



REGULAR MEETING – PLANNING AND ZONING COMMISSION AGENDA

**SEPTEMBER 3, 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 & SEATING OF ALTERNATES

III. REVIEW AND ACTION ON APPLICATIONS

- A. #2021-03 SPR - 761 Main Avenue - iPARK - Extension of time request for four (4) story, 132 unit multifamily dwelling on existing mixed-use development site - Report & recommended action**
- B. #2025-65 CAM – Joseph R. Cugno – 5 Gregory Court – Construct a new single-family residence to be FEMA flood compliant with an integral garage and stormwater management - Report & recommended action**
- C. #2025-66 CAM – Susan H & James H Carter III – 16 Norport Drive – Construct a new flood complaint spa within an existing elevated patio less than 50’ from a tidal lagoon - Report & recommended action**

IV. PUBLIC HEARINGS

- A. #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 - Public hearing, report & recommended action

V. DISCUSSION

- A. Accessory Dwelling Unit Regulations

VI. ACCEPTANCE OF MINUTES

- A. Regular Meeting: July 16, 2025; August 20, 2025

VII. COMMENTS OF DIRECTOR

VIII. COMMENTS OF COMMISSIONERS

IX. ADJOURNMENT

UPCOMING MEETINGS

September 17, 2025; October 8, 2025



**i.Park Norwalk
485 West Putnam Avenue
Greenwich, Connecticut 06830**

August 25, 2025

VIA EMAIL

Mr. Bryan Baker
Principal Planner, City of Norwalk
125 East Avenue
Norwalk, Connecticut 06856

***Re: #2021-03 SPR – Proposed UNO Multifamily Building at i.Park Norwalk
761 Main Avenue, Norwalk***

Dear Bryan,

The above application was approved by the City of Norwalk Zoning Commission with an effective date of July 2, 2021. Due to several factors, including an unforeseen delay in completion of the on-site parking garage required for this project, the Applicant is hereby seeking an extension of the effective period.

The Applicant requests a two-year extension of the effective period of the application through July 2, 2028.

Thank you for the City's consideration on this matter.

Sincerely,

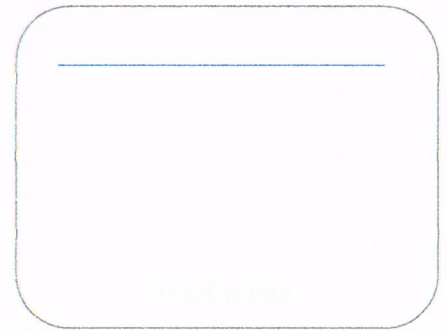
Lynne M. Ward
President



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.



Application Completion Date:

Official Receipt Date:

Fee Paid:

1. Property Address: 5 Gregory Court 2. D/B/L/U: 3/70/6
3. Proposed Work: New Residence 4. Zone: CD-1S

5. Applicant Identification:

Applicant Name: Joseph R. Cugno Architect

Address: 113 WESTPORT ROAD

Phone Number: 2039439151

Email: cugno@optonline.net

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

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

Name: Joseph Cugno

Address: 113 WESTPORT ROAD

Business Phone: 203-563-9223

Email: joe@cugnoarchitecture.com

6. Property Owner, if different than applicant:

Owner Name: Jeff and Kaisa Newhams

Address: 5 Gregory Court

Phone Number: 203-223-6341

Email: Jeff Newhams <jeffrey.newhams@gmail.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:

5 Gregory Court

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:

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 existing site is a residential use as with the surrounding neighborhood

e) Indicate the area of the project site: .1338 acres or 5,832 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*):

There is an existing two story residence and detached garage that will be completely removed and replaced with a new two and a half story residence that will have its new first floor at the required flood elevation.

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*):

Grumman Engineer has engineered a new storm water retention system that will be located in the front yard of the property. Please see the attached map and reports that are part of this application.

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*):

The existing coastal resources are located at the west side of the lot. All of these existing conditions will not be changed in any way and will remain as is.

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:

- ☒ 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):

This lot will have all the required soils erosion methods in place and maintained during the demolition of the existing structure as with the construction of the new home as noted on the civil drawings by Grumman Engineering.

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.) *:

The existing water dependent uses are existing and will not be changed or part of this application

*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*):

There are no potential adverse impacts to the coastal resources. The west side of the lot will have soils control measures in place before and during construction.

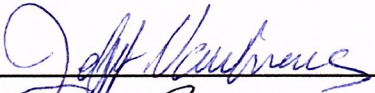
17. Remaining Adverse Impacts:

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 will be no remaining adverse impacts. The proposed civil drawings by Grumman Engineering address the required mitigation

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.

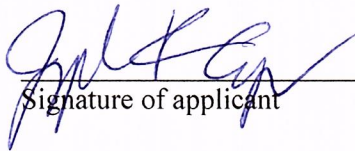
Applicant's Signature:  DATE: 8.10.2025

Agent's Signature:  DATE: 8.10.25

Dear Michael Rizzo & Amanda Bartley ,

Be advised that Jeff and Kaisa Newhams with their applicant Joseph R. Cugno Architect has applied for a Coastal Site Plan application for the property located at the following address: 5 Gregory Court, District 3, Block 70, Lot #6. The proposal is for the removal of the existing two-story residence and the constructing of a new two and a half story residence.

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.

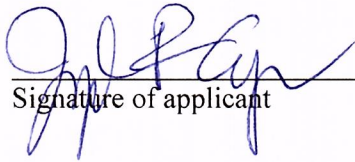


Signature of applicant

Dear Gregory & Carolyn Wheeler Trustee ,

Be advised that Jeff and Kaisa Newhams with their applicant Joseph R. Cugno Architect has applied for a Coastal Site Plan application for the property located at the following address: 5 Gregory Court, District 3, Block 70, Lot #6. The proposal is for the removal of the existing two-story residence and the constructing of a new two and a half story residence.

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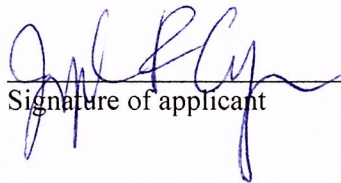


Signature of applicant

Dear 8 Gregory Court LLC ,

Be advised that Jeff and Kaisa Newhams with their applicant Joseph R. Cugno Architect has applied for a Coastal Site Plan application for the property located at the following address: 5 Gregory Court, District 3, Block 70, Lot #6. The proposal is for the removal of the existing two-story residence and the constructing of a new two and a half story residence.

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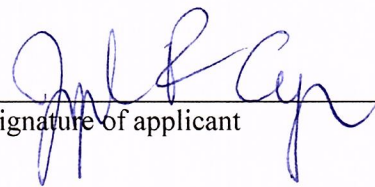
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Signature of applicant

Dear Jack Crowel & Eva Kronberg ,

Be advised that Jeff and Kaisa Newhams with their applicant Joseph R. Cugno Architect has applied for a Coastal Site Plan application for the property located at the following address: 5 Gregory Court, District 3, Block 70, Lot #6. The proposal is for the removal of the existing two-story residence and the constructing of a new two and a half story residence.

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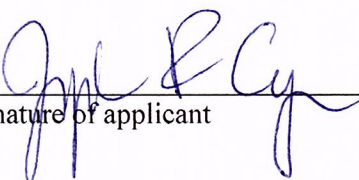


Signature of applicant

Dear Mark Dariano ,

Be advised that Jeff and Kaisa Newhams with their applicant Joseph R. Cugno Architect has applied for a Coastal Site Plan application for the property located at the following address: 5 Gregory Court, District 3, Block 70, Lot #6. The proposal is for the removal of the existing two-story residence and the constructing of a new two and a half story residence.

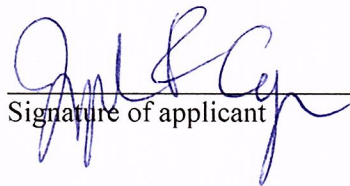
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Signature of applicant

Dear Nicolina Saporito & Alexander Hill ,

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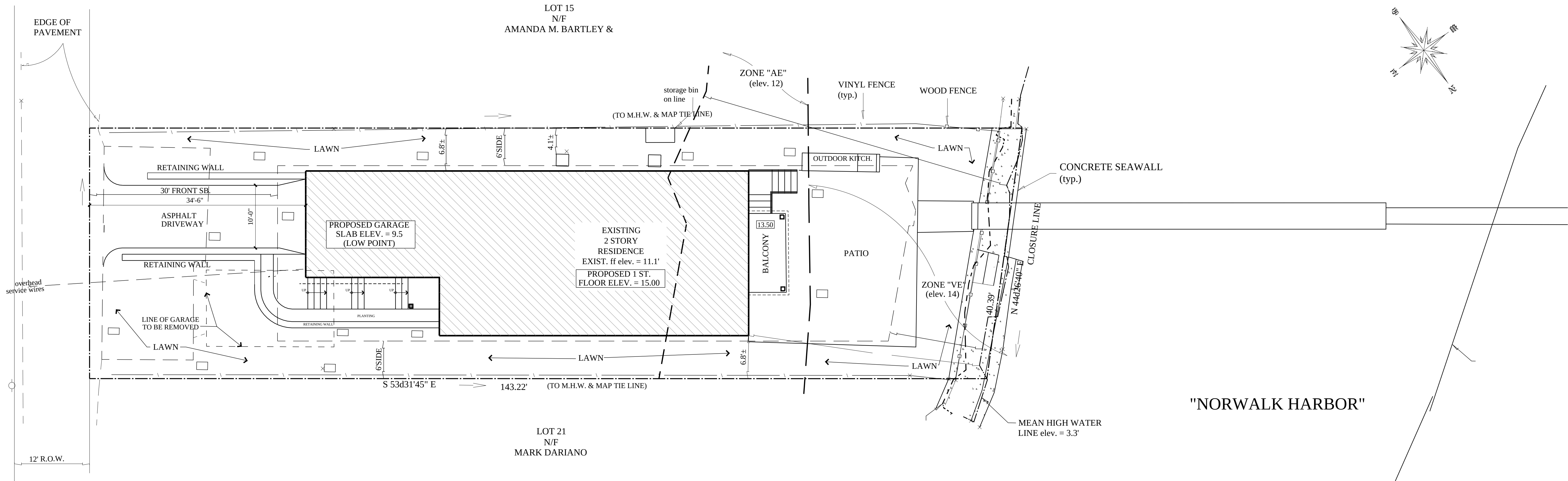


Signature of applicant

**NEWHAMS RESIDENCE
PROPERTY OWNERS WITHIN 100 FEET**

DISTRICT	BLOCK	LOT	NAME & ADDRESS
1) 3	70	2	Michael J. Rizzo & Amanda Bartley, 7 Gregory Court, Norwalk 06855
2) 3	70	3	Gregory & Carolyn Wheeler Trustee, 9 Gregory Court, Norwalk 06855
3) 3	70	4	8 Gregory Court LLC, 9 Gregory Court, Norwalk 06855
4) 3	70	5	Michael J. Rizzo, 1 Sylvester Court, Norwalk 06855
5) 3	70	8	Jack Crowell & Eva Kronberg, 11 Blackstone Dr., Norwalk 06855
6) 3	70	1	Mark Dariano, 3 Gregory Court, Norwalk 06855
7) 3	70	7	Nickolina Saporito & Alexander Hill, 1 Gregory Court, Norwalk 06855





SITE PLAN

SCALE: 1/8" = 1'-0"

NEWHAM'S RESIDENCE
5 GREGIRY COURT
NORWALK, CT

Date: 3/20/2025	Drawn By: JRC	Drawing Title: SITE PLAN
Scale: AS NOTED		
Job No:		

CUGNO
ARCHITECTURE

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Revisions:
3-21-2025
4-11-2025
5-6-2025
8-10-2025
7-1-2025
7-27-2025
8-10-2025

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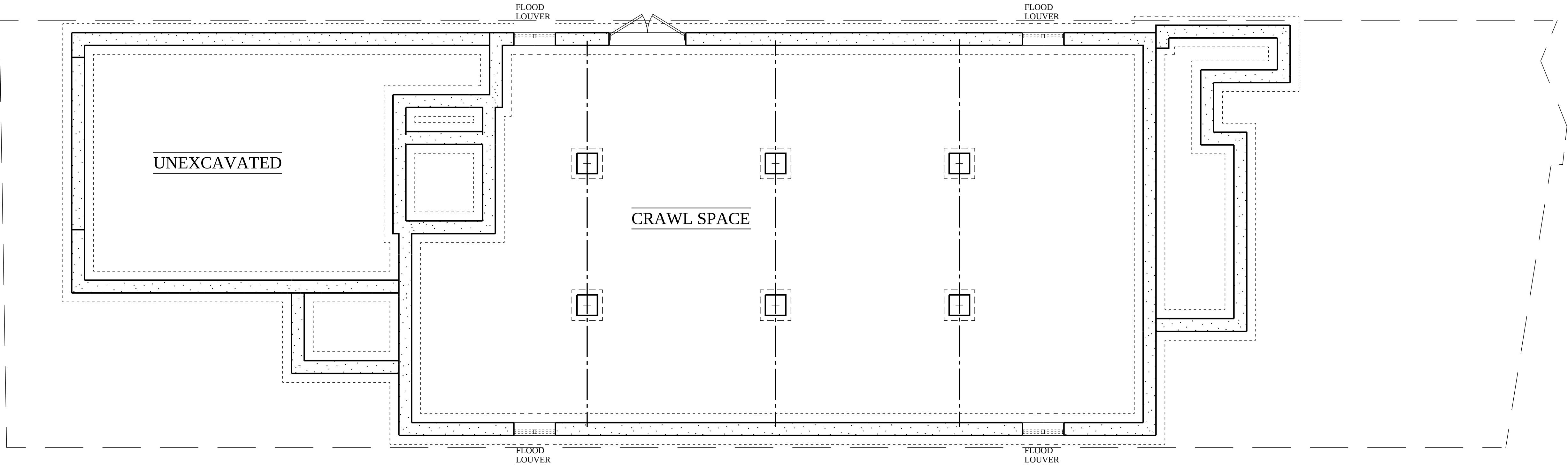
Drawing Number:

SP100

Seal:

FOUNDATION PLAN

1/4" = 1'-0"



NEWHAMMS RESIDENCE

5 GREGIRY COURT

NORWALK, CT

Date: 3/20/2025

Scale: AS NOTED

Job No:

Drawn By: JRC

Drawing Title:

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7-16-2025

7-27-2025

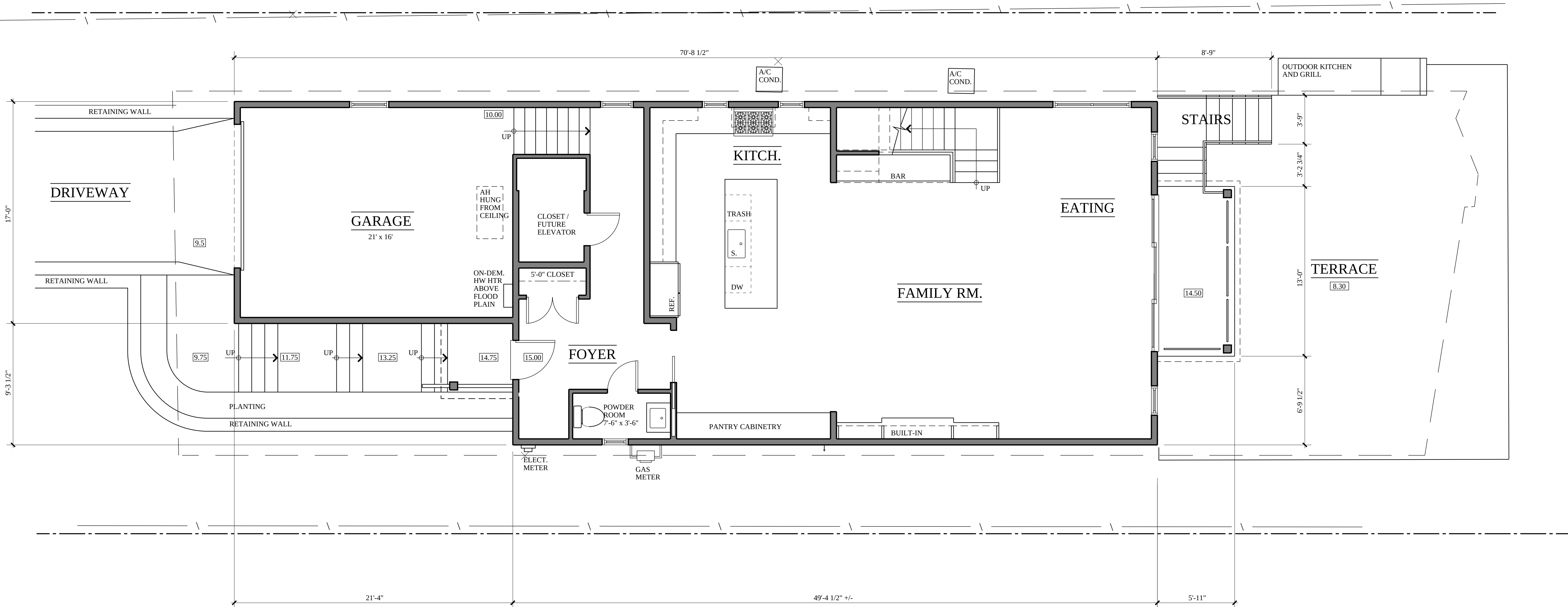
8-10-2025

Drawing Number:

A100

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FIRST FLOOR PLAN

1/4" = 1'-0"

EXISTING 1,123.59 SQ. FT.
PROPOSED 1,650.36 SQ. FT.

NEWHAMMS RESIDENCE
5 GREGORY COURT
NORWALK, CT

Date: 3/20/2025	Drawn By: JRC	Drawing Title:
Scale: AS NOTED		
Job No:		

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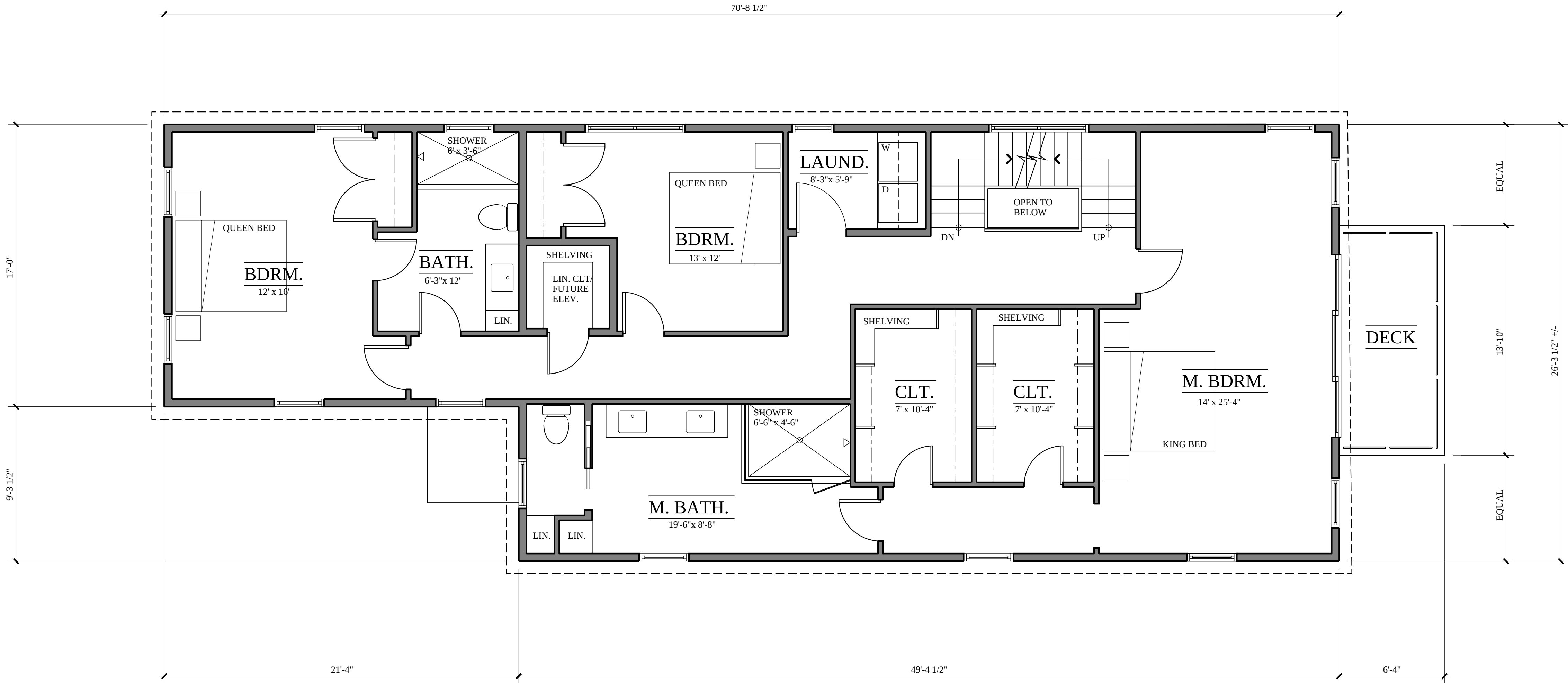
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 - 7-17-2025
 - 7-27-2025
 - 8-10-2025

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A101



SECOND FLOOR PLAN

1/4" = 1'-0"

9'-0" CEILING

1,660.50 SQ. FT.

NEWHAMMS RESIDENCE
5 GREGORY COURT
NORWALK, CT

Date: 3/20/2025	Drawn By: JRC	Drawing Title:
Scale: AS NOTED		
Job No:		

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 - 7-16-2025
 - 7-27-2025
 - 8-10-2025

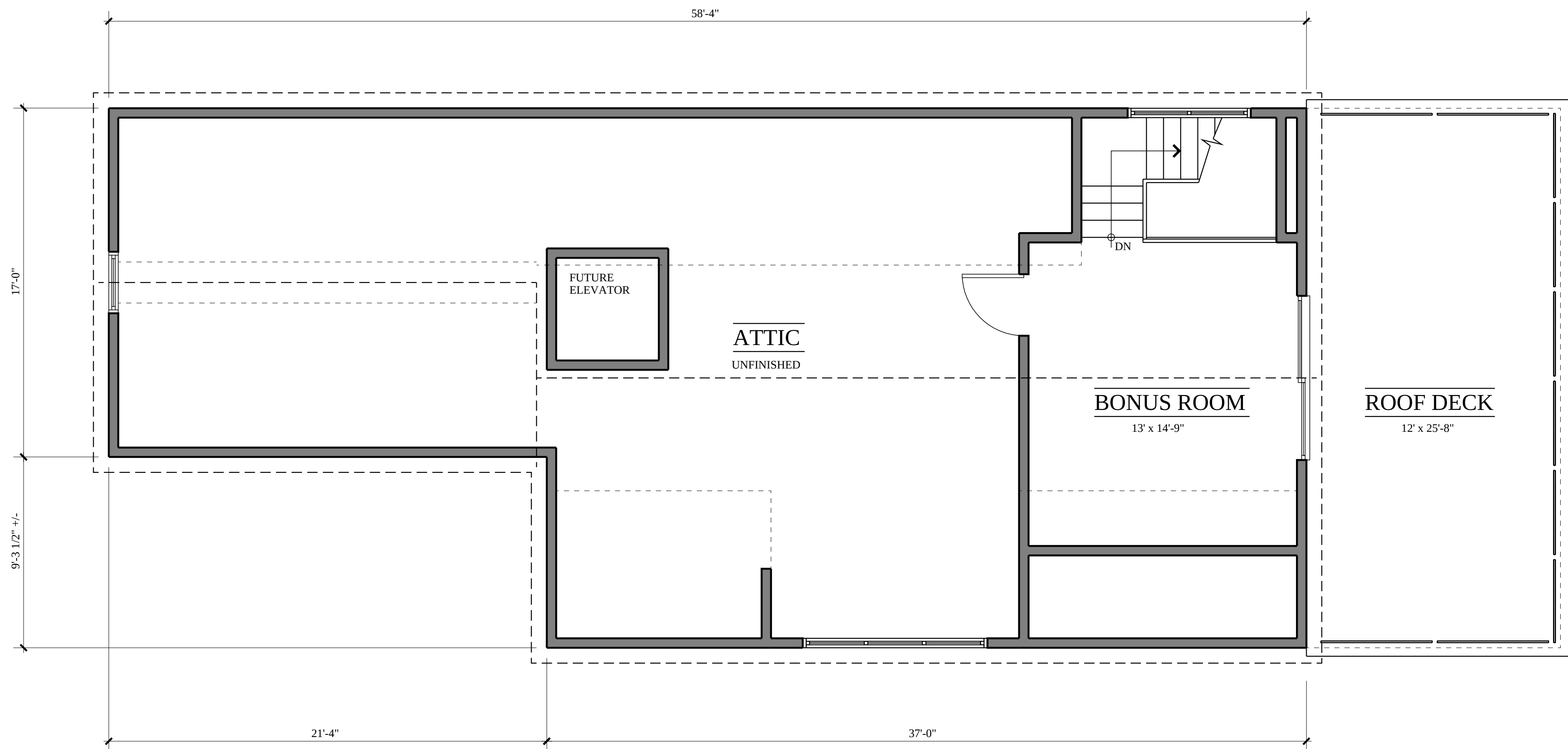
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Seal:

Drawing Number:
A201

1/4" = 1'-0"

1,660.50 SQ. FT. SECOND FLOOR BELOW
50% OF FLOOR BELOW = 830.25 SQ. FT
60% OF FLOOR BELOW W/ DORMERS= 996.30 SQ. FT



Seal:	Drawing Number: A250	Revisions: 3-21-2025 4-11-2025 5-6-2025 5-10-2025 6-18-2025 7-7-2025 7-27-2025 8-10-2025
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NEWHAMPS RESIDENCE 5 GREGORY COURT NORWALK, CT			
Date:	3/20/2025	Drawn By:	JRC
Scale:	AS NOTED		
Job No:			
		Drawing Title:	



EAST ELEVATION

1/4" = 1'-0"



NORTH ELEVATION

1/4" = 1'-0"

NEWHAMMS RESIDENCE
5 GREGORY COURT
NORWALK, CT

Date:	3/20/2025	Drawn By:	JRC	Drawing Title:
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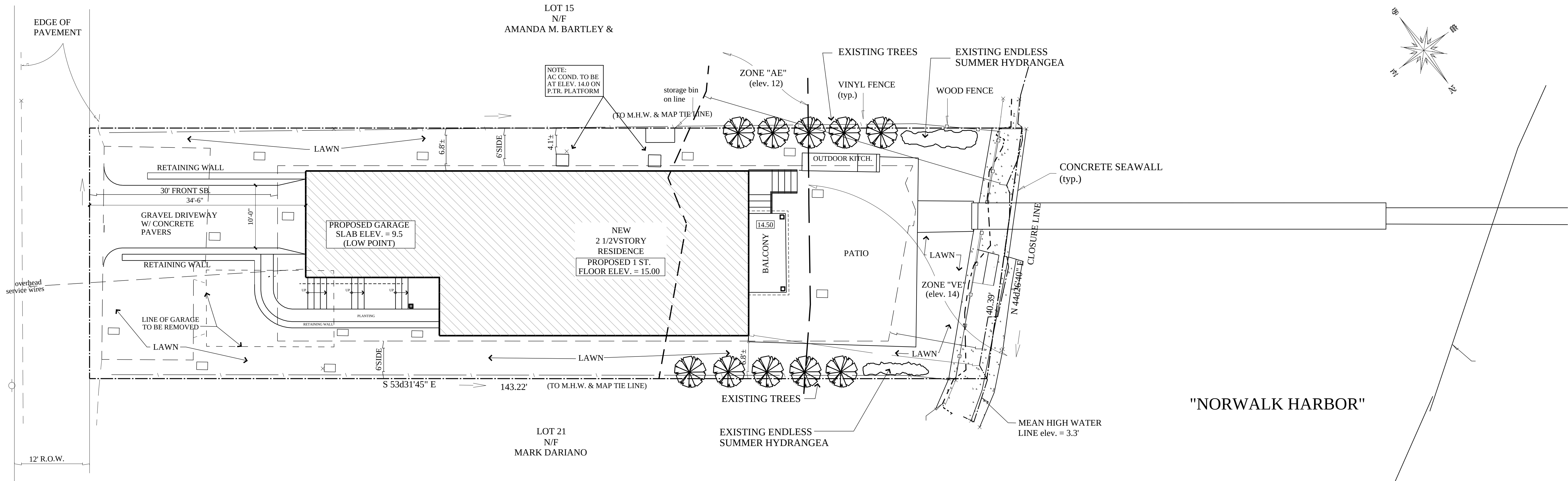
Revisions:
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7-16-2025
7-27-2025
8-10-2025

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Drawing Number:

A301

Seal:



SITE PLAN

SCALE: 1/8" = 1'-0"

NEWHAM'S RESIDENCE
5 GREGORY COURT
NORWALK, CT

Date: 3/20/2025	Drawn By: JRC	Drawing Title: SITE PLAN
Scale: AS NOTED		
Job No:		

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8-27-2025

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Drawing Number:

SP100

OPERATION AND MAINTENANCE

PLAN REPORT

FOR

5 GREGORY COURT

NORWALK, CONNECTICUT

GE #25-5844

JULY 1, 2025



GRUMMAN ENGINEERING, LLC
CONSULTING CIVIL ENGINEERS
20 KNIGHT STREET
NORWALK, CONNECTICUT 06851
(203) 853-3833
FAX 286-5057

Stormwater Management Practices Maintenance Declaration

The Owner(s) of this property located at (5 Gregory Court) shall be solely responsible for the installation, maintenance and repair of the stormwater management practice(s), drainage easements and associated landscaping identified in the Approved Stormwater Management System Plan.

No alterations or changes to the approved stormwater management practice(s) shall be permitted unless they are deemed to comply with the original design and are approved in writing by the City of Norwalk.

The Owner(s) shall retain a qualified inspector (as approved by the City of Norwalk) to operate and ensure the maintenance of the stormwater management practice(s) identified herein in accordance with the Operations and Maintenance Plan.

The Owner(s) must maintain all records (logs, invoices, reports, data, etc) and have them readily available for inspection at all times. Inspection documentation must be maintained as frequently as required in Operation and Maintenance Plan.

The City of Norwalk or its designee is authorized to access the property as necessary to conduct inspections of the stormwater management practice(s) or drainage easements to ascertain compliance with the intent of the stormwater management practice(s).

The Owner(s) hereby conveys to the City of Norwalk an easement over, on and in the property for the purpose of access to the stormwater management practices(s) for the inspection, maintenance and repair thereof, should the Owner(s) fail to properly inspect, maintain and repair the practice(s). The City of Norwalk's execution of any repair or maintenance does not alter the Owner(s) responsibility to maintain in the future.

The Owner(s) agrees that 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 stormwater management practice(s). The information shall accompany the first deed transfer and include the Operation And Maintenance Plan Report and survey depicting stormwater management practice(s). The transfer of this information shall also be required with any subsequent sale, transfer or lease of the Property.

The parties whose signatures appear below hereby represent and warrant that they have the authority and capacity to sign this declaration and bind the respective parties hereto.

IN WITNESS WHEREOF, the "Owner(s)" have executed this Declaration on this _____ day of _____, 20____.

By: _____
[Owner(s)]

By: _____
[Owner(s)]

STATE OF CONNECTICUT)
) ss: Norwalk
COUNTY OF FAIRFIELD)

The foregoing instrument was acknowledged before me on this _____ day of _____, 20____, by _____, the
[Owner(s)]

"Owner(s)" of _____.
[Address]

Notary Public

My Commission Expires On:

WHEN RECORDED RETURN COPIY TO:
[All of the following departments involved in approval:
Building Department, Planning & Zoning, Inland Wetlands Agency

Exhibit A

Operations and Maintenance Plan

5 Gregory Court

7-1-25

Scope:

The purpose of the Operations and Maintenance Plan is to ensure that the existing and proposed stormwater components installed at (5 Gregory Court) 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. **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.
2. **Drainage Outfalls/Splash Pads/Scour Holes/Level Spreaders:**
 - a. All outfalls shall be completely cleaned of accumulated debris and sediments at the completion of construction. Any repairs to outlet protection material (rip rap) shall be performed.
 - b. For the first year, outfalls shall be inspected on a quarterly basis.

- c. Any accumulated debris shall be removed and any repairs made to the outfalls 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 erosion shall be promptly repaired and the cause of the erosion shall be identified and corrected.
- g. Any additional maintenance required per the manufacturer's specifications shall also be completed.

3. 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.

4. 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 3)

5 Gregory Court

7-1-25

Type of Inspection: ☐ Spring ☐ Fall ☐ Other

Inspector's Name: _____ Date of inspection: _____

Affiliation: _____ Phone : _____

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:

Drainage Outfalls/Splash Pads/Scour Holes/Level Spreaders:

- Have all drainage outlets been cleared of debris? ☐ Yes ☐ No
☐ N/A
- Have all outlet protections been inspected/repared? ☐ Yes ☐ No
☐ N/A
- Have all erosion issues been repaired? ☐ Yes ☐ No
☐ N/A

Notes:

Operations and Maintenance Log (Page 2 of 3)

*5 Gregory Court
7-1-25*

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:

Operations and Maintenance Log (Page 3 of 3)

5 Gregory Court

7-1-25

Please make additional notes/observations and particular concerns below. Also record any additional maintenance that has been performed:

Signature of Inspector:

Date:

DRAINAGE ANALYSIS

PREPARED FOR

PROPOSED SITE IMPROVEMENTS

LOCATED AT

5 GREGORY COURT

NORWALK, CONNECTICUT

GE #25-5844

JULY 1, 2025



GRUMMAN ENGINEERING, LLC

CONSULTING CIVIL ENGINEERS

20 KNIGHT STREET

NORWALK, CONNECTICUT 06851

(203) 853-3833

FAX 286-5057

NARRATIVE:

The subject of this report is a 0.1339-acre parcel located at 5 Gregory Court. The purpose of the report is to determine the change in stormwater runoff resulting from a proposed building addition, and to provide mitigation in accordance with City of Norwalk standards.

EXISTING CONDITIONS:

This site which is situated on the west side of Gregory Court currently contains a single-family dwelling with detached garage, partial paver partial crushed stone driveway. This parcel is adjacent to the Norwalk Harbor of the west side. The site is located within the FEMA AE(12) and VE(14) flood zones.

The majority of the site is relatively level with grade from the rear of the site to the street of less than 1%. The existing dwelling is served by municipal water and sewer service.

The soils at this location are identified in the NRCS Web Soil Survey as being Hinckley-Urban land complex, HSG 'A'.

PROPOSED CONDITIONS:

The proposal for this site is to remove the existing detached garage, existing driveway and walks and to construct a garage addition onto the eastern end of the existing structure. A new reconfigured paved driveway is proposed with retaining walls along either side to allow grading to the raised garage floor. There will be minor regrading at the front of the lot in order to construct the driveway.

There will be no changes to the existing runoff patterns.

PROPOSED DRAINAGE:

The site was analyzed for existing and proposed conditions peak runoff which results in a decrease after improvements are completed, thus only the water quality volume required for the site has been proposed.

The following computations utilize the Hydrocad computer software to determine the pre and post developed runoff for the 2, 10-, 25-, 50- & 100-Year storm events. Rainfall data was taken from the NOAA Atlas 14 table for this location.

COMPUTATIONS:

Existing Conditions:

Dwelling -	1,152 s.f.	CN-98
Driveway -	901 s.f.	CN-98
Patio -	791 s.f.	CN-98
Seawall -	202 s.f.	CN-98
Dock/Walk -	67 s.f.	CN-98
Walk/Steps -	226 s.f.	CN-98
Bilco -	28 s.f.	CN-98
Garage -	240 s.f.	CN-98
Storage Bin -	10 s.f.	CN-98
Refuse Bin -	15 s.f.	CN-98
Pervious -	2,200 s.f.	CN-61
Total -	5,832 s.f.	

Proposed Conditions:

Dwelling -	1,703 s.f.	CN-98
Driveway -	323 s.f.	CN-98
Seawall -	202 s.f.	CN-98
Dock Walk -	67 s.f.	CN-98
Patio -	771 s.f.	CN-98
Walk -	164 s.f.	CN-98
Walls -	71 s.f.	CN-98
Storage Bin -	10 s.f.	CN-98
Outdoor Kitchen -	38 s.f.	CN-98
Pervious -	2,483 s.f.	CN-61
Total -	5,201 s.f.	

Groundwater Recharge Volume (GRV)

$$GRV = F \times I$$

$$F = 0.35'' \text{ (HSG 'B')}$$

$$I = \text{New Impervious Area}$$

$$GRV = (0.35''/12) (3,086 \text{ s.f.})$$

$$GRV = 0.0 \text{ c.f.}$$

There is a decrease in impervious surface – no GRV required.

Water Quality Volume (WQV) -

$$WQV = \frac{(1.3'') \times (R) \times (A)}{12}$$

$$R = 0.05 + 0.009I$$

$$I = \% \text{ Impervious (57.4\%)}$$

$$**A = \text{Impervious Area}$$

$$WQV = \frac{(1.3'') (0.5666) (5,832 \text{ s.f.})}{12}$$

$$WQV = 358 \text{ c.f.,}$$

SUMMARY

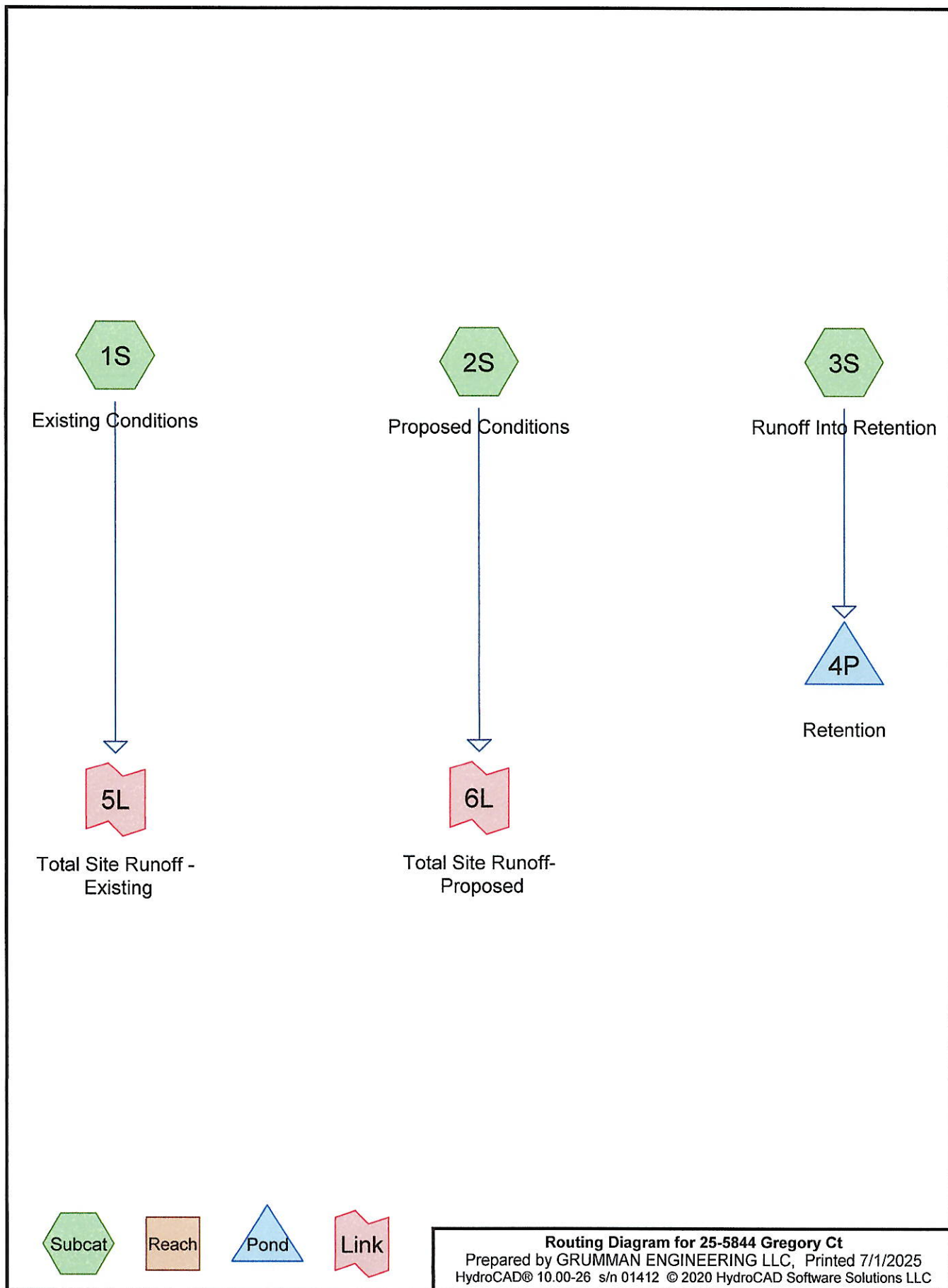
Storm Event	Flow/Volume	Existing	Proposed	Δ	$\%\Delta$
2-Year	Q (c.f.s.)	0.21	0.14	- 0.07	-33.3
	V (c.f.)	656	476	- 180	- 27.4
10-Year	Q (c.f.s.)	0.44	0.34	- 0.10	- 22.7
	V (c.f.)	1,365	1,073	- 283	- 20.7
25-Year	Q (c.f.s.)	0.60	0.48	- 0.12	- 20.0
	V (c.f.)	1,844	1,490	- 354	- 19.2
50-Year	Q (c.f.s.)	0.71	0.59	- 0.12	- 16.9
	V (c.f.)	2,215	1,817	- 398	- 17.9
100-Year	Q (c.f.s.)	0.85	0.70	- 0.15	- 17.6
	V (c.f.)	2,620	2,177	- 443	- 16.9

CONCLUSIONS:

The proposed improvements will decrease the impervious surface that are on the property, thus the peak runoff will also decrease, therefore no on-site retention is required. However, to provide storage for the water Quality Volume - (6) 24" precast galleries have been proposed. This system will receive runoff from a portion of the proposed roof (392 s.f. Min.).

The total storage volume provided is 372 c.f.

There will be no adverse impacts on adjacent or City property as a result of the proposed improvements.



25-5844 Gregory Ct

Type III 24-hr 2-Year Rainfall=3.48"

Prepared by GRUMMAN ENGINEERING LLC

Printed 7/1/2025

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Page 2

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Conditions Runoff Area=5,832 sf 62.28% Impervious Runoff Depth>1.35"
Tc=5.0 min CN=76 Runoff=0.21 cfs 656 cf

Subcatchment 2S: Proposed Conditions Runoff Area=5,440 sf 54.36% Impervious Runoff Depth>1.05"
Tc=5.0 min CN=71 Runoff=0.14 cfs 476 cf

Subcatchment 3S: Runoff Into Retention Runoff Area=392 sf 100.00% Impervious Runoff Depth>3.24"
Tc=5.0 min CN=98 Runoff=0.03 cfs 106 cf

Pond 4P: Retention Peak Elev=4.08' Storage=8 cf Inflow=0.03 cfs 106 cf
Discarded=0.02 cfs 106 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 106 cf

Link 5L: Total Site Runoff - Existing Inflow=0.21 cfs 656 cf
Primary=0.21 cfs 656 cf

Link 6L: Total Site Runoff- Proposed Inflow=0.14 cfs 476 cf
Primary=0.14 cfs 476 cf

Total Runoff Area = 11,664 sf Runoff Volume = 1,238 cf Average Runoff Depth = 1.27"
40.15% Pervious = 4,683 sf 59.85% Impervious = 6,981 sf

25-5844 Gregory Ct

Type III 24-hr 10-Year Rainfall=5.33"

Prepared by GRUMMAN ENGINEERING LLC

Printed 7/1/2025

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Page 3

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Conditions Runoff Area=5,832 sf 62.28% Impervious Runoff Depth>2.81"
Tc=5.0 min CN=76 Runoff=0.44 cfs 1,365 cf

Subcatchment 2S: Proposed Conditions Runoff Area=5,440 sf 54.36% Impervious Runoff Depth>2.37"
Tc=5.0 min CN=71 Runoff=0.34 cfs 1,073 cf

Subcatchment 3S: Runoff Into Retention Runoff Area=392 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98 Runoff=0.05 cfs 166 cf

Pond 4P: Retention Peak Elev=4.21' Storage=21 cf Inflow=0.05 cfs 166 cf
Discarded=0.02 cfs 166 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 166 cf

Link 5L: Total Site Runoff - Existing Inflow=0.44 cfs 1,365 cf
Primary=0.44 cfs 1,365 cf

Link 6L: Total Site Runoff- Proposed Inflow=0.34 cfs 1,073 cf
Primary=0.34 cfs 1,073 cf

Total Runoff Area = 11,664 sf Runoff Volume = 2,604 cf Average Runoff Depth = 2.68"
40.15% Pervious = 4,683 sf 59.85% Impervious = 6,981 sf

25-5844 Gregory Ct

Type III 24-hr 25-Year Rainfall=6.48"

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Printed 7/1/2025

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Page 4

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Conditions Runoff Area=5,832 sf 62.28% Impervious Runoff Depth>3.80"
Tc=5.0 min CN=76 Runoff=0.60 cfs 1,844 cf

Subcatchment 2S: Proposed Conditions Runoff Area=5,440 sf 54.36% Impervious Runoff Depth>3.29"
Tc=5.0 min CN=71 Runoff=0.48 cfs 1,490 cf

Subcatchment 3S: Runoff Into Retention Runoff Area=392 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98 Runoff=0.06 cfs 204 cf

Pond 4P: Retention Peak Elev=4.32' Storage=32 cf Inflow=0.06 cfs 204 cf
Discarded=0.02 cfs 204 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 204 cf

Link 5L: Total Site Runoff - Existing Inflow=0.60 cfs 1,844 cf
Primary=0.60 cfs 1,844 cf

Link 6L: Total Site Runoff- Proposed Inflow=0.48 cfs 1,490 cf
Primary=0.48 cfs 1,490 cf

Total Runoff Area = 11,664 sf Runoff Volume = 3,539 cf Average Runoff Depth = 3.64"
40.15% Pervious = 4,683 sf 59.85% Impervious = 6,981 sf

25-5844 Gregory Ct

Type III 24-hr 50-Year Rainfall=7.34"

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Printed 7/1/2025

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Conditions Runoff Area=5,832 sf 62.28% Impervious Runoff Depth>4.56"
Tc=5.0 min CN=76 Runoff=0.71 cfs 2,215 cf

Subcatchment 2S: Proposed Conditions Runoff Area=5,440 sf 54.36% Impervious Runoff Depth>4.01"
Tc=5.0 min CN=71 Runoff=0.59 cfs 1,817 cf

Subcatchment 3S: Runoff Into Retention Runoff Area=392 sf 100.00% Impervious Runoff Depth>7.10"
Tc=5.0 min CN=98 Runoff=0.07 cfs 232 cf

Pond 4P: Retention Peak Elev=4.41' Storage=41 cf Inflow=0.07 cfs 232 cf
Discarded=0.02 cfs 232 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 232 cf

Link 5L: Total Site Runoff - Existing Inflow=0.71 cfs 2,215 cf
Primary=0.71 cfs 2,215 cf

Link 6L: Total Site Runoff- Proposed Inflow=0.59 cfs 1,817 cf
Primary=0.59 cfs 1,817 cf

Total Runoff Area = 11,664 sf Runoff Volume = 4,264 cf Average Runoff Depth = 4.39"
40.15% Pervious = 4,683 sf 59.85% Impervious = 6,981 sf

25-5844 Gregory Ct

Type III 24-hr 100-Year Rainfall=8.26"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Conditions Runoff Area=5,832 sf 62.28% Impervious Runoff Depth>5.39"
Tc=5.0 min CN=76 Runoff=0.85 cfs 2,620 cf

Subcatchment 2S: Proposed Conditions Runoff Area=5,440 sf 54.36% Impervious Runoff Depth>4.80"
Tc=5.0 min CN=71 Runoff=0.70 cfs 2,177 cf

Subcatchment 3S: Runoff Into Retention Runoff Area=392 sf 100.00% Impervious Runoff Depth>8.02"
Tc=5.0 min CN=98 Runoff=0.07 cfs 262 cf

Pond 4P: Retention Peak Elev=4.51' Storage=52 cf Inflow=0.07 cfs 262 cf
Discarded=0.02 cfs 262 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 262 cf

Link 5L: Total Site Runoff - Existing Inflow=0.85 cfs 2,620 cf
Primary=0.85 cfs 2,620 cf

Link 6L: Total Site Runoff- Proposed Inflow=0.70 cfs 2,177 cf
Primary=0.70 cfs 2,177 cf

Total Runoff Area = 11,664 sf Runoff Volume = 5,059 cf Average Runoff Depth = 5.21"
40.15% Pervious = 4,683 sf 59.85% Impervious = 6,981 sf

Summary for Subcatchment 1S: Existing Conditions

Runoff = 0.60 cfs @ 12.08 hrs, Volume= 1,844 cf, Depth> 3.80"

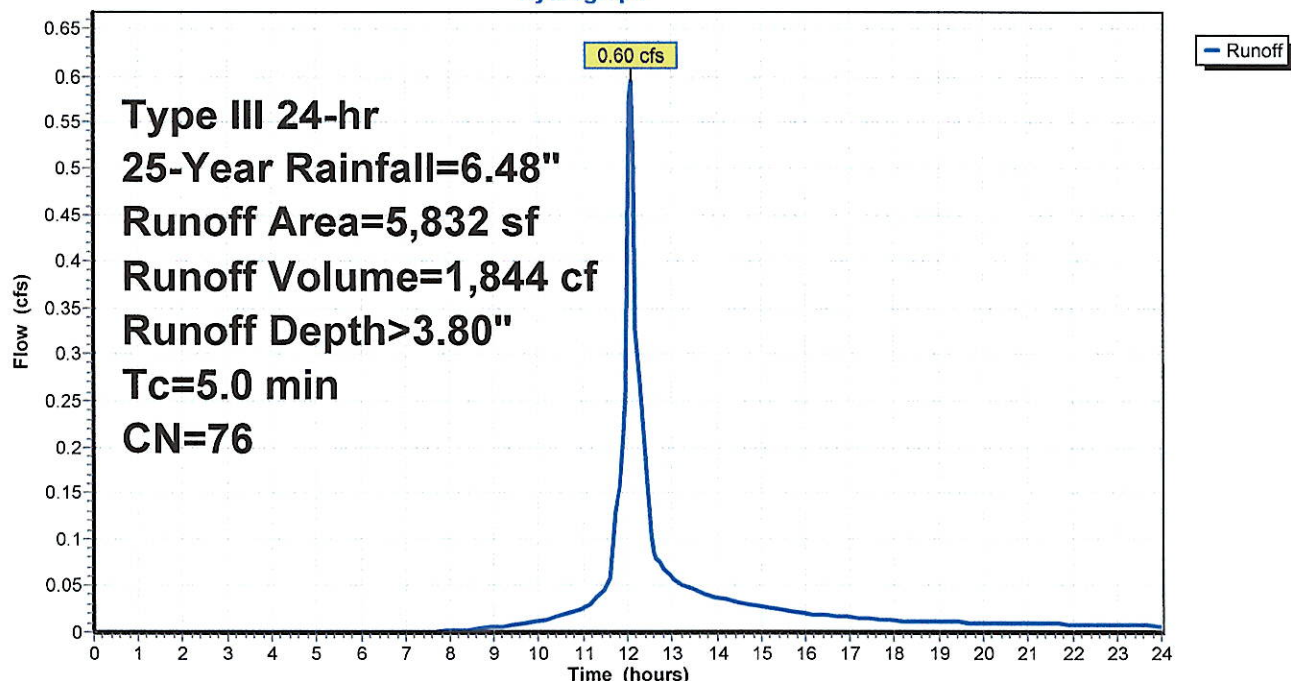
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	1,152	98	Dwelling
*	791	98	Patio
*	202	98	Seawall
*	67	98	Dock walkway
*	226	98	Ex. Walk/Stepping Stones
*	28	98	Bilco
*	240	98	Detached Garage
*	901	98	Driveway
*	25	98	Storage/Refuse Bins
	2,200	39	>75% Grass cover, Good, HSG A
	5,832	76	Weighted Average
	2,200		37.72% Pervious Area
	3,632		62.28% Impervious Area

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

Subcatchment 1S: Existing Conditions

Hydrograph



Summary for Subcatchment 2S: Proposed Conditions

Runoff = 0.48 cfs @ 12.08 hrs, Volume= 1,490 cf, Depth> 3.29"

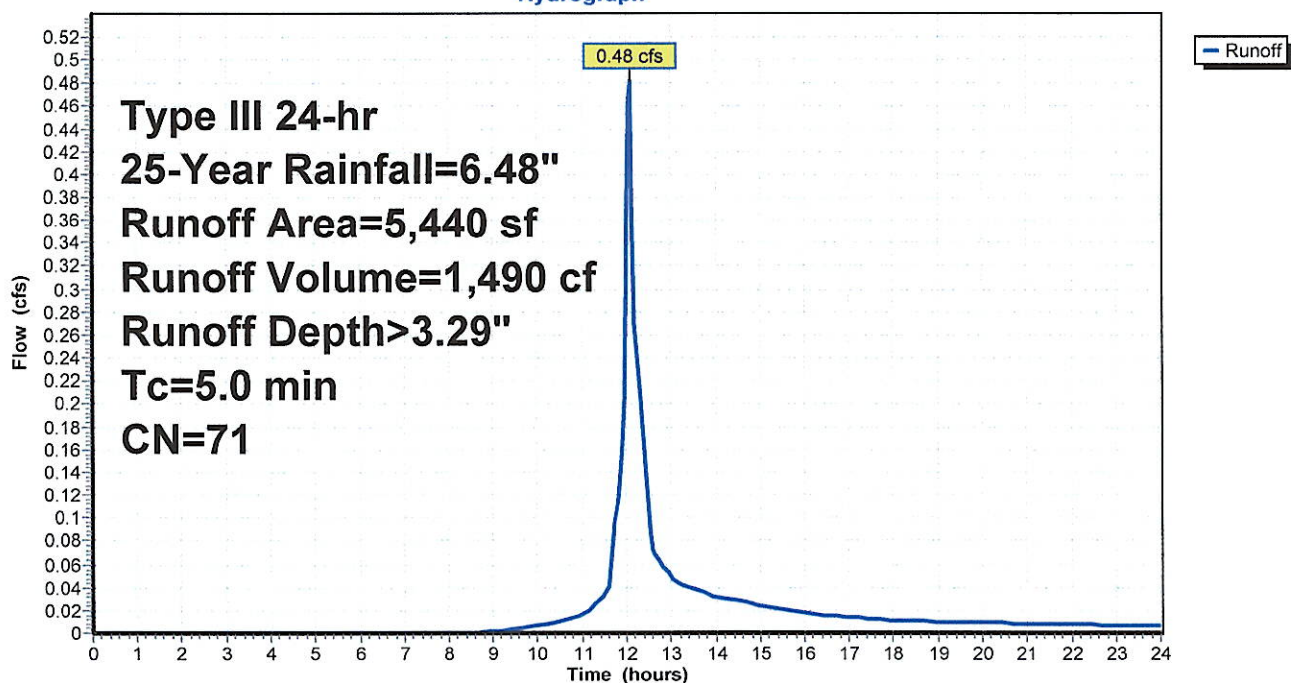
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	Area (sf)	CN	Description
*	1,311	98	Dwelling
*	771	98	Patio
*	202	98	Seawall
*	67	98	Dock walkway
*	323	98	Paved Driveway
*	164	98	Walk
*	71	98	Proposed Walls
*	10	98	Storage Bin
*	38	98	Outdoor Kitchen
	2,483	39	>75% Grass cover, Good, HSG A
	5,440	71	Weighted Average
	2,483		45.64% Pervious Area
	2,957		54.36% Impervious Area

