8.4.8G.2 (a-o) as follows:

(a) Density of use and bulk of buildings. The existing structure complies with the density of use and bulk of buildings requirements for the SD-LI zone. The structure has been

[3]An application for coastal site plan review is submitted simultaneously herewith because the property is within the boundary of the coastal area management (CAM) zone.

designed to comply with the design guidelines for structures in the SD-LI zone. (Refer to ZLS attached hereto and made a part hereof).

(b) All proposed uses for which a site plan is required shall provide for ingress and egress to the site which does not adversely impact the normal flow of traffic or normal safe conditions of the roadways. Site plans shall be referred to the Department of Public Works (DPW) and the Transportation, Mobility and Parking Department (TMP) for review and recommendations. The Property will continue to be served by one (1) driveway. The application and supporting documentation have been forwarded to DPW, TMP, South Norwalk Electric and Water and the Water Pollution Control Authority for review and comment.

(c) The Commission may require such reasonable improvements as may be necessary to accommodate traffic increases caused by the proposed development to maintain existing levels of service to improve traffic safety. A traffic impact analysis, as specified below, may be required from the applicant to determine the extent of necessary improvements. Refer to April 3, 2025 Traffic Analysis prepared by Hardesty & Hanover, attached hereto and made a part hereof.

(d) Availability of mass transit facilities and provision of sidewalks, with a minimum clearance of five (5') feet without obstructions. A five-foot-wide concrete sidewalk will be created along the Meadow Street frontage. Wheels Bus Route 10 and the Connecticut Avenue Sunday line travel directly in front of the Property, and Wheels Bus Route 7 travels within four or five blocks of the site and the South Norwalk Train Station is located approximately 1.5 miles to the north.

(e) Availability and compatibility of utilities. The Property is and will continue to be served by city water and sewer. Since the site is nearly all impervious and based on existing uses, the Property is not suitable for the installation of underground stormwater best management practices. Due to the foregoing and the Property's location within the CAM zone, water quality treatment rather than stormwater quantity was emphasized and under post development conditions, there will be a net reduction in impervious areas, with runoff treated through a hydrodynamic separator prior to entry into the city stormwater system on Meadow Street. (Refer to ZLS, attached hereto and made a part hereof).

(f) Adverse impact from noise, odor, fumes, dust and artificial lighting. The proposal is geared toward reducing neighborhood impact from noise, odor, fumes, dust and artificial lighting. A new building is proposed as close to the street as permitted in the SD-LI zone, which will serve as a visual barrier for interior on-site activities. Receiving, shipping, materials/product storage will largely occur within the proposed building, while the rear of the site which is largely obscured from view from Meadow Street will continue to be used for the Applicant's existing processing operations. (Refer to "Front & Right Elevations (Drawing No. A-3)" and "Rear & Left Elevations (Drawing No. A-4)" dated 10/29/24 revised to 5/30/25 prepared by Andriopoulos Design Associates, attached hereto and made a part hereof).

(g) Signs of size and design that are in harmony with the neighborhood. Limited wall and ground signs are proposed and will comply with the city's signage regulations.

(h) Adequacy of yards and open space, screening and buffering. Yards and open space, screening and buffering for the site comply with city zoning regulations for the SD-LI zone. (Refer to zoning data chart on ZLS and "Landscape Plan (L-1.0)" dated 6/2/25 prepared by LandTech Consult, attached hereto and made a part hereof).

(i) Impact on neighborhood properties, as compared to uses and structures permitted as a matter of right. The proposed redevelopment of the Property as a recycling operation/facility is compatible and consistent with other commercial uses in the vicinity including indoor processing operations, waste management, warehouse and others industrial uses. Interior space for processing, receipt, shipping and storage of product will reduce the impact on the community while allowing the Applicant to remain in Norwalk and prosper.

(j) Existing land use in the area. The area surrounding the property is generally developed with industrial, warehouse, materials processing, multi-family residential self-storage, industrial, fire station and other uses.

(k) Proximity of community facilities. The new South Norwalk elementary school is under construction within one half mile of the Property, and a small city park is located across the street at the former Meadow Gardens. The Woodward Avenue Park, tennis courts and pickleball courts are located one mile to the south.

(l) Compliance with the Zoning Code and Plan of Development. The proposed use is a new use adopted in December 2023 as part of the of the citywide zoning rewrite and not contemplated by the 2019 advisory Plan of Conservation and Development.

(m) Utilization of green infrastructure and other sustainability measures. Low-impact development features have been incorporated into the stormwater management system design and solar panels are proposed for the roof. (Refer to Stormwater Management Report by LandTech Consult, and Roof Plan by Andriopoulos Design Associates, attached hereto and made a part hereof).

(n) Conservation of wetlands, watercourses and other ecologically viable lands. No wetlands or watercourses exist on the Property. The Property is within the boundary of the coastal area management (CAM) zone, but separated from coastal resources by other industrially, residentially and commercially developed sites, driveways, streets, curbs and other improvements. There are no onsite wetlands or onsite coastal resources. (Refer to Coastal Area Management Report dated June 2, 2025 prepared by LandTech Consult, attached hereto and made a part hereof).

(o) No zoning violation exists on the property. There are no known zoning violations on the property.

Planning & Zoning Commission

APPLICATION FOR COASTAL SITE PLAN REVIEW

Application must be accompanied by two (2) printed and one (1) digital set of all documents, and appropriate filing fee. Filing Fee: $310.00 for single or two family use; $810.00 for all other uses.

Date Stamp

Application Completion Date: Official Receipt Date: Fee Paid:

1. Property Address: 40 Meadow Street, Norwalk, CT 06854 **2.** D/B/L/U: 2/91/51

3. Proposed Work: Site redevelopment for recycling facility. See Schedule A attached hereto and made a part hereof. **4.** Zone: SD-LI

5. Applicant Identification:

Applicant Name: Lajoie Auto Wrecking Company, Inc.

Address: 40 Meadow Street, Norwalk ,CT 06854

Phone Number: c/o Elizabeth Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth Suchy, Esq. - esuchy@carmodylaw.com

Interest in Property: ☑ fee simple ☐ option ☐ lessee ☐ easement ☐ other (specify): _____

List primary contact for correspondence *if other than applicant* (Agent or Attorney):

Name: Elizabeth Suchy, Esq., Carmody Torrance Sandak & Hennessey LLP

Address: 1055 Washington Boulevard, 4th Floor, Stamford, CT 06901

Business Phone: 203-252-2656 Email: esuchy@carmodylaw.com

6. Property Owner, if different than applicant:

Owner Name: D & R Incorporated of Norwalk and DLJ Associates Inc.

Address: 40 Meadow Street, Norwalk, CT 06854

Phone Number: c/o Elizabeth Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth Suchy, Esq. - esuchy@carmodylaw.com

7. Project Information:

Please check the appropriate box to identify the plan or application that has resulted in this Coastal Site Plan Review:

- ○ Coastal Site Plan for Zoning Compliance/Zoning Permit
- ○ Subdivision or Resubdivision Application
- ◉ Special Permit or Special Exception Application
- ○ Site Plan Review Application
- ○ Variance Application
- ○ Municipal Project (CGS Section 8-24)

6. Project Site Plans:

Please provide project site plans that clearly and accurately depict the following information, and check the appropriate boxes to indicate that the plans are included in this application:

- ☑ Project location
- ☑ Existing and proposed conditions, including buildings and topography
- ☐ **All** coastal resources on and contiguous to the site **N/A**
- ☐ High tide line [as defined in CGS Section 22a-359(c)] and mean high water mark elevation contours (for parcels abutting coastal waters and/or tidal wetlands only) **N/A**
- ☑ Soil erosion and sediment controls
- ☑ Storm water management & treatment practices
- ☑ Ownership and type of use on adjacent properties
- ☑ Reference datum (i.e., National Geodetic Vertical Datum, Mean Sea Level, etc.)
- ☑ Landscaping and planting plan (existing & proposed)
- ☑ Utility Plan (existing & proposed: water, drainage, sanitary sewers, electric & gas lines)
- ☑ Easements (utility, sight preservation, conservation, pedestrian)

7. Site Information:

a) Street Address or Geographical Description:
40 Meadow Street, Norwalk, CT 06854

b) Is project or activity proposed at a waterfront site (includes tidal wetlands frontage)? ○YES ●NO

c) Name of on-site, adjacent, or downstream coastal, tidal, or navigable waters, if applicable:
Village Creek

d) Identify and describe the existing land use in and adjacent to the site. Include description of any existing structures and significant features on the project site:
See Schedule A attached hereto and made a part hereof.

e) Indicate the area of the project site: 3.48± acres **or** 151,588+ square feet

f) Check the appropriate box below to indicate total land area of disturbance of the project or activity (please also see Question #9 regarding proposed stormwater best management practices):

- ○ Project or activity will disturb five (5) or more total acres of land area on the site. *Registration for CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities required.*
- ● Project or activity will disturb land, but less than five (5) total acres of land area would be disturbed. *A soil erosion and sedimentation control plan must be submitted.* **Attached hereto.**
- ○ Project or activity will not disturb any land area.

g) Does the project include a shoreline flood and erosion control structure as defined in CGS section 22a-109(d)? ○Yes ●No

8. Description of Proposed Project or Activity:

Describe the proposed project or activity including its purpose and related activities such as site clearing, grading, demolition, and other site preparations; percentage of increase or decrease in impervious cover over existing conditions resulting from the project; phasing, timing and method of proposed construction; and new uses and changes from existing uses (*attach additional pages if necessary*):

See Schedule A and Site Demolition Plan (C-1.0), Site Development Plan, Soil Erosion and Sediment Control Plan, Stormwater Management Report, all prepared by LandTech Consult, dated 5/15/2025, attached hereto and made a part hereof.

9. Description of Proposed Stormwater Best Management Practices:

Describe the stormwater best management practices that will be utilized to ensure that the volume of runoff generated by the first inch of rainfall is retained on-site, especially if the site or stormwater discharge is adjacent to tidal wetlands. If runoff cannot be retained on-site, describe the site limitations that prevent such retention and identify how stormwater will be treated before it is discharged from the site. Also demonstrate that the loadings of total suspended solids from the site will be reduced by 80 percent on an average annual basis, and that post-development stormwater runoff rates and volumes will not exceed pre-development runoff rates and volumes (*attach additional pages if necessary*):

Refer to Schedule A and Stormwater Management Report dated 5/15/25 prepared by LandTech Consult attached hereto and made a part hereof.

10. Identification of Applicable Coastal Resources and Coastal Resource Policies:

Identify the coastal resources and associated policies that apply to the project by placing a check mark in the appropriate box(es) in the following table.

Coastal Resources	On-site	Adjacent	Off-site but within the influence of project	Not Applicable
General Coastal Resources* - Definition: CGS Section 22a-93(7); Policy: CGS Section 22a-92(a)(2)	☑	☐	☐	☐
Beaches & Dunes - Definition: CGS Section 22a-93(7)(C); Policies: CGS Sections 22a-92-(b)(2)(C) and 22a-92(c)(1)(K)	☐	☐	☐	☑
Bluffs & Escarpments - Definition: CGS Section 22a-93(7)(A); Policy: CGS Section 22a-92(b)(2)(A)	☐	☐	☐	☑
Coastal Hazard Area - Definition: CGS Section 22a-93(7)(H); Policies: CGS Sections 22a-92(a)(2), 22a-92(a)(5), 22a-92(b)(2)(F), 22a-92(b)(2)(J), and 22a-92(c)(2)(B)	☐	☐	☐	☑
Coastal Waters, Estuarine Embayments, Nearshore Waters, Offshore Waters - Definition: CGS Sections 22a-93(5), 22a-93(7)(G), and 22a-93(7)(K), and 22a-93(7)(L) respectively; Policies: CGS Sections 22a-92(a)(2) and 22a-92(c)(2)(A)	☐	☐	☐	☑
Developed Shorefront - Definition: CGS Section 22a-93(7)(I); Policy: 22a-92(b)(2)(G)	☐	☐	☐	☑
Freshwater Wetlands and Watercourses - Definition: CGS Section 22a-93(7)(F); Policy: CGS Section 22a-92(a)(2)	☐	☐	☐	☑
Intertidal Flats - Definition: CGS Section 22a-93(7)(D); Policies: 22a-92(b)(2)(D) and 22a-92(c)(1)(K)	☐	☐	☐	☑
Islands - Definition: CGS Section 22a-93(7)(J); Policy: CGS Section 22a-92(b)(2)(H)	☐	☐	☐	☑
Rocky Shorefront - Definition: CGS Section 22a-93(7)(B); Policy: CGS Section 22a-92(b)(2)(B)	☐	☐	☐	☑
Shellfish Concentration Areas - Definition: CGS Section 22a-93(7)(N); Policy: CGS Section 22a-92(c)(1)(I)	☐	☐	☐	☑
Shorelands - Definition: CGS Section 22a-93(7)(M); Policy: CGS Section 22a-92(b)(2)(I)	☐	☐	☐	☑
Tidal Wetlands - Definition: CGS Section 22a-93(7)(E); Policies: CGS Sections 22a-92(a)(2), 22a-92(b)(2)(E), and 22a-92(c)(1)(B)	☐	☐	☐	☑

* General Coastal Resource policy is applicable to all proposed activities

11. Consistency with Applicable Coastal Resource Policies and Standards:

Describe the location and condition of the coastal resources identified in Question #10 and explain how the proposed project or activity is consistent with all of the applicable coastal resource policies and standards; also see adverse impacts assessment in Question #14 below (*attach additional pages if necessary*):

See Schedule A, and Coastal Report prepared by LandTech Consult, attached hereto and made a part hereof.

12. Identification of Applicable Coastal Use and Activity Policies and Standards:

Identify all coastal policies and standards in or referenced by CGS Section 22a-92 applicable to the proposed project or activity:

- [x] General Development* - CGS Sections 22a-92(a)(1), 22a-92(a)(2), and 22a-92(a)(9)
- [ ] Water-Dependent Uses** - CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A); Definition CGS Section 22a-93(16)
- [ ] Ports and Harbors - CGS Section 22a-92(b)(1)(C)
- [ ] Coastal Structures and Filling - CGS Section 22a-92(b)(1)(D)
- [ ] Dredging and Navigation - CGS Sections 22a-92(c)(1)(C) and 22a-92(c)(1)(D)
- [ ] Boating - CGS Section 22a-92(b)(1)(G)
- [ ] Fisheries - CGS Section 22a-92(c)(1)(I)
- [ ] Coastal Recreation and Access - CGS Sections 22a-92(a)(6), 22a-92(C)(1)(j) and 22a-92(c)(1)(K)
- [x] Sewer and Water Lines - CGS Section 22a-92(b)(1)(B)
- [ ] Fuel, Chemicals and Hazardous Materials - CGS Sections 22a-92(b)(1)(C), 22a-92(b)(1)(E) and 22a-92(c)(1)(A)
- [ ] Transportation - CGS Sections 22a-92(b)(1)(F), 22a-92(c)(1)(F), 22a-92(c)(1)(G), and 22a-92(c)(1)(H)
- [ ] Solid Waste - CGS Section 22a-92(a)(2)
- [ ] Dams, Dikes and Reservoirs - CGS Section 22a-92(a)(2)
- [ ] Cultural Resources - CGS Section 22a-92(b)(1)(J)
- [ ] Open Space and Agricultural Lands - CGS Section 22a-92(a)(2)

* General Development policies are applicable to all proposed activities

** Water-dependent Use policies are applicable to all activities proposed at waterfront sites, including those with tidal wetlands frontage.

13. Consistency With Applicable Coastal Use Policies and Standards:

Explain how the proposed activity or use is consistent with all of the applicable coastal use and activity policies and standards identified in Question #12. **For projects proposed at waterfront sites (including those with tidal wetlands frontage)**, particular emphasis should be placed on the evaluation of the project's consistency with the water-dependent use policies and standards contained in CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A) -- also see adverse impacts assessment in Question #15 below (attach additional pages if necessary):

See Schedule A and coastal report prepared by LandTech Consult, attached hereto and made a part hereof.

14. Identification of Potential Adverse Impacts on Coastal Resources: (*Must be completed for ALL projects.*)
Identify the adverse impact categories below that apply to the proposed project or activity.

The **'applicable'** column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(15). If an adverse impact **may result** from the proposed project or activity, please use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Coastal Resources	Applicable	Not Applicable
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☑
Degrading existing circulation patterns of coastal water through the significant alteration of patterns of tidal exchange or flushing rates, freshwater input, or existing basin characteristics and channel contours - CGS Section 22a-93(15)(B)	☐	☑
Degrading natural or existing drainage patterns through the significant alteration of groundwater flow and recharge and volume of runoff - CGS Section 22a-93(15)(D)	☐	☑
Degrading natural erosion patterns through the significant alteration of littoral transport of sediments in terms of deposition or source reduction - CGS Section 22a-93(15)(C)	☐	☑
Degrading visual quality through significant alteration of the natural features of vistas and view points - CGS Section 22a-93(15)(F)	☐	☑
Degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen or salinity - CGS Section 22a-93(15)(A)	☐	☑
Degrading or destroying essential wildlife, finfish, or shellfish habitat through significant alteration of the composition, migration patterns, distribution, breeding or other population characteristics of the natural species or significant alterations of the natural components of the habitat - CGS Section 22a-93(15)(G)	☐	☑
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☑
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☑

15. **Identification of Potential Adverse Impacts on Water-dependent Uses:** ***(Complete only if the project/activity is proposed at a waterfront site.)***

a) Identify the adverse impact categories below that apply to the proposed project or activity. The applicable column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(17). If an adverse impact **may result** from the proposed project or activity, use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Future Water-dependent Development Opportunities and Activities	Applicable	Not Applicable
Locating a non-water-dependent use at a site physically suited for or planned for location of a water-dependent use - CGS Section 22a-93(17)	☐	☑
Replacing an existing water-dependent use with a non-water-dependent use - CGS Section 22a-93(17)	☐	☑
Siting a non-water-dependent use which would substantially reduce or inhibit existing public access to marine or tidal waters - CGS Section 22a-93(17)	☐	☑

b) Identification of existing and/or proposed Water-dependent Uses:

Describe the features or characteristics of the proposed activity or project that qualify as water-dependent uses as defined in CGS Section 22a-93(16). If general public access to coastal waters is provided, please identify the legal mechanisms used to ensure public access in perpetuity, and describe any provisions for parking or other access to the site and proposed amenities associated with the access (e.g., boardwalk, benches, trash receptacles, interpretative signage, etc.) *:

Not applicable as the site does not abut nor have access to any coastal resources. Therefore, no water-dependent use is possible. See Schedule A attached hereto and made a part hereof.

*If there are no water-dependent use components, describe how the project site is not appropriate for the development of a water-dependent use.

16. Mitigation of Potential Adverse Impacts:

Explain how all potential adverse impacts on coastal resources and/or future water-dependent development opportunities and activities identified in Questions #14 & #15 have been avoided, eliminated, or minimized (*attach additional pages if necessary*):

See Schedule A attached hereto and made a part hereof.

17. Remaining Adverse Impacts:

Explain why any remaining adverse impacts resulting from the proposed activity or use have not been mitigated and why the project as proposed is consistent with the Connecticut Coastal Management Act (*attach additional pages if necessary*):

Not applicable.

By signing this application, the applicant or his/her agent certifies that they are familiar with the information provided in this application and are aware of the penalties for obtaining a permit through deception or by submission of inaccurate or misleading information.

By signing this application, permission is hereby given to necessary and proper inspection of the subject property by the Commissioners and designated staff of the Commission or consultants to the Commission, at reasonable times, during the pendency of the application.

Applicant's Signature: By Carmody Torrance Sandak & Hennessey LLP **DATE:** 6/4/2025

* **Agent's Signature:** Carmody Torrance Sandak & Hennessey, LLP **DATE:** 6 / 4 /2025

By: Carmody Torrance Sandak & Hennessey LLP, Its Attorneys

*See Letter of consent attached hereto.

D&R INCORPORATED OF NORWALK AND DLJ ASSOCIATES, INC.
40 MEADOW STREET, NORWALK, CONNECTICUT
APPLICATION FOR COASTAL SITE PLAN REVIEW
NARRATIVE – SCHEDULE A

BACKGROUND

D&R Incorporated of Norwalk and DLJ Associates, Inc. (hereinafter collectively the "Owner") are the owners of real property with the improvements thereon located at 40 Meadow Street in Norwalk, CT (the "Property"). Designated as Tax Lot 51 in Block 91 of the Second Taxing District, the Property is 3.58± acres and is now zoned SD-LI and within the coastal area management (CAM) zone (AE11).[1] The Property is improved with a one-story, 5,800+sf commercial/industrial building constructed around 1945 and other structures including storage bays for recycled projects, an automobile crusher, and other structures. (Refer to "Zoning Location & Topography Survey" ["ZLS"] dated 4/11/24 revised to 6/2/25 prepared by LandTech Consult, attached hereto and made a part hereof). Lajoie Auto Wrecking Company, Inc. is the applicant on this site plan application.[2]

REQUEST

The Applicant seeks coastal site plan approval for the redevelopment of the site as a recycling facility for Lajoie's Auto Wrecking Co., Inc. LaJoie's has been in existence in Norwalk for more than 100 years when Francois LaJoie began collecting and recycling rags and paper, and then developed the profitable business of recycling used auto parts and scrap metal. In its century of existence and operation in Norwalk, LaJoie's has served local residents and businesses, as well as large companies including Sikorsky Aircraft, Pratt & Whitney and Hubbell, municipalities throughout Fairfield County, and various police and fire departments.

The proposal contemplates the demolition of most of the existing structures along the northern property line and one structure along the southern property boundary, and the construction, use and occupancy of a new, 33,770± sq.ft. zoning compliant building for office, product receiving, processing and shipping of product, a welding area and garage. (Refer to "Zoning Improvement Survey (SV-1.1" ["Improvement Survey"], "Site Demolition Plan (C-1.0)," and "Site Layout Plan (C-1.1)" ["Site Plan"] all dated 6/2/25 and prepared by LandTech Consult, and "First Floor Plan Second Floor Plan (Drawing No. A-1)," "Roof Plan (Drawing No. A-2)," "Front & Right Elevations (Drawing No. A-3)," and "Rear & Left Elevations (Drawing No. A-3)" all dated 10/29/24 revised to 5/30/25 prepared by Andriopoulos Design Associates, attached hereto and made a part hereof). Since nearly the entire site is currently impervious and not suitable for installing underground stormwater infiltration best management practices ("BMPs") due to the existing use of the site, ". . . water quality treatment was the emphasis of the stormwater management design rather than stormwater quantity.... There are a series of existing catch basins located on the subject property that have a direct connection to a City of Norwalk catch basin located in Meadow Street. . . . There is a net reduction in impervious areas in post-development conditions. Runoff from the existing and proposed impervious surfaces are directed through a hydrodynamic separator to provide water quality treatment for the "first flush" volumes." (P.2,

[1]Prior to November 2022, the Property had been zoned Industrial No. 1, which permitted commercial junkyards. With the rezoning in 2022, the use became legally nonconforming. As part of the citywide zoning rewrite in 2023-2024, the regulations included recycling facilities as a use permitted by special permit.

[2]An application for special permit is submitted simultaneously herewith.

"Stormwater Management Report" dated June 2, 2025 prepared by LandTech Consult, attached hereto and a made a part hereof.)

Existing parking at the western (front) of the Property will continue to be used but improved with landscaping and fencing. The new structure will largely shield the continuing site rear LaJoie operations from view. Per city zoning regulations, solar panels will be installed on the roof and low-impact development components have been added to the proposed stormwater management system to achieve compliance with required sustainability and green infrastructure requirements.

LaJoie's is a recycling facility per the City of Norwalk Zoning Regulations ("zoning regulations") effective February 19, 2024 and is so classified by the State of Connecticut Department of Motor Vehicles under Permit No. J4151. It accepts vehicles for scrap as well as all sorts of metal such as steel; cast iron; copper wire, tubing and sheeting; aluminum rims, siding and windows; brass; bronze; and other recyclable items, and then separates, sorts, and packages this scrap material for sale to and reuse in the building trades and other industries. For example, LaJoie's sells aluminum scrap to Pennex (whose products contain 80% recycled aluminum), Alcoa (a major US producer and recycler of aluminum) and Novelis (the world's largest recycler of aluminum). Copper, including wire and tubing and the chips manufactured at the Property, are purchased by Revere Copper (which turns scrap metal into copper coil), Acupowder International (a manufacturer of non-ferrous metal powders), and Cambridge-Lee Industries (a manufacturer and distributor of copper tubing). Steel scrap such as girders from the former Maritime Aquarium, is purchased by Commercial Metals, McWane Ductile, Sims Metals Management. LaJoie's works hand-in-hand with firms such as Rizzo Companies, Ducci, Cianbro, Middlesex and Manafort in connection with the recycling of guardrails, signs and light poles from I-95 and the Merritt Parkway and will assist with the reclamation and recycling of scrap metals from the Walk Bridge replacement project in South Norwalk.

This coastal site plan review application is submitted pursuant Sec. 6.10.2B.2 (coastal overlay), Table 4.3.1-L (District Standards), Table 4.3.9A (Building, Lot & Building Site Principal Uses), Table 4.3.9.D (Building Lot & Building Site Accessory Uses), Sec. 8.4.5.F (coastal site plan review) of the zoning regulations. The Applicant hereby submits that the proposed commercial building and associated interior building modifications comply with the zoning regulations and standards of review for coastal site plan applications set forth in Sec. 6.10.B.3b as follows:

(1) The characteristics of the site, including location and condition of all coastal resources. The site is located within the CAM zone but not adjacent to any coastal resources. Developed lots, roads, sidewalks, curbs and other improvement separate the Property from the closest coastal resource, namely Village Creek. (Refer to page 2-3 of "Coastal Management Report for the Redevelopment of an Existing Recycling Facility" ["CAM Report"] dated June 2, 2025 prepared by LandTech Consult, attached hereto and made a part hereof).

(2) The potential effects, both beneficial and adverse of the proposed activity on adjacent coastal systems and coastal resources. There are no adverse impacts anticipated by the proposed activity, as the site is not located adjacent or proximate to any coastal resources. (Refer to page 3-4 of CAM Report, attached hereto and made a part hereof).

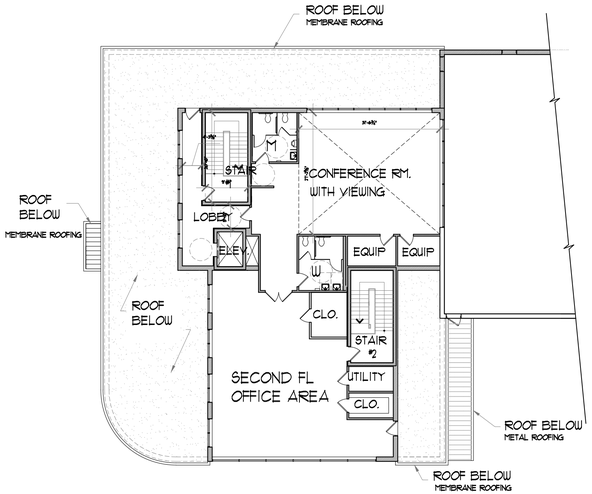
(3) The potential effects, both beneficial and adverse, of the proposed activity on future water-dependent development opportunities. There is no opportunity for future water-dependent

development opportunities from the Property as it is not located adjacent or contiguous to any coastal resource.

(4) The potential impact of a rise in sea level, coastal flooding and erosion patterns on both coastal resources and coastal development. The finished floor of the proposed building including all HVAC equipment, is at 13.1 feet, which is above the 11.0 feet minimum flood elevation established by the Federal Emergency Management Administration (FEMA), plus the additional two (2') required by the Norwalk zoning regulations. (Refer to p. 3 of CAM Report, attached hereto and made a part hereof).

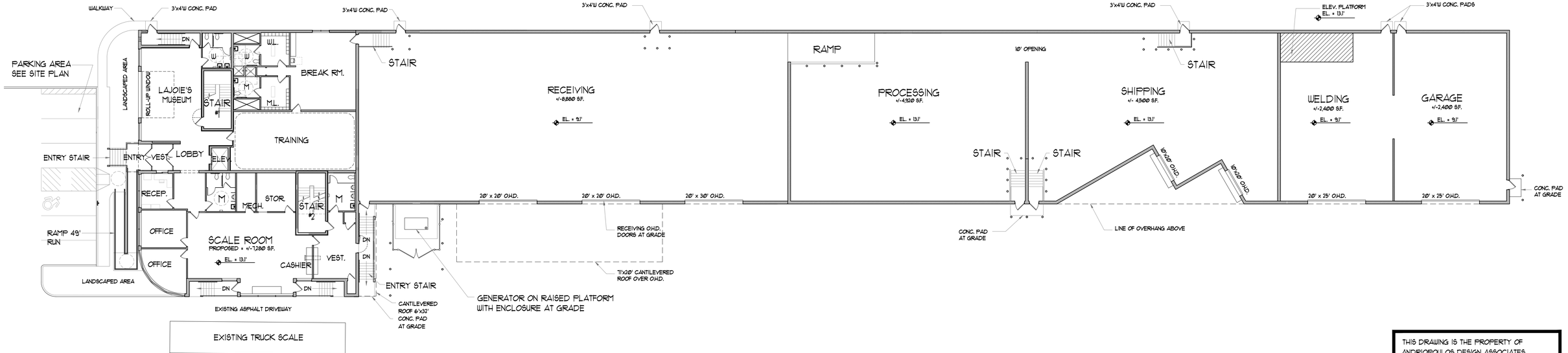
(5) Preservation of the dynamic form and integrity of coastal resource systems, including but not limited to minimization of alteration of current flows, depth, slope, natural erosion and sedimentation, biological communities and habitat. Refer to p. 4 of CAM Report, attached hereto and made a part hereof.

(6) The goals and policies of the Connecticut Coastal Management Act, as amended, and identification of any conflicts between the proposed Development, Use or activity and any goal or policy of the Act. The proposed Project meets the requirements of the Connecticut Coastal Management Act and is adequately protective of the interests of these regulations and the City of Norwalk's coastal resources. Furthermore, the Project is consistent with general development goals referenced in CGS Section 22a-92. (Refer to p. 4 of CAM Report, attached hereto and made a part hereof).



SECOND FLOOR PLAN

SCALE: 1/16"=1'-0" +/-3,942 S.F. (GROSS)



FIRST FLOOR PLAN

SCALE: 1/16"=1'-0" 32,181 S.F. (GROSS FOOTPRINT)

PRELIMINARY 05/30/25
NOT FOR CONSTRUCTION
FOR ZONING COMMISSION REVIEW

THIS DRAWING IS THE PROPERTY OF ANDRIOPOULOS DESIGN ASSOCIATES. ARCHITECTS LLC. ANY UNAUTHORIZED USE, IN PART OR IN WHOLE IS STRICTLY PROHIBITED. ©

Client:
LAJOIE'S AUTO WRECKING
40 MEADOW STREET
SO. NORWALK, CT 06854

Project:
NEW RECYCLING FACILITY
40 MEADOW STREET
SO. NORWALK, CT 06854

NOTES

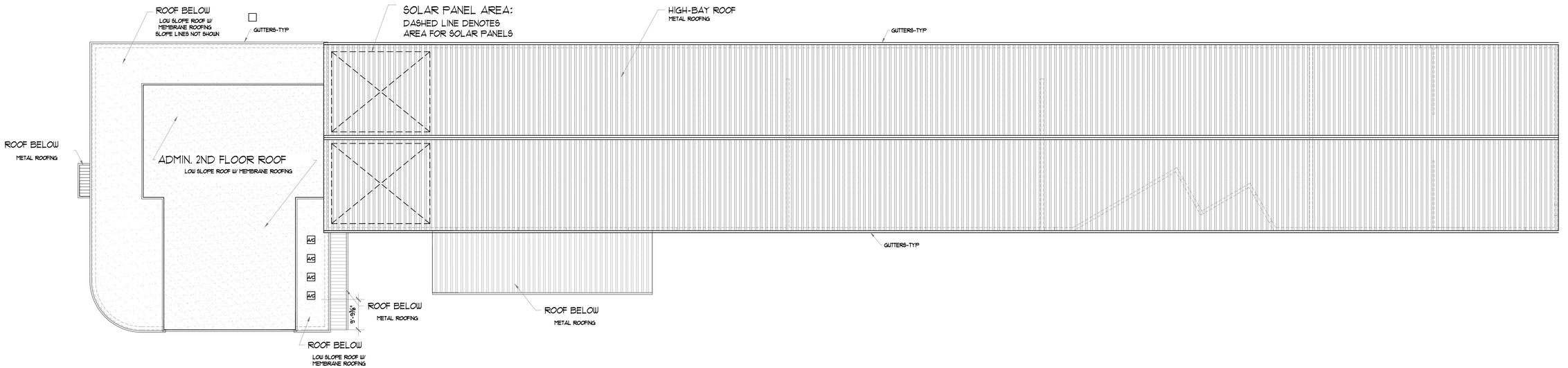
1. SEE NOTES ALL OTHER DRAWINGS.

NO	DATE	ISSUED/ REVISION
1	5/30/25	ISSUE FOR ZONING COMMISSION REVIEW

Drawing Title:
FIRST FLOOR PLAN
SECOND FLOOR PLAN

Scale: 1/16" - 1'-0"	Drawing No: A-1
Date: 10/29/24	
Drawn By: JVL	
Project No: 24-115	

ADA ARCHITECTS
Andriopoulos Design Associates, LLC
16 River Street, 2nd FL
Norwalk, Connecticut 06850
203-853-8006 203-855-7567 fax
E-MAIL: ADA@andriopoulosdesign.com



ROOF PLAN

SCALE: 1/16"=1'-0"

PRELIMINARY 05/30/25
NOT FOR CONSTRUCTION
FOR ZONING COMMISSION REVIEW

THIS DRAWING IS THE PROPERTY OF ANDRIOPOULOS DESIGN ASSOCIATES, ARCHITECTS LLC. ANY UNAUTHORIZED USE, IN PART OR IN WHOLE IS STRICTLY PROHIBITED. ©

Client:
LAJOIE'S AUTO WRECKING
40 MEADOW STREET
SO. NORWALK, CT 06854

Project:
NEW RECYCLING FACILITY
40 MEADOW STREET
SO. NORWALK, CT 06854

NOTES

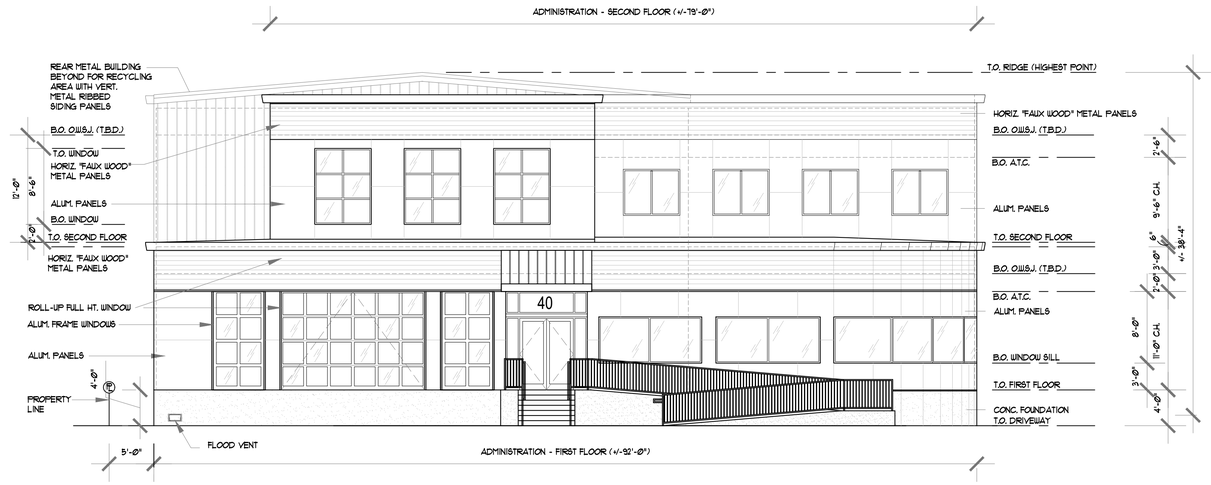
1. SEE NOTES ALL OTHER DRAWINGS.

NO	DATE	ISSUED/ REVISION
1	5/30/25	ISSUE FOR ZONING COMMISSION REVIEW

Drawing Title: ROOF PLAN

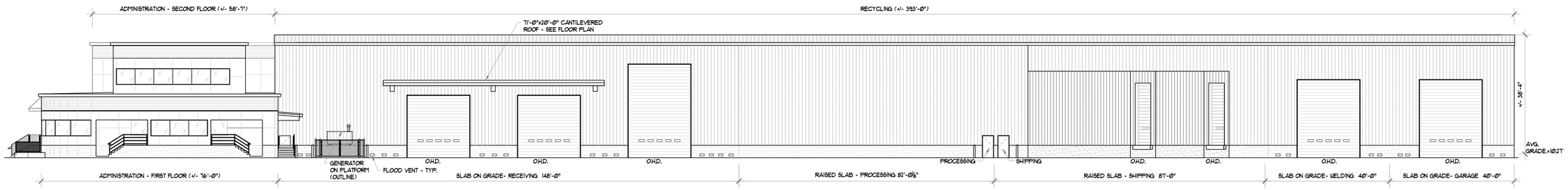
Scale: 1/16" - 1'-0"	Drawing No: A-2
Date: 10/23/24	
Drawn By: JVL	
Project No: 24-115	

ADA ARCHITECTS
Andriopoulos Design Associates, LLC
16 River Street, 2nd FL
Norwalk, Connecticut 06850
203-853-8006 203-855-7567 fax
E-MAIL: ADA@andriopoulosdesign.com



FRONT ELEVATION - (FACING MEADOW STREET)

SCALE: 1/8" = 1'-Ø"



RIGHT ELEVATION - (FACING DRIVEWAY)

SCALE: 1/16" = 1'-Ø"

THIS DRAWING IS THE PROPERTY OF ANDRIOPOULOS DESIGN ASSOCIATES, ARCHITECTS LLC. ANY UNAUTHORIZED USE, IN PART OR IN WHOLE IS STRICTLY PROHIBITED. ©

PRELIMINARY 05/30/25
NOT FOR CONSTRUCTION
FOR ZONING COMMISSION REVIEW

Client:
LAJOIE'S AUTO WRECKING
40 MEADOW STREET
SO. NORWALK, CT Ø6854

Project:
NEW RECYCLING FACILITY
40 MEADOW STREET
SO. NORWALK, CT Ø6854

NOTES

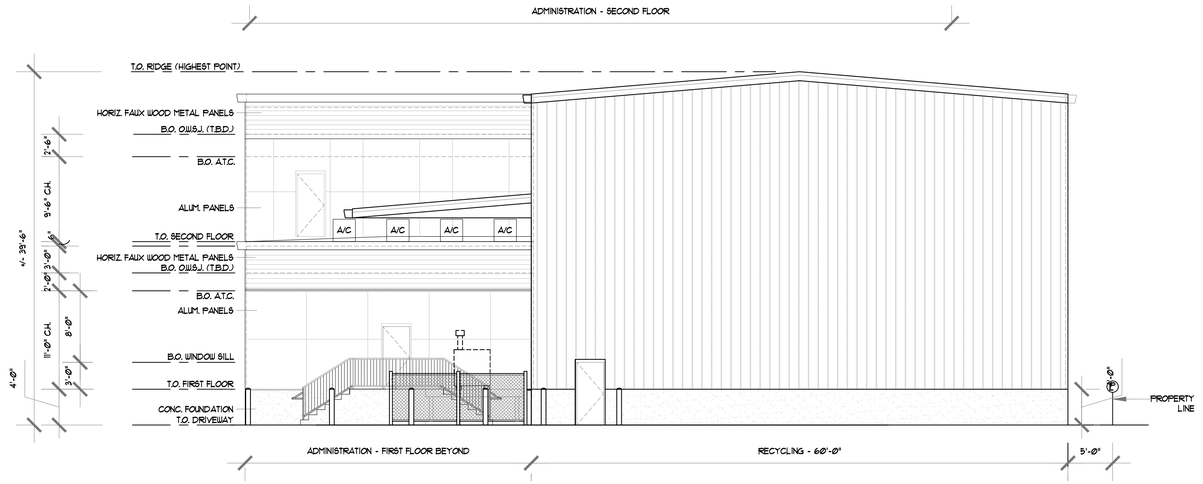
1. SEE NOTES ALL OTHER DRAWINGS.