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

Subcatchment 2S: Proposed Conditions

Hydrograph



Summary for Subcatchment 3S: Runoff Into Retention

Runoff = 0.06 cfs @ 12.07 hrs, Volume= 204 cf, Depth> 6.24"

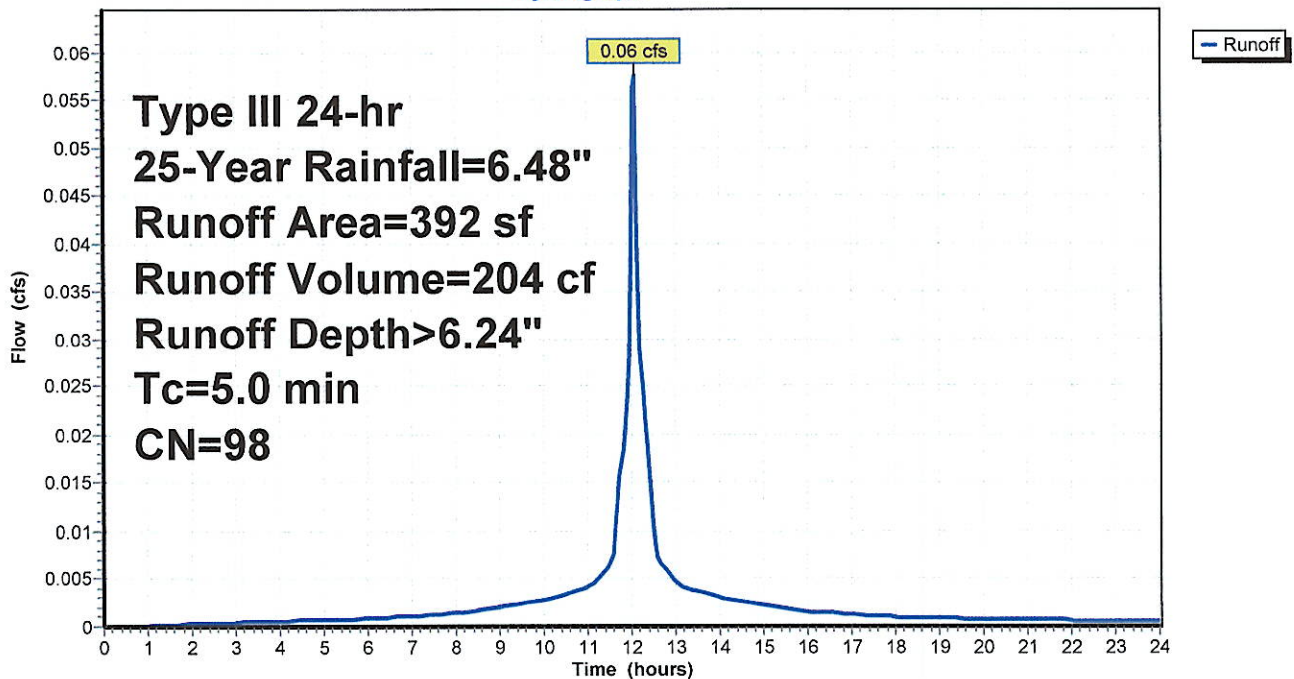
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.48"

Area (sf)	CN	Description
* 392	98	Roof
392		100.00% Impervious Area

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

Subcatchment 3S: Runoff Into Retention

Hydrograph



Summary for Pond 4P: Retention

Inflow Area = 392 sf, 100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
 Inflow = 0.06 cfs @ 12.07 hrs, Volume= 204 cf
 Outflow = 0.02 cfs @ 11.85 hrs, Volume= 204 cf, Atten= 70%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 11.85 hrs, Volume= 204 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 4.32' @ 12.37 hrs Surf.Area= 252 sf Storage= 32 cf

Plug-Flow detention time= 9.0 min calculated for 203 cf (100% of inflow)

Center-of-Mass det. time= 8.7 min (751.5 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	4.00'	100 cf	14.00'W x 18.00'L x 2.50'H Field A 630 cf Overall - 380 cf Embedded = 250 cf x 40.0% Voids
#2A	4.50'	272 cf	Concrete Galley 4x8x2 x 6 Inside #1 Inside= 42.0"W x 21.0"H => 6.04 sf x 7.50'L = 45.3 cf Outside= 48.0"W x 24.0"H => 7.92 sf x 8.00'L = 63.4 cf 6 Chambers in 3 Rows
		372 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	4.00'	3.000 in/hr Exfiltration over Horizontal area
#2	Primary	6.50'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 11.85 hrs HW=4.03' (Free Discharge)

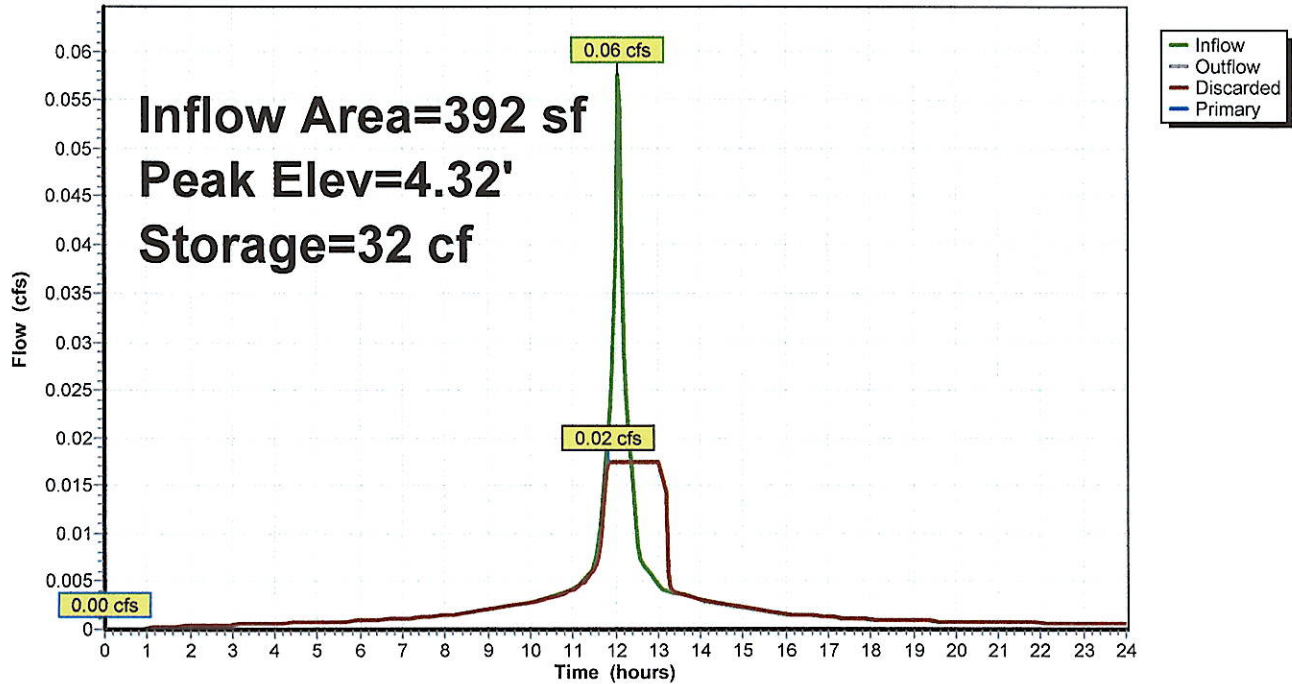
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=4.00' (Free Discharge)

↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: Retention

Hydrograph



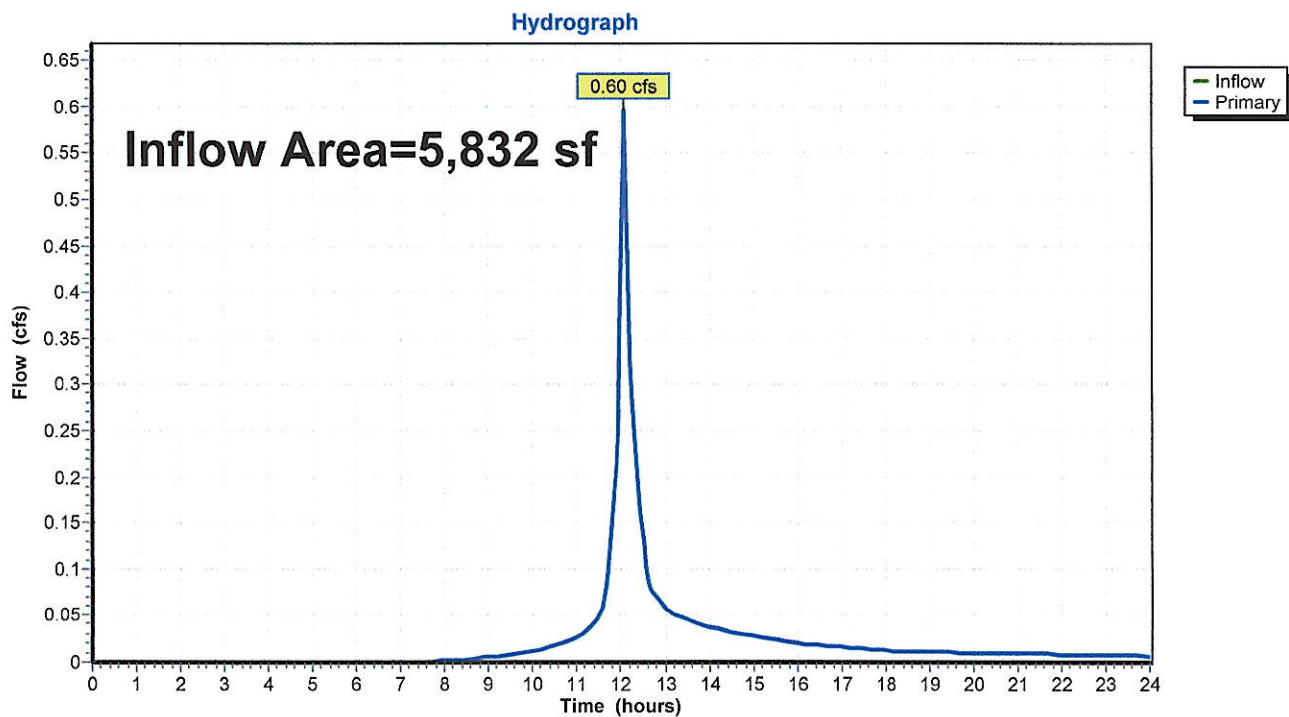
Stage-Area-Storage for Pond 4P: Retention

Elevation (feet)	Horizontal (sq-ft)	Storage (cubic-feet)
4.00	252	0
4.05	252	5
4.10	252	10
4.15	252	15
4.20	252	20
4.25	252	25
4.30	252	30
4.35	252	35
4.40	252	40
4.45	252	45
4.50	252	50
4.55	252	60
4.60	252	69
4.65	252	78
4.70	252	87
4.75	252	96
4.80	252	105
4.85	252	114
4.90	252	123
4.95	252	132
5.00	252	142
5.05	252	151
5.10	252	160
5.15	252	169
5.20	252	178
5.25	252	187
5.30	252	196
5.35	252	205
5.40	252	214
5.45	252	224
5.50	252	233
5.55	252	242
5.60	252	251
5.65	252	260
5.70	252	269
5.75	252	278
5.80	252	287
5.85	252	296
5.90	252	306
5.95	252	315
6.00	252	324
6.05	252	333
6.10	252	342
6.15	252	350
6.20	252	358
6.25	252	366
6.30	252	367
6.35	252	368
6.40	252	369
6.45	252	370
6.50	252	372

Summary for Link 5L: Total Site Runoff - Existing

Inflow Area = 5,832 sf, 62.28% Impervious, Inflow Depth > 3.80" for 25-Year event
Inflow = 0.60 cfs @ 12.08 hrs, Volume= 1,844 cf
Primary = 0.60 cfs @ 12.08 hrs, Volume= 1,844 cf, Atten= 0%, Lag= 0.0 min

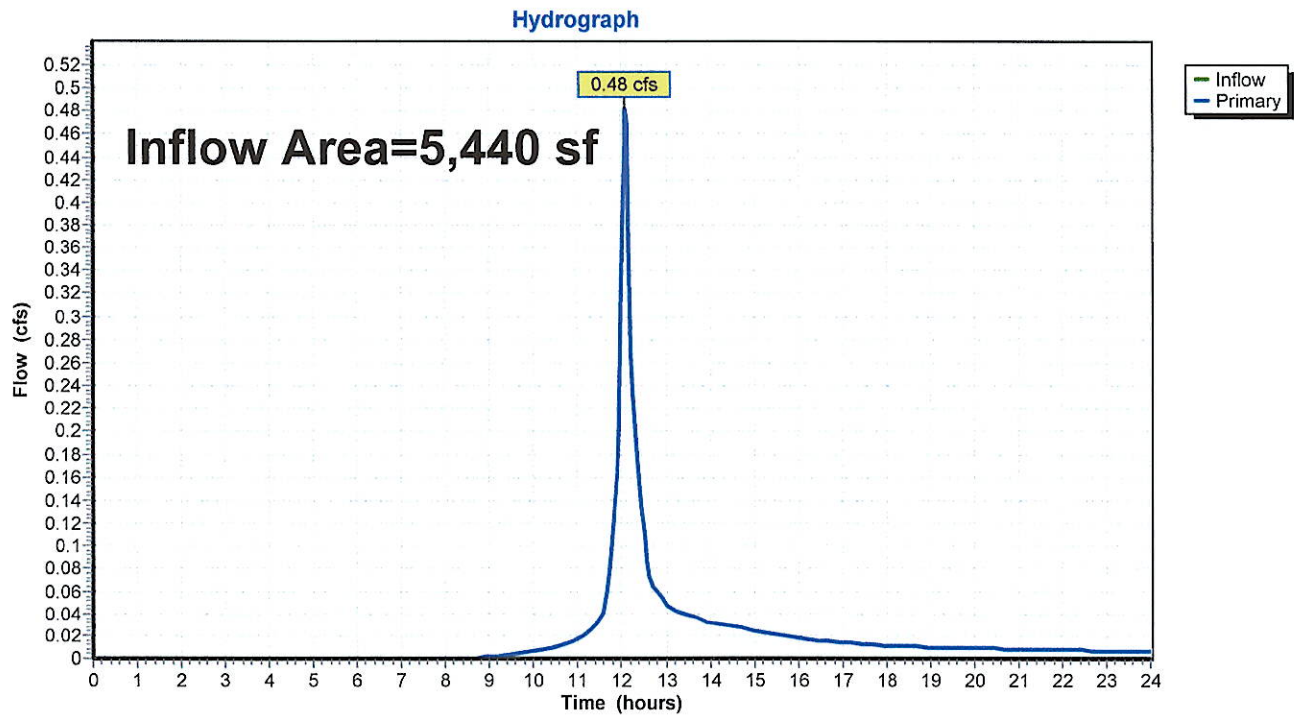
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 5L: Total Site Runoff - Existing

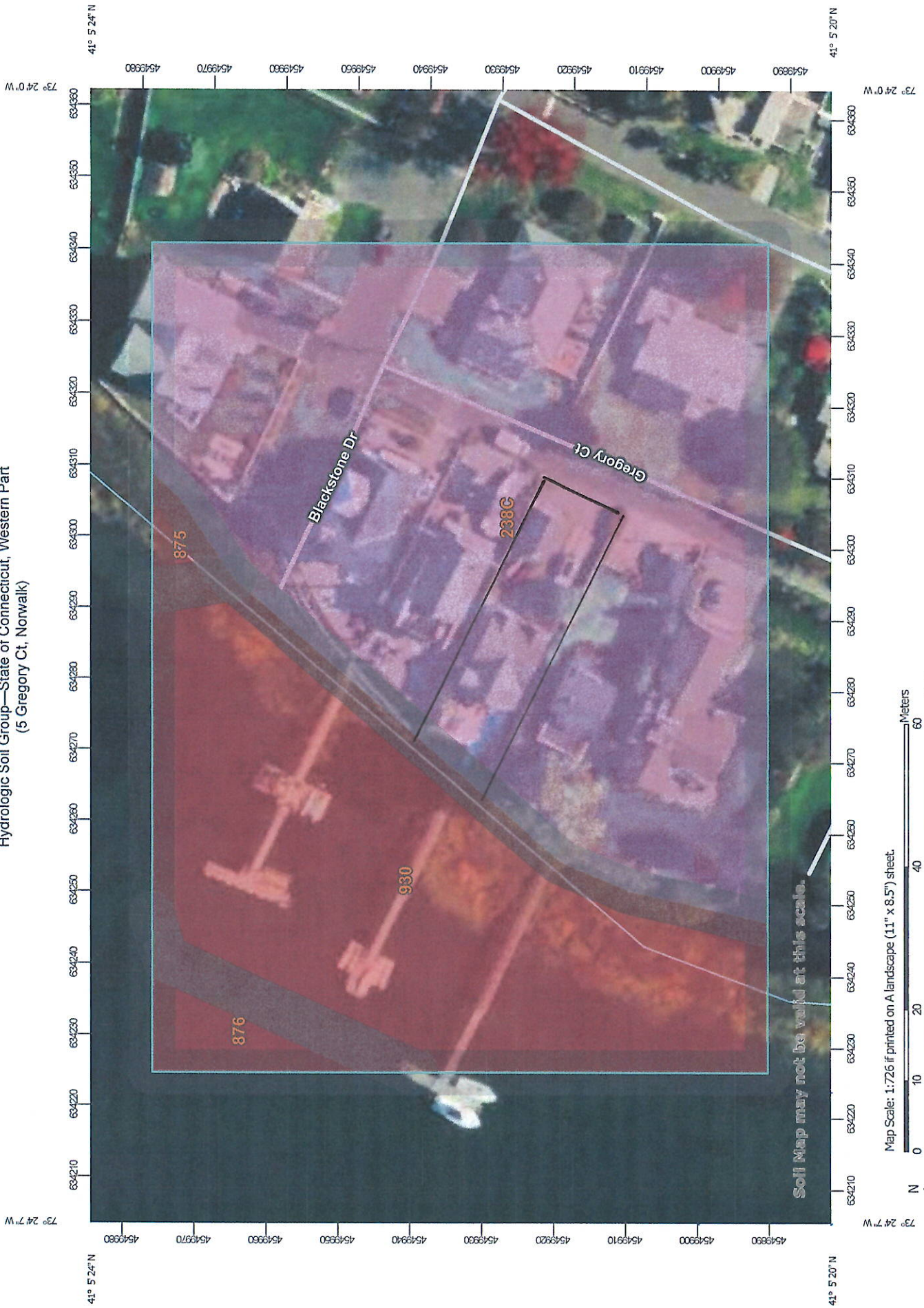
Summary for Link 6L: Total Site Runoff- Proposed

Inflow Area = 5,440 sf, 54.36% Impervious, Inflow Depth > 3.29" for 25-Year event
Inflow = 0.48 cfs @ 12.08 hrs, Volume= 1,490 cf
Primary = 0.48 cfs @ 12.08 hrs, Volume= 1,490 cf, Atten= 0%, Lag= 0.0 min

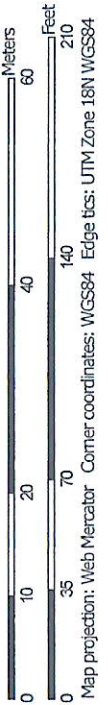
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: Total Site Runoff- Proposed

Hydrologic Soil Group—State of Connecticut, Western Part (5 Gregory Ct, Norwalk)



Map Scale: 1:726 if printed on A landscape (11" x 8.5") sheet.



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

Water Features

Streams and Canals

Transportation

+++ Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

C

C/D

D

Not rated or not available

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
238C	Hinckley-Urban land complex, 3 to 15 percent slopes	A	1.5	61.4%
875	Pishagqua mucky silt loam, intertidal	D	0.0	1.0%
876	Pishagqua mucky silt loam, subtidal	D	0.1	3.1%
930	Anguilla sand, intertidal	D	0.8	34.4%
Totals for Area of Interest			2.5	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



NOAA Atlas 14, Volume 10, Version 3
Location name: Norwalk, Connecticut, USA*
Latitude: 41.0895°, Longitude: -73.4012°
Elevation: 8 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

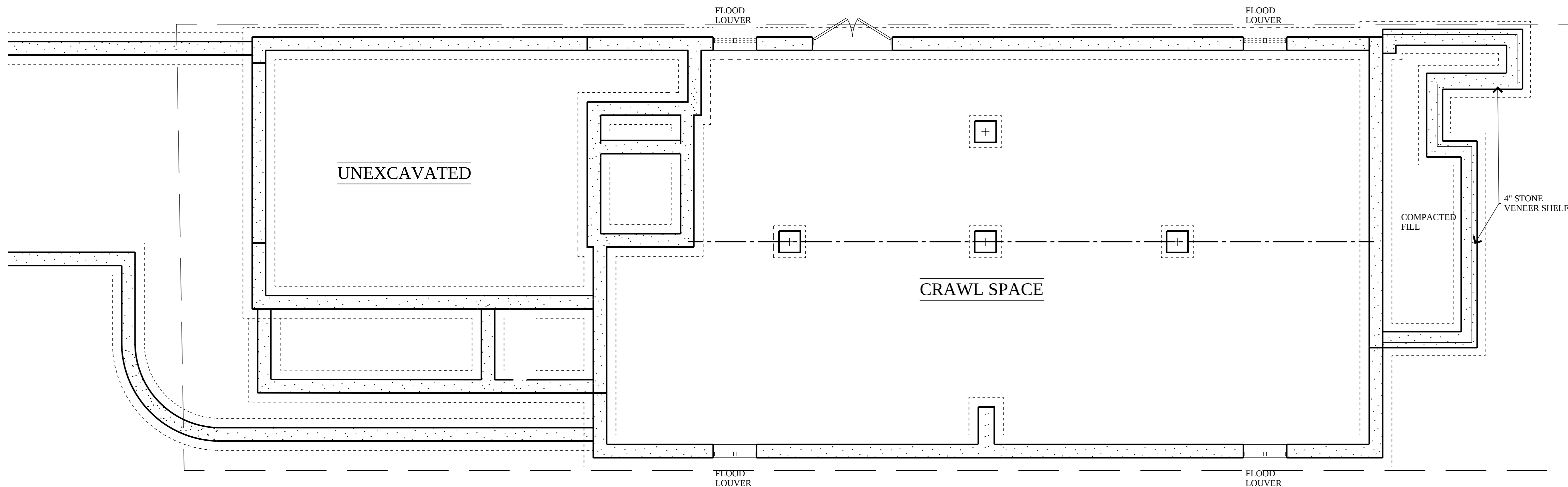
Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerals](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.365 (0.294-0.453)	0.425 (0.342-0.528)	0.524 (0.420-0.653)	0.606 (0.482-0.760)	0.719 (0.550-0.942)	0.805 (0.601-1.08)	0.893 (0.642-1.24)	0.988 (0.672-1.42)	1.12 (0.728-1.66)	1.22 (0.773-1.73)
10-min	0.517 (0.416-0.641)	0.603 (0.485-0.748)	0.743 (0.596-0.927)	0.859 (0.683-1.08)	1.02 (0.779-1.33)	1.14 (0.851-1.53)	1.26 (0.909-1.76)	1.40 (0.952-2.00)	1.58 (1.03-2.36)	1.73 (1.10-2.36)
15-min	0.608 (0.490-0.755)	0.709 (0.570-0.881)	0.874 (0.701-1.09)	1.01 (0.804-1.27)	1.20 (0.917-1.57)	1.34 (1.00-1.80)	1.49 (1.07-2.07)	1.65 (1.12-2.36)	1.86 (1.21-2.77)	2.04 (1.29-3.00)
30-min	0.846 (0.681-1.05)	0.987 (0.793-1.22)	1.22 (0.975-1.52)	1.41 (1.12-1.77)	1.67 (1.28-2.19)	1.87 (1.40-2.50)	2.08 (1.49-2.87)	2.29 (1.56-3.28)	2.58 (1.68-3.83)	2.80 (1.77-4.20)
60-min	1.08 (0.872-1.34)	1.26 (1.02-1.57)	1.56 (1.25-1.94)	1.81 (1.44-2.27)	2.14 (1.64-2.80)	2.40 (1.79-3.21)	2.66 (1.91-3.68)	2.93 (2.00-4.20)	3.29 (2.14-4.89)	3.56 (2.26-5.30)
2-hr	1.38 (1.12-1.70)	1.64 (1.33-2.02)	2.06 (1.66-2.55)	2.41 (1.93-3.00)	2.89 (2.23-3.77)	3.26 (2.44-4.34)	3.63 (2.63-5.03)	4.05 (2.76-5.76)	4.63 (3.02-6.85)	5.10 (3.24-7.70)
3-hr	1.58 (1.29-1.94)	1.89 (1.54-2.32)	2.40 (1.94-2.96)	2.82 (2.27-3.50)	3.40 (2.63-4.42)	3.83 (2.89-5.10)	4.29 (3.12-5.94)	4.80 (3.29-6.82)	5.54 (3.62-8.16)	6.14 (3.91-9.40)
6-hr	1.99 (1.63-2.43)	2.40 (1.96-2.92)	3.06 (2.49-3.74)	3.60 (2.91-4.44)	4.36 (3.39-5.64)	4.92 (3.74-6.52)	5.52 (4.05-7.62)	6.21 (4.26-8.75)	7.22 (4.73-10.6)	8.06 (5.14-12.9)
12-hr	2.46 (2.03-2.98)	2.97 (2.44-3.60)	3.79 (3.11-4.61)	4.47 (3.64-5.47)	5.40 (4.23-6.95)	6.10 (4.66-8.04)	6.85 (5.06-9.40)	7.72 (5.32-10.8)	8.99 (5.92-13.1)	10.1 (6.44-15.4)
24-hr	2.86 (2.38-3.44)	3.48 (2.89-4.19)	4.49 (3.71-5.42)	5.33 (4.37-6.48)	6.48 (5.11-8.28)	7.34 (5.65-9.61)	8.26 (6.14-11.3)	9.34 (6.46-13.0)	11.0 (7.24-15.8)	12.3 (7.92-18.1)
2-day	3.12 (2.61-3.72)	3.87 (3.23-4.63)	5.11 (4.24-6.13)	6.13 (5.06-7.40)	7.54 (5.98-9.59)	8.58 (6.65-11.2)	9.71 (7.28-13.2)	11.1 (7.69-15.3)	13.1 (8.71-18.9)	14.9 (9.61-22.3)
3-day	3.32 (2.79-3.95)	4.15 (3.48-4.94)	5.50 (4.59-6.57)	6.62 (5.49-7.96)	8.16 (6.50-10.4)	9.31 (7.24-12.1)	10.5 (7.93-14.3)	12.0 (8.38-16.6)	14.3 (9.51-20.5)	16.3 (10.5-23.6)
4-day	3.53 (2.97-4.19)	4.40 (3.70-5.22)	5.83 (4.88-6.94)	7.01 (5.82-8.40)	8.63 (6.89-10.9)	9.83 (7.66-12.7)	11.1 (8.39-15.1)	12.7 (8.86-17.5)	15.1 (10.0-21.5)	17.1 (11.1-24.1)
7-day	4.17 (3.53-4.92)	5.11 (4.32-6.03)	6.64 (5.59-7.87)	7.92 (6.61-9.44)	9.67 (7.75-12.1)	11.0 (8.58-14.1)	12.4 (9.32-16.6)	14.0 (9.81-19.1)	16.5 (11.0-23.3)	18.6 (12.0-26.1)
10-day	4.81 (4.08-5.65)	5.79 (4.91-6.81)	7.40 (6.25-8.73)	8.73 (7.32-10.4)	10.6 (8.49-13.2)	11.9 (9.34-15.2)	13.4 (10.1-17.8)	15.1 (10.6-20.5)	17.5 (11.7-24.7)	19.5 (12.7-27.3)
20-day	6.76 (5.78-7.88)	7.86 (6.71-9.17)	9.65 (8.20-11.3)	11.1 (9.40-13.1)	13.2 (10.6-16.2)	14.7 (11.6-18.6)	16.3 (12.3-21.3)	18.1 (12.8-24.3)	20.4 (13.7-28.6)	22.3 (14.5-30.1)
30-day	8.40 (7.21-9.75)	9.58 (8.22-11.1)	11.5 (9.83-13.4)	13.1 (11.1-15.4)	15.3 (12.4-18.7)	17.0 (13.4-21.2)	18.7 (14.0-24.2)	20.5 (14.5-27.4)	22.8 (15.3-31.7)	24.5 (16.0-33.0)
45-day	10.4 (9.01-12.1)	11.7 (10.1-13.6)	13.8 (11.8-16.1)	15.6 (13.2-18.2)	17.9 (14.6-21.8)	19.8 (15.6-24.5)	21.6 (16.2-27.7)	23.4 (16.7-31.2)	25.7 (17.4-35.6)	27.4 (17.9-38.9)
60-day	12.2 (10.5-14.0)	13.5 (11.7-15.6)	15.8 (13.5-18.2)	17.6 (15.0-20.5)	20.1 (16.4-24.3)	22.1 (17.4-27.3)	24.0 (18.0-30.6)	25.8 (18.4-34.4)	28.1 (19.0-38.8)	29.7 (19.4-41.1)

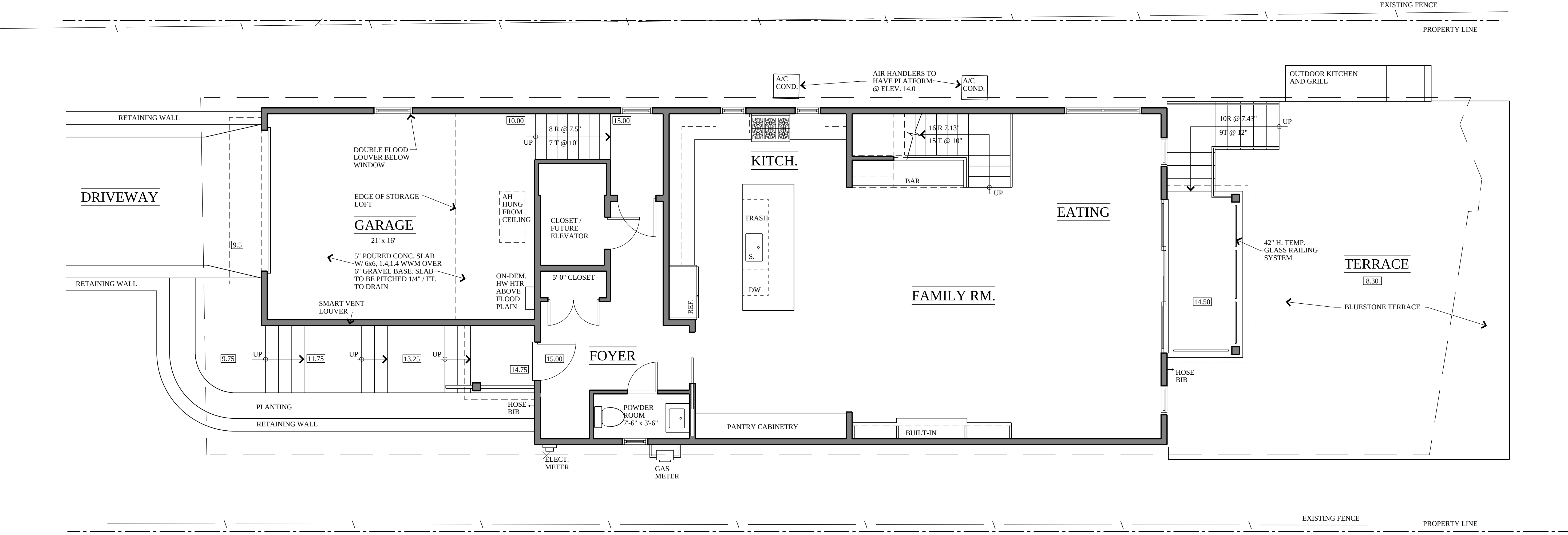
$$1/4'' = 1'-0''$$


Seal:	Drawing Number: A100	Revisions: 3-21-2025 4-11-2025 5-6-2025 5-10-2025 6-18-2025 7-7-2025 7-27-2025 8-10-2025 8-23-2025
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NEWHAMS RESIDENCE 5 GREGORY COURT NORWALK, CT		Drawing Title:
Date: 3/20/2025	Drawn By: JRC	
Scale: AS NOTED		
		Job No:



FIRST FLOOR PLAN

1/4" = 1'-0"

EXISTING 1,123.59 SQ. FT.
PROPOSED 1,650.36 SQ. FT.

NEWHAMMS RESIDENCE
5 GREGORY COURT
NORWALK, CT

Date: 3/20/2025	Drawn By: JRC	Drawing Title:
Scale: AS NOTED		
Job No:		

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Revisions:
3-21-2025
4-11-2025
5-6-2025
6-10-2025
7-16-2025
7-27-2025
8-10-2025
8-25-2025

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A101



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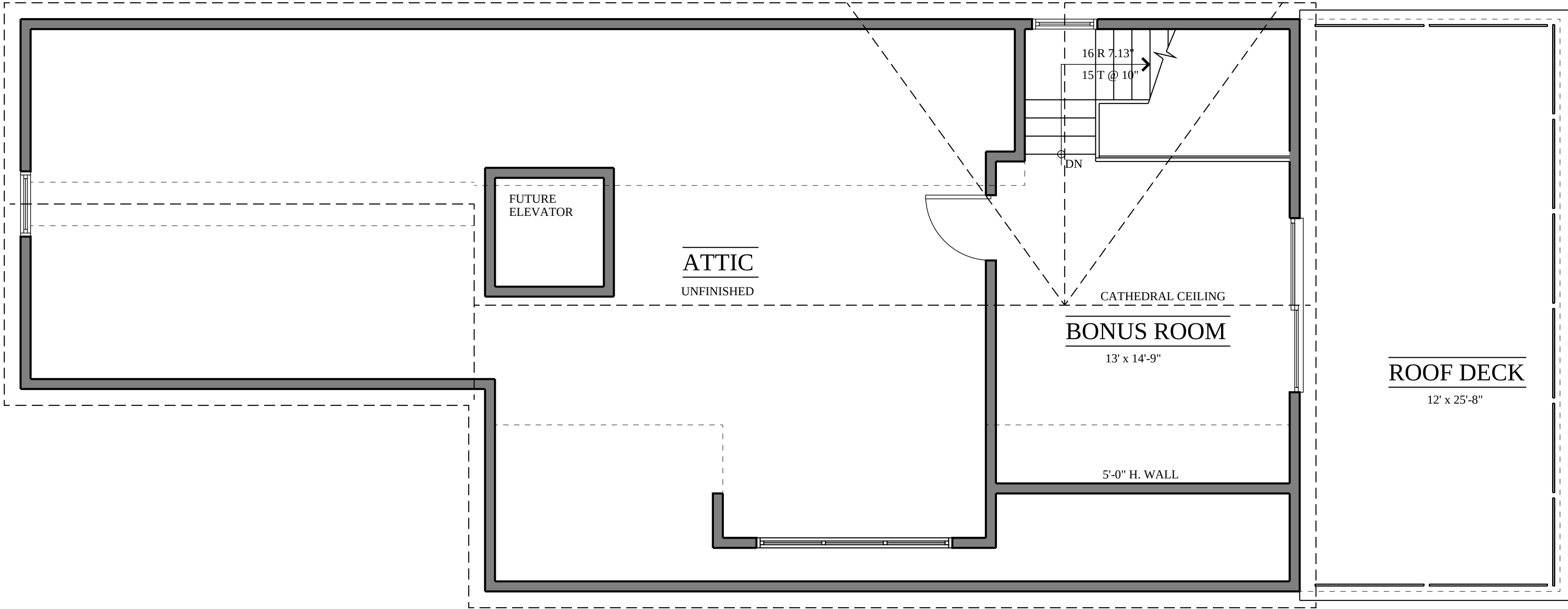
Date: 3/20/2025	Drawn By: JRC	Drawing Title:
Scale: AS NOTED		
Job No:		

Seal:	Drawing Number: A201	Revisions: 3-21-2025 4-11-2025 5-6-2025 6-10-2025 6-16-2025 7-7-2025 7-27-2025 8-10-2025 8-25-2025
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ATTIC FLOOR PLAN

1/4" = 1'-0"
1,660.50 SQ. FT. SECOND FLOOR BELOW
50% OF FLOOR BELOW = 830.25 SQ. FT
60% OF FLOOR BELOW W/ DORMERS= 996.30 SQ. FT

520.76 SQ. FT (31.4 %)PROPOSED FINISHED ATTIC LEVEL INCLUDING DORMERS



Seal:

Revisions:
3-21-2025
4-11-2025
5-6-2025
8-10-2025
7-16-2025
7-27-2025
8-10-2025
8-25-2025

Drawing Number:
A250

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NEWHAMS RESIDENCE
5 GREGORY COURT
NORWALK, CT

Date: 3/20/2025

Scale: AS NOTED

Job No:

Drawn By: JRC

Drawing Title:

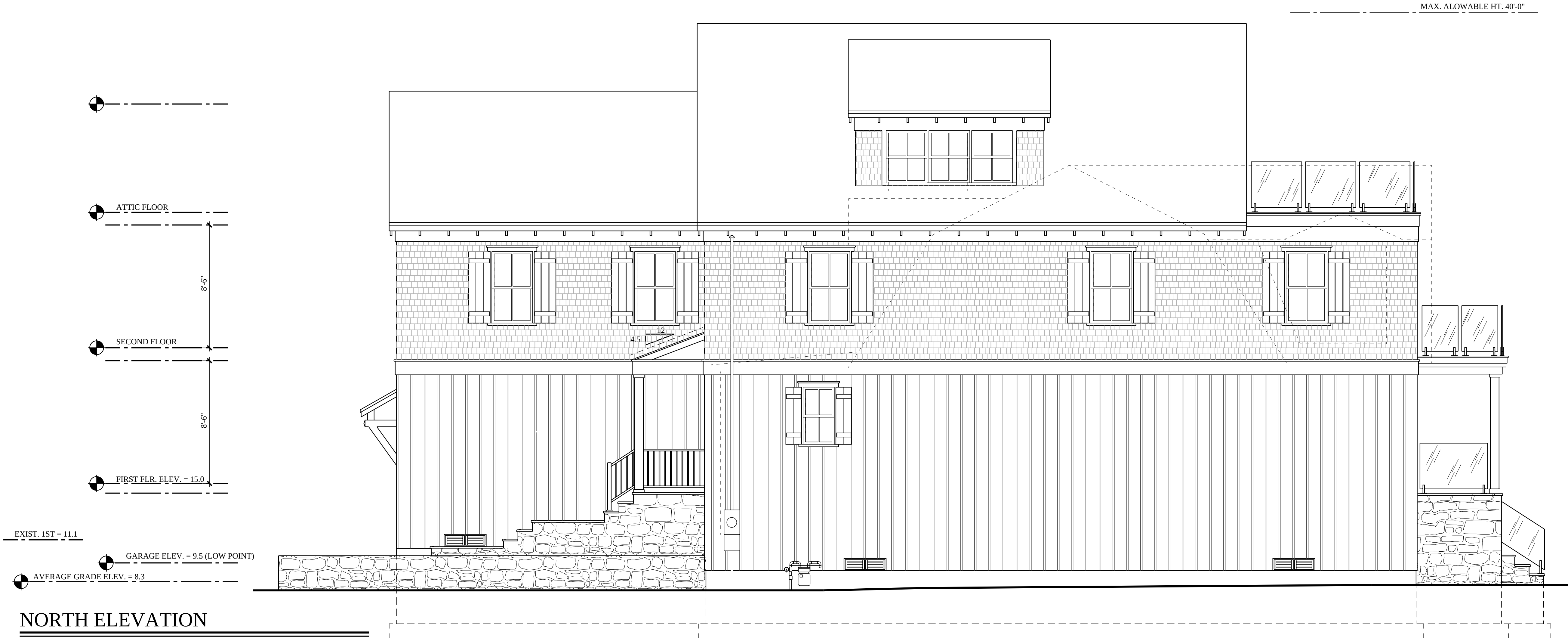
EAST ELEVATION

1/4" = 1'-0"



NORTH ELEVATION

1/4" = 1'-0"



NEWHAMS RESIDENCE
5 GREGORY COURT
NORWALK, CT

Date: 3/20/2025	Drawn By: JRC	Drawing Title:
Scale: AS NOTED		
Job No:		

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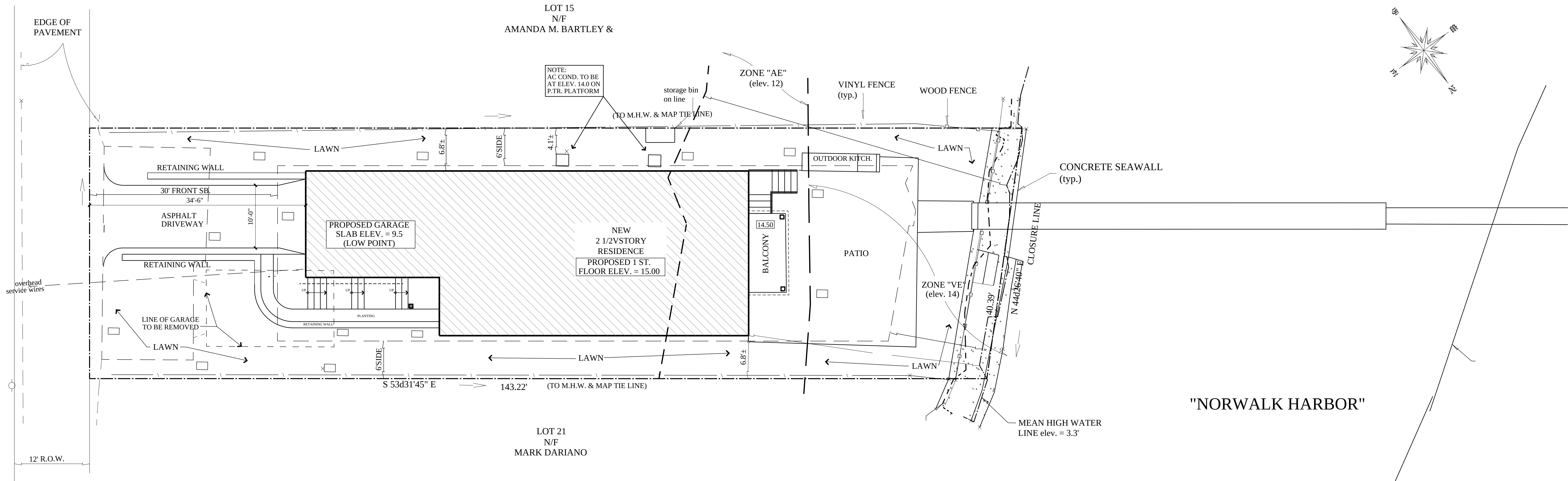
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Revisions:
3-21-2025
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8-16-2025
7-17-2025
7-27-2025
8-10-2025
8-25-2025

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Seal:

Drawing Number:
A301



SITE PLAN

SCALE: 1/8" = 1'-0"

NEWHAM'S RESIDENCE
5 GREGORY COURT
NORWALK, CT

Date: 3/20/2025	Drawn By: JRC	Drawing Title: SITE PLAN
Scale: AS NOTED		
Job No:		

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- Revisions:
- 3-21-2025
 - 4-11-2025
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 - 5-10-2025
 - 6-16-2025
 - 7-17-2025
 - 7-27-2025
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Drawing Number:

SP100



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

August 19, 2025

Joseph R. Cugno
Cugno Architecture
113 Westport Road
Wilton, CT 06897

Re: 5 Gregory Court
Preliminary Review of Coastal Site Plan Application #2025-65
Raise an existing single family residence to be FEMA flood compliant and construct an integral garage addition, with new landscaping and stormwater management.

Dear Mr. Cugno:

I have preliminarily reviewed the referenced plans. Tentatively, the Commission is scheduled to review the application at their September 3, 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) Will the foundation under the rear porch be void space or will it be filled? If void, flood vents may be required.
- 2) Flood vents are required in the integral garage.
- 3) The two proposed A/C units as depicted on the site plan must be raised to at least two feet above the 12' base flood elevation.
- 4) The site plan is inconsistent with the survey and architectural plans submitted. The site plan depicts a proposed first floor elevation of 14.75' while the survey and architectural plans depict a first floor elevation of 15'. The site plan also erroneously indicates the proposed number of stories as two.
- 5) Please provide a roof plan to confirm the proposed dormers comply with the requirement to be set back a minimum of two feet from all building faces.

- 6) Please provide a planting plan detailing the specific native shrubs, grasses, etc. proposed within the ten foot vegetative buffer along the seawall.
- 7) Though it is slightly reduced from existing, would it be possible to further reduce the amount of impervious surface coverage? As proposed it is still non-conforming, and Staff would encourage making the driveway pervious.
- 8) Staff will advise the Commission to consider if approving the project will result in a significant exposure of life and property to flood hazards. It is not recommended to allow significant expansion of living space in flood prone areas to be consistent with CCMA flood hazard policy to “minimize threats to life and property”.
- 9) 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



MEMORANDUM

August 28th, 2025

TO: Planning and Zoning Commission – Galen Wells, Chair

FROM: Amelia Williams, Land Use Planner

SUBJECT: #2025 - 65 CAM – Joseph R. Cugno – 5 Gregory Court – Construct a new single-family residence to be FEMA flood compliant with an integral garage and stormwater management.

District: 3 **Block:** 70 **Lot:** 6 **Zone:** CD-1S **Flood Zone:** VE (EL.14) and AE (EL.12)

ZONING HISTORY:

The .13-acre lot is currently vacant, where a non-flood compliant single-family residence and detached garage were recently demolished. A seawall exists at the rear of the property, separating it from the Norwalk Harbor, with residential dock access. The lot is generally flat, with existing elevations ranging from 7-8.5'. The rear of the property is within the Limit of Moderate Wave Action (LiMWA) and a high velocity flood zone; only the existing patio is located in this flood zone.

PROPOSED USE/STRUCTURE:

The applicant is proposing to construct a new single family residence to be made flood compliant to AE standards; the house will be built on a foundation with flood vents. The proposal also includes a new driveway, integral two-car garage, balconies, and retaining the existing patio. Six leaching galleries are proposed within the front yard. The engineered site plan submitted depicts a proposed planted buffer along the seawall, however the applicant has clarified they are proposing to retain that area as lawn. There are some issues with the engineered site plan being inconsistent with the other materials submitted as well as consistency with the flood regulations. Staff is awaiting a revised engineered site plan that demonstrates consistency.

STAFF COMMENTS:

- Staff recommend planted buffer be installed as depicted on the engineered site plan to aid in the filtration of stormwater prior to its discharge into the harbor.
- The engineered site plan must be revised to be consistent with the zoning regulations as demonstrated on the other materials submitted.
- The applicant has revised the architectural plans to make the driveway porous and reduce impervious surface coverage. This must also be reflected on the engineered site plan.
- The architectural plans have been revised to demonstrate compliance.
- It is not recommended to allow significant expansion of living space in flood prone areas to be consistent with CCMA flood hazard policy to “minimize threats to life and property”.

ZONING BOARD OF APPEALS: No variances were needed for this proposal.

SIGN-OFFS: Department approvals/comments have been received from the Conservation Office 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 - 65 CAM – Joseph R. Cugno – 5 Gregory Court – Construct a new single-family residence to be FEMA flood compliant with an integral garage and stormwater management be **APPROVED** subject to the following conditions:

1. That the building and site be developed in accordance with the following plans:
 - a. Per engineered site plan dated 6/10/2025 prepared by Grumman Engineering LLC, Norwalk, CT, revised per Staff comments
 - b. Per architectural plans dated 3/20/2025 and revised to 8/20/2025 prepared Cugno Architecture, Wilton, CT
 - c. Per zoning improvement survey dated 2/3/2025 and revised to 7/31/2025 prepared by Arcamone Land Surveyors, 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 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 the engineered site plan be revised per Staff comments to demonstrate consistency with the regulations and other materials submitted prior to the issuance of a Zoning Permit; and
10. That the driveway be made pervious; and
11. That a planting plan for a vegetative buffer along the seawall be submitted to and approved by Staff prior to issuance of Zoning Permit; and
12. That all plantings be implemented prior to COZC; and
13. That all plantings be maintained, and any dead plantings must be replaced in accordance with the approved planting plan; and
14. That no changes to the seawall are permitted without City review and DEEP approval; and
15. 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 these 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 September 12th, 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 #2025 - 65 CAM – Joseph R. Cugno – 5 Gregory Court – Construct a new single-family residence to be FEMA flood compliant with an integral garage and stormwater management as shown on engineered site plan dated 6/10/2025 prepared by Grumman Engineering LLC, Norwalk, CT, architectural plans dated 3/20/2025 and revised to 8/20/2025 prepared Cugno Architecture, Wilton, CT, and zoning improvement survey dated 2/3/2025 and revised to 7/31/2025 prepared by Arcamone Land Surveyors, Norwalk, CT be **DENIED** subject to the following reasons:

- 1.
- 2.

BE IT FURTHER RESOLVED that the effective date of this denial shall be September 12th, 2025.

DRAFT



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: 16 Norport Drive 2. D/B/L/U: 3/78/25/0

3. Proposed Work: Construction of new spa into and flush with an existing elevated patio 4. Zone: A1

5. Applicant Identification:

Applicant Name: Susan H & James H Carter III

Address: 16 Norport Drive, Norwalk, CT 06855

Phone Number: (203) 984-1806 Email: jhcinct@aol.com

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

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

Name: McChord Engineering Associates, Inc.

Address: 1 Grumman Hill Road, Wilton, CT 06897

Business Phone: (203) 834-0569 Email: hrocheville@mcchordengineering.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:

16 Norport Drive, 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:

Bermuda Lagoon

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 existing site is developed with a single-family residence, driveway, elevated patio and lawn. The adjacent properties are other single-family residences, Bermuda Lagoon and the Covlee Beach and Marina for Covlee residents.

e) Indicate the area of the project site: 0.30 acres or 13,100 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 proposed project consists of installing a 7'-9" x 12'-0" (93 sq. ft.) spa into and flush with an existing elevated patio. There will be no increase in impervious coverage. There is no grading or clearing proposed. There is no volume being added to the flood zone since the spa is flush with the existing patio. Construction access will be via an existing dirt/gravel road off-site to the south due to the sites tight conditions. This off-site property is owned by the HOA who has permitted the use of the road/property. Erosion controls consisting of an anti-tracking pad and silt fence will be installed to protect the lagoon during construction. No trees will be removed. A few shrubs will be removed to access the site, and will be replaced following construction activity. The spa equipment will be elevated on a platform 1-ft above the BFE on the north side of the house, next to the existing generator and AC unit on a similar platform. Construction activity is anticipated to begin this fall and should take approximately 12 weeks.

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*):

This project does not result in any increase in impervious area. Therefore, no stormwater management measures are proposed.

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*):

Coastal Hazard Area - The property is within the AE Flood Zone (elev. 13) and the VE Flood Zone (elev. 14). There is no volume being added to the flood zone since the spa is flush with an existing elevated patio. The pool equipment will be located on a platform above the flood elevation. This is consistent with the policy to "insure that development proceeds in such a manner that hazards to life and property are minimized".

Shorelands - The redevelopment of the property maintains the existing residential use and meets the applicable zoning regulations. This is consistent with the policy to "regulate shoreland use and development in a manner which minimizes adverse impacts upon adjacent coastal systems and resources".

Tidal Wetlands - Tidal wetlands are located off-site to the west within Bermuda Lagoon. The project has proposed soil and erosion controls to protect coastal resources during construction. The spa will be located within an existing elevated patio so setbacks and vegetated buffers to the coastal resources will be maintained. This is consistent with the policy "to preserve tidal wetlands and to prevent the despoliation and destruction thereof in order to maintain their vital natural functions"

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:

- ☒ 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):

The redevelopment of the property maintains the existing residential use and meets the applicable zoning regulations. The development is consistent with the adjacent properties and neighborhood. The project has been designed to minimize site impact and preserve the coastal resources. This has been accomplished by locating the spa within an existing patio.

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.) *:

The current and proposed use of the property as a single family residence is not a water-dependent use. The development is consistent with the adjacent properties and neighborhood. Additionally, the property is too small to be reasonably considered for a water-dependent use. Also, the beach and marina for the HOA is already established and is located south of the subject property.

*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*):

No adverse impacts to coastal resources are anticipated and there is no direct impact to coastal resources as a result of the proposed project. Soil and erosion controls, including silt fence, will be employed to protect coastal resources during construction. Site disturbance will be minimized by installing the spa within the existing patio and not increasing the impervious area. All vegetated buffers between the current development and the tidal wetlands will be maintained.

17. Remaining Adverse Impacts:

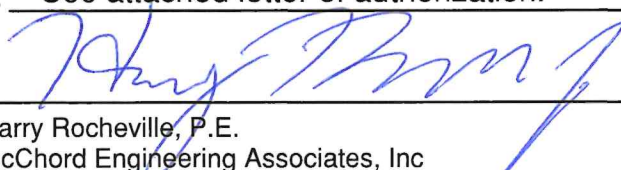
Explain why any remaining adverse impacts resulting from the proposed activity or use have not been mitigated and why the project as proposed is consistent with the Connecticut Coastal Management Act (*attach additional pages if necessary*):

There are no remaining adverse impacts. The nature of the proposed development in conjuncture with the proposed mitigation measures should eliminate adverse impacts to coastal resources. The proposed project is consistent with the rights of private property owner and the capability of the land to support development without significantly disrupting either the natural environment or sound economic growth and is therefore consistent with the Connecticut Coastal Management Act.

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: See attached letter of authorization. DATE: _____

Agent's Signature:  DATE: 8/26/25
Harry Rocheville, P.E.
McChord Engineering Associates, Inc

James H Carter III
16 Norport Drive
Norwalk, CT 06855

August 25, 2025

Planning & Zoning Commission
Norwalk City Hall
125 East Avenue
Room 129
Norwalk, CT 06856

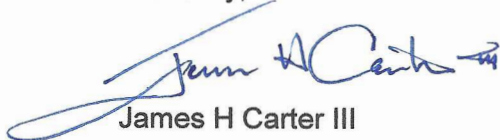
Re: Application for Coastal Site Plan Review
16 Norport Drive, Norwalk
Map 3, Block 78, Lot 25

To Whom It May Concern,

I hereby authorize McChord Engineering Associates, Inc. (MEA), to act as agent in regard to the referenced Application for Coastal Site Plan Review and authorize all activities associated with the proposed site development at the subject property.

I hereby consent to all necessary and proper inspections of the property by the Commissioners and designated agents of the Commission or consultants to the Commission, at all reasonable times, both before and after a final decision has been rendered.

Sincerely,



James H Carter III

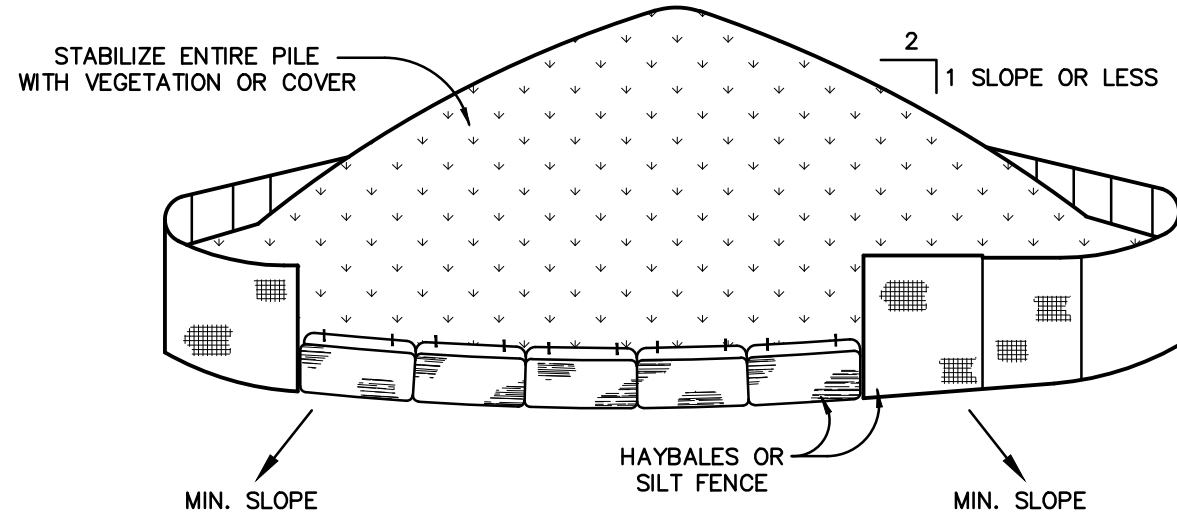
ITEM	REQUIRED/PERMITTED		EXISTING
ZONE: A RESIDENCE			
FRONT SETBACK:	40'	MIN.	40.6'
REAR:	20% NEED NOT EXCEED 20'	MIN.	29.9'
SIDE:	10'	MIN.	12.2'
AGGREGATE SIDE:	25%	MIN.	26.8%
LOT WIDTH:	100'	MIN.	100'
LOT AREA:	12,500 S.F.	MIN.	13,100 S.F.
BUILDING HEIGHT:	36' (to mean) 41' (to peak)	MAX.	25.2' (to mean) 29.8' (to peak)
No. STORIES:	2.5	MAX.	2.0
LOT COVERAGE— STRUCTURE:	25%	MAX.	19.5%

1. This survey has been prepared in accordance with Sections 20-300b-1 through 20-300b-20 of the Regulations of Connecticut State Agencies and the Standards for Surveys and Maps in the State of Connecticut as adopted by the Connecticut Association of Land Surveyors, Inc. as a Zoning Location Survey the Boundary Determination Category of which is a Resurvey conforming to Horizontal Accuracy Class A-2 and intended to be used for regulatory zoning purposes.
2. Area of parcel = 13,100 s.f. / 0.300 acres (to mean high water).
3. Reference is made to Lot 15, Map 3533 of the Norwalk Land Records.
4. Reference is made to deed of record found in V. 7337, Pg. 25 of the Norwalk Land Records.
5. Reference is made to Assessor's Parcel 25, Block 78, Third Taxing District.
6. Property Located in A Residence Zone.
7. Property located in Flood Zones AE (el.13) & VE (el.14) as depicted on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency. Reference is made to Community Panel No. 090012 532 G, dated July 8, 2013. Flood line depicted hereon has been transcribed from this mapping.
8. Elevation Datum - NAVD 1988.

ZONING LOCATION SURVEY 16 NORPORT DRIVE	
PREPARED	FOR
JAMES H. CARTER, III AND SUSAN H. CARTER NORWALK, CONNECTICUT	
 TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.  DOUGLAS R. FAULDS LAND SURVEYOR CONN. LIC. No. 13292	NOVEMBER 7, 2017  Ryan and Faulds LAND SURVEYORS A Redniss & Mead Company 11 GRUMMAN HILL ROAD WILTON, CT 06897 Ph. (203) 762-9492 ryanandfaulds.com

NOTES:

- EXISTING STRUCTURES, TOPOGRAPHY, UTILITIES, AND PROPERTY LINE INFORMATION SHOWN HEREON ARE TAKEN FROM THE "ZONING LOCATION SURVEY, 16 NORPORT DRIVE" PREPARED FOR JAMES H. CARTER, III & SUSAN H. CARTER BY RYAN AND FAULDS LAND SURVEYORS, OF WILTON, CT, DATED NOVEMBER 7, 2017.
- THE PROPERTY IS SUBJECT TO FLOOD ZONE "VE" (ELEV. 14.0) AND FLOOD ZONE "AE" (ELEV. 13.0) AS SHOWN ON THE FEMA FLOOD ZONE INSURANCE RATE MAP NO. 0900125320, EFFECTIVE DATE JULY 8, 2013.
- LOCATIONS OF EXISTING UNDERGROUND STRUCTURES AND UTILITIES INDICATED HEREON ARE TAKEN FROM DESIGN DRAWINGS, FIELD OBSERVATIONS, AND OTHER SOURCES OF INFORMATION AND ARE NOT TO BE CONSTRUED AS AN ACCURATE "AS-BUILT" SURVEY. THE CONTRACTOR SHALL EXCAVATE TEST HOLES, CONTACT "CALL BEFORE YOU DIG", AND PERFORM WHATEVER ADDITIONAL VERIFICATION NECESSARY TO VERIFY THE EXISTING INFORMATION. THE PROJECT ENGINEER SHALL BE PROMPTLY NOTIFIED OF ANY APPARENT CONFLICTS BETWEEN EXISTING UTILITIES AND PROPOSED WORK.
- THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED UTILITIES, CONSTRUCTION ACCESS AND SOIL EROSION CONTROLS ASSOCIATED WITH THE CONSTRUCTION OF PROPOSED SPA.
- ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF NORWALK STANDARD DETAILS AND SPECIFICATIONS, IN THE ABSENCE OF LOCAL STANDARDS, THE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CONNECTICUT DEPARTMENT OF TRANSPORTATION SPECIFICATION FORM 818, LATEST REVISION.
- SOIL AND EROSION CONTROL MEASURES SHOWN HEREON SHALL BE PROPERLY INSTALLED PRIOR TO THE START OF CONSTRUCTION, INSPECTED AND REPAIRED WEEKLY AND BEFORE AND AFTER STORM EVENTS, AND MAINTAINED IN FUNCTIONAL CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO THE COMMENCEMENT OF THE WORK.

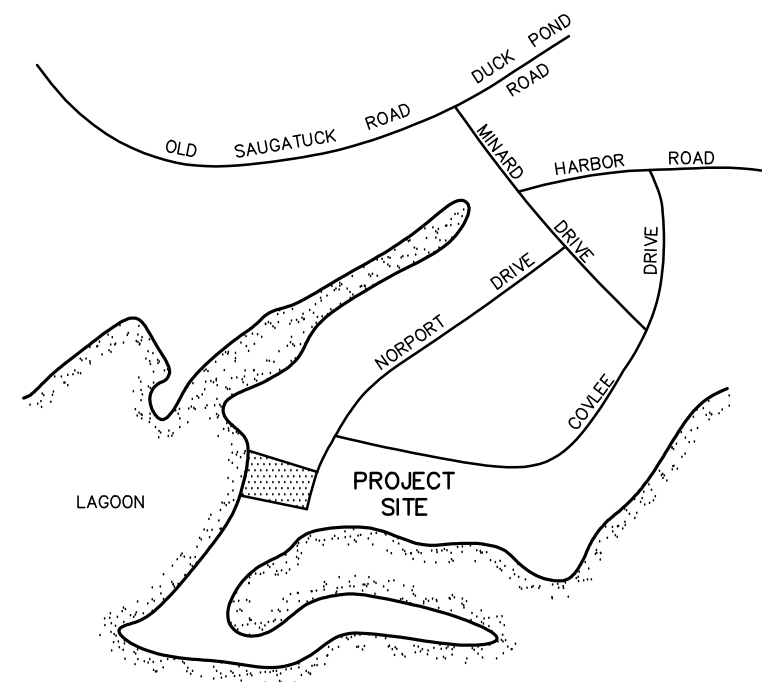


- AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
- MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
- UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR HAYBALES, THEN STABILIZED WITH VEGETATION OR COVERED.

STOCKPILE DETAIL
N.T.S.

EROSION AND SEDIMENT CONTROL NOTES:

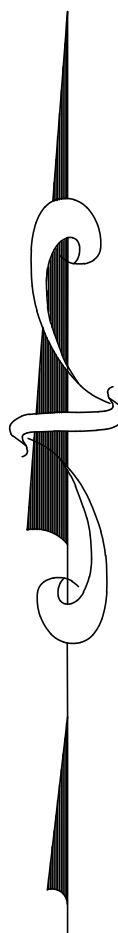
- AS A MINIMUM, ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE STANDARDS LOCATED IN THE 2024 CONNECTICUT STORMWATER QUALITY MANUAL AND AS REQUIRED BY STATE AND FEDERAL LAWS.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED AT THE PROJECT SITE AT ALL TIMES. THIS COPY SHALL BE MADE AVAILABLE TO THE CITY UPON REQUEST.
- PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN ANY AREA NOT ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE CITY FOR REVIEW AND APPROVAL.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING AND GRADING. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION.
- THE CITY MUST BE NOTIFIED PRIOR TO DEWATERING OPERATIONS. WATER MUST BE PUMPED THROUGH AN APPROVED FILTERING DEVICE. THE CITY MAY SUSPEND DEWATERING OPERATIONS IF POLLUTION IS OBSERVED.
- THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL DEVICES. THE CONTRACTOR SHALL PERFORM ANY REPAIRS OR MAINTENANCE IMMEDIATELY IN ORDER TO ENSURE EFFECTIVE EROSION AND SEDIMENT CONTROL.
- THE CONTRACTOR SHALL MAINTAIN A RECORD OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES AT THE PROJECT SITE. THIS RECORD SHALL BE MADE AVAILABLE TO THE CITY UPON REQUEST.



SCALE 1" = 500'

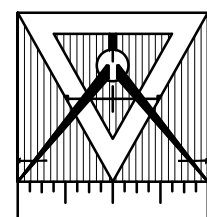
Orientation

No.	Date	Revisions or Submissions
1	8-26-25	ISSUED FOR MUNICIPAL APPROVAL



THIS DRAWING AND DETAILS ON IT, AS AN INSTRUMENT OF SERVICE, IS THE PROPERTY OF THE ENGINEER AND MAY BE USED FOR THIS SPECIFIC PROJECT AND SHALL NOT BE LOANED, COPIED OR REPRODUCED WITHOUT THE WRITTEN CONSENT OF THE ENGINEER.

McChord Engineering Associates, Inc.

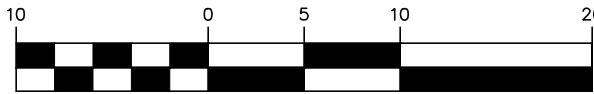


Civil Engineers and Land Planners
1 Grumman Hill Road
Wilton, CT 06897 (203) 834-0569

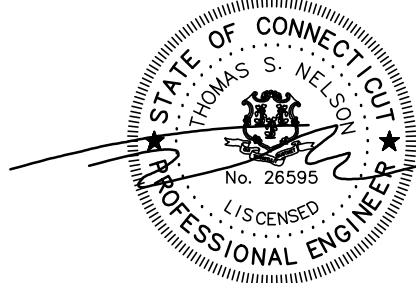
PLAN PREPARED FOR
JAMES H. & SUSAN H. CARTER, III
NORWALK, CONNECTICUT

SITE DEVELOPMENT PLAN
16 NORPORT DRIVE
NORWALK, CONNECTICUT

JOB NO.: 2420A-1 DATE: AUGUST 26, 2025
DRAWN BY: DRS CHECKED BY: TSN, HMR
SCALE: 1" = 10'



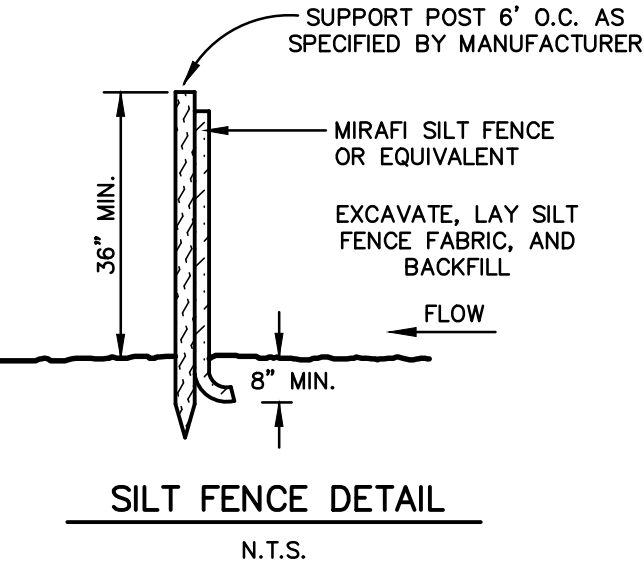
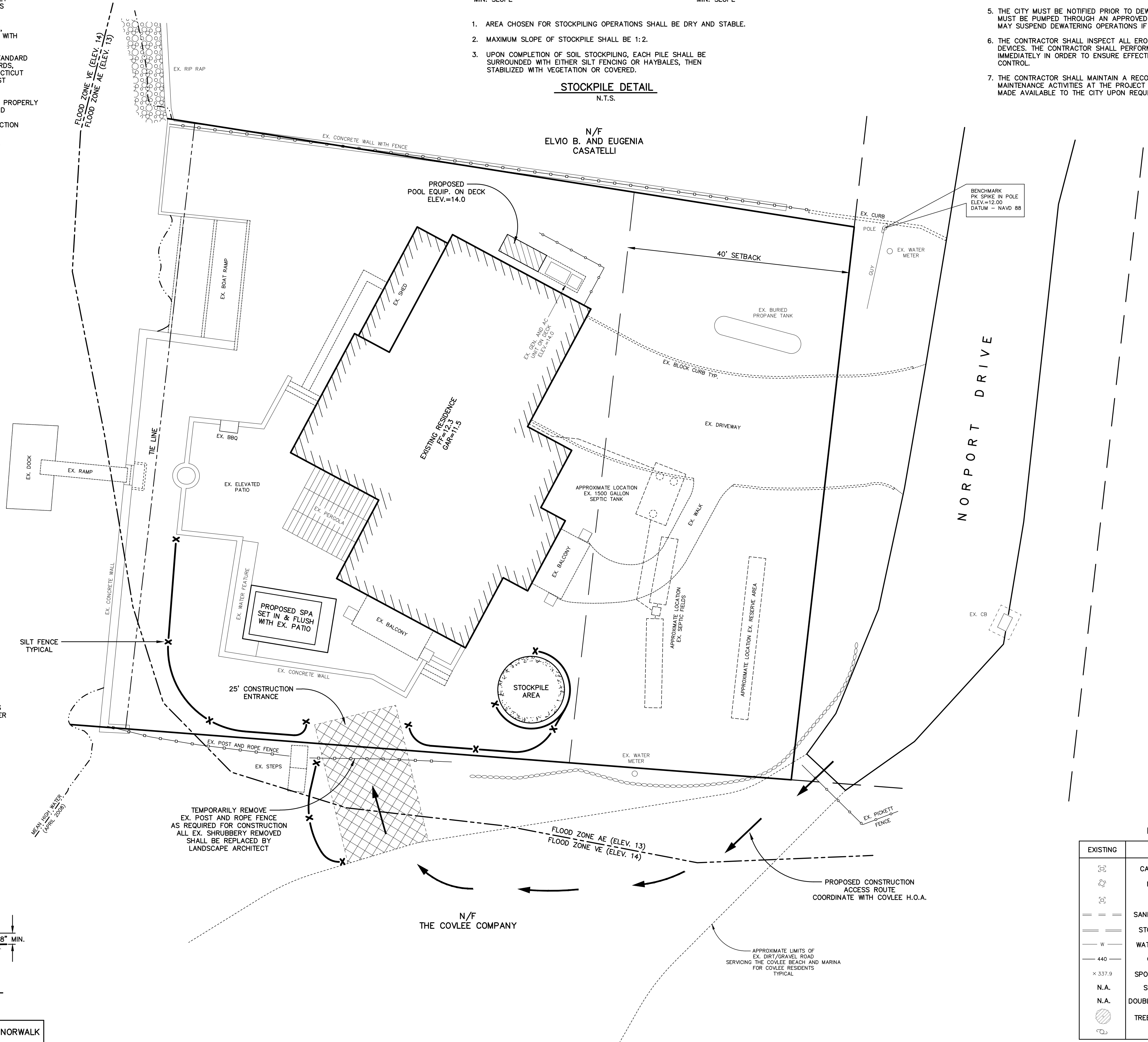
SIGNATURE:



DRAWING NO.:

SE1

SHEET 1 OF 1



CONSTRUCTION ENTRANCE DETAIL
N.T.S.

NOTE: DETAILS SHALL CONFORM TO LATEST CITY OF NORWALK STANDARDS.



CITY OF NORWALK
Planning & Zoning Commission
Norwalk City Hall, Room 129
125 East Avenue,
Norwalk, CT 06856-5125

MEMORANDUM

August 27th, 2025

TO: Planning and Zoning Commission – Galen Wells, Chair

FROM: Amelia Williams, Land Use Planner

SUBJECT: #2025 - 66 CAM – Susan H & James H Carter III – 16 Norport Drive – Construct a new flood complaint spa within an existing elevated patio less than 50’ from a tidal lagoon.

District: 3 **Block:** 78 **Lot:** 25

Zone: CD-1S

Flood Zone: AE-13

ZONING HISTORY:

The .3 acre property currently contains a single family residence, driveway, elevated patio, and a dock. The property is primarily within the AE-13 flood zone and the proposed work will need to be made flood compliant.

PROPOSED USE/STRUCTURE:

A new spa is proposed within the existing elevated patio at the rear of a single family residence. The new spa must be constructed to FEMA flood compliance standards. A tracking pad, stockpile area, and silt fence are proposed for the duration of construction. The applicant must gain permission from the adjacent property owner prior to encroaching for construction access.

STAFF COMMENTS:

Under the “old” zoning regulations, many activities within 100’ of coastal resources were exempt, even if there was disturbance directly adjacent to tidal wetlands, beaches, etc. The regulations effective 2/19/2024 now require a Coastal Site Plan Review (CSPR) for most activities that occur within 50’ of coastal resources. The proposed work is within 50’ of a tidal lagoon and therefore is not exempt from CSPR. However, the proposed disturbance is minimal and within an existing elevated patio. Staff does not anticipate any adverse impacts and believe this proposal is consistent with the goals and policies of the Connecticut Coastal Management Act.

ZONING BOARD OF APPEALS: No variances were needed for this application.

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 - 66 CAM – Susan H & James H Carter III – 16 Norport Drive – Construct a new flood complaint spa within an existing elevated patio less than 50’ from a tidal lagoon be **APPROVED** subject to the following conditions:

1. That the building and site be developed in accordance with the following plans:
 - a. Per the site plan dated 8/26/2025 prepared by McChord Engineering Associates, Inc., Wilton, CT
2. That all required soil sedimentation and erosion controls are in place prior to the start of any construction; and
3. That any additional needed soil sedimentation and erosion controls be installed at the direction of the Staff; and
4. That any changes to the plans be reviewed by Staff prior to implementation; and
5. 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
6. 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 Building Zone Regulations for the City of Norwalk; and

BE IT FURTHER RESOLVED that these 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 September 12th, 2025.

You must obtain a zoning approval and a building permit prior to any work on the site.

108 Water Street - Site Plan Review & Coastal Area Management (CAM) Applications

Table of Contents

1. Narrative Summary
2. Site Plan Application Form
3. Coastal 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

**108 WATER STREET
NARRATIVE DESCRIPTION OF SITE PLAN REVIEW &
COASTAL AREA MANAGEMENT (CAM) APPLICATIONS**



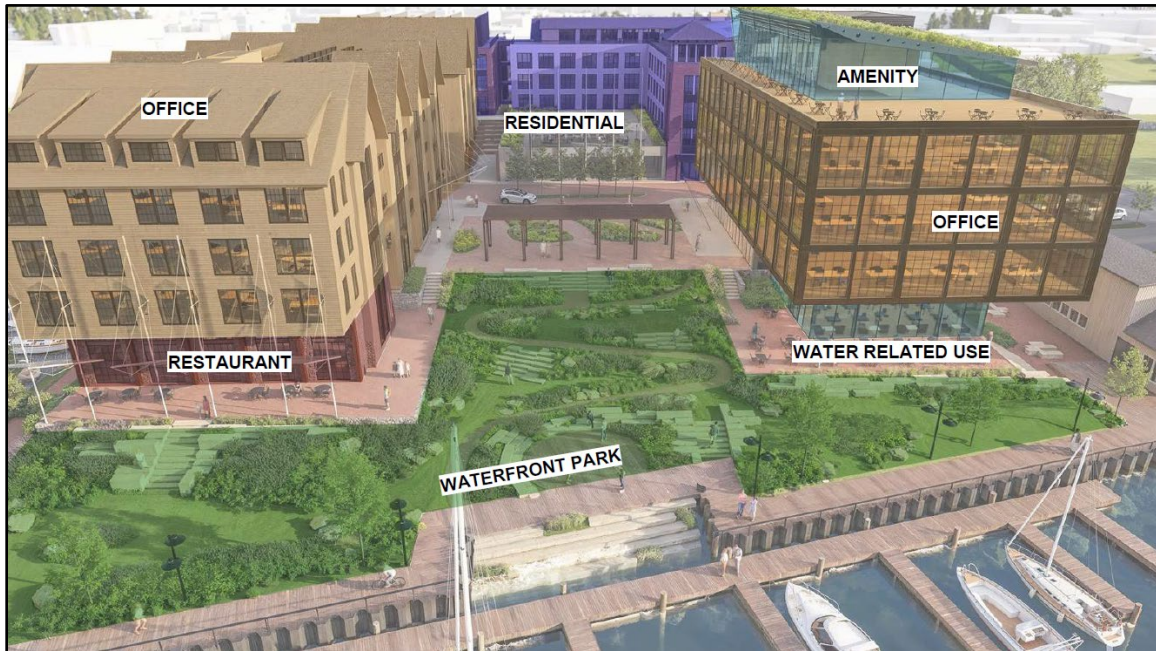
Spinnaker Acquisitions LLC (the “Applicant”) is the contract purchaser of 108 Water Street, MBLU: 2/84/18/0 (the “Property”). The property is approximately 2.72 acres (118,483.2 square feet). The Applicant seeks to construct a mixed-use development at the Property consisting of boat slips, a boardwalk, 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 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 comprised 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 of 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



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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.

Date Received:

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.



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- 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.l.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).



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- 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 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:



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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:

- ☒ 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):

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, 446j, 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
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<i>(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</i>	No impact
<i>(D) degrading natural or existing drainage patterns through the significant alteration of groundwater flow and recharge and volume of runoff</i>	Positive Impact
<i>(E) increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones</i>	Positive Impact
<i>(F) degrading visual quality through significant alteration of the natural features of vistas and view points</i>	No impact
<i>(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</i>	No impact
<i>(H) degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or function</i>	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.

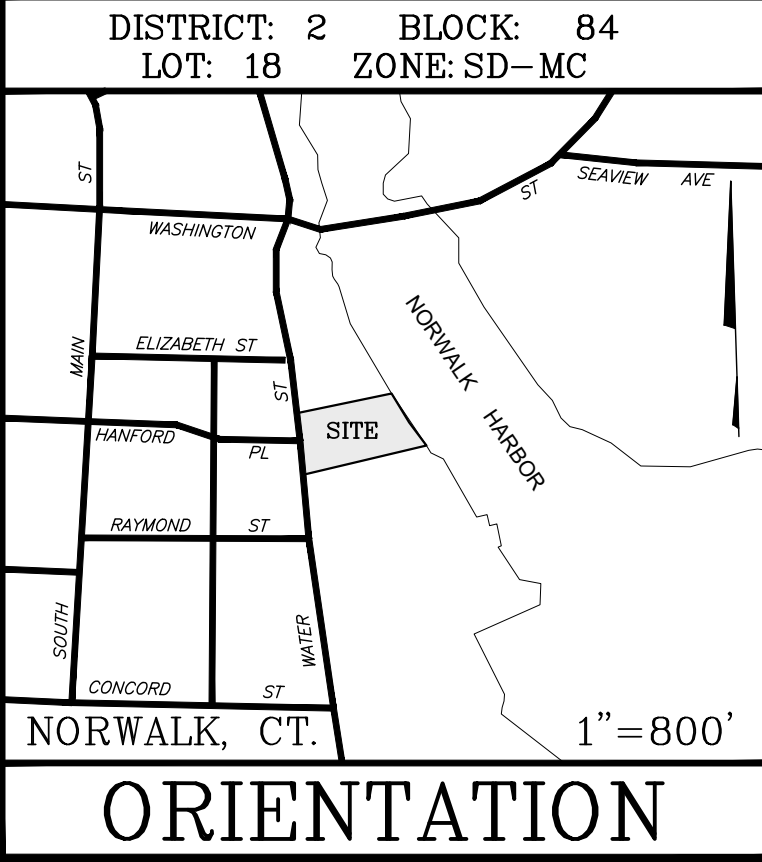
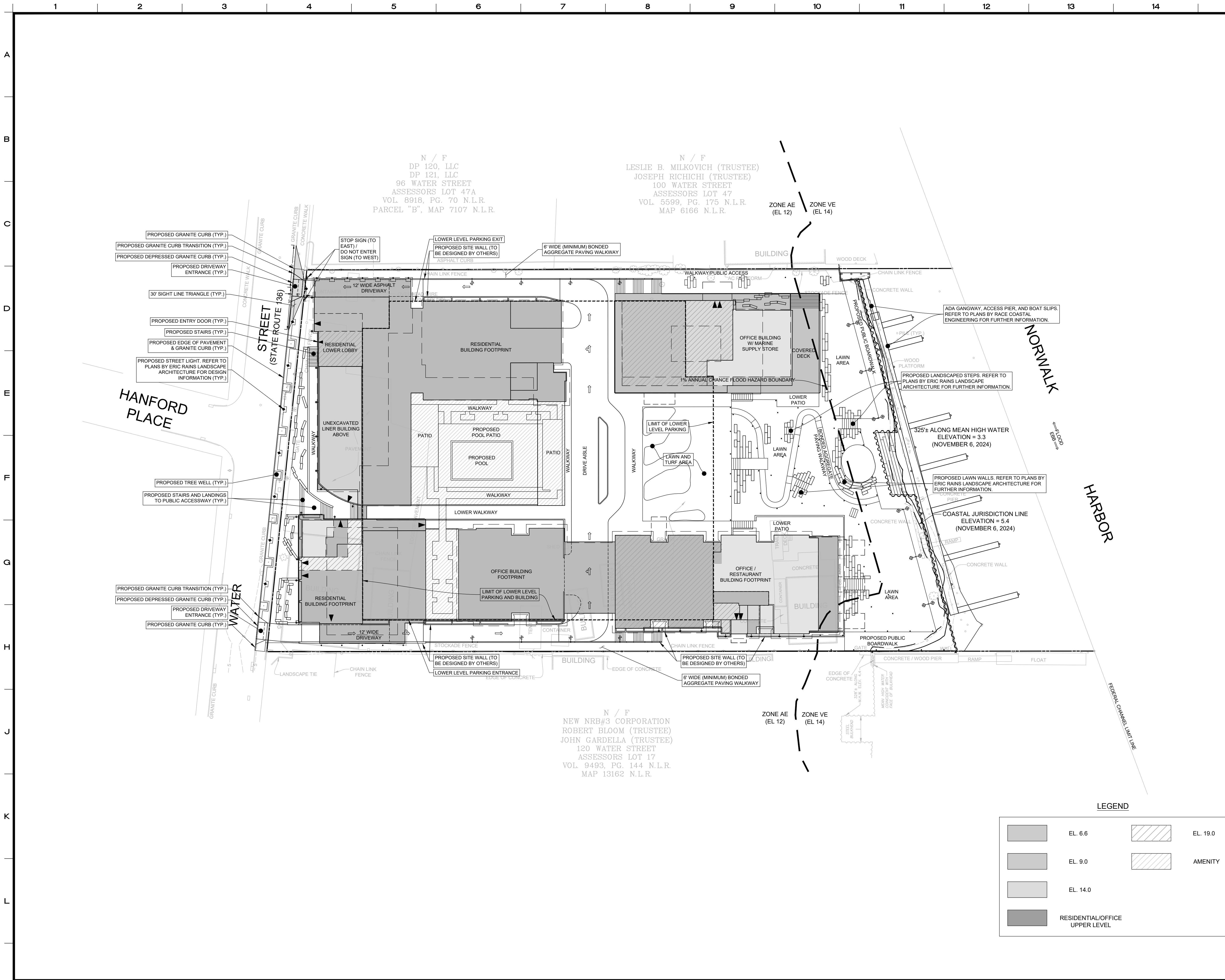
General Development	applicable
Water and Dependent Use	applicable
Ports & Harbors	not applicable
Coastal Structures & Filling	applicable
Dredging & Navigation	applicable
Boating	applicable
Fisheries	not applicable
Coastal Recreation & Access	applicable
Sewer and Water Lines	not applicable
Energy Facilities	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

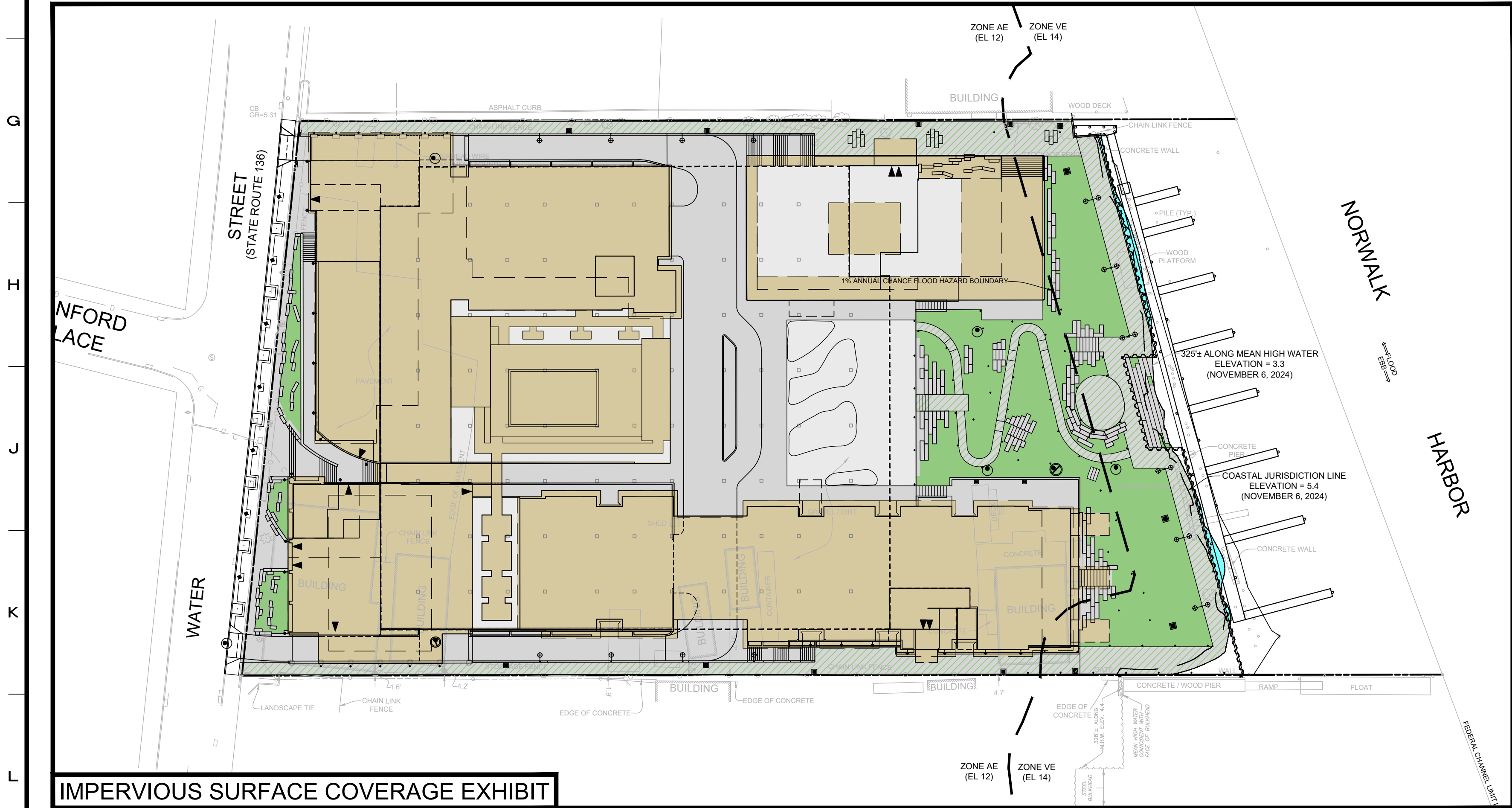
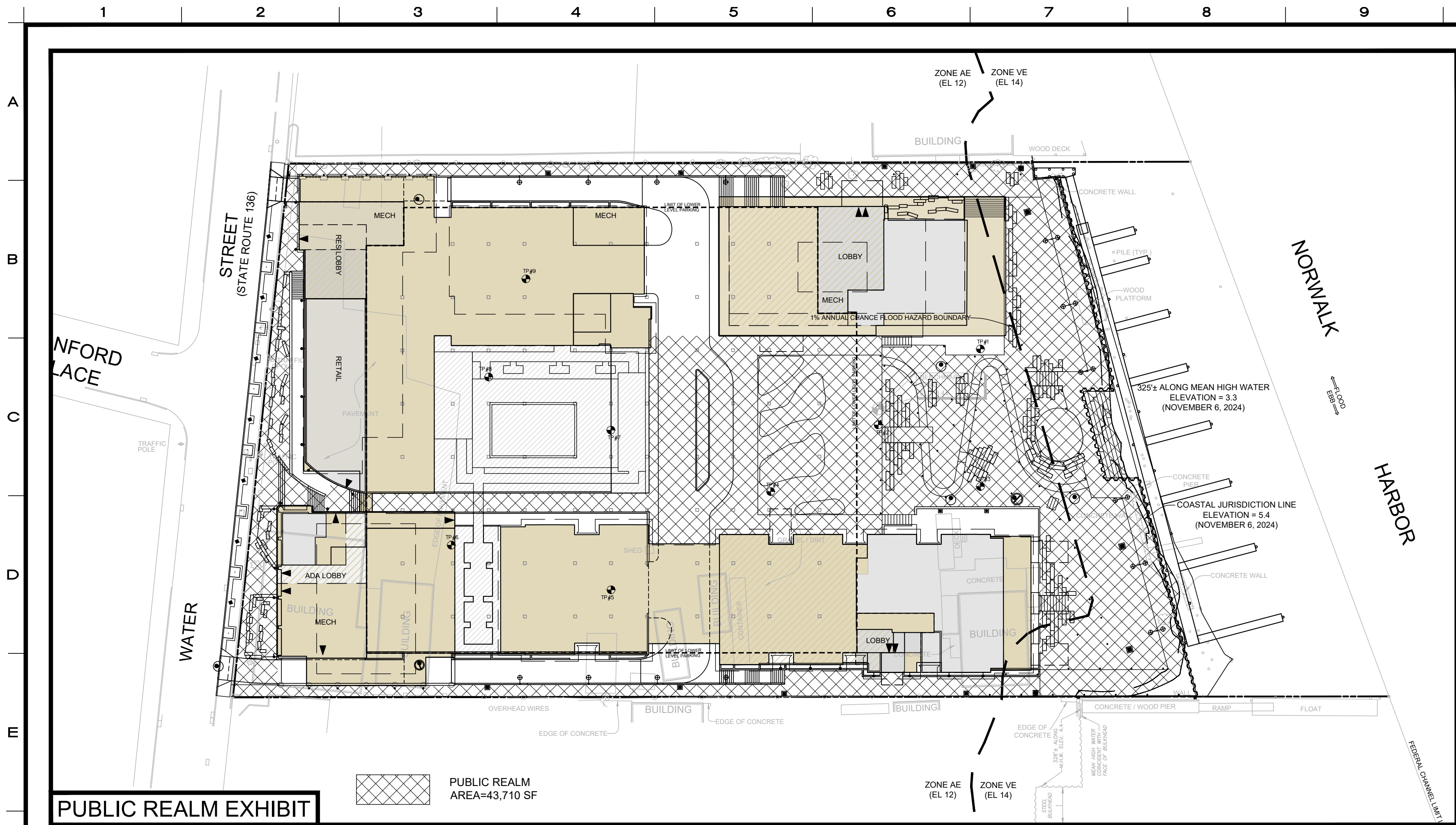
A list of coastal resources is provided below with those resources present on site, adjacent, or not applicable so indicated.

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



I	06/13/2025	ORIGINAL SUBMISSION
No.	Date	Revision
ZONING SITE 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: 0 30 60 1"=30' 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 herein null & void. SHEET No: ZSP-1A Comm. No.: 10909		



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

- One loading space required when proposing 3,000 - 25,000 sf of commercial area.
- Gross floor areas of commercial spaces as depicted on plans by project architect.

ZONING INFORMATION TABLE 108 Water Street			
MINIMUM SIZE OF PLOT	6/13/2025	SD-MC Zone	Provided / Proposed Development
	AREA	Not regulated	118,594± SF (2.72± acres)
HEIGHT	LOT WIDTH	100' min.	267'
	MAXIMUM	4.5 stories	4.5 stories
BUILDING COMPOSITION	ADDITIONAL	Height further limited via ceiling height requirements.*	Compliant, refer to Architectural Plans for additional information.
		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 vegetative 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%)

1

06/13/2025

ORIGINAL SUBMISSION

No.

Date

Revision

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 40 80
1"=40'

DRAWN BY: JWB
CHECKED BY: VJH

Vincent J. Hynes, Jr.

VINCENT J. HYNES, CT. P.E. 32100

June 13, 2025

DATE

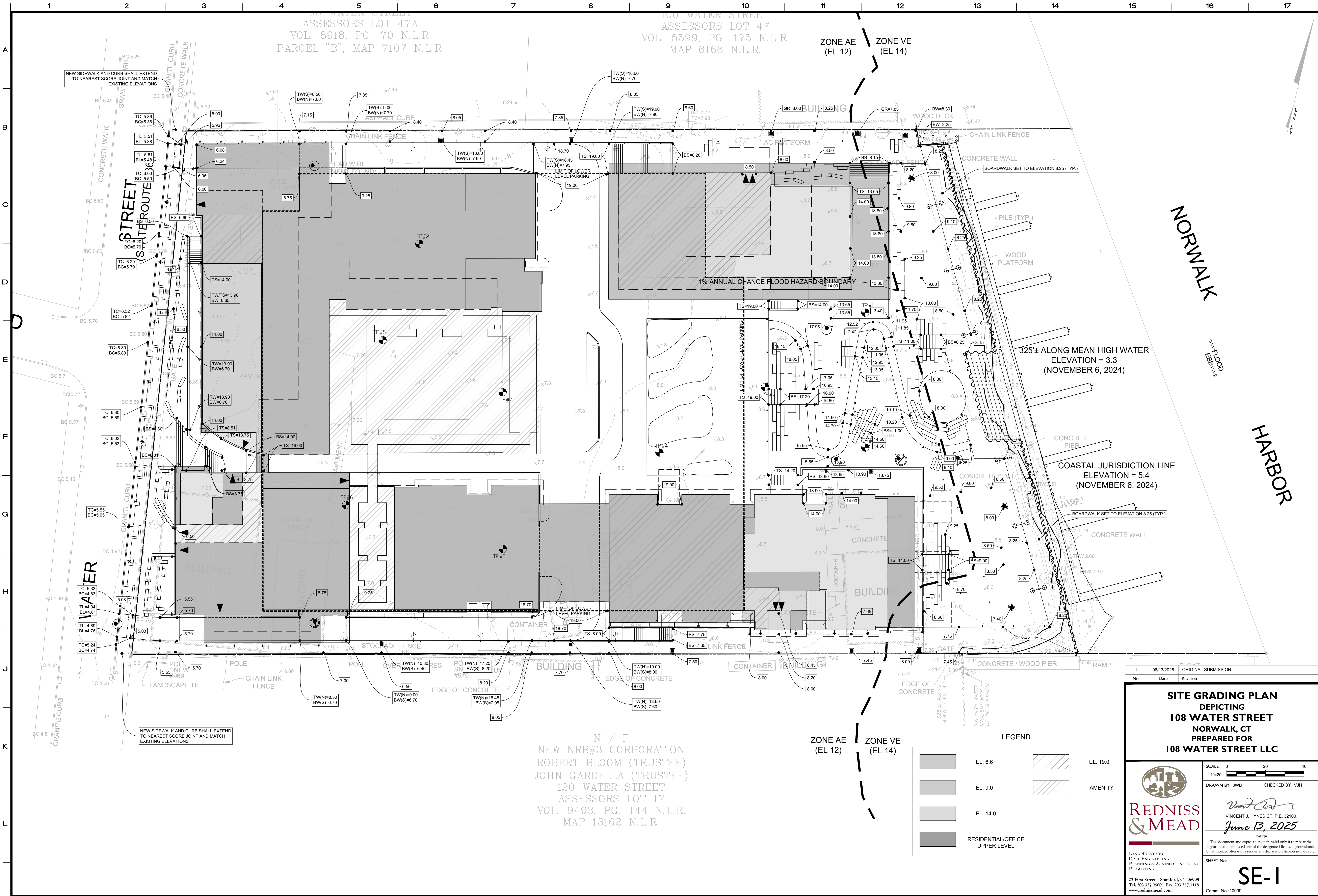
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No.	Date	Revision
1	06/13/2025	ORIGINAL SUBMISSION

SITE GRADING PLAN
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

REDNISS & MEAD
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

SCALE: 0 20 40
1"=20'

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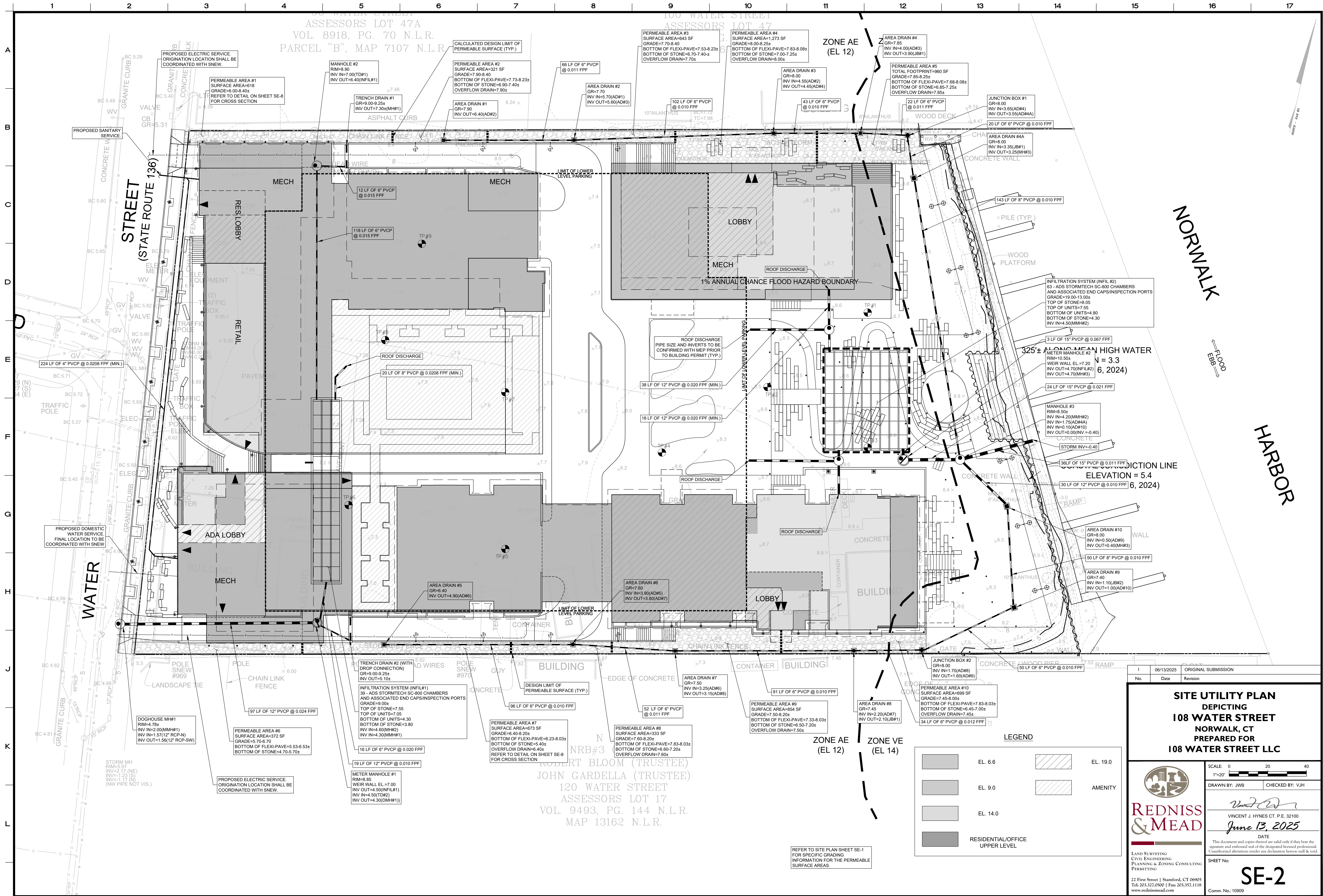
Vincent J. Hynes
VINCENT J. HYNES CT. P.E. 32100
June 13, 2025
DATE

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Revision		

108 WATER STREET

108 WATER STREET LLC

REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

SCALE: 0 20 40
1"=20'

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June 13, 2025

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108 WATER STREET

108 WATER STREET LLC

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LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

SCALE: 0 20 40
1"=20'

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108 WATER STREET

108 WATER STREET LLC

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SCALE: 0 20 40
1"=20'

DRAWN BY: JWB
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VINCENT J. HYNES CT. P.E. 32100
June 13, 2025

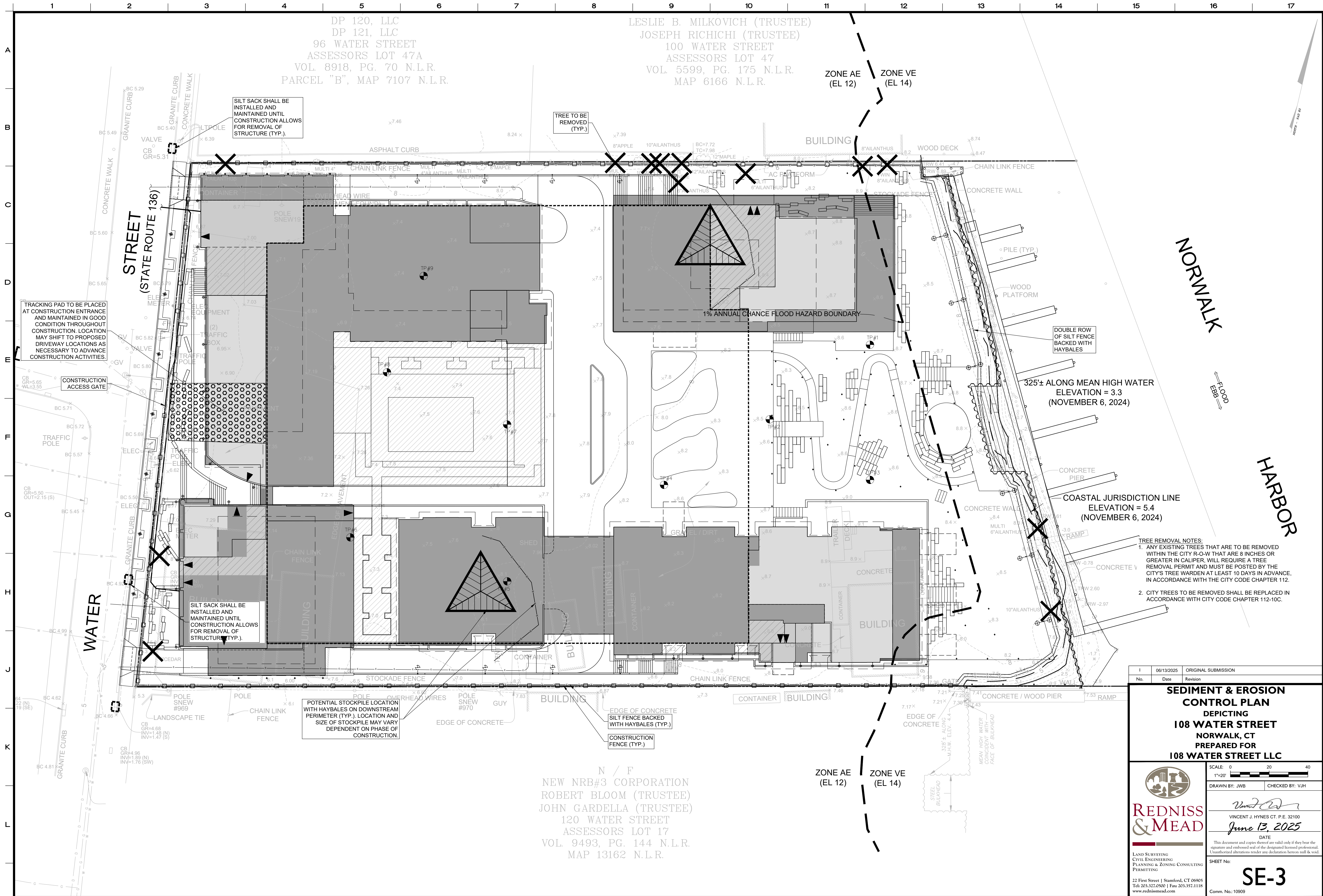
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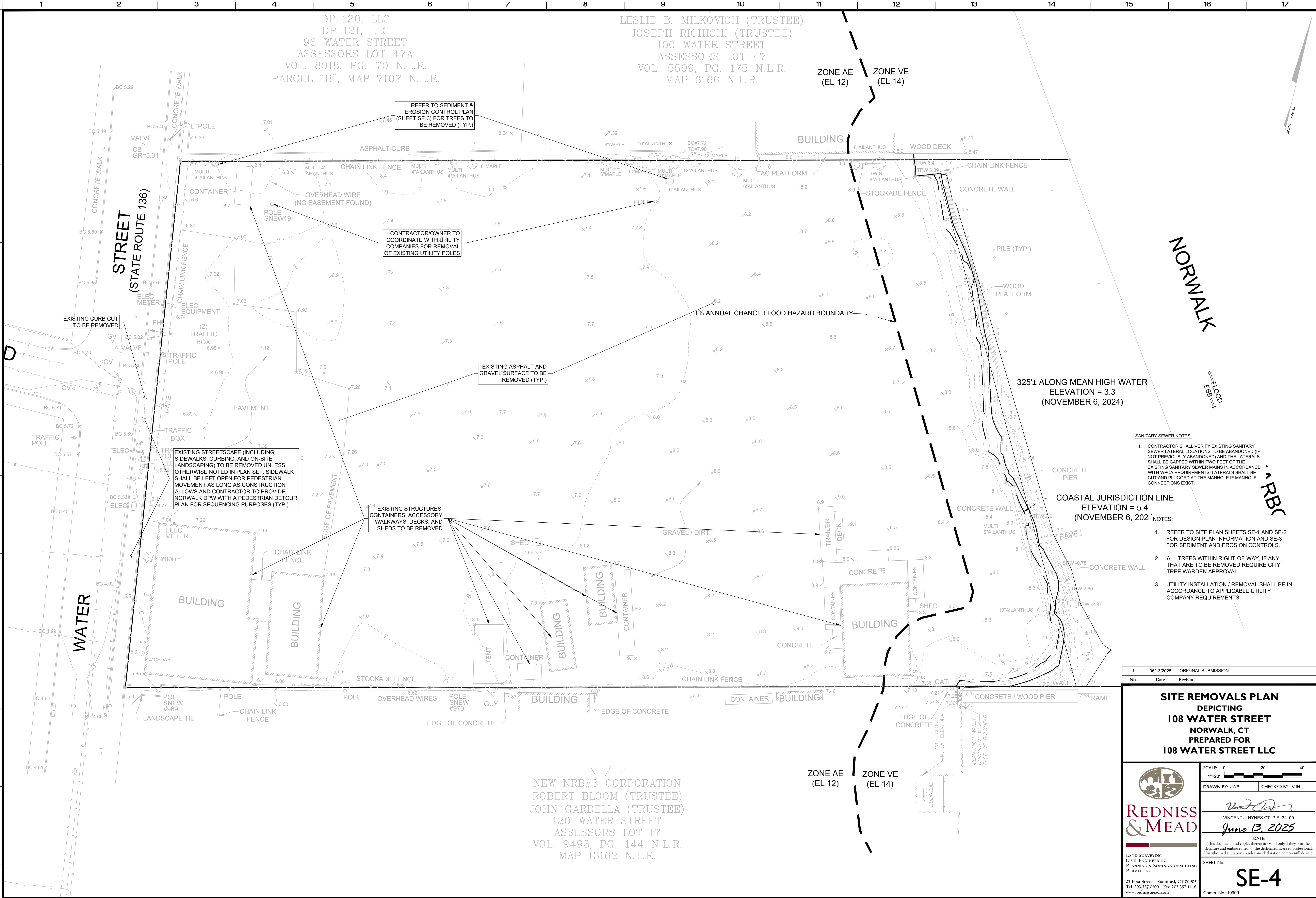
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- SANITARY SEWER NOTES:**
- CONTRACTOR SHALL VERIFY EXISTING SANITARY SEWER LATERAL LOCATIONS TO BE ABANDONED (IF NOT PREVIOUSLY ABANDONED) AND THE LATERALS SHALL BE CAPPED WITHIN TWO FEET OF THE EXISTING SANITARY SEWER MAINS IN ACCORDANCE WITH WPCA REQUIREMENTS. LATERALS SHALL BE CUT AND PLUGGED AT THE MANHOLE IF MANHOLE CONNECTIONS EXIST.
 - ALL TREES WITHIN RIGHT-OF-WAY, IF ANY, THAT ARE TO BE REMOVED REQUIRE CITY TREE WARDEN APPROVAL.
 - UTILITY INSTALLATION / REMOVAL SHALL BE IN ACCORDANCE TO APPLICABLE UTILITY COMPANY REQUIREMENTS.