NO	DATE	ISSUED/ REVISION
1	5/30/25	ISSUE FOR ZONING COMMISSION REVIEW

Drawing Title:
FRONT & RIGHT ELEVATIONS

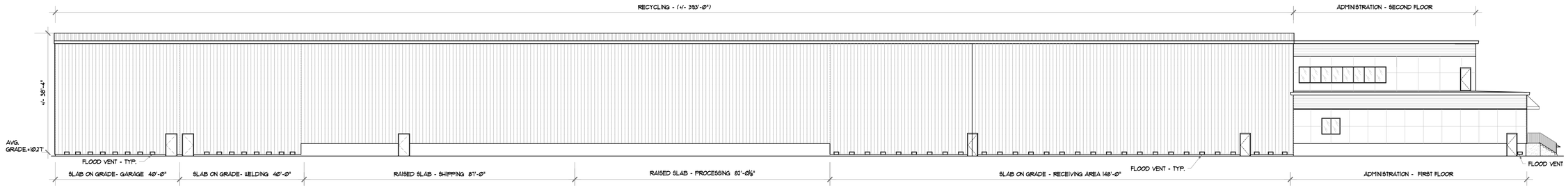
Scale: AS NOTED	Drawing No: A-3
Date: 10/23/24	
Drawn By: JVL	
Project No: 24-115	

ADA ARCHITECTS
Andriopoulos Design Associates, LLC
16 River Street, 2nd FL
Norwalk, Connecticut 06850
203-853-8006 203-855-7567 fax
E-MAIL: ADA@andriopoulosdesign.com



REAR ELEVATION

SCALE: 1/8" = 1'-0"



LEFT ELEVATION

SCALE: 1/16" = 1'-0"

PRELIMINARY 05/30/25
NOT FOR CONSTRUCTION
FOR ZONING COMMISSION REVIEW

THIS DRAWING IS THE PROPERTY OF ANDRIOPOULOS DESIGN ASSOCIATES, ARCHITECTS LLC. ANY UNAUTHORIZED USE, IN PART OR IN WHOLE IS STRICTLY PROHIBITED. ©

Client:
LAJOIE'S AUTO WRECKING
40 MEADOW STREET
SO. NORWALK, CT 06854

Project:
NEW RECYCLING FACILITY
40 MEADOW STREET
SO. NORWALK, CT 06854

NOTES

1. SEE NOTES ALL OTHER DRAWINGS.

NO	DATE	ISSUED/ REVISION
1	5/30/25	ISSUE FOR ZONING COMMISSION REVIEW

Drawing Title:
REAR AND LEFT ELEVATION

Scale: 1/16" = 1'-0"
Date: 10/23/24
Drawn By: JVL
Project No: 24-115
Drawing No: A-4

ADA ARCHITECTS
Andriopoulos Design Associates, LLC
16 River Street, 2nd FL
Norwalk, Connecticut 06850
203-853-8006 203-855-7567 fax
E-MAIL: ADA@andriopoulosdesign.com

SITE DEVELOPMENT PLANS

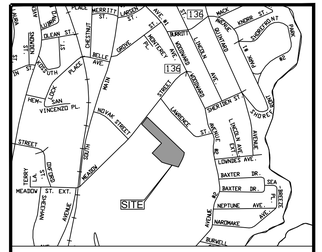
FOR AN EXISTING

RECYCLING FACILITY



DRAWING SHEET INDEX

SHEET NO.	SHEET TITLE
T-1.0	COVER SHEET
SV-1.0	EXISTING CONDITIONS SURVEY
SV-1.1	PROPOSED CONDITIONS SURVEY
C-1.0	SITE DEMOLITION PLAN
C-1.1	SITE LAYOUT PLAN
C-1.2	SITE DEVELOPMENT PLAN
C-2.0	SOIL EROSION AND SEDIMENT CONTROL PLAN & DETAILS
C-3.0	CONSTRUCTION NOTES & DETAILS
L-1.0	LANDSCAPE PLAN



LOCATION MAP
(NTS)

GENERAL NOTES

1. LOT LINE & TOPOGRAPHIC INFORMATION FOR 40 MEADOW STREET TAKEN FROM ZONING LOCATION & TOPOGRAPHIC SURVEY PREPARED BY LANDTECH DATED 4/11/2024.
2. DATUM: NAVD88
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES ARE TAKEN FROM EXISTING AS-BUILT MAPPING AND OTHER SOURCES OF INFORMATION AND ARE APPROXIMATE. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IN ADDITION, THERE MAY BE OTHER UNDERGROUND PIPING, UTILITIES, AND OTHER FEATURES PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ANY OF THESE EXISTING ELEMENTS BY WHATEVER MEANS NECESSARY AND PROTECTING THESE ELEMENTS AS REQUIRED OR RELOCATING THEM IF THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
5. SUBJECT PROPERTY IS LOCATED IN FEMA FLOOD HAZARD ZONE "AE" (ELEV. = 11) AS SHOWN ON FEMA FIRM PANEL NO. 09001C 0533G, EFFECTIVE 7/8/2013.
6. A NEW BENCHMARK SHALL BE SET PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED IN THE PLAN SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE FULLY STABILIZED.
8. ALL EXISTING CATCH BASINS TO REMAIN SHALL HAVE ALL SEDIMENT REMOVED AND ALL EXISTING STORM PIPING TO REMAIN SHALL BE JETTED TO REMOVE ANY SEDIMENT OR DEBRIS PRIOR TO THE INSTALLATION OF ANY PROPOSED STORMWATER INFRASTRUCTURE.
9. DESIGN FLOOD ELEVATION = BFE + 2'
   11.0' + 2.0' = 13.0'
10. PORTIONS OF THE PROPOSED BUILDING BELOW THE DESIGN FLOOD ELEVATION SHALL BE DRY FLOOD PROOFED IN ACCORDANCE WITH FEMA TECHNICAL BULLETIN (T.B.) 3, LATEST EDITION. IT IS THE RESPONSIBILITY OF THE ARCHITECT AND STRUCTURAL ENGINEER TO ENSURE COMPLIANCE WITH T.B. 3.

REVISION DATE	ISSUE

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

LaJOIE'S AUTO WRECKING CO.

PROJECT LOCATION:

40 MEADOW STREET
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR AN EXISTING RECYCLING FACILITY

DRAWING TITLE:

COVER SHEET

PROJECT No. 24049-01

DATE:	DESIGNED BY:	CHECKED BY:
06/02/2025	CM	RPP

SCALE: N.T.S.

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ROY SOUWLOS · 27803 · LICENSED PROFESSIONAL ENGINEER

T-1.0

LANDTECH
T:\ ACTIVE PROJECTS\24049-01 LAJOIES AUTO WRECKING CO. - 40 MEADOW ST, NORWALK\DRAWINGS\LAJOIES - 40 MEADOW STREET - SITE PLAN.DWG

ZONING DATA

ZONING DISTRICT: "SD-LI" LIGHT INDUSTRIAL SPECIAL DISTRICT

USE: RECYCLING FACILITY

DIMENSIONAL		REQUIRED/ALLOWED	EXISTING	CONFORMS
LOT OCCUPATION				
LOT AREA (MIN.)		5,000 SF	156,262 SF	Y
LOT WIDTH (MIN.)		50'	125.11'	Y
LOT/BUILDING SITE ENFORCEMENT		MUST ENFRONT A STREET	CONFORMS	Y
IMPERVIOUS SURFACE COVERAGE	MAX.	50% (BUILDINGS) 90% (BUILDINGS AND PARKING)	15.3% (23,959 SF) 100% (FULLY PAVED)	N
SETBACKS				
YARDS (MIN.)	FRONT	10' (PRINCIPAL BUILDING) 30' (ACCESSORY BUILDING)	68.1'	Y
	2ND FRONT	10' (PRINCIPAL BUILDING) 30' (ACCESSORY BUILDING)	N/A	-
	SIDE	NONE - PRINCIPAL & ACCESSORY (10' WHEN ABUTTING RESIDENTIAL ZONE)	N/A	-
	REAR	NONE - PRINCIPAL & ACCESSORY (10' WHEN ABUTTING RESIDENTIAL ZONE)	N/A	-
DENSITY		1 DWELLING UNIT PER 1,650 SF	EXISTING	-
NUMBER OF BUILDINGS		1 MAX (PRINCIPAL BUILDING) NOT REGULATED (ACCESSORY BUILDING)	EXISTING	Y
BUILDING STANDARDS				
BUILDING HEIGHT	MAX.	4 STORIES[2,3] (PRINCIPAL) 15' (ACCESSORY)	EXISTING	Y
CEILING HEIGHT	MAX.	20', GROUND FLOOR (PRINCIPAL)	EXISTING	Y
	MIN.	15' (ACCESSORY)		
GROUND FLOOR ELEVATION		18" MIN., 36" MAX.[4]	EXISTING	Y
BUILDING TYPES				
PERMITTED:		1. LIVE/WORK 2. JEWEL BOX 3. MIXED USE 4. FLEX 5. CIVIC	EXISTING	-
VEHICULAR PARKING REQUIREMENTS				
VEHICLE PARKING SPACES		RECYCLING OPERATIONS: 1 SPACE PER EMPLOYEE NUMBER OF EMPLOYEES = 20 PARKING SPACES REQUIRED: 20 SPACES	0	N
BICYCLE PARKING		1 SPACE PER 20,000 SF BUILDING AREA OR 1 SPACE PER 10 VEHICLE SPACES (WHICHEVER IS GREATER) 23,100 SF FLOOR AREA = 1.15 SPACES BICYCLE SPACES REQUIRED: 2 SPACES	0	N
LOADING SPACES		>3,000 SF - 25,000 SF 1 SPACE REQUIRED 10' W x 50' L x 15' H	1	Y
FLOOD ZONE REQUIREMENTS				
FEMA FLOOD ZONE "AE" BASE FLOOD ELEVATION (BFE) = 11		DESIGN FLOOD ELEVATION (DFE) = BFE + 2' (DFE = 13)	EXISTING	N

NOTES:

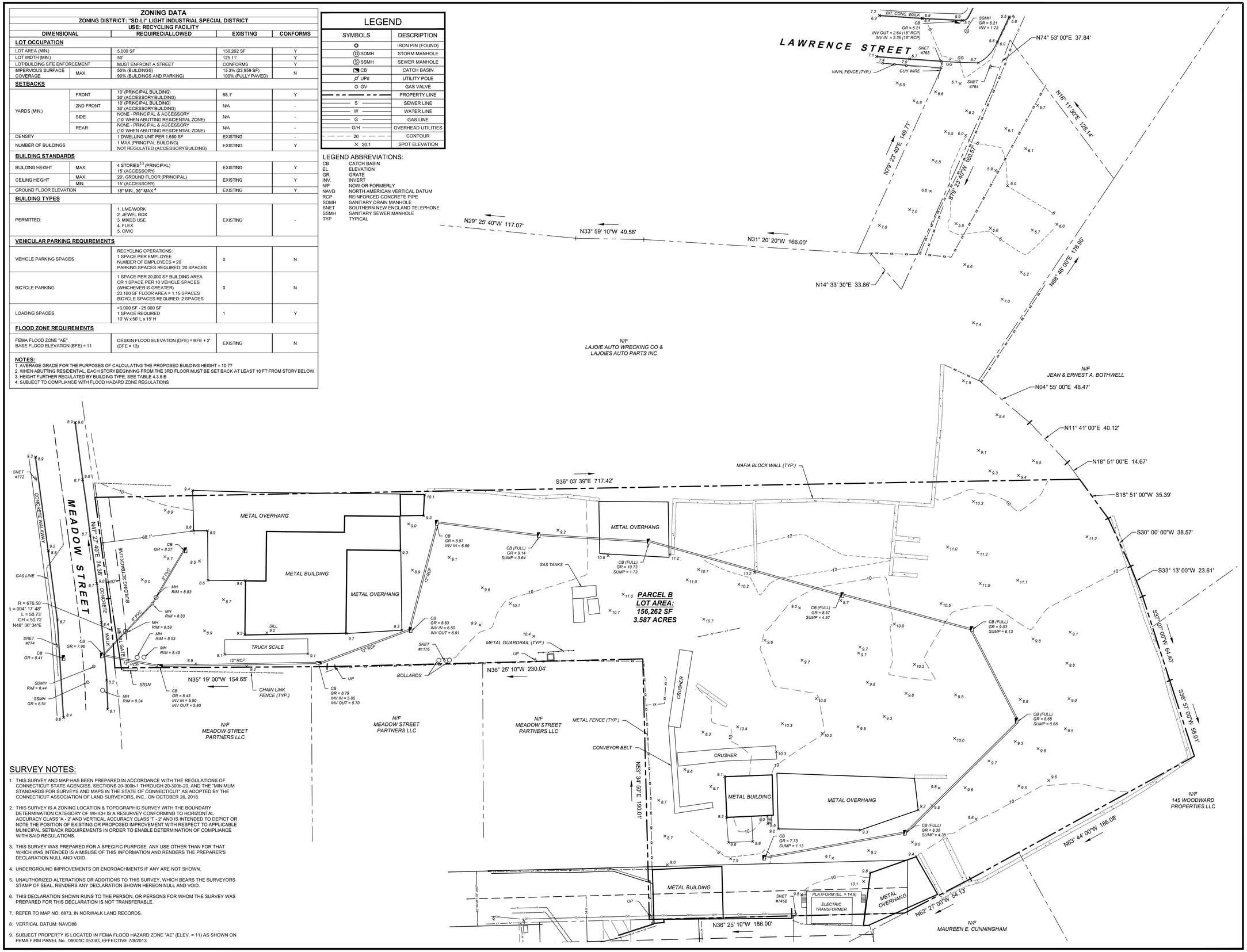
1. AVERAGE GRADE FOR THE PURPOSES OF CALCULATING THE PROPOSED BUILDING HEIGHT = 10.77
2. WHEN ABUTTING RESIDENTIAL, EACH STORY BEGINNING FROM THE 3RD FLOOR MUST BE SET BACK AT LEAST 10 FT FROM STORY BELOW
3. HEIGHT FURTHER REGULATED BY BUILDING TYPE. SEE TABLE 4.3.8.B
4. SUBJECT TO COMPLIANCE WITH FLOOD HAZARD ZONE REGULATIONS

LEGEND

SYMBOLS	DESCRIPTION
	IRON PIN (FOUND)
(D) SDMH	STORM MANHOLE
(S) SSMH	SEWER MANHOLE
CB	CATCH BASIN
UP#	UTILITY POLE
GV	GAS VALVE
	PROPERTY LINE
S	SEWER LINE
W	WATER LINE
G	GAS LINE
O/H	OVERHEAD UTILITIES
20	CONTOUR
20.1	SPOT ELEVATION

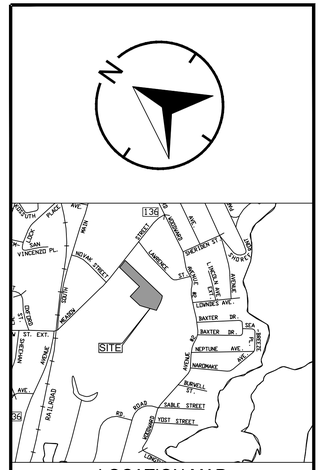
LEGEND ABBREVIATIONS:

CB	CATCH BASIN
EL	ELEVATION
GR.	GRATE
INV.	INVERT
N/F	NOW OR FORMERLY
NAVD	NORTH AMERICAN VERTICAL DATUM
RCP	REINFORCED CONCRETE PIPE
SDMH	SANITARY DRAIN MANHOLE
SNET	SOUTHERN NEW ENGLAND TELEPHONE
SSMH	SANITARY SEWER MANHOLE
TYP	TYPICAL



SURVEY NOTES:

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THROUGH 20-300b-20, AND THE "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC., ON OCTOBER 26, 2018.
2. THIS SURVEY IS A ZONING LOCATION & TOPOGRAPHIC SURVEY WITH THE BOUNDARY DETERMINATION CATEGORY OF WHICH IS A RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS 'A - 2' AND VERTICAL ACCURACY CLASS 'T - 2' AND IS INTENDED TO DEPICT OR NOTE THE POSITION OF EXISTING OR PROPOSED IMPROVEMENT WITH RESPECT TO APPLICABLE MUNICIPAL SETBACK REQUIREMENTS IN ORDER TO ENABLE DETERMINATION OF COMPLIANCE WITH SAID REGULATIONS.
3. THIS SURVEY WAS PREPARED FOR A SPECIFIC PURPOSE. ANY USE OTHER THAN FOR THAT WHICH WAS INTENDED IS A MISUSE OF THIS INFORMATION AND RENDERS THE PREPARER'S DECLARATION NULL AND VOID.
4. UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS IF ANY ARE NOT SHOWN.
5. UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS SURVEY, WHICH BEARS THE SURVEYORS STAMP OF SEAL, RENDERS ANY DECLARATION SHOWN HEREON NULL AND VOID.
6. THIS DECLARATION SHOWN RUNS TO THE PERSON, OR PERSONS FOR WHOM THE SURVEY WAS PREPARED FOR THIS DECLARATION IS NOT TRANSFERABLE.
7. REFER TO MAP NO. 6873, IN NORWALK LAND RECORDS.
8. VERTICAL DATUM: NAVD88
9. SUBJECT PROPERTY IS LOCATED IN FEMA FLOOD HAZARD ZONE "AE" (ELEV. = 11) AS SHOWN ON FEMA FIRM PANEL No. 09001C 0533G, EFFECTIVE 7/8/2013.



LOCATION MAP
(1" = 1000')

PROPERTY INFORMATION:

OWNER: LaJOIE'S AUTO WRECKING CO,
ADDRESS: 40 MEADOW STREET
NORWALK, CT

LOT AREA: 156,262 SF, 3.587 AC
ZONE: "SD-LI"
DEED: BK. 3549 PG. 151

MAP: 2
BLOCK: 91
LOT: 51

REVISION DATE	ISSUE
06/02/2025	REVISED ZONING CHART
05/22/2025	REVISED BUILDING SETBACKS
01/29/2025	REVISED ZONING CHART

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

LaJOIE'S AUTO WRECKING CO.

PROJECT LOCATION:

40 MEADOW STREET
NORWALK, CT

DRAWING TITLE:

ZONING LOCATION &
TOPOGRAPHIC SURVEY

PROJECT No. 24049-01

DATE: 04/11/2024 | DRAWN BY: CM | CHECKED BY: TAD

SCALE: 1" = 30'

IN FEET
0 30 60 90

TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON

THOMAS A. DEILUS, LAND SURVEYOR
CT. REGISTRATION NO. 70098
THE SURVEY AND DECLARATION SHOWN HEREON IS NULL AND VOID WITHOUT THE LICENSED SURVEYOR'S LIVE SIGNATURE AND SEAL

STATE OF CONNECTICUT · THOMAS A. DEILUS · No. 70098 · LICENSED LAND SURVEYOR

SV-1.0

T:\1- ACTIVE PROJECTS\24049-01 LAJOIE'S AUTO WRECKING CO. - 40 MEADOW ST - NORWALK\SURVEY\LAJOIE - 40 MEADOW ROAD - SURVEY.DWG

ZONING DATA

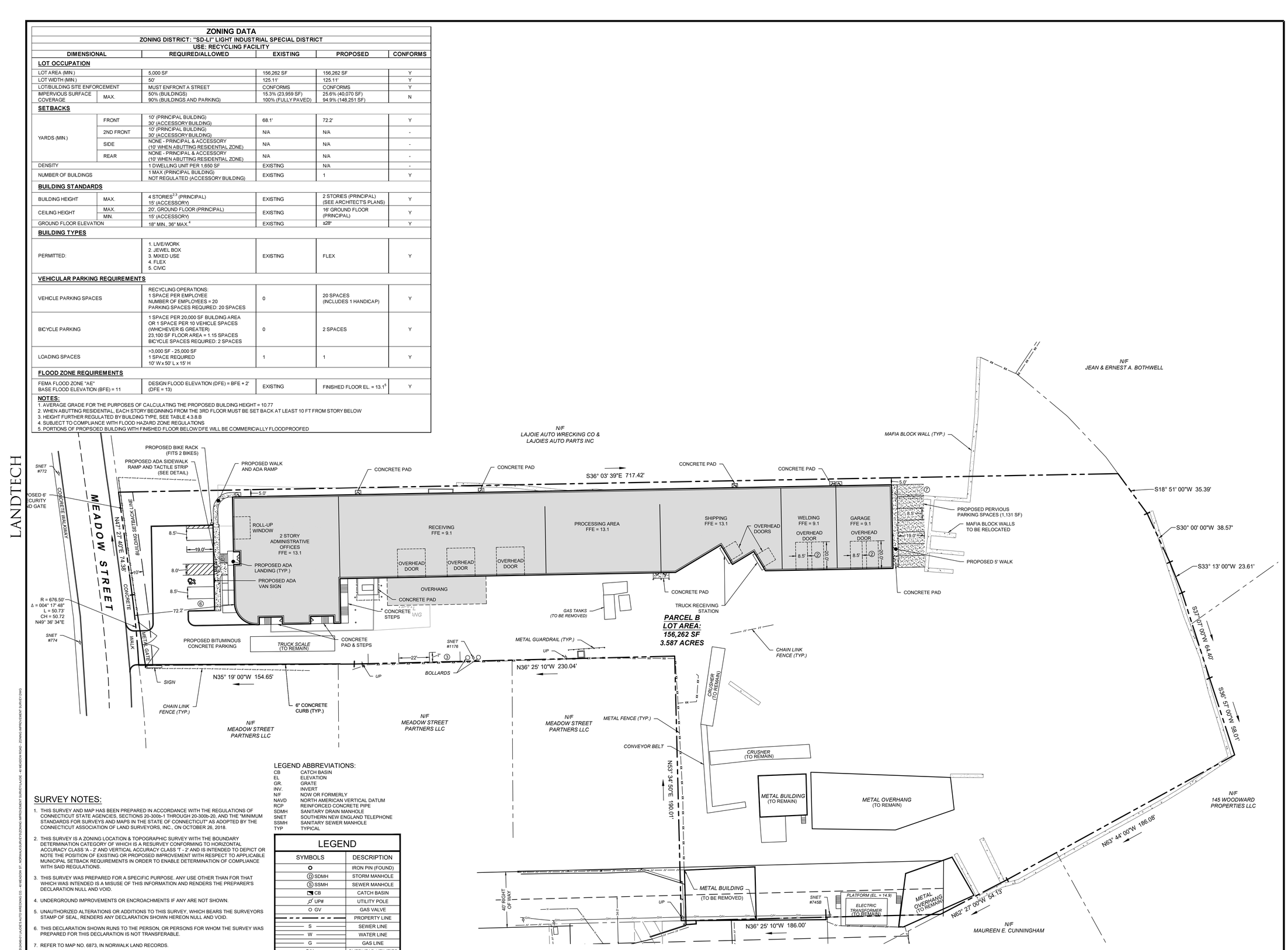
ZONING DISTRICT: "SD-LI" LIGHT INDUSTRIAL SPECIAL DISTRICT

USE: RECYCLING FACILITY

DIMENSIONAL		REQUIRED/ALLOWED	EXISTING	PROPOSED	CONFORMS
LOT OCCUPATION					
LOT AREA (MIN.)		5,000 SF	156,262 SF	156,262 SF	Y
LOT WIDTH (MIN.)		50'	125.11'	125.11'	Y
LOT/BUILDING SITE ENFORCEMENT		MUST ENFRONT A STREET	CONFORMS	CONFORMS	Y
IMPERVIOUS SURFACE COVERAGE	MAX.	50% (BUILDINGS) 90% (BUILDINGS AND PARKING)	15.3% (23,959 SF) 100% (FULLY PAVED)	25.6% (40,070 SF) 94.9% (148,251 SF)	N
SETBACKS					
YARDS (MIN.)	FRONT	10' (PRINCIPAL BUILDING) 30' (ACCESSORY BUILDING)	68.1'	72.2'	Y
	2ND FRONT	10' (PRINCIPAL BUILDING) 30' (ACCESSORY BUILDING)	N/A	N/A	-
	SIDE	NONE - PRINCIPAL & ACCESSORY (10' WHEN ABUTTING RESIDENTIAL ZONE)	N/A	N/A	-
	REAR	NONE - PRINCIPAL & ACCESSORY (10' WHEN ABUTTING RESIDENTIAL ZONE)	N/A	N/A	-
DENSITY		1 DWELLING UNIT PER 1,650 SF	EXISTING	N/A	-
NUMBER OF BUILDINGS		1 MAX (PRINCIPAL BUILDING) NOT REGULATED (ACCESSORY BUILDING)	EXISTING	1	Y
BUILDING STANDARDS					
BUILDING HEIGHT	MAX.	4 STORIES[2,3] (PRINCIPAL) 15' (ACCESSORY)	EXISTING	2 STORIES (PRINCIPAL) (SEE ARCHITECT'S PLANS)	Y
CEILING HEIGHT	MAX.	20', GROUND FLOOR (PRINCIPAL)	EXISTING	16' GROUND FLOOR (PRINCIPAL)	Y
	MIN.	15' (ACCESSORY)			
GROUND FLOOR ELEVATION		18" MIN., 36" MAX.[4]	EXISTING	±28"	Y
BUILDING TYPES					
PERMITTED:		1. LIVE/WORK 2. JEWEL BOX 3. MIXED USE 4. FLEX 5. CIVIC	EXISTING	FLEX	Y
VEHICULAR PARKING REQUIREMENTS					
VEHICLE PARKING SPACES		RECYCLING OPERATIONS: 1 SPACE PER EMPLOYEE NUMBER OF EMPLOYEES = 20 PARKING SPACES REQUIRED: 20 SPACES	0	20 SPACES (INCLUDES 1 HANDICAP)	Y
BICYCLE PARKING		1 SPACE PER 20,000 SF BUILDING AREA OR 1 SPACE PER 10 VEHICLE SPACES (WHICHEVER IS GREATER) 23,100 SF FLOOR AREA = 1.15 SPACES BICYCLE SPACES REQUIRED: 2 SPACES	0	2 SPACES	Y
LOADING SPACES		>3,000 SF - 25,000 SF 1 SPACE REQUIRED 10' W x 50' L x 15' H	1	1	Y
FLOOD ZONE REQUIREMENTS					
FEMA FLOOD ZONE "AE" BASE FLOOD ELEVATION (BFE) = 11		DESIGN FLOOD ELEVATION (DFE) = BFE + 2' (DFE = 13)	EXISTING	FINISHED FLOOR EL. = 13.1[5]	Y

NOTES:

1. AVERAGE GRADE FOR THE PURPOSES OF CALCULATING THE PROPOSED BUILDING HEIGHT = 10.77
2. WHEN ABUTTING RESIDENTIAL, EACH STORY BEGINNING FROM THE 3RD FLOOR MUST BE SET BACK AT LEAST 10 FT FROM STORY BELOW
3. HEIGHT FURTHER REGULATED BY BUILDING TYPE, SEE TABLE 4.3.8.B
4. SUBJECT TO COMPLIANCE WITH FLOOD HAZARD ZONE REGULATIONS
5. PORTIONS OF PROPSOED BUILDING WITH FINISHED FLOOR BELOW DFE WILL BE COMMERCIALLY FLOODPROOFED



SURVEY NOTES:

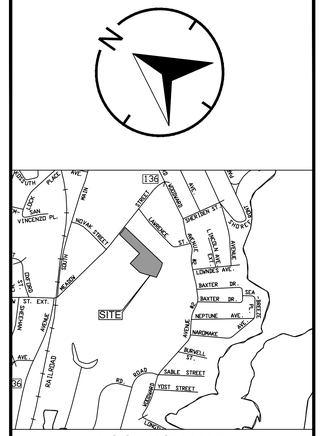
1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THROUGH 20-300b-20, AND THE "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC., ON OCTOBER 26, 2018.
2. THIS SURVEY IS A ZONING LOCATION & TOPOGRAPHIC SURVEY WITH THE BOUNDARY DETERMINATION CATEGORY OF WHICH IS A RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS 'A - 2' AND VERTICAL ACCURACY CLASS 'T - 2' AND IS INTENDED TO DEPICT OR NOTE THE POSITION OF EXISTING OR PROPOSED IMPROVEMENT WITH RESPECT TO APPLICABLE MUNICIPAL SETBACK REQUIREMENTS IN ORDER TO ENABLE DETERMINATION OF COMPLIANCE WITH SAID REGULATIONS.
3. THIS SURVEY WAS PREPARED FOR A SPECIFIC PURPOSE. ANY USE OTHER THAN FOR THAT WHICH WAS INTENDED IS A MISUSE OF THIS INFORMATION AND RENDERS THE PREPARER'S DECLARATION NULL AND VOID.
4. UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS IF ANY ARE NOT SHOWN.
5. UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS SURVEY, WHICH BEARS THE SURVEYORS STAMP OF SEAL, RENDERS ANY DECLARATION SHOWN HEREON NULL AND VOID.
6. THIS DECLARATION SHOWN RUNS TO THE PERSON, OR PERSONS FOR WHOM THE SURVEY WAS PREPARED FOR THIS DECLARATION IS NOT TRANSFERABLE.
7. REFER TO MAP NO. 6873, IN NORWALK LAND RECORDS.
8. VERTICAL DATUM: NAVD88
9. SUBJECT PROPERTY IS LOCATED IN FEMA FLOOD HAZARD ZONE "AE" (ELEV. = 11) AS SHOWN ON FEMA FIRM PANEL No. 09001C 0533G, EFFECTIVE 7/8/2013.

LEGEND ABBREVIATIONS:

CB	CATCH BASIN
EL	ELEVATION
GR.	GRATE
INV.	INVERT
N/F	NOW OR FORMERLY
NAVD	NORTH AMERICAN VERTICAL DATUM
RCP	REINFORCED CONCRETE PIPE
SDMH	SANITARY DRAIN MANHOLE
SNET	SOUTHERN NEW ENGLAND TELEPHONE
SSMH	SANITARY SEWER MANHOLE
TYP	TYPICAL

LEGEND

SYMBOLS	DESCRIPTION
O	IRON PIN (FOUND)
Ⓓ SDMH	STORM MANHOLE
Ⓢ SSMH	SEWER MANHOLE
CB	CATCH BASIN
UP#	UTILITY POLE
GV	GAS VALVE
	PROPERTY LINE
S	SEWER LINE
W	WATER LINE
G	GAS LINE
O/H	OVERHEAD UTILITIES
20	CONTOUR
20.1	SPOT ELEVATION



LOCATION MAP
(1" = 1000')

PROPERTY INFORMATION:

OWNER:	LaJOIE'S AUTO WRECKING CO,
ADDRESS:	40 MEADOW STREET NORWALK, CT
LOT AREA:	156,262 SF, 3.587 AC
ZONE:	"SD-LI"
DEED:	BK. 3549 PG. 151
MAP:	2
BLOCK:	91
LOT:	51

REVISION DATE	ISSUE

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

LaJOIE'S AUTO WRECKING CO.

PROJECT LOCATION:

40 MEADOW STREET
NORWALK, CT

DRAWING TITLE:

ZONING IMPROVEMENT SURVEY

PROJECT No. 24049-01

DATE: 06/02/2025 | DRAWN BY: CM | CHECKED BY: TAD

SCALE: 1" = 30'

IN FEET
0 30 60 90

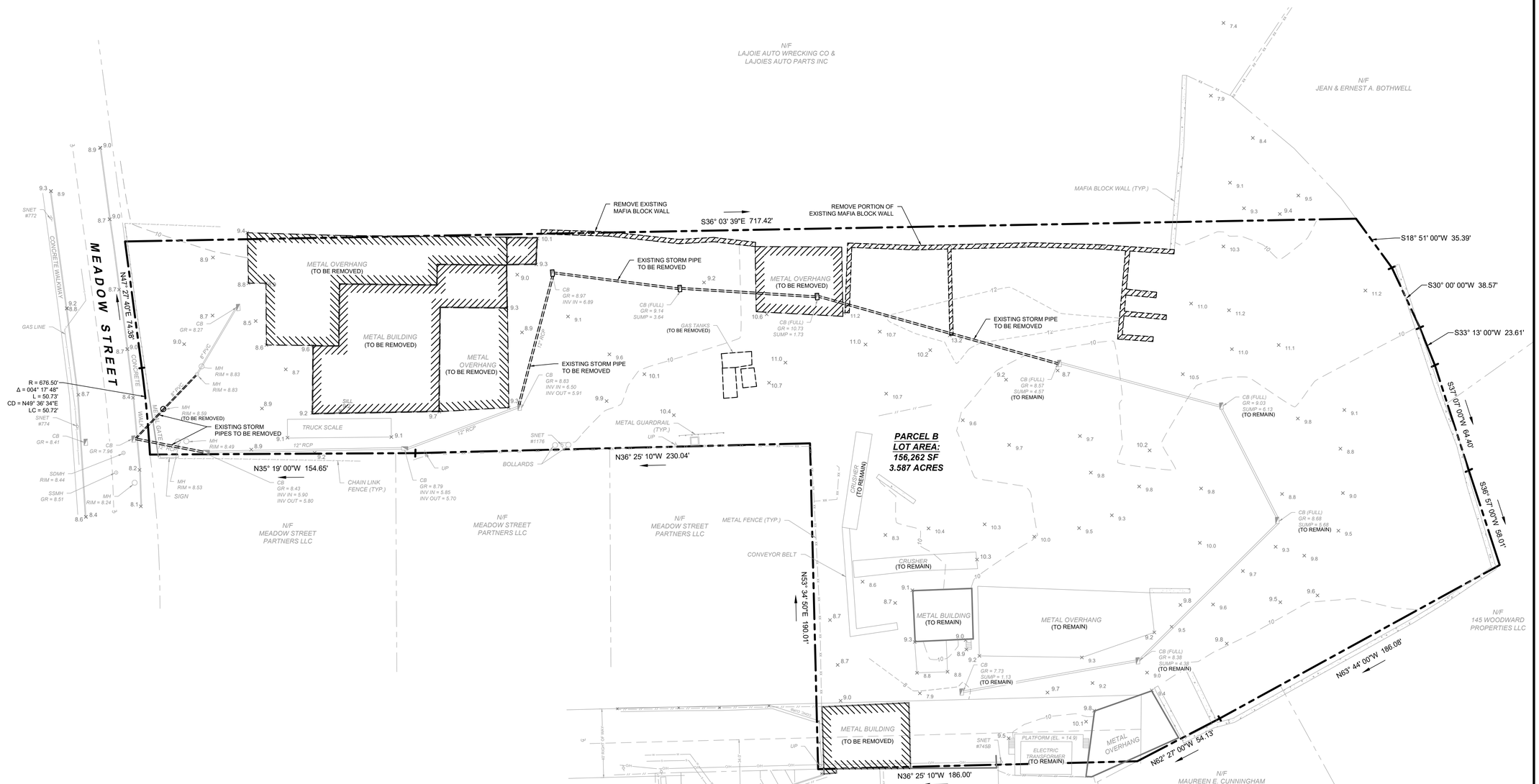
TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON

THOMAS A. DEILUS, LAND SURVEYOR
CT. REGISTRATION NO. 70098
THE SURVEY AND DECLARATION SHOWN HEREON IS NULL AND VOID WITHOUT THE LICENSED SURVEYOR'S LIVE SIGNATURE AND SEAL.

STATE OF CONNECTICUT · THOMAS A. DEILUS · No. 70098 · LICENSED LAND SURVEYOR

SV-1.1

T:\1. ACTIVE PROJECTS\24049-01 LAJOIE'S AUTO WRECKING CO'S - 40 MEADOW ST - NORWALK\SURVEY\ZONING IMPROVEMENT SURVEY\LAJOIE - 40 MEADOW ROAD - ZONING IMPROVEMENT SURVEY.DWG



T:\ - ACTIVE PROJECTS\24049-01 LAJOIE'S AUTO WRECKING CO. - 40 MEADOW ST - NORWALK\DRAWINGS\LAJOIES - 40 MEADOW STREET - SITE PLAN.DWG

LANDTECH

REVISION DATE	ISSUE

LANDTECH

SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING

518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

LaJOIE'S AUTO WRECKING CO.

PROJECT LOCATION:

40 MEADOW STREET
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR AN
EXISTING RECYCLING FACILITY

DRAWING TITLE:

SITE DEMOLITION PLAN

PROJECT No. 24049-01

DATE:	DESIGNED BY:	CHECKED BY:
06/02/2025	CM	RPP

SCALE: 1" = 30'

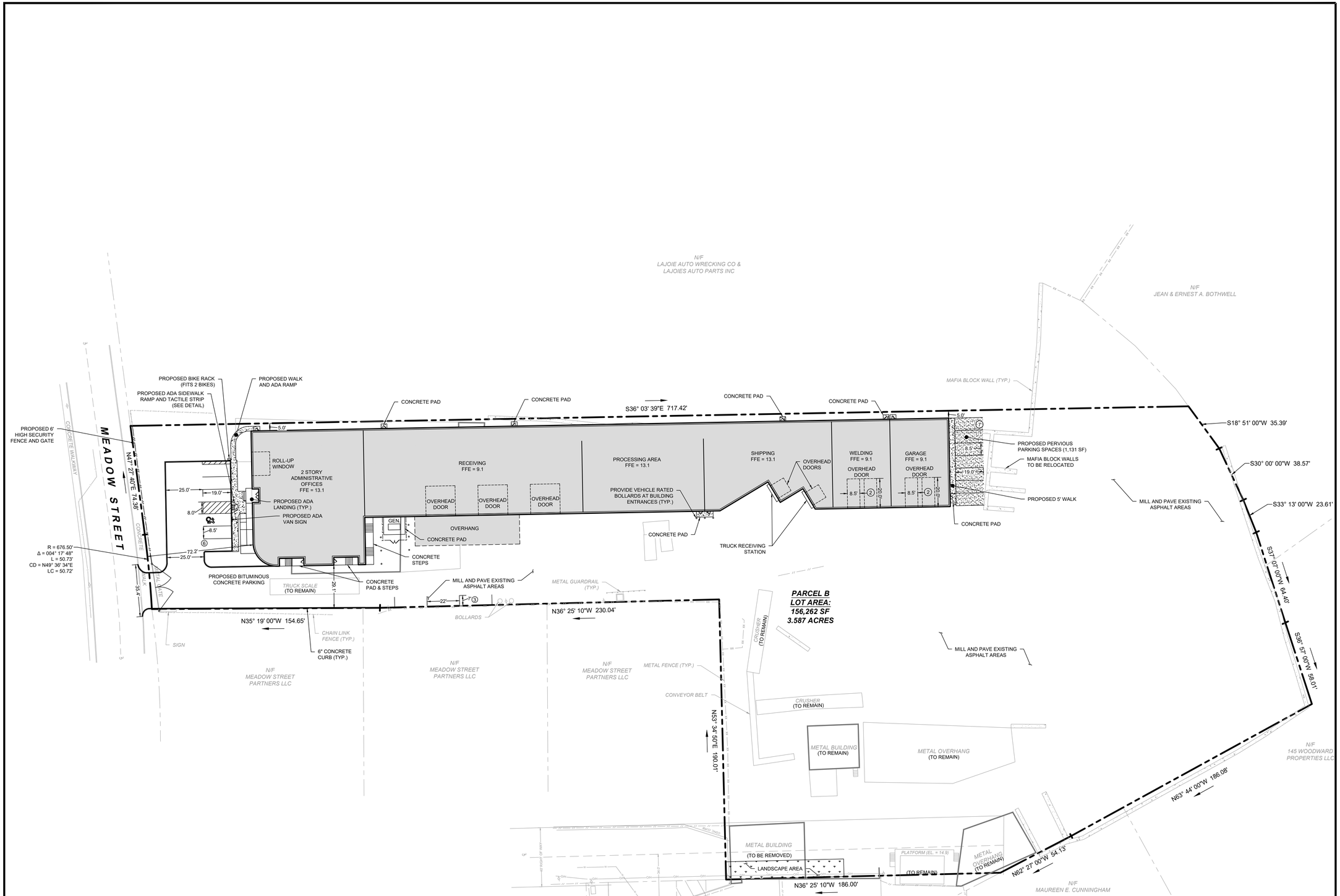
IN FEET
0 30 60 90

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT
RYAN P. DOUCETTE
27063
LICENSED
PROFESSIONAL ENGINEER

C-1.0



T:\ - ACTIVE PROJECTS\24049-01 LAJOIE'S AUTO WRECKING CO - 40 MEADOW ST., NORWALK\DRAWINGS\LAJOIES - 40 MEADOW STREET - SITE PLAN.DWG

LANDTECH

REVISION DATE	ISSUE

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

LaJOIE'S AUTO WRECKING CO.