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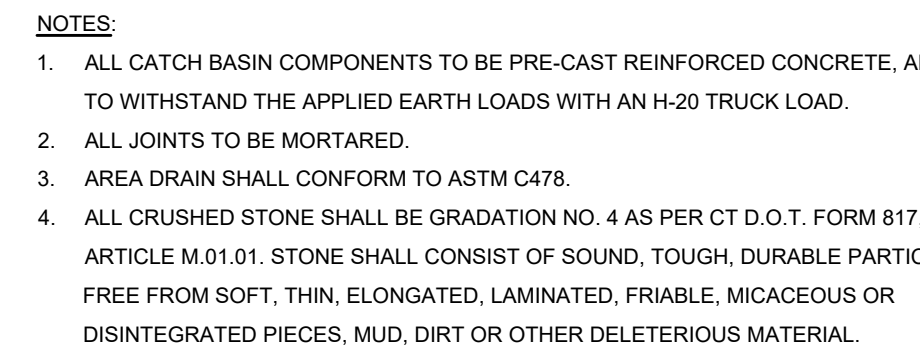
SITE REMOVALS PLAN
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

SCALE: 0 20 40
1"=20'
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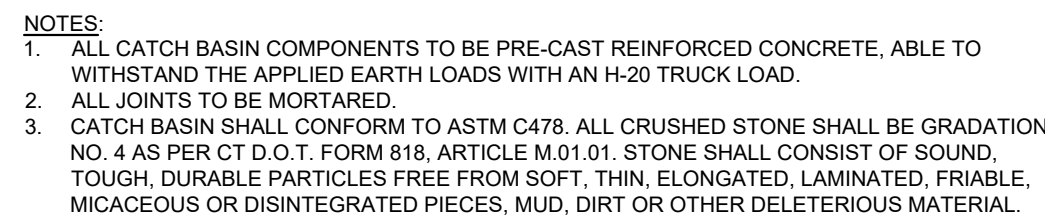
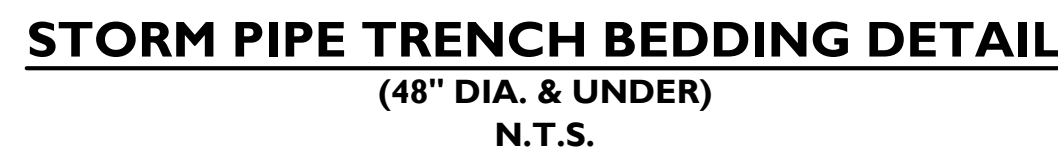
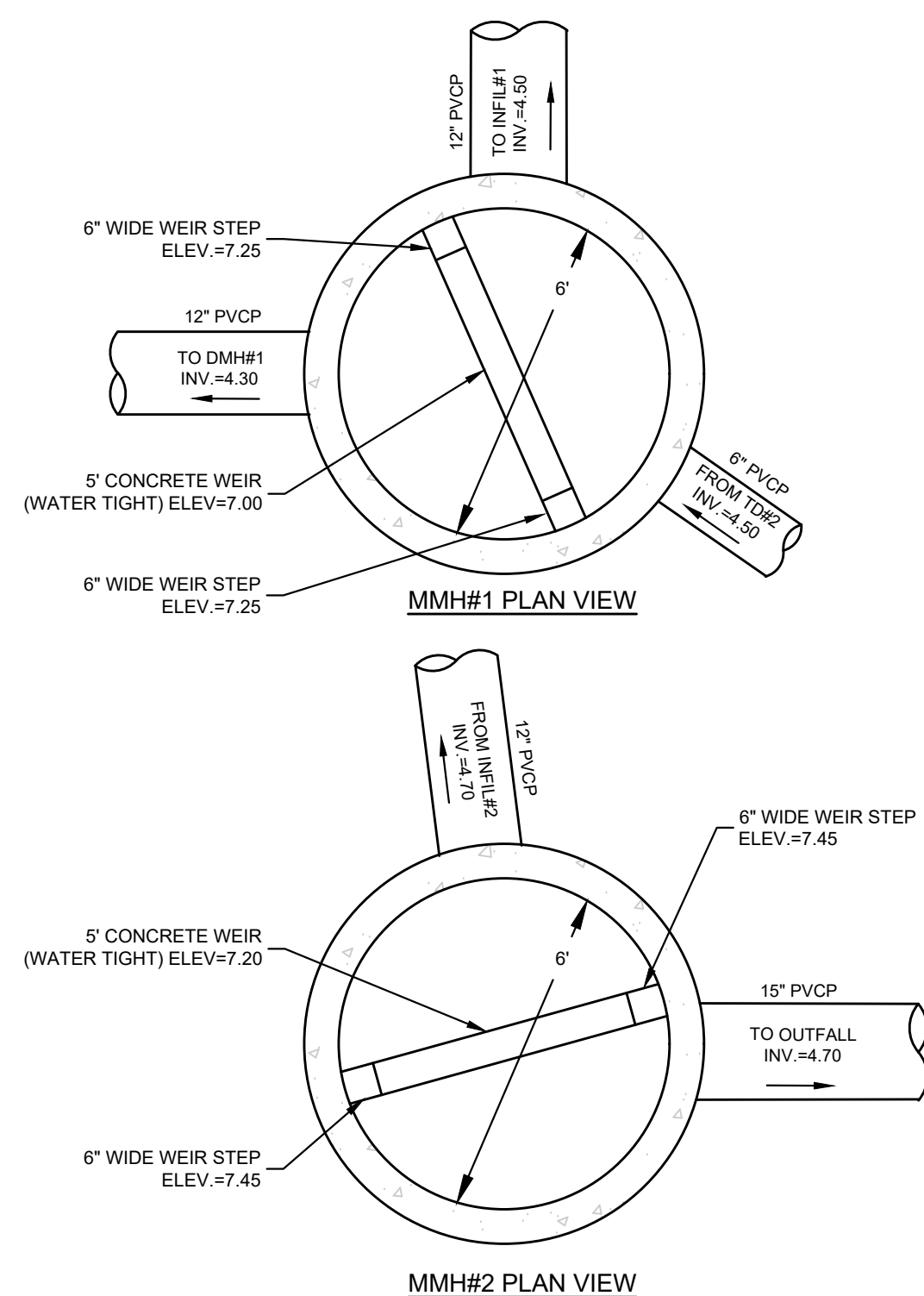


N.T.S.

- 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, MICAACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.

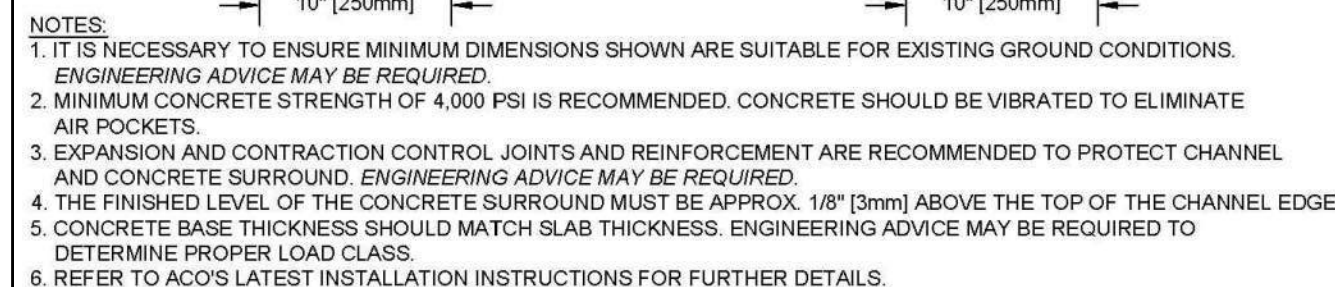


(MMH#1 & MMH#2)



N.T.S.

CAST IRON BELL TRAP	
PIPE SIZE	CAMPBELL FOUNDRY NO.
12"	2563
15"	2564
18"	2565
21"	2566
24"	2568A



K3-C-HAP	K300 - KLASSIKDRAIN - LOAD CLASS: C
	Haunched Asphalt Pavement
DATE: 08/18/16	INSTALLATION DRAWING - ACO DRAIN

SPECIFICATION CLAUSE															
R	K300 KLASIKRAIN® QUICKLOK® LOAD CLASS C GENERAL THE SURFACE DRAINAGE SYSTEM SHALL BE POLYESTER CONCRETE K300 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC. MATERIALS CHANNEL SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAIL. THE MINIMUM PROPERTIES OF POLYMER CONCRETE SHALL BE: <table border="0"> <tbody> <tr> <td>COMPRESSIVE STRENGTH:</td><td>14,000 PSI</td></tr> <tr> <td>FLEXURAL STRENGTH:</td><td>4,000 PSI</td></tr> <tr> <td>TENSILE STRENGTH:</td><td>1,500 PSI</td></tr> <tr> <td>WATER ABSORPTION:</td><td>0.07%</td></tr> <tr> <td>FROST PROOF:</td><td>YES</td></tr> <tr> <td>DILUTE ACID AND ALKALI RESISTANT:</td><td>YES</td></tr> <tr> <td>B117 SALT SPRAY TEST COMPLIANT:</td><td>YES</td></tr> </tbody> </table> THE SYSTEM SHALL BE 12" (300mm) NOMINAL INTERNAL WIDTH WITH A 1/4" (30mm) TOTAL 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. GRATINGS SHALL BE SECURED USING QUICKLOK® FASTENERS. GRADES SHALL BE SET SO THAT EACH 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.	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
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														
ACO Polymer Products, Inc., Pleasant Rd.															
Charlotte SC Attn: E-26122 Tel: 803-698-9988 Fax: 803-698-9985	9470 Pinecone Dr. Memhor, OH 44860 Tel: 440-636-7230 Fax: 440-636-7230														
4211 Pleasant Rd. Fort Mill, SC 29708 Tel: 440-636-7230 Fax: 803-698-1093															

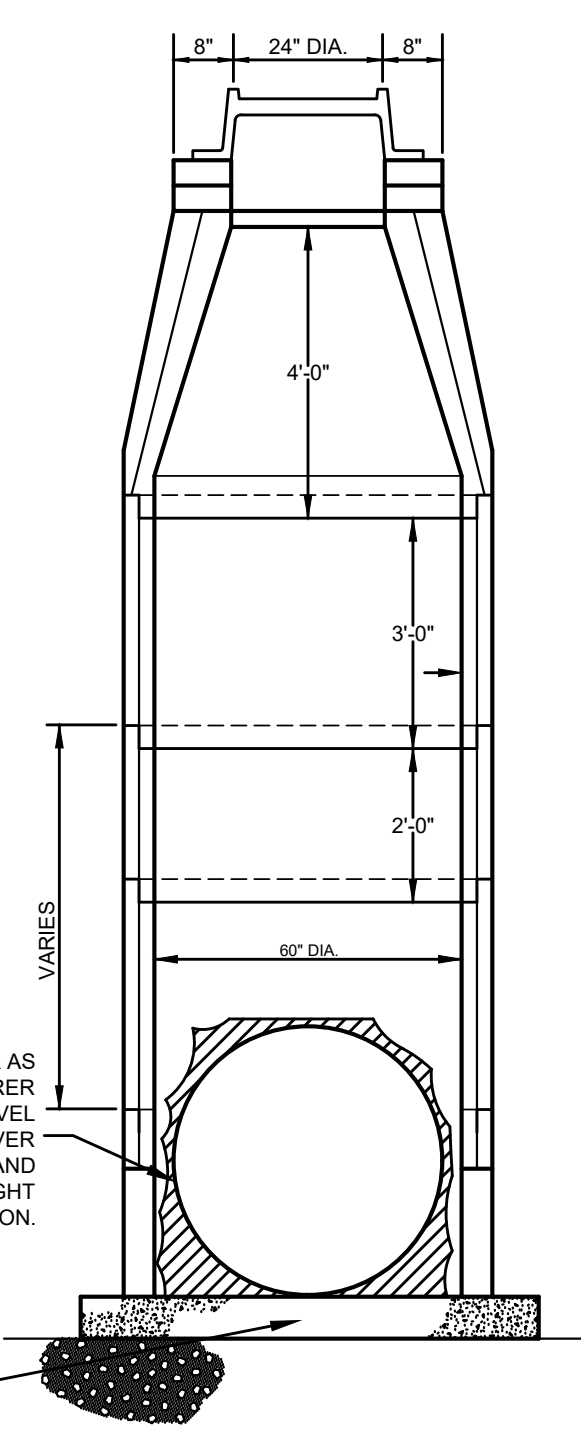
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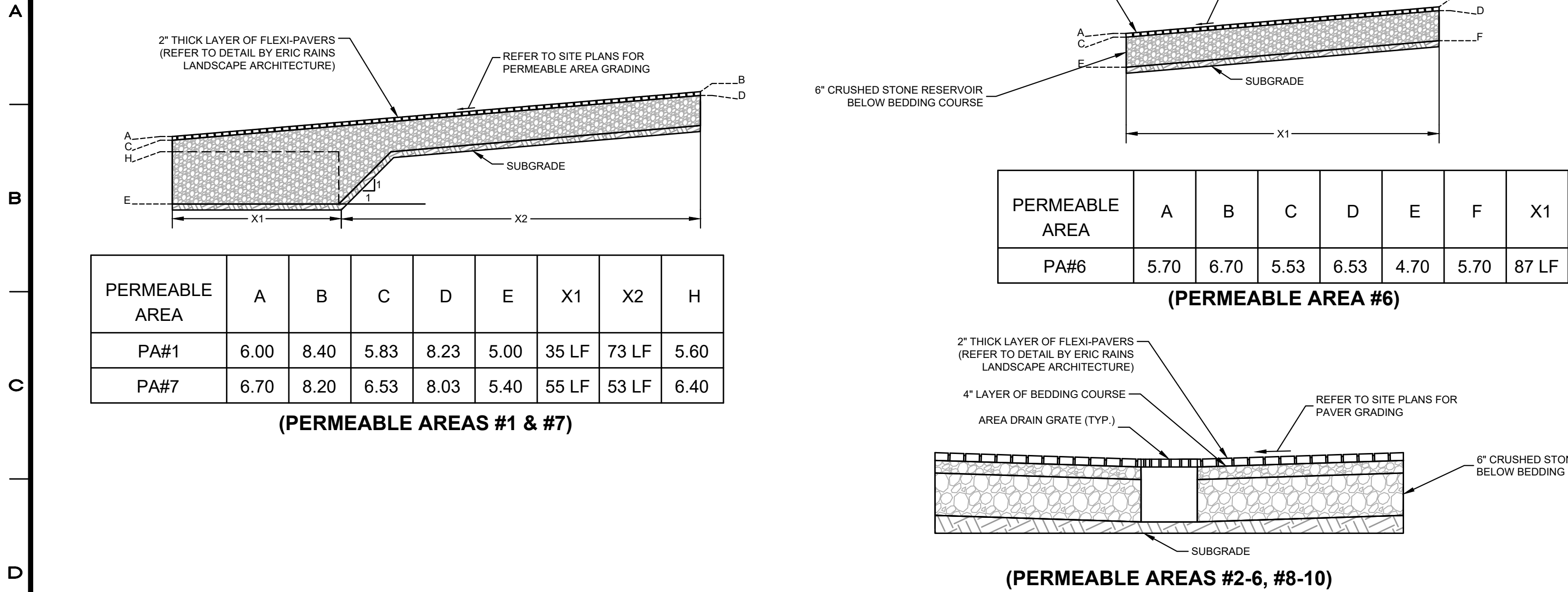
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NTS



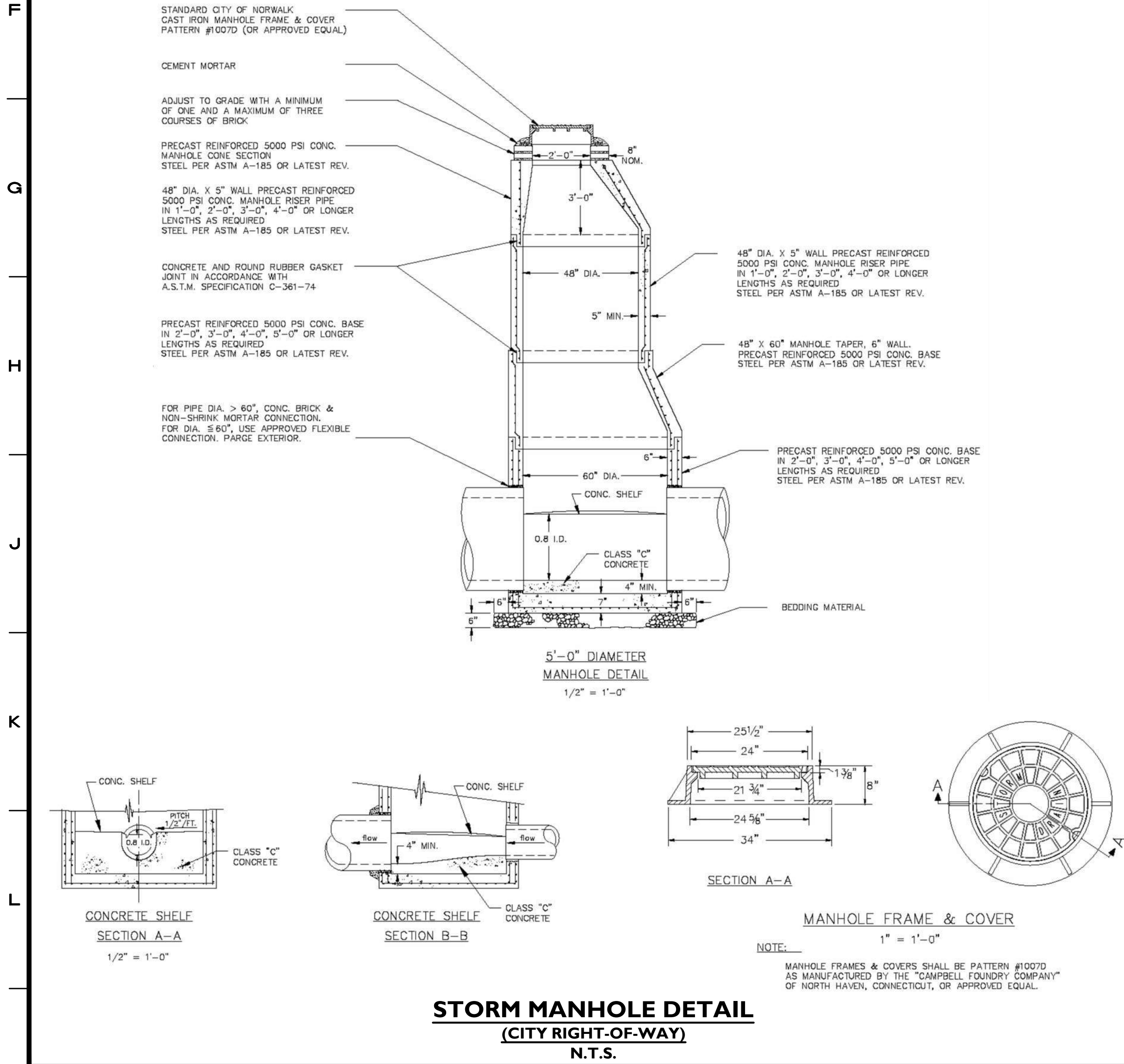
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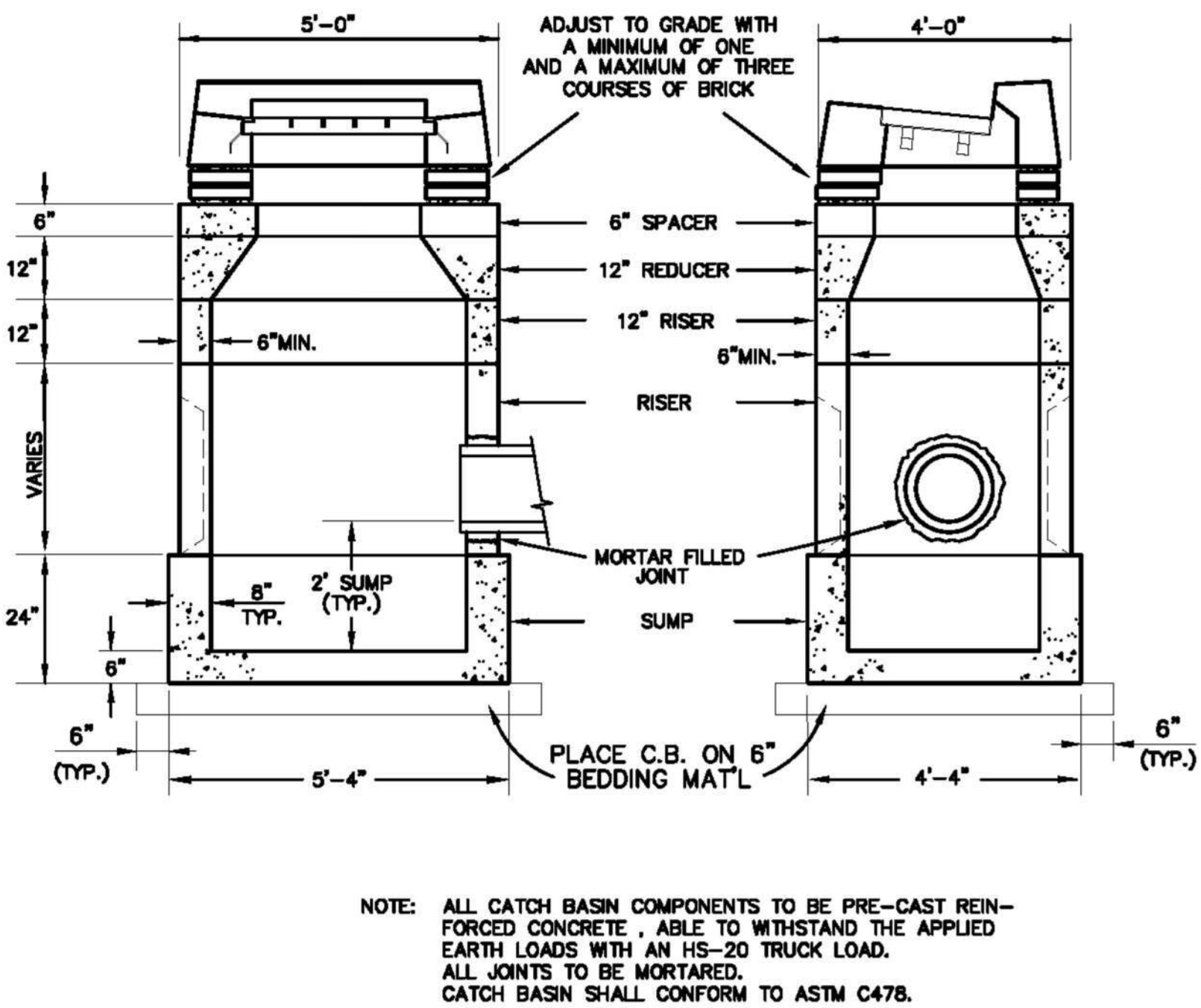
NOTES:

- PERMEABLE PAVERS SHALL BE "ECO-PRIOR" BY UNLOCK OR EQUIVALENT. COLOR AND PATTERN SHALL BE FINALIZED PRIOR TO CONSTRUCTION AND SHALL BE DETERMINED BY ARCHITECT, LANDSCAPE ARCHITECT, AND OWNER.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL PROVIDE SITE ENGINEER WITH A SIEVE ANALYSIS OF MATERIAL USED FOR THE BEDDING COURSE PRIOR TO INSTALLATION.
- AFTER SCREENING THE BEDDING MATERIAL, THE PAVERS ARE PLACED ON THIS LAYER. PAVEMENT INSTALLATION CAN BE BY HAND OR WITH MECHANICAL EQUIPMENT.
- THE PAVEMENT JOINTS ARE FILLED WITH ASTM NO. 8 STONE. DEPENDING ON THE PAVEMENT SURFACE, SPREADING AND SWEEPING CAN BE DONE WITH SHOVELS AND BROOMS, OR LARGER AREAS WITH BOBCATS AND SWEEPERS. ONCE THE JOINTS ARE FULL (WITHIN 1/4 IN. OF THE PAVEMENT SURFACE), THE SURFACE MUST BE SWEEPED CLEAN PRIOR TO COMPACTION AS LOOSE STONES ON THE SURFACE CAN MAR THE PAVERS. WHEN IN CONTACT WITH A PLATE COMPACTOR.
- AFTER THE PAVEMENT SURFACE IS SWEEPED 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 3-18 IN. TO 4 IN. THICK, THE PLATE COMPACTOR SHOULD EXERT A MINIMUM 5,000 LBF AT 70 TO 90 Hz.
- COMPACTION CAN CAUSE SOME SETTLEMENT OF THE STONES INSIDE THE JOINTS. IF THE STONES ARE MORE THAN 1/4 IN. FROM THE PAVEMENT SURFACE, THEY SHOULD BE TOPPED UP TO THIS LEVEL WITH ADDITIONAL STONES. THE PAVEMENT SURFACE SHOULD BE SWEEPED CLEAN PRIOR TO OPENING THE PAVEMENT TO TRAFFIC. AGGREGATES IN THE PAVEMENT 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 1/4 IN. BELOW THE PAVEMENT SURFACE.
- 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.
- 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.



STORM MANHOLE DETAIL
(CITY RIGHT-OF-WAY)
N.T.S.



TYPE "C" CATCH BASIN DETAIL
N.T.S.

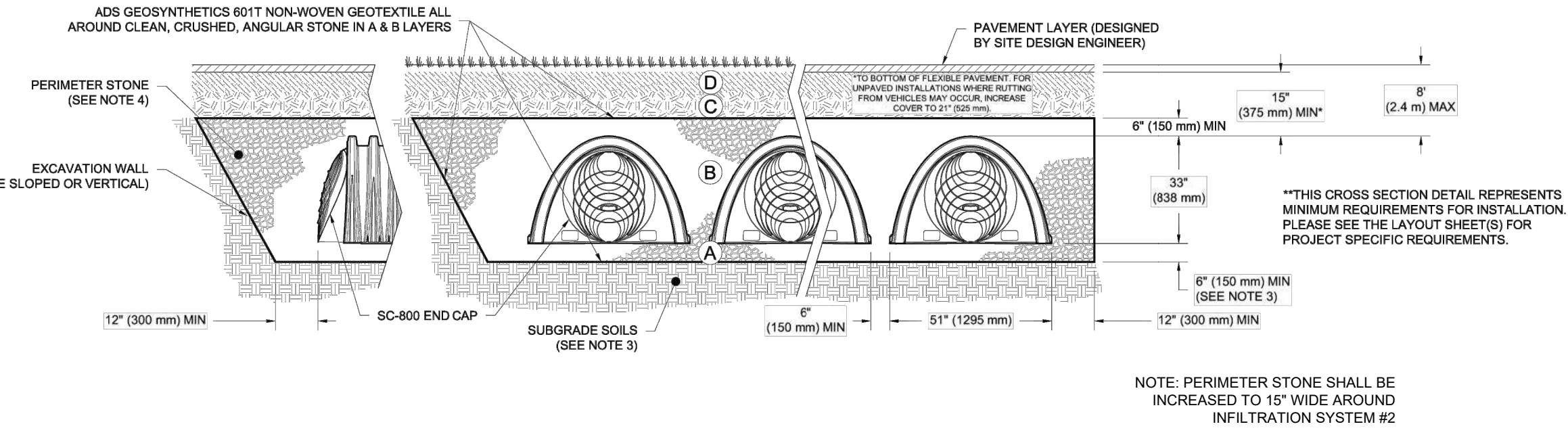
- CATCH BASIN FILTER INSERT NOTES
- USE FILTER INSERTS WHERE SHOWN ON DESIGN PLANS OR AS REQUIRED BY D.P.W. ENGINEERING. FILTER USED SHALL BE FROM D.P.W. APPROVED SUPPLIERS LIST:
 - "ULTRA-URBAN FILTER W/SMART SPONGE FILTER MEDIA" - ABTECH INDUSTRIES, SCOTTSDALE, AZ, 1-800-543-8999
 - "TRANSCO ENVROSAFE MODULAR STORMWATER CATCH BASIN FILTER" - TRANSCO INDUSTRIES, NEW ROCHELLE, NY, 1-914-636-1000
 - OR OTHER APPROVED FILTER.
 - ALLOW 24" MINIMUM CLEARANCE BETWEEN BOTTOM OF GRATE AND TOP OF PIPE INLET OR OUTLET.
 - INSTALL AND MAINTAIN ACCORDING TO MANUFACTURERS RECOMMENDATIONS.

CATCH BASIN 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.	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.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 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 90% 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	EMBODIMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ¹ 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.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

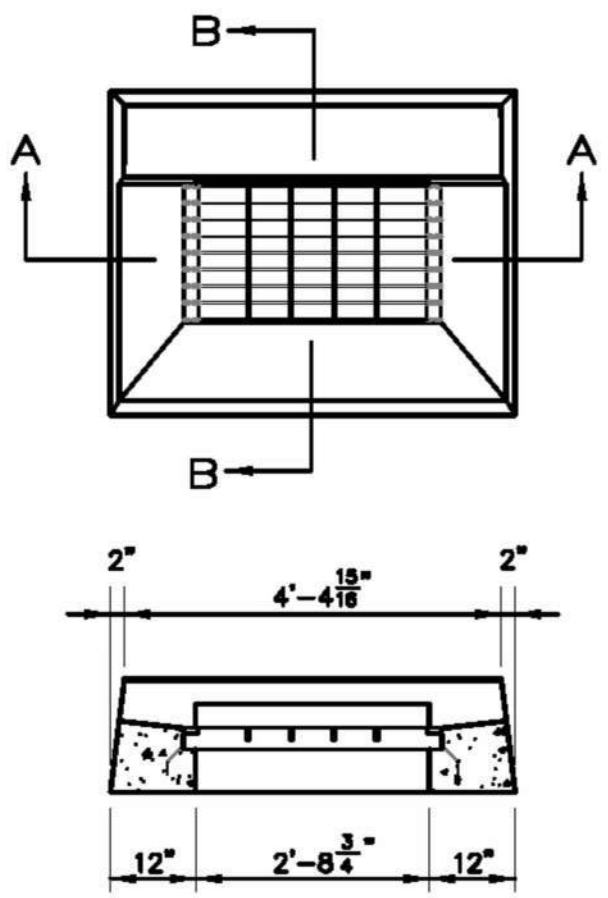
- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX. LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - 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.
 - 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.
 - WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 8.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- 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/FT², 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.



I	06/13/2025	ORIGINAL SUBMISSION
No.	Date	Revision

DETAILS
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

SCALE: N.T.S.

DRAWN BY: DML CHECKED BY: VJH

Vincent J. Hynes
VINCENT J. HYNES CT. P.E. 32100
June 13, 2025
DATE

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SHEET No: **SE-8**

Comm. No.: 10909

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A

B

C

D

E

F

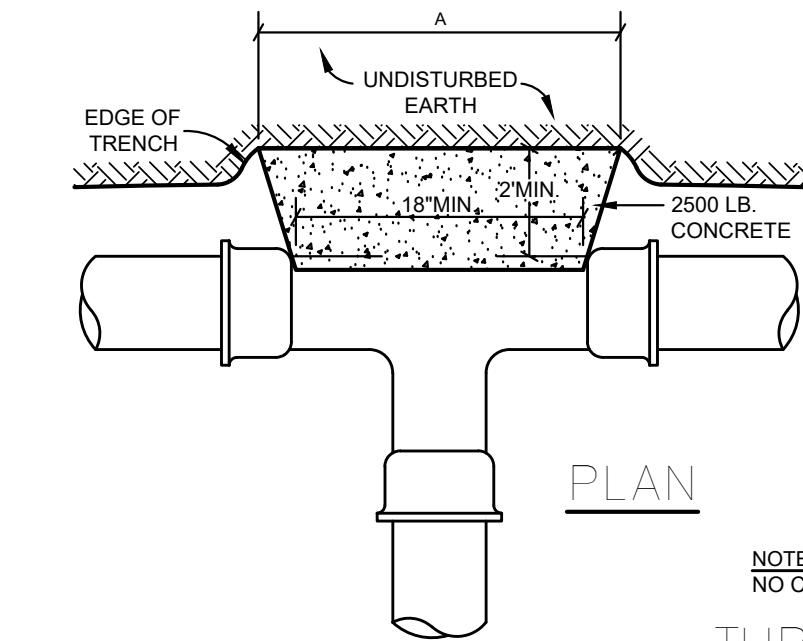
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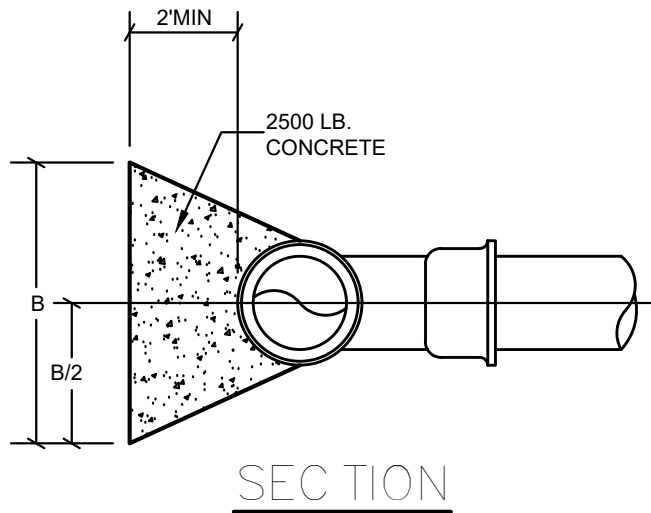
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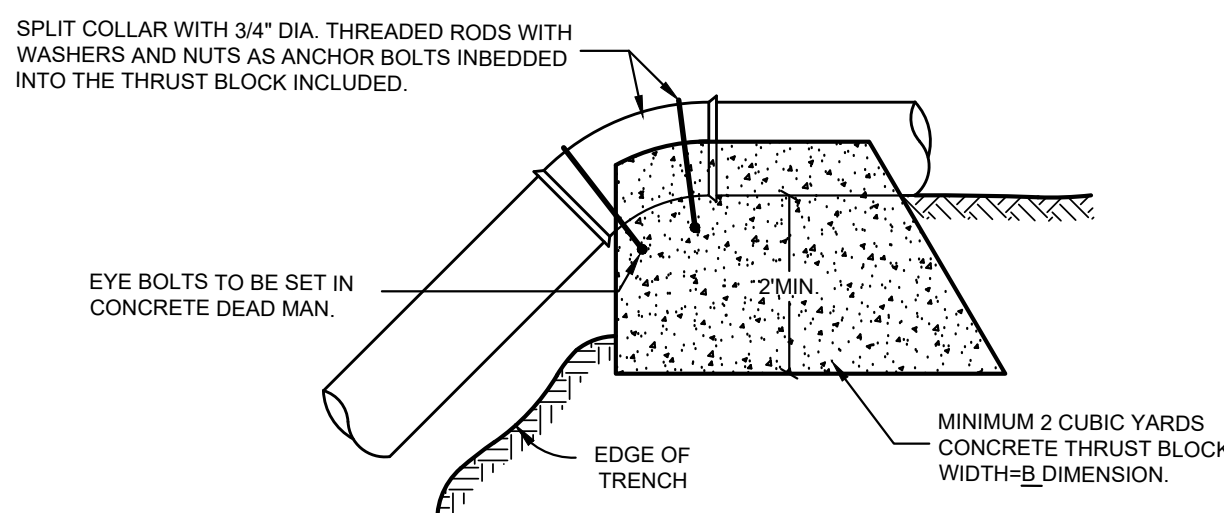
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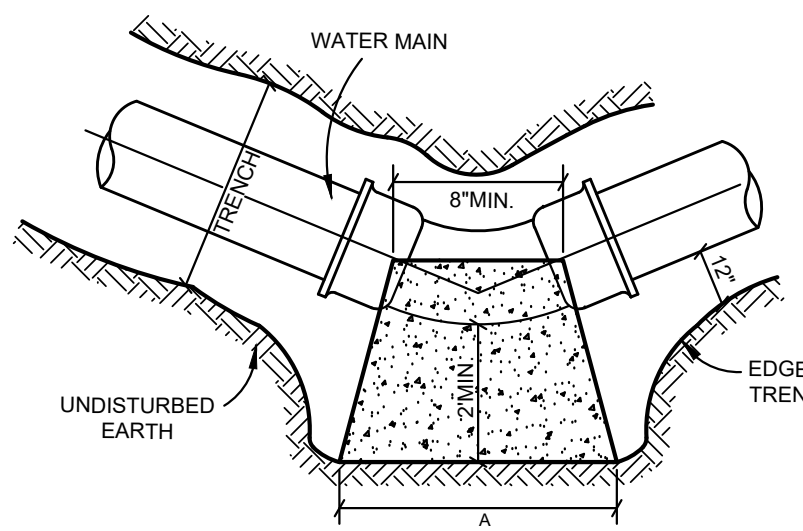
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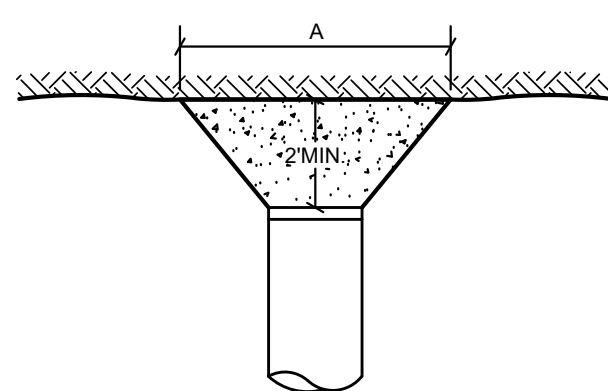
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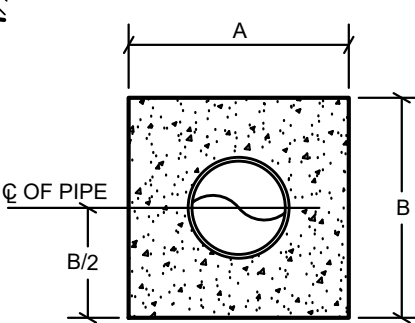
THRUST BLOCK AT VERTICAL BENDS TENSILE THRUST



THRUST BLOCK AT BENDS



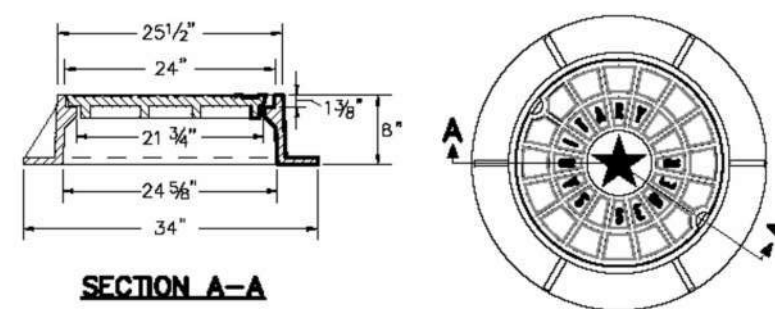
THRUST BLOCK AT PLUG



SECTION

CONCRETE THRUST BLOCK DETAILS N.T.S.

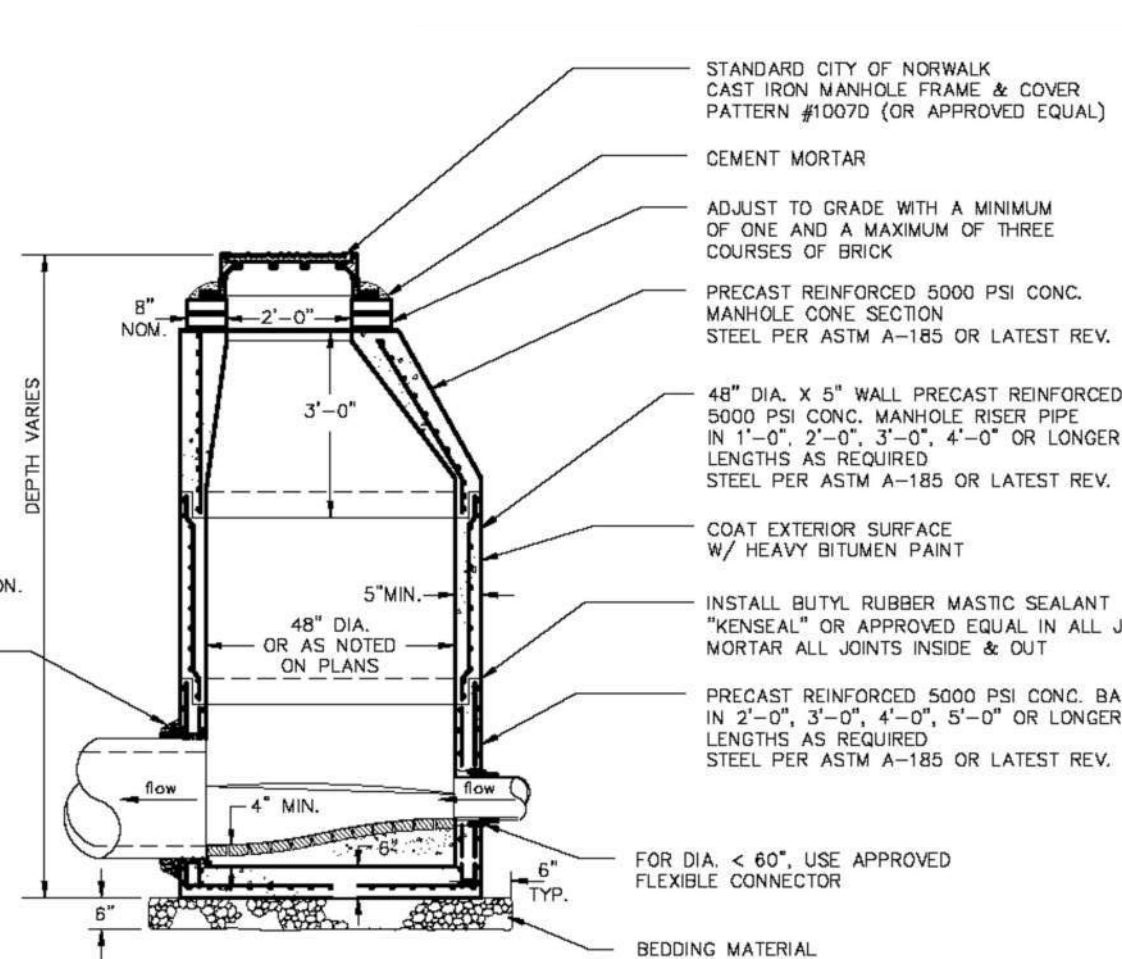
THRUST BLOCK DIMENSIONS				
FOR 6" & 8" WATER MAINS				
FITTING	C.Y.	A	B	
45°	1/3	2'-6"	2'-0"	
22-1/2°	1/3	2'-0"	1'-6"	
11-1/4°	1/3	2'-0"	1'-0"	
TEE	4/5	3'-6"	3'-0"	
PLUG	4/5	3'-6"	3'-0"	
FOR 10" & 12" WATER MAINS				
45°	1	3'-6"	3'-6"	
22-1/2°	2/5	3'-6"	2'-0"	
11-1/4°	1/5	2'-0"	1'-6"	
TEE	1	5'-0"	4'-0"	
PLUG	1	5'-0"	4'-0"	
FOR 16" WATER MAINS				
45°	1	3'-6"	4'-0"	
22-1/2°	2	3'-6"	3'-0"	
11-1/4°	1/2	2'-6"	2'-0"	
TEE	2	5'-6"	5'-0"	
PLUG	2	5'-0"	5'-0"	



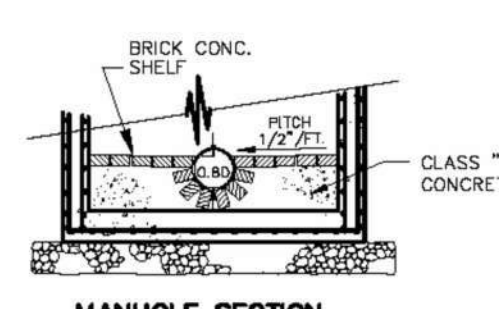
MANHOLE FRAME & COVER

NOTE: MANHOLE FRAMES & COVERS SHALL BE PATTERN #10070 AS MANUFACTURED BY THE "CAMPBELL FOUNDRY COMPANY" OF NORTH HAVEN, CONNECTICUT, OR APPROVED EQUAL.

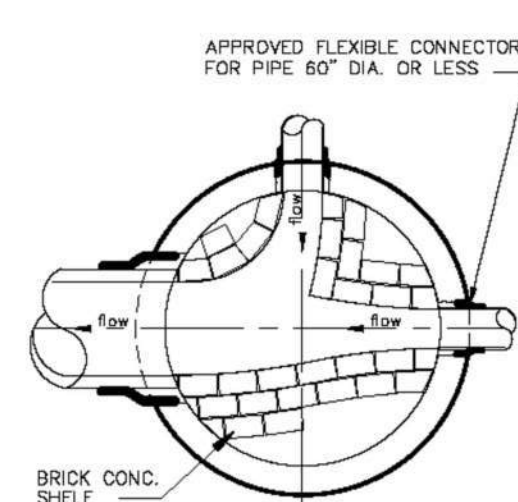
FOR DIA. > 60", CONC. BRICK & NON-SHRINK MORTAR CONNECTION, FOR DIA. ≤ 60", USE APPROVED FLEXIBLE CONNECTION, PARGE EXTERIOR.



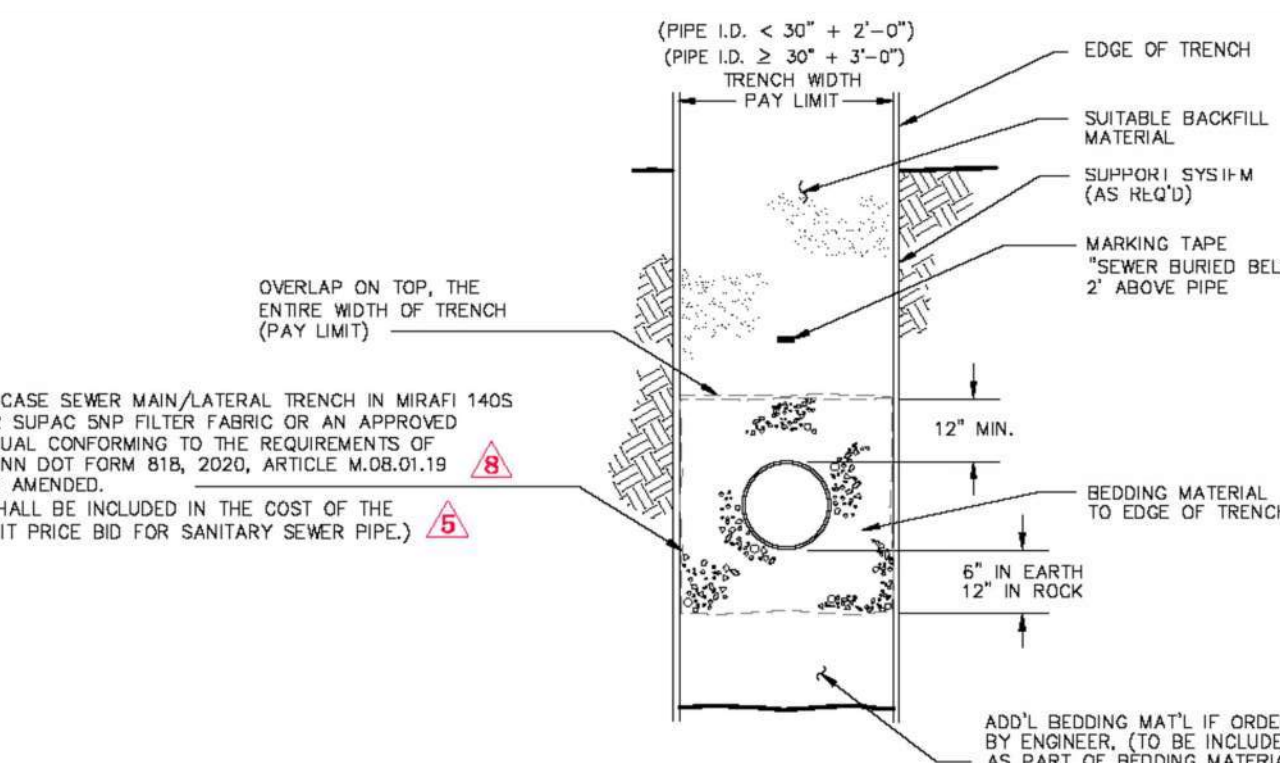
SANITARY MANHOLE DETAIL N.T.S.



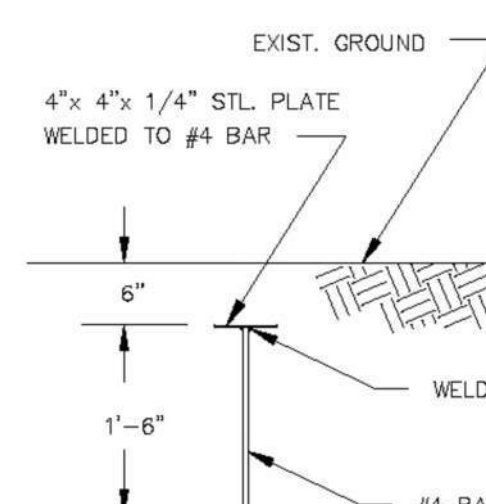
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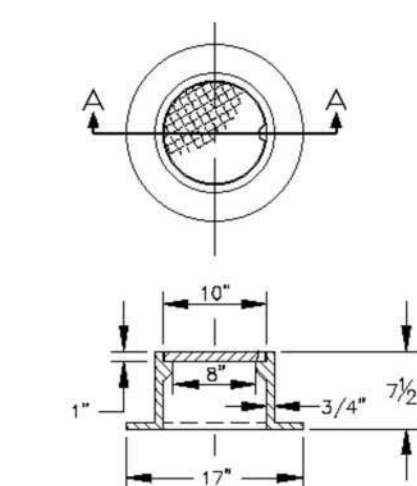
MANHOLE PLAN



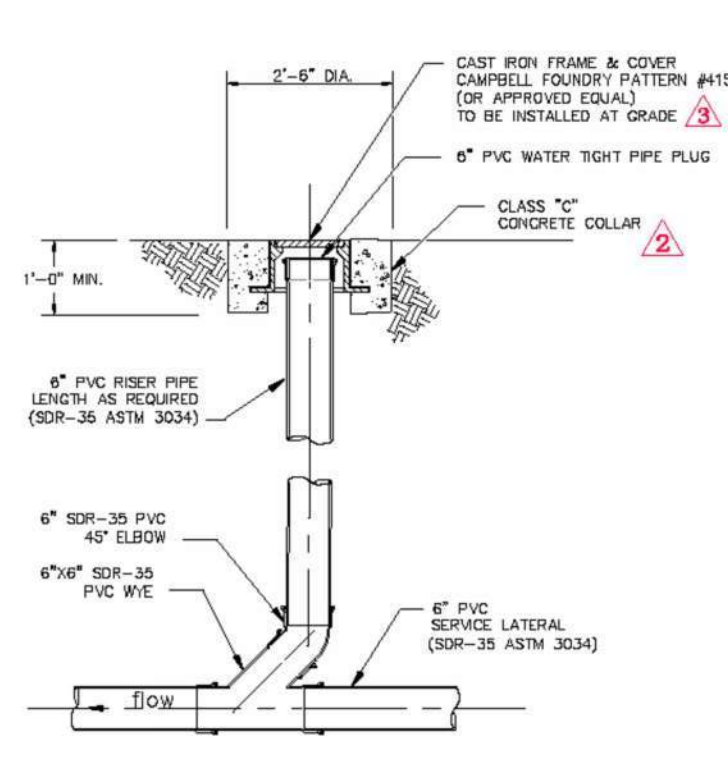
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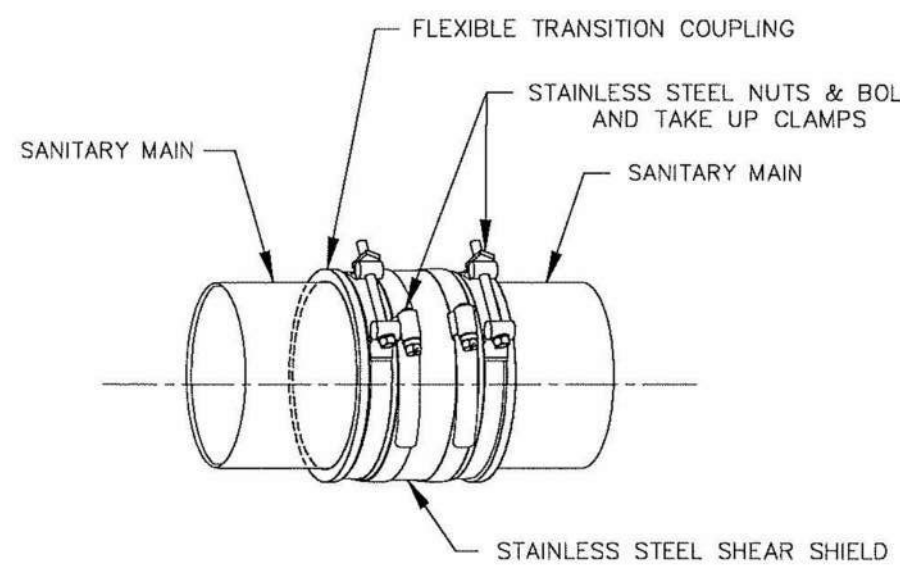
SANITARY LATERAL MARKER DETAIL N.T.S.



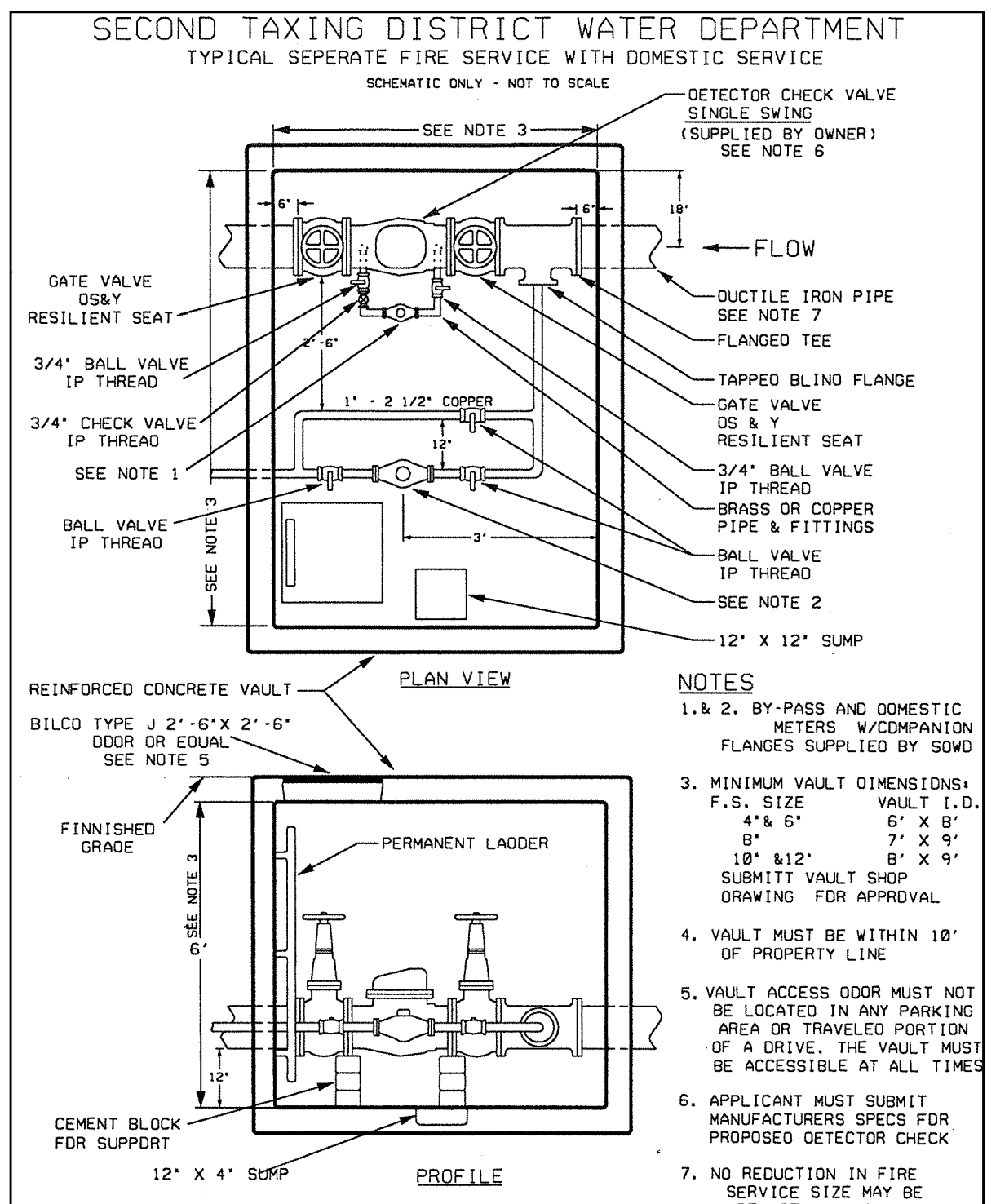
CLEAN OUT FRAME & COVER N.T.S.



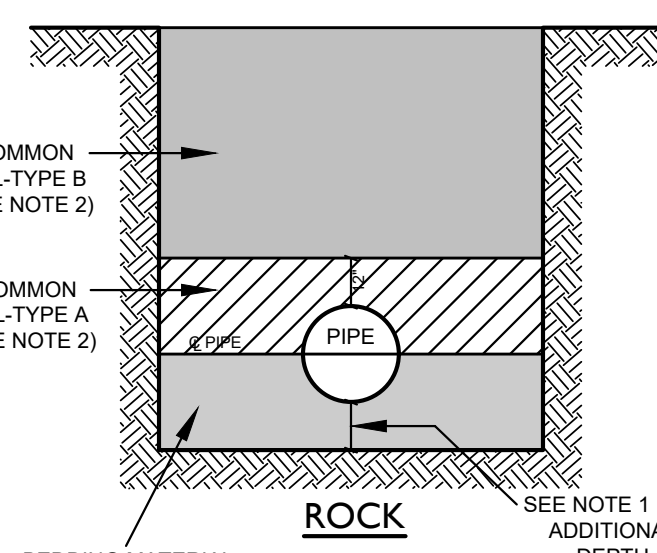
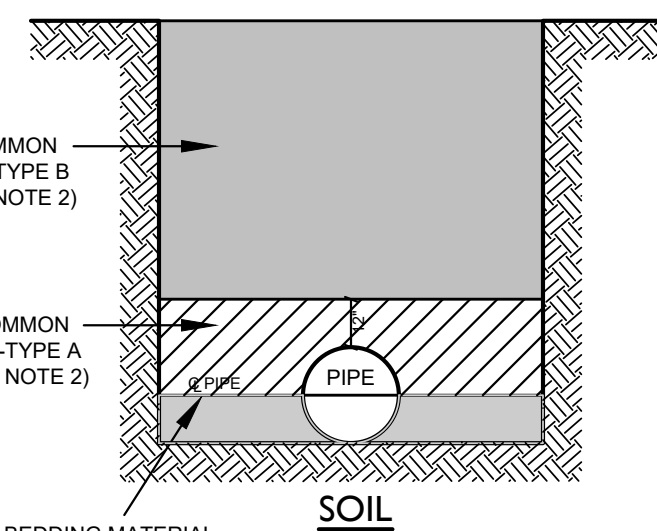
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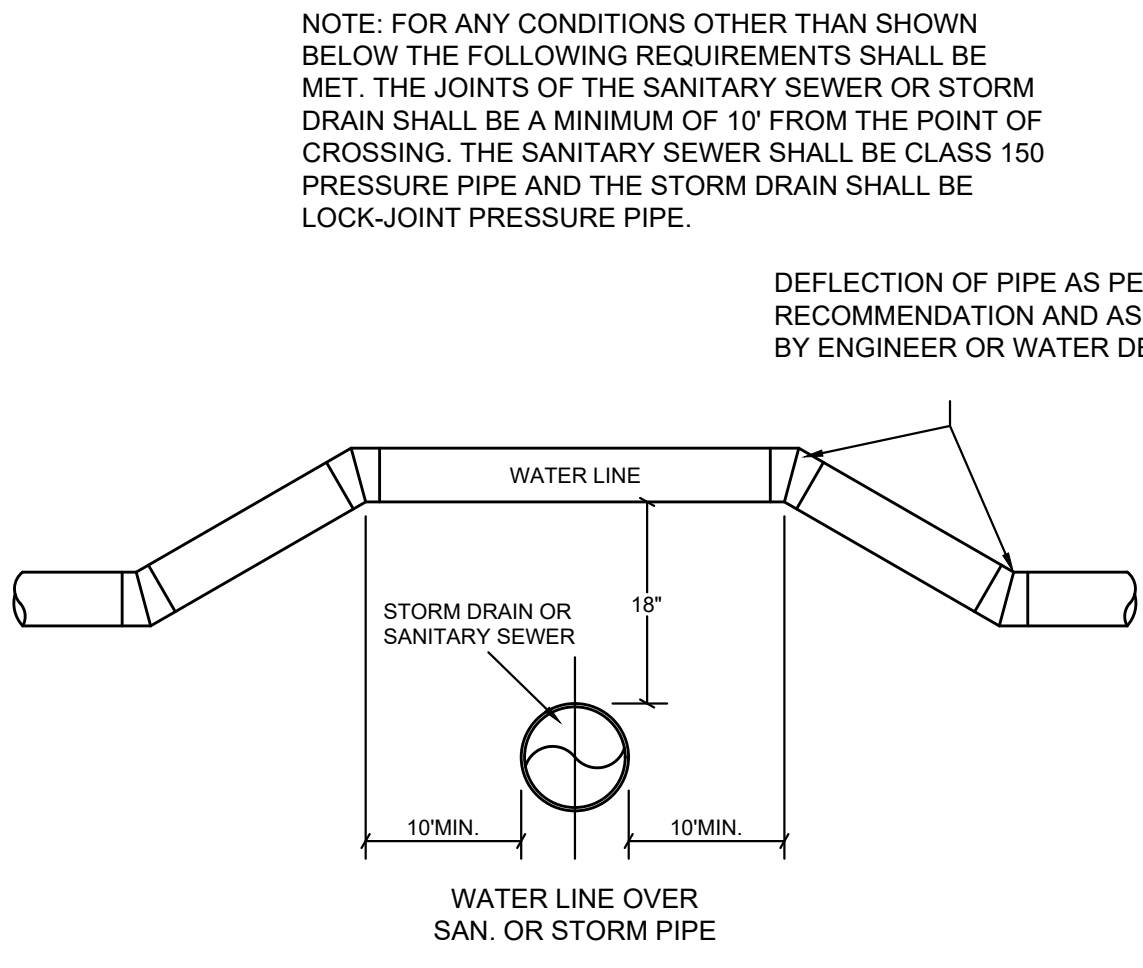
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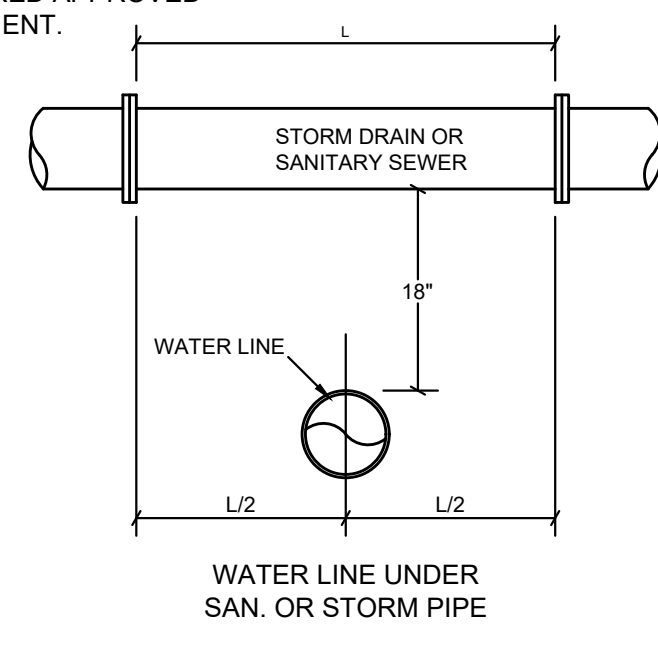
WATER METER VAULT DETAIL N.T.S.



WATER TRENCH BACKFILL MATERIALS N.T.S.



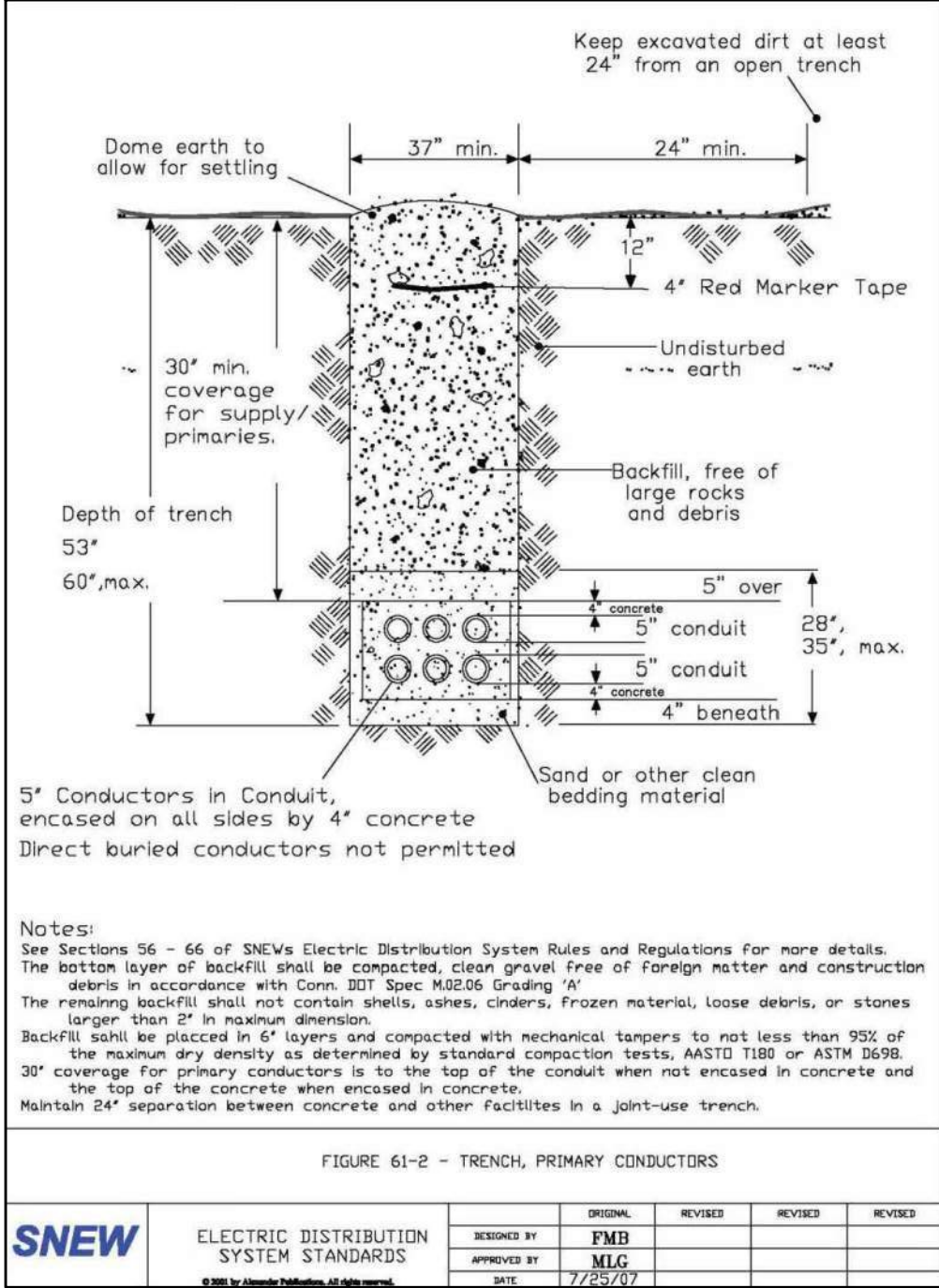
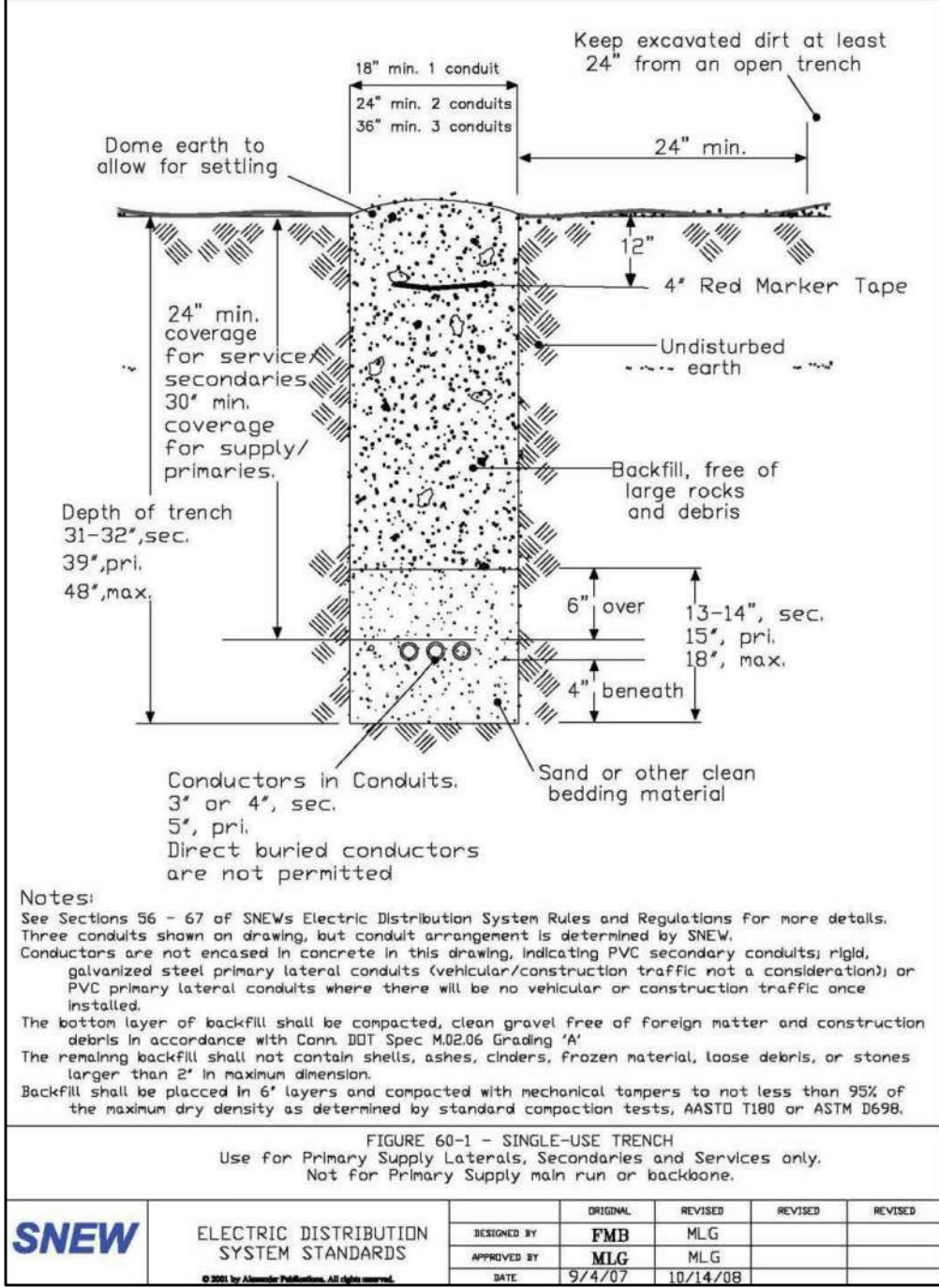
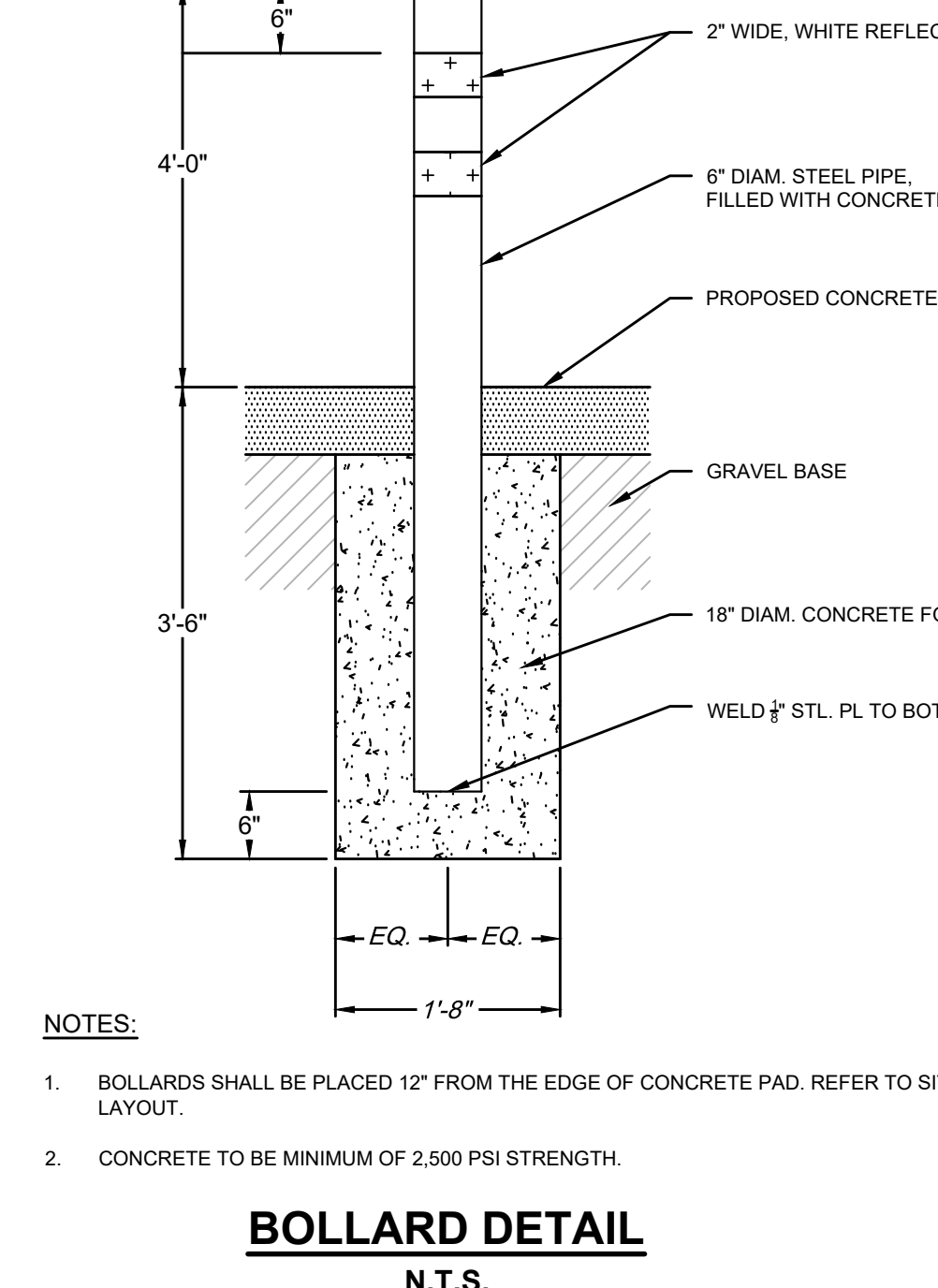
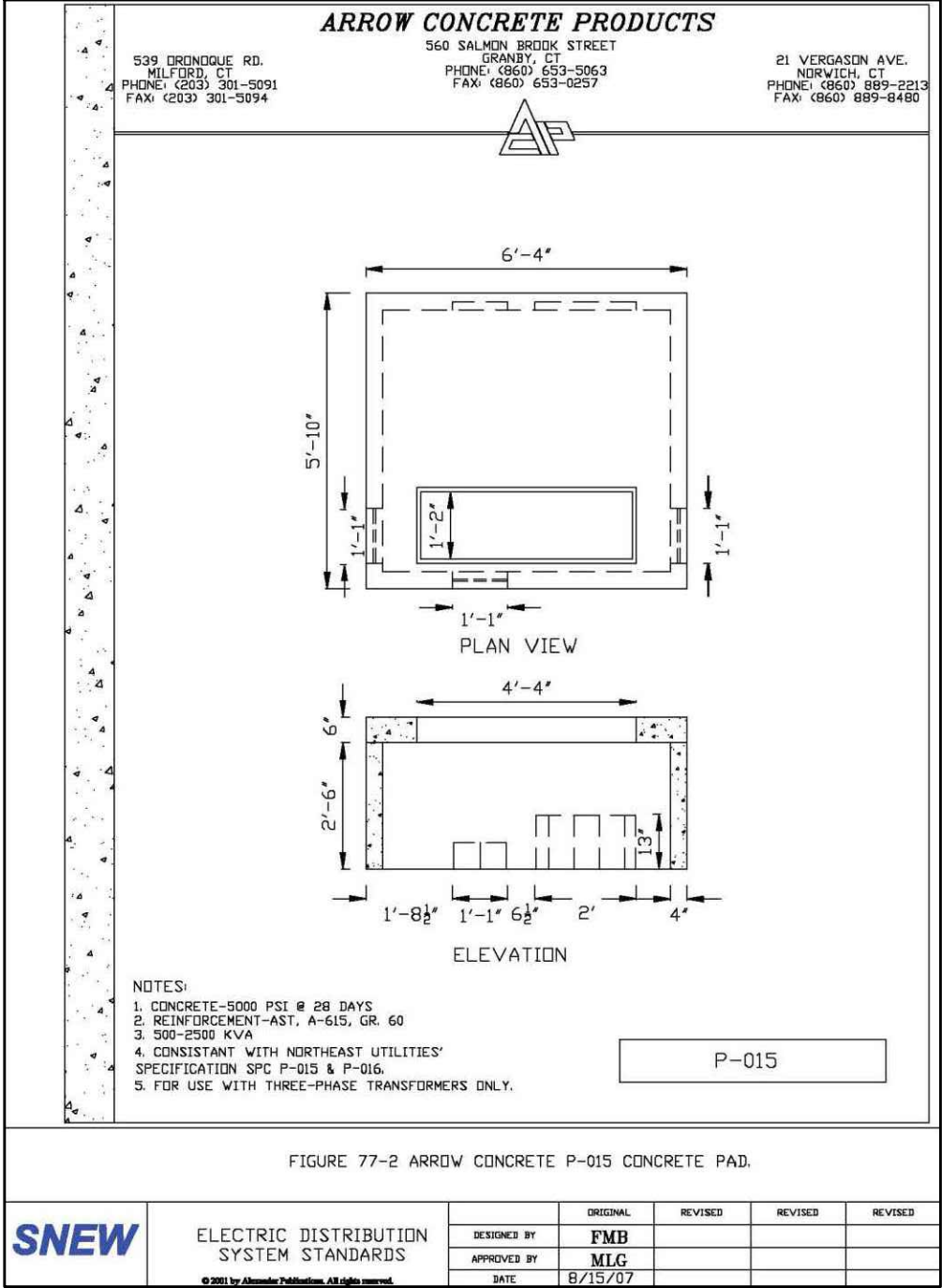
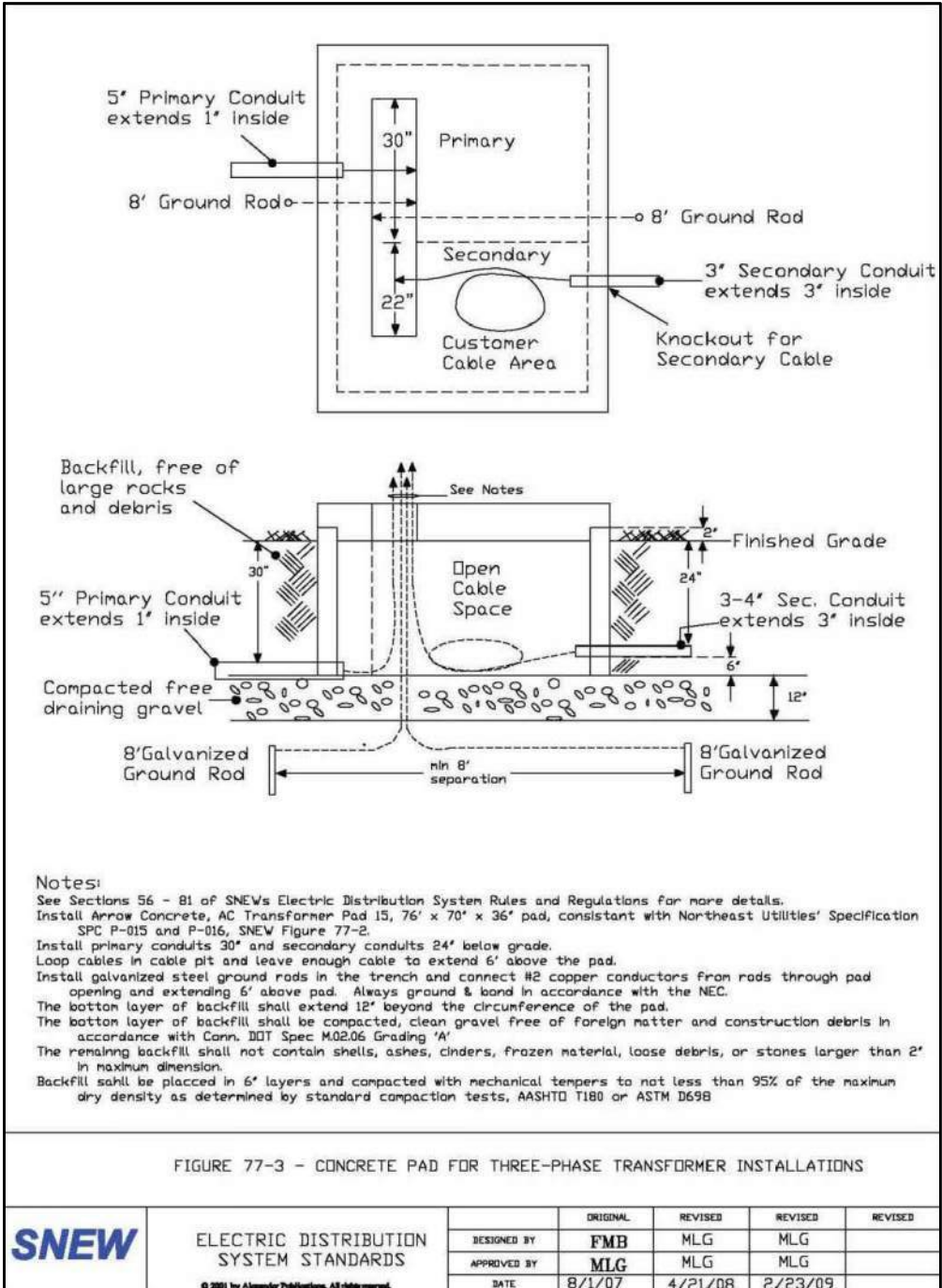
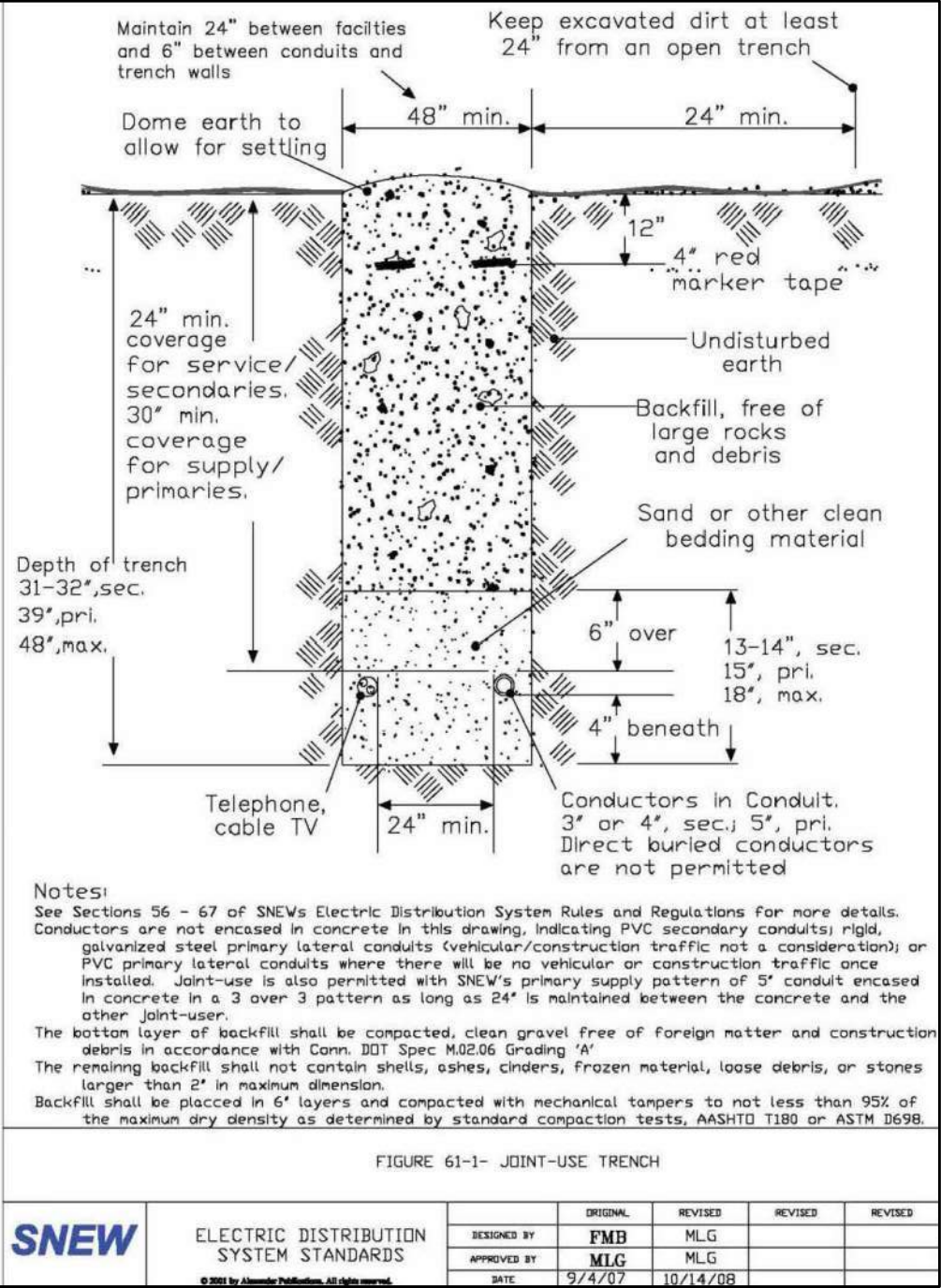
CROSSINGS OF WATER LINE AND SAN. & STORM PIPES N.T.S.



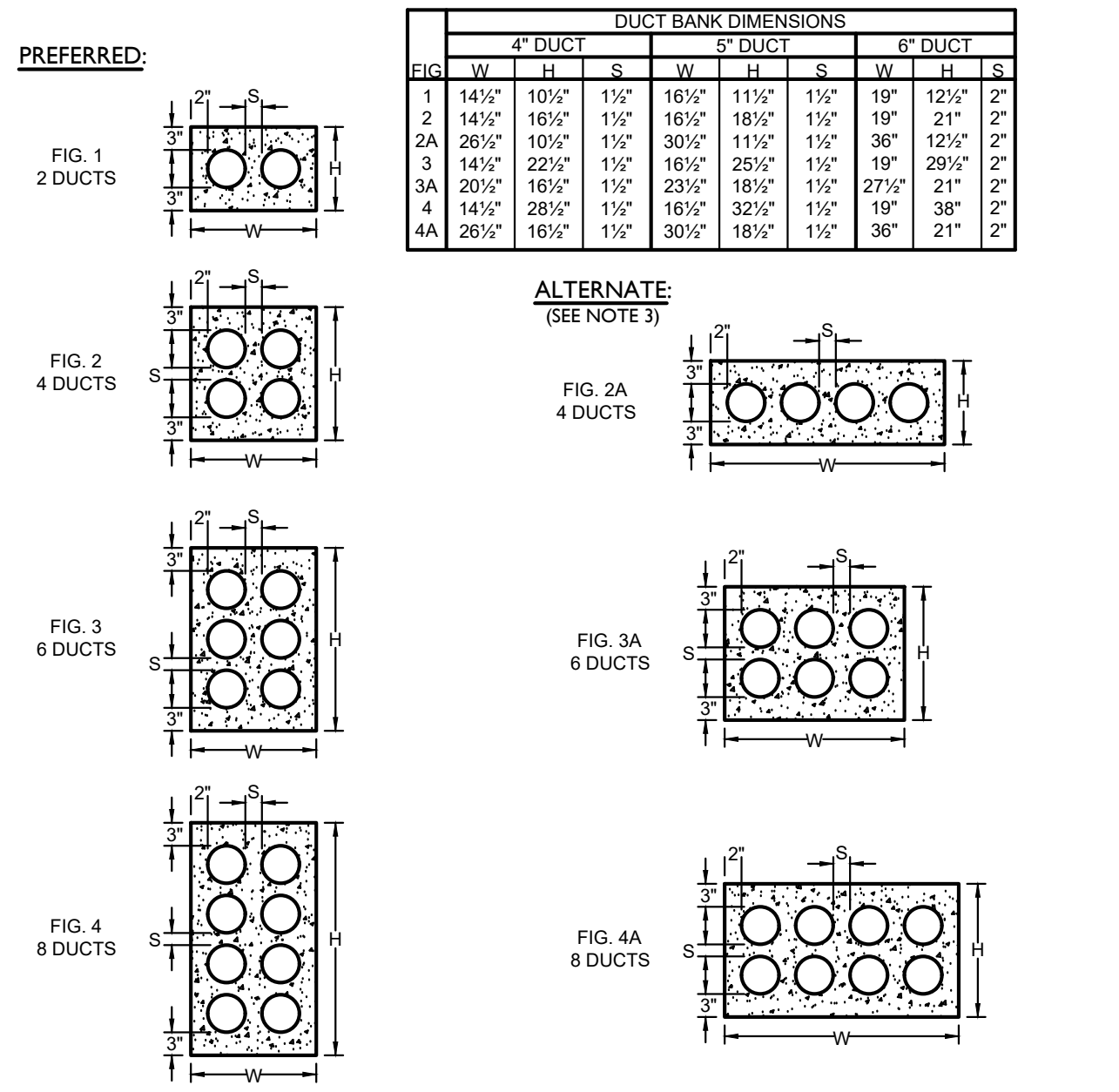
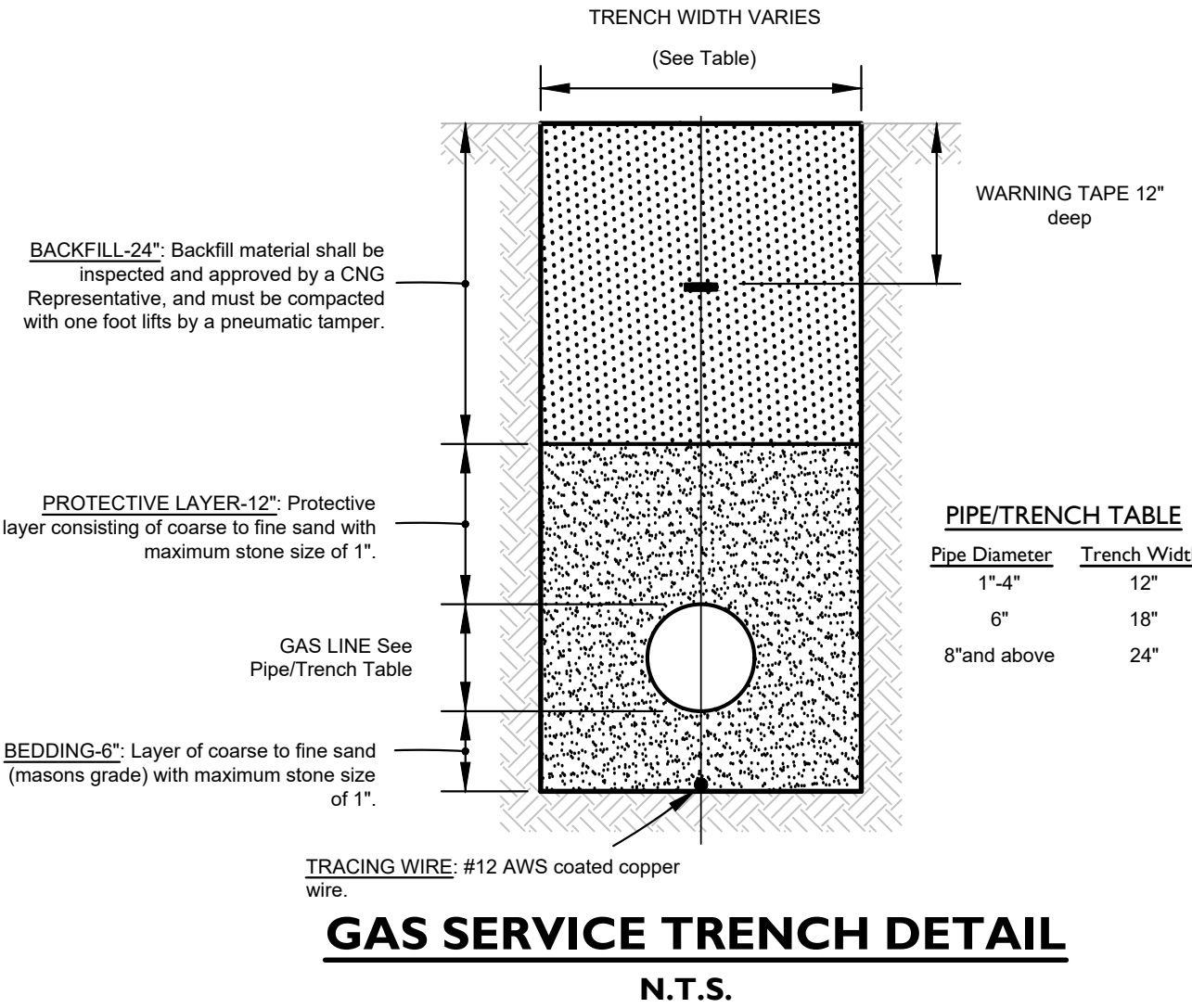
1	06/13/2025	ORIGINAL SUBMISSION
No.	Date	Revision
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108 WATER STREET		
NORWALK, CT		
PREPARED FOR		
108 WATER STREET LLC		
SCALE: N.T.S.		
DRAWN BY: DML CHECKED BY: VJH		
VINCENT J. HYNES CT. P.E. 32100		
June 13, 2025		
DATE		
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Comm. No.: 10909		

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- Notes:**
- A minimum of 10' vertical clearance and 50' horizontal clearance will be maintained between the gas line and all other structures.
 - Minimum cover for mains shall be 30" from finished grade as measured from gutter line.
 - 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.
 - Off the traveled portion when section is at a higher elevation than the traveled way - elevation to be taken from gutter line.
 - 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.
 - Minimum cover of service lines in private property shall be 20" only when approved by the Eversource inspector or designee.
 - The bottom of the trench must be free of rocks, debris, or water that could damage the pipe or its coating.
 - 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).
 - 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.
 - Only personnel qualified by Eversource will be allowed to install gas lines.
 - The builder will supply a suitable location to store the pipe and materials and will be responsible for its security.



- Notes:**
- AT MANHOLES CONDUIT BANKS SHALL BE PER FIGS. 1, 2, 3 OR 4.
 - MINIMUM COVER FROM TOP OF A CONDUIT BANK TO THE PAVEMENT OR EARTH SURFACE TO BE:
 - STATE HIGHWAYS - 36"
 - RAILROAD TRACKS - 60"
 - ALL OTHER AREAS - 24"
 - IN THE CONDUIT RUN BETWEEN MANHOLES IF OBSTRUCTIONS ARE ENCOUNTERED OR TO REDUCE TRENCH DEPTH, FIGS. 2A, 3A OR 4A ARE PERMISSIBLE.
 - CONCRETE SHALL BE 2500 P.S.I., 1/2" MAXIMUM STONE, 6"-8" 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.
 - DUCTS SHALL BE SCHEDULE 40 PVC.

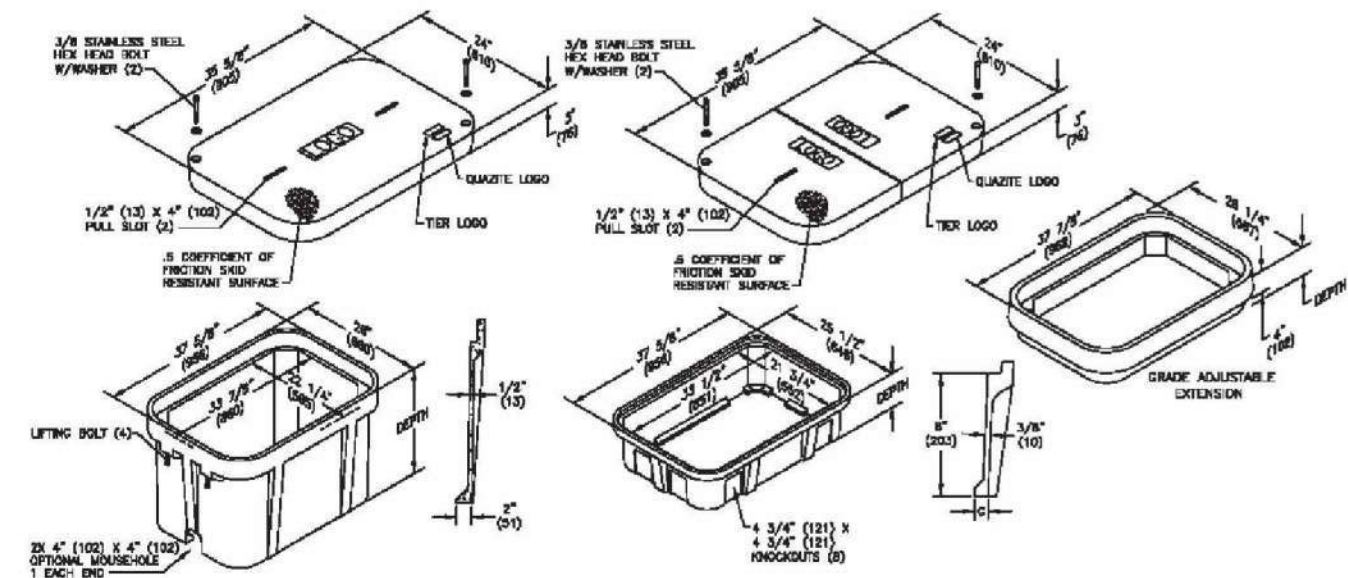
CONDUIT BANK CONSTRUCTION
N.T.S.



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.
W/2 Bolts	8	8,000 / 12,000	100	10	PG2436AC00**
2 piece w/2 Bolts	8	8,000 / 12,000	122	10	PG2436C000**
W/2 Bolts	15	15,000 / 22,500	115	10	PG2436HA00**
2 piece w/2 Bolts	15	15,000 / 22,500	122	10	PG2436H000**
W/2 Bolts	22	22,500 / 33,750	122	10	PG2436H000**
No Bolts	8	8,000 / 12,000	100	10	PG2436AA00**

To order gasketed covers, replace the letter "A" with the letter "G".
Replace "H" with a logo code found on page 60. See page 65 for meter and touch/radio road 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.

I	06/13/2025	ORIGINAL SUBMISSION
No.	Date	Revision

DETAILS
DEPICTING
108 WATER STREET
NORWALK, CT
PREPARED FOR
108 WATER STREET LLC

SCALE: N.T.S.

DRAWN BY: DML CHECKED BY: VJH

Vincent J. Hynes CT. P. E. 32100
June 13, 2025

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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.

Table of Contents

	Orientation Map	1
I.	<u>INTRODUCTION</u>	
	<i>Property Description</i>	2
	<i>Nature of Flooding</i>	2
II.	<u>FLOOD PREPAREDNESS</u>	
	<i>Awareness and Preparedness</i>	3
	<i>Flood Warning Procedure</i>	3
III.	<u>LIMITATIONS</u>	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 Flood 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 WNLK	(95.9 FM) (1350 AM)
Television:	News 12 Connecticut WTNH Channel 8	(Channel 12) (Channel 8)
Website:	City of Norwalk The Weather Channel AccuWeather National Weather Service	https://www.norwalkct.gov/ https://weather.com https://www.accuweather.com 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

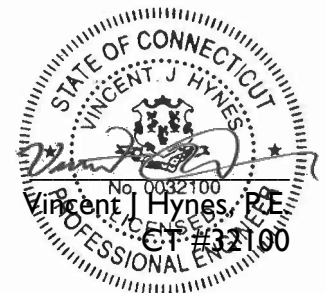


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APPENDICES

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:

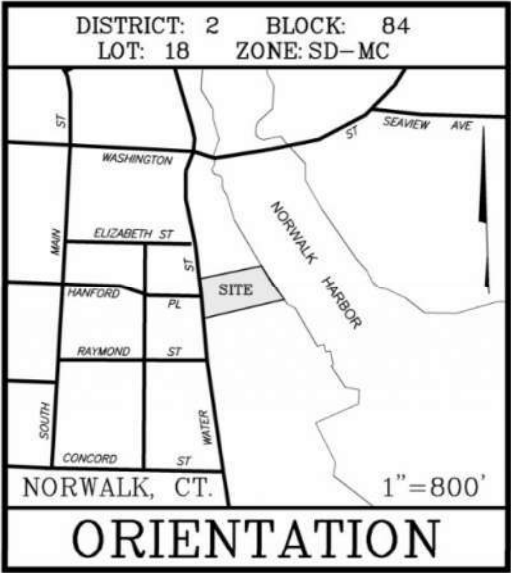
Appendix 7: Drainage Infrastructure Exhibit
Exhibit depicting Surface Elevations, South Norwalk

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 is 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 device 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).

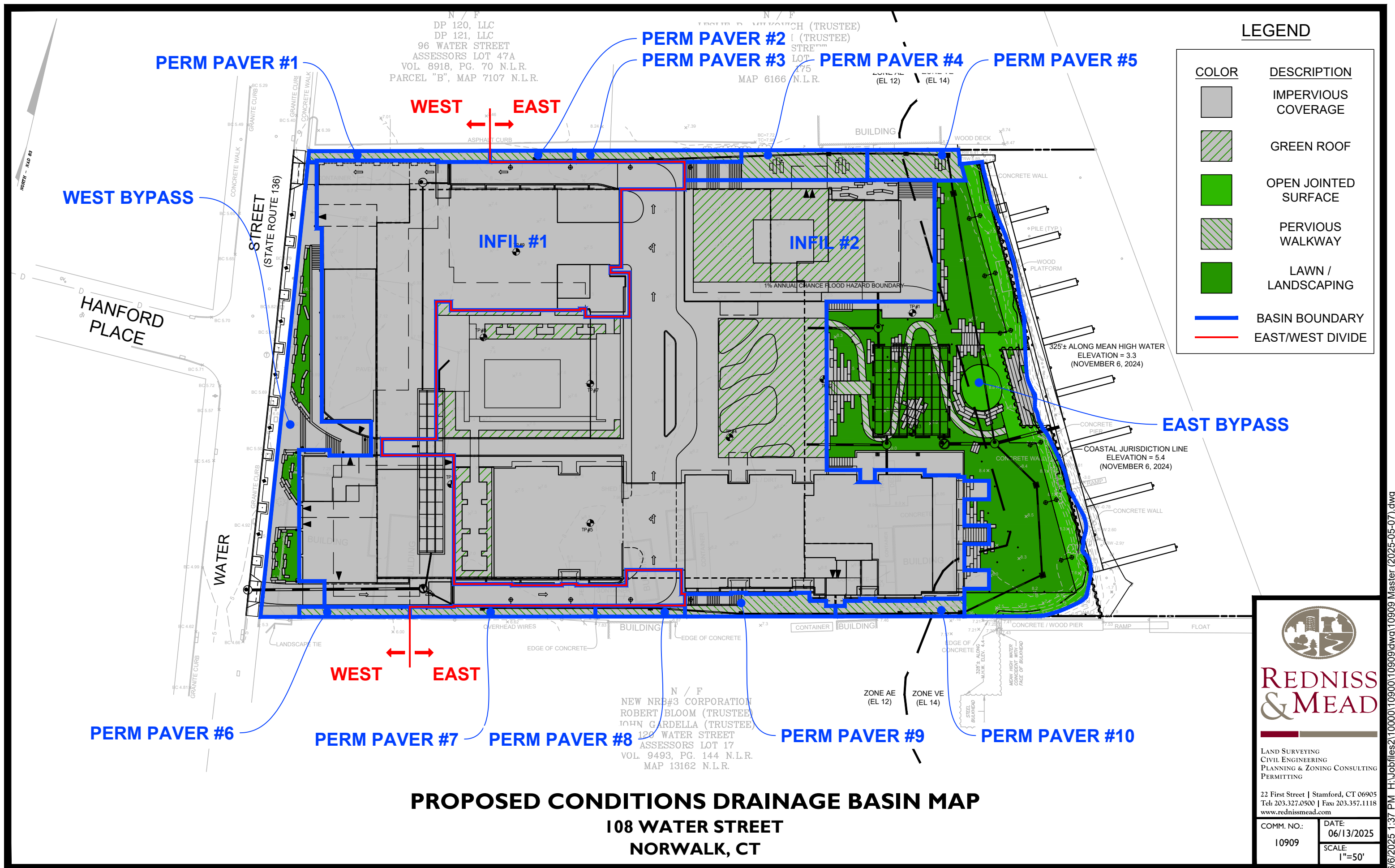
Under proposed conditions, the developer is seeking permission to construct a new four and one-half-story building with 59 residential units (25 one-bed units, 17 two-bed units, 13 three-bed units and 4 four-bed units), 110,900± sf of office floor area, 3,440± sf of personal service area, 3,820± sf of 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



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	^d
WQV PROVIDED=	4,710.00 ft.³	

^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	^d
WQV PROVIDED=	82.00 ft.³	

^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	^d
WQV PROVIDED=	96.00 ft.³	

^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	^d
WQV PROVIDED=	167.00 ft.³	

^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	^d
WQV PROVIDED=	282.00 ft.³	

^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	^d
WQV PROVIDED=	146.00 ft.³	

^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	^d
WQV PROVIDED=	74.00 ft.³	

^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	^d
WQV PROVIDED=	202.00 ft.³	

^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	^d
WQV PROVIDED=	93.00 ft.³	

^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	^d
WQV PROVIDED=	222.00 ft.³	

^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	^d
WQV PROVIDED=	203.00 ft. ³	

^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
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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.