PROJECT LOCATION:

40 MEADOW STREET
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR AN
EXISTING RECYCLING FACILITY

DRAWING TITLE:

SITE LAYOUT PLAN

PROJECT No.	
24049-01	

DATE:	DESIGNED BY:	CHECKED BY:
06/02/2025	CM	RPP

SCALE: 1" = 30'

IN FEET

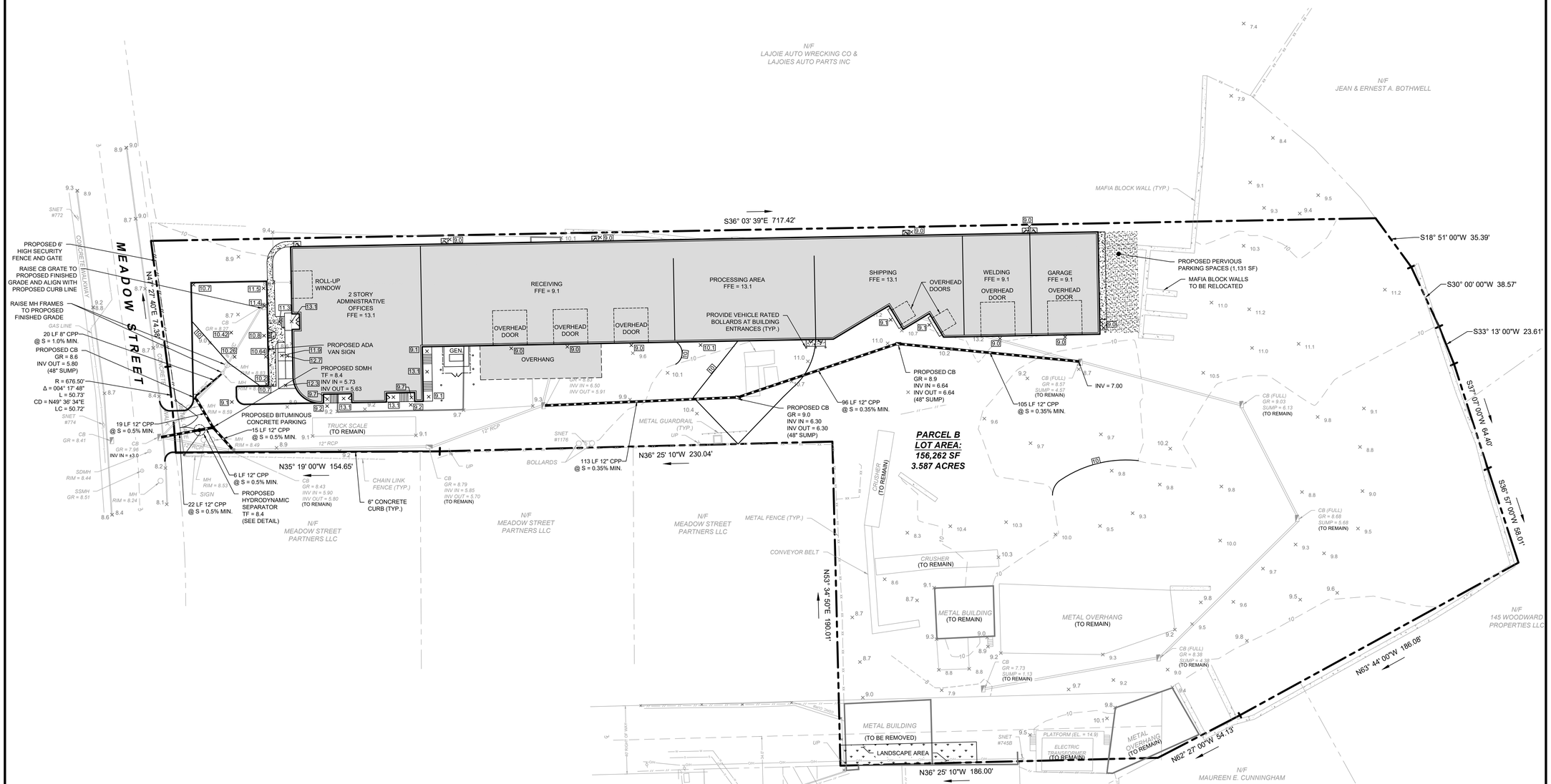
0 30 60 90

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT
ROBERT P. SOUWEIDANE
27803
LICENSED
PROFESSIONAL ENGINEER

C-1.1



LANDTECH

SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

REVISION DATE	ISSUE

PREPARED FOR:

LaJOIE'S AUTO WRECKING CO.

PROJECT LOCATION:

40 MEADOW STREET
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR AN EXISTING RECYCLING FACILITY

DRAWING TITLE:

SITE DEVELOPMENT PLAN

PROJECT No.		
24049-01		
DATE: 06/02/2025	DESIGNED BY: CM	CHECKED BY: RPP

SCALE: 1" = 30'

IN FEET
0 30 60 90

PROJECT STATUS:

DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

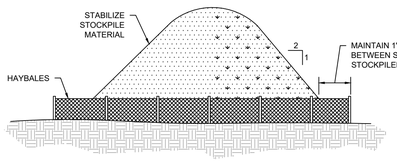
STATE OF CONNECTICUT · ROBERT P. SOUWLOS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-1.2

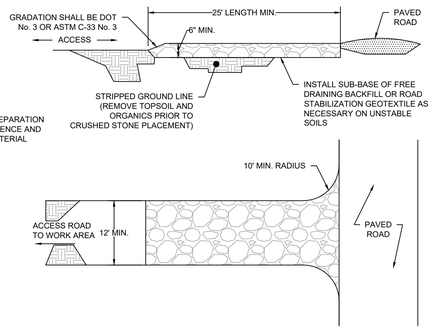
T:\1. ACTIVE PROJECTS\24049-01 LAJOIE'S AUTO WRECKING CO\5 - 40 MEADOW ST, NORWALK\DRAWINGS\LAJOIES - 40 MEADOW STREET - SITE PLAN.DWG

GENERAL EROSION AND SEDIMENT CONTROL NOTES

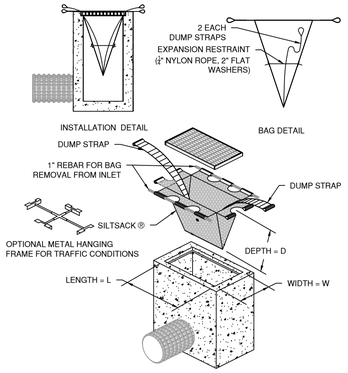
1. LAND DISTURBANCE WILL BE KEPT TO A MINIMUM; RESTABILIZATION WILL BE SCHEDULED AS SOON AS POSSIBLE.
2. SILT FENCE WILL BE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES, SOIL STOCKPILE AREAS, AND IN THOSE AREAS SHOWN ON THE PLAN.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE STATE OF CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL. 2002.
4. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO LAND DISTURBANCE WHENEVER POSSIBLE.
5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED UNTIL STABILIZATION HAS BEEN ACHIEVED.
6. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD IF NECESSARY OR REQUIRED. A MINIMUM OF 50 FEET OF SILT FENCE SHALL BE STORED AT THE SITE FOR EMERGENCY USE.
7. ANY EXCAVATIONS THAT MUST BE DEWATERED WILL BE PUMPED INTO A 15'x15' DIRTBAG ON-SITE. THE INLETS OF ALL PUMPS ARE TO BE FLOATED A MINIMUM OF 24 INCHES OFF THE BOTTOM OF THE EXCAVATION. THE CONTRACTOR SHALL KEEP A MINIMUM OF (2) 15'x15' DIRTBAGS ON-SITE THROUGHOUT THE EXCAVATION OF PROPOSED FOUNDATIONS.
8. WATER AND CALCIUM CHLORIDE SHALL BE APPLIED TO UNPAVED ACCESSWAYS TO PREVENT WIND GENERATED SEDIMENTS AND DUST.
9. DEBRIS AND OTHER WASTES RESULTING FROM EQUIPMENT MAINTENANCE AND CONSTRUCTION ACTIVITIES WILL NOT BE DISCARDED ON-SITE.
10. SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE DISPOSED OF IN A MANNER WHICH IS CONSISTENT WITH INTENT OF THE PLAN.
11. SILT FENCES SHALL HAVE SEDIMENT REMOVED WHEN THE DEPTH OF THE SEDIMENT IS EQUAL TO ½ TO ⅔ THE HEIGHT OF THE FENCE. FENCES SHALL BE PROPERLY INSTALLED AND RIPPED FENCE OR BROKEN POSTS REPAIRED AS SOON AS PRACTICAL.
12. ANTI-TRACKING PADS AND GRAVEL CHECK DAMS SHALL BE REPLACED WHEN VOID SPACES ARE FULL OR STRUCTURES ARE BREACHED, AS APPLICABLE.
13. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE SOIL SURFACE STABILIZED WHEN CONSTRUCTION IS COMPLETE AND THE SOIL SURFACES ARE PERMANENTLY STABILIZED. STRUCTURAL COMPONENTS SHALL BE CLEANED OF ALL SEDIMENT UPON COMPLETION OF CONSTRUCTION.
14. THE OWNER IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES INSTALLATION AND MAINTENANCE OF CONTROL MEASURES. INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFYING THE PLANNING AND ZONING COMMISSION OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT PLAN IF AND WHEN THE TITLE OF LAND IS TRANSFERRED.



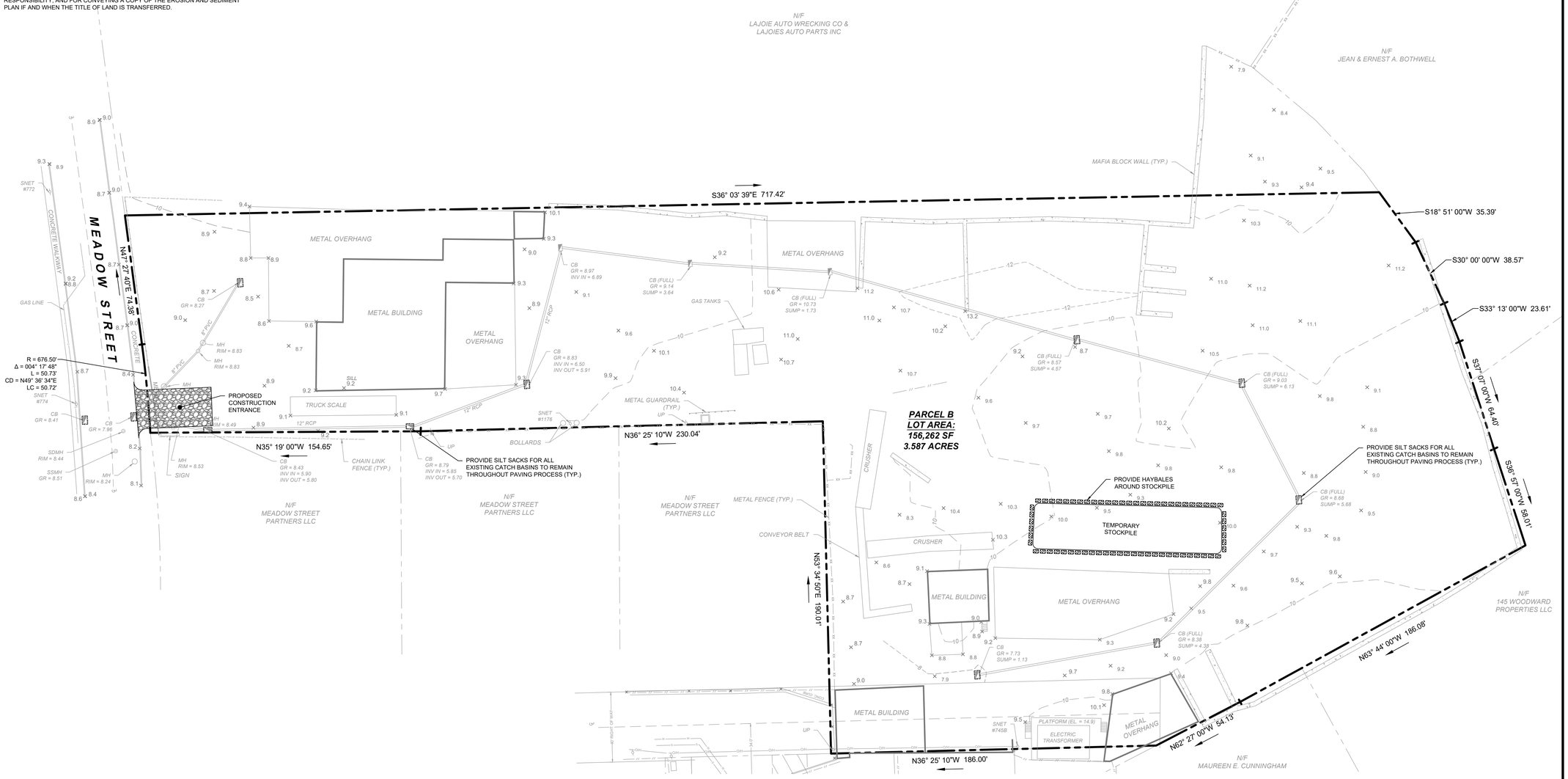
STOCKPILE DETAIL
(NTS)



CONSTRUCTION ENTRANCE
(NTS)



SILTSACK® CATCH BASIN INSERT
(NTS)



T:\1 ACTIVE PROJECTS\24049-01 LAJOIE'S AUTO WRECKING CO. - 40 MEADOW ST - NORWALK\DRAWINGS\LAJOIES - 40 MEADOW STREET - SITE PLAN.DWG

LANDTECH

REVISION DATE	ISSUE

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:

LaJOIE'S AUTO WRECKING CO.

PROJECT LOCATION:

40 MEADOW STREET
NORWALK, CT

PROJECT TITLE:

SITE IMPROVEMENTS FOR AN EXISTING RECYCLING FACILITY

DRAWING TITLE:

SOIL EROSION AND SEDIMENT CONTROL PLAN

PROJECT No.		
24049-01		
DATE: 06/02/2025	DESIGNED BY: CM	CHECKED BY: RPP

SCALE: 1" = 30'

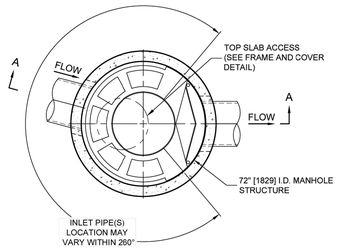
IN FEET
0 30 60 90

PROJECT STATUS:

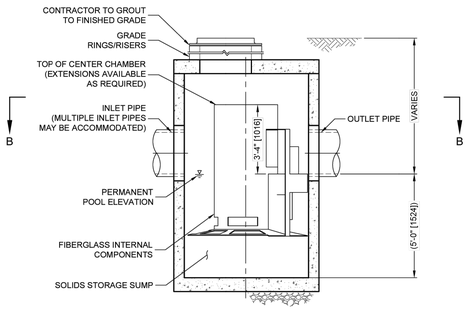
DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ROBERT PHILIP PANTANO · 27803 · LICENSED PROFESSIONAL ENGINEER

C-2.0

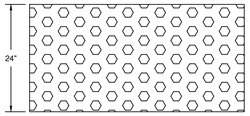


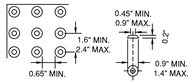
PLAN VIEW B-B
NOT TO SCALE



ELEVATION A-A
NOT TO SCALE

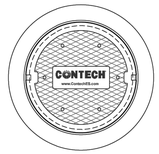
CASCADE
separator™





DOME SPACING DOME SECTION

TACTILE STRIP TYPICAL DETAIL
(NTS)



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

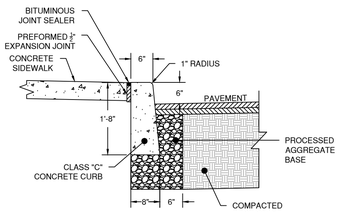
SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID			HDS-1
WATER QUALITY FLOW RATE (cfs [L/s])			3.38
PEAK FLOW RATE (cfs [L/s])			29.42
RETURN PERIOD OF PEAK FLOW (yrs)			100
RIM ELEVATION			8.4'
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1	3.15'	CPP	12"
INLET PIPE 2		-	-
OUTLET PIPE	3.15'	CPP	12"
NOTES / SPECIAL REQUIREMENTS:			

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH
ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CS-6
CASCADE SEPARATOR
STANDARD DETAIL

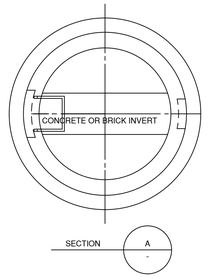


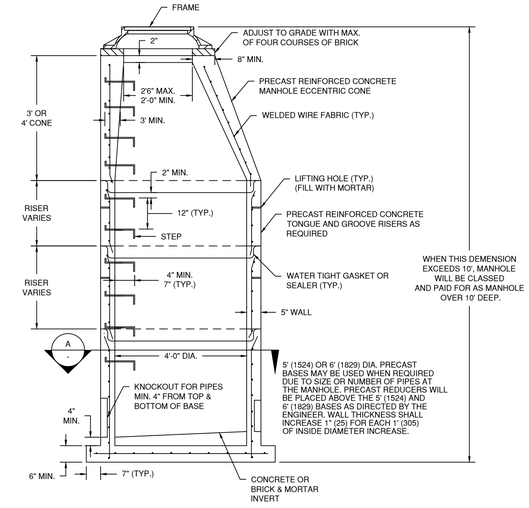
GENERAL NOTES
CONCRETE CURBING SHALL BE INSTALLED IN LENGTHS OF 10'-0" (6'-0" MIN.) AND SEPARATED BY ½" PREMOLDED EXPANSION JOINTS, UNLESS OTHERWISE SPECIFIED.

CONCRETE CURB
(NTS)



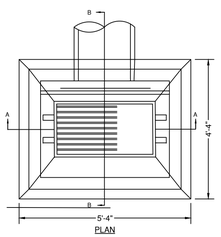
VAN ACCESSIBLE
HANDICAPPED PARKING SIGN
(NTS)





ELEVATION

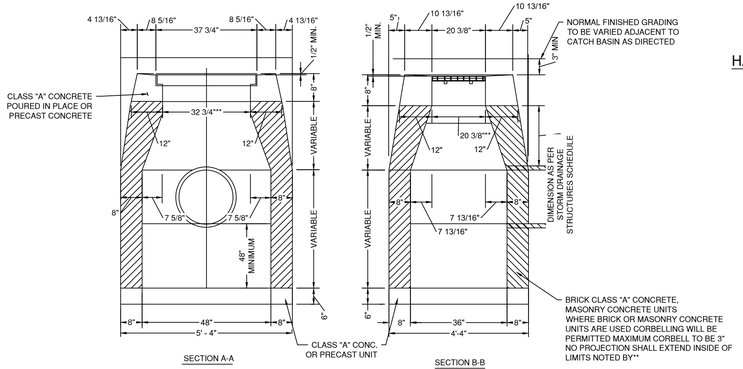
CT DOT REINFORCED PRECAST CONCRETE MANHOLE
(NTS)



PLAN

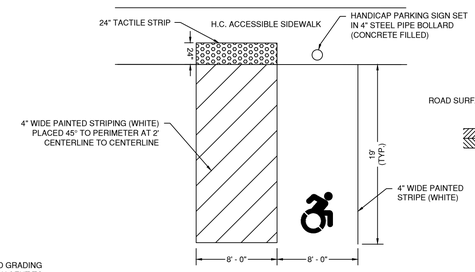
TYPE "C-L" CATCH BASIN
& TYPE "C-L" DROP INLET

NOTES
WALLS OF ALL CATCH BASINS OVER 10 FT. DEEP TO BE INCREASED TO 12" THICKNESS. INSIDE DIMENSION TO REMAIN THE SAME.

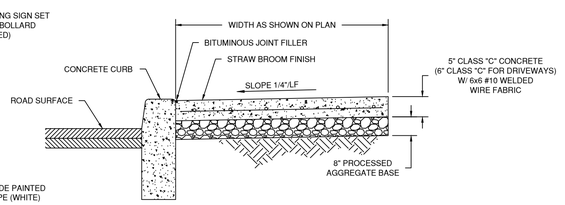


WHERE PRECAST CONCRETE IS USED FOR SUMP, THE TOP OF THE UNIT SHALL BE AT LEAST 6" BELOW THE BOTTOM OF THE PIPE OUTLETTING FROM THE CATCH BASIN.

TYPE "C-L" CATCH BASIN
(NTS)

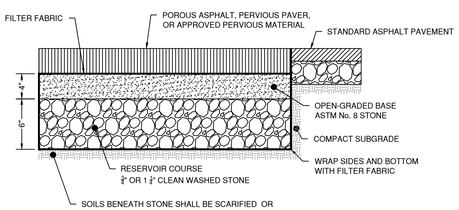


HANDICAP VAN PARKING SPACE LAYOUT
(NTS)



GENERAL NOTES
1. ½" PREFORMED EXPANSION JOINTS SHALL BE PLACED 12' O.C. WITH DUMMY JOINTS EVERY 4' OR AS DIRECTED.
2. 2" STEEL TROWEL FINISH ALONG ALL EDGES AND ALL JOINTS IS REQUIRED.

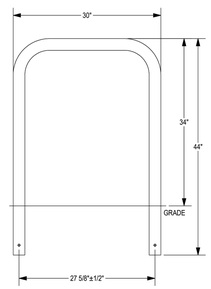
CONCRETE SIDEWALK TYPICAL CROSS SECTION
(NTS)

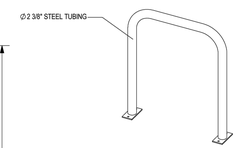


PERVIOUS PARKING SPACES TYPICAL CROSS SECTION
(NTS)

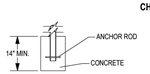
MADRAX

MADRAX DIVISION
GRABER MANUFACTURING, INC.
1060 UNIEK DRIVE
WAUNAKEE, WI 53597
P:(800) 448-7931, P:(608) 849-1080, F:(608) 849-1081
WWW.MADRAX.COM, E-MAIL: SALES@MADRAX.COM

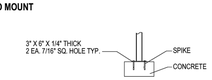




CHECK DESIRED MOUNT



☐ IN GROUND MOUNT (IG)



☒ SURFACE FLANGE MOUNT (SF)

PRODUCT: UX238-IG(SF)
DESCRIPTION: 1/' BIKE RACK
2 BIKE, SURFACE OR IN GROUND MOUNT
DATE: 10-5-18
ENG: SMC

CONFIDENTIAL DRAWING AND INFORMATION IS NOT TO BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE CONSENT OF GRABER MANUFACTURING, INC. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

©2018 GRABER MANUFACTURING, INC. ALL PROPRIETARY RIGHTS RESERVED.

NOTES:
1. INSTALL BIKE RACKS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. CONSULTANT TO SELECT COLOR (FINISH), SEE MANUFACTURER'S SPECIFICATIONS.
3. SEE SITE PLAN FOR LOCATION OR CONSULT OWNER.

STANDARD BIKE RACK DETAIL
(NTS)

LANDTECH

REVISION DATE	ISSUE

LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

PREPARED FOR:
LaJOIE'S AUTO WRECKING CO.

PROJECT LOCATION:
40 MEADOW STREET
NORWALK, CT

PROJECT TITLE:
SITE IMPROVEMENTS FOR AN
EXISTING RECYCLING FACILITY

DRAWING TITLE:
NOTES AND DETAILS

PROJECT No.: 24049-01

DATE:	DESIGNED BY:	CHECKED BY:
06/02/2025	CM	RPP

SCALE: N.T.S.

PROJECT STATUS:
DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ROBERT · SOUMELIDIS · 27803 · LICENSED PROFESSIONAL ENGINEER

C-3.0

T:\1 ACTIVE PROJECTS\24049-01 LAJOIE'S AUTO WRECKING CO - 40 MEADOW ST, NORWALK\DRAWINGS\LAJOIES - 40 MEADOW STREET - SITE PLAN.DWG

P+A2:II11LANTING LEGEND
40 MEADOW STRLET
NORWALK, CT

KEY	BOTANICAL NAME	COMMON NAME	DESCRIPTION	SIZE	HEIGHT	ROOTS	QTY
BM	*Buxus microphylla 'Little Missy*	Little Missy Boxwood	"Little Missy" (Buxus microphylla "Little Missy") is a compact, evergreen boxwood cultivar renowned for its exceptional resistance to boxwood blight. In a 2020 USDA analysis, it ranked in the top 2% among 131 varieties tested for blight resistance, making it a reliable choice for landscapes in Connecticut and other regions prone to this disease	3-gallon	10-14"	CONT	24
MS	*Magnolia stellata*	Star Magnolia	A compact, ornamental tree prized for its profuse, fragrant white flowers that bloom in early spring before leaf-out. Its refined size and slow growth habit make it ideal for smaller gardens, foundation plantings, or courtyard settings.	2"-caliper	6'	B&B	2
TJ	*Thuja standishii x plicata 'Green Giant'*	Green Giant Arborvitae	A fast-growing, dense evergreen conifer ideal for creating privacy screens, windbreaks, and visual buffers in residential and commercial landscapes. This hybrid arborvitae forms a uniform, pyramidal shape with rich green, scale-like foliage that holds its color year-round. Mature plants typically reach 30 to 50 feet in height and 12 to 18 feet in spread. 'Green Giant' is tolerant of a wide range of soil types, including clay and loam, and is adaptable to full sun to partial shade conditions.	2"-caliper	6-8'	B&B	5
TS	*Thymus serpyllum*	Creeping Thyme	Creeping Thyme is a low-growing, fragrant, mat-forming groundcover ideal for sunny, well-drained sites such as snow shelf areas and roadside strips. It tolerates poor soils, light foot traffic, and drought once established. In early to mid-summer, it produces small, pink to lavender-purple flowers that attract pollinators, especially bees.	4" pot	1-3"	CONT	65

PLANTING NOTES

1. GENERAL PREPARATION
- REMOVE INVASIVE SPECIES, DEBRIS, AND CONSTRUCTION MATERIALS FROM THE PLANTING AREA PRIOR TO INSTALLATION.
- MINIMIZE DISTURBANCE TO ADJACENT TIDAL WETLANDS AND EXISTING NATIVE VEGETATION.
- USE HAND TOOLS OR LOW-IMPACT EQUIPMENT IN AND AROUND WETLAND BOUNDARY AREAS.

2. SOIL AND BED PREPARATION
- LOOSEN COMPACTED SOILS TO A DEPTH OF 6-8 INCHES TO PROMOTE ROOT PENETRATION.
- TOPSOIL OR AMENDMENTS ARE NOT TO BE ADDED UNLESS SPECIFIED ON THE PLAN OR DIRECTED BY THE PROJECT ECOLOGIST.
- WHERE NECESSARY, BLEND IN COARSE SAND OR COMPOST TO ENHANCE INFILTRATION AND ROOTING.

3. PLANT INSTALLATION
- INSTALL ALL PLANTS IN ACCORDANCE WITH THE PLAN SCHEDULE AND PLANTING DETAILS.
- GROUP PERENNIALS AND GRASSES IN NATURALISTIC DRIFTS OR CLUSTERS OF 3-7 FOR ECOLOGICAL AND AESTHETIC EFFECT.
- SPACE SHRUBS SUCH AS INKBERRY (ILEX GLABRA) IN STAGGERED ROWS AT 4'-6' ON-CENTER ALONG UPLAND EDGES TO FORM A VISUAL BUFFER.
- DIG PLANTING HOLES TWICE AS WIDE AS THE ROOT BALL AND EQUAL IN DEPTH. PLANT SO THAT THE CROWN IS FLUSH WITH FINISH GRADE.
- BACKFILL WITH EXCAVATED NATIVE SOIL AND WATER THOROUGHLY AFTER PLANTING.

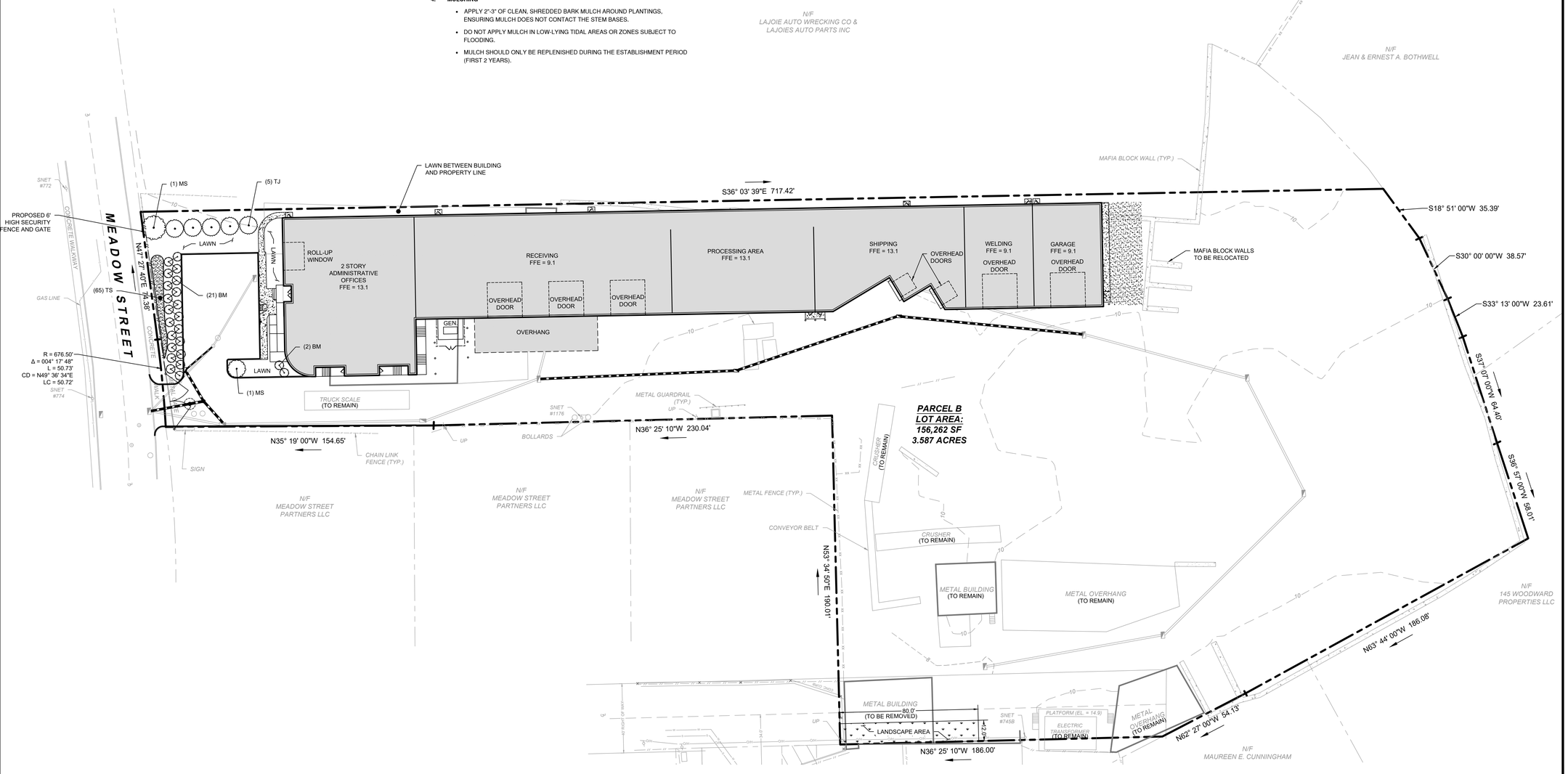
4. MULCHING
- APPLY 2"-3" OF CLEAN, SHREDDED BARK MULCH AROUND PLANTINGS, ENSURING MULCH DOES NOT CONTACT THE STEM BASES.
- DO NOT APPLY MULCH IN LOW-LYING TIDAL AREAS OR ZONES SUBJECT TO FLOODING.
- MULCH SHOULD ONLY BE REPLENISHED DURING THE ESTABLISHMENT PERIOD (FIRST 2 YEARS).

5. WATERING AND ESTABLISHMENT
- WATER IMMEDIATELY AFTER PLANTING AND MAINTAIN MOISTURE THROUGH THE ESTABLISHMENT PERIOD, PROVIDING ~1" OF WATER PER WEEK.
- USE DRIP IRRIGATION OR SOAKER HOSES IF SUPPLEMENTAL IRRIGATION IS NECESSARY; AVOID OVERHEAD WATERING.

6. MAINTENANCE
- PERFORM MANUAL WEEDING OR USE HAND TOOLS ONLY. HERBICIDE USE IS PROHIBITED NEAR WETLANDS.
- REPLACE ANY DEAD OR DYING PLANTS DURING THE FIRST TWO YEARS FOLLOWING INSTALLATION.
- ALLOW SHRUBS SUCH AS INKBERRY TO GROW NATURALLY, PRUNING ONLY FOR HEALTH OR FORM.
- MONITOR THE SITE QUARTERLY FOR INVASIVE SPECIES AND REMOVE AS NEEDED.

7. PROTECTION MEASURES
- TEMPORARY SIGNAGE OR FENCING SHALL BE USED TO DEMARCATE PLANTING AREAS DURING CONSTRUCTION.
- INFORM ALL WORKERS OF PLANTING AREA BOUNDARIES AND WETLAND PROTECTION ZONES.

8. FINAL INSPECTION
- A POST-INSTALLATION INSPECTION WITH THE PROJECT LANDSCAPE ARCHITECT OR WETLAND CONSULTANT SHALL BE SCHEDULED UPON PLANTING COMPLETION.
- SUBMIT A FINAL PLANTING LOG INCLUDING ANY DEVIATIONS FROM THE APPROVED PLAN, PLANT SUBSTITUTIONS, OR QUANTITY ADJUSTMENTS.



LANDTECH
SITE/CIVIL • ENVIRONMENTAL • SURVEYING • PLANNING
518 RIVERSIDE AVENUE • WESTPORT, CT 06880 • 203-454-2110
HELLO@LANDTECHCONSULT.COM • WWW.LANDTECHCONSULT.COM

REVISION DATE	ISSUE

PREPARED FOR:
LaJOIE'S AUTO WRECKING CO.

PROJECT LOCATION:
40 MEADOW STREET
NORWALK, CT

PROJECT TITLE:
SITE IMPROVEMENTS FOR AN EXISTING RECYCLING FACILITY

DRAWING TITLE:
LANDSCAPE PLAN

PROJECT No. 24049-01

DATE:	DESIGNED BY:	CHECKED BY:
06/02/2025	CM	RPP

SCALE: 1" = 30'
IN FEET
0 30 60 90

PROJECT STATUS:
DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · SOUMELIDIS · 27961 · LICENSED PROFESSIONAL ENGINEER

L-1.0

T:\1 - ACTIVE PROJECTS\24049-01 LAJOIE'S AUTO WRECKING CO. - 40 MEADOW ST - NORWALK\DRAWINGS\LAJOIES - 40 MEADOW STREET - SITE PLAN.DWG

Stormwater Management Report

Prepared for:

LaJoie's Auto Wrecking Co.

40 Meadow Street

Norwalk, CT



June 2, 2025



LANDTECH

Civil / Site Engineering · Site Planning
Environmental Science & Engineering
Landscape Architecture · Land Surveying
Permit Coordination & Management
Construction Management & Financing

Contents

Executive Summary..... 2
Project Site Description: 3
Scope of Study: 3
Methodology:..... 3
Stormwater Quality: 3
Results of Study: 4

Appendices:

Appendix A – NRCS Soils Report
Appendix B – Hydrodynamic Separator Sizing Criteria
Appendix C – Water Quality Flow Calculations
Appendix D – HydroCAD Stormwater Runoff Calculation Summaries

Executive Summary

The owner of 40 Meadow Street, Norwalk, CT proposes to construct a new ±29,929 sf building and associated parking and stormwater improvements for the existing recycling facility. The building will be divided into sections based on the type of activity commencing within. The front portion of the new structure will be 2 stories and will support the administrative offices for the facility. The balance of the new building will be divided up among the receiving, processing, shipping, and welding areas with a small portion in the southerly most portion of the building that will be a dedicated indoor garage for maintaining machines and vehicles. The existing use on the property as a recycling facility will remain but the proposed building will allow many of the daily activities on the property to be conducted indoors instead of outdoors as is currently being done. Improvements are limited to the areas related to the construction of the above-listed structures and lawn areas outside the delineated wetlands as shown on the site plans prepared by LANDTECH.

The property consists of 3.587 ac. and has direct frontage on Meadow Street. The entire site drains to the City of Norwalk storm drainage system located in Meadow Street. The subject property is located within the AE 11.0 FEMA Special Flood Hazard Area (SFHA) thus the administrative, processing, and shipping areas will have their finished floors elevated to el. 13.1, which is >2' above the Base Flood Elevation (11.0).

The entire property is currently impervious and not suitable for installing underground stormwater infiltration BMPs based on the existing use of the property. The subject property lies within the Coastal Area Management zone so for the purposes of our study, water quality treatment was the emphasis of the stormwater management design rather than stormwater quantity. There are a series of existing catch basins located on the subject property that have a direct connection to a City of Norwalk catch basin located in Meadow Street.

There is a net reduction in impervious areas in the post-development conditions. Runoff from the existing and proposed impervious surfaces are directed through a hydrodynamic separator to provide water quality treatment for "first flush" volumes.

Project Site Description:

As previously described, the property is currently 100% impervious and supports a recycling facility. All of the runoff generated on the property generally flows from south to north and is collected in a series of catch basins and collection piping before discharging to a City of Norwalk catch basin located in Meadow Street along the frontage of the subject property.

Scope of Study:

As previously mentioned, for the purposes of this study, water quality treatment was the emphasis of the stormwater management design. However, the 2-yr, 10-yr, 25-yr, 50-yr, and 100-yr storm events were also analyzed to ensure that the peak runoff rate for the respective storm events is maintained or decreased in the post-development conditions as compared to the pre-development conditions. There is a net reduction in impervious areas by approximately 8,011 sf thus the peak runoff rate for all design storm events will be slightly reduced.

All of the soils on the subject property are defined as Urban land, a soil in Hydrologic Soil Group (HSG) D utilizing the NRCS online Web Soil Survey utility. Please refer to the NRCS Soils Report (Appendix A) for additional information. Given the history of the use on this site, it is our opinion that directing stormwater into an underground stormwater infiltration BMP is not a viable option.

Methodology:

As previously described, the entire site drains into the City of Norwalk drainage system located in Meadow Street. Under pre-development conditions, the site is divided into one subarea (EX-1) and is 100% impervious. Under post-development conditions, there will be net reduction in impervious areas and will consist of one subarea (PR 1). Before runoff enters the City of Norwalk drainage system, it will be pre-treated by a Hydrodynamic Separator sized to treat the first inch of runoff for both existing (to remain) and proposed impervious areas and internally bypass the peak runoff rate for the 100-yr storm event. The proposed building will not have footing drains.

The runoff computations were performed using the HydroCAD® stormwater modelling program, which uses the SCS TR-20 methodology provided in Appendix D. Soil type, rainfall characteristics, topography, surface cover conditions, runoff curve number, and time of concentration are all inputs into this program. Rainfall is modelled as a Type III, 24-hour storm event. Rainfall amounts were obtained using the NOAA Atlas-14 rainfall data.

Stormwater Quality:

Runoff collected from the proposed building and existing impervious coverage to remain will be routed through a hydrodynamic separator and then connect to an existing City of Norwalk catch basin located in Meadow Street, matching current conditions. We have included water quality flow calculations utilized in the sizing of the hydrodynamic separator in Appendix C.

Results of Study:

Based on our calculations, the peak discharge from the site for the 2-yr, 10-yr, 25-yr, 50-yr, and 100-yr storm events under pre-development conditions are 12.40 cfs, 19.02 cfs, 23.16 cfs, 26.22 cfs, and 29.50 cfs, respectively. Under the post-development conditions the peak discharge from the site for the 2-yr, 10-yr, 25-yr, 50-yr, and 100-yr storm events are 12.24 cfs, 18.90 cfs, 23.06 cfs, 26.13 cfs, and 29.42 cfs, respectively. The reduction in impervious areas and the installation of the proposed hydrodynamic separator provide a significant improvement to stormwater quality and peak discharge generated by the site.

Based on the results of our investigation, it is our professional opinion that upon construction of the proposed improvements, stormwater discharge from the site will comply with the applicable rules and regulations of the City of Norwalk and will not result in any adverse impacts to neighboring properties or downstream drainage systems.

Appendix A

NRCS Soils Report

Hydrologic Soil Group—State of Connecticut, Western Part
(40 Meadow Street)



Map Scale: 1:1,460 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 2, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
307	Urban land	D	3.6	100.0%
Totals for Area of Interest			**3.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Appendix B

Hydrodynamic Separator Sizing Criteria

Cascade Separator Project Details

Description

The Cascade Separator® is the latest innovation in hydrodynamic separation from Contech. The Cascade uses advanced sediment capture technology to provide the highest sediment removal efficiency of any Contech HDS product.

Project Information

Project Name	76999 - HDS Design
Location	Norwalk, CT
Date	June 02 2025

Design Parameters	
System Type	Cascade Separator
Particle Size D50	110
System Model	CS-6
Sizing Method	Water Qlty Flow Rate
Treatment Rate	3.38ft³/sec
Peak Conveyance	29.42ft³/sec
100% Trash Capture?	No
Primary Access Casting	Solid Cover
Target Removal %	80%

Outlet Pipe Information	
# of Pipes	1
Outlet Diameter	12 inches
Outlet Invert Elev	3.15 ft
Outlet Angle	180°
Outlet Material	HDPE
Inlet Pipe Information	
# of Pipes	1
Inlet Diameter	12 inches
Inlet Invert Elev	3.15 ft
Inlet Angle	0°
Inlet Material	HDPE

Appendix C

Water Quality Flow Calculations

PROJECT	40 Meadow Street	PREPARED BY	CL
DATE	6/2/2025	CHECKED BY	RP
SUBJECT	Water Quality Flow Calculations		

SUBCATCHMENT AREAS

Inlet ID	Impervious Area	Grass Area	Wooded Area
HDS-1	3.49	0.18	0.00
	3.49	0.18	0.00

WATER QUALITY VOLUME (WQV) CALCULATION

Area (A) =	3.68	acres
Area (A) =	0.00575	square miles
Design Precipitation (P) =	1	inch
% Impervious Cover (I) =	95	
Volumetric Runoff Coefficient (R) =	0.905	

WQV =	**0.277**	**ac-ft**

WATER QUALITY FLOW (WQF) CALCULATION

RUNOFF CURVE NUMBER (CN)

Runoff Depth (Q) =	0.905	inches
CN =	99.5	NRCS Runoff CN Formula

TIME OF CONCENTRATION (Tc), 10 minute minimum

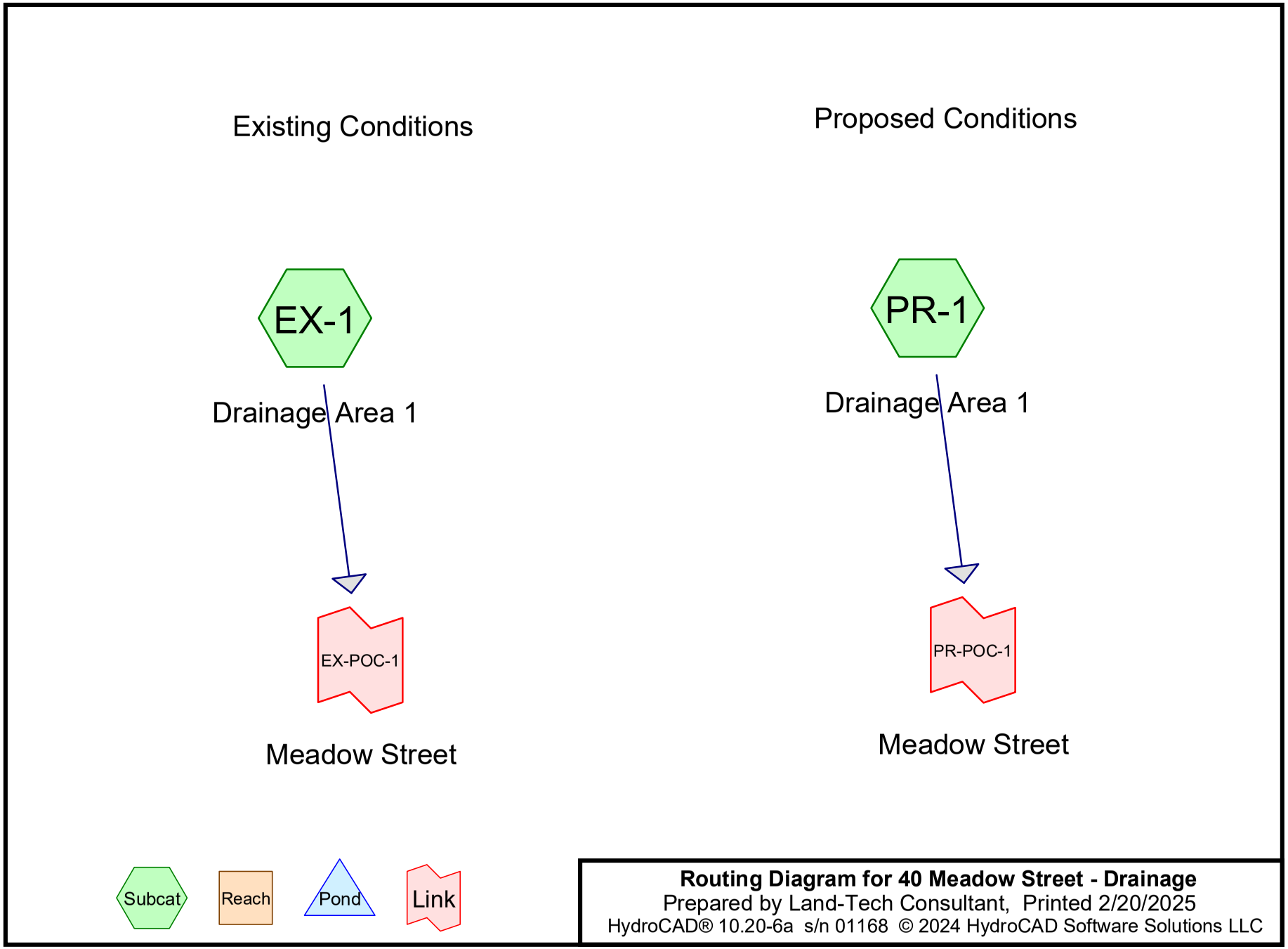
Tc =	10	min
Tc =	0.17	hours

Initial Abstraction (I_a) =	0.041	Table 4-1 (SWQM)
I_a/P Calculation =	0.041	
Unit Peak Discharge (q_u) =	650	Exhibit 4-111 (SWQM)

WQF =	**3.38**	**cfs**

Appendix D

HydroCAD Stormwater Runoff Computation Summaries



Routing Diagram for 40 Meadow Street - Drainage
Prepared by Land-Tech Consultant, Printed 2/20/2025
HydroCAD® 10.20-6a s/n 01168 © 2024 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2yr Storm	Type III 24-hr		Default	24.00	1	3.53	2
2	10yr Storm	Type III 24-hr		Default	24.00	1	5.38	2
3	25yr Storm	Type III 24-hr		Default	24.00	1	6.54	2
4	50yr Storm	Type III 24-hr		Default	24.00	1	7.40	2
5	100yr Storm	Type III 24-hr		Default	24.00	1	8.32	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
156,262	98	Existing Impervious Areas (EX-1)
29,929	98	Proposed Building (PR-1)
8,011	80	Proposed Landscaping (PR-1)
118,322	98	Proposed Walks, Parking & Existing Impervious Areas to Remain (PR-1)

Summary for Subcatchment EX-1: Drainage Area 1

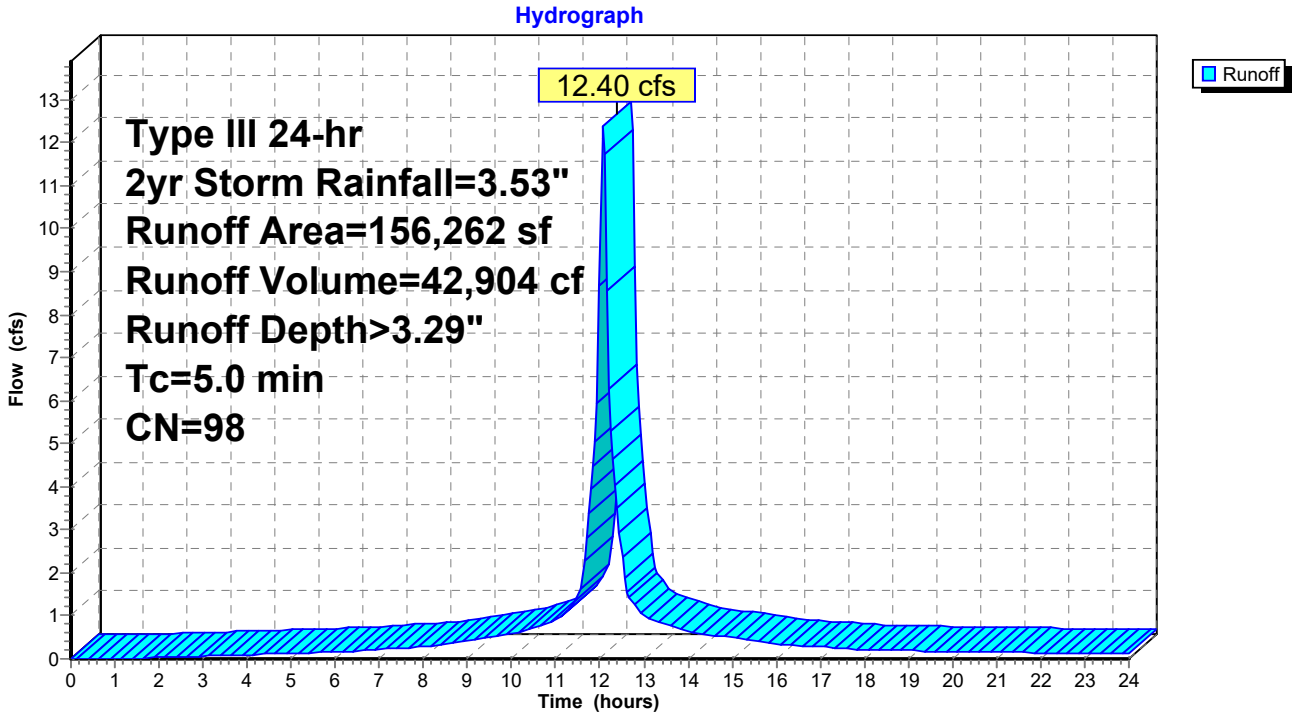
Runoff = 12.40 cfs @ 12.07 hrs, Volume= 42,904 cf, Depth> 3.29"
Routed to Link EX-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Storm Rainfall=3.53"

	Area (sf)	CN	Description
*	156,262	98	Existing Impervious Areas
	156,262		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment EX-1: Drainage Area 1



Summary for Subcatchment PR-1: Drainage Area 1

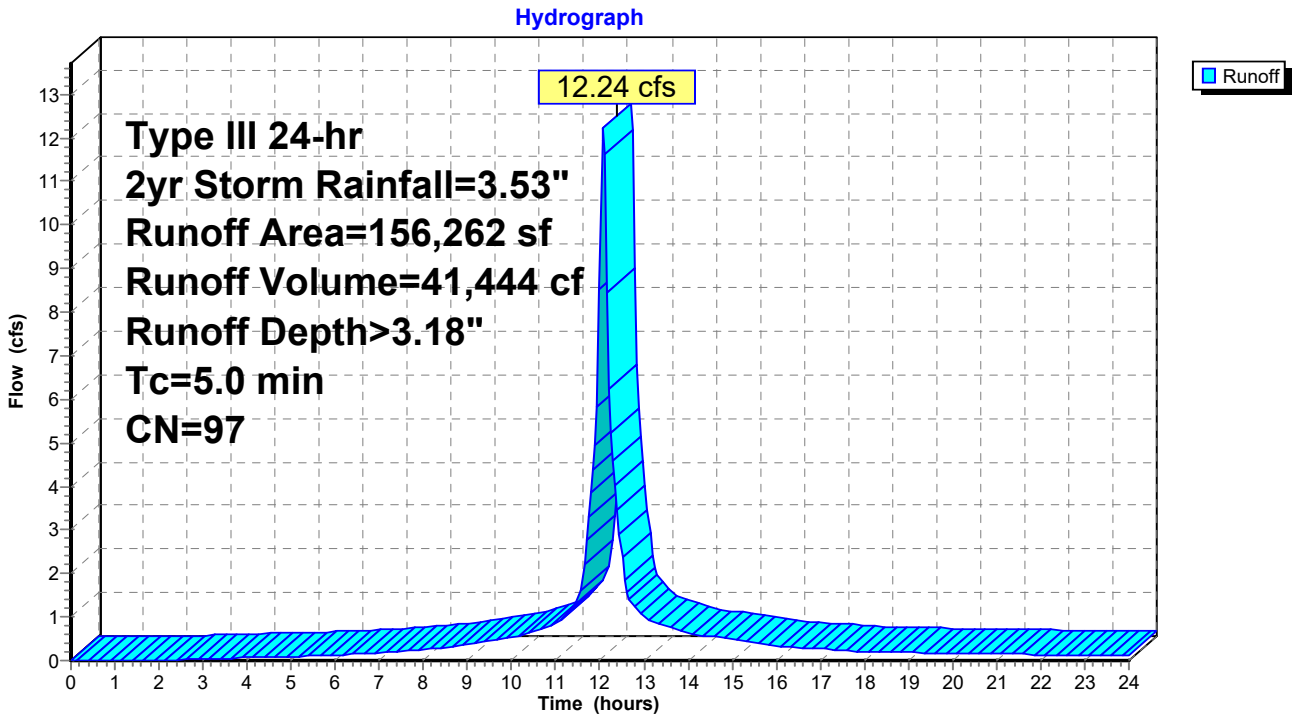
Runoff = 12.24 cfs @ 12.07 hrs, Volume= 41,444 cf, Depth> 3.18"
Routed to Link PR-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Storm Rainfall=3.53"

	Area (sf)	CN	Description
*	29,929	98	Proposed Building
*	8,011	80	Proposed Landscaping
*	118,322	98	Proposed Walks, Parking & Existing Impervious Areas to Remain
	156,262	97	Weighted Average
	8,011		5.13% Pervious Area
	148,251		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment PR-1: Drainage Area 1

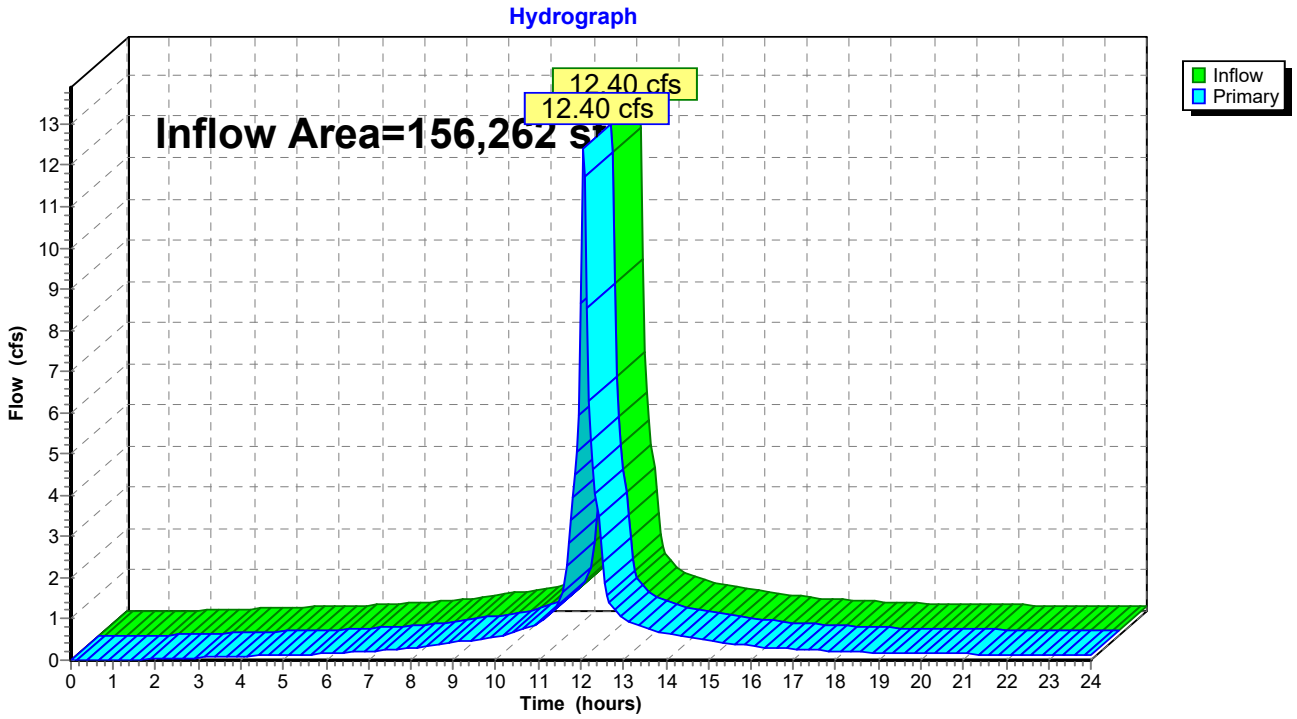


Summary for Link EX-POC-1: Meadow Street

Inflow Area = 156,262 sf,100.00% Impervious, Inflow Depth > 3.29" for 2yr Storm event
Inflow = 12.40 cfs @ 12.07 hrs, Volume= 42,904 cf
Primary = 12.40 cfs @ 12.07 hrs, Volume= 42,904 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link EX-POC-1: Meadow Street

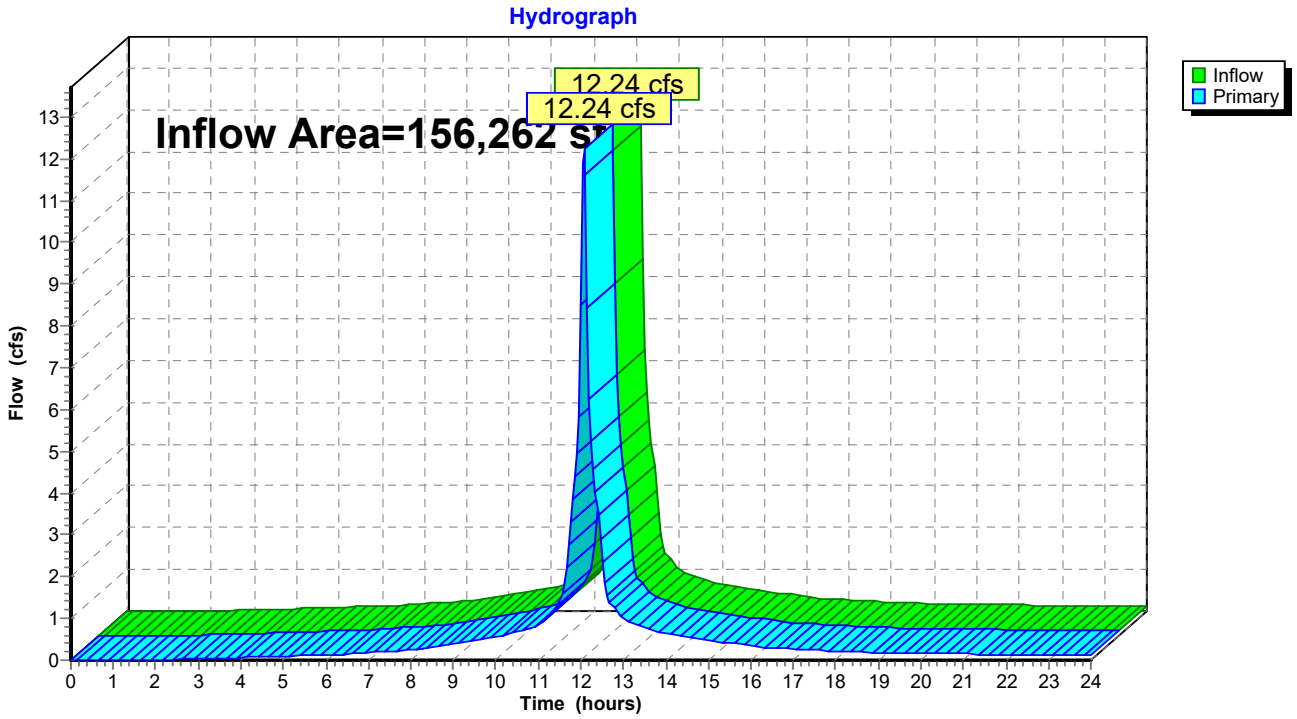


Summary for Link PR-POC-1: Meadow Street

Inflow Area = 156,262 sf, 94.87% Impervious, Inflow Depth > 3.18" for 2yr Storm event
Inflow = 12.24 cfs @ 12.07 hrs, Volume= 41,444 cf
Primary = 12.24 cfs @ 12.07 hrs, Volume= 41,444 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link PR-POC-1: Meadow Street



Summary for Subcatchment EX-1: Drainage Area 1

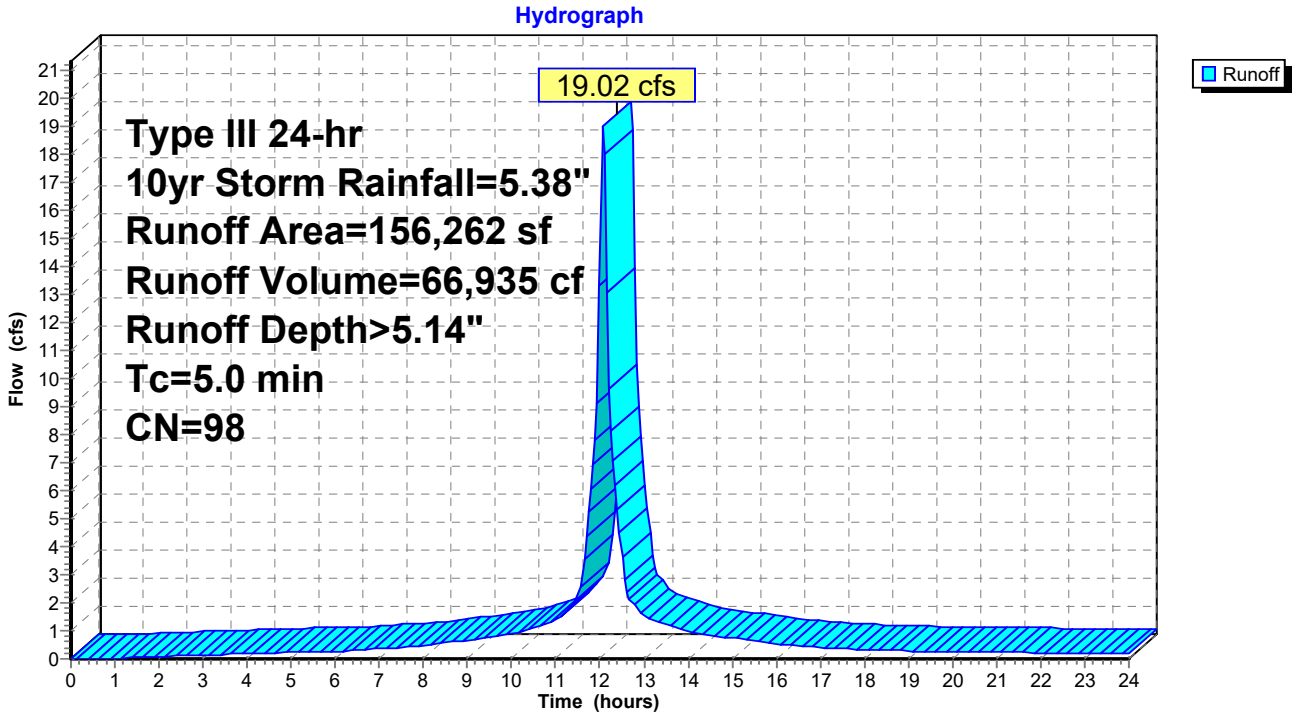
Runoff = 19.02 cfs @ 12.07 hrs, Volume= 66,935 cf, Depth> 5.14"
Routed to Link EX-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Storm Rainfall=5.38"

	Area (sf)	CN	Description
*	156,262	98	Existing Impervious Areas
	156,262		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment EX-1: Drainage Area 1



Summary for Subcatchment PR-1: Drainage Area 1

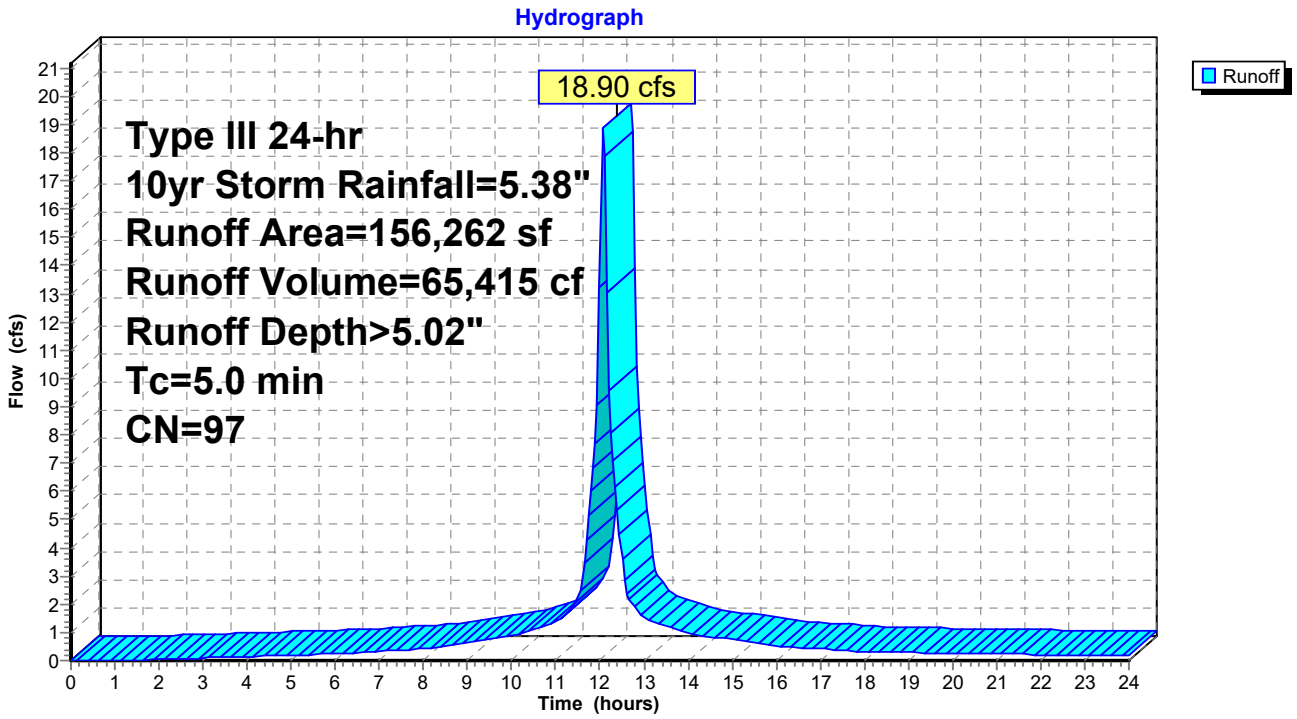
Runoff = 18.90 cfs @ 12.07 hrs, Volume= 65,415 cf, Depth> 5.02"
Routed to Link PR-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Storm Rainfall=5.38"

	Area (sf)	CN	Description
*	29,929	98	Proposed Building
*	8,011	80	Proposed Landscaping
*	118,322	98	Proposed Walks, Parking & Existing Impervious Areas to Remain
	156,262	97	Weighted Average
	8,011		5.13% Pervious Area
	148,251		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment PR-1: Drainage Area 1

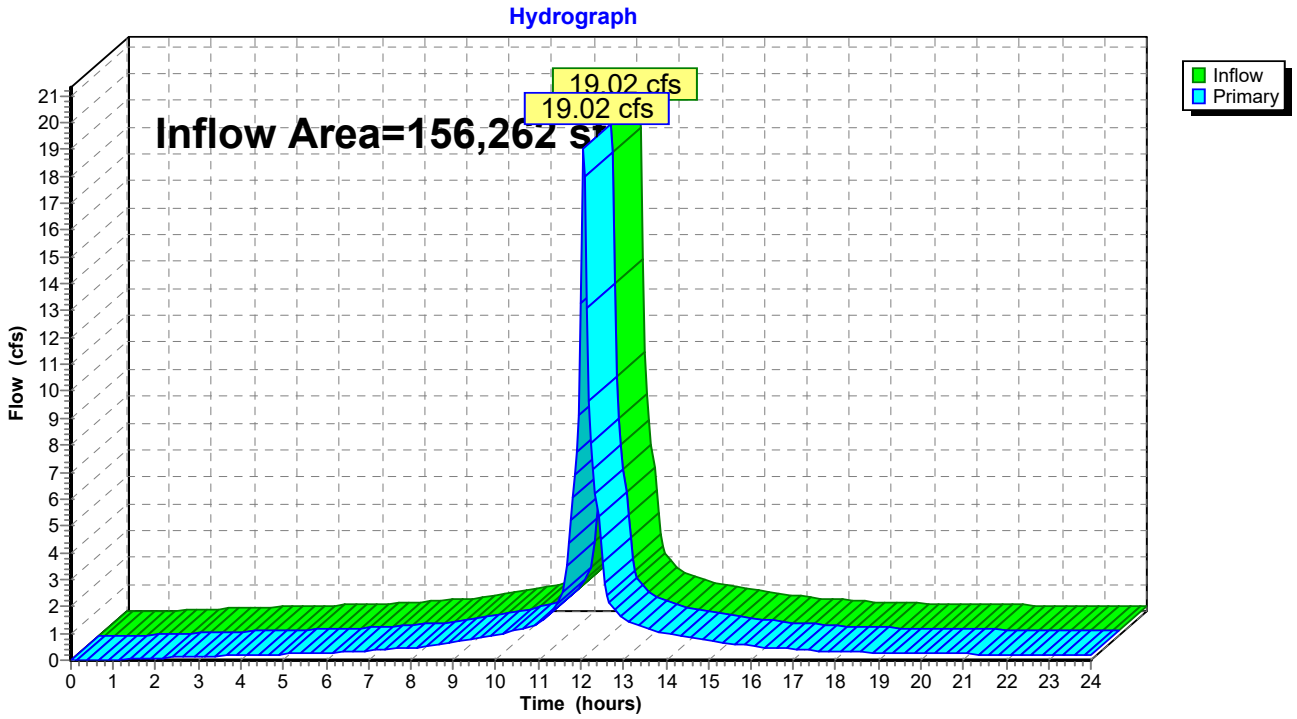


Summary for Link EX-POC-1: Meadow Street

Inflow Area = 156,262 sf,100.00% Impervious, Inflow Depth > 5.14" for 10yr Storm event
Inflow = 19.02 cfs @ 12.07 hrs, Volume= 66,935 cf
Primary = 19.02 cfs @ 12.07 hrs, Volume= 66,935 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link EX-POC-1: Meadow Street

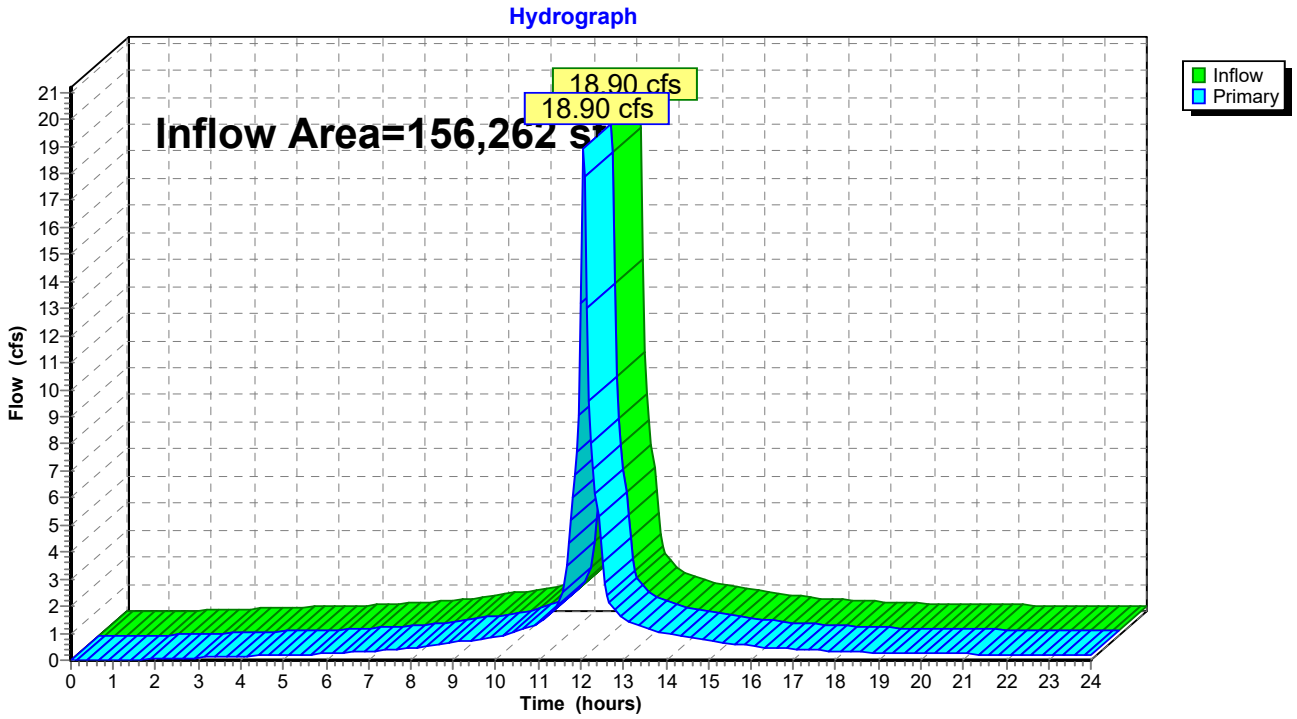


Summary for Link PR-POC-1: Meadow Street

Inflow Area = 156,262 sf, 94.87% Impervious, Inflow Depth > 5.02" for 10yr Storm event
Inflow = 18.90 cfs @ 12.07 hrs, Volume= 65,415 cf
Primary = 18.90 cfs @ 12.07 hrs, Volume= 65,415 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link PR-POC-1: Meadow Street



Summary for Subcatchment EX-1: Drainage Area 1

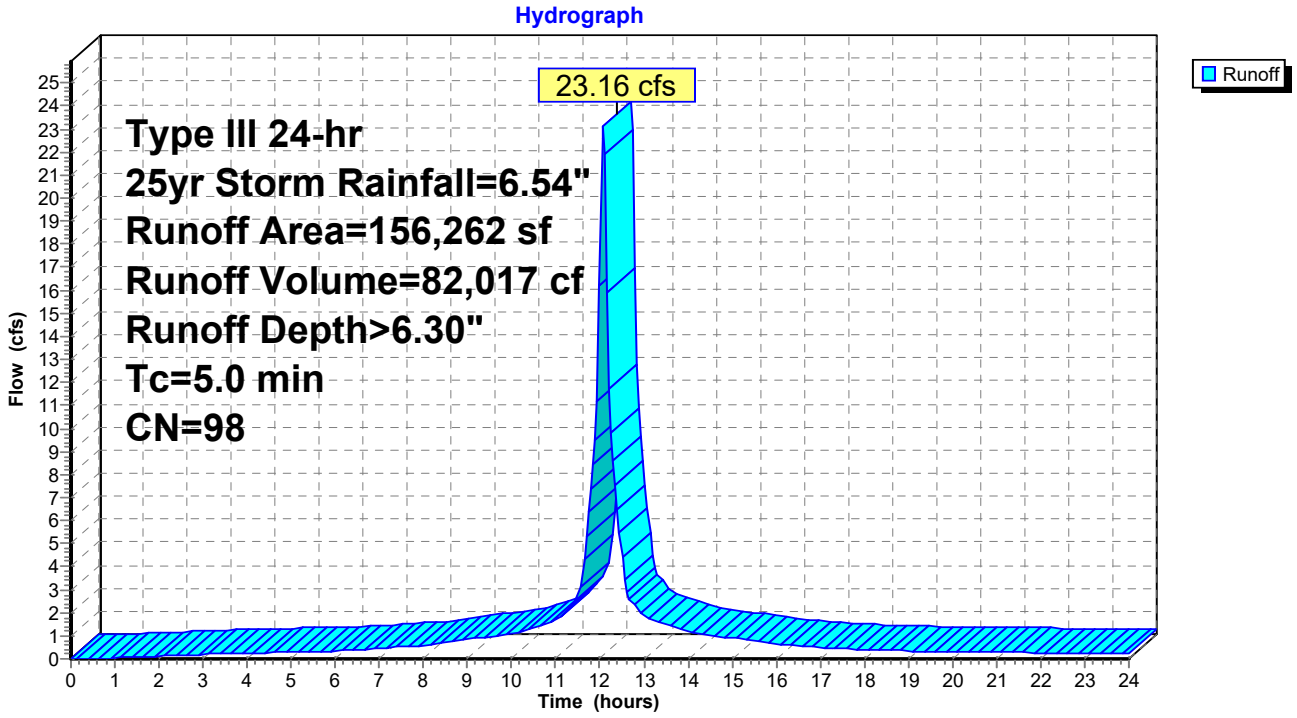
Runoff = 23.16 cfs @ 12.07 hrs, Volume= 82,017 cf, Depth> 6.30"
Routed to Link EX-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Storm Rainfall=6.54"