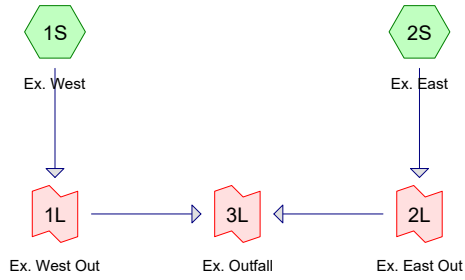
HYDRAULIC DATA FOR RATIONAL METHOD												
Project: 108 Water Street						Project #: 10909		Date: 6/13/2025				
Location: Norwalk, CT						By: VJH		Checked: CJF				
25 Year Storm												
Page 1 of 3												
Pipe From AD#1 to AD#2	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
		0.95	Impervious	0.000								
		0.30	Pervious	0.000								
	0.000		Total	0.000					5	8.60	0.00	
									Note: Flow Q in System = Hydrocad Inflow for Pr. PP#2 during 25-yr event.			
	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)
	0.05	6	66	0.010	PVC	0.011	0.77	6.5%				0.25
Pipe From AD#2 to AD#3	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
		0.95	Impervious	0.000								
		0.30	Pervious	0.000								
	0.000		Total	0.000								
									Note: Flow Q in System = Hydrocad Inflow for Pr. PP#3 during 25-yr event plus upstream flow.			
	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	102	0.010	PVC	0.010	0.73	20.5%				0.76
Pipe From AD#3 to AD#4	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
		0.95	Impervious	0.000								
		0.30	Pervious	0.000								
	0.000		Total	0.000								
									Note: Flow Q in System = Hydrocad Inflow for Pr. PP#4 during 25-yr event plus upstream flow.			
	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)
	0.40	6	43	0.010	PVC	0.010	0.73	54.7%				2.04
Pipe From AD#4 to JB#1	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
		0.95	Impervious	0.000								
		0.30	Pervious	0.000								
	0.000		Total	0.000								
									Note: Flow Q in System = Hydrocad Inflow for Pr. PP#5 during 25-yr event plus upstream flow.			
	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)
	0.55	6	22	0.010	PVC	0.011	0.77	71.7%				2.80
Pipe From JB#1 to AD#4A	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
		0.95	Impervious	0.000								
		0.30	Pervious	0.000								
	0.000		Total	0.000								
									Note: Flow Q in System = Upstream Flow			
	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)
	0.55	6	20	0.010	PVC	0.010	0.73	75.2%				2.80
Pipe from AD#4A to MH#3	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
	0.01	0.95	Impervious	0.01								
	0.01	0.30	Pervious	0.00								
	0.02		Total	0.01					5	8.60	0.11	
									Note: Flow Q in System = Upstream Flow + new tributary area			
	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)
	0.66	8	143	0.010	PVC	0.010	1.58	41.7%				1.88

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												
Page 2 of 3												
Pipe From AD#5 to AD#6	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
		0.95	Impervious	0.000								
		0.30	Pervious	0.000								
	0.000		Total	0.000								
									Note: Flow Q in System = Hydrocad Inflow for Pr. PP#7 during 25-yr event.			
	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
Pipe From AD#6 To AD#7	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
		0.95	Impervious	0.000								
		0.30	Pervious	0.000								
	0.000		Total	0.000								
									Note: Flow Q in System = Hydrocad Inflow for Pr. PP#8 during 25-yr event plus upstream flow.			
	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
Pipe From AD#7 to AD#8	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
		0.95	Impervious	0.000								
		0.30	Pervious	0.000								
	0.000		Total	0.000								
									Note: Flow Q in System = Hydrocad Inflow for Pr. PP#9 during 25-yr event plus upstream flow.			
	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
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								
									Note: Flow Q in System = Hydrocad Inflow for Pr. PP#10 during 25-yr event plus upstream flow.			
	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
Pipe From JB#2 to AD#9	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
	0.000	0.95	Impervious	0.00								
	0.000	0.30	Pervious	0.00								
	0.00		Total	0.00								
									Note: Flow Q in System = Upstream Flow			
	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
Pipe from AD#9 to AD#10	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
	0.091	0.95	Impervious	0.086								
	0.002	0.30	Pervious	0.001								
	0.092		Total	0.087					5	8.60	0.74	
									Note: Flow Q in System = Tributary Sheet Flow + Upstream Flow			
	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

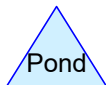
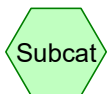
HYDRAULIC DATA FOR RATIONAL METHOD												
Project: 108 Water Street						Project #: 10909		Date: 6/13/2025				
Location: Norwalk, CT						By: VJH		Checked: CJF				
25 Year Storm												
Page 3 of 3												
Pipe From AD#10 to MH#3	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
	0.150	0.95	Impervious	0.143								
	0.000	0.30	Pervious	0.000								
	0.150		Total	0.143					5	8.60	1.23	
									Note: Flow Q in System = Tributary Sheet Flow + Upstream Flow			
	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
Pipe From MH#3 to inv.=-1.70	Basin Description				Drainage Path				Time (min)	25yr. Rainfall Intensity (in/hr)	Q = ACI (cfs)	
	Acres	C	Description	AC	Length (ft)	ΔH	Slope (%)	Description				
		0.95	Impervious	0.000								
		0.30	Pervious	0.000								
	0.000		Total	0.000								
									Note: Flow Q in System = Upstream flow			
	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

Appendix 3

EXISTING CONDITIONS



PROPOSED CONDITIONS



Routing Diagram for 10909 HydroCAD
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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

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Type III 24-hr 2-Year Rainfall=3.49"

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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

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Type III 24-hr 2-Year Rainfall=3.49"

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Pond 1A: Pr. PP#1Peak 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

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Type III 24-hr 2-Year Rainfall=3.49"

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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

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Type III 24-hr 5-Year Rainfall=4.50"

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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

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Type III 24-hr 5-Year Rainfall=4.50"

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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

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Type III 24-hr 5-Year Rainfall=4.50"

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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

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Type III 24-hr 10-Year Rainfall=5.33"

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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

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Type III 24-hr 10-Year Rainfall=5.33"

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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

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Type III 24-hr 10-Year Rainfall=5.33"

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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

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Type III 24-hr 25-Year Rainfall=6.48"

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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

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Type III 24-hr 25-Year Rainfall=6.48"

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Pond 1A: Pr. PP#1Peak 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

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Type III 24-hr 25-Year Rainfall=6.48"

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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

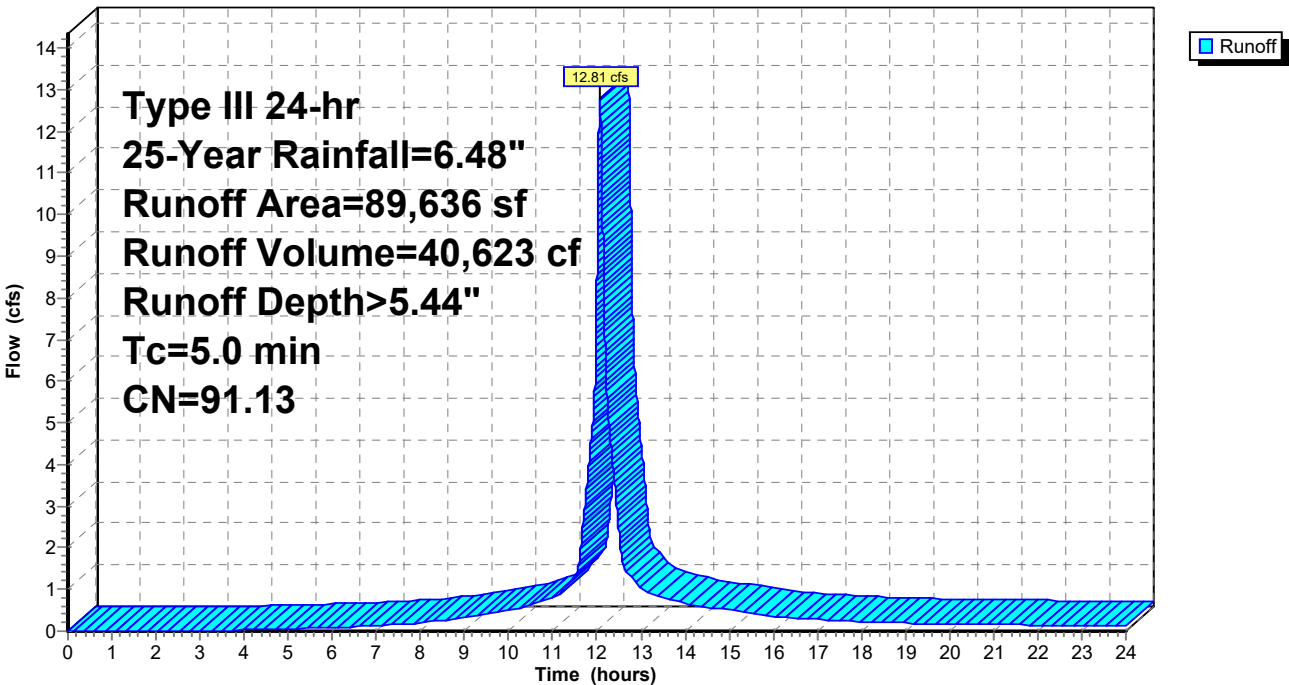
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

	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

Hydrograph



Summary for Subcatchment 2S: Ex. East

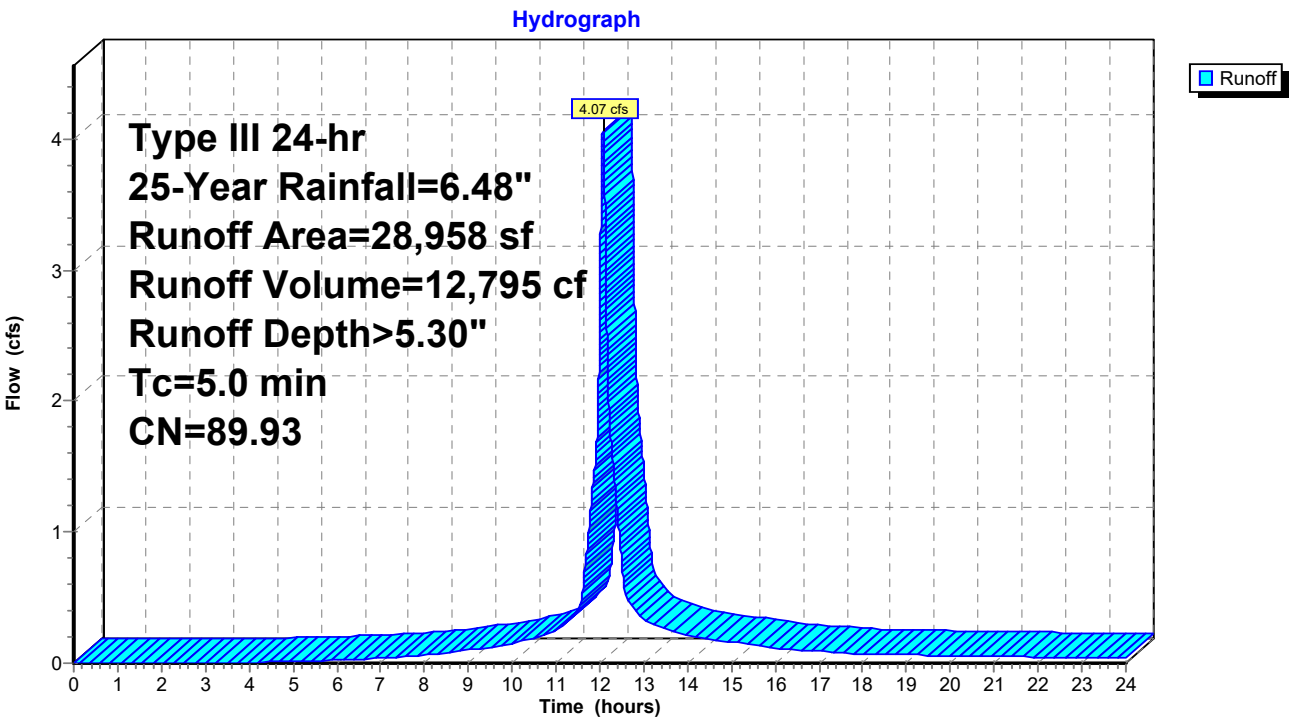
Runoff = 4.07 cfs @ 12.07 hrs, Volume= 12,795 cf, Depth> 5.30"
Routed to Link 2L : Ex. East Out

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

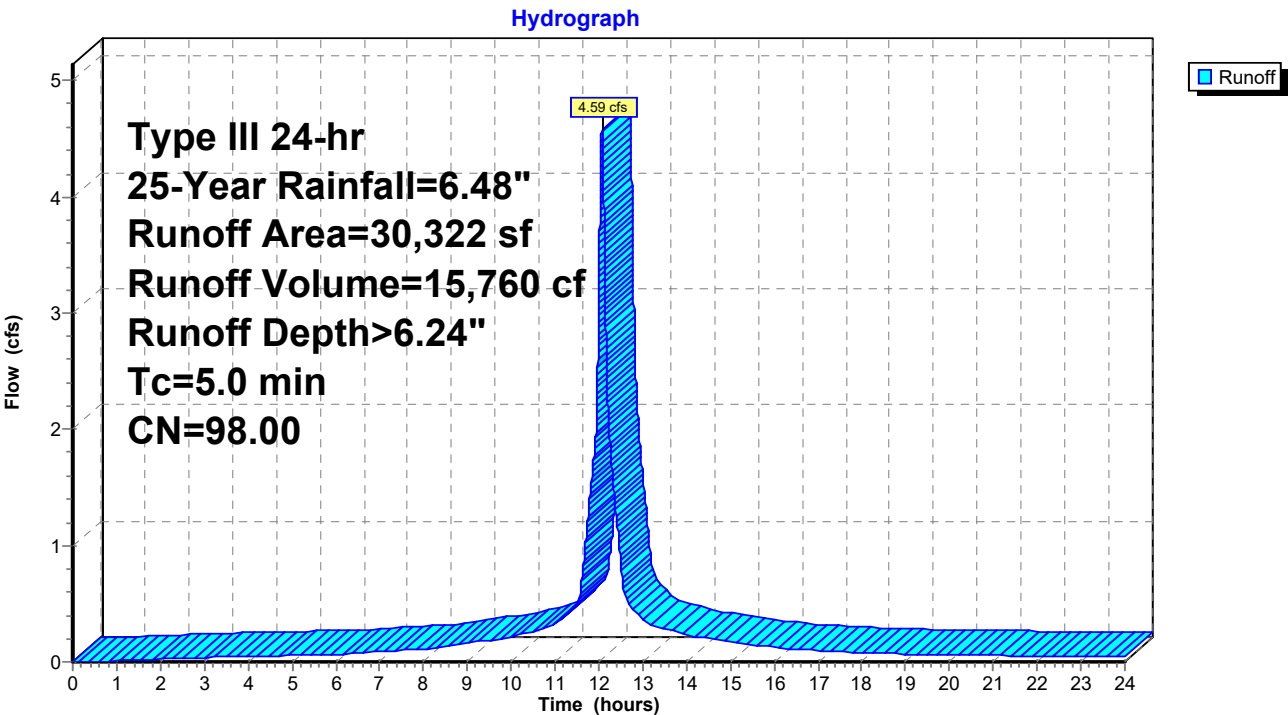
Runoff = 4.59 cfs @ 12.07 hrs, Volume= 15,760 cf, Depth> 6.24"
Routed to Pond 1P : Pr. Infil #1

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

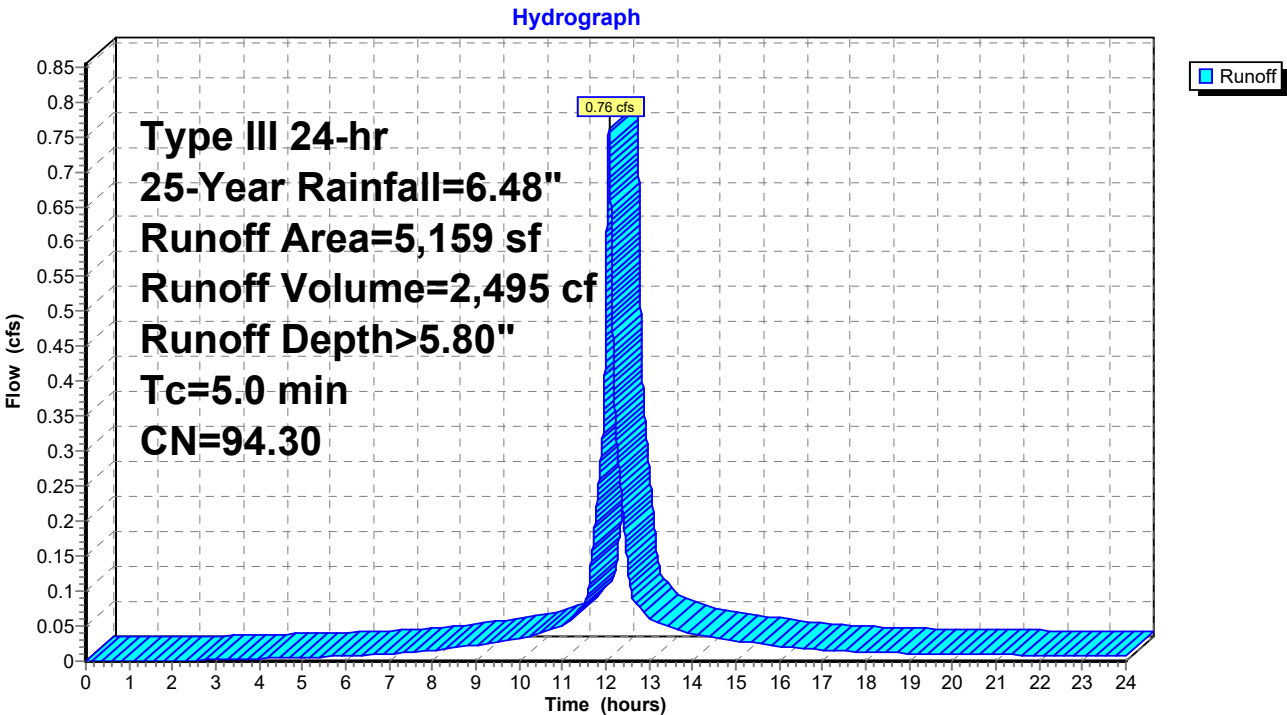
Runoff = 0.76 cfs @ 12.07 hrs, Volume= 2,495 cf, Depth> 5.80"
Routed to Link 4L : Pr. West Out

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

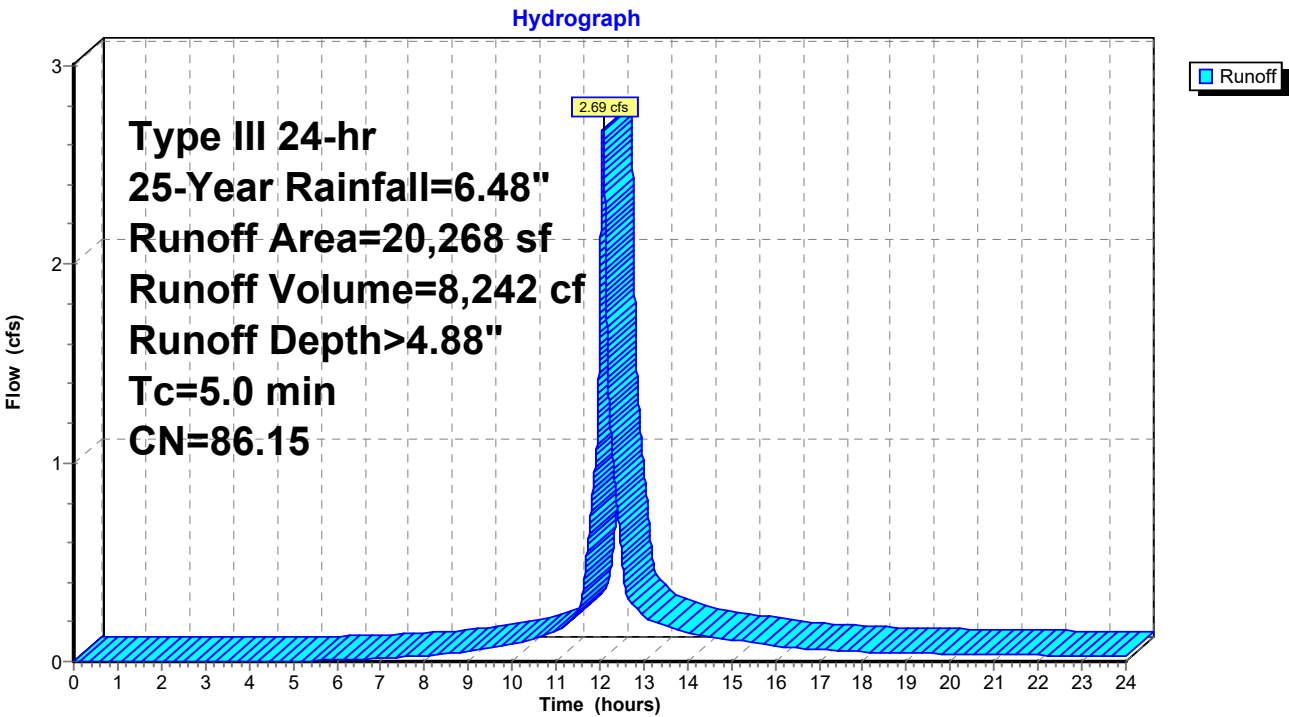
Runoff = 2.69 cfs @ 12.07 hrs, Volume= 8,242 cf, Depth> 4.88"
Routed to Link 5L : Pr. East Out

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

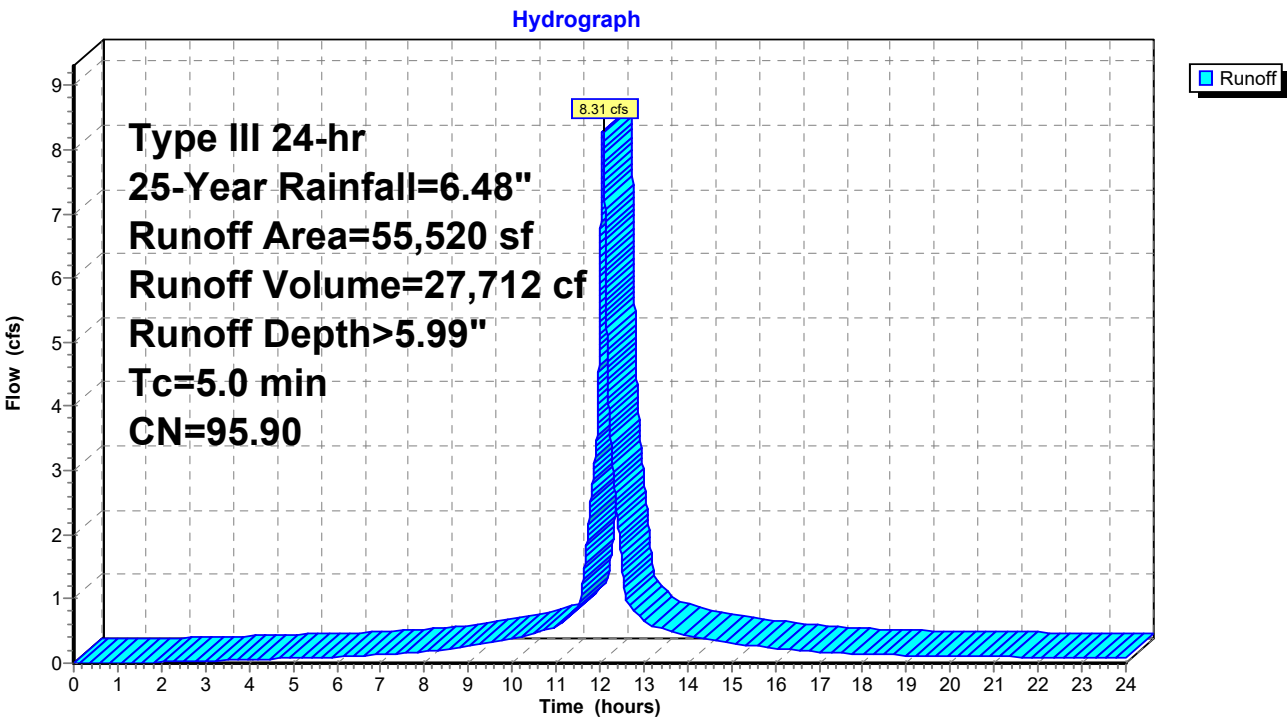
Runoff = 8.31 cfs @ 12.07 hrs, Volume= 27,712 cf, Depth> 5.99"
Routed to Pond 2P : Pr. Infil #2

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

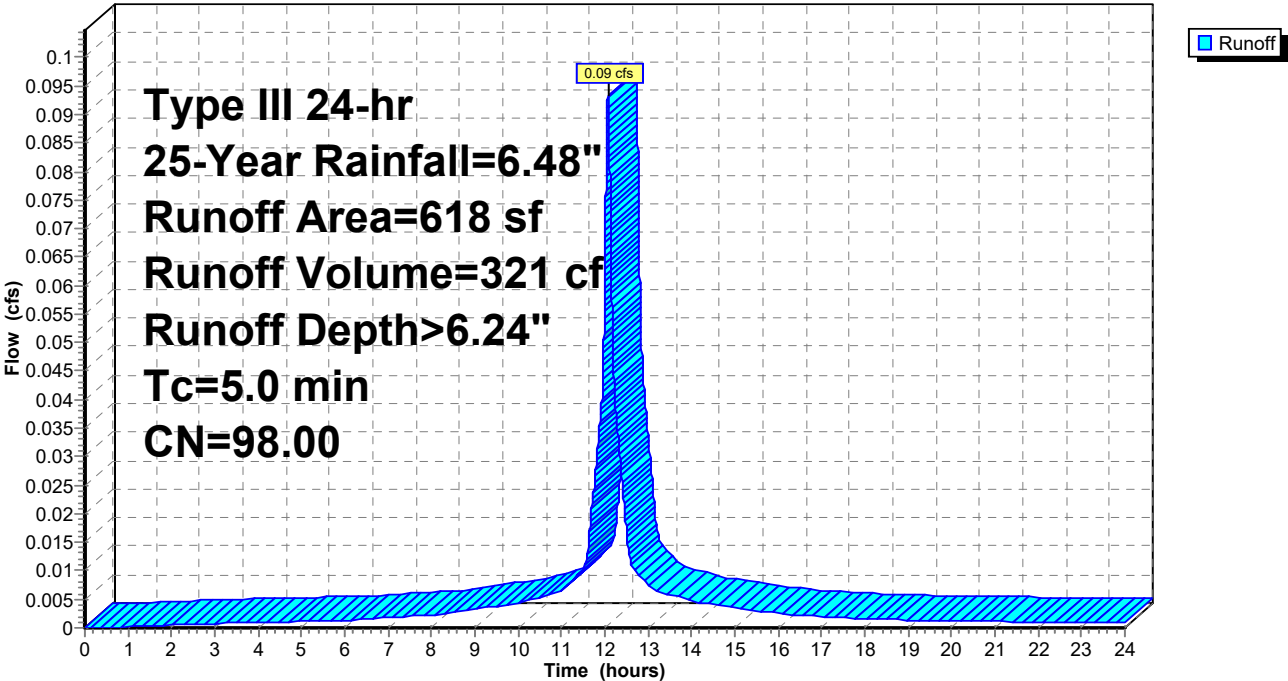
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

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

Hydrograph



Summary for Subcatchment 8S: Pr. Perm Pavers #2

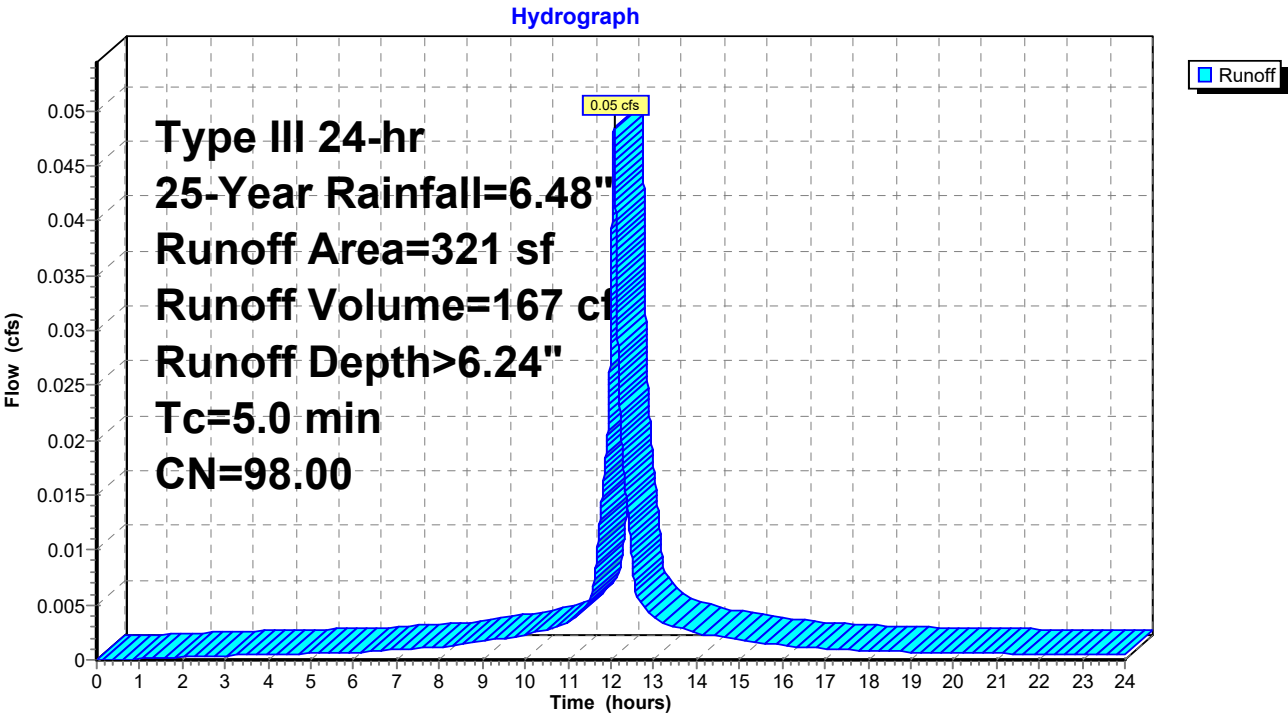
Runoff = 0.05 cfs @ 12.07 hrs, Volume= 167 cf, Depth> 6.24"
Routed to Pond 2A : Pr. PP#2

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

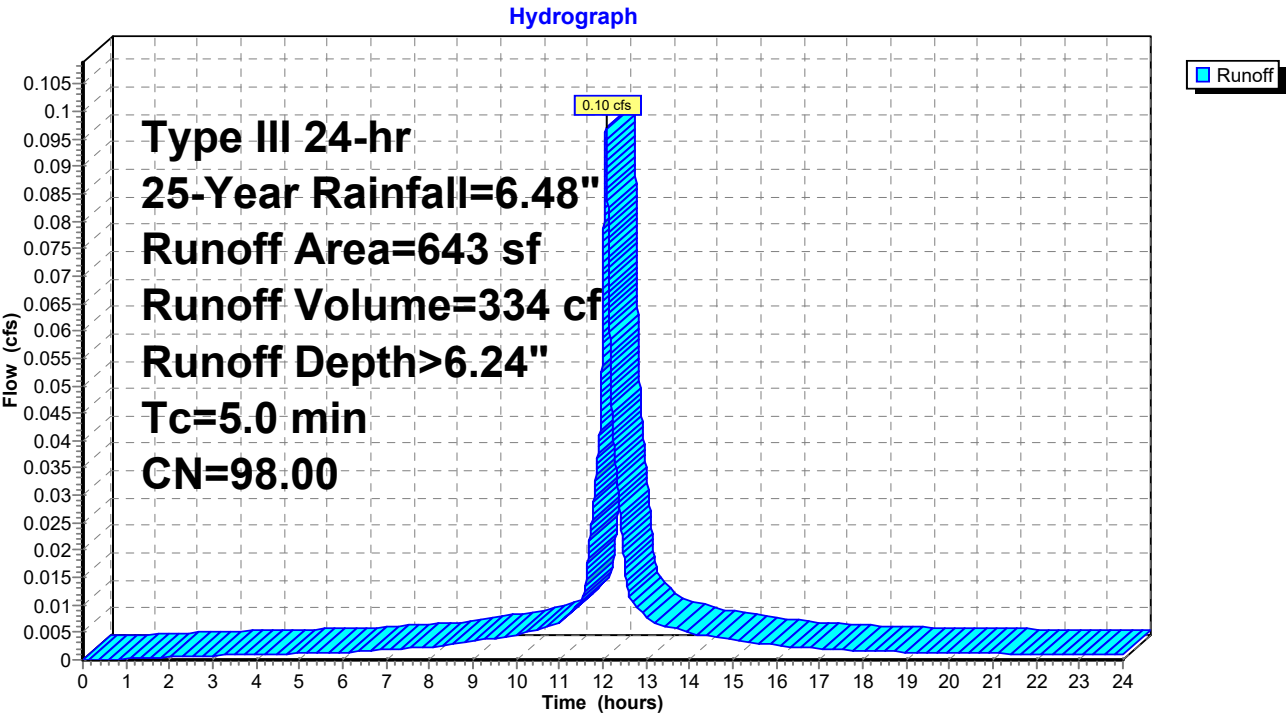
Runoff = 0.10 cfs @ 12.07 hrs, Volume= 334 cf, Depth> 6.24"
Routed to Pond 3A : Pr. PP#3

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

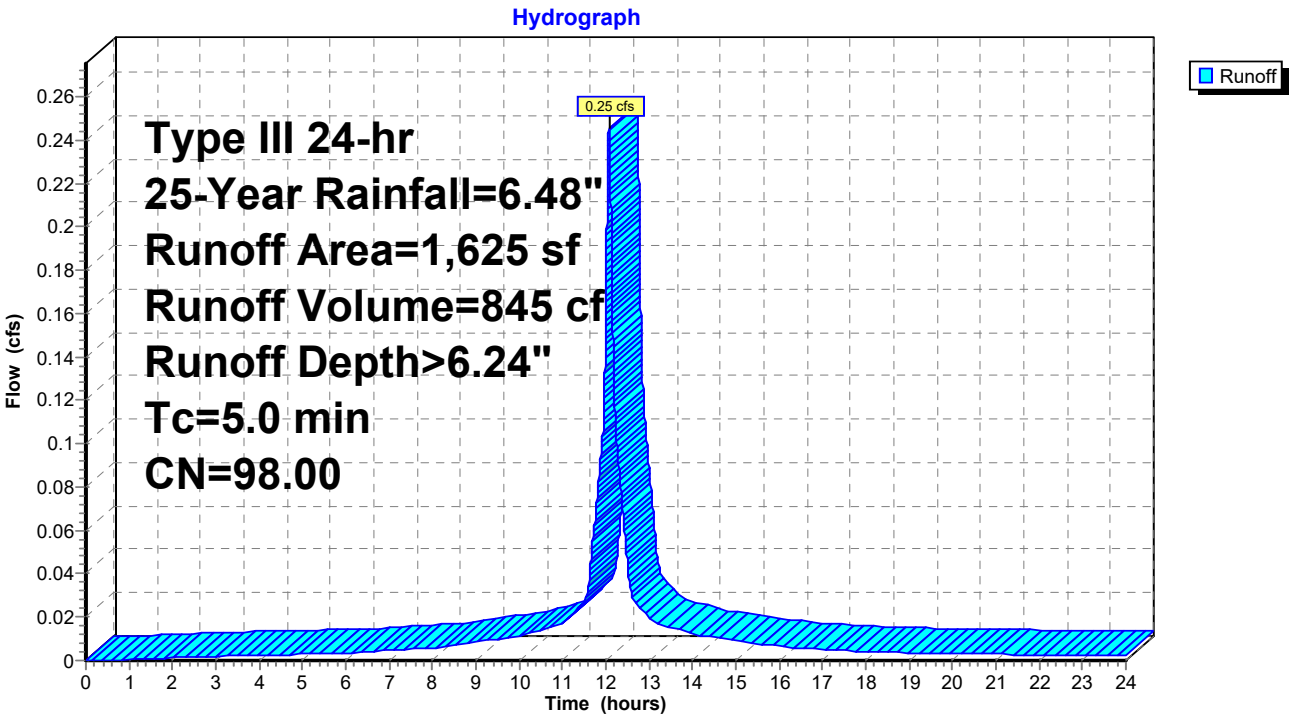
Runoff = 0.25 cfs @ 12.07 hrs, Volume= 845 cf, Depth> 6.24"
Routed to Pond 4A : Pr. PP#4

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

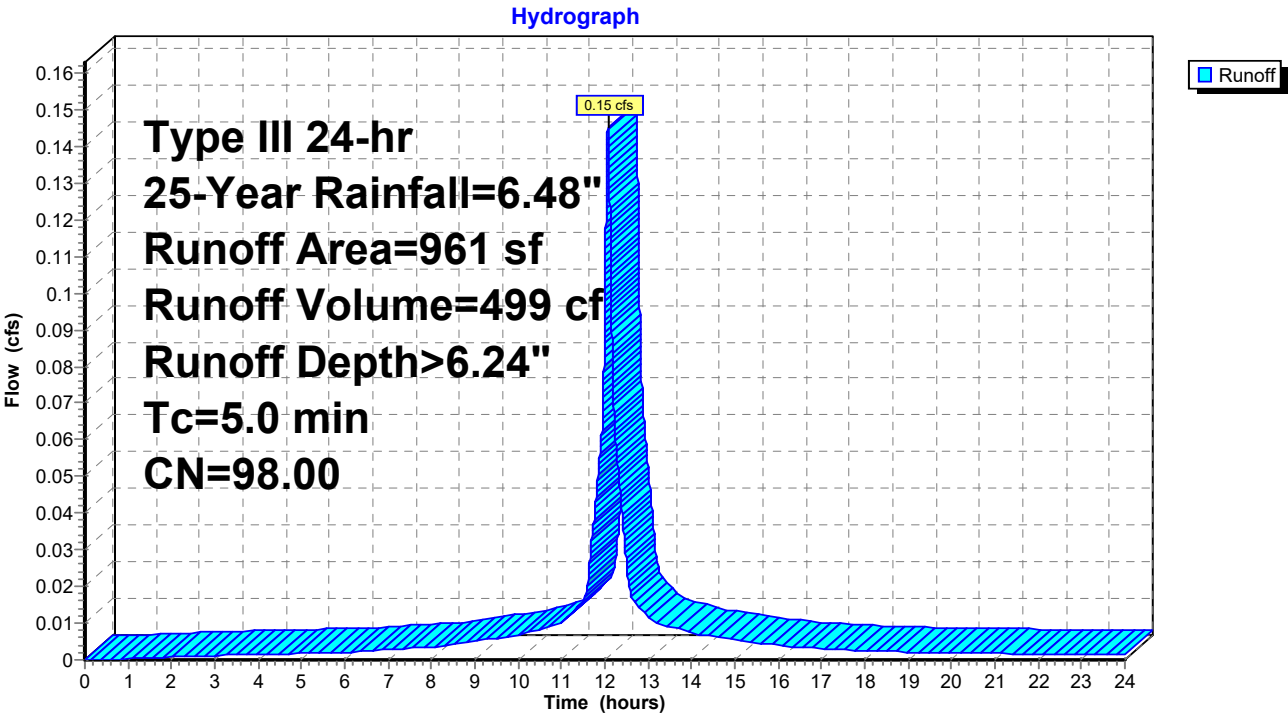
Runoff = 0.15 cfs @ 12.07 hrs, Volume= 499 cf, Depth> 6.24"
Routed to Pond 5A : Pr. PP#5

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

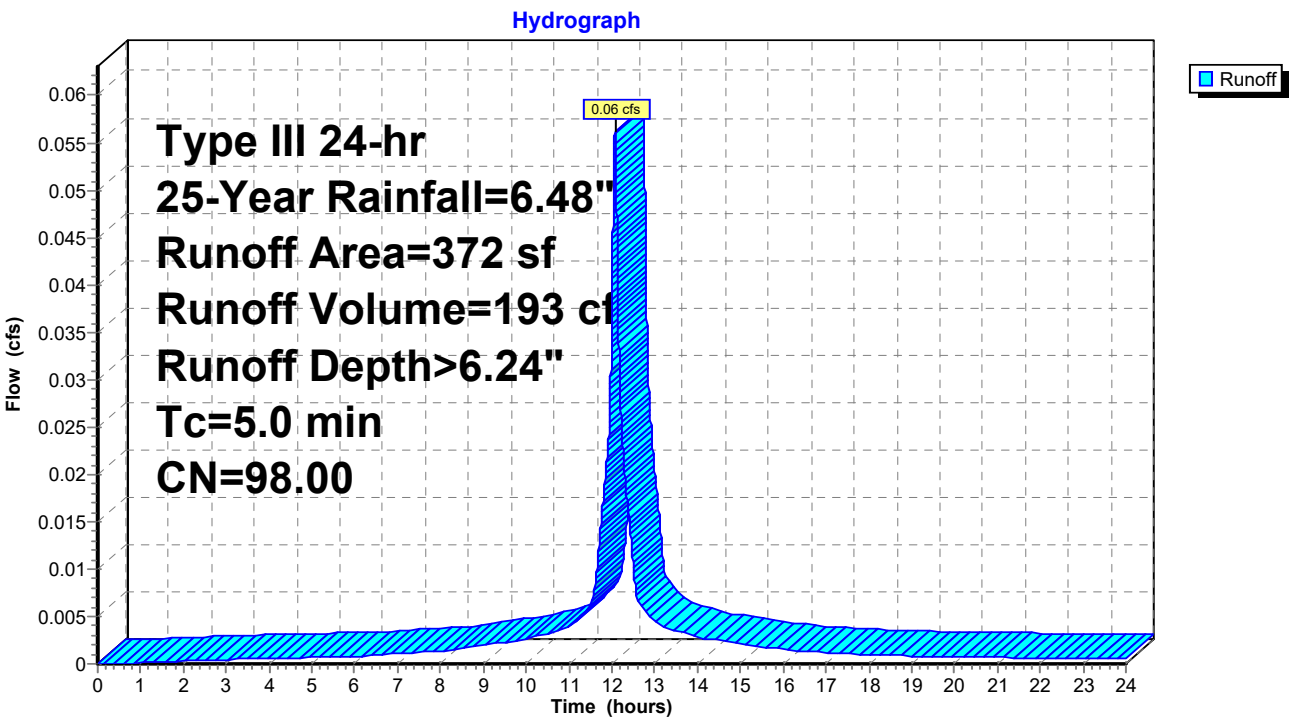
Runoff = 0.06 cfs @ 12.07 hrs, Volume= 193 cf, Depth> 6.24"
Routed to Pond 13P : Pr. PP#6

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

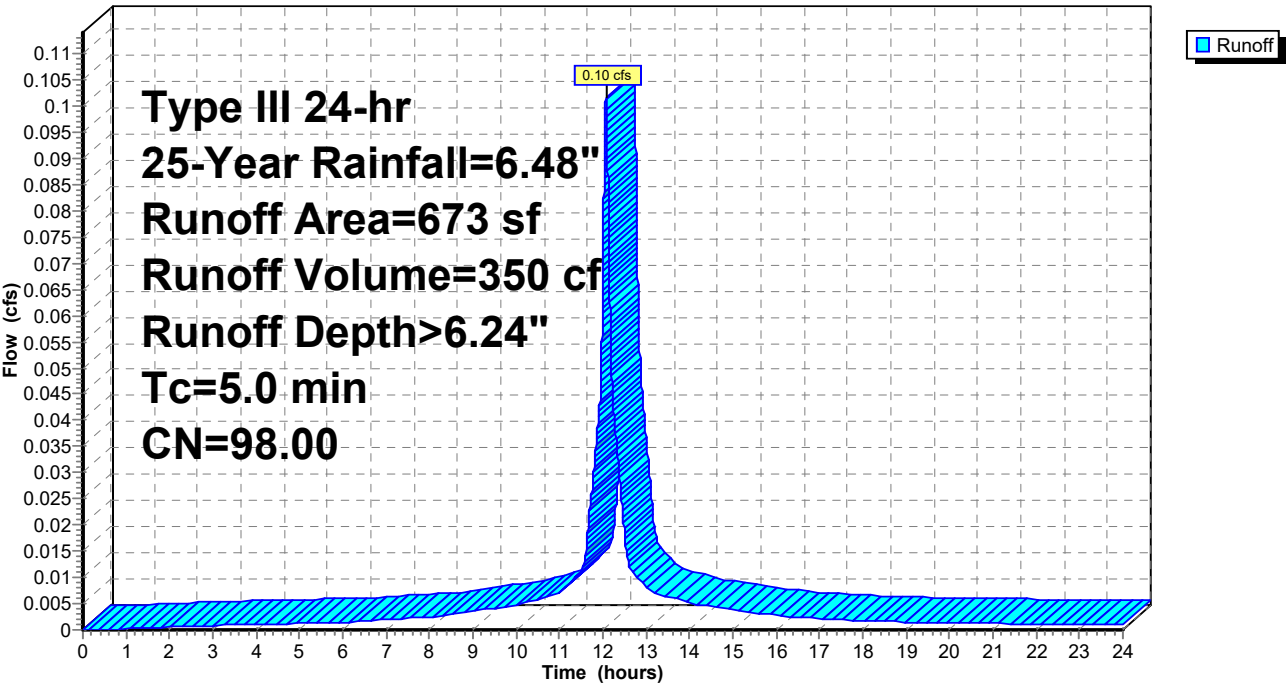
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

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

Hydrograph



Summary for Subcatchment 16S: Pr. Perm Pavers #8

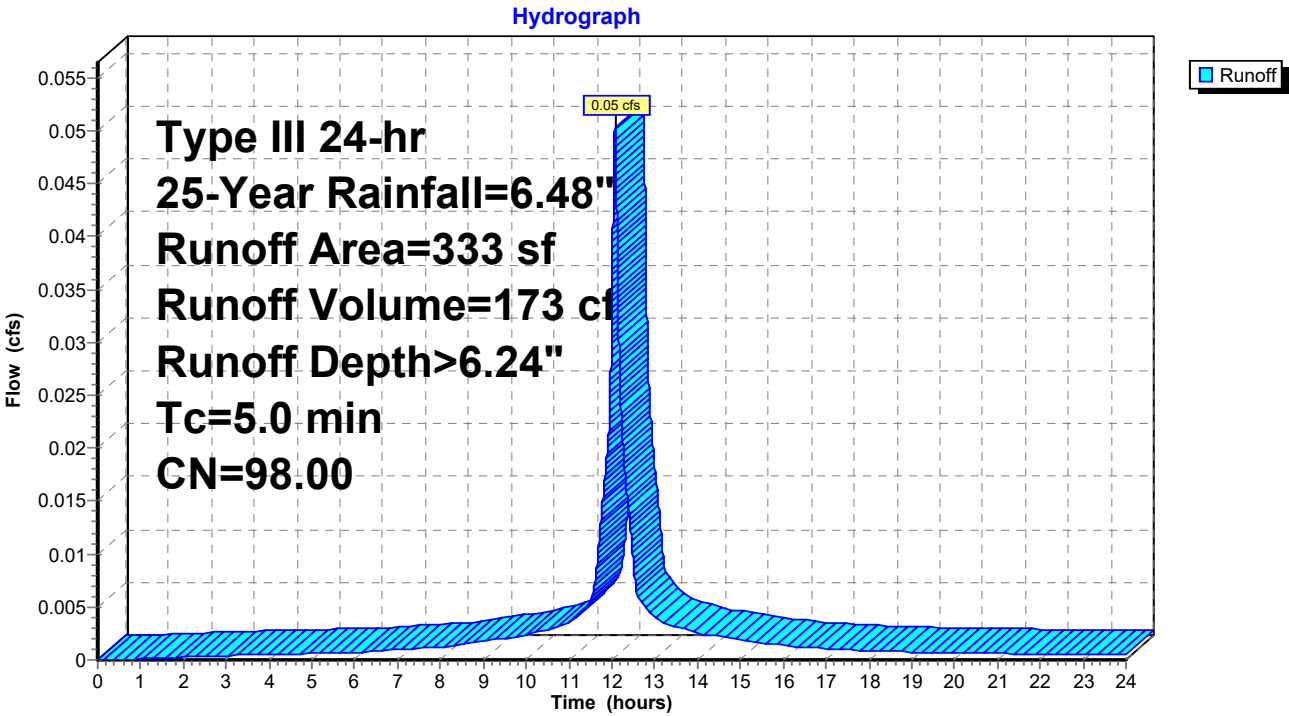
Runoff = 0.05 cfs @ 12.07 hrs, Volume= 173 cf, Depth> 6.24"
Routed to Pond 17P : Pr. PP#8

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

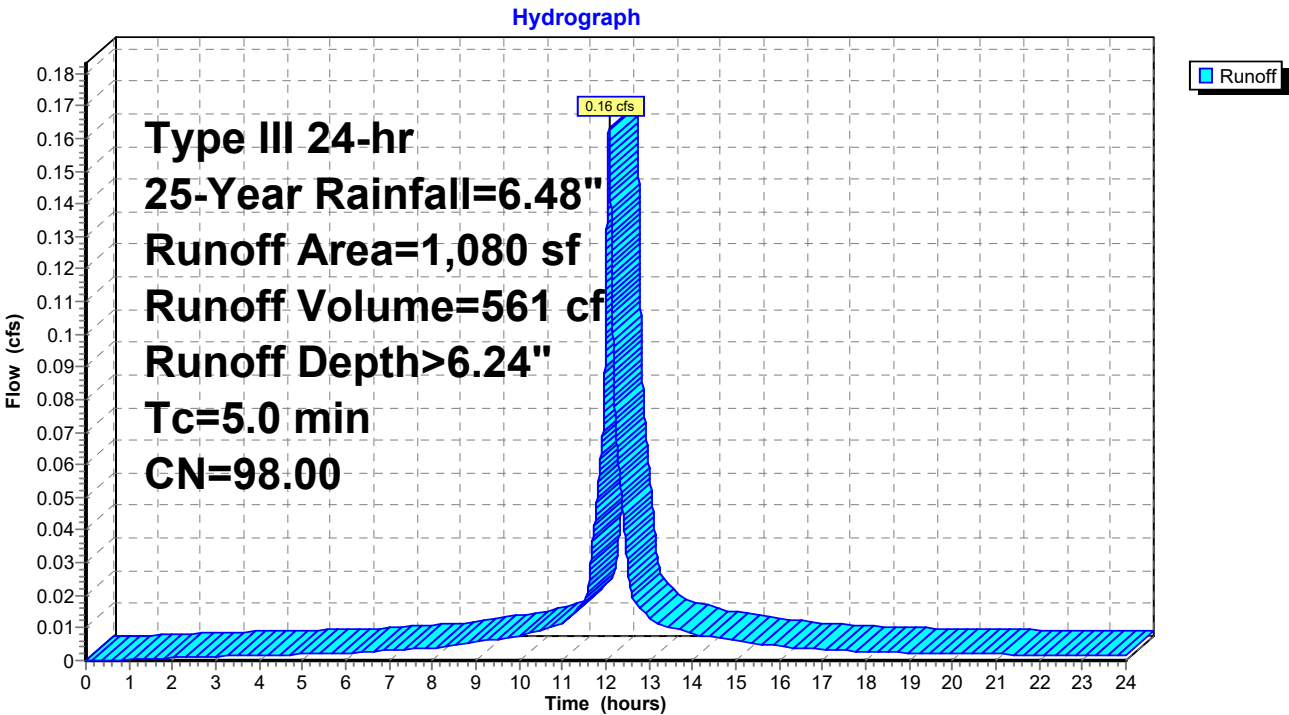
Runoff = 0.16 cfs @ 12.07 hrs, Volume= 561 cf, Depth> 6.24"
Routed to Pond 21P : Pr. PP#9

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

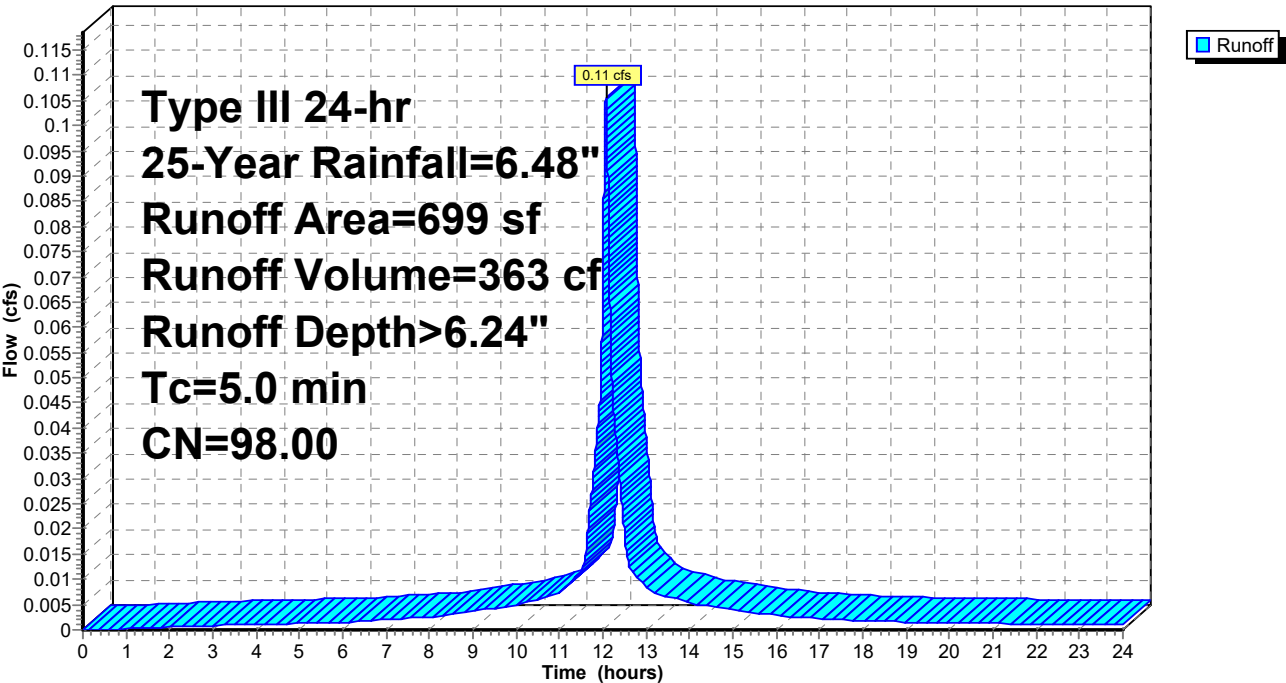
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-Year Rainfall=6.48"

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

Hydrograph



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Type III 24-hr 25-Year Rainfall=6.48"

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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)

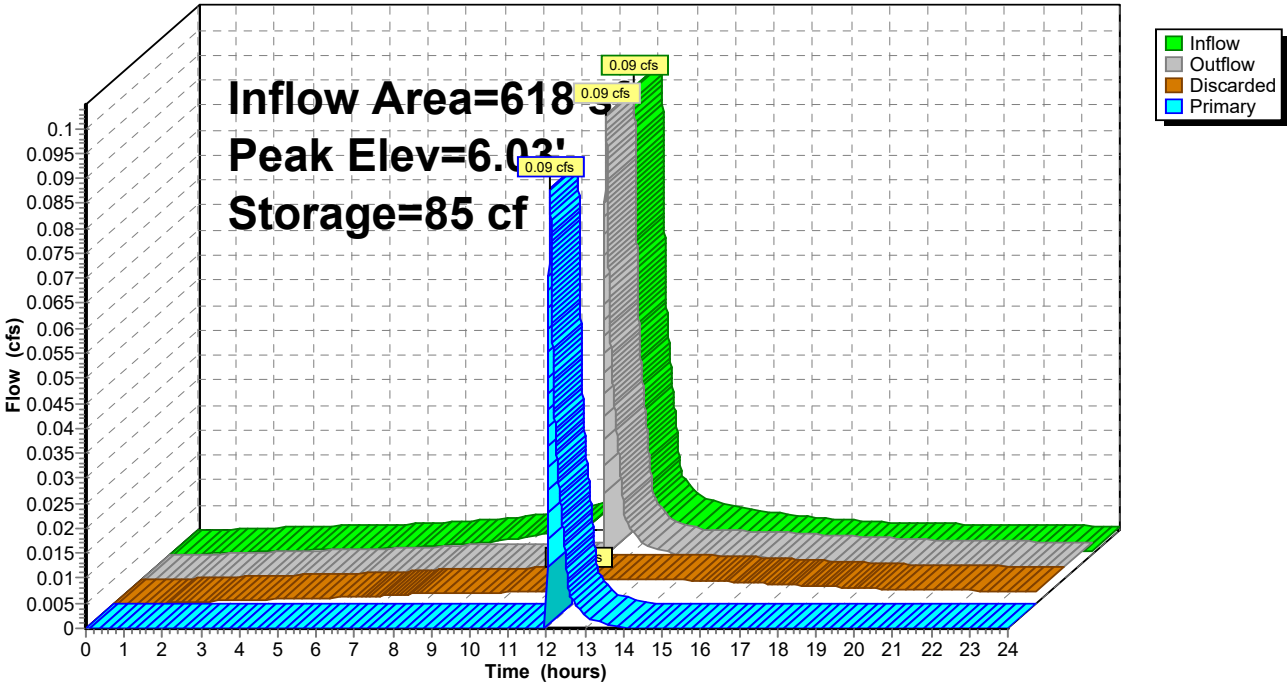
↑ **1=Exfiltration** (Controls 0.00 cfs)

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

Hydrograph



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Stage-Area-Storage for Pond 1A: Pr. PP#1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
5.00	181	0	7.60	177	238
5.05	181	4	7.65	166	240
5.10	181	7	7.70	155	243
5.15	181	11	7.75	144	245
5.20	181	14	7.80	133	247
5.25	181	18	7.85	122	249
5.30	181	22	7.90	111	251
5.35	181	25	7.95	99	254
5.40	181	29	8.00	88	256
5.45	181	33	8.05	77	258
5.50	181	36	8.10	66	260
5.55	181	40	8.15	55	262
5.60	181	43	8.20	44	265
5.65	196	48	8.25	33	267
5.70	212	53	8.30	22	269
5.75	227	58	8.35	11	271
5.80	243	63	8.40	0	273
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			

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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

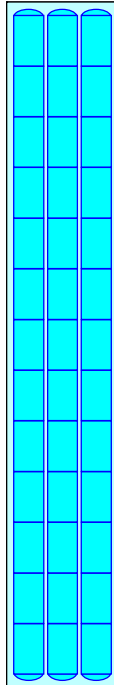
Overall Storage Efficiency = 61.0%

Overall System Size = 96.28' x 15.75' x 3.75'

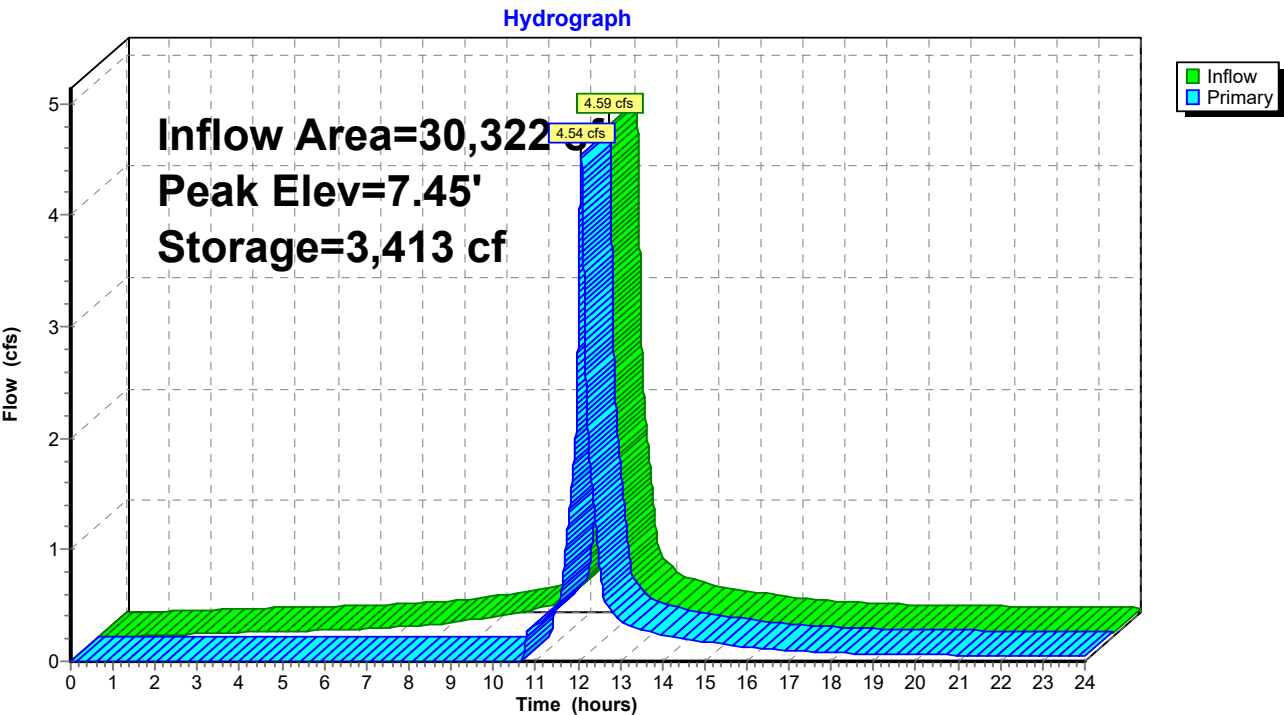
39 Chambers

210.6 cy Field

136.8 cy Stone



Pond 1P: Pr. Infil #1



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Stage-Area-Storage for Pond 1P: Pr. Infil #1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
3.80	0	6.40	2,665
3.85	30	6.45	2,711
3.90	61	6.50	2,756
3.95	91	6.55	2,801
4.00	121	6.60	2,844
4.05	152	6.65	2,886
4.10	182	6.70	2,926
4.15	212	6.75	2,965
4.20	243	6.80	3,002
4.25	273	6.85	3,037
4.30	303	6.90	3,071
4.35	365	6.95	3,104
4.40	427	7.00	3,137
4.45	488	7.05	3,168
4.50	550	7.10	3,198
4.55	611	7.15	3,228
4.60	672	7.20	3,259
4.65	733	7.25	3,289
4.70	793	7.30	3,319
4.75	854	7.35	3,350
4.80	914	7.40	3,380
4.85	974	7.45	3,410
4.90	1,034	7.50	3,441
4.95	1,093	7.55	3,471
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		