	Area (sf)	CN	Description
*	156,262	98	Existing Impervious Areas
	156,262		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment EX-1: Drainage Area 1



Summary for Subcatchment PR-1: Drainage Area 1

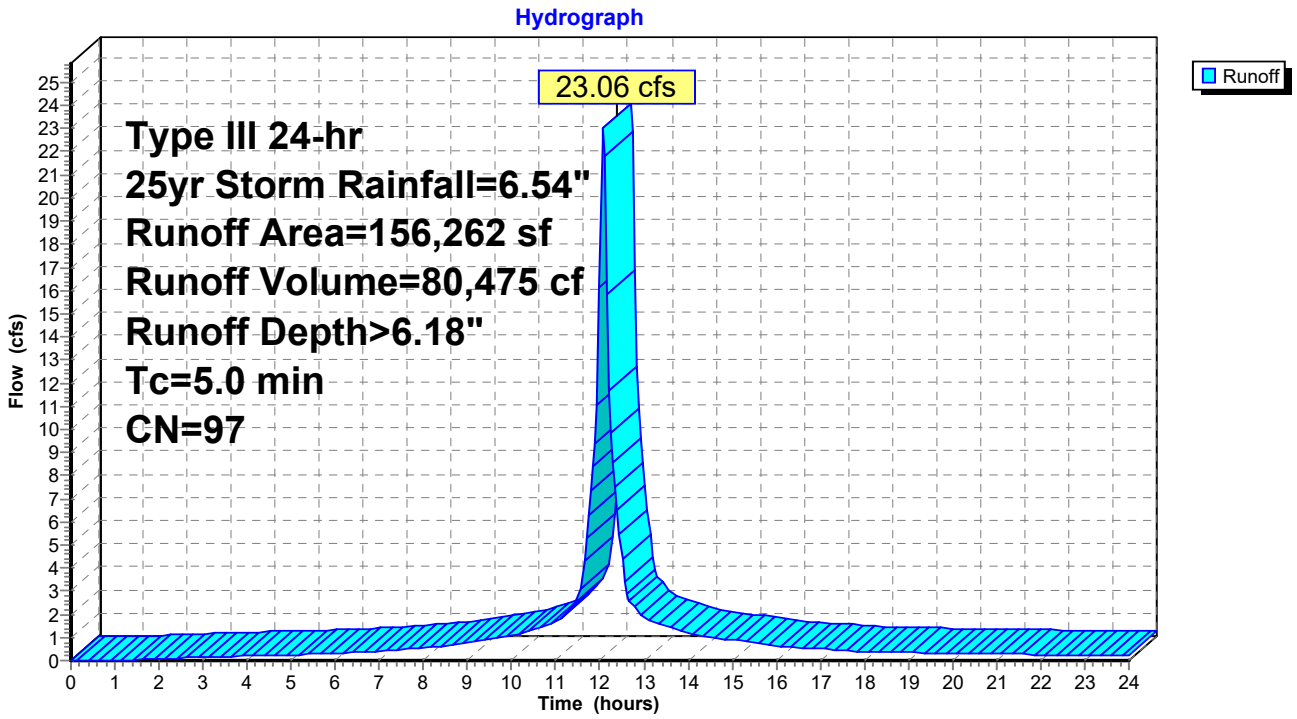
Runoff = 23.06 cfs @ 12.07 hrs, Volume= 80,475 cf, Depth> 6.18"
Routed to Link PR-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Storm Rainfall=6.54"

	Area (sf)	CN	Description
*	29,929	98	Proposed Building
*	8,011	80	Proposed Landscaping
*	118,322	98	Proposed Walks, Parking & Existing Impervious Areas to Remain
	156,262	97	Weighted Average
	8,011		5.13% Pervious Area
	148,251		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment PR-1: Drainage Area 1

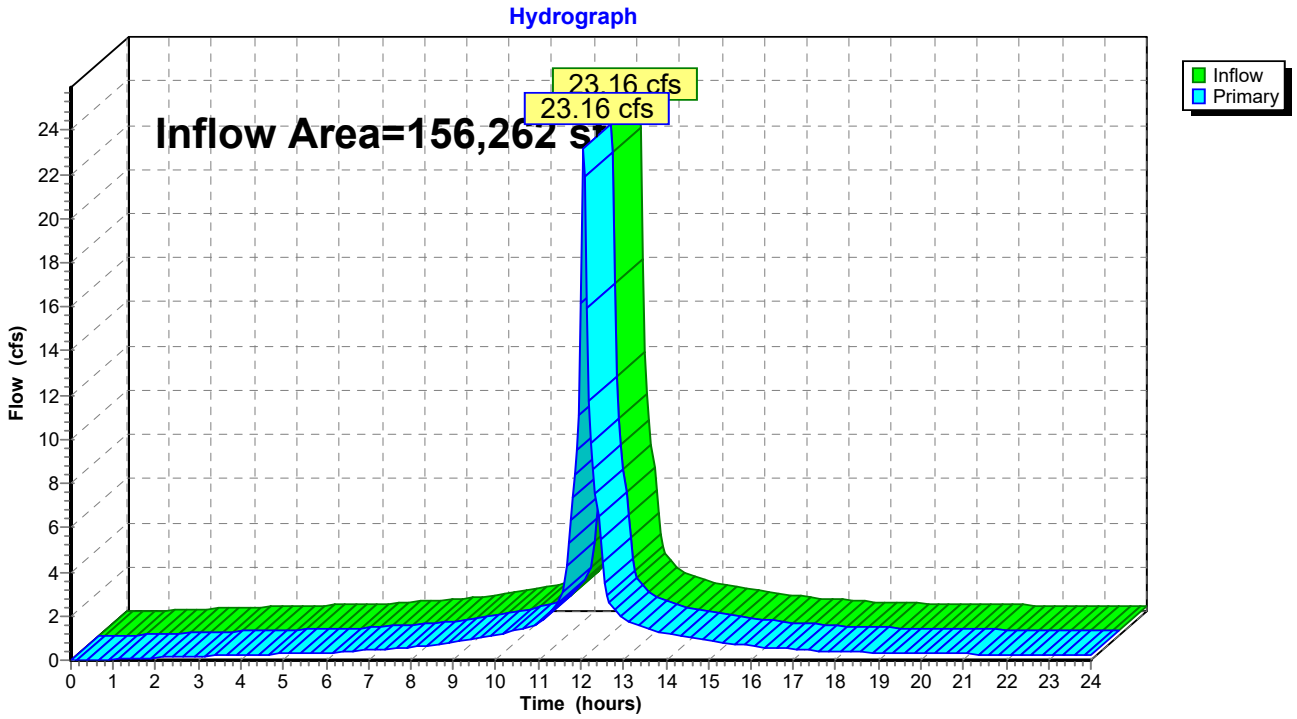


Summary for Link EX-POC-1: Meadow Street

Inflow Area = 156,262 sf,100.00% Impervious, Inflow Depth > 6.30" for 25yr Storm event
Inflow = 23.16 cfs @ 12.07 hrs, Volume= 82,017 cf
Primary = 23.16 cfs @ 12.07 hrs, Volume= 82,017 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link EX-POC-1: Meadow Street

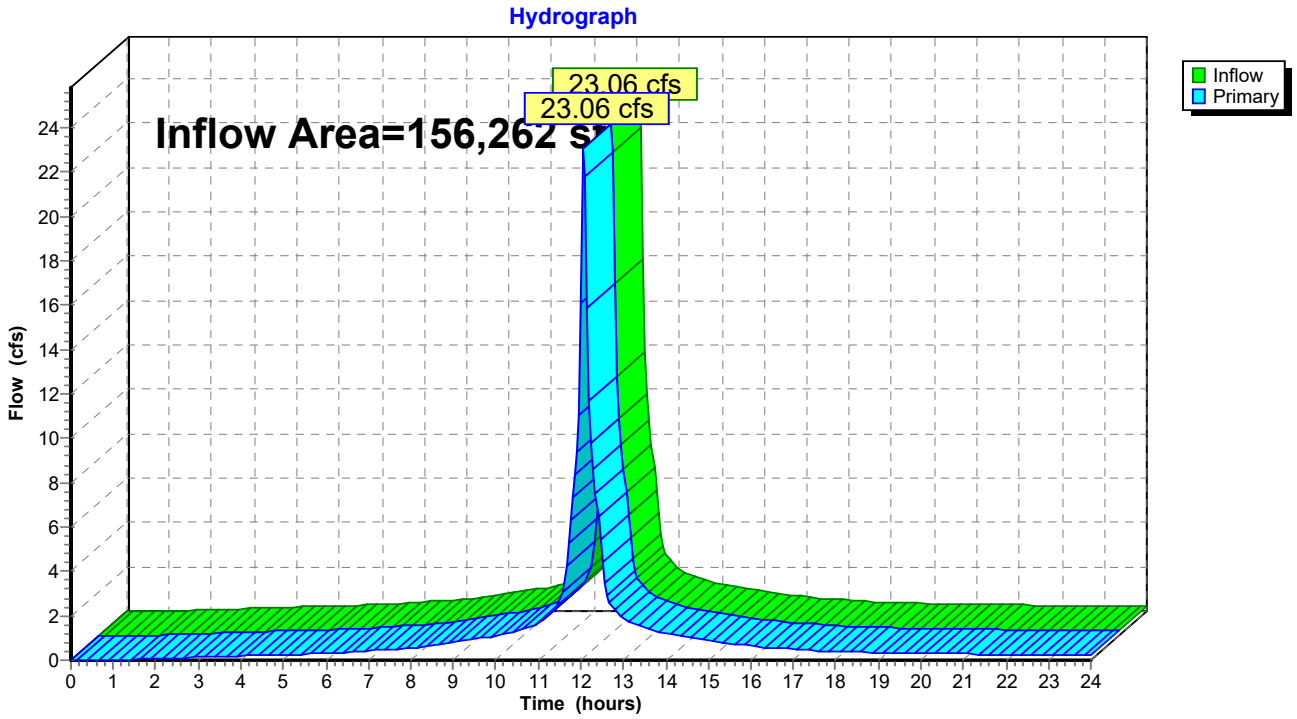


Summary for Link PR-POC-1: Meadow Street

Inflow Area = 156,262 sf, 94.87% Impervious, Inflow Depth > 6.18" for 25yr Storm event
Inflow = 23.06 cfs @ 12.07 hrs, Volume= 80,475 cf
Primary = 23.06 cfs @ 12.07 hrs, Volume= 80,475 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link PR-POC-1: Meadow Street



Summary for Subcatchment EX-1: Drainage Area 1

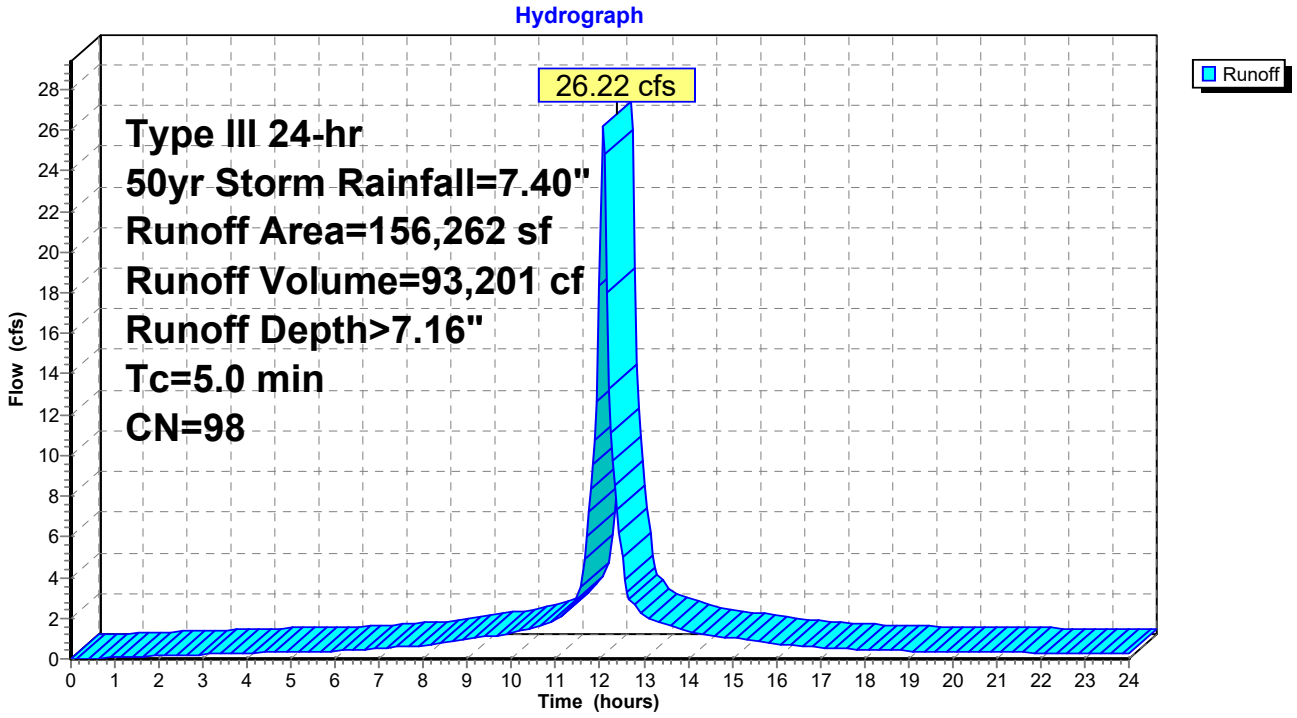
Runoff = 26.22 cfs @ 12.07 hrs, Volume= 93,201 cf, Depth> 7.16"
Routed to Link EX-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50yr Storm Rainfall=7.40"

	Area (sf)	CN	Description
*	156,262	98	Existing Impervious Areas
	156,262		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment EX-1: Drainage Area 1



Summary for Subcatchment PR-1: Drainage Area 1

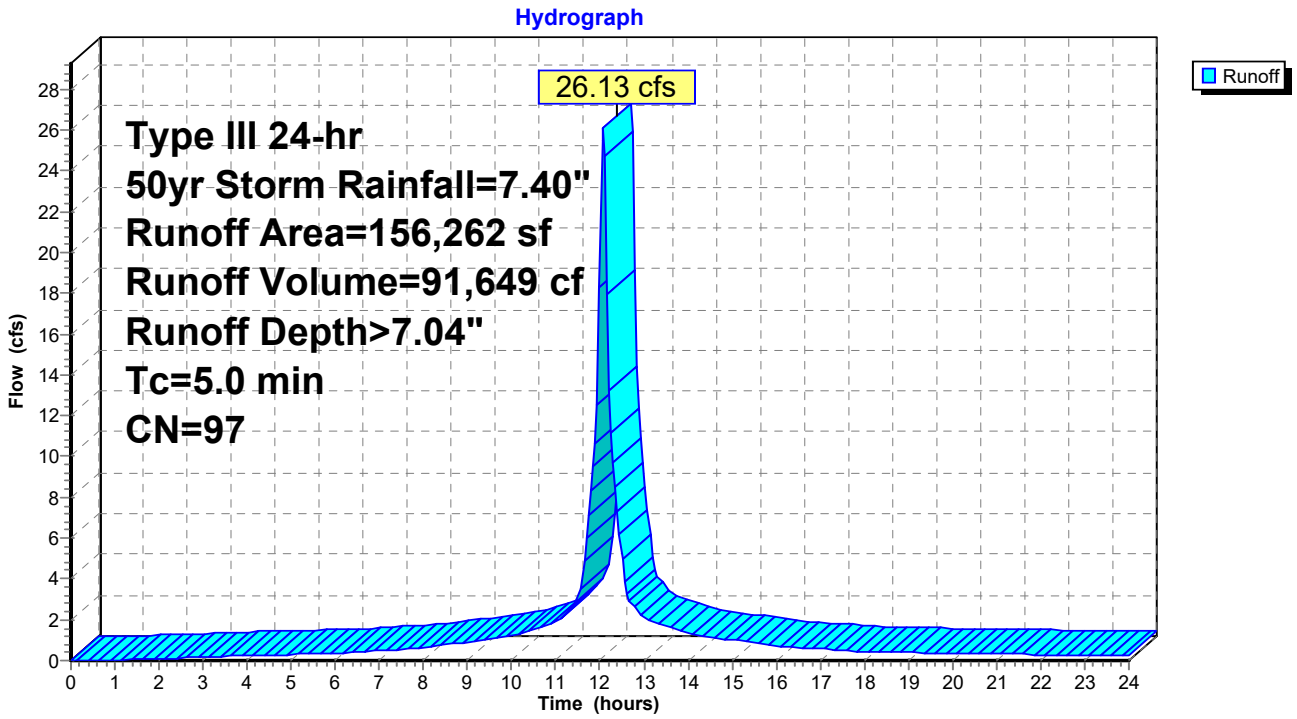
Runoff = 26.13 cfs @ 12.07 hrs, Volume= 91,649 cf, Depth> 7.04"
Routed to Link PR-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50yr Storm Rainfall=7.40"

	Area (sf)	CN	Description
*	29,929	98	Proposed Building
*	8,011	80	Proposed Landscaping
*	118,322	98	Proposed Walks, Parking & Existing Impervious Areas to Remain
	156,262	97	Weighted Average
	8,011		5.13% Pervious Area
	148,251		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment PR-1: Drainage Area 1

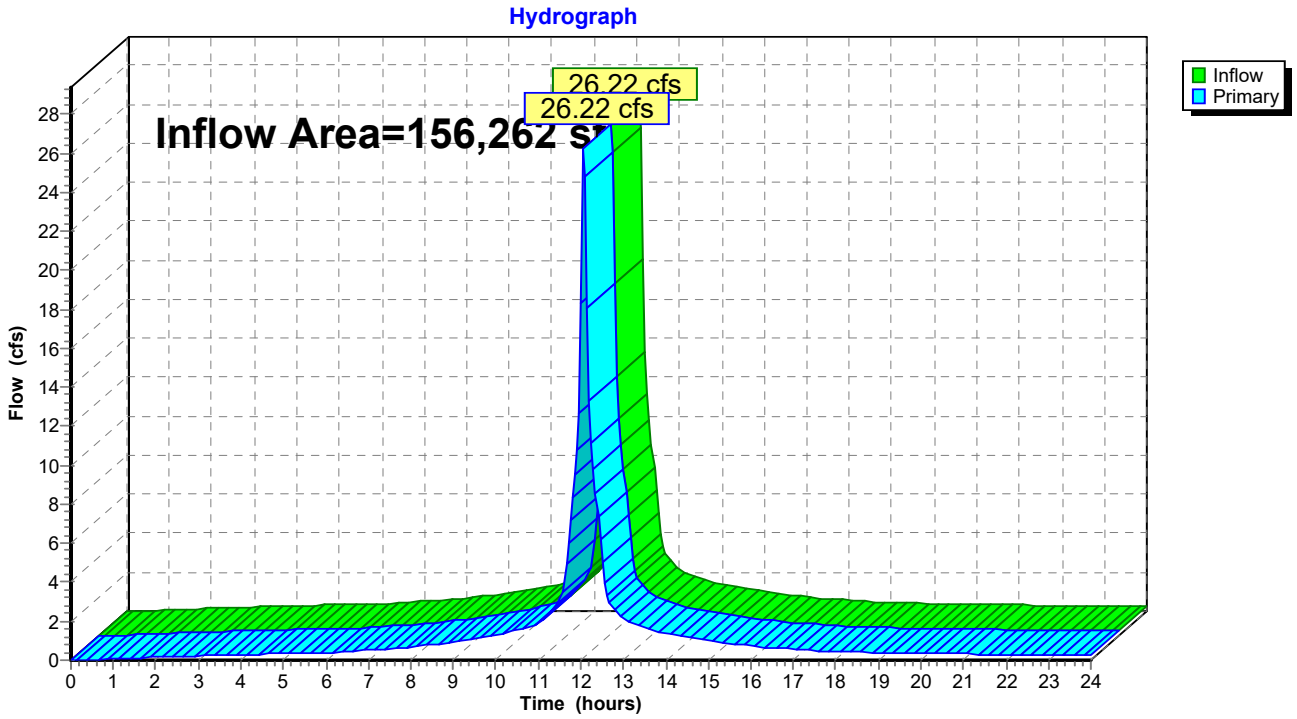


Summary for Link EX-POC-1: Meadow Street

Inflow Area = 156,262 sf,100.00% Impervious, Inflow Depth > 7.16" for 50yr Storm event
Inflow = 26.22 cfs @ 12.07 hrs, Volume= 93,201 cf
Primary = 26.22 cfs @ 12.07 hrs, Volume= 93,201 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link EX-POC-1: Meadow Street

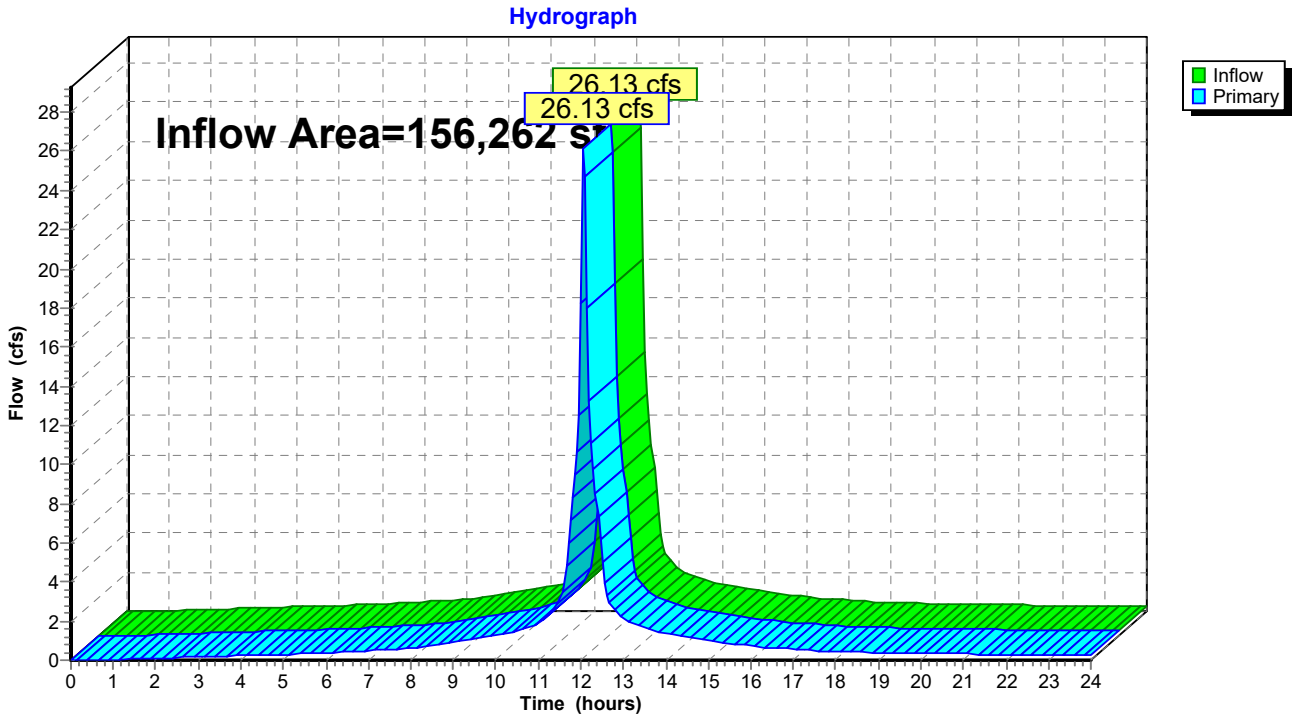


Summary for Link PR-POC-1: Meadow Street

Inflow Area = 156,262 sf, 94.87% Impervious, Inflow Depth > 7.04" for 50yr Storm event
Inflow = 26.13 cfs @ 12.07 hrs, Volume= 91,649 cf
Primary = 26.13 cfs @ 12.07 hrs, Volume= 91,649 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link PR-POC-1: Meadow Street



Summary for Subcatchment EX-1: Drainage Area 1

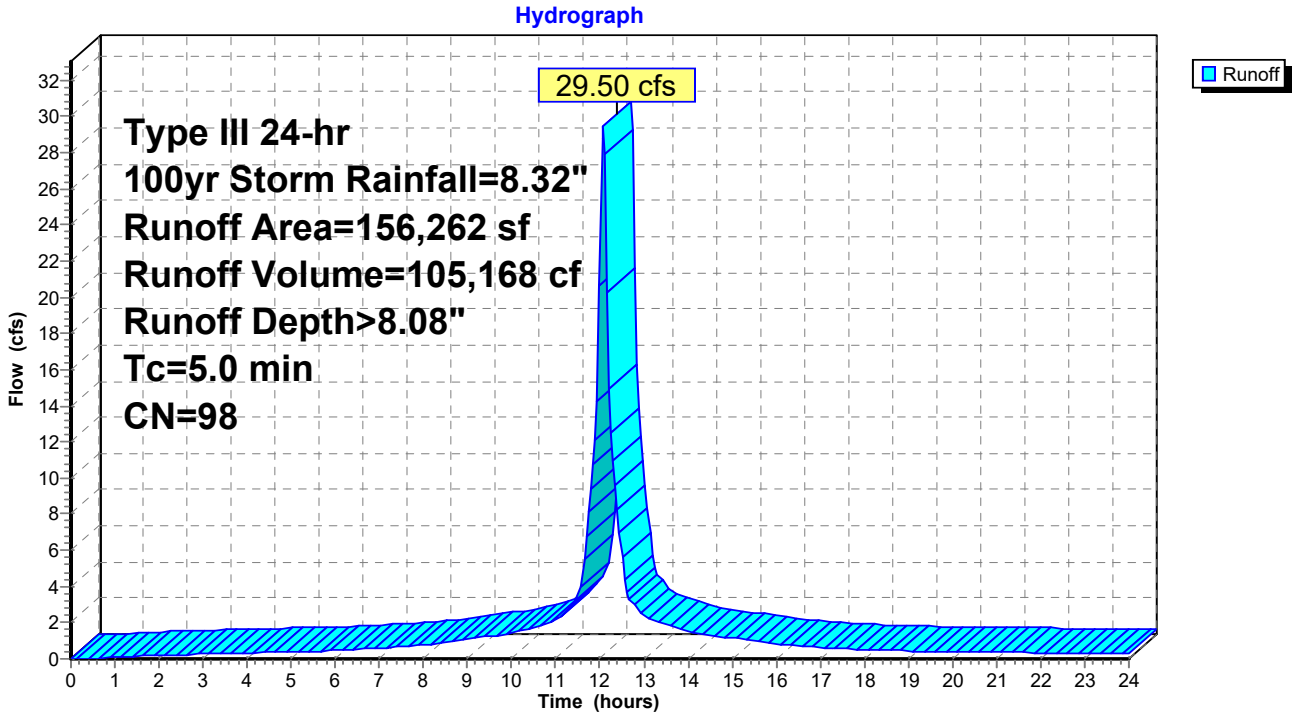
Runoff = 29.50 cfs @ 12.07 hrs, Volume= 105,168 cf, Depth> 8.08"
Routed to Link EX-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Storm Rainfall=8.32"

	Area (sf)	CN	Description
*	156,262	98	Existing Impervious Areas
	156,262		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment EX-1: Drainage Area 1



Summary for Subcatchment PR-1: Drainage Area 1

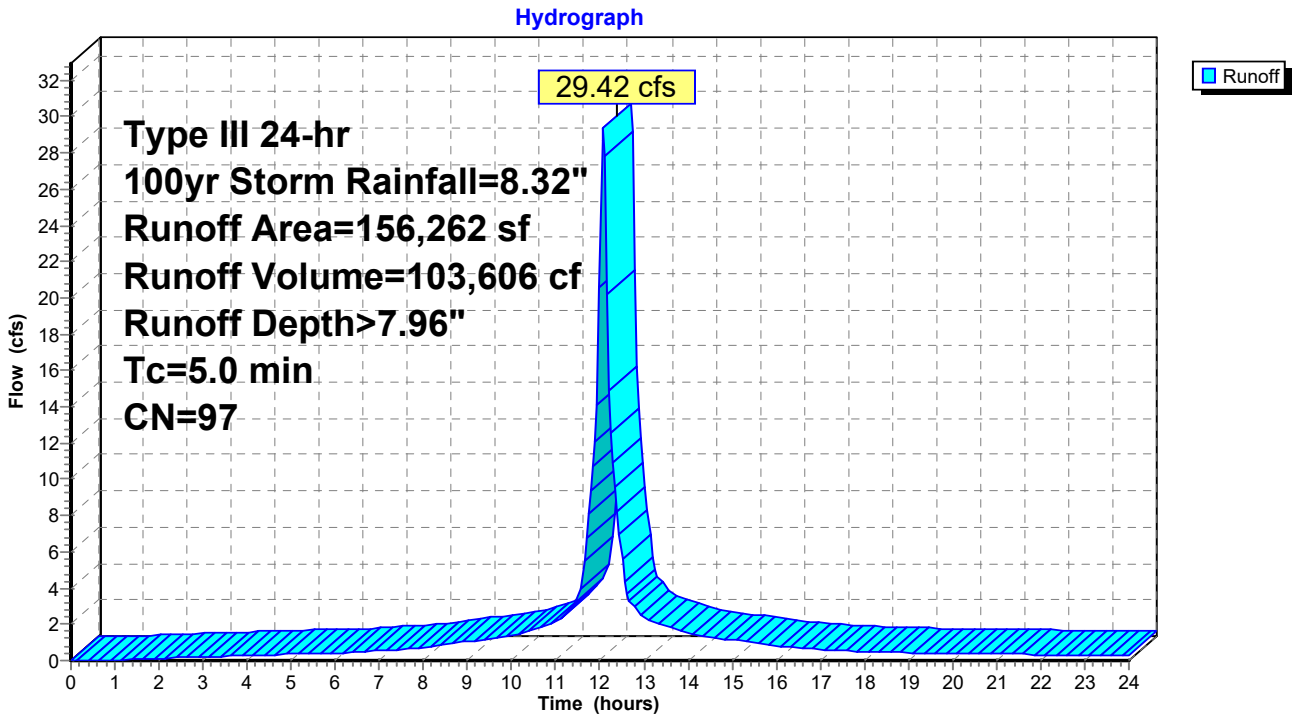
Runoff = 29.42 cfs @ 12.07 hrs, Volume= 103,606 cf, Depth> 7.96"
Routed to Link PR-POC-1 : Meadow Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Storm Rainfall=8.32"

	Area (sf)	CN	Description
*	29,929	98	Proposed Building
*	8,011	80	Proposed Landscaping
*	118,322	98	Proposed Walks, Parking & Existing Impervious Areas to Remain
	156,262	97	Weighted Average
	8,011		5.13% Pervious Area
	148,251		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Site**

Subcatchment PR-1: Drainage Area 1

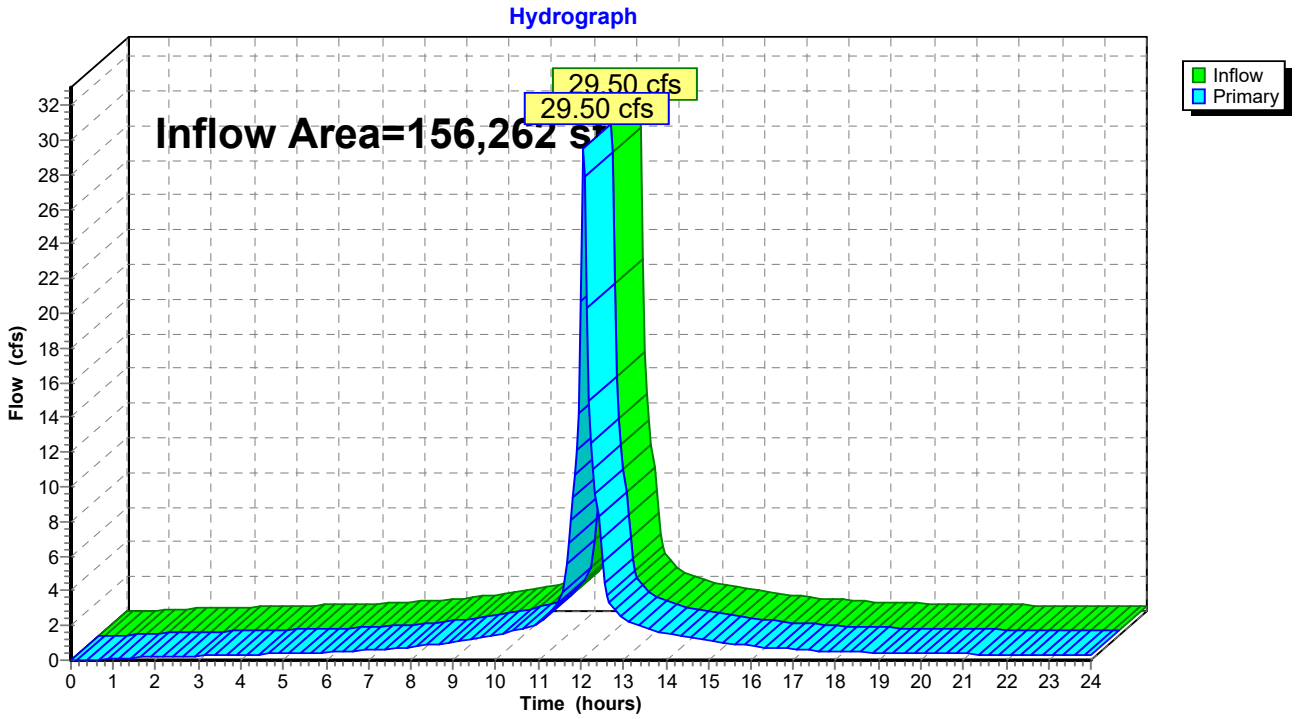


Summary for Link EX-POC-1: Meadow Street

Inflow Area = 156,262 sf,100.00% Impervious, Inflow Depth > 8.08" for 100yr Storm event
Inflow = 29.50 cfs @ 12.07 hrs, Volume= 105,168 cf
Primary = 29.50 cfs @ 12.07 hrs, Volume= 105,168 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link EX-POC-1: Meadow Street

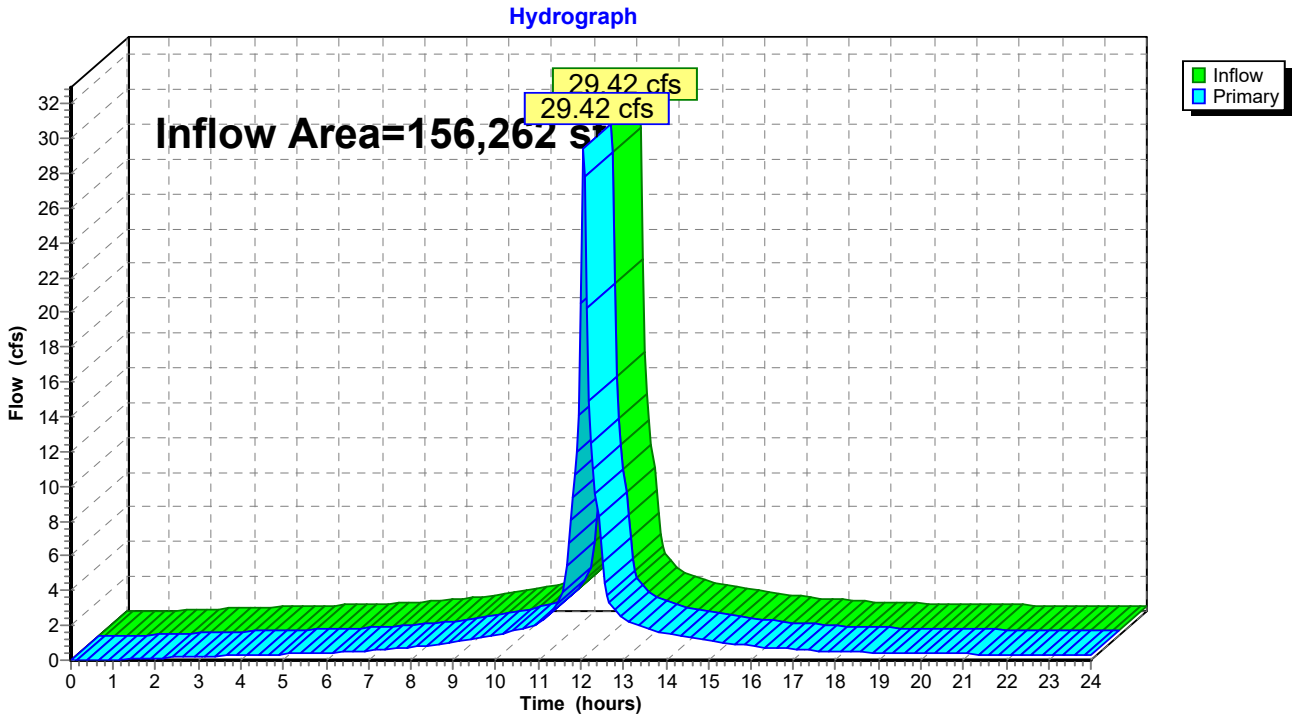


Summary for Link PR-POC-1: Meadow Street

Inflow Area = 156,262 sf, 94.87% Impervious, Inflow Depth > 7.96" for 100yr Storm event
Inflow = 29.42 cfs @ 12.07 hrs, Volume= 103,606 cf
Primary = 29.42 cfs @ 12.07 hrs, Volume= 103,606 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link PR-POC-1: Meadow Street



LANDTECH

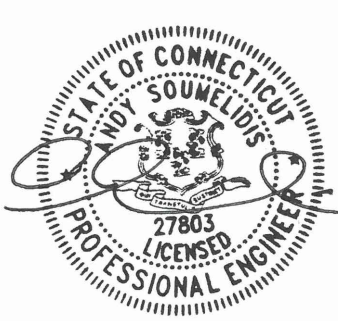
Civil / Site Engineering · Site Planning
Environmental Science & Engineering
Landscape Architecture · Land Surveying
Permit Coordination & Management
Construction Management & Financing

OPERATIONS AND MAINTENANCE PLAN REPORT

For

40 Meadow Street

Norwalk, CT



Andy Soumelidis, PE CT Lic. No. 27803

June 2, 2025

Exhibit A
Operations and Maintenance Plan

40 Meadow Street
06/02/2025

Scope:

The purpose of the Operations and Maintenance Plan is to ensure that the existing and proposed stormwater components installed at 40 Meadow Street are maintained in operational condition throughout the life of the project. The service procedures associated with this plan shall be performed as required by the parties legally responsible for their maintenance.

Recommended Frequency of Service:

As further defined below, all stormwater components should be checked on a periodic basis and kept in full working order. Ultimately, the required frequency of inspection and service will depend on runoff quantities, pollutant loading, and clogging due to debris. At a minimum, we recommend that all stormwater components be inspected and serviced twice per year, once before winter begins and once during spring cleanup.

Qualified Inspector:

The inspections must be completed by an individual experienced in the construction and maintenance of stormwater drainage systems. Once every five years the inspections must be completed by a professional engineer.

Service Procedures:

1. Catch Basins:

    a. Catch basins shall be completely cleaned of accumulated debris and sediments at the completion of construction.
    b. For the first year, catch basins shall be inspected on a quarterly basis.
    c. Any accumulated debris within the catch basins shall be removed and any repairs as required.
    d. From the second year onward, visual inspections shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
    e. Accumulated debris within the catch basins shall be removed and repairs made as required.
    f. Accumulated sediments shall be removed at which time they are within 12 inches of the invert of the outlet pipe.
    g. Any additional maintenance required per the manufacturer's specifications shall also be completed.

2. Storm Drainage Piping and Manhole:

    a. All storm drainage piping shall be completely flushed of debris and accumulated sediment at the completion of construction.
    b. Manholes shall be inspected and repaired on an annual basis.
    c. Unless system performance indicates degradation of piping, comprehensive video inspection of storm drainage piping shall occur once every ten years.

d. Any additional maintenance required per the manufacturer's specifications shall also be completed.

3. Hydrodynamic Separator:

a. Hydrodynamic Separator shall be completely cleaned of accumulated debris and sediments at the completion of construction.
b. For the first year, the hydrodynamic separator shall be inspected on a quarterly basis.
c. Any accumulated debris within the hydrodynamic separator shall be removed and any repairs made to the unit as required.
d. From the second year onward, visual inspection shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
e. Accumulated debris within the unit shall be removed and repairs made as required.
f. Accumulated sediments shall be removed at which time they are within 12 inches of the invert of the outlet pipe.
g. All inlets, outlets and components of the unit shall be inspected and cleared of debris. Any repairs shall be performed.
h. Any additional maintenance required per the manufacturer's specifications shall also be completed.

4. Porous Pavement:

a. Changing the porous pavement surface to an impervious surface requires the review and approval of the Town of Greenwich DPW Engineering Division.
b. Clean and vacuum (Regenerative Air Vacuum for Permeable Interlocking Concrete Pavers) the porous pavement upon the completion of construction.
c. Check for standing water on the surface of the pavement after a precipitation event. If standing water remains within 30 minutes after rainfall had ended, cleaning of porous pavement is recommended.
d. Vacuum sweeper shall be used regularly to remove sediment and organic debris on the pavement surface. The sweeper may be fitted with water jets.
e. Pavement vacuuming should occur during spring cleanup following the last snow event to remove accumulated debris, at a minimum.
f. Pavement vacuuming should occur during fall cleanup to remove dead leaves, at a minimum.
g. Power washing can be an effective tool for cleaning clogged areas. See manufacturer's specifications.
h. Check for debris accumulating on pavement, especially debris buildup in winter. For loose debris, a power/leaf blower or gutter broom can be used to remove leaves and trash.
i. In the event that the porous surface becomes clogged an engineer must be retained to determine how to restore the porous surface to its original condition.
j. Any additional maintenance required per the manufacturer's specifications shall also be completed.

5. Roof Gutters:

a. Remove accumulated debris and inspect for damage. Any damage should be repaired as required.

Disposal of Debris and Sediment:

All debris and sediment removed from the stormwater structures and bioretention/biofiltration basins shall be disposed of legally. There shall be no dumping of silt or debris into or in proximity to any inland or tidal wetlands.

Maintenance Records:

The Owners(s) must maintain all records (logs, invoices, reports, data, etc.) and have them readily available for inspection at all times.

Operations and Maintenance Log (Page 1 of 2)

40 Meadow Street
06/02/2025

Type of Inspection: ☐ Spring ☐ Fall ☐ Other

Inspector's Name:_____ Date of Inspection:_____

Affiliation:_____ Phone #:_____

Catch Basins:

- Has accumulated debris been removed from grates? ☐ Yes ☐ No ☐ N/A
- Do any basins require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Have sumps been cleaned of sediment? ☐ Yes ☐ No ☐ N/A

Notes:

Storm Drainage Piping and Manholes:

- Has accumulated debris been removed? ☐ Yes ☐ No ☐ N/A
- Do any manholes require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Is there any evidence of stormwater piping failure? ☐ Yes ☐ No ☐ N/A
- Has a comprehensive video inspection been completed? ☐ Yes ☐ No ☐ N/A

Notes:

Hydrodynamic Separators:

- Has accumulated debris been removed? ☐ Yes ☐ No ☐ N/A
- Does unit require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Has unit been cleaned of sediment? ☐ Yes ☐ No ☐ N/A

Notes:

Operations and Maintenance Log (Page 2 of 2)

40 Meadow Street
06/02/2025

Porous Pavement:

- Has pavement been vacuumed? ☐ Yes ☐ No ☐ N/A
- Has draining times been verified? ☐ Yes ☐ No ☐ N/A

Notes:

Roof Gutters:

- Has accumulated debris been removed from gutters? ☐ Yes ☐ No ☐ N/A
- Do any gutters require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A

Notes:

Please make additional notes/observations and particular concerns below. Also record any additional maintenance that has been performed

Signature of Inspector: **Date:**

LANDTECH

Civil Engineering · Site Planning
Environmental Science & Engineering
Landscape Architecture · Land Surveying
Permit Coordination & Management
Construction Management & Financing

COASTAL AREA MANAGEMENT REPORT
FOR THE REDEVELOPMENT OF AN EXISTING RECYCLING FACILITY

Prepared for:

40 Meadow Street

Norwalk, CT

June 2, 2025

518 Riverside Avenue · Westport CT 06880 · www.landtechconsult.com · hello@landtechconsult.com · 203-454-2110

INTRODUCTION

This report identifies the existing coastal resources on and adjacent to the property at 40 Meadow Street in Norwalk, CT. It provides an evaluation of potential impacts to the coastal resources associated with the construction of new buildings on the property in accordance with Chapter 444 Section 22a-90 through 22a-112 of the Connecticut General Statutes known as the "Coastal Management Act" and follows the guidelines provided in the Connecticut Coastal Management Manual prepared by the Connecticut Department of Environmental Protection (September 2000).

SITE LOCATION & EXISTING CONDITIONS

The property at 40 Meadow Street in Norwalk is 3.587± acres in size and is located in a SD-LI zone. The property has no connection to tidal waters.

The property is completely developed as an existing recycling facility. There is one main building with two connected open side covered areas, two smaller buildings and three separate open sided covered areas on the property. The remainder of the site consists of asphalt with an on grade truck scale and various piles of metals.

The entire property is located within an AE-11 zone.

DESCRIPTION OF PROPOSED PROJECT

The project is to remove the existing building and three associated metal overhang structures and construct a new 2 story administrative office building with a connected one story structure consisting of enclosed and covered areas to improve facility operations. A ±377' section of the existing 12" diameter RCP which runs under the proposed structure will be removed and an approximate 315' section of 12" diameter RCP and three deep sump catch basins will be added to the existing drainage system. This essentially relocates the piping outside of the proposed building's footprint. Stormwater quality will be improved through the installation of a hydrodynamic separator which will remove oil and grease and suspended solids prior to being directed off site.

The entire property is currently impervious through asphalt, existing buildings or covered areas. The addition of plantings along the road, eastern side of the proposed building, southwest corner, and addition of pervious parking spaces will decrease the impervious coverage by approximately 5%.

DESCRIPTION OF COASTAL RESOURCES

Policies have been established by the State to protect the existing coastal resources. Coastal Resources on and adjacent to the site were identified from the Coastal Resources Norwalk South quadrangle map, prepared by the Coastal Area Management Program of the Connecticut Department of Environmental Protection, dated 1979. This information was then field verified and adjusted if necessary.

Applicable Coastal Resources

The property is within the coastal zone boundary but does not abut tidal waters or any sensitive coastal resources. Coastal resources applicable to this project are discussed below.

- **General Coastal Resources**
- **Coastal "Flood" Hazard Areas**

  Coastal Hazard Areas are those portions of a property within the 100-year flood zone. For this property the flood zone is set at elevation 11 (NAVD) as depicted on Federal Flood Insurance Rate Map (FIRM) Number 09001C0533G. The entire property lies within the Coastal Hazard Area.

Applicable Coastal Uses

Coastal Uses are those uses of general public access, septic system/sewer or water lines, shoreline erosion control structures, stormwater management, vegetated buffers, or water dependent uses as defined in the Connecticut General Statutes.

CONSISTANCY OF COASTAL RESOURCE POLICIES:

The following coastal resources are applicable to the proposed activities.

General Development

The project is consistent with applicable policies for General Development as no sensitive coastal resources

Coastal Hazard Area

The project is consistent with this coastal resource policy

The project is consistent with applicable Coastal Hazard Area policies as the first floor of enclosed buildings will be set at elevation 13.1 which is over 2 feet above the hundred year flood elevation and flood vents or other features will be incorporated into the structures in compliance with FEMA guidelines which minimize impacts to life and property. The project also does not alter natural patterns of water circulation, erosion or deposition.

CONSISTENCY WITH COASTAL USE POLICIES

The only coastal uses applicable to this project are Stormwater Management.

The project is consistent with applicable Stormwater Management policies as the existing stormwater system will be improved with the addition of a hydrodynamic separator near the road to remove oil, grease and suspended solids. The project will yield a net reduction of peak runoff.

Potential Adverse Impacts:

The proposed project does not incur any of the adverse impacts outlined in the Connecticut Coastal Management Manual, as the project does not abut coastal waters, it does not degrade water quality or erosion or drainage patterns; it does not degrade circulation patterns; it does not degrade natural features of public vistas or view points as no identified public vistas exist in this area. In addition, the proposed project does not increase the hazard of coastal flooding. Finally, the project does not alter the bathymetry or degrade wildlife, finfish or shellfish habitat which is consistent with the Connecticut Management Act.

Erosion controls will be installed prior to the commencement of construction related activities. These controls will be maintained in proper working order throughout the construction phase and will be removed after all construction is completed and disturbed site areas have been restored to a quality residential landscape condition

Respectfully Submitted

LANDTECH

Senior Ecologist

20 N. Main Street, Suite 218
Norwalk, CT 06854
T: 203.286.7814
www.hardestyhanover.com

April 3, 2025

Mr. Jim Murphy
LaJoie's Recycling Facility Co., Inc.
40 Meadow Street
Norwalk, Connecticut 06854

Subject **Traffic Evaluation – Proposed Recycling Facility Modernization – 40 Meadow Street, Norwalk, Connecticut (F6966.00)**

Dear Mr. Murphy:

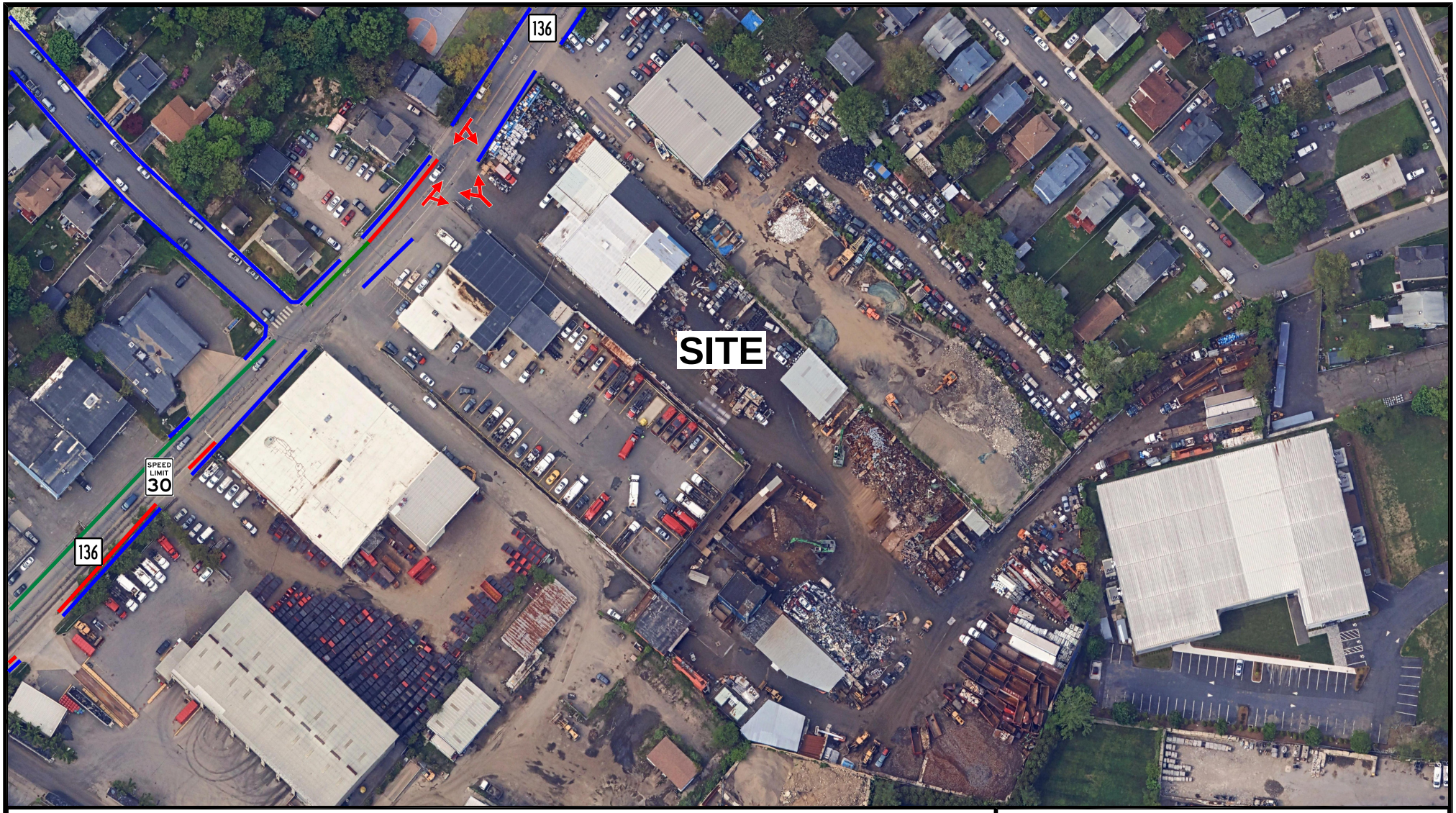
As requested, we have conducted a Traffic Evaluation related to the proposed recycling facility modernization at 40 Meadow Street. The proposal is to replace the existing structures and build additional structures to house the existing operations. There is no proposed expansion of current operation or increase in existing average tonnage with the proposed modernizations.

Site access will be maintained to Meadow Street. The existing operations on the front of the property will be moved to the back and a new parking lot with six spaces will be provided for visitors along the proposed administration building frontage.

This Traffic Evaluation is suitable for submission to the City and provides a description and better understanding of potential traffic-related impacts to adjacent roadways, if any, with the proposed modernizations on the Subject Property.

Roadways

The site is located on the southeasterly side of Meadow Street, between Novak Street and Lawrence Street. Meadow Street is a north-south, two-way, two-lane, State maintained roadway, also designated State Route 136. It begins to the north at the all-way STOP-controlled intersection with Woodward Avenue and continues south past the site to the intersection with South Main Street/Meadow Street Extension, where it continues south as Wilson Avenue, also designated State Route 136. It provides a double-yellow centerline, curbing and sidewalks generally along both sides of the roadway. NO PARKING signs are posted generally along the easterly side of the roadway south of Novak Street. Along the westerly side of the roadway there are NO PARKING 9 AM to 1 PM WEDNESDAYS signs posted for a short section north of Novak Street, as well as to the south of Novak Street. In the vicinity of the site, a bike lane is provided in the northbound direction and a shared lane bike marking (Sharrow) is provided in the southbound direction. The posted speed limit is 30 miles per hour and land use within the Study Area is residential and commercial. Figure 1 provides a summary of current street system characteristics.



Legend

- Traffic Lane
- Sidewalk
- No Parking
- No Parking 9 AM - 1 PM Wednesdays
- Site Access Drive

Note: A bike lane is provided in the northbound direction and a shared lane bike marking (Sharrow) is provided in the southbound direction

CURRENT STREET SYSTEM CHARACTERISTICS

Proposed Auto Wrecking Modernization
40 Meadow Street
Norwalk, Connecticut

N

H&H

Not to Scale

1

3/18/25

Existing Traffic Volumes

To develop a baseline condition of area roadways and the site driveway, turning movement counts were conducted at the intersection of Meadow Street and the Site Access Driveway. Traffic counts were conducted during the following time periods on Thursday, March 6, 2025

- Weekday morning – 7:00 to 9:00 A.M.; and,
- Weekday afternoon – 1:00 to 3:00 P.M.

Based on the results of the traffic counting program, the following site peak hours were identified:

- Weekday morning – 7:15 to 8:15 A.M.; and,
- Weekday afternoon – 1:00 to 2:00 P.M.

Figure 2 graphically illustrate the peak hour volumes, by turning movements, for the weekday morning and weekday afternoon peak hours. The field sheets for the traffic counts are included in the Appendix of this report.

Crash Experience

The latest available crash data was obtained from the Connecticut Crash Data Repository (CCDR) for a period beginning December 1, 2021 to November 30, 2024 for State Route 136. At the intersection of State Route 136 and Novak Street/Shared Access Driveway, there were no crashes reported during this three-year period.

For the section of State Route 136, between Novak Street/Shared Access Driveway and Lawrence Street, there were a total of seven crashes recorded during this three-year period. Data indicates that 86 percent of the crashes were limited to property damage and 14 percent involved injuries. The collision types were 44 percent involving a sideswipe in the same direction and 14 percent involving an angle collision, a sideswipe in the opposite direction, unknown and other. The contributing factors were 29 percent for failure to yield right-of-way, unknown and other contributing actions and 13 percent for failure to keep proper lane. It was found that 86 percent of the crashes occurred during daylight hours and all of the crashes occurred on dry road conditions.

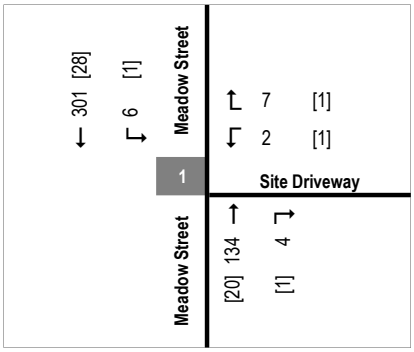
There were no crashes reported at the intersection of State Route 136 and Lawrence Street during this three-year period. Table 1 provides a more detailed summary of the crash data. None of the crashes involved heavy trucks to/from the project site. All crashes involved passenger cars and/or pick-up trucks, however, no bicycles or pedestrians were involved in any crashes. Data from the CCDR is included in the Appendix of this evaluation.

Site Traffic Generation

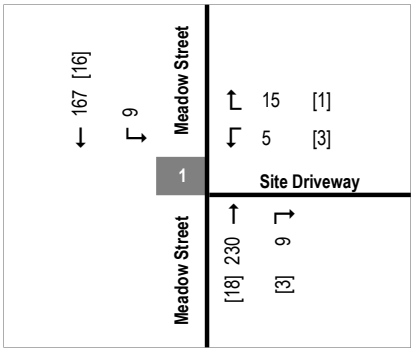
Currently a majority of the site's operations occur outside. The proposal is to replace the existing structures and build additional structures to house the existing operations.

N

Weekday Morning Peak Hour
(7:15 - 8:15 A.M.)



Weekday Afternoon Peak Hour
(1:00 - 2:00 P.M.)



Proposed Auto Wrecking Modernization
40 Meadow Street
Norwalk, Connecticut

Note: Turning movement counts conducted by H&H, LLC on Thursday, March 6, 2025 from 7:00 to 9:00 A.M. and 1:00 to 3:00 P.M.

[00] = Heavy Vehicles

2023 Existing Traffic Volumes
Figure 2

Table 1
CRASH EXPERIENCE SUMMARY – STATE ROUTE 136
Proposed Auto Wrecking Modernization
40 Meadow Street
Norwalk, Connecticut

ACCIDENT CHARACTERISTICS	STATE ROUTE 136					
	At Novak Street/ Shared Access Driveway		Between Novak Street/Shared Access Driveway and Lawrence Street		At Lawrence Street	
	Total	%	Total	%	Total	%
Year						
▪ 2021	0	0	1	14	0	0
▪ 2022	0	0	5	72	0	0
▪ 2023	0	0	1	14	0	0
▪ 2024	0	0	0	0	0	0
▪ Total	0	0	7	100	0	0
Accident Severity						
▪ Property Damage	0	0	6	86	0	0
▪ Injury	0	0	1	14	0	0
Collision Type						
▪ Angle	0	0	1	14	0	0
▪ Sideswipe-Same Dir.	0	0	3	44	0	0
▪ Sideswipe-Opp. Dir.	0	0	1	14	0	0
▪ Unknown	0	0	1	14	0	0
▪ Other	0	0	1	14	0	0
Contributing Factor						
▪ Failed to Yield ROW	0	0	2	29	0	0
▪ Failed to Keep Proper Lane	0	0	1	13	0	0
▪ Unknown	0	0	2	29	0	0
▪ Other Contributing Action	0	0	2	29	0	0
Light Condition						
▪ Daylight	0	0	6	86	0	0
▪ Dark Lit	0	0	1	14	0	0
Surface Condition						
▪ Dry	0	0	7	100	0	0
Weather Conditions						
▪ Clear	0	0	6	86	0	0
▪ Cloudy	0	0	1	14	0	0

Source: Connecticut Crash Data Repository.

Notes: The latest available crash data is from December 1, 2021 to November 30, 2024.

Hardesty & Hanover, LLC.
Y:\Shared\Projects\06966-40 Meadow St Norwalk\000-Pursuits\04-Technical\Word\25-001.stc.docx
3/26/25

Based on discussions with the Applicant, the purpose of the proposed modernizations is to move more of their current operations indoors. There is no proposed expansion of current operation or increase in existing average tonnage with the proposed modernizations. Therefore, there is no anticipated increase in site traffic from existing conditions with the proposed changes.

As noted above, turning movement counts were conducted at the site driveway. Based on discussions with the Applicant, the beginning of March is the start of one of their busier seasons; therefore, no seasonal adjustments were applied to the driveway volumes.

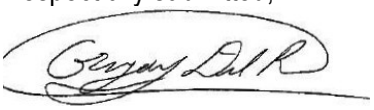
Review of the raw count data indicated that during the 7:00 to 9:00 A.M. peak period the site traffic is consistently between 16 to 19 total vehicles per hour. During the 1:00 to 3:00 P.M. peak period the site traffic peaks from 1:00 to 2:00 P.M. at 38 total vehicles and consistently drops off to 16 total vehicles per hour by 3:00 P.M. Based on observations, after 3:00 P.M. until the gates close at 5:30 P.M. there is minimal activity in and out of the site. No difficulties were observed for any vehicles entering or exiting the site. Nor were any pedestrian conflicts observed.

Based on the driveway counts, the existing site generates a total of 19 and 38 vehicle trip ends, of which 15 and 31 are light vehicles (cars/pickup trucks) and 4 and 7 are heavy vehicles (single unit/tractor trailers) during the weekday morning and weekday afternoon peak hour of the site, respectively. Table 2 provides the existing site traffic in more detail. As noted, there is no proposed expansion of current operations; therefore, there is no anticipated increase in site traffic from existing conditions with the proposed changes.

Potential Traffic Impact and Findings

There is no proposed expansion of current operation or increase in existing average tonnage with the proposed modernizations. Therefore, there is no anticipated increase in site traffic from existing conditions with the proposed changes. Site access will be maintained to Meadow Street. The existing operations at the front of the property will be moved to the back and a new parking lot with six spaces will be provided for visitors along the proposed administration building. The relocation of the existing operations on the front of the property to the back will improve internal circulation and reduce traffic movements and vehicles standing near the intersection of Meadow Street.

Respectfully submitted,



Gregory Del Rio, PE
Principal Traffic Engineer
Hardesty & Hanover, LLC
y:\shared\projects\06966-40 meadow st norwalk\000-pursuits\04-technical\word\25-000.stc.docx

Table 2
EXISTING SITE TRAFFIC GENERATION – PEAK HOURS
Proposed Auto Wrecking Modernization
40 Meadow Street
Norwalk, Connecticut

LAND USE	TRAFFIC DIRECTION	VEHICLE TRIP ENDS					
		Weekday Morning			Weekday Afternoon		
		Lights	Heavy Vehicles	Total	Lights	Heavy Vehicles	Total
Auto Wrecking Facility (TMC)	Enter	8	2	10	15	3	18
	Exit	7	2	9	16	4	20
	Total	15	4	19	31	7	38

Source: Turning movement counts conducted by H&H, LLC on Thursday, March 6, 2025.

Hardesty & Hanover, LLC
Y:\Shared\Projects\06966-40 Meadow St Norwalk\000-Pursuits\04-Technical\Word\25-002.stc.docx
3/26/2025

APPENDIX

TURNING MOVEMENT COUNTS

PROPOSED AUTO WRECKING MODERNIZATION, 40 MEADOW STREET, NORWALK, CONNECTICUT (F6966.00)
FIELD DATA SUMMARY - Meadow Street at Site Driveway

All Vehicles

Thursday		Eastbound				Westbound - Site Driveway				Northbound - Meadow Street				Southbound - Meadow Street					Last 4
6-Mar-25		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Quarters
7:00 AM	7:15 AM	0	0	0	0	0	0	1	1	0	20	0	20	1	58	0	59	80	
7:15 AM	7:30 AM	0	0	0	0	1	0	2	3	0	32	1	33	3	81	0	84	120	
7:30 AM	7:45 AM	0	0	0	0	0	0	2	2	0	39	2	41	0	72	0	72	115	
7:45 AM	8:00 AM	0	0	0	0	0	0	2	2	0	23	0	23	1	85	0	86	111	426
8:00 AM	8:15 AM	0	0	0	0	1	0	1	2	0	40	1	41	2	63	0	65	108	**454**
8:15 AM	8:30 AM	0	0	0	0	2	0	3	5	0	26	0	26	1	63	0	64	95	429
8:30 AM	8:45 AM	0	0	0	0	1	0	1	2	0	34	0	34	2	56	0	58	94	408
8:45 AM	9:00 AM	0	0	0	0	0	0	1	1	0	49	1	50	0	64	0	64	115	412
AM Peak Hour Vol.		**0**	**0**	**0**	**0**	**2**	**0**	**7**	**9**	**0**	**134**	**4**	**138**	**6**	**301**	**0**	**307**	**454**	
Peak Hour Factor					**#DIV/0!**				**0.75**				**0.84**				**0.89**	**0.95**	
1:00 PM	1:15 PM	0	0	0	0	1	0	4	5	0	51	1	52	3	36	0	39	96	
1:15 PM	1:30 PM	0	0	0	0	1	0	8	9	0	49	2	51	5	43	0	48	108	
1:30 PM	1:45 PM	0	0	0	0	0	0	2	2	0	50	2	52	0	46	0	46	100	
1:45 PM	2:00 PM	0	0	0	0	3	0	1	4	0	80	4	84	1	42	0	43	131	**435**
2:00 PM	2:15 PM	0	0	0	0	3	0	0	3	0	41	0	41	0	26	0	26	70	409
2:15 PM	2:30 PM	0	0	0	0	1	0	0	1	0	53	2	55	2	50	0	52	108	409
2:30 PM	2:45 PM	0	0	0	0	1	0	1	2	0	84	1	85	1	64	0	65	152	461
2:45 PM	3:00 PM	0	0	0	0	1	0	1	2	0	61	2	63	0	30	0	30	95	425
PM Peak Hour Vol.		**0**	**0**	**0**	**0**	**5**	**0**	**15**	**20**	**0**	**230**	**9**	**239**	**9**	**167**	**0**	**176**	**435**	
Peak Hour Factor					**#DIV/0!**				**0.56**				**0.71**				**0.92**	**0.83**	

PROPOSED AUTO WRECKING MODERNIZATION, 40 MEADOW STREET, NORWALK, CONNECTICUT (F6966.00)
FIELD DATA SUMMARY - Meadow Street at Site Driveway

Heavy Vehicles Only

Thursday		Eastbound				Westbound - Site Driveway				Northbound - Meadow Street				Southbound - Meadow Street					Last 4
6-Mar-25		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Quarters
7:00 AM	7:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	3	4	
7:15 AM	7:30 AM	0	0	0	0	1	0	1	2	0	7	0	7	0	9	0	9	18	
7:30 AM	7:45 AM	0	0	0	0	0	0	0	0	0	6	0	6	0	8	0	8	14	
7:45 AM	8:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	1	5	0	6	8	44
8:00 AM	8:15 AM	0	0	0	0	0	0	0	0	0	5	1	6	0	6	0	6	12	**52**
8:15 AM	8:30 AM	0	0	0	0	1	0	0	1	0	6	0	6	0	6	0	6	13	47
8:30 AM	8:45 AM	0	0	0	0	1	0	0	1	0	4	0	4	1	5	0	6	11	44
8:45 AM	9:00 AM	0	0	0	0	0	0	1	1	0	3	0	3	0	4	0	4	8	44
AM Peak Hour Vol.		**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**20**	**1**	**21**	**1**	**28**	**0**	**29**	**52**	
Peak Hour Factor					**#DIV/0!**				**0.25**				**0.75**				**0.81**	**0.72**	
1:00 PM	1:15 PM	0	0	0	0	0	0	0	0	0	7	0	7	0	3	0	3	10	
1:15 PM	1:30 PM	0	0	0	0	0	0	1	1	0	3	0	3	0	4	0	4	8	
1:30 PM	1:45 PM	0	0	0	0	0	0	0	0	0	6	1	7	0	6	0	6	13	
1:45 PM	2:00 PM	0	0	0	0	3	0	0	3	0	2	2	4	0	3	0	3	10	**41**
2:00 PM	2:15 PM	0	0	0	0	1	0	0	1	0	2	0	2	0	3	0	3	6	37
2:15 PM	2:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	5	0	5	7	36
2:30 PM	2:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	6	0	6	8	31
2:45 PM	3:00 PM	0	0	0	0	0	0	0	0	0	2	1	3	0	2	0	2	5	26
PM Peak Hour Vol.		**0**	**0**	**0**	**0**	**3**	**0**	**1**	**4**	**0**	**18**	**3**	**21**	**0**	**16**	**0**	**16**	**41**	
Peak Hour Factor					**#DIV/0!**				**0.33**				**0.75**				**0.67**	**0.79**	

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26825.ppd
Start Date: 3/6/2025
Start Time: 7:00:00 AM
Site Code: 26825
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **Lights**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:00:00 AM	0	55	1	0	1	0	0	1	0	19	0	1	0	0	0	0
7:15:00 AM	0	72	3	0	1	0	0	2	1	25	0	0	0	0	0	0
7:30:00 AM	0	64	0	0	2	0	0	2	2	33	0	0	0	0	0	0
7:45:00 AM	0	80	0	0	2	0	0	0	0	21	0	2	0	0	0	0
8:00:00 AM	0	57	2	0	1	0	1	0	0	35	0	0	0	0	0	0
8:15:00 AM	0	57	1	0	3	0	1	1	0	20	0	0	0	0	0	0
8:30:00 AM	0	51	1	0	1	0	0	0	0	30	0	0	0	0	0	0
8:45:00 AM	0	60	0	0	0	0	0	0	1	46	0	0	0	0	0	0

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26825.ppd
Start Date: 3/6/2025
Start Time: 7:00:00 AM
Site Code: 26825
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **Trucks**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:00:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00 AM	0	7	0	0	1	0	1	0	0	7	0	0	0	0	0	0
7:30:00 AM	0	4	0	0	0	0	0	0	0	5	0	0	0	0	0	0
7:45:00 AM	0	5	1	0	0	0	0	0	0	2	0	0	0	0	0	0
8:00:00 AM	0	3	0	0	0	0	0	0	1	4	0	0	0	0	0	0
8:15:00 AM	0	3	0	0	0	0	1	0	0	5	0	0	0	0	0	0
8:30:00 AM	0	2	1	0	0	0	1	0	0	3	0	0	0	1	0	0
8:45:00 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	0

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26825.ppd
Start Date: 3/6/2025
Start Time: 7:00:00 AM
Site Code: 26825
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **Buses**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:00:00 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7:15:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00 AM	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0
8:15:00 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0
8:30:00 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0
8:45:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26825.ppd
Start Date: 3/6/2025
Start Time: 7:00:00 AM
Site Code: 26825
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **HV**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:00:00 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7:15:00 AM	0	9	0	0	1	0	1	0	0	7	0	0	0	0	0	0
7:30:00 AM	0	8	0	0	0	0	0	0	0	6	0	0	0	0	0	0
7:45:00 AM	0	5	1	0	0	0	0	0	0	2	0	0	0	0	0	0
8:00:00 AM	0	6	0	0	0	0	0	0	1	5	0	0	0	0	0	0
8:15:00 AM	0	6	0	0	0	0	1	0	0	6	0	0	0	0	0	0
8:30:00 AM	0	5	1	0	0	0	1	0	0	4	0	0	0	1	0	0
8:45:00 AM	0	4	0	0	1	0	0	0	0	3	0	0	0	0	0	0

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26825.ppd
Start Date: 3/6/2025
Start Time: 7:00:00 AM
Site Code: 26825
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **Total**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:00:00 AM	0	58	1	0	1	0	0	1	0	20	0	1	0	0	0	0
7:15:00 AM	0	81	3	0	2	0	1	2	1	32	0	0	0	0	0	0
7:30:00 AM	0	72	0	0	2	0	0	2	2	39	0	0	0	0	0	0
7:45:00 AM	0	85	1	0	2	0	0	0	0	23	0	2	0	0	0	0
8:00:00 AM	0	63	2	0	1	0	1	0	1	40	0	0	0	0	0	0
8:15:00 AM	0	63	1	0	3	0	2	1	0	26	0	0	0	0	0	0
8:30:00 AM	0	56	2	0	1	0	1	0	0	34	0	0	0	1	0	0
8:45:00 AM	0	64	0	0	1	0	0	0	1	49	0	0	0	0	0	0

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26826.ppd
Start Date: 3/6/2025
Start Time: 2:00:00 PM
Site Code: 26826
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **Lights**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:00:00 PM	0	33	3	0	4	0	1	1	1	44	0	0	0	0	0	1
2:15:00 PM	0	39	5	0	7	0	1	2	2	46	0	0	0	0	0	0
2:30:00 PM	0	40	0	0	2	0	0	0	1	44	0	0	0	0	0	0
2:45:00 PM	0	39	1	0	1	0	0	0	2	78	0	0	0	0	0	0
3:00:00 PM	0	23	0	0	0	0	2	0	0	39	0	1	0	0	0	0
3:15:00 PM	0	45	2	0	0	0	1	3	2	51	0	0	0	0	0	0
3:30:00 PM	0	58	1	0	1	0	1	1	1	82	0	0	0	0	0	0
3:45:00 PM	0	28	0	0	1	0	1	0	1	59	0	0	0	0	0	0

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26826.ppd
Start Date: 3/6/2025
Start Time: 2:00:00 PM
Site Code: 26826
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **Trucks**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:00:00 PM	0	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0
2:15:00 PM	0	4	0	0	1	0	0	1	0	2	0	0	0	0	0	0
2:30:00 PM	0	5	0	0	0	0	0	0	1	4	0	0	0	0	0	0
2:45:00 PM	0	1	0	0	0	0	3	1	2	2	0	0	0	0	0	0
3:00:00 PM	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0
3:15:00 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
3:30:00 PM	0	4	0	0	0	0	0	0	0	2	0	0	0	0	0	0
3:45:00 PM	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26826.ppd
Start Date: 3/6/2025
Start Time: 2:00:00 PM
Site Code: 26826
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **Buses**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:00:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
2:15:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2:30:00 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
2:45:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
3:15:00 PM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45:00 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26826.ppd
Start Date: 3/6/2025
Start Time: 2:00:00 PM
Site Code: 26826
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **HV**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:00:00 PM	0	3	0	0	0	0	0	0	0	7	0	0	0	0	0	0
2:15:00 PM	0	4	0	0	1	0	0	1	0	3	0	0	0	0	0	0
2:30:00 PM	0	6	0	0	0	0	0	0	1	6	0	0	0	0	0	0
2:45:00 PM	0	3	0	0	0	0	3	1	2	2	0	0	0	0	0	0
3:00:00 PM	0	3	0	0	0	0	1	0	0	2	0	0	0	0	0	0
3:15:00 PM	0	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0
3:30:00 PM	0	6	0	0	0	0	0	0	0	2	0	0	0	0	0	0
3:45:00 PM	0	2	0	0	0	0	0	1	1	2	0	0	0	0	0	0

File Name: S:\Connecticut Counts\Documents\Manual Turning Movement Counts 3\26826.ppd
Start Date: 3/6/2025
Start Time: 2:00:00 PM
Site Code: 26826
Comment 1: Meadow Street at 40 Meadow Street
Comment 2: Norwalk, Connecticut
Comment 3: **Total**
Comment 4:

	Meadow Street From North				40 Meadow Street From East				Meadow Street From South				From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:00:00 PM	0	36	3	0	4	0	1	1	1	51	0	0	0	0	0	1
2:15:00 PM	0	43	5	0	8	0	1	3	2	49	0	0	0	0	0	0
2:30:00 PM	0	46	0	0	2	0	0	0	2	50	0	0	0	0	0	0
2:45:00 PM	0	42	1	0	1	0	3	1	4	80	0	0	0	0	0	0
3:00:00 PM	0	26	0	0	0	0	3	0	0	41	0	1	0	0	0	0
3:15:00 PM	0	50	2	0	0	0	1	3	2	53	0	0	0	0	0	0
3:30:00 PM	0	64	1	0	1	0	1	1	1	84	0	0	0	0	0	0
3:45:00 PM	0	30	0	0	1	0	1	1	2	61	0	0	0	0	0	0

CRASH HISTORY

Dataset: mmucc
Date From:12/01/2021
Date To:11/30/2024
Towns:Norwalk

CrashId	Date Of Crash	Day of the Week	Time of Crash	Crash Severity	Road Description	Landmark Description	Distance From Nearest Landmark	Manner of Crash	Weather Condition	Light Condition	Road Surface Condition
940553	5/3/2022	Tuesday	13:14:00	Property Damage Only	MEADOW ST RT 136	Novak St	20 FT N	Sideswipe, same direction	Cloudy	Daylight	Dry
878592	12/9/2021	Thursday	12:48:00	Property Damage Only	MEADOW ST RT 136	Novak St.	100 FT E	Sideswipe, opposite direction	Clear	Daylight	Dry
1038297	3/31/2023	Friday	18:16:00	Property Damage Only	MEADOW ST RT 136	Novak St	200 FT E	Sideswipe, same direction	Clear	Daylight	Dry
962435	8/3/2022	Wednesday	15:29:00	Property Damage Only	MEADOW ST RT 136	Meadow St	250 FT N	Sideswipe, same direction	Clear	Daylight	Dry
894863	1/6/2022	Thursday	21:00:00	Injury of any type (Serious, Minor, Possible)	MEADOW ST RT 136	LAWRENCE ST	285 FT W	Angle	Clear	Dark-Lighted	Dry
925249	4/11/2022	Monday	18:50:00	Property Damage Only	MEADOW ST RT 136			Unknown	Clear	Daylight	Dry
990204	11/1/2022	Tuesday	8:12:00	Property Damage Only	MEADOW ST RT 136	Lawrence St	300 FT S	Other	Clear	Daylight	Dry

Dataset: mmucc Date From:12/01/2021 Date To:11/30/2024 Towns:Norwalk	
CrashId	Driver Actions 1
878592	Other Contributing Action
878592	Failed to Keep in Proper Lane
894863	Failed to Yield Right-of-Way
894863	Not Applicable
894863	No Contributing Action
894863	Not Applicable
925249	Unknown
925249	Unknown
940553	Unknown
962435	Other Contributing Action
962435	No Contributing Action
990204	No Contributing Action
990204	Not Applicable
990204	Not Applicable
990204	Failed to Yield Right-of-Way
1038297	Other Contributing Action
1038297	No Contributing Action

CITY OF NORWALK
Planning and Zoning

www.norwalkct.gov

P: 203-854-7780

Norwalk City Hall
Room 129
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

June 17, 2025

Elizabeth A.B. Suchy, Esq.
Carmody Torrance Sandak & Hennessey LLP
1055 Washington Boulevard, 4th Floor
Stamford, CT 06901

Re: 40 Meadow Street
Preliminary Review of Special Permit and CAM Site Plan Application #2025-46
Redevelopment of a recycling facility at Lajoie's Auto Wrecking, Inc.