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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

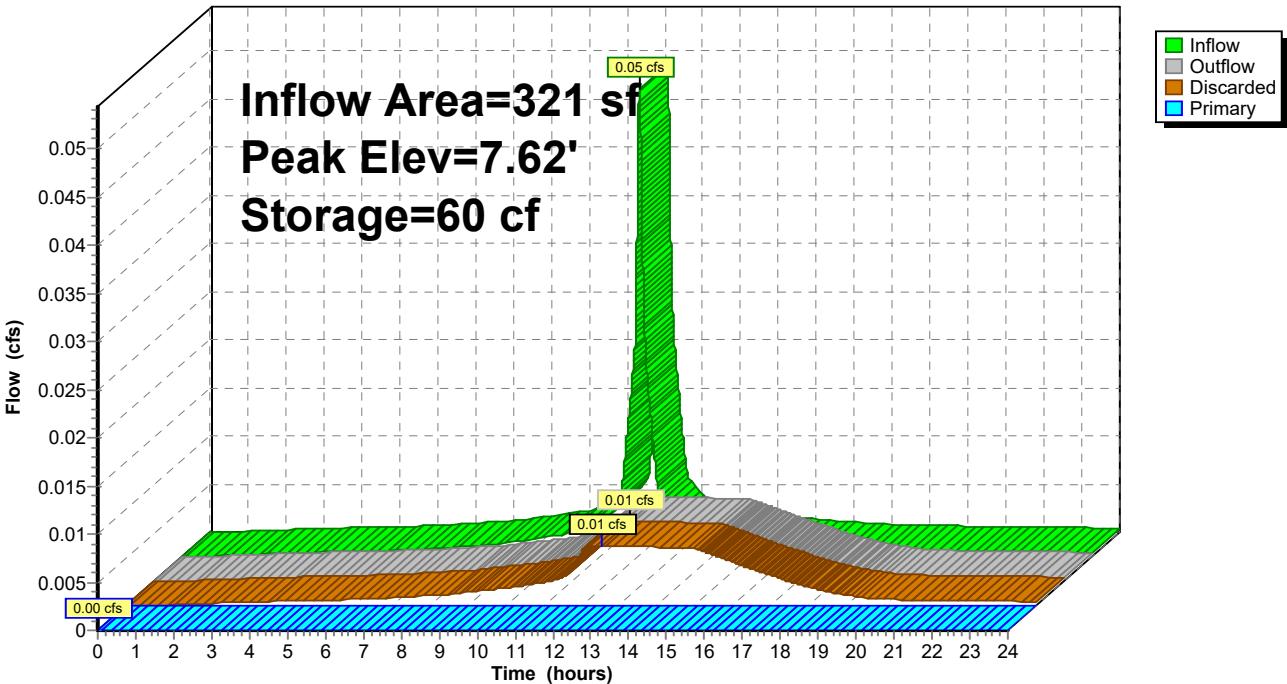
Device	Routing	Invert	Outlet Devices
#1	Discarded	6.90'	0.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.90'	Special & User-Defined Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

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

Hydrograph



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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

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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)

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Type III 24-hr 25-Year Rainfall=6.48"

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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

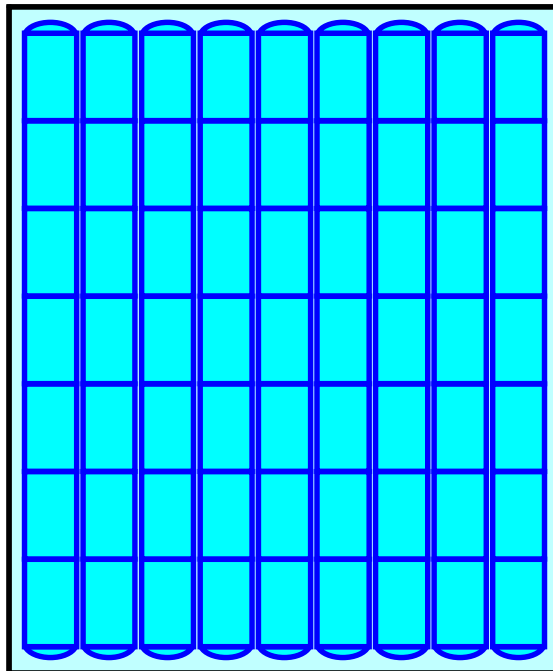
Overall Storage Efficiency = 61.5%

Overall System Size = 54.08' x 44.75' x 3.75'

63 Chambers

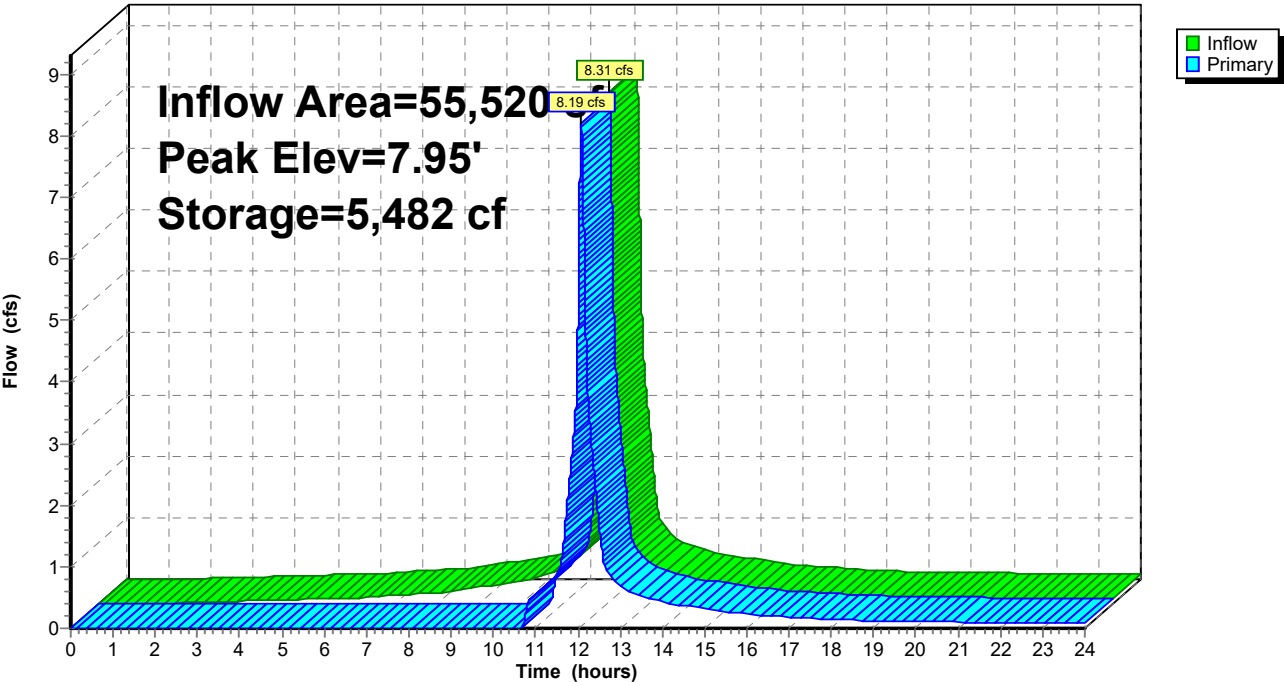
336.1 cy Field

215.8 cy Stone



Pond 2P: Pr. Infil #2

Hydrograph



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Stage-Area-Storage for Pond 2P: Pr. Infil #2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
4.30	0	6.90	4,289
4.35	48	6.95	4,364
4.40	97	7.00	4,437
4.45	145	7.05	4,508
4.50	194	7.10	4,577
4.55	242	7.15	4,645
4.60	290	7.20	4,710
4.65	339	7.25	4,772
4.70	387	7.30	4,831
4.75	436	7.35	4,888
4.80	484	7.40	4,942
4.85	584	7.45	4,995
4.90	683	7.50	5,046
4.95	783	7.55	5,096
5.00	882	7.60	5,144
5.05	980	7.65	5,192
5.10	1,079	7.70	5,241
5.15	1,177	7.75	5,289
5.20	1,274	7.80	5,338
5.25	1,372	7.85	5,386
5.30	1,469	7.90	5,434
5.35	1,566	7.95	5,483
5.40	1,662	8.00	5,531
5.45	1,758	8.05	5,580
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		

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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

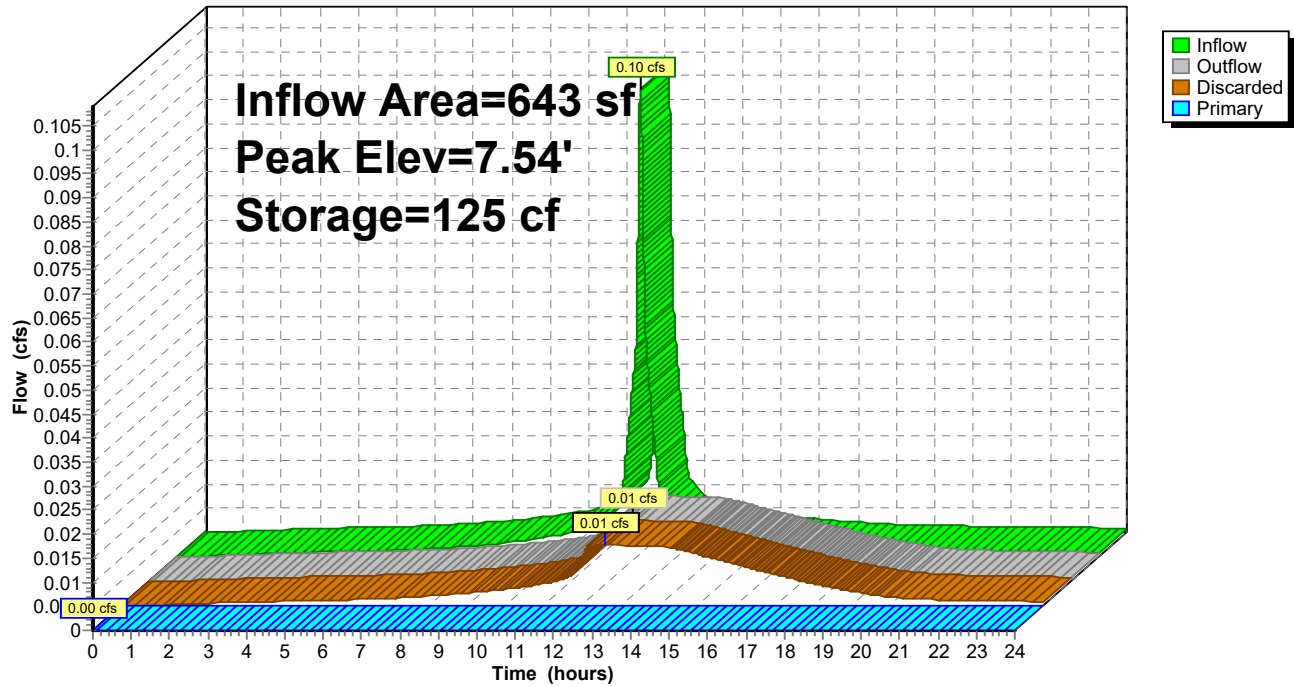
Device	Routing	Invert	Outlet Devices
#1	Discarded	6.70'	0.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.70'	Special & User-Defined Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

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

Hydrograph



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

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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

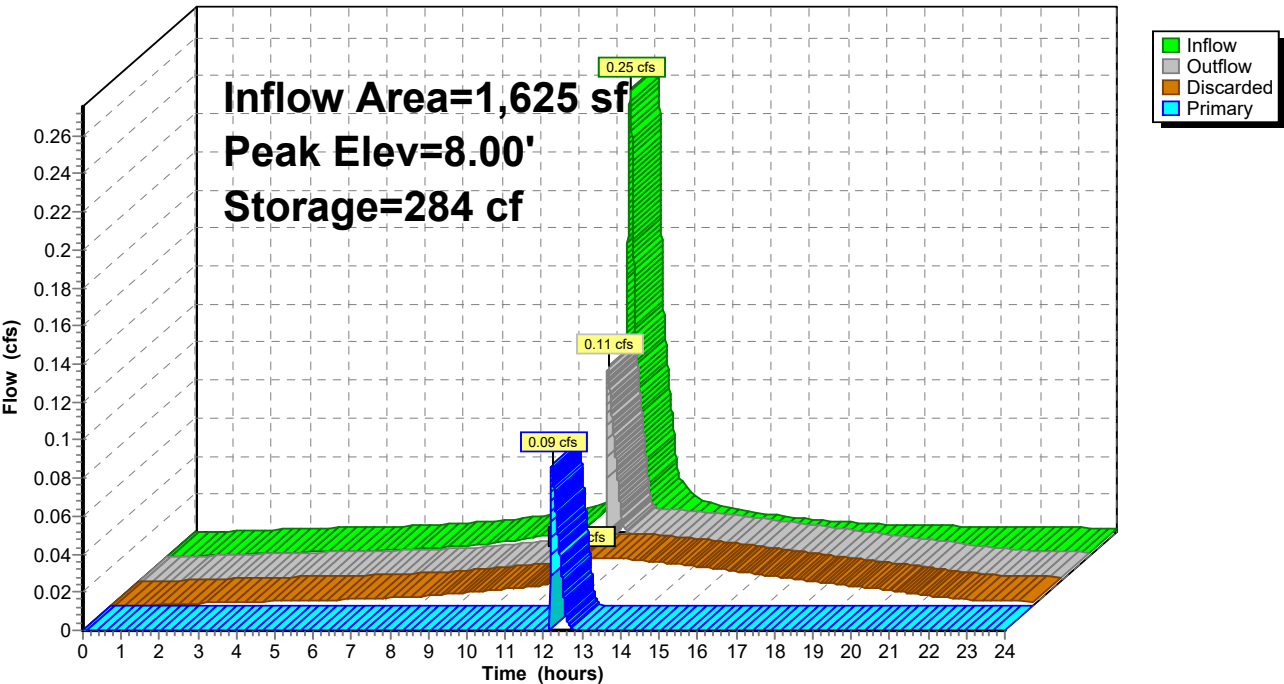
Device	Routing	Invert	Outlet Devices
#1	Discarded	7.00'	0.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 3.30'
#2	Primary	8.00'	Special & User-Defined Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

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

Hydrograph



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

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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

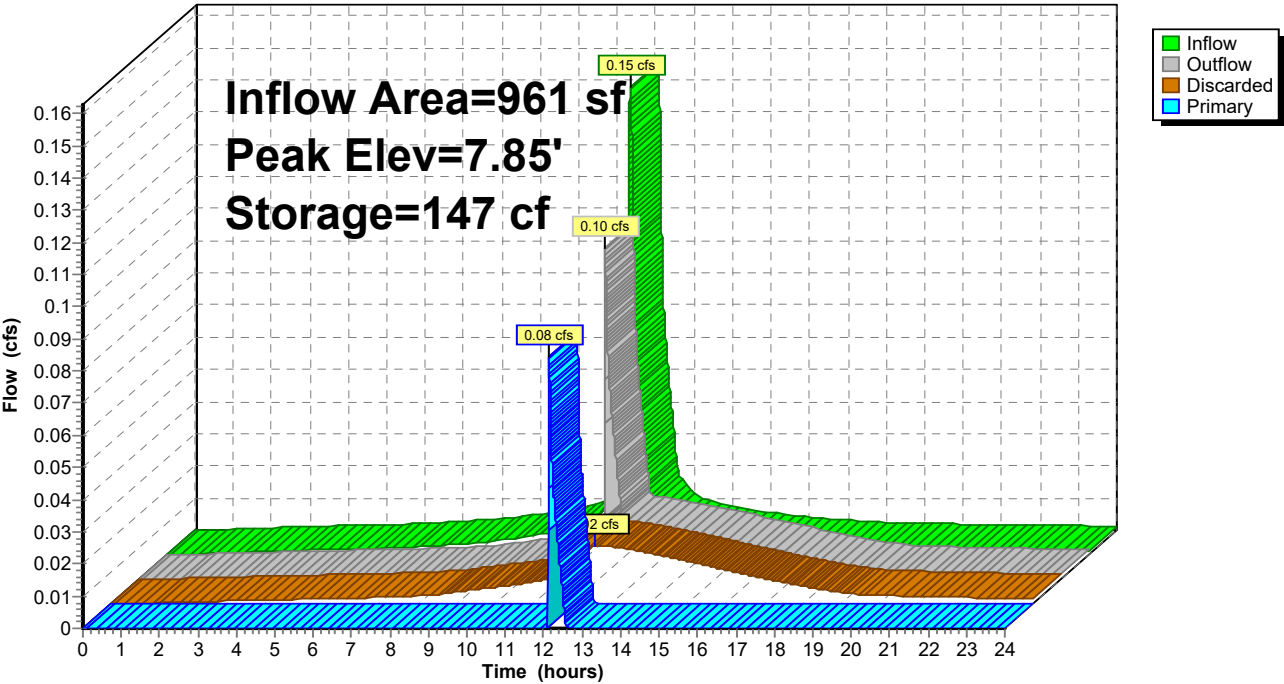
Device	Routing	Invert	Outlet Devices
#1	Discarded	6.85'	0.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.85'	Special & User-Defined Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

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

Hydrograph



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

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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

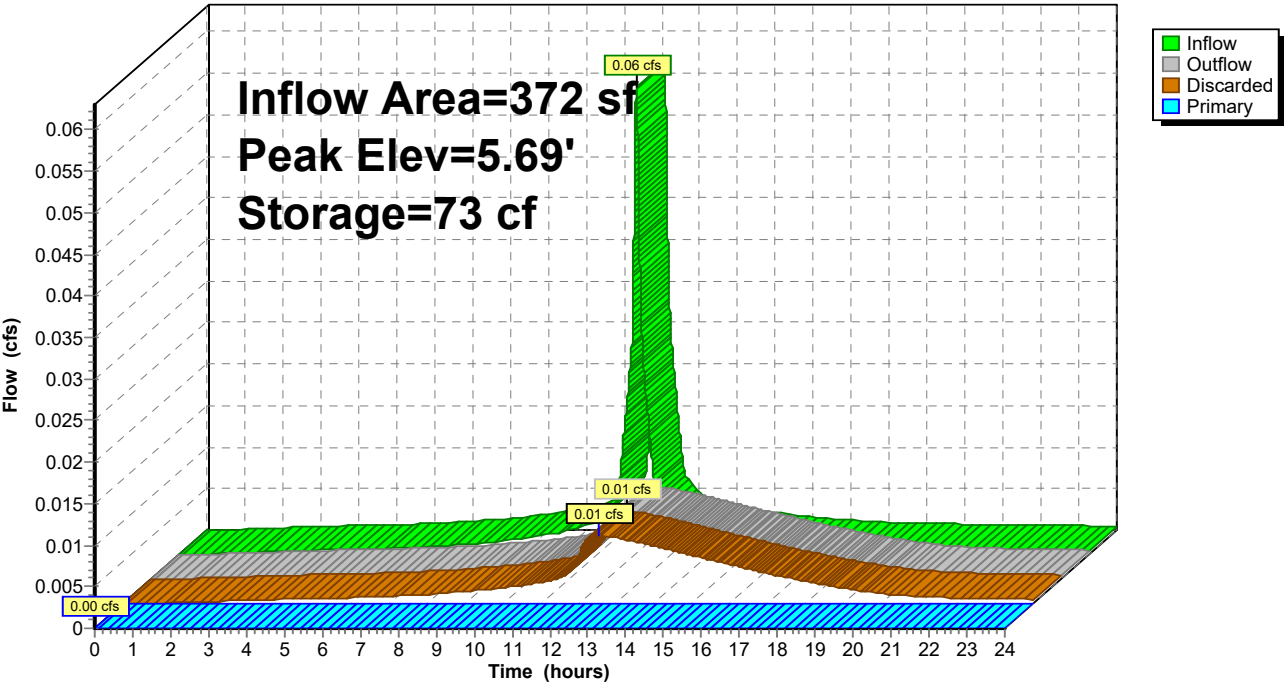
Device	Routing	Invert	Outlet Devices
#1	Discarded	4.70'	0.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 3.30'
#2	Primary	5.70'	5.5' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

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

Hydrograph



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

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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)

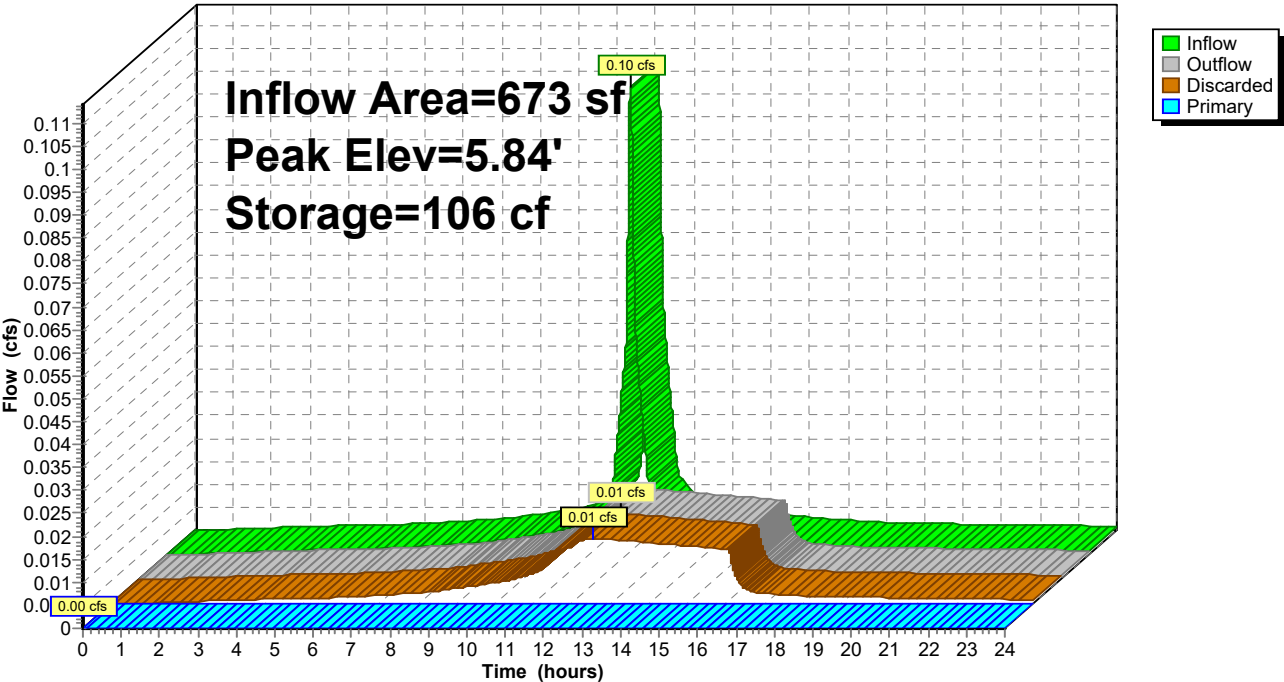
↑**1=Exfiltration** (Controls 0.01 cfs)

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

Hydrograph



Stage-Area-Storage for Pond 15P: Pr. PP#7

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
5.40	673	0	8.00	37	321
5.45	656	13	8.05	28	321
5.50	639	26	8.10	19	322
5.55	622	39	8.15	9	322
5.60	605	51	8.20	0	322
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			

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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

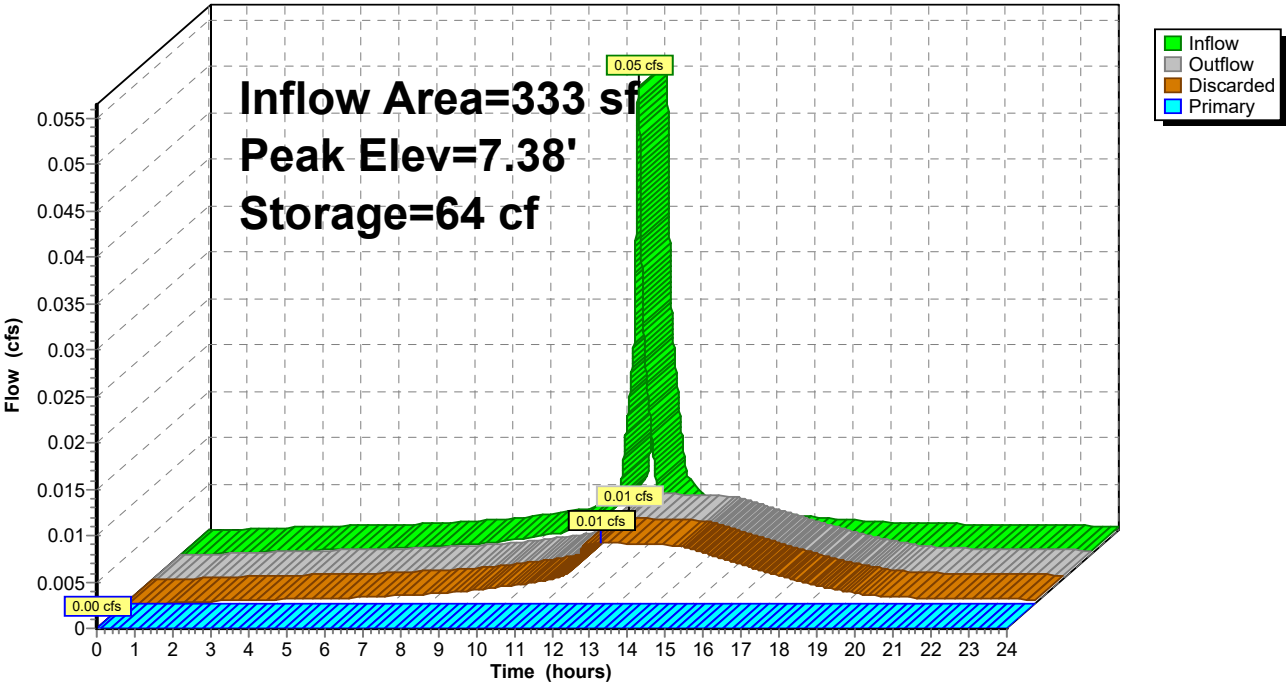
Device	Routing	Invert	Outlet Devices
#1	Discarded	6.60'	0.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.60'	Special & User-Defined Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

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

Hydrograph



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

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Type III 24-hr 25-Year Rainfall=6.48"

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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

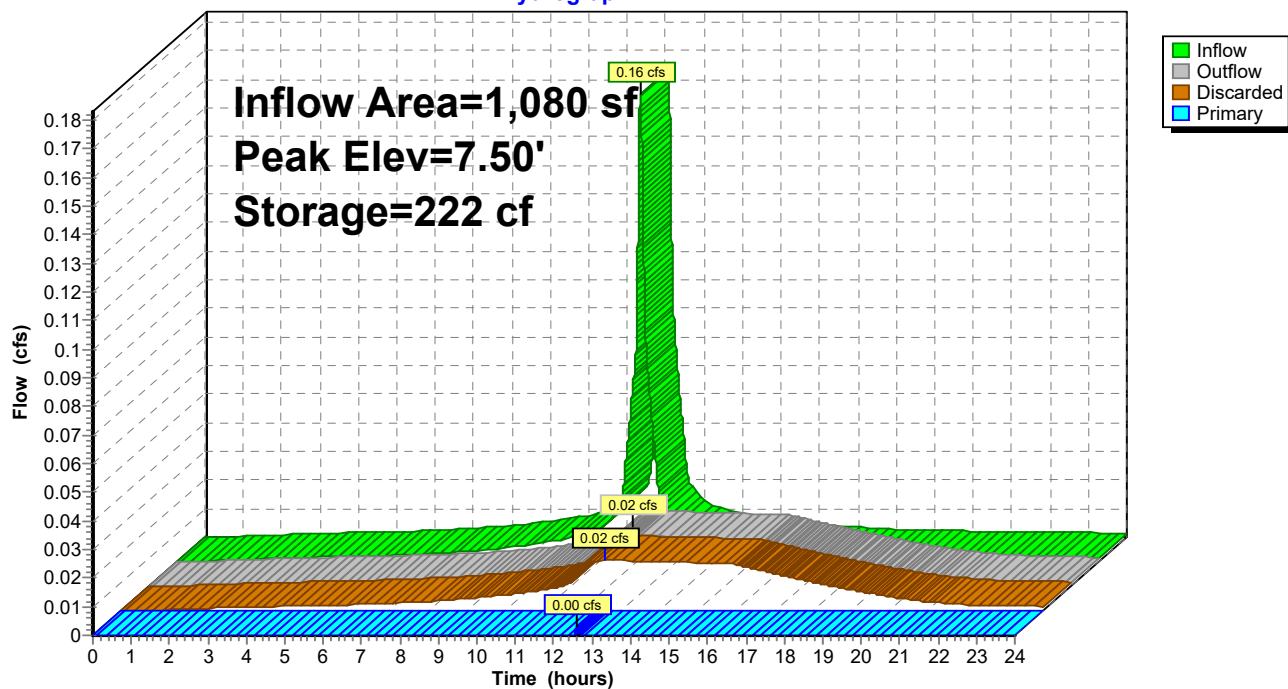
Device	Routing	Invert	Outlet Devices
#1	Discarded	6.50'	0.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.50'	Special & User-Defined Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

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

Hydrograph



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

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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

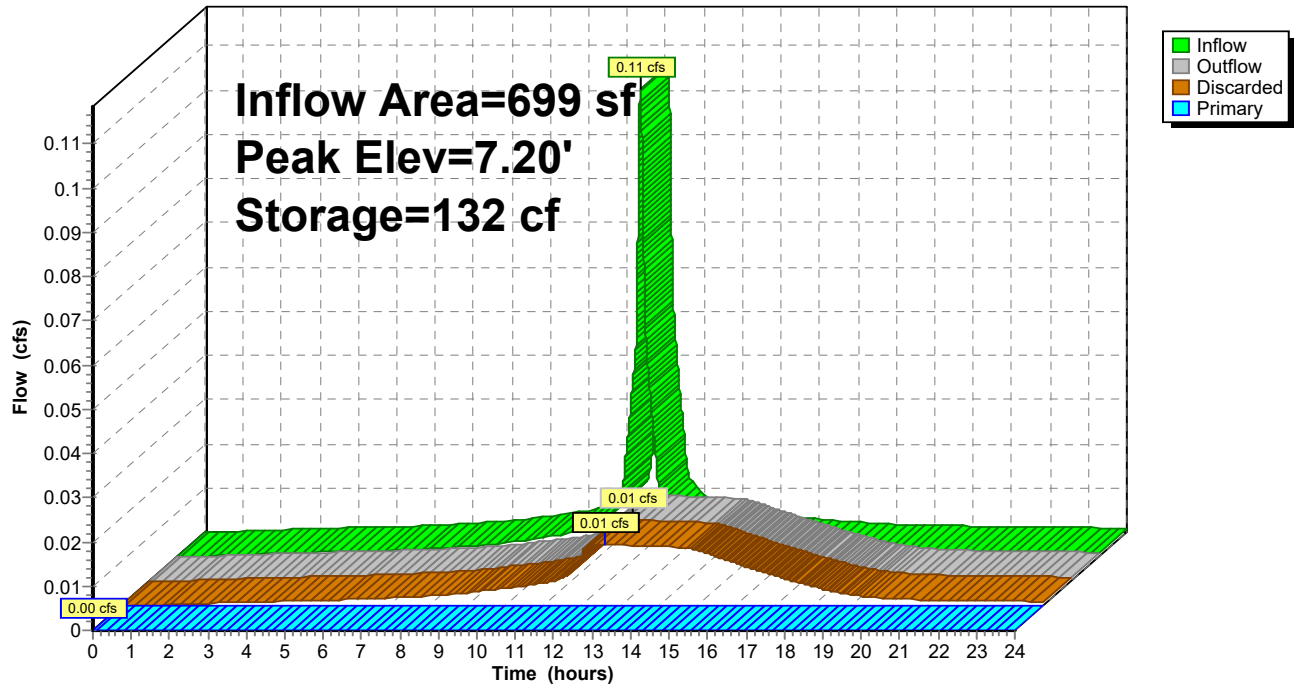
Device	Routing	Invert	Outlet Devices
#1	Discarded	6.45'	0.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 3.30'
#2	Primary	7.45'	Special & User-Defined Head (feet) 0.00 0.08 0.17 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.700 3.400 3.800 4.400 4.700

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

Hydrograph



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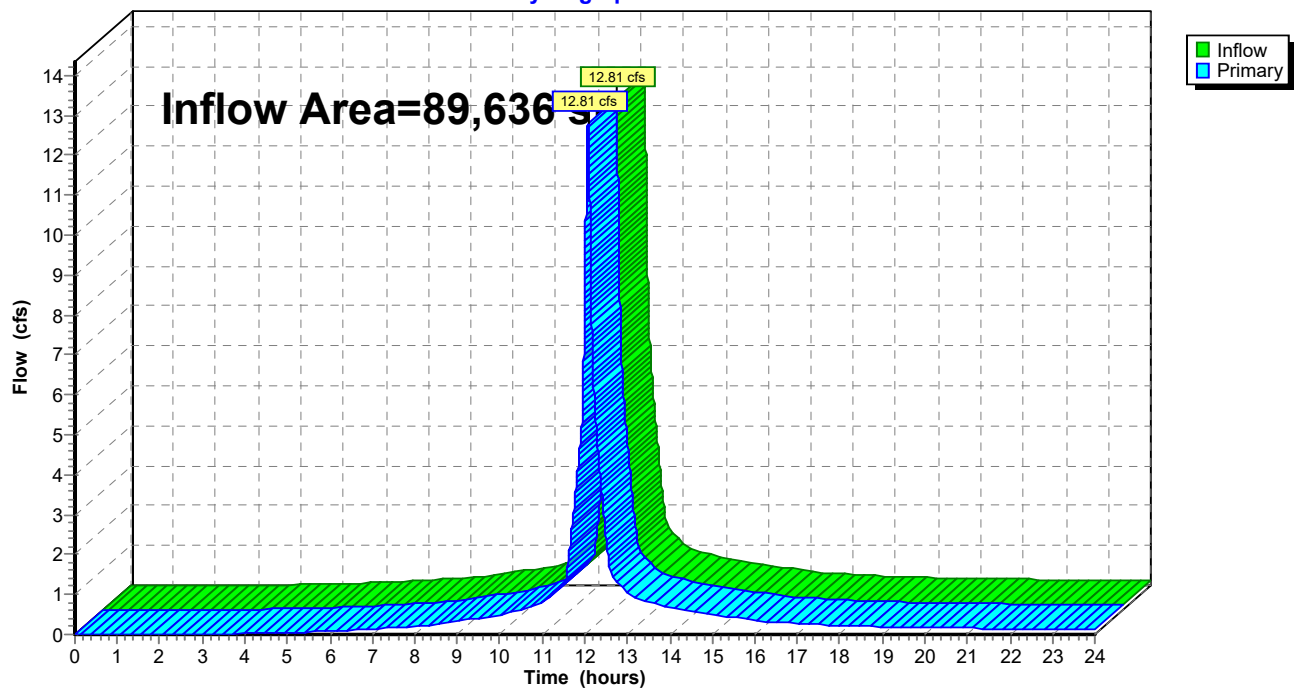
Stage-Area-Storage for Pond 23P: Pr. PP#10

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

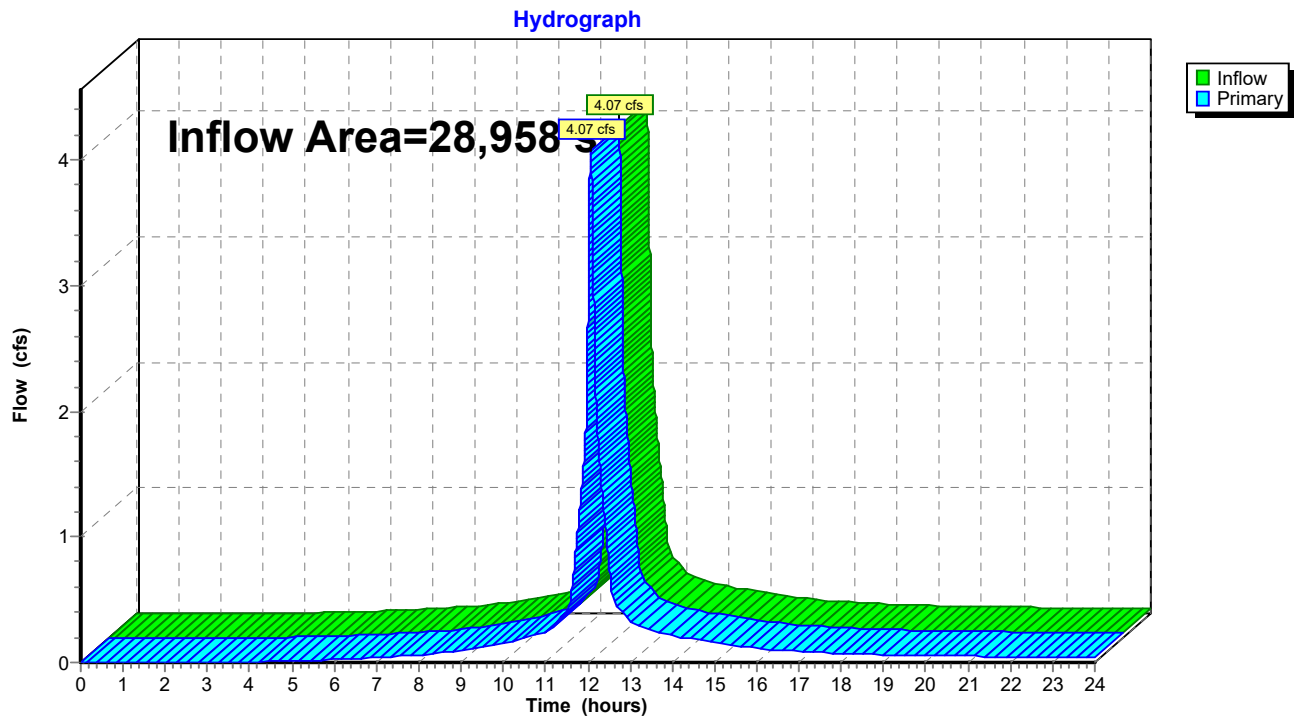
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

Link 1L: Ex. West Out**Hydrograph**

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

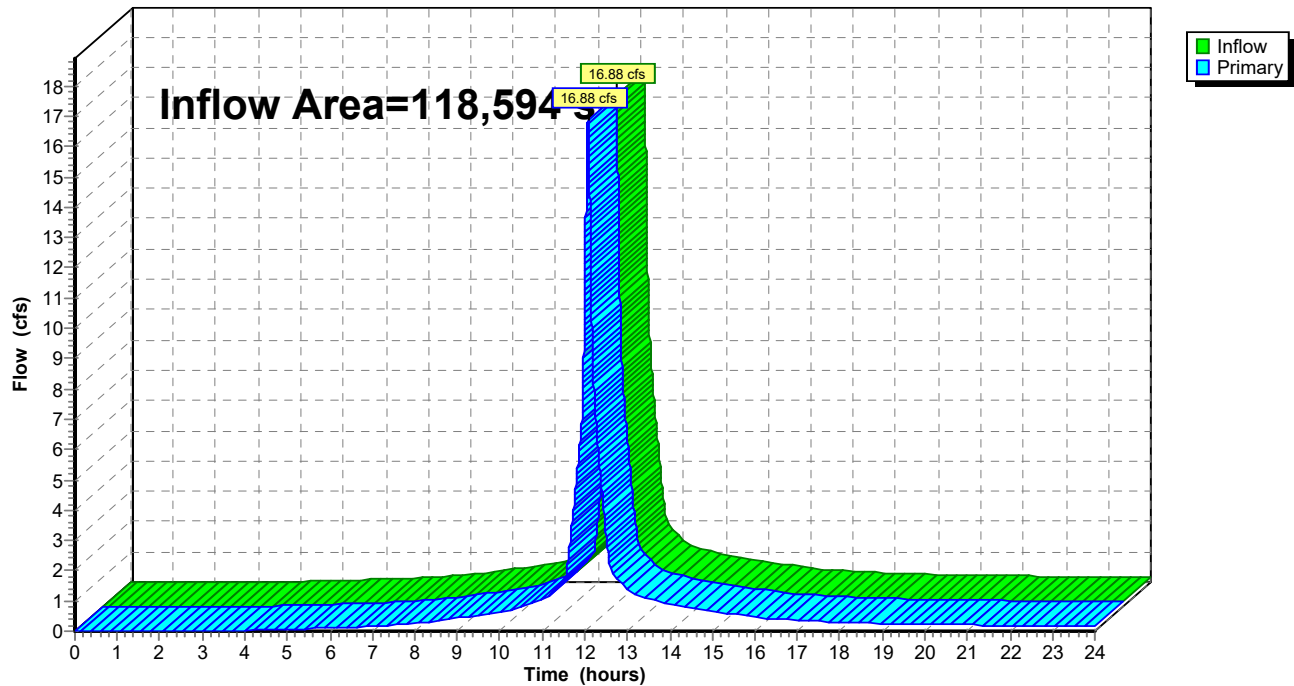
Summary for Link 3L: Ex. Outfall

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

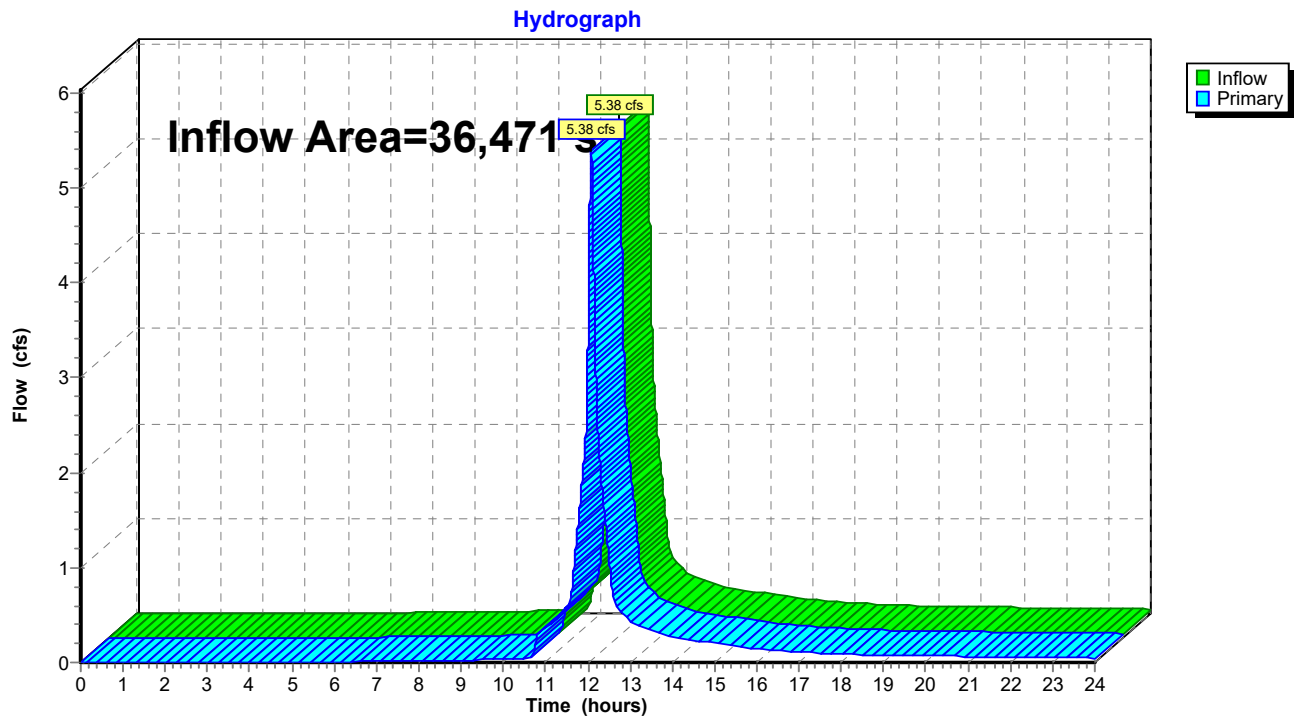
Hydrograph



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

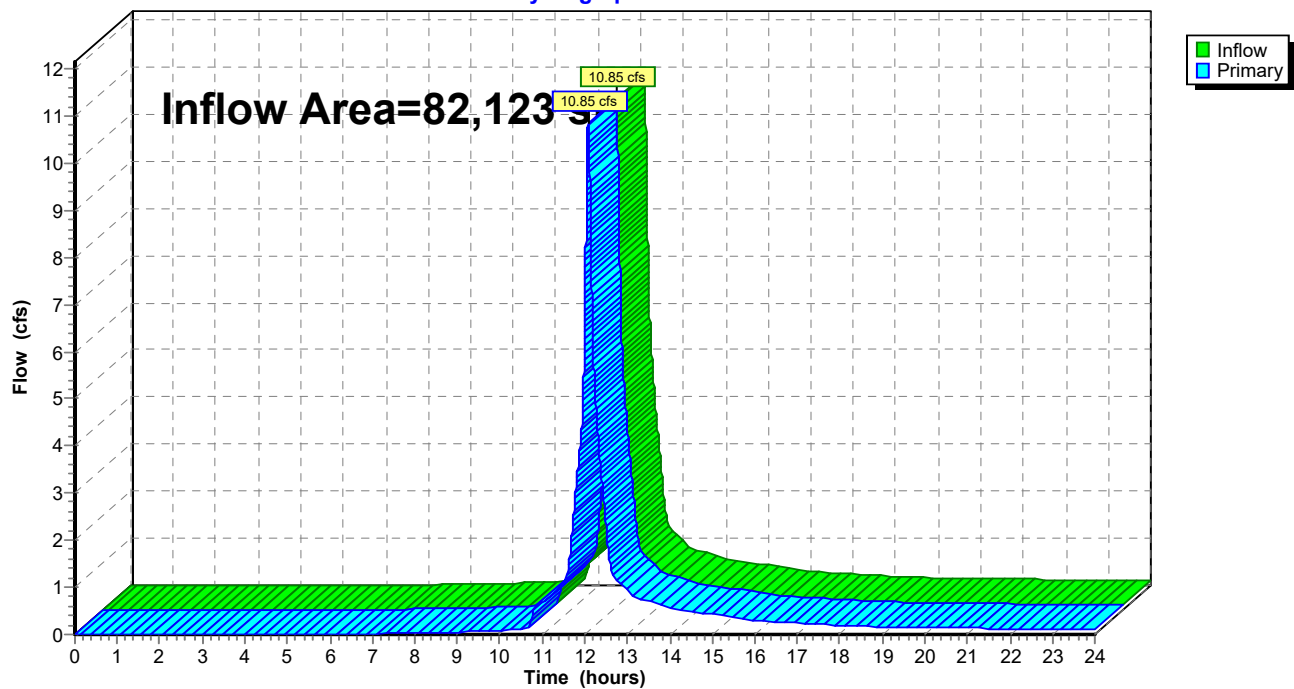
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs

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**Hydrograph**

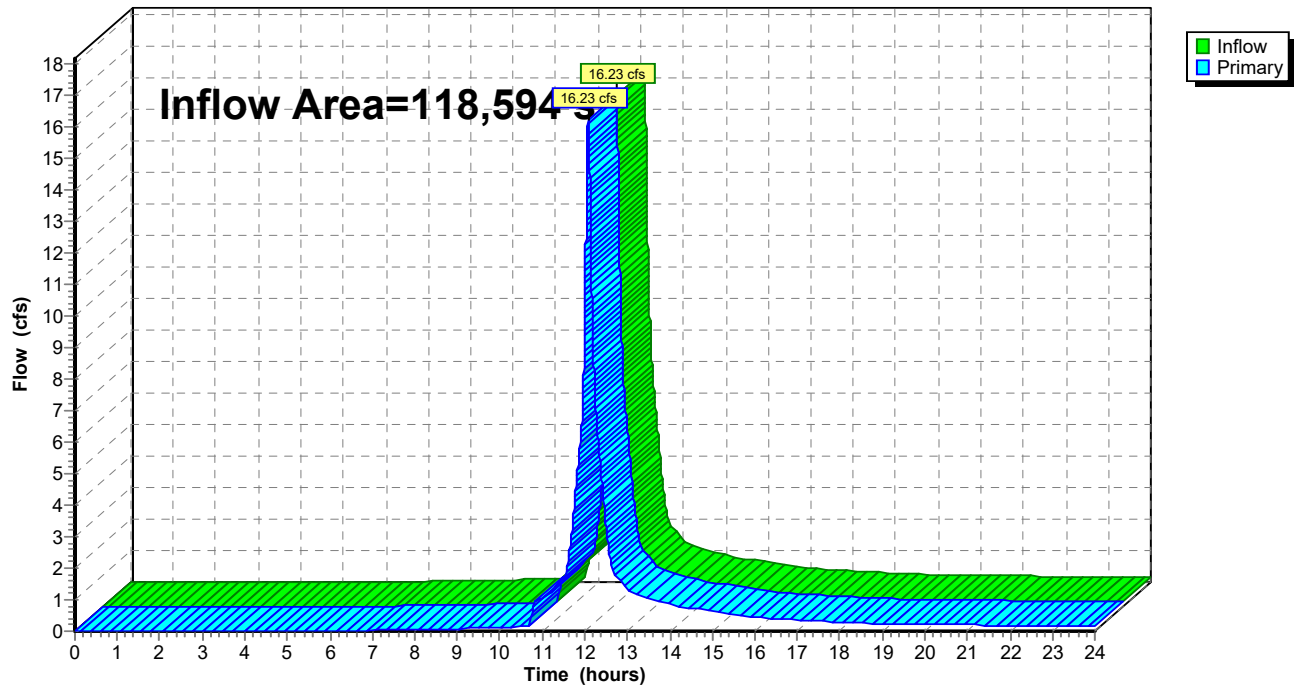
Summary for Link 6L: Pr. Outfall

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

Hydrograph



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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

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Pond 1A: Pr. PP#1Peak 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

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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

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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

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Pond 1A: Pr. PP#1Peak 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

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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 & aerals](#)

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.

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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 (ESDM, 2007).

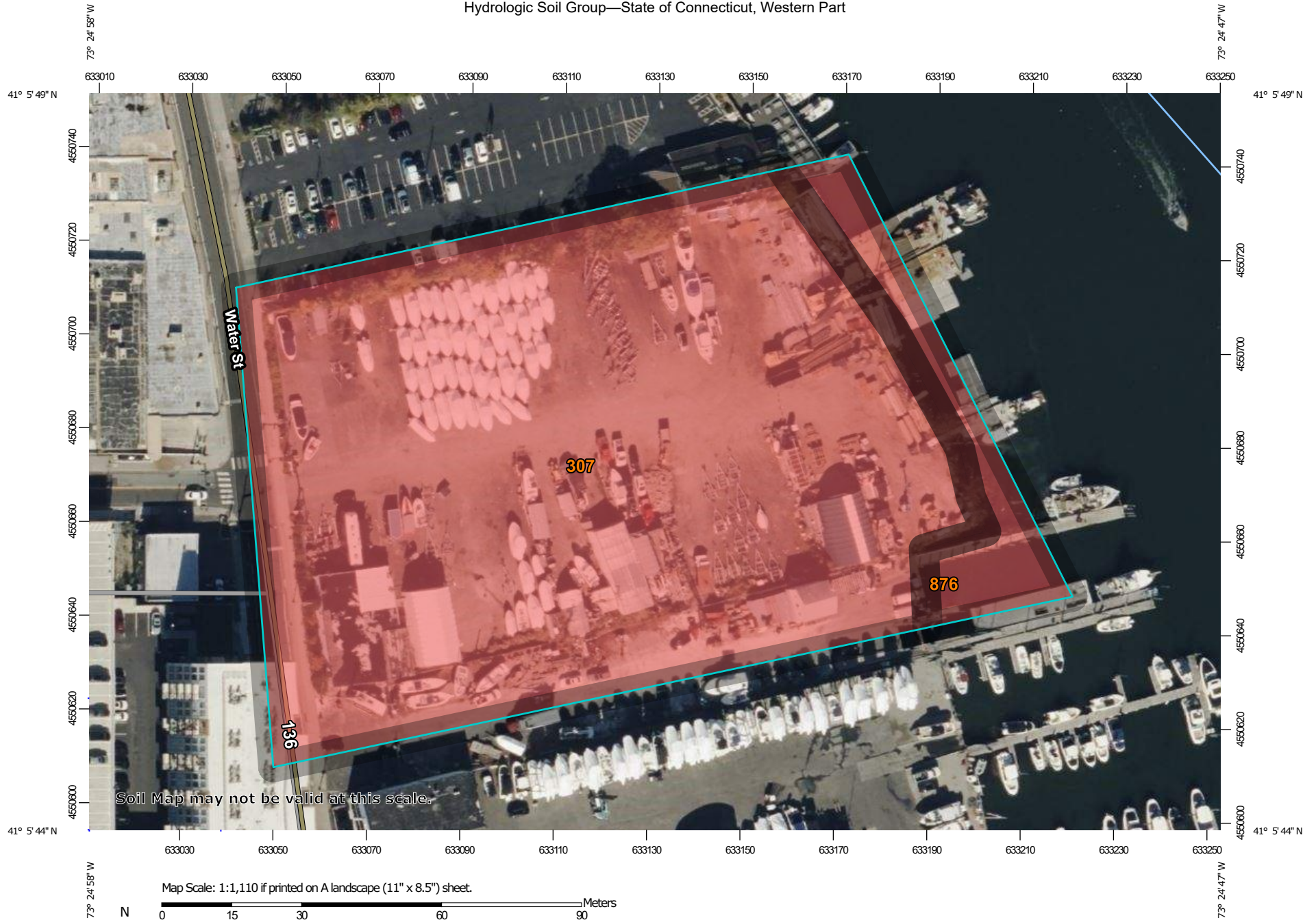
² Town of Greenwich Drainage Manual February 2012 - Addendum 1 February 2014, Appendix L - 24-Hour Design Storm Rainfall Amounts.

³ Interpolated from Table 2.1 of TR-55 - Urban Hydrology for Small 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 (ESDM, 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.

Hydrologic Soil Group—State of Connecticut, Western Part



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

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.