Dear Attorney Suchy:

I have preliminarily reviewed the referenced plans. Tentatively, the Commission is scheduled to review the application and open the Public Hearing at their July 16, 2025, meeting. The below reflects my initial comments and the Commission may continue their review of the application at their regularly scheduled meetings that follow.

Please submit or comment on the following.

1) Proof of the required notice sign must be provided at least fifteen (15) days prior to the Public Hearing and proof of mailing notices to properties within 100' must be provided at least ten (10) days prior. Staff will coordinate the legal notice publication.

2) Staff suggests silt fence location be depicted on the site plan in addition to the description in General Erosion and Sediment Control Note 2.

3) The electric transformer and metal overhang both encroach over the Southern property line. Though they are existing non-conforming, has there been any communication with the other property owner about retaining these?

4) Please confirm that clear glass is being used as the façade glazing material for all windows at frontage.

5) The building materials at frontage do not appear to comply with the standards outlined below:

Building Materials				
Primary Building Material on Facades	Brick	P	Authentic stucco over masonry	P
	Natural stone	P	Exposed concrete	NP
	Wood	P	Aluminum siding	NP
	Cementitious siding	P	Vinyl siding	NP
	Corrugated and/or sheet metal	NP		

Staff recollection is that the material presented when initially discussing this project was an attractive material, is it one of the listed materials or a separate material? If it is different and something the Commission views favorably, Staff would be supportive of adding that to the list of approved materials for this zone and similar zones. If the Commission doesn't look favorably on it, a compliant material would have to be substituted.

6) Under current regulations, parking must be located within or behind the primary structure. There is a proposed text amendment (2025-41R) that would change this requirement if approved by the Commission.

7) Please confirm the driveway/vehicular entrance width is 24 feet, which is the maximum allowed.

8) Continuous shrubs around foundation at façade are required as the front yard is ≥ 3 feet deep. Please revise the landscape plan accordingly.

9) The maximum height for fencing at frontage is 3.5 feet. Staff believe when initially discussing this project, it was indicated the owner is seeking something taller for security purposes. Staff is not opposed to increasing the height in this zone at the frontage, provided it is a decorative fence as discussed.

10) What material will be used for the fencing? Picket-type natural wood, brick, natural stone, stucco over masonry, wrought iron, or aluminum are permitted at frontage.

11) Please confirm screening exists or will be installed to comply with the below standards:

Additional Standards	
Screening of Parking, Loading Areas, Service Areas, Outdoor Storage, Drive-Throughs, Trash Receptacles/Dumpsters, HVAC, Antennas, and other equipment Screened from Frontage, Civic Space and Adjacent Property	R; except at Driveways: Parking Lots and Parking Areas must be Screened from Frontage and Civic Space by Building or Streetscreen; or by Building, wall, hedge or Fence not at Frontages or Adjacent to Civic Space.

12) Please submit copies of all necessary federal, state, and local permits required for recycling operations per section 4.3.9.G.4.bs of the zoning regulations.

13) No parking space shall be more than 72 feet away from a tree per section 4.3.12.C.16.h, please demonstrate compliance with this regulation on the site plan and/or landscape plan.

14) Please provide a proposed photometric plan.

15) Please indicate how the project complies with the sustainable roofing requirement outlined in section 6.11.2.A and how the usable roof area was determined.

16) Please demonstrate compliance with the Special Permit standard found in section 8.4.8.G (subsections 1.f-j and 2.p).

17) I have referred this application to the Conservation Office. Please provide comments/approvals from the Health Department, DPW, WPCA etc. The link to the webpage can be found here.

The application is still being reviewed and requests for further information or clarification may be forthcoming. Please email (amelia.williams@norwalkct.gov) or call (203-854-7259) if you have any questions regarding your application or the application process.

Sincerely,



Amelia Williams
Land Use Planner

CITY OF NORWALK
Planning & Zoning Commission
Norwalk City Hall, Room 129
125 East Avenue,
Norwalk, CT 06856-5125

MEMORANDUM July 9th, 2025

TO: Planning and Zoning Commission – Galen Wells, Chair

FROM: Amelia Williams, Land Use Planner

SUBJECT: #2025 - 46 SP CAM – Lajoie Auto Wrecking Company, Inc. – 40 Meadow Street – Redevelop a recycling facility, including the demolition of existing structures and the construction of a new building with associated site improvements.

District: 2 **Block:** 91 **Lot:** 51 **Zone:** SD-LI **Flood Zone:** AE (EL.11 and 14)

ZONING HISTORY:
The 3.48-acre property currently consists of a recycling facility comprised of a one story (+/- 5,800 sq ft) primary structure that was built in 1945 and various accessory structures such as storage bays and an automobile crusher. There is non-conforming parking that is proposed to remain. The property is in the Coastal Area Management zone but does not directly abut any coastal resources. Currently, the entire site drains to the City's storm drainage system in Meadow Street. The entire property is impervious, and the applicant has indicated it is not suitable for installing underground stormwater infiltration BMPs based on the use.

PROPOSED USE/STRUCTURE:
The applicant is proposing to redevelop the property by demolishing the primary structure and some accessory structures. A new +/- 33,770 sq ft building to use for offices, product receiving, processing and shipping areas, a welding area, and garage space. The building will be made flood compliant and will be entirely within the AE-11 flood zone; only a small corner of the property is in the AE-14 zone where no buildings are proposed. There will be a roughly 5% decrease in impervious surface and runoff will be directed through a hydrodynamic separator to provide water quality treatment. Landscaping and screening is proposed around the property, and solar panels are proposed on the roof. The proposal meets most, but not all of the special permit standards.

STAFF COMMENTS:
- Numerous letters of support have been received for this project and can be found on the webpage here.
- Staff is still awaiting responses to the concerns outlined in the Preliminary Review letter which can be found here.
- The proposal seems consistent with the goals and policies of the Connecticut Coastal Management Act.
- The proposal does not comply with the current parking regulations, however if text amendment application #2025-41 R is approved, that will be remedied.

- Staff would recommend opening the Public Hearing during the July 16th meeting and closing it during the August 6th meeting, should compliance be determined at that point. Staff will draft resolutions once compliance is determined.

SIGN-OFFS: Comments have been received from the Conservation Office, Fire Marshal, SNEW, TMP, and DPW. Health Department, WPCA, etc. approvals have yet to be received.

ZONING BOARD OF APPEALS: No variances were needed for this project.

VIOLATIONS: There are no zoning violations currently on the property.

South Norwalk Electric and Water
A Municipal Utility System
Serving the Needs of the Community

ALAN E HUTH, General Manager

ELIZABETH BURNS, Director of Water Operations
SCOTT MURPHY, Director of Electric Operations

Justin Andriopoulos
Water Technical Specialist
South Norwalk Electric and Water
164 Water Street, Norwalk CT 06854
(203) 866-3366 Ext. 256

June 18, 2025

Norwalk Department of Planning & Zoning
125 East Avenue
Room 129
Norwalk, CT. 06856

Re: Utility Signoff for –**40 Meadow Street**

To whom it may concern:

This letter shall be considered confirmation that I have reviewed the plans for the proposed redevelopment of the Lajoie's recycling facility at 40 Meadow street. SNEW has no objections for the project moving forward. This property is currently served with a 1" copper service from 1960's and may be inadequate for the proposed project. The client will be required to complete an application for a New or Modified Water Service. After reviewing the application, we can determine the size for the new domestic service and domestic meter to properly serve this project. Should you have any questions or concerns, feel free to contact me at the number above.

Sincere Regards,

Justin Andriopoulos

Justin Andriopoulos

CITY OF NORWALK
Transportation Mobility & Parking
P: 203-854-7335
Norwalk City Hall
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

Sent via email to: esuchy@carmodylaw.com

To: Elizabeth A.B. Suchy, Esq. – Carmody Torrance Sandak & Hennessey LLP
From: Benjamin Yeung, P.E. – Senior Traffic Engineer, TMP
James Travers – Director, TMP
Date: June 18, 2025
Subject: 40 Meadow Street – Recycling Facility Site Improvements

---

The City of Norwalk Transportation, Mobility, and Parking (TMP) Department has completed a review of the following documents related to the proposed recycling facility site improvements at 40 Meadow Street:

- Special Permit Application Narrative – 40 Meadow Street, Norwalk, Connecticut, prepared by Carmody Law, received June 4, 2025;
- "Site Development Plans for an Existing Recycling Facility, 40 Meadow Street, Norwalk, CT", prepared by Landtech, dated June 2, 2025; and,
- "Traffic Evaluation – Proposed Recycling Facility Modernization – 40 Meadow Street, Norwalk, Connecticut (F6966.00)", prepared by Hardesty & Hanover, LLC, dated April 3, 2025.

Based on review of the aforementioned documents, the followed items must be addressed.

Site Plans:

1. In accordance with Section 6.8.2.B of the Norwalk Zoning Regulations, please provide the following streetscape improvements:
    a. Replace concrete curb along entire site frontage due to some damage on the existing curb. The replacement should include all full-height curb for the entire site frontage except for the site access driveway (there is existing drop curb on the north half of the site frontage which should be replaced with full-height curb).
    b. Replace all existing asphalt sidewalk with new concrete sidewalk.
    c. Replace existing driveway apron with a new concrete driveway apron (Type B for City standard details).
    d. Add street trees to the sidewalk amenity zone, just behind the back of curb. Each tree should be in a 3' x 8' tree pit to maintain clear driveway sight triangles at both 40 Meadow St and 46 Meadow St. TMP recommends three (3) small trees be planted. See attachment at end of this letter for listing of potential tree species. Please confirm selection with City prior to installation.

SUMMARY:

TMP has no comments on the traffic evaluation at this time. Please note this review is based on all documents submitted to date. TMP reserves the right to comment on forthcoming revised/updated site plans or traffic studies.

Sincerely,

Benjamin Yeung

Benjamin Yeung, P.E., Senior Traffic Engineer – TMP

James Travers, Director – TMP

Cc: DPW Permits
Jay Habansky - Chief of Economic and Community Development
Garrett Bolella, P.E., PTOE, RSP1, Assistant Director – TMP
Nathan Fankhanel, E.I.T., Junior Engineer – TMP
Vanessa Valadares, P.E., Chief of Department of Public Works
Wilber Giron, P.E., Permit Engineer – Department of Public Works
Christine Cardascia, E.I.T., Junior Engineer – Department of Public Works
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Land Use Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement
Ralph Kolb, P.E., Sr. Environmental Engineer – WPCA
Christopher Cavaliere, Junior Engineer – WPCA
Alexis Cherichetti, Senior Environmental Officer – Conservation Office
William Mooney, Assistant Director of Health – Health Department
Troy Donohue, Deputy Fire Marshal – Fire Department

City of Norwalk Tree and Shrub Selection List - 2021 Tree Planting Contract

Street/Park Trees

Native Selections

Genus/Species	Common Name	Size
Acer negundo	Ash-Leaf Maple	15 gal.
Acer rubrum	Red Maple	2.5" - 3" cal.
Acer saccharum	Sugar Maple	2.5" - 3" cal.
Acer saccharinum	Silver Maple	2.5" - 3" cal.
Amelanchier canadensis (standard)	Serviceberry	7' - 8' ht.
Betula nigra	River Birch	8' - 10' ht.
Betula populifolia	Gray Birch	15 gal.
Carpinus caroliniana	American Hornbeam	2.5" - 3" cal.
Celtis occidentalis	Common Hackberry	2.5" - 3" cal.
Cercis canadesis	Eastern Redbud (pink)	2.5" - 3" cal.
Cornus alternifolia	Alternate-Leaf Dogwood	15 gal.
Cornus florida	Flowering Dogwood	2.5" - 3" cal.
Crataegus crus-galli	Cock-Spur Hawthron	2" - 2.5" cal.
Fagus grandifolia	American Beech	2" - 2.5" cal.
Juglans nigra	Black Walnut	15 gal.
Juniperus virginiana	Eastern Red Cedar	7' - 8' ht.
Larix laricina	American Larch	7' - 8' ht.
Liquidambar styraciflua	American Sweetgum	2.5" - 3" cal.
Liriodendron tulipfera	Tuliptree	2.5" - 3" cal.
Magnolia x Soulangiana	Saucer Magnolia	7' - 8' ht.
Nyssa sylvatica	Black Tupelo	2.5" - 3" cal.
Ostrya virginiana	Eastern Hop-Hornbeam	2.5" - 3" cal.
Pinus rigida	Pitch Pine	7' - 8' ht.
Pinus strobus	Eastern White Pine	7' - 8' ht.
Platanus occidentalis	American Sycamore	2.5" - 3" cal.
Quercus alba	Northern White Oak	15 gal.
Quercus bicolor	Swamp White Oak	2.5" - 3" cal.
Quercus coccinea	Scarlet Oak	2.5" - 3" cal.
Quercus macrocarpa	Bur Oak	1.75" - 2" cal.
Quercus palustris	Pin Oak	2.5" - 3" cal.
Quercus rubra	Red Oak	2.5" - 3" cal.
Salix nigra	Black Willow	2.5" - 3" cal.
Thuja occidentalis	Arborvitae/White Cedar	7' - 8' ht.
Tillia Americana	American Linden	2.5" - 3" cal.
Tillia Americana 'Redmond'	Redmond American Linden	2.5" - 3" cal.
Tillia cordata	Littleleaf Linden	2.5" - 3" cal.
Tsuga canadensis	Eastern Hemlock	7' - 8' ht.

Hybrid Selections

Genus/Species	Common Name	Size
Amelanchier canadensis	Canadian Service Berry	15 gal.
Amelanchier x grandiflora	Apple Service Berry	15 gal.
Carpinus betulus 'Fastiglata'	Fastigiate European Hornbeam (columnar)	2.5" - 3" cal.
Cornus kousa	Kousa Dogwood	2.5" - 3" cal.
Cornus mas	Cornelian Cherry Dogwood	7' - 8' ht.
Cornus x Rutcan Constellation	Constellation Flowering Dogwood (white)	2.5" - 3" cal.
Cornus x Rutcan Stellar Pink	Stellar Pink Flowering Dogwood (pink)	2.5" - 3" cal.
Crataegus phaenopurum 'Winter King'	Winter King Hawthron	2" - 2.5" cal.
Gingko biloba 'Princeton Sentry'	Princeton Sentry Gingko	2.5" - 3" cal.
Gleditsia triacanthos Var. Inermis	Thornless Common Honeylocust	2.5" - 3" cal.
Ilex x 'Nellie R. Stevens'	Nellie Stevens Holly	6' - 7' ht.
Liquidambar styraciflua 'Slender Silhouette'	Slender Silhouette American Sweetgum	2.5" - 3" cal.
Magnolia stellata	Star Magnolia	7' - 8' ht.
Malus 'Donald Wyman'	Donald Wyman Crab (white)	2" - 2.5" cal.
Malus floribunda	Japanese Flowering Crab (rose)	2" - 2.5" cal.
Malus 'Snowdrift'	Snowdrift Crab (white)	2" - 2.5" cal.
Picea abies	Norway Spruce	7' - 8' ht.
Platanus x aerifolia 'Bloodgood'	Bloodgood London Planetree	2.5" - 3" cal.
Prunus sargentii 'Columnaris'	Columnar Sargent Cherry	2.5" - 3" cal.
Prunus serrulata 'Kwanzan'	Kwanzan Cherry	2.5" - 3" cal.
Prunus x Yedoensis	Yoshino Cherry	2.5" - 3" cal.
Quercus robur 'Fastigiata'	Pyramidal English Oak	2.5" - 3" cal.
Salix alba 'Niobe'	Golden Weeping Willow	2.5" - 3" cal.
Sophora japonica	Japanese Pagodatree	2.5" - 3" cal.
Syringa reticulata	Japanese Tree Lilac	2.5" - 3" cal.
Tillia tomentosa	Silver Linden	2.5" - 3" cal.
Zelkova serrata	Japanese Zelkova	2.5" - 3" cal.

City of Norwalk Tree and Shrub Selection List - 2021 Tree Planting Contract

Street/Park Shrubs

Native Selections

Genus/Species	Common Name	Size
Amelanchier aborea	Downy Shadbush	15 gal.
Amelanchier laevis	Smooth Shadbush	15 gal.
Clethra alnifolia	Summersweet	5 gal.
Cornua alba	Red Osier	5 gal.
Cornus racemosa	Gray Dogwood	5 gal.
Hamamelis virginiana	American Witch-Hazel	15 gal.
Ilex verticillata	Winterberry	5 gal.
Juniper (species)	Juniper	5 gal.
Myrica pensylvanica	Northern Bayberry	5 gal.
Prunus americana	American Plum	5 gal.
Prunus virginiana	Choke Cherry	5 gal.
Rhododendron spp.	Rhododendron	10 gal.
Rhus copallinum	Winged Sumac	5 gal.
Rhus glabra	Smooth Sumac	5 gal.
Rhus typhhina	Stag-Horn Sumac	5 gal.
Salix discolor	Pussy Willow	5 gal.
Viburnum dentatum	Arrowwood Viburnum	5 gal.
Zanthoxylum americanum	Toothachetree	15 gal.

Hybrid Selections

Cotoneaster spp.	Cotoneaster	3 gal.
Enkianthus campanulata	Redveined Enkianthus	5 gal.
Forsythia x intermedia	Forsythia	5 gal.
Ilex crenata	Japanese Holly	3 gal.
Prunus laurocerasus	Cherry Laurel	5 gal.
Rosa rugosa	Rugosa Rose	3 gal.
Spiraea x bumalda 'Anthony Waterer'	Anthony Waterer Spirea	3 gal.
Viburnum pilcatum	Doublefile Viburnum	5 gal.
Viburnum x burkwoodii	Burkwood Viburnum	5 gal.

DEPARTMENT OF ENGINEERING

CITY OF NORWALK
Christine Cardascia, P.E.
Assistant Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Office: (203) 854-7873
Permits: (203) 854-4161
www.norwalkct.gov
ccardascia@norwalkct.gov
dpwpermits@norwalkct.gov

June 23, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 40 Meadow Street (District 02, Block 91, Lot 51)
Proposed Improvements to an Existing Recycling Facility
Department of Engineering's Plan Review Comments

Dear Ms. Suchy:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Site Plan titled "Site Development Plans for an Existing Recycling Facility," prepared by Landtech Inc., dated 06/02/2025
- Stormwater Report titled "Stormwater Management Report Prepared for: LaJoie's Auto Wrecking Co.," prepared by Landtech Inc., dated 06/02/2025
- Engineering Report titled "Operations and Maintenance Plan Report for 40 Meadow Street Norwalk, CT," prepared by Landtech Inc., dated 06/02/2025

The following are the Department of Engineering's review comments highlighting sections that will require revision or additional information prior to our departmental sign-off:

1. The City has identified various encroachments (fence gate, transformer, metal overhang, etc.) onto the neighboring property. It is recommended that the property owner take the necessary steps to resolve this issue.
2. Please clarify the intended discharge points of the roof leaders on the proposed buildings. Under existing conditions, runoff does not appear to discharge onto neighboring properties. Please ensure that the proposed roof and roof leader layout will not result in new discharge onto adjacent properties where it did not occur previously.

3. The plan shall be revised to include a concrete sidewalk and driveway with concrete curb detail, in compliance with the City's Standard Detail Drawings.
4. Please confirm if any exterior utility work is proposed as part of the development. Should utility work be proposed, the plan shall be revised to include all existing and proposed utility information (i.e. pipe size, material, inverts, etc.) and proposed connection locations and abandonments along with the corresponding details.
5. The plan shall be revised to include the driveway sight line distance to ensure no obstruction in excess of two (2) feet high are within the sight line triangle, in conformance with the City's Roadway Standards.
6. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
    a. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.

Please note this is a preliminary review of the submitted documents. Additional comments may be forthcoming once the requested information is received.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Christine Cardascia

Christine Cardascia, P.E.
Assistant Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Wilber Giron, P.E., Permit Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Mario Pizighelli, P.E., Stormwater Systems Manager – Water Pollution Control Authority
Garrett Bolella, P.E., Assistant Director – Transportation, Mobility and Parking
Benjamin Yeung, P.E., Senior Traffic Engineer – Transportation, Mobility and Parking
Nathan Fankhanel, Junior Engineer – Transportation, Mobility and Parking
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Tammy Maldonado, Zoning Enforcement Officer – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer/Assistant Director – Conservation and Planning and Zoning

Baker, Bryan

From: Elizabeth A.B. Suchy <ESuchy@carmodylaw.com>
Sent: Tuesday, July 1, 2025 1:29 PM
To: Williams, Amelia
Cc: Curt Lowenstein; Maria Genovese
Subject: FW: LaJoies

CAUTION: EXTERNAL Email: Don't open links or attachments from untrusted senders

Please see the attached.

From: Donohue, Troy <TDonohue@norwalkct.gov>
Sent: Tuesday, July 1, 2025 1:28 PM
To: Kleppin, Steven <skleppin@norwalkct.gov>
Cc: Elizabeth A.B. Suchy <ESuchy@carmodylaw.com>
Subject: [EXTERNAL] FW: LaJoies

Good afternoon,

At this time, the Norwalk Fire Marshal's Office has no issue moving forward with the submitted proposal for Lajoie's Auto Wrecking located at 40 Meadow St, Norwalk, CT. A full building and fire code analysis will be conducted as part of the building permit process. Thank you

Respectfully,

Troy J. Donohue
Fire Marshal
City of Norwalk Fire Department
121 Connecticut Avenue
Norwalk, CT 06854
Office 203-854-0226
Mobile 203-807-3166
Email TDonohue@norwalkct.gov

From: Elizabeth A.B. Suchy <ESuchy@carmodylaw.com>
Sent: Tuesday, July 1, 2025 1:06 PM
To: Donohue, Troy <TDonohue@norwalkct.gov>
Subject: FW: LaJoies

CAUTION: EXTERNAL Email: Don't open links or attachments from untrusted senders

Fire Marshal Donohue,
I left word with Curt Lowenstein, PE of Land Tech, the project civil engineer regarding sprinklers, fire alarm and all required illuminated exit signs. He has not called back as yet.
I also spoke with Maria Genovese, project manager, at Andriopoulos Design Associates, the project architects. She said that her office would be conducting a full building and fire code analysis as part of the building permit process, which would include your comments regarding the sprinkler and fire alarm systems as well as illuminated exit signs.

About the best I can do at this stage, so I would have no objection to your inclusion of these items in your departmental signoff for the zoning approval process.

Let me know if I can be of further assistance.
Liz

Elizabeth A.B. Suchy | Bio
Carmody Torrance Sandak & Hennessey LLP
1055 Washington Blvd., 4th Floor | Stamford, CT 06901-2218
Direct: 203-252-2656 | Fax: 203-325-8608
ESuchy@carmodylaw.com | www.carmodylaw.com



This electronic message contains information from Carmody Torrance Sandak & Hennessey LLP, or its attorneys, which may be confidential, privileged or otherwise protected from disclosure. The information is intended to be used solely by the recipient(s) named. If you are not an intended recipient, be aware that any review, disclosure, copying, distribution or use of this transmission or its contents is prohibited. If you have received this transmission in error, please notify us immediately at 203-573-1200 or at the reply email address. For more information about Carmody Torrance Sandak & Hennessey LLP, please go to http://www.carmodylaw.com
---

Baywater Properties, LLC
34 Old Kings Highway South
Darien, CT 06820

June 27, 202

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: Lajoie Auto Wrecking et-al Applications for Special Permit and Coastal Site Plan Review.

Dear Chairwoman Wells:

We own property located at 155 Woodward Avenue, which directly abuts/is within 100 feet of the property owned by the Lajoie businesses on Meadow Street in South Norwalk. Jim Murphy of Lajoie's shared with us the redevelopment plans for the 40 Meadow Street property and afforded us the opportunity to review plans and to ask questions. I support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

The proposal will not only improve the Lajoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to largely be conducted indoors. The Lajoies have been thoughtful in their approach, and we support their efforts and urge the Planning & Zoning Commission to approve their applications.

Respectfully,

Rocco Genovese

Norwalk Housing

Enhancing Housing, Engaging Minds, Enriching Lives.

24 1/2 Monroe Street • P.O. Box 508
Norwalk, CT 06856-0508

P 203.838.8471 • F 203.838.6535
TDD 800.545.1833 ext. 437

NorwalkHA.org

Brenda Penn-Williams, Chair | Liza Y. Bermudez-Montgomery, Vice Chair | John H. Church, Treasurer | Isaac J. Walcott, Commissioner | Teneshia Jacobs, Tenant Commissioner | Adam Bovilsky, Executive Director | Lattarulo Law Firm, LLC, General Counsel

Galen Wells, chair
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chair Wells:

As you know, the Norwalk Housing Authority has started construction on the new Meadow Gardens. Meadow Gardens is across the street from LaJoie Auto Wrecking and within 100 feet of the property owned by the LaJoie businesses on Meadow Street. Jim Murphy of LaJoie's shared with us the plans for the 40 Meadow Street property and understand the changes to the recycling facility and redevelopment. He was kind enough to give us a tour of the property and gave us the opportunity to review the plans and ask questions.

We believe this is a substantial improvement to the property and will benefit the tenants of the new Meadow Gardens. **We support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.**

Very truly yours,

Adam Bovilsky
Executive Director

149 Woodward Avenue LLC
PO Box 322
Rowayton, CT 06853

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I, Joseph L. Seaman, own property located at 149 Woodward Avenue, which directly abuts/is within 100 feet of the property owned by the LaJoie businesses on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with us the plans for the 40 Meadow Street property so that it will be redeveloped as a recycling facility, and gave us the opportunity to review the plans and ask questions. We support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

Very truly yours,

Joseph L. Seaman

COMPLETE DISMANTLING SERVICES

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: Lajoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells,

I, Complete Dismantling Services LLC, own property located at 2 Meadow Street, Norwalk CT 06854, which directly abuts/is within 100 feet of the property owned by the Lajoie businesses on Meadow Street in South Norwalk, CT. Jim Murphy of LaJoie's shared with us the redevelopment plans for the 40 Meadow Street property so that it will be used as a recycling facility and afforded me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

The proposal will not only improve the LaJoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to largely be conducted indoors. The LaJoies have been thoughtful in their approach, and we support their efforts and urge the Planning & Zoning Commission to approve their applications.

Very Truly Yours,

John Giannattasio

D+R Inc.

46A Meadow St

S. Norwalk, Ct 06854

Galen Well, chairwoman

City of Norwalk

Planning and Zoning Commission

125 East Ave.

Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al-Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I Roger Lajoie own property located at 46 Meadow Street, which directly abuts/is within 100 feet of the property owned by the LaJoie Auto Wrecking business on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with me the plans for the 40 Meadow Street property that will be redeveloped as a recycling facility, and gave me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning and Zoning Commission to approve their applications.

Very truly yours,

Roger Lajoie

Lajoie's Auto Parts

46 Meadow St

S. Norwalk, Ct 06854

Galen Well, chairwoman

City of Norwalk

Planning and Zoning Commission

125 East Ave.

Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al-Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I Roger Lajoie own property located at 46 Meadow Street, which directly abuts the property owned by the LaJoie Auto Wrecking business on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with me the redevelopment plans for the 40 Meadow Street property showing that it will be used as a recycling facility, and afforded me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning and Zoning Commission to approve their applications.

I believe the proposal will not only improve the LaJoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to be conducted indoors. The LaJoie's have been thoughtful in their approach, and we support their efforts and urge the Planning and Zoning Commission to approve their applications.

Very truly yours,

Roger Lajoie

MEADOW STREET PARTNERS, LLC

2 MEADOW STREET, NORWALK CT 06854

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: Lajoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells,

I, Complete Dismantling Services LLC, own property located at 2 Meadow Street, Norwalk CT 06854, which directly abuts/is within 100 feet of the property owned by the Lajoie businesses on Meadow Street in South Norwalk, CT. Jim Murphy of LaJoie's shared with us the redevelopment plans for the 40 Meadow Street property so that it will be used as a recycling facility and afforded me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

The proposal will not only improve the LaJoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to largely be conducted indoors. The LaJoies have been thoughtful in their approach, and we support their efforts and urge the Planning & Zoning Commission to approve their applications.

Very Truly Yours,

Michael Ferro



Galen Wells, chairwoman

City of Norwalk

Planning & Zoning Commission

125 East Avenue

Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I own property located at 129 Woodward Ave in South Norwalk, which directly abuts the property owned by the LaJoie businesses on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with us the plans for the 40 Meadow Street property so that it will be redeveloped as a recycling facility, and gave us the opportunity to review the plans and ask questions. We support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

Very truly yours,

Mark Fischl

WEB
CONSTRUCTION

34 MEADOW STREET
NORWALK, CT 06854
TEL: 203-642-3695
FAX: 203-642-3696

Galen Wells, chairwoman

City of Norwalk

Planning & Zoning Commission

125 East Avenue

Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I, James Brenia, manage property located at 34 Meadow Street, which directly abuts/is within 100 feet of the property owned by the LaJoie businesses on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with us the redevelopment plans for the 40 Meadow Street property so that it will be used as a recycling facility, and afforded me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

The proposal will not only improve the LaJoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to largely be conducted indoors. The LaJoies have been thoughtful in their approach, and we support their efforts and urge the Planning & Zoning Commission to approve their applications.

Very truly yours,

James Brenia

COMPLETE DISMANTLING SERVICES

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: Lajoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells,

I, Complete Dismantling Services LLC, own property located at 2 Meadow Street, Norwalk CT 06854, which directly abuts/is within 100 feet of the property owned by the Lajoie businesses on Meadow Street in South Norwalk, CT. Jim Murphy of LaJoie's shared with us the redevelopment plans for the 40 Meadow Street property so that it will be used as a recycling facility and afforded me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

The proposal will not only improve the LaJoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to largely be conducted indoors. The LaJoies have been thoughtful in their approach, and we support their efforts and urge the Planning & Zoning Commission to approve their applications.

Very Truly Yours,

John Giannattasio

D+R Inc.

46A Meadow St

S. Norwalk, Ct 06854

Galen Well, chairwoman

City of Norwalk

Planning and Zoning Commission

125 East Ave.

Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al-Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I Roger Lajoie own property located at 46 Meadow Street, which directly abuts/is within 100 feet of the property owned by the LaJoie Auto Wrecking business on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with me the plans for the 40 Meadow Street property that will be redeveloped as a recycling facility, and gave me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning and Zoning Commission to approve their applications.

Very truly yours,

Roger Lajoie

Lajoie's Auto Parts

46 Meadow St

S. Norwalk, Ct 06854

Galen Well, chairwoman

City of Norwalk

Planning and Zoning Commission

125 East Ave.

Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al-Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I Roger Lajoie own property located at 46 Meadow Street, which directly abuts the property owned by the LaJoie Auto Wrecking business on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with me the redevelopment plans for the 40 Meadow Street property showing that it will be used as a recycling facility, and afforded me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning and Zoning Commission to approve their applications.

I believe the proposal will not only improve the LaJoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to be conducted indoors. The LaJoie's have been thoughtful in their approach, and we support their efforts and urge the Planning and Zoning Commission to approve their applications.

Very truly yours,

Roger Lajoie

MEADOW STREET PARTNERS, LLC

2 MEADOW STREET, NORWALK CT 06854

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: Lajoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells,

I, Complete Dismantling Services LLC, own property located at 2 Meadow Street, Norwalk CT 06854, which directly abuts/is within 100 feet of the property owned by the Lajoie businesses on Meadow Street in South Norwalk, CT. Jim Murphy of LaJoie's shared with us the redevelopment plans for the 40 Meadow Street property so that it will be used as a recycling facility and afforded me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

The proposal will not only improve the LaJoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to largely be conducted indoors. The LaJoies have been thoughtful in their approach, and we support their efforts and urge the Planning & Zoning Commission to approve their applications.

Very Truly Yours,

Michael Ferro

Norwalk Housing

Enhancing Housing, Engaging Minds, Enriching Lives.

24 1/2 Monroe Street • P.O. Box 508
Norwalk, CT 06856-0508

P 203.838.8471 • F 203.838.6535
TDD 800.545.1833 ext. 437

NorwalkHA.org

Brenda Penn-Williams, Chair | Liza Y. Bermudez-Montgomery, Vice Chair | John H. Church, Treasurer | Isaac J. Walcott, Commissioner | Teneshia Jacobs, Tenant Commissioner | Adam Bovilsky, Executive Director | Lattarulo Law Firm, LLC, General Counsel

Galen Wells, chair
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chair Wells:

As you know, the Norwalk Housing Authority has started construction on the new Meadow Gardens. Meadow Gardens is across the street from LaJoie Auto Wrecking and within 100 feet of the property owned by the LaJoie businesses on Meadow Street. Jim Murphy of LaJoie's shared with us the plans for the 40 Meadow Street property and understand the changes to the recycling facility and redevelopment. He was kind enough to give us a tour of the property and gave us the opportunity to review the plans and ask questions.

We believe this is a substantial improvement to the property and will benefit the tenants of the new Meadow Gardens. **We support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.**

Very truly yours,

Adam Bovilsky
Executive Director

THE SPORTS HAUS

Galen Wells, chairwoman

City of Norwalk

Planning & Zoning Commission

125 East Avenue

Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I own property located at 129 Woodward Ave in South Norwalk, which directly abuts the property owned by the LaJoie businesses on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with us the plans for the 40 Meadow Street property so that it will be redeveloped as a recycling facility, and gave us the opportunity to review the plans and ask questions. We support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

Very truly yours,

Mark Fischl

Baywater Properties, LLC
34 Old Kings Highway South
Darien, CT 06820

June 27, 202

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: Lajoie Auto Wrecking et-al Applications for Special Permit and Coastal Site Plan Review.

Dear Chairwoman Wells:

We own property located at 155 Woodward Avenue, which directly abuts/is within 100 feet of the property owned by the Lajoie businesses on Meadow Street in South Norwalk. Jim Murphy of Lajoie's shared with us the redevelopment plans for the 40 Meadow Street property and afforded us the opportunity to review plans and to ask questions. I support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

The proposal will not only improve the Lajoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to largely be conducted indoors. The Lajoies have been thoughtful in their approach, and we support their efforts and urge the Planning & Zoning Commission to approve their applications.

Respectfully,

Rocco Genovese

WEB
CONSTRUCTION

34 MEADOW STREET
NORWALK, CT 06854
TEL: 203-642-3695
FAX: 203-642-3696

Galen Wells, chairwoman

City of Norwalk

Planning & Zoning Commission

125 East Avenue

Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I, James Brenia, manage property located at 34 Meadow Street, which directly abuts/is within 100 feet of the property owned by the LaJoie businesses on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with us the redevelopment plans for the 40 Meadow Street property so that it will be used as a recycling facility, and afforded me the opportunity to review the plans and ask questions. I support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

The proposal will not only improve the LaJoie property, but the neighborhood as well by the construction of a new facility and other site improvements. Part of this project will result in materials and processing to largely be conducted indoors. The LaJoies have been thoughtful in their approach, and we support their efforts and urge the Planning & Zoning Commission to approve their applications.

Very truly yours,

James Brenia

149 Woodward Avenue LLC
PO Box 322
Rowayton, CT 06853

Galen Wells, chairwoman
City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851

Re: LaJoie Auto Wrecking et al – Applications for Special Permit and Coastal Site Plan Review

Dear Chairwoman Wells:

I, Joseph L. Seaman, own property located at 149 Woodward Avenue, which directly abuts/is within 100 feet of the property owned by the LaJoie businesses on Meadow Street in South Norwalk, Connecticut. Jim Murphy of LaJoie's shared with us the plans for the 40 Meadow Street property so that it will be redeveloped as a recycling facility, and gave us the opportunity to review the plans and ask questions. We support their proposal and urge the Norwalk Planning & Zoning Commission to approve their applications.

Very truly yours,

Joseph L. Seaman

Norwalk Planning & Zoning Commission

125 East Avenue
Norwalk, Connecticut

July 11, 2025

Memorandum

To: Planning & Zoning Commission – Galen Wells, Chairwoman

From: Bryan Baker, AICP, Principal Planner

Re: #2025-41 R – Planning & Zoning Commission – Zoning regulation text amendment(s) to Articles 1 and 4 regarding the location of nonconforming parking, Commercial Recreation Establishment uses, and the permitting process for clustered Single-Family Dwellings in the Silvermine Tavern District

Commissioners,

This memorandum details proposed changes to Articles 1 and 4 of the Norwalk Zoning Regulations, respectively.

The zoning map can be found here:
https://www.norwalkct.gov/DocumentCenter/View/32441/ApprovedZoningMap_Effective2_19_24

The existing Zoning Regulations can be found here:
https://www.norwalkct.gov/DocumentCenter/View/34823/Zoning-Regulations_Rev_3_28_25?bidId=

For clarity:

- Each proposed revision will be under a separate page
- New/Proposed text is indicated in **red text**
- Deleted text is indicated ~~as struck-through text~~

DRAFT

1. Modify Section 1.21 Nonconformities to include the following amendments:

1.21.5 Nonconforming Parking Location

Upon redevelopment, any Parcel that contains Parking Spaces that do not conform to location as indicated in Table 4.3.1, shall locate all required Parking Spaces in conformance with Table 4.3.1; except:

1. **Within the CV and SD-H zones; or**
2. **Within the SD-HI and SD-LI zones, those Parking Spaces may remain as existing, at a location in front of a new Principal Structure, provided that:**
    a. **There is a maximum of one (1) row of Parking in front of the Building with Parking Spaces perpendicular to the Building; and**
    b. **There is a minimum of ten (10') feet of Landscaping and Screening, as permitted in Table 4.3.1, between the Street and Parking Spaces.**

DRAFT

2. Modify Tables 4.3.1-H and I which applies to the CD-4 and CD-4W zones to include the following amendments:

Ceiling Height
May not exceed 13 ft. from finished floor to finished floor, except for: 1. A first floor Business/Commercial, Office, Restaurant, Retail/Personal Service, or Lodging Use which must be a minimum of 15 ft. with a maximum of 25 ft. 2. Auditoriums, Community Centers or Places of Assembly, **Commercial Recreation Establishments**, Museums, Performing Arts Theaters, and Places of Worship

DRAFT

3. Modify Table 4.3.9.A to include the following revisions:

Principal Use	CD-1L	CD-1M	CD-1S	CD-2	CD-3	CD-3W	CD-3C	CD-4	CD-4W	SD-H	SD-IC	SD-LI	SD-HI	SD-MC	CV
Commercial Recreation Establishment	NP	NP	NP	NP	NP	NP	PL	~~NP~~ **PL**	~~NP~~ **PL**	NP	NP	NP	NP	NP	NP

aa. Commercial Recreation Establishment shall be permitted in accordance with the applicable Use Table, subject to the following:

1. A Site Plan Application is required for any Commercial Recreation Establishment over ~~1,500~~ **5,000**sf in Floor Area in the **CD-4 and CD-4W zones**, and over **10,000sf** in the CD-3C zone, pursuant to Section 8.4.5.
2. **Shall not exceed a Floor Area of 15,000sf in the CD-4 or CD-4W zones.**
3. **A Special Permit is required for any Commercial Recreation Establishment over 20,000sf in Floor Area in the CD-3C zone, pursuant to Section 8.4.8.**

DRAFT

4. Modify Section 4.3.9.G Uses Permitted with Limitations to include the following revisions:

cf. Single-Family Detached Dwelling shall be permitted in accordance with the applicable Use Table, subject to the following:

In addition to the traditional Single-Family Detached Dwelling, clustered Single-Family Dwellings shall also be permitted within the Silvermine Tavern Village District Overlay subject to the following:

1. **A Special Permit is received for the clustered Single-Family Dwellings.**
2. A maximum of eleven (11), single-family dwellings, which may be clustered, with no more than
    - **a.** four (4) dwellings on 1 River Road,
    - **b.** one (1) dwelling with a Detached Accessory Dwelling Unit on 192 Perry Avenue,
    - **c.** no more than six (6) dwellings on 3 and 5 River Road and 1032 Silvermine Road,
    - **d.** a total Parcel area containing a minimum of six (6) acres.
3. New clustered Dwellings shall not exceed a maximum of four thousand four hundred (4,400) square feet of gross Floor Area per unit including a minimum of one thousand one hundred and fifty (1,150) square feet of basement floor area and shall not exceed one and one half (1 1/2) stories and a maximum height of thirty (30) feet to the peak of a pitched roof.

DRAFT

The following resolution is offered by Staff:

Resolution to approve:

THEREFORE, BE IT RESOLVED by the Norwalk Planning & Zoning Commission that application #2025-41 R – Planning & Zoning Commission – Zoning regulation text amendment(s) to Articles 1 and 4 regarding the location of nonconforming parking, Commercial Recreation Establishment uses, and the permitting process for clustered Single-Family Dwellings in the Silvermine Tavern District be **APPROVED** to implement the following goals, strategies, and actions of the Norwalk Plan of Conservation and Development:

1. Chapter 12, Goal 1: "General guidelines guide land use decision making."
    a. Policy: "Promote urban design guidelines for walkability for development in urbanized parts of Norwalk."
    b. Policy: "Implement transit-oriented design (TOD) guidelines promoting density, walkability, and mix of uses for development near transit stations (rail and high-frequency bus).
2. Chapter 12, Goal 2: "Neighborhood and corridor activity centers have urban design standards that promote walkability."
    a. Policy: "Support mixed-use redevelopment along commercial corridors."
3. Chapter 12, Goal 3: "The user-friendly zoning ordinance is consistent with the future land use map and achievement of the vision and goals of the POCD."
    a. Policy: "Support revision of the zoning ordinance to promote desired development and design patterns."
    b. Policy: "Support permit streamlining for projects with desired characteristics."
        i. Strategy A: "Modernize the zoning ordinance and the development approval process to achieve the goals of the POCD."
            1. Action i: "Rewrite the zoning ordinance to reflect contemporary best practices in administration and user-friendliness and to be consistent with the POCD."

BE IT FURTHER RESOLVED that the effective date of this action shall be July 25, 2025.

DRAFT

CITY OF NORWALK
Harbor Management Commission
www.norwalkct.gov
Norwalk City Hall
Room 129
125 East Avenue, PO Box 5125
Norwalk, CT 06851

VIA EMAIL
Amelia.williams@norwalkct.gov

July 9, 2025

Ms. Amelia Williams
Land Use Planner
City of Norwalk Conservation and Planning & Zoning
125 East Ave.
Norwalk, CT 06851

Subject: #2025-41R – Planning & Zoning Commission – Zoning Regulation Text Amendment to Article 4

Dear Ms. Williams:

The Norwalk Harbor Management Commission (NHMC) has reviewed the above-referenced application prepared by the Norwalk Planning and Zoning Department for an amendment to the text of the Norwalk Zoning Regulations to allow commercial recreation establishments within the CD-4 and CD-4W zones.

As the proposed zoning text amendment affects property on, in, or contiguous to Norwalk Harbor, it is subject to review by the NHMC to determine its consistency with the Norwalk Harbor Management Plan. The requirements of this review are specified in Sec. 22a-113p of the Connecticut General Statutes and the Harbor Management Plan.

The NHMC discussed the referenced application during its meeting on June 25, 2025 and approved a motion to express no objection to the application insofar as the proposed zoning text amendment is not expected to significantly impact the Harbor Management Area, and with the understanding that the NHMC will review, when submitted, individual development proposals that are subject to the zoning text amendment and that may affect the Harbor Management Area.

Please be advised that the NHMC reserves its right to continue to review and comment on the proposed zoning text amendment at such time as it may be modified, additional information may be available, or the proposal is the subject of a public hearing.

If you have any questions, please contact me (203) 984-5339 or pintoj@optonline.net.

Sincerely,

John Thomas Pinto

John Thomas Pinto, Ph.D.
Chairman, NHMC Application Review Committee

cc: Steve Bartush, Chair, Norwalk Shellfish Commission
Mary-Beth Hart, CT DEEP
Alan Kibbe, Chair, NHMC

July 10, 2025

Norwalk Planning and Zoning Commission
c/o Bryan Baker, Principal Planner
125 East Avenue
Norwalk, CT 06851

Subject: **#2025-41 R – Planning & Zoning Commission – Zoning regulation text amendment(s) to Articles 1 and 4 regarding the location of nonconforming parking, Commercial Recreation Establishment uses, and the permitting process for clustered Single-Family Dwellings in the Silvermine Tavern District**

Dear Commissioners:

Thank you for notifying this office of the proposed zoning text amendment application noted above. Acting as the Commissioner's staff, our office has reviewed the amendments for consistency with the policies and standards of the Connecticut Coastal Management Act (CCMA), and we find the amendments consistent.

Please be advised that this consistency determination is based on coastal management considerations only and does not necessarily reflect other municipal planning and zoning considerations which may apply. These comments are made in response to the review requirement contained in Section 22a-104(e) of the Connecticut General Statutes, which requires that notification be sent to the Commissioner of Energy and Environmental Protection at least 35 days prior to the commencement of the public hearing. Once notified, our office is responsible for reviewing the proposal's consistency with the policies of Section 22a-92 and the criteria of Section 22a-102(b) of the CCMA.

Should you have any questions regarding this letter, please feel free to contact me at braden.lynn@ct.gov.

Sincerely,

Braden Lynn
Environmental Analyst
Land and Water Resources Division

BL

CITY OF NORWALK
PLANNING & ZONING COMMISSION MINUTES
July 2, 2025

PRESENT: Galen Wells, Chair; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Chapin Bryce; Richard Roina (left the meeting at 7:46 pm); Ana Tabachneck; Nick Kantor; Darius Williams (arrived at 6:05 pm); Jacquen Jordan-Byron (arrived after roll call)

STAFF: Steven Kleppin; MIchelle Andrzejewski

OTHERS: Morris Pitt; Kevin Coughlin; Craig Flaherty; Brian Dempsey; Vernetta and Gregory Johnson; Andrea and Noah Goldman; Ryan Henderson; Keith Baker; Alisa Grevenberg; Michael Mason; Jan Fiore; John Gorde; John Aslanidis

I. CALL TO ORDER

Ms. Wells called the meeting to order at 6:01 p.m. It should be noted that this meeting was held on Zoom.com with participants calling in, separately.

II. ROLL CALL

Ms. Andrzejewski called the roll.

III. PUBLIC HEARINGS

A. #2025-47 SP - 186 Westport Ave LLC - 186 Westport Avenue (District 5, Block 4, Lot 151) - Special permit for existing car wash to add motor vehicle repair use - Public hearing, report & recommended action

Ms. Wells opened the public hearing. Morris Pitt spoke on behalf of the applicant by explaining that they wanted to add a brake service to the car wash but the Department of Motor Vehicles said it is a general repair use. They currently also do oil changes.

Ms. Andrzejewski said that nothing else was changing, however, there had never been a special permit for motor vehicle use. They were approving for the oil change and repairing brakes use on the property,

Ms. Wells opened the hearing for public comment.

Kevin Coughlin, Fort Walter Avenue, said that his property abutted the property. He asked for the hours of the brake service and would it coincide with the current use. He said that some employees would stay after hours to play music so he asked if this could be monitored. Mr. Schulman asked if it was an adjourning business or a residence, which he said it was.

At this point, there were no other members of the public that spoke on this matter.

Mr. Pitt said that the hours of operations would remain the same except for on Sundays when they would not do brake service. He said he would speak with the general manager about the people hanging out.

There was a discussion about whether there had been complaints about employees hanging out or were there any violations on the property. Mr. Kleppin said he was not aware of any.

**** MR. ROINA MOVED: THEREFORE BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2025-47 SP – 186 WESTPORT AVE LLC – 186 Westport Avenue (District 5, Block 4, Lot 151) – Existing Splash carwash proposing motor vehicle repair be **APPROVED** subject to the following conditions:

1. That the site shall be maintained in accordance with the following plans submitted as part of this application, as modified by the Commission:

a. Per survey entitled “Property Survey” prepared by Godfrey, Hoffman, Hodge, LLC, dated 3/26/2025; and

b. Per site plan entitled “Grading & Utility”, dated 5/15/1996; and

2. That all department sign-offs are obtained prior to issuance of any Zoning Permit; and

3. That a Special Permit certificate and mylar be filed on the Norwalk Land Records prior to the issuance of a zoning permit; and

4. That all motor vehicle repairs be conducted within the building; and

5. That there be no outdoor storage of parts or auto carcasses; and

6. That there shall be parking only in the designated parking spaces; and

7. That there shall be no on-street parking of repaired vehicles or vehicles pending repair; and

8. That storage of vehicles for more than 24 hours is prohibited; and

9. That any changes to the approved plans shall be submitted to the Commission's Staff for review and approval prior to implementation. If any proposed changes are determined to be substantive, Staff shall refer the changes to the Commission for their review and approval prior to implementation; and

BE IT FURTHER RESOLVED that this application complies with all applicable sections of the Norwalk Building Zone Regulations; and

BE IT FURTHER RESOLVED that the effective date of this action shall be July 11th, 2025.

Mr. Schulman seconded.

At this point, Ms. Wells seated both Ms. Lenkowsky and Ms. Tabachneck so the commissioners could review the resolution. Mr. Schulman asked whether there could be language about strictly complying with business hours. Mr. Kleppin did not think this was a zoning issue, so new language was not added.

Galen Wells; Louis Schulman; Tammy Langalis; Chapin Bryce; Richard Roina; Ana Tabachneck; Nick Kantor approved.
No one opposed.
Darius Williams abstained.

B. #2025-40 SP - Mayra Garcia - 43 Bettswood Road (District 5, Block 5, Lot 70) - Special permit application for a Child Day-Care Center use - Public hearing, report & recommended action

Ms. Wells opened the public hearing.

Craig Flaherty said that he was representing the applicant and introduced the project team. He oriented the commissioners as to the location of the property on an aerial map. He said that the applicant currently has a daycare on property but is looking to increase the number of children. There would be internal improvements as well as site improvements. He then showed them the proposed site plan which included a loop system for dropoff. There would be more parking on site. He also discussed the driveway and drainage report. He said that they had received a sign off from the

Department of Public Works. Transportation, Mobility and Parking (TMP) had no objections.

Brian Dempsey, the engineer on the project, said that he had submitted a report to TMP. He also explained further about the loop driveway.There would be an increase in people arriving at the site because of the additional number of children at the facility. There would be additional traffic from the additional parents dropping off. They had done observations of the current dropoff and pickup but did not observe any issues. They did not think the additional traffic would cause any issues. The additional parking on site would prevent people from parking on the street.

Mr. Flaherty explained that dropoff and pickup is staggered. The morning cycle starts at 7:30 am to 9:30 am and the evening pickup starts at 3:30 through 5:30 pm. He said that they had received one letter in opposition from a neighbor at 9 Overlook Drive, which he showed on an aerial map. He noted what the concerns were. He also described the fencing around the play area.

Ms. Wells said that Ms. Jordan-Bryon had arrived at the beginning of this presentation.

There was a discussion about the number of children allowed under a special permit in a daycare in a residential zone. There was a discussion about the current number of staff and how that would increase. Mayra Garcia,the owner of the property and the applicant, said she currently had 4 employees and that would increase to six. The staff worked in shifts. There was a discussion about the students and what the age range was. Ms. Garcia explained how the play area was used depending on age. She could not have them all together.

There was also a discussion about whether she would have families with more than one child. There was a discussion about whether she had state approval for 18 children. Ms. Garcia said she needed approvals from zoning, the fire department and the building department first. There was a discussion about whether Ms. Garcia planned on staying in the house, which she said she did. There was also a discussion about how long it took for dropoffs which Ms. Garcia said it was about 10 minutes. There was also a discussion about whether any of the children were transported by a van to another facility. Ms. Garcia said that sometimes she would take the children for walks in the neighborhood.

At this point, Ms. Wells opened the hearing to members of the public for comment.

Vernetta and Gregory Johnson, 45 Bettswood Road, said that they lived right next door to the property. Mr. Johnson said that they were nice neighbors. He said that he would previously support her but was not aware that they had the potential for 18 children and more staff. He thought it was a bit much for this. He said that there were no sidewalks in the area. He had concerns about the noise. He said that this was not the largest piece of property. He also said that it was a narrow road. He had talked to other neighbors who agreed as to what he said.

Andrea and Noah Goldman, 40 Bettswood Road, said that she had promoted the business when it was smaller. She was not aware of the increase to 18 children. She had concerns about the increase in the number of children. She had concerns about the drive out of the property. She was concerned about the traffic coming from the property, especially since there were no sidewalks. She did not realize that the age of the students would be up to 5 years.

Noah Goldman, Ms. Goldman's husband, then spoke, had concerns about the additional cars as well as the new layout which would make it look bigger.

Ryan Henderson, 20 Walnut Avenue, said that he had a positive experience with Ms. Garcia's day care center.

Keith Baker, 34 Bettswood Road, diagonally across from the daycare center, explained how his children walked near the daycare. He was concerned that it would become commercial and had concerns about the street, especially when buses come down it.

Alisa Grevenberg said that she was in favor of the application because she had trouble finding daycare. She said that the applicant cares about the children. She thought it would be a good thing if she could walk to the daycare. She understood that there were concerns about parking but that most will use the driveway. She did not think that the daycare parents were parking on the street or blocking the traffic. She thought it was a lot more quiet than anyone realized. She had also gone on walks with the children in the neighborhood. She said that the playground is on the backside of the property. It is also kept very neat.

Michael Mason, 85 George Avenue, said that George Avenue was a busy road. He had concerns also because there are no sidewalks to walk on. He had concerns about it being a daycare center.

Jan Fiore, 41 Bettswood Road, said that they had a good personal relationship with them. However, she said that she has now found out that the children would be up

to 5 years old. They were previously told that the children would not be over 3 years old. She was concerned about the size of the property. She said that this is a tiny road to get 2 vehicles to go past one another. She also noted that others did not see how long it would take for others to drop off their children.

John Gorde, 38 Bettswood Road, said that the parents are not coming out in 5 minutes. It is a very narrow road with no sidewalks. He had concerns about adding more cars which created more exhaust. He was also concerned that the neighborhood would become more commercial. He said he was against this application.

At this point, there were no other speakers.

Mr. Flaherty continued the presentation by addressing the comments from the public. He noted that the hours of operation had not changed from 7:30 pm - 5:30 pm. He also explained why some property owners had not received notice of the meeting. He showed them the site plan which included the driveway and 7 parking spaces, which would take cars off the road. He also discussed the time that the children used the outdoor play area, which was 10 am - 2 pm. Mr. Dempsey said that they had observed the site for traffic during the tropoff and pickup.

Ms. Garcia said that this was the only daycare that she had. She also said that she did not have children that were over 3 years old. She also clarified the number of staff that she had and the maximum staff at one time. She also explained how the children would come at different times during the morning and leave at different times in the afternoon. There would be more staff if there were 18 children. There was also a discussion about how the arrival times were staggered. Ms. Garcia said it was contracted.

There was a discussion about the driveway. Ms. Garcia said that she would require parents to only park there and not in the street. Mr. Flaherty said that Ms. Garcia had requested the looped driveway to help facilitate the dropoff and pickup. She also said that her daughter was also an employee and that there would not be more than 6 employees.

Ms. Wells closed the public hearing.

**** MR. WILLIAMS MOVED: THEREFORE BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2025-40 SP – Mayra Garcia – 43 Bettswood Road (District 5, Block 5, Lot 70) – Proposed Child Daycare Center be **APPROVED** subject to the following conditions:

1. That the site shall be developed in accordance with the following plans submitted as part of this application, as modified by the Commission:

a. Per site plans entitled “Zoning site Plan” prepared by Redniss & Mead, dated 5/21/2025 revised to 6/17/2025; and

b. Per design drawings entitled “Baby Beluga Group Home Daycare”, dated 5/6/2025; and

2. That all department sign-offs are obtained prior to issuance of any Zoning Permit; and

3. That a Special Permit certificate and mylar be filed on the Norwalk Land Records prior to the issuance of a zoning permit; and

4. That the Property and Use shall be owner occupied and operated with a permitted Residential Use; and

5. That an affidavit is filed on the Norwalk Land Records indicating the Child Daycare Center is owner occupied; and

6. That any changes to the approved plans shall be submitted to the Commission’s Staff for review and approval prior to implementation. If any proposed changes are determined to be substantive, Staff shall refer the changes to the Commission for their review and approval prior to implementation; and

7. That any sign for the Child Daycare Center would be modest and comply with the City’s Regulations advertising the business; and

BE IT FURTHER RESOLVED that this application complies with all applicable sections of the Norwalk Building Zone Regulations; and

BE IT FURTHER RESOLVED that the effective date of this action shall be July 11th, 2025.

Mr. Bryce seconded.

There was a discussion about whether there was a sign on the property for the business, and whether signs were allowed in this zone. Ms. Lenkowsky was seated for this vote.

Galen Wells; Louis Schulman; Tammy Langalis; Chapin Bryce; Darius Williams; Diana Lenkowsky; Nick Kantor approved.

Richard Roina opposed.
Jacquen Jordan-Byron abstained.

At this point, Mr. Roina said that he was leaving the meeting.

IV. REVIEW AND ACTION ON APPLICATIONS

A. #2025-52 SP Modification - St. George Greek Orthodox Church - 238 West Rocks Road (District 5, Block 23, Lot 10) - Request to modify existing special permit to add new pavilion building for storage and outdoor kitchen - Report & recommended action

John Aslanidis, the representative for the applicant, began by describing the project. He then showed them the exterior of the building. He explained that the festival had been running for many years except during Covid. He then showed them the site plan and noted where they keep the equipment for the festivals. He said that the structures would allow for the removal of containers on the property. He said that they complied with zoning regulations. He explained that the structure would sit on a concrete slab. They would like to have it built by September but he did not think it would happen. Mr. Aslanidis also oriented the commissioners as to the location of the new structure on the site plan. He noted that there is a residence behind the proposed structure. There was a discussion about whether the neighbors had been notified. There was a discussion about the fence around the property. There were also fir trees in some areas.

Mr. Kleppin said that the commission had to decide whether a public hearing would be necessary. He said that there was no resolution if they decided that this was a minor change. There was a discussion about screening. There was a discussion about how the storage shed would be used. At this point, they reviewed the aerial of the property. The structure would mostly be used for the festival. Mr. Aslanidis said that there could be another festival during the year that it would be used again. The equipment would not have to be stored in containers which they believed was unsightly. There was also a discussion about whether the community center was completed. There was a discussion about the materials that would be used for the proposed structure.

**** MR. KANTOR MOVED: THEREFORE BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2025-52 SP Modification - St. George Greek Orthodox Church - 238 West Rocks Road (District 5, Block 23, Lot 10) - A request to modify existing special permit to add a new pavilion building for storage and

outdoor kitchen was a minor change which did not require a public hearing, and could be handled administratively.

Mr. Bryce seconded.
Galen Wells; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Chapin Bryce; Darius Williams; Nick Kantor; Jacquen Jordan-Byron approved.
Ana Tabachneck opposed.
No one abstained.

V. ACCEPTANCE OF MINUTES

A. Regular Meeting: June 18, 2025

**** MS. LANGALIS MOVED to approve the June 18, 2025 minutes.**
Mr. Schulman seconded.
Galen Wells; Diana Lenkowsky; Louis Schulman; Ana Tabachneck; Tammy Langalis; Chapin Bryce; Darius Williams approved.
No one opposed.
Nick Kantor and Jacquen Jordan-Byron abstained.

VI. COMMENTS OF DIRECTOR

Mr. Kleppin asked if everyone was doing well with their city emails. Some commissioners said that they had to make an appointment with someone in IT. Others wanted to come into the office to meet with IT to have issues resolved.

VII. COMMENTS OF COMMISSIONERS

There was a conversation about the opening of Wegmann's supermarket in Norwalk, in July.

VIII. ADJOURNMENT

Mr. Schulman made a Motion to Adjourn.
Ms. Tabachneck seconded.
Galen Wells; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Chapin Bryce; Darius Williams; Nick Kantor; Ana Tabachneck approved.
No one opposed.
No one abstained.

The meeting was adjourned at 8:10 p.m.
Respectfully submitted,
Diana Palmentiero

Norwalk Planning & Zoning Commission

125 East Avenue
Norwalk, Connecticut

Memorandum

July 7, 2025

To: Mayor Rilling

From: Bryan Baker, AICP, Principal Planner

Re: **Tax Sale Legislation Change**

Included within the 2025 Norwalk Affordable Housing Action Plan is to support the development of affordable homeownership units and pathways for residents to become homeowners. One of the biggest hurdles to this goal is the high entry price to purchase existing housing and the high cost of development. To help achieve the goal of increasing affordable homeownership options and lowering the entry price to purchase a home in Norwalk, Staff found an interesting case study in Greenfield, Massachusetts, that may serve as a potential model.

A link to the Greenfield, Massachusetts project can be found here. Various municipalities and the county government combined to take ownership of homes that were abandoned, blighted, or otherwise distressed and rehabilitated the structures which would then be sold, via a lottery system, to a family earning no more than 80% of the county's median income. For the first 15-years of ownership, an affordability restriction is placed on the home, where if the property is sold that it must be sold to another family earning no more than 80% of the county's median income. After the initial 15-years, the affordability restriction is lifted, allowing the original purchaser to sell and gain the equity accrued from the home. This model achieves two important goals of affordable homeownership which are 1) to create an affordable entry price and 2) to allow the homeowner to gain the equity of the home to create generational wealth.

Norwalk can take advantage of this model by utilizing the existing property tax sale model that occurs every other year, by giving entities such as the Norwalk Housing Authority and other non-profit affordable housing developers (other developer) the ability to purchase an existing home that is being auctioned for the price of the unpaid taxes and/or blight fees. The Housing Authority or other developer can be given a right-of-first refusal, wherein they would have the ability to select properties that are being auctioned and have a due diligence period to decide whether to acquire the property for rehabilitation and sale. If the Housing Authority or other developer decides to proceed with acquiring the property, they would only have to pay the unpaid taxes or whatever other applicable fines. If the Housing Authority or other developer decide not to proceed with acquiring the property, then it would be sold via the current process (to the highest bidder).

To achieve this goal, the statutory language of Section 12-157 of the Connecticut General Statutes would likely need to be amended to enable Housing Authorities or other developers the right-of-first refusal for properties that are subject to a municipal tax sale.

The language that would need to be amended specifically is the following:

(c) At the time and place stated in such notices, or, if such sale is adjourned, at the time and place specified at the time of adjournment as aforesaid, such collector (1) may sell at public auction to the highest bidder all of said real property, to pay the taxes with the interest, fees and other charges allowed by law, including, but not limited to, those charges set forth in section 12-140, or (2) may sell all of said real property to his municipality if there has been no bidder of the amount bid is insufficient to pay the amount due.

Language would need to be added that 1) provides housing authorities or other developers the right-of-first refusal, 2) allows for the municipality to sell the property to a Housing Authority or other developer for the taxes and/or fines owed, 3) provides minimum criteria on renovating the property, 4) and be sold at an affordable price with restrictions on how soon it can be resold (with restrictions on what happens if sold prior to that date).

Draft language that can be added to the statute could be:

(c) At the time and place stated in such notices, or, if such sale is adjourned, at the time and place specified at the time of adjournment as aforesaid, such collector (1) may sell at public auction to the highest bidder all of said real property, to pay the taxes with the interest, fees and other charges allowed by law, including, but not limited to, those charges set forth in section 12-140, ~~or~~ (2) may sell all of said real property to his municipality if there has been no bidder or the amount bid is insufficient to pay the amount due**, or (3) notwithstanding any provision of this section to the contrary, before proceeding with the sale of any residential, multifamily, or mixed-use real property pursuant to this section, the tax collector may notify the local housing authority of the pending sale and provide the authority with a right of first refusal in accordance with the following: (1) such notice shall include the same information as required under subsection (a), including the amount of delinquent taxes, interest, fees, and charges owed, and shall be sent at least five weeks prior to the scheduled tax sale date, (2) the local housing authority shall have thirty days from the date of receipt of such notice to notify the tax collector in writing of its intent to exercise its right of first refusal and if the authority elects to exercise the right, the property shall be sold to the housing authority for an amount equal to the total of all taxes, interest, fees and costs authorized by law as of the date of the proposed sale, (3) if the housing authority fails to exercise the right of first refusal within the prescribed period, the tax collector may proceed with the tax sale as otherwise provided in this section, and (4) for the purposes of this subsection, "local housing authority" shall mean any housing authority established pursuant to section 8-40 of the general statutes**.

cc: Galen Wells, Chair, Norwalk Planning & Zoning Commission
Jay Habansky, AICP, Chief of Economic and Community Development, City of Norwalk

Tom Livingston, Chief of Staff, City of Norwalk
Nora Niedzielski-Eichner, Council Member At-Large, City of Norwalk

CITY OF NORWALK
Planning & Zoning Commission
Norwalk City Hall, Room 129
125 East Avenue,
Norwalk, CT 06856-5125

MEMORANDUM July 9th, 2025

TO: Mayor Harry Riling

FROM: Planning and Zoning Staff

SUBJECT: Lobbying for state enabling legislation to promote construction of grocery stores that provide fresh produce and grocery to underserved communities thru tax and zoning incentives.

OVERVIEW: The City of Norwalk recognizes a need for grocery stores and supermarkets in underserved communities like South Norwalk this includes vulnerable demographics, such as people of lower income, minorities, immigrants, including many children. As you can see in the figure below South Norwalk Census Block is the densest compared to other parts of the City. (See Figure 1. below)

This area of the city is also located in a development area in need of grocery stores and supermarkets without these resources creates a food desert for this population, making it difficult to buy affordable and fresh foods. Our data indicates there are approximately 18 grocers or bodegas within the City of Norwalk, four of which are in South Norwalk.

The objective of this memorandum is to show how we can create opportunities to incentivize construction of grocery stores/supermarkets and better support the ones we already have. These opportunities can be realized through tax incentives and/or through zoning incentives. The main hurdle with trying to create this opportunity is the absence of state enabling legislation to allow tax incentive programs for this use. In addition to tax incentives, this food access program could encompass certain zoning incentives as well. For instance, New York City (NYC) has adopted a program known as Food Retail Expansion to Support Health (FRESH) which was sparked by a study conducted researching food access (NYC did not need to propose enabling legislation for this program.) This program offers zoning and financial incentives which includes:

Real Estate Tax Reductions:

- Land tax abatement for 25 years equal to $500 multiplied by each full-time employee or part-time equivalent at time of application (or the full value of the land tax for projects located within Empire and Empowerment Zones)
- Stabilization of building taxes based on pre-improvement assessed value for 25 years (benefit reduced in years 22 through 25)

Sale Tax Exemption:

- Exemption from the 8.875 percent sales tax on materials to construct, renovate or equip facilities

Mortgage Recording Tax Deferral:

- Deferral of mortgage recording tax relating to the project's financing, equal to 2.05 percent for mortgages of $500,000 or less, and 2.80 percent for mortgages greater than $500,000

Zoning incentives within the FRESH program includes:

- One additional square foot of residential floor area in mixed-use buildings for every square foot provided for a grocery store, up to a 20,000 square foot limit.
- The commission may authorize the maximum building height to be increased by up to 15 feet to enable the additional floor area to be accommodated. The story occupied by a FRESH food store would be required to have a minimum finished floor to finished ceiling height 14 feet above the adjacent public sidewalk.
- No parking required for grocery stores up to 40,000 square feet in districts that permit residential buildings with ground floor retail.
- First 15,000 square feet of grocery retail space exempt from parking in certain districts
- In lower residential densities, allow up to 10,000sf of FRESH food stores area waived from the parking requirement. Stores exceeding 10,000sf require one space per 400sqft of floor area.

The State of Connecticut currently has a number of tax incentive programs like the Enterprise Zone Program, Neighborhood Assistance Act Tax Credit Program (which Norwalk utilizes both of these), and Data Center Tax Incentive. These are designed to attract businesses to areas they may not otherwise entertain, based on a myriad of factors. In NYC an agency known as New York City Industrial Development Agency (NYCIDA) has the authority to review and enables tax incentive programs city wide. Whereas in Connecticut we would have to lobby for this type of enabling legislation similar to the above-mentioned programs.

DATA: Figure 2 below illustrates food insecurity for the City of Norwalk. In particular South Norwalk is 20.1% of people are food insecure which is the highest rate within the City. Additional data and support from the Health Department will be required in order to drive what kind of tax and zoning incentives we want to do.

This topic is important because adding additional fresh food sources in proximity to some of our most vulnerable populations, who are more reliant on mass transportation provides many benefits to our residents and the broader community. In addition, as the City is fostering an urban downtown in and around South Norwalk, having fresh food options for the increasing population reduces vehicular traffic, lowers automobile exhaust and helps foster a sense of community.

Example zoning incentives Norwalk could consider:

- The Commission may authorize the maximum building height to be increased by one additional story.
- No parking required for corner stores or bodegas in commercial zones within certain commercial zones.
- Provide assurances and requirements that the incentives are only allowed if the use is maintained.

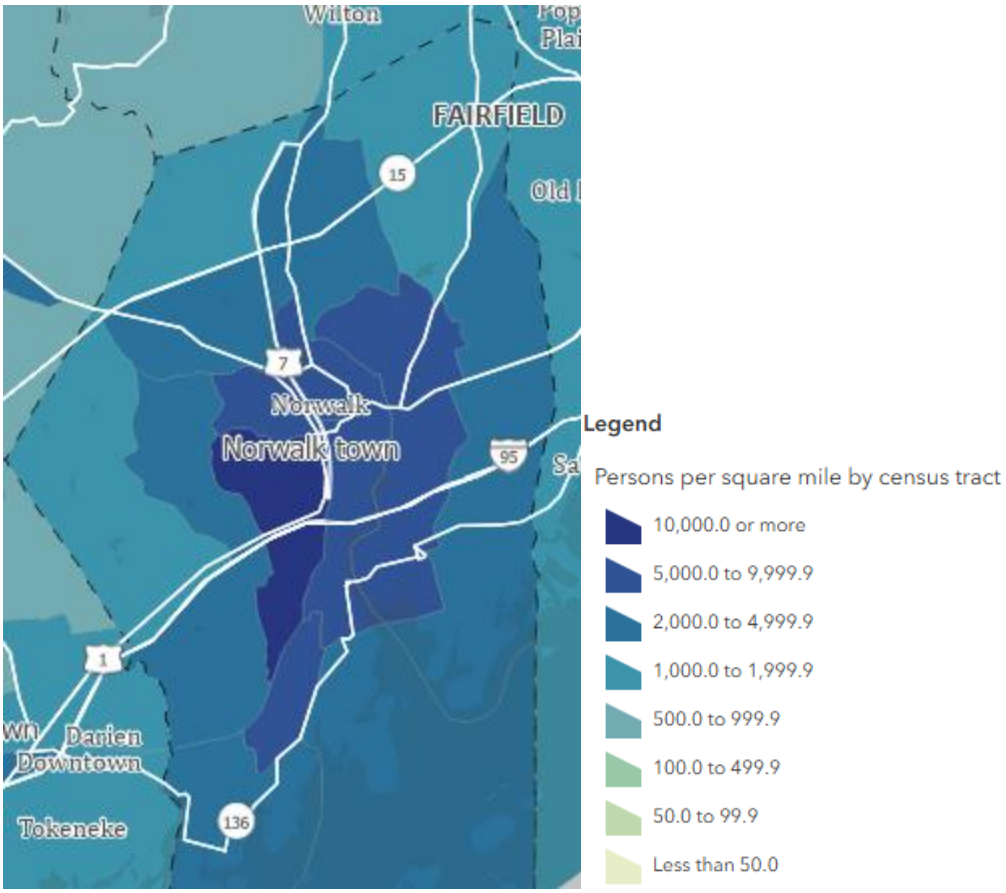


Figure 1. https://maps.geo.census.gov/ddmv/map.html

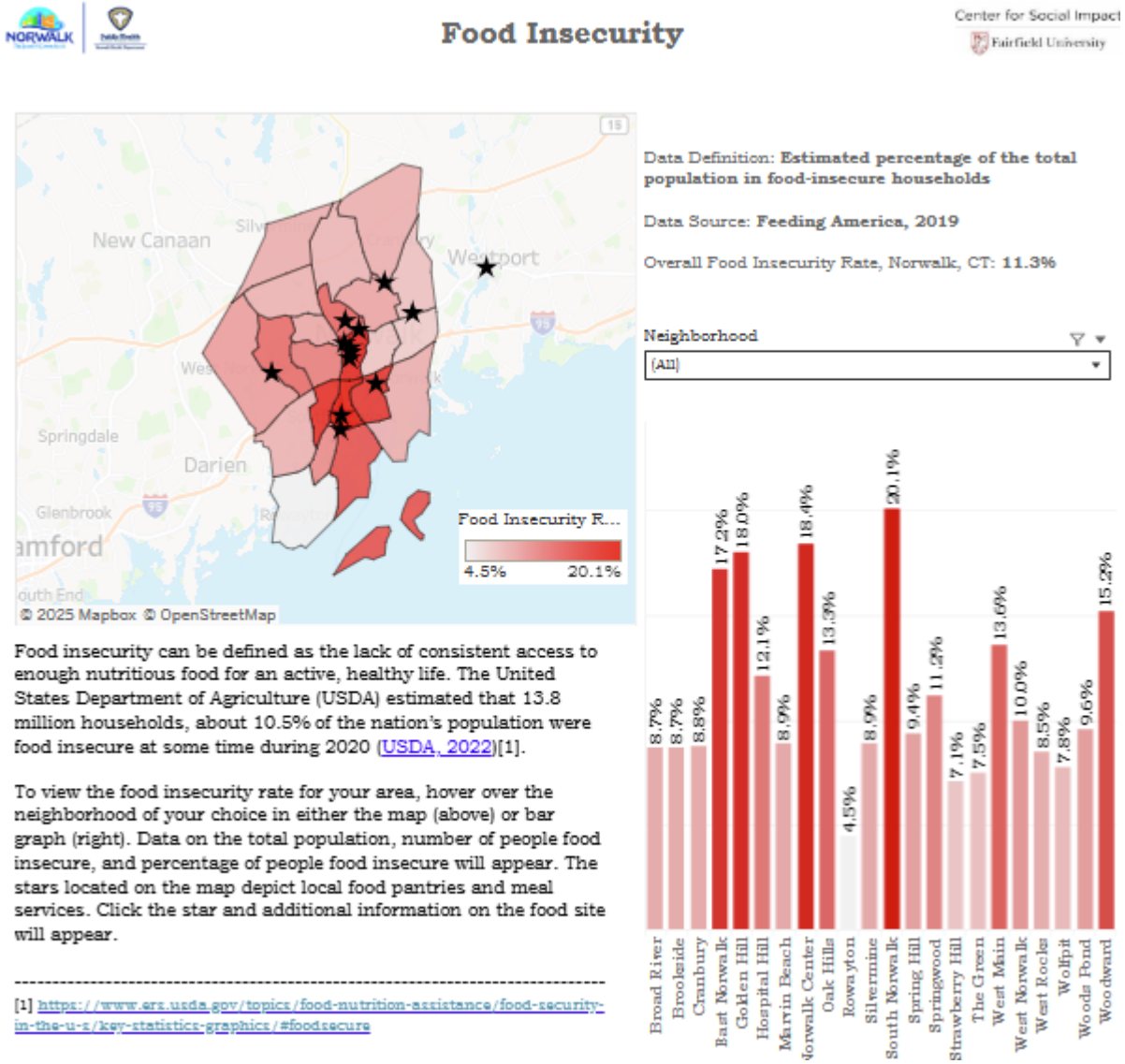


Figure 2. https://www.norwalkct.gov/3350/Food-Security-Data-Dashboard

cc. Galen Wells, Chair, Norwalk Planning & Zoning Commission, City of Norwalk
Jay Habansky, AICP, Chief of Economic and Community Development, City of Norwalk
Tom Livingston, Chief of Staff, City of Norwalk
Nora Niedzielski, Council Member At-Large, City of Norwalk

CITY OF NORWALK
Planning & Zoning Commission
Norwalk City Hall, Room 129
125 East Avenue,
Norwalk, CT 06856-5125

MEMORANDUM July 9th, 2025

TO: Mayor Riling

FROM: Planning and Zoning Staff

SUBJECT: Lobbying to amend state legislation to address barriers to condominium construction in order to increase homeownership opportunities.

OVERVIEW: The City of Norwalk recognizes there has been a decrease in new homeownership development, particularly condominium construction in recent years. Homeownership as a whole has fallen from 65% to 55% between 2012-2022, as indicated in the City's Affordable Housing Action Plan (Plan). There are many reasons why homeownership levels have dropped. One reason is that there is very little undeveloped land left at our current zoning. While the land area dedicated to single-family zoning has not decreased significantly over that time frame, the number of rental units has increased substantially in our urban areas. To increase homeownership opportunities, we recommend focusing on other factors that are leading to the increase in rental units and what is preventing condominium development.

There are societal shifts and preferences in living and lifestyle which are leading more people to rent than buy. Whether this is a permanent shift or one that will adjust over time is difficult to determine. Given the well documented need and shortfall of housing of all types, coupled with low availability rates in our area, it is easy to understand why rental costs and purchase prices are high.

The Plan identified legislative barriers and disincentives making condominium development more difficult, that ultimately make rental development easier and more economically viable for the developer. Further analysis of why these are hurdles exist and how these can be addressed will be required. These hurdles could include the following:

- Financing condominium projects require a lot of the funds to be provided up front.
- The taxes for condominiums can be much higher on the developer when borrowing money.
- There are a lot of federal incentives and funding opportunities for rental units compared to other types of housing.
- Construction insurance for condos is much more expensive.
- Overall, higher liability for the developer in turn increased costs.
- At the local level our Workforce Housing requirements applied to condos is more complicated.

As the City starts to identify these hurdles, we realize there could be solutions to these by amending state laws governing condominium construction and financing. The goal of revising these laws would be to create more opportunities and inventory of home ownership. The Plan specifically states that the City wants to expand affordable housing opportunities by lobbying Norwalk's state and federal delegation to address tax and financing polices that act as a barrier to certain unit types like condos. The next step would be to identify the laws needing amending and propose changes they would require helping eliminate these barriers.

cc. Galen Wells, Chair, Norwalk Planning & Zoning Commission, City of Norwalk
Jay Habansky, AICP, Chief of Economic and Community Development, City of Norwalk
Tom Livingston, Chief of Staff, City of Norwalk
Nora Niedzielski, Council Member At-Large, City of Norwalk