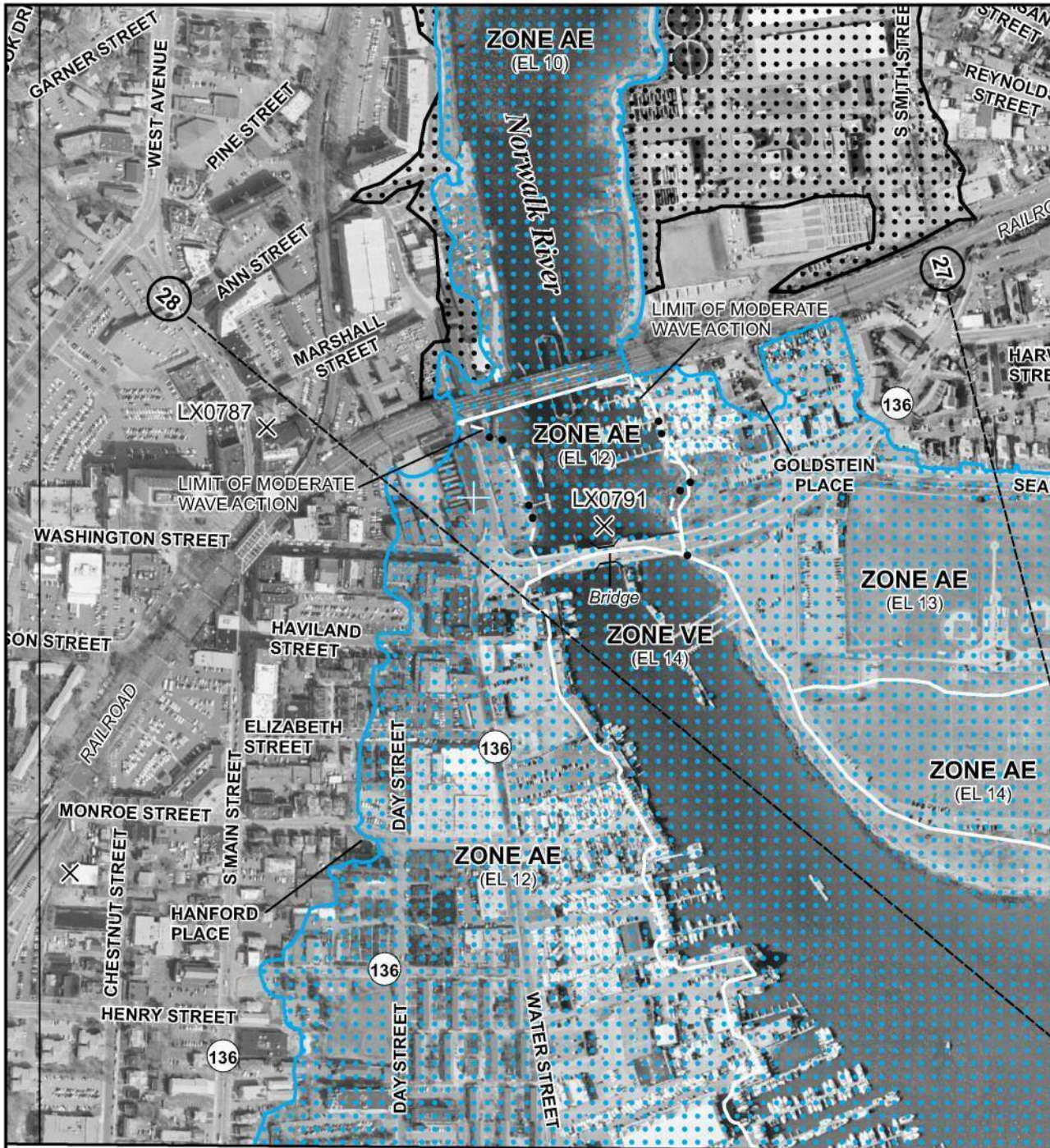
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

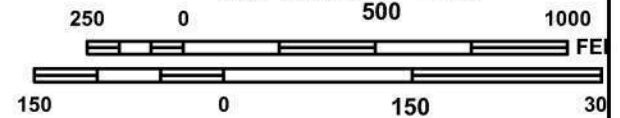
Appendix 5



EL 0533



MAP SCALE 1" = 500'



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.

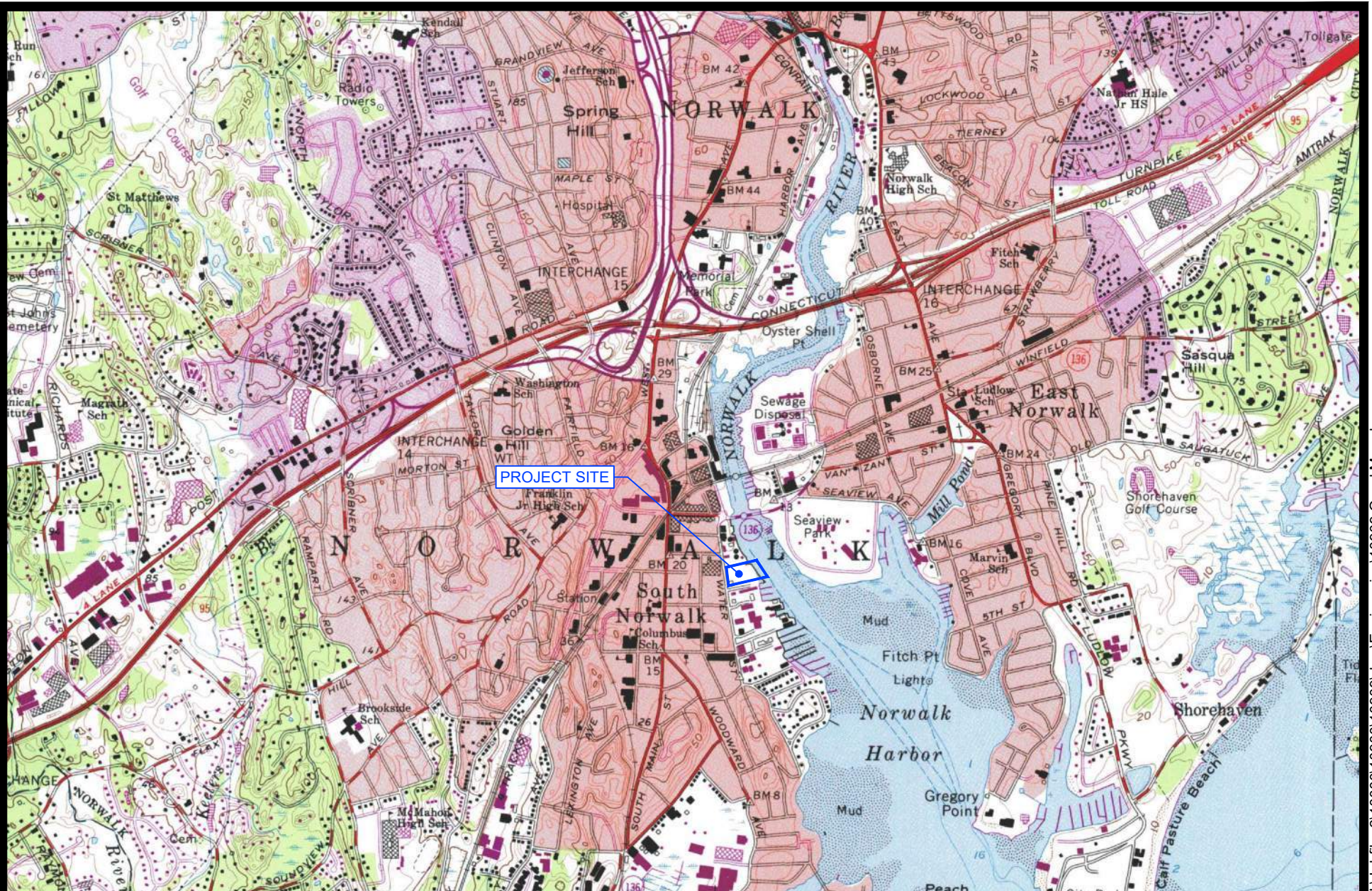


MAP NUMBER
09001C0531G

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'

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.

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.

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 Statutes 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.

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.

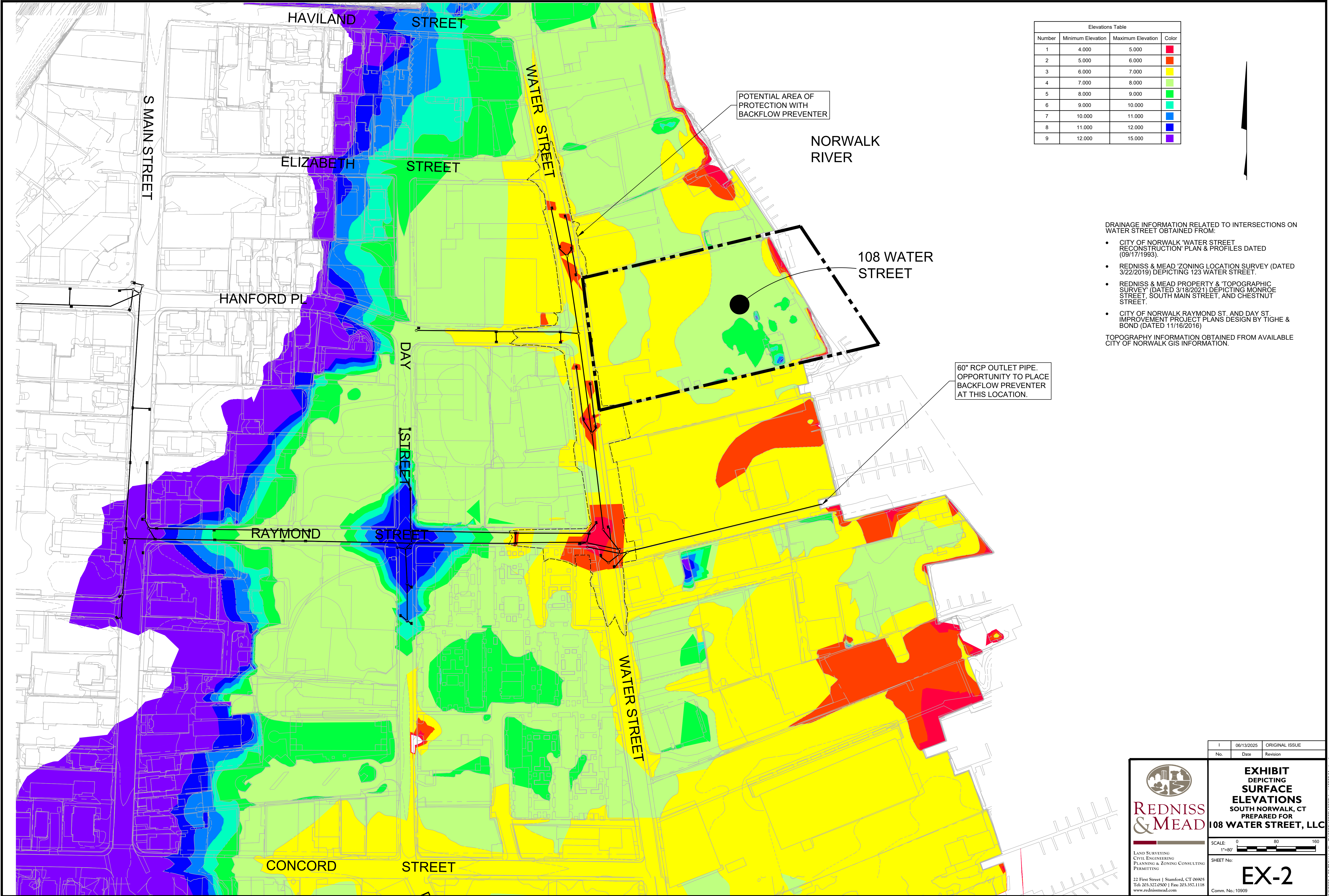
By: _____
[Owner(s)]

[Date]

By: _____
[Owner(s)]

[Date]

Appendix 7



Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	4.000	5.000	Red
2	5.000	6.000	Orange
3	6.000	7.000	Yellow
4	7.000	8.000	Light Green
5	8.000	9.000	Green
6	9.000	10.000	Cyan
7	10.000	11.000	Blue
8	11.000	12.000	Dark Blue
9	12.000	15.000	Purple

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.

1	06/13/2025	ORIGINAL ISSUE
No.	Date	Revision



REDNISS & MEAD

LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

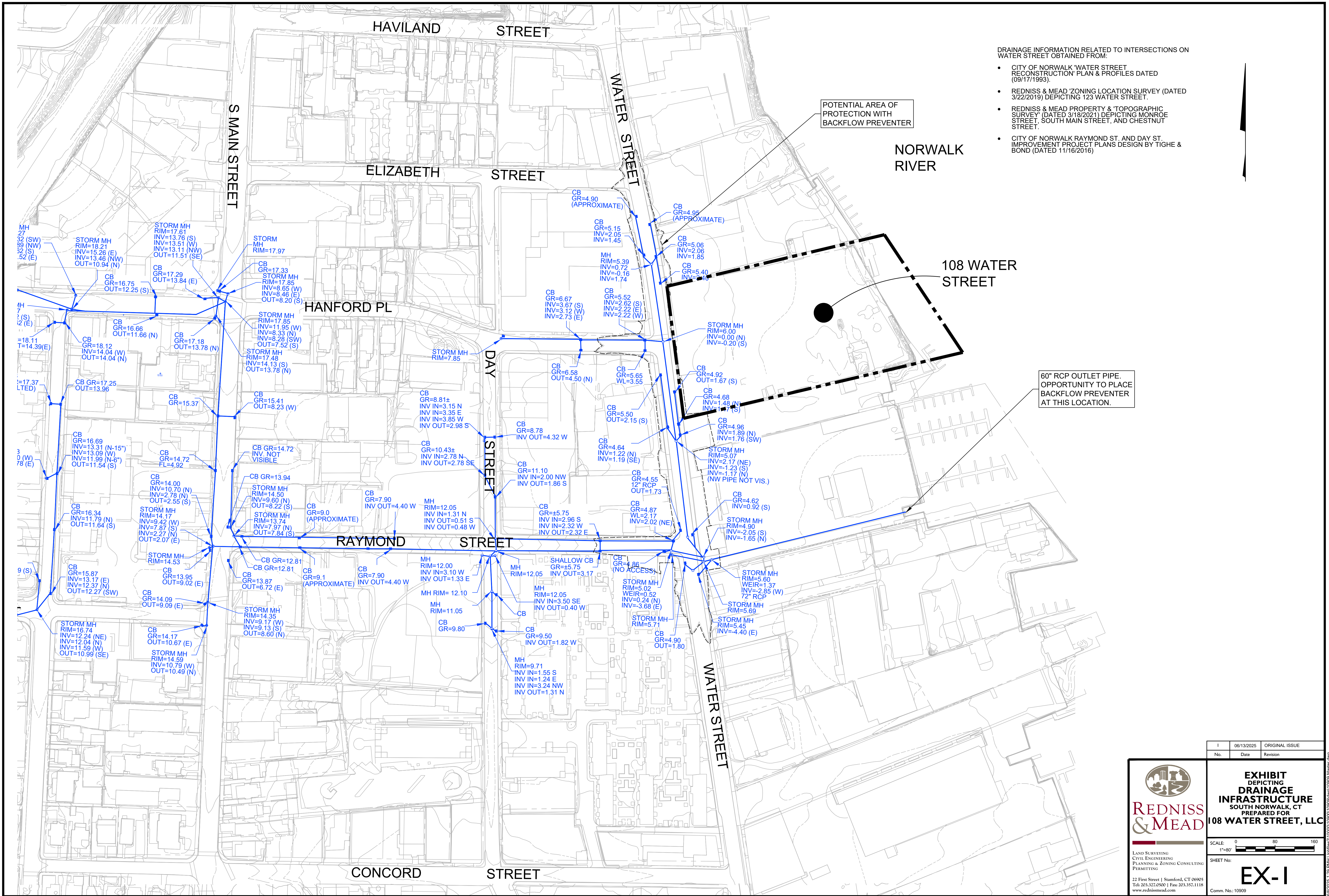
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissmead.com

EXHIBIT
DEPICTING
SURFACE
ELEVATIONS
SOUTH NORWALK, CT
PREPARED FOR
108 WATER STREET, LLC

SCALE: 0 80 160
1"=80'

SHEET No: **EX-2**

Comm. No.: 10909



- 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)

60" RCP OUTLET PIPE. OPPORTUNITY TO PLACE BACKFLOW PREVENTER AT THIS LOCATION.

1	06/13/2025	ORIGINAL ISSUE
No.	Date	Revision

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
DRAINAGE
INFRASTRUCTURE**
SOUTH NORWALK, CT
PREPARED FOR
108 WATER STREET, LLC

SCALE: 0 80 160
1"=80'
SHEET No: **EX-1**
Comm. No.: 10909

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

	<u>Existing</u>	<u>Proposed</u>	<u>Net Inc.</u>
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:	<i>108 Water Street</i>	Project #:	<i>10909</i>	Date:	<i>6/13/25</i>
Location:	<i>Norwalk, CT</i>	By:	<i>VJH</i>	Checked:	<i>CJF</i>

48" Sanitary Pipe - Pipe #1

Calculate the maximum flow capacity using Manning's equation.

Pipe material	reinforced 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:	<i>108 Water Street</i>	Project #:	<i>10909</i>	Date:	<i>6/13/25</i>
Location:	<i>Norwalk, CT</i>	By:	<i>VJH</i>	Checked:	<i>CJF</i>

48" Sanitary Pipe - Pipe #2

Calculate the maximum flow capacity using Manning's equation.

Pipe material	reinforced 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

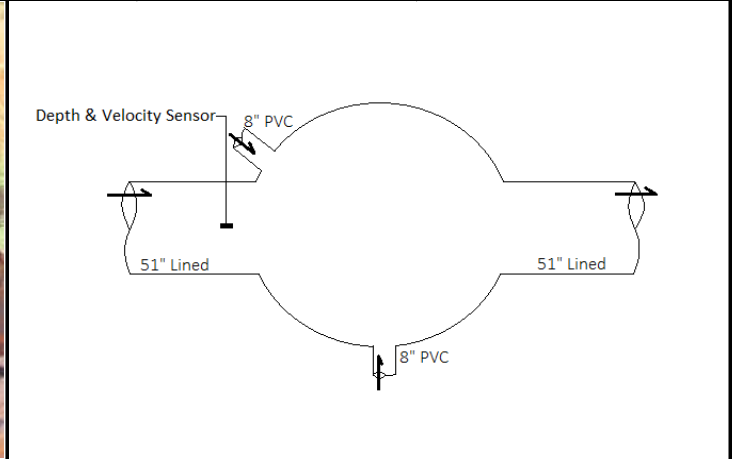


METER SITE INFORMATION FIELD LOG

PROJECT: Norwalk, CT	DATE: March 10, 2021	JOB#: 21026
LOCATION: 10 North Water Street	MH#:	METER SITE: 15
GPS/COMMENTS: 41.100361, -73.416479		



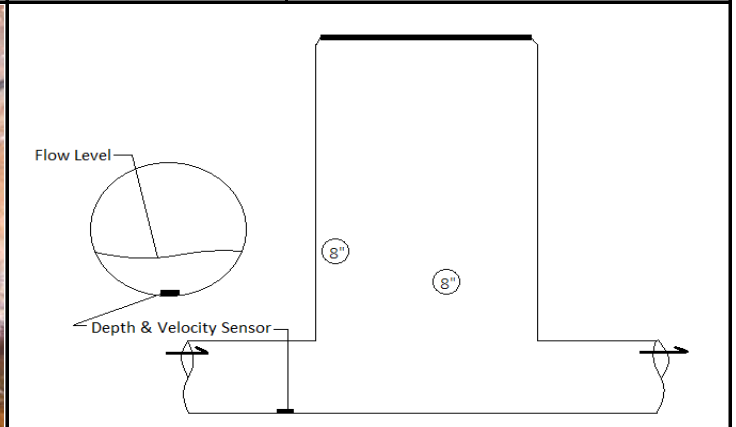
	Size (")	Material	Flow Depth (")	Debris	Shape	MH Depth
Incoming	51	Lined	12	0	Circular	13' 10"
Incoming	8	PVC	0.25	0	Circular	07' 01"
Incoming	8	PVC	0	0.5	Circular	06' 07"
Outgoing	51	Lined	12	0	Circular	13' 11"



SURCHARGE INFORMATION

SURCHARGE NONE EVIDENT:	LENGTH:	HEIGHT ABOVE WEIR:
SURCHARGED MARKS TO: 8'	BREADTH:	OVERFLOW OCCURS AT:
SURCHARGE CURRENTLY TO:	LEVEL:	

WEIR INFORMATION



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 jurisdiction.

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 project 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	D	C ⁽¹⁾	C	C	N/A
	32.4	40.3	34.5	26.6	28.1	
Water Street & Haviland Street	a	a	N/A	a	a	N/A
	0.5	0.5		0.5	0.4	
Water Street & Elizabeth Street	a	a	N/A	a	a	N/A
	1.9	2.1		2.0	2.1	
Water Street & Hanford Place	B	B	N/A	B	B	N/A
	15.8	18.2		13.2	13.3	
Washington Street & North/South Main Street	C	D	C ⁽²⁾	C	C	N/A
	34.9	36.3	35.0	27.7	28.0	
Washington Street/Fort Point Street & Seaview Avenue	C	C	N/A	B	B	N/A
	21.3	22.0		14.4	17.0	
North/South Main Street & Monroe Street/Hanford Place	C	C	N/A	C	C	N/A
	32.0	33.7		26.6	27.6	
Water Street & Proposed Site Driveway A	N/A	a	N/A	N/A	a	N/A
	N/A	0.5		N/A	1.0	
Water Street & Proposed Site Driveway B	N/A	a	N/A	N/A	a	N/A
	N/A	0.9		N/A	0.8	

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	E	E ⁽¹⁾	D	D	D ⁽³⁾
	58.6	65.6	63.5	41.9	48.1	46.5
Water Street & Haviland Street	a	a	N/A	a	a	N/A
	0.4	0.3		0.6	0.6	
Water Street & Elizabeth Street	a	a	N/A	a	a	N/A
	3.9	5.1		4.0	4.6	
Water Street & Hanford Place	B	B	N/A	B	B	N/A
	15.9	15.9		13.1	17.5	
Washington Street & North/South Main Street	C	D	C ⁽²⁾	C	C	N/A
	33.6	35.8	35.0	31.4	32.3	
Washington Street/Fort Point Street & Seaview Avenue	C	C	N/A	B	B	N/A
	22.9	24.0		18.2	18.5	
North/South Main Street & Monroe Street/Hanford Place	C	C	N/A	C	C	N/A
	30.0	31.4		24.7	25.1	
Water Street & Proposed Site Driveway A	N/A	a	N/A	N/A	a	N/A
	N/A	1.7		N/A	0.6	
Water Street & Proposed Site Driveway B	N/A	a	N/A	N/A	a	N/A
	N/A	0.6		N/A	0.5	

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.

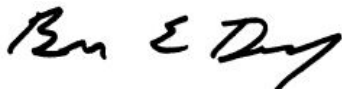
Copies of the capacity analysis summary sheets are contained in Appendix D. It is the opinion of DTS Provident that the study intersections will not be significantly impacted by the proposed Project.

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/TRAFF/Reports/1187_TIS_108 Water Street_V3.docx

APPENDIX A
TRAFFIC FIGURES

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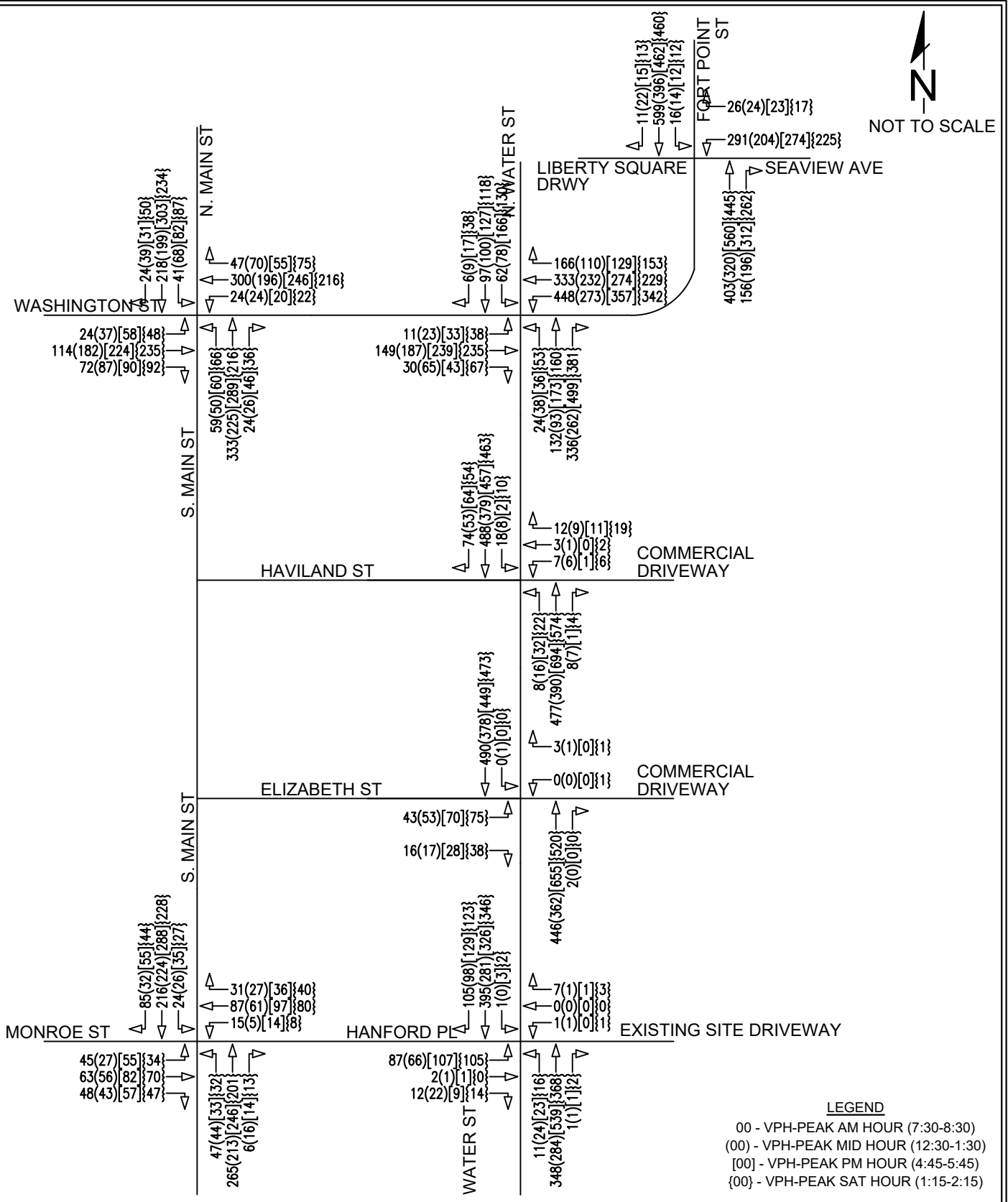
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Site Location
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: As Shown
June, 2025

Figure No. 01



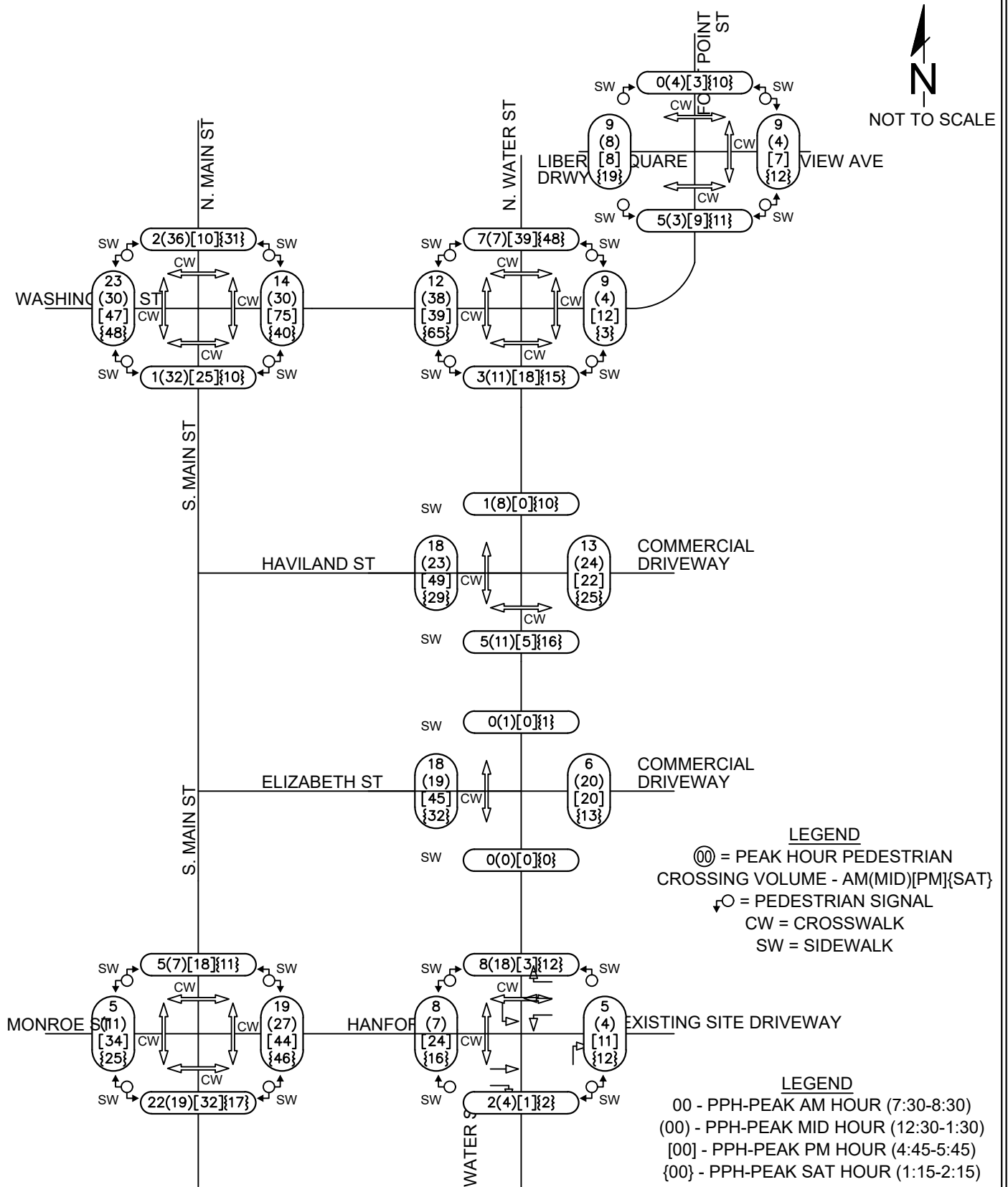
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Existing Traffic Volumes
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 02



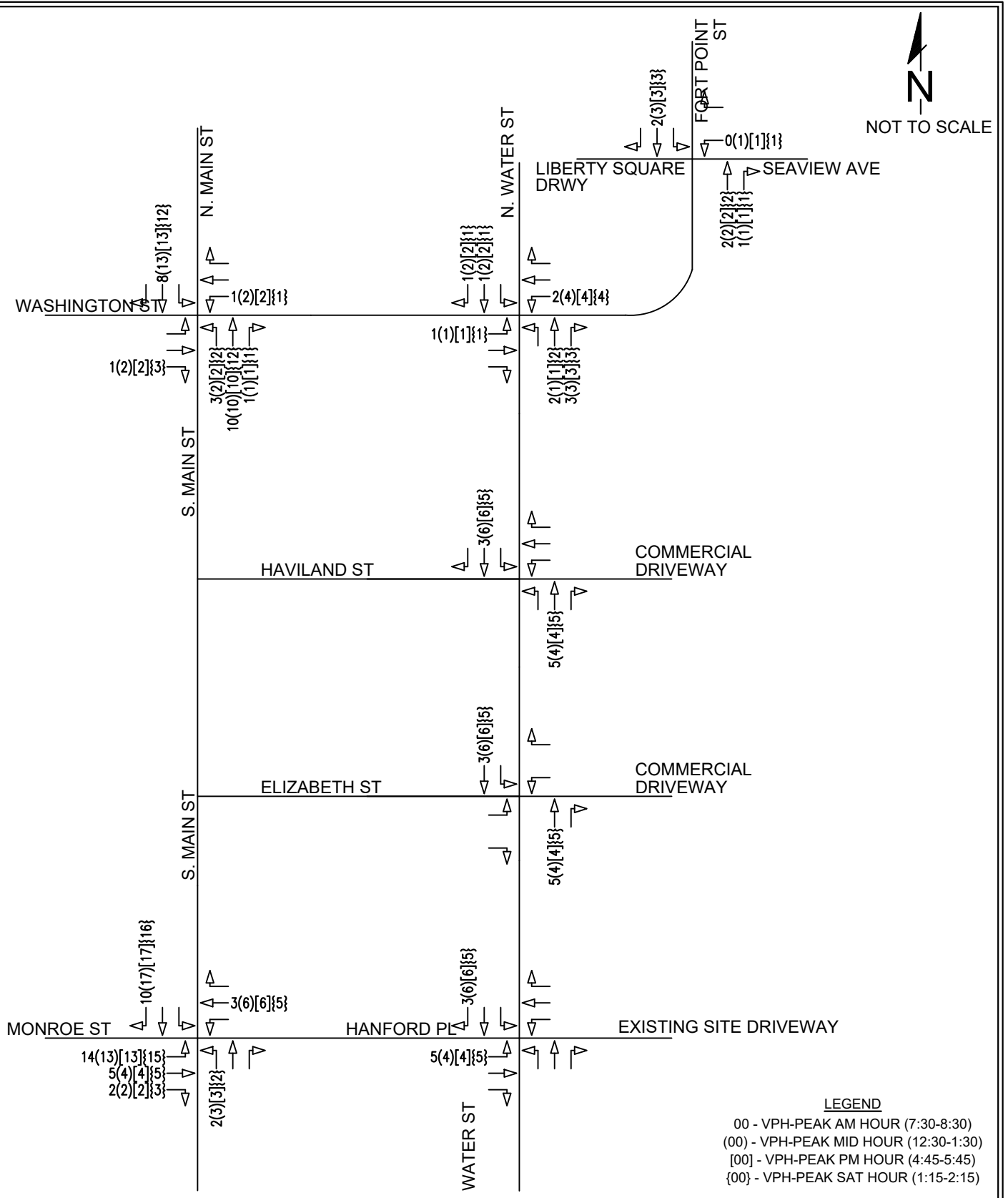
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Existing Pedestrian Volumes
 108 Water Street
 Norwalk, Fairfield County, CT

Project No. 1187
 Scale: N.T.S.
 June, 2025

Figure No. 03



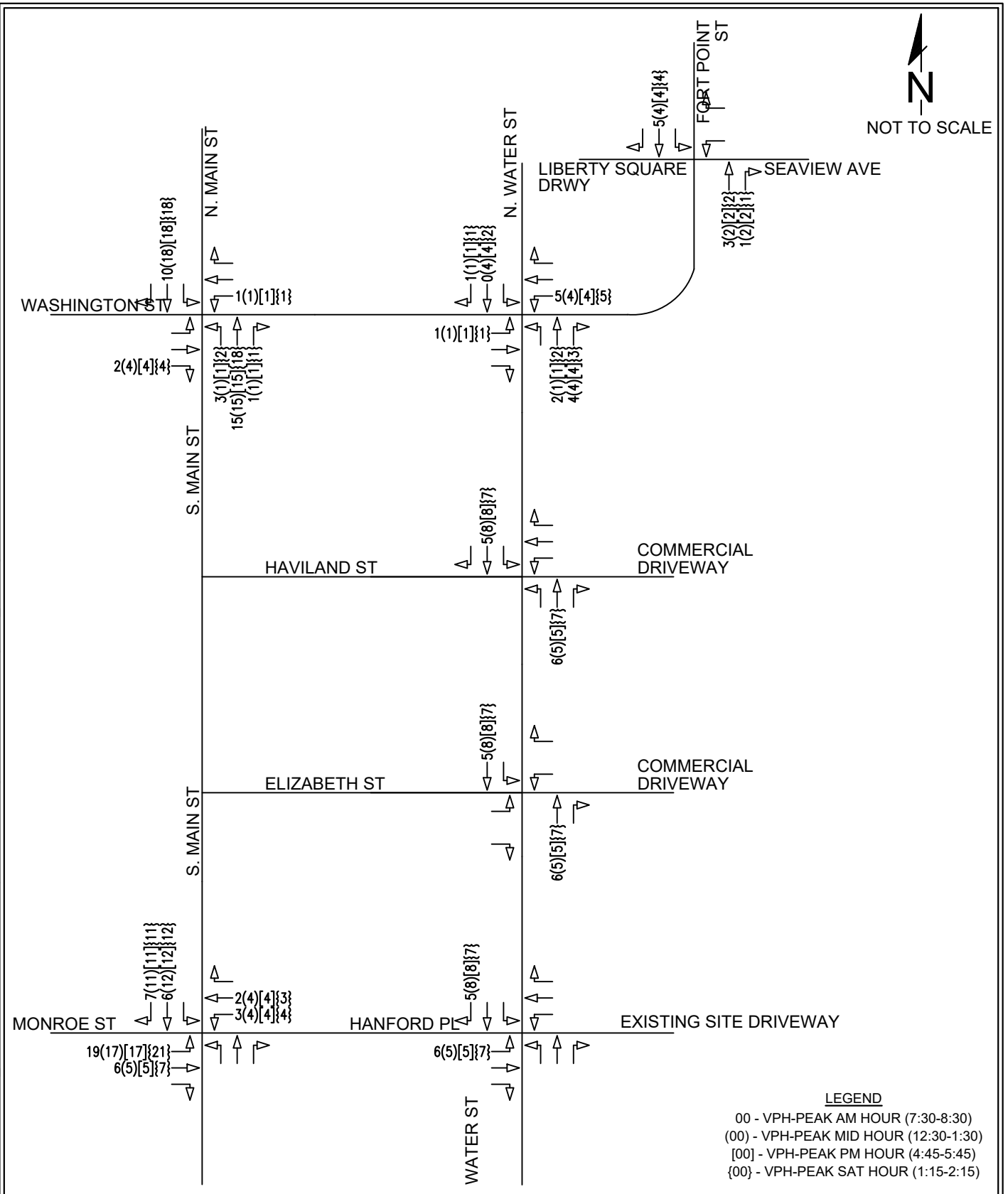
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Adjacent Development Traffic Volumes
10 Monroe Street
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 04



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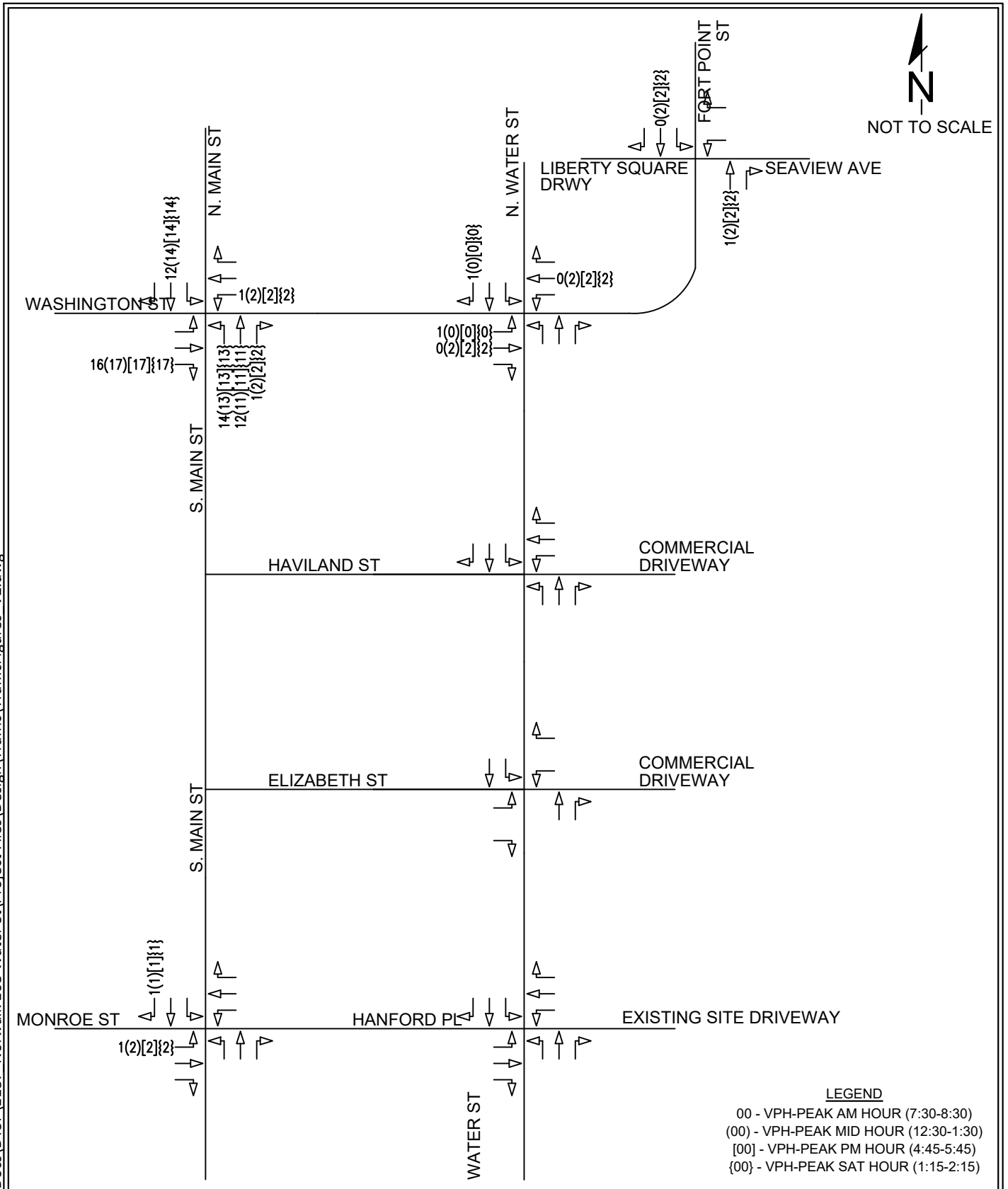
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Adjacent Development Traffic Volumes
15-07 Chestnut Street
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 05

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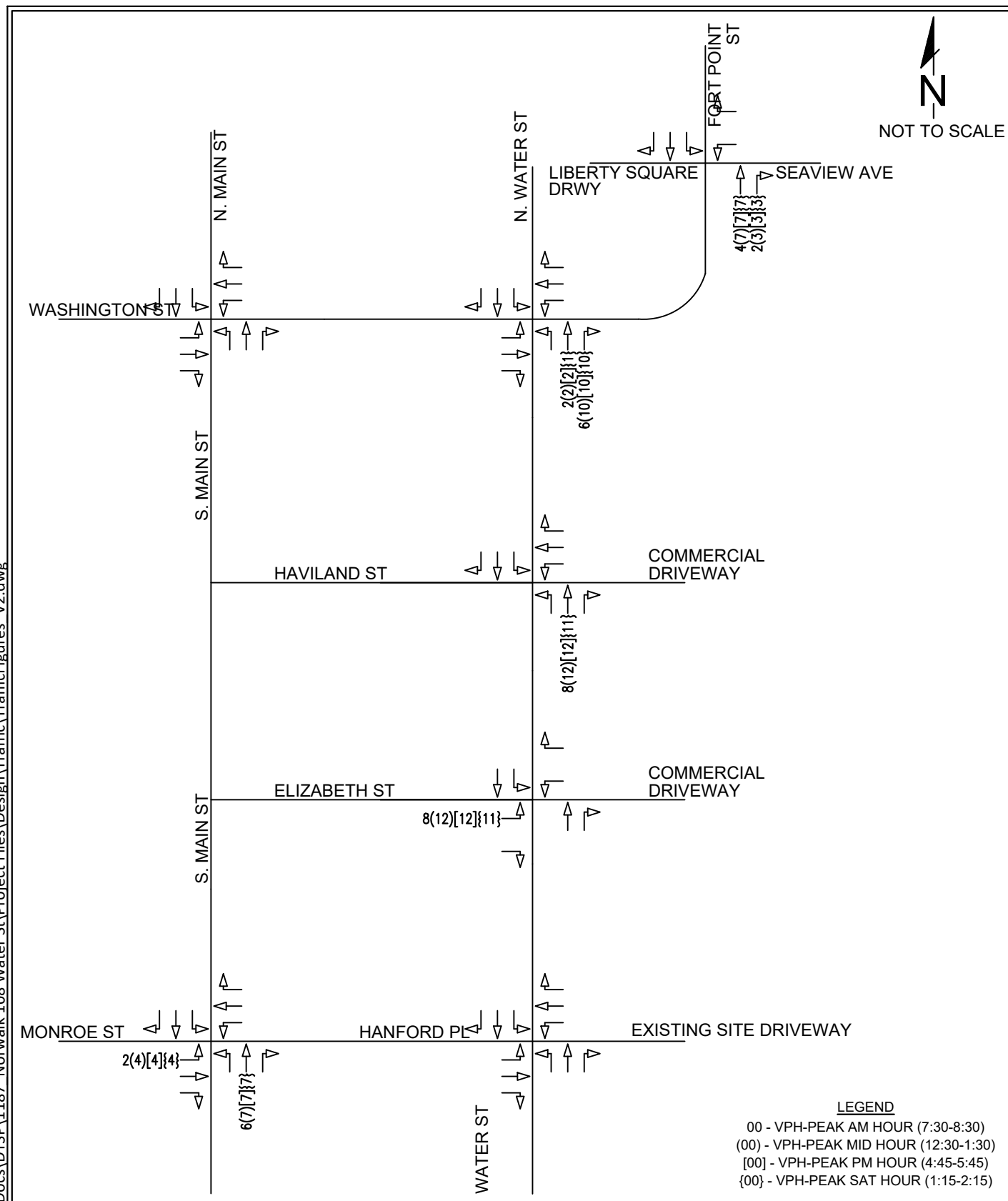
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Adjacent Development Traffic Volumes
25-35 South Main Street
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 06



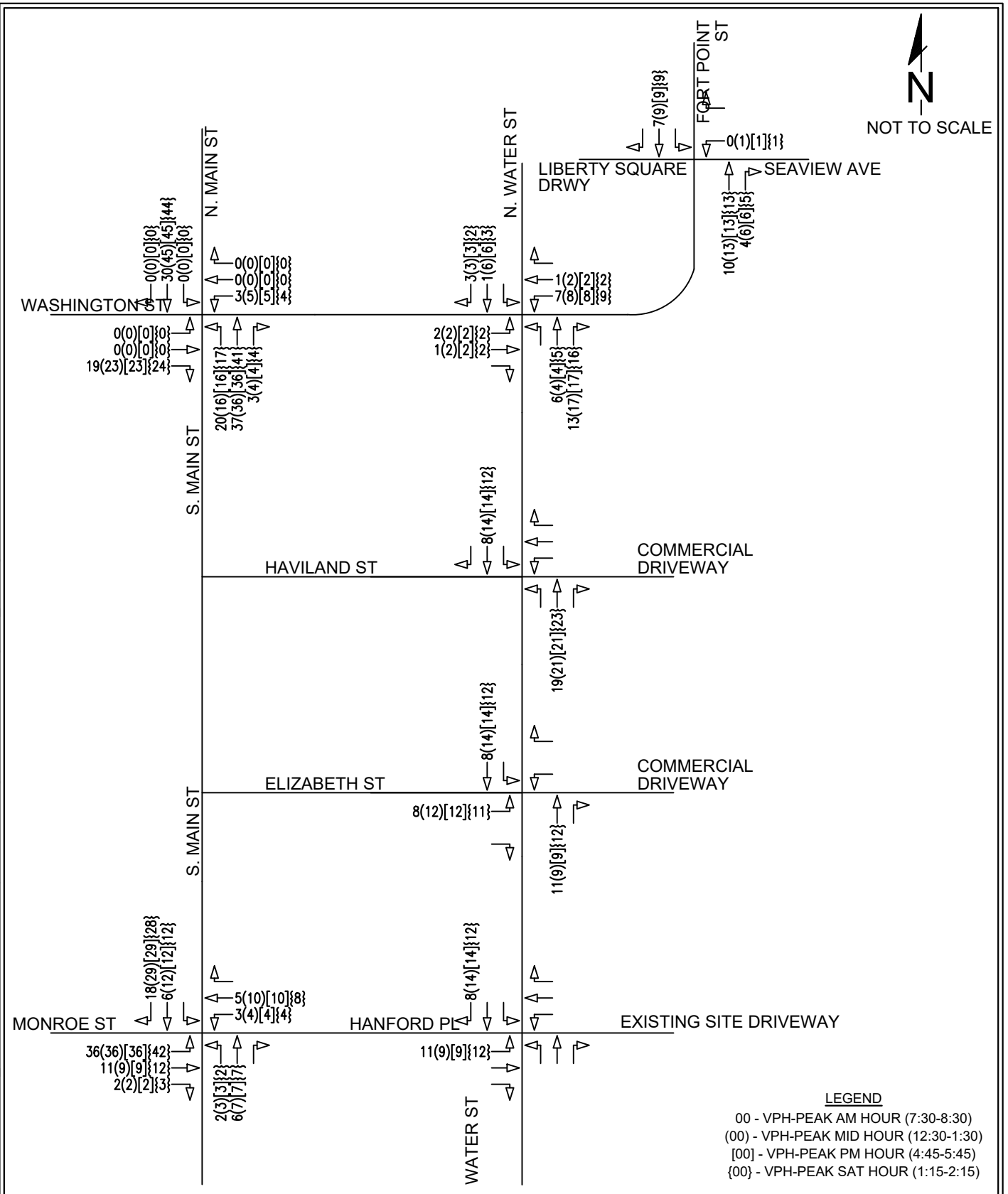
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Adjacent Development Traffic Volumes
71 Water Street
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 07



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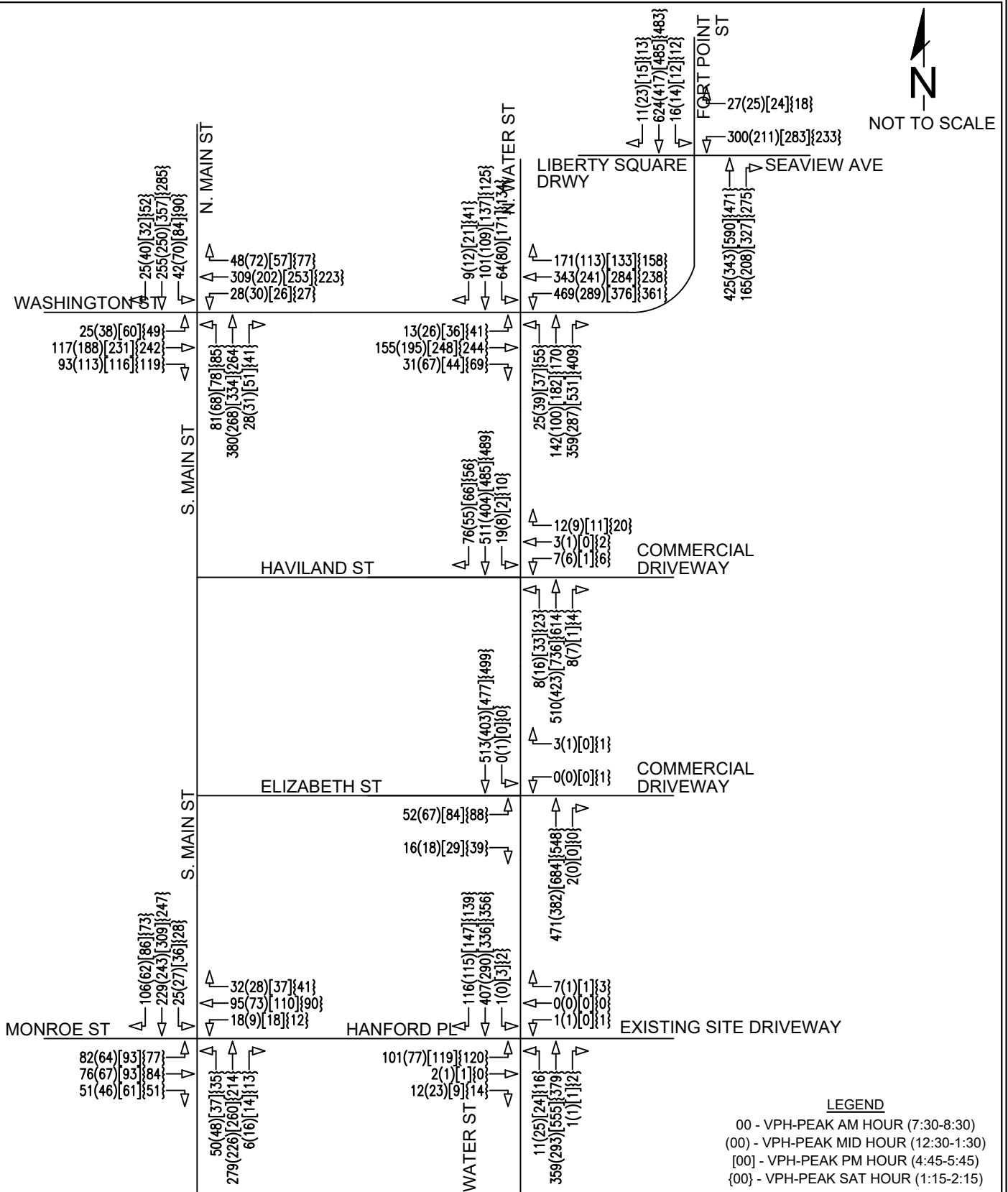
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Adjacent Development Traffic Volumes Total

108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 08



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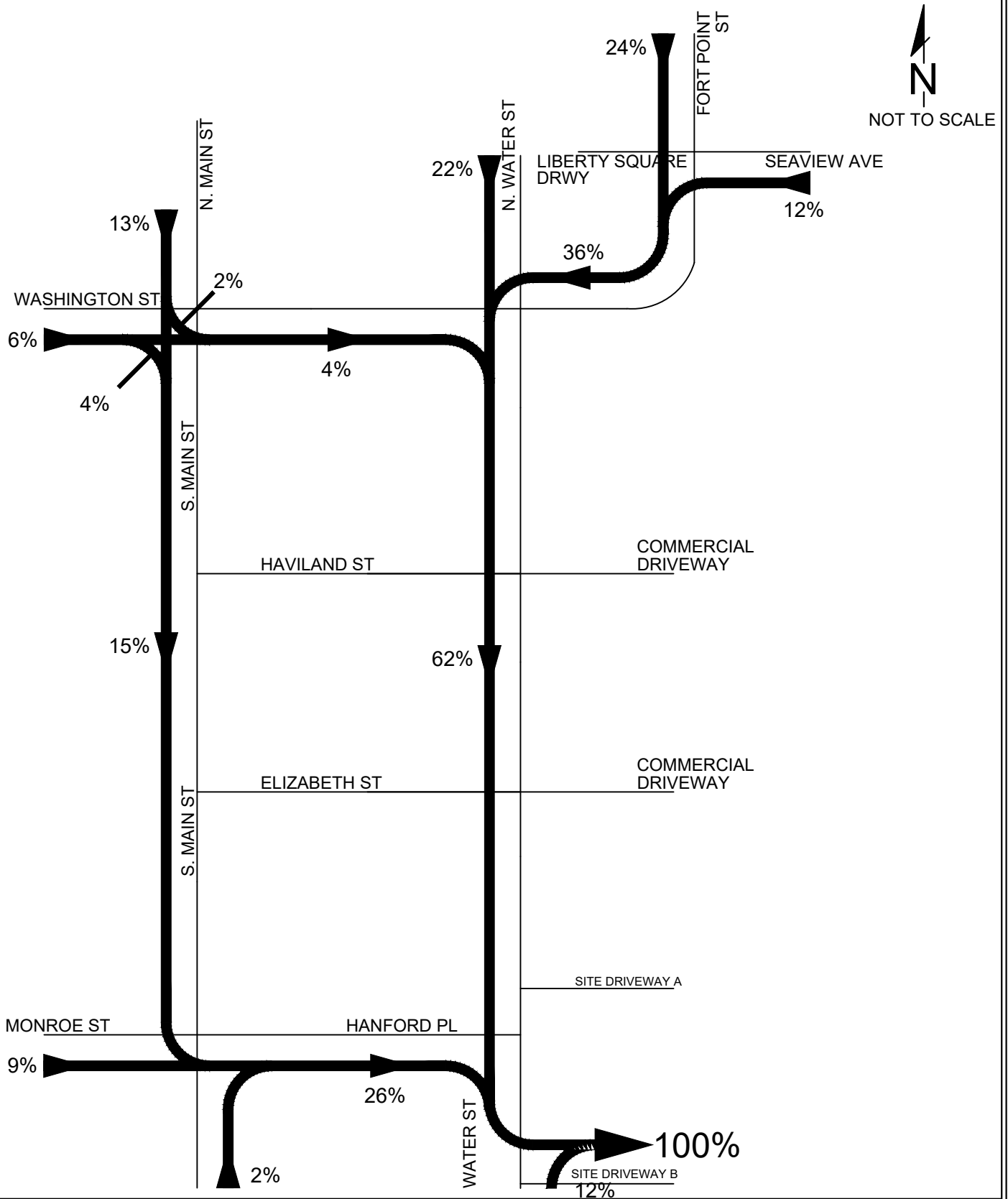
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No-Build Traffic Volumes
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 09

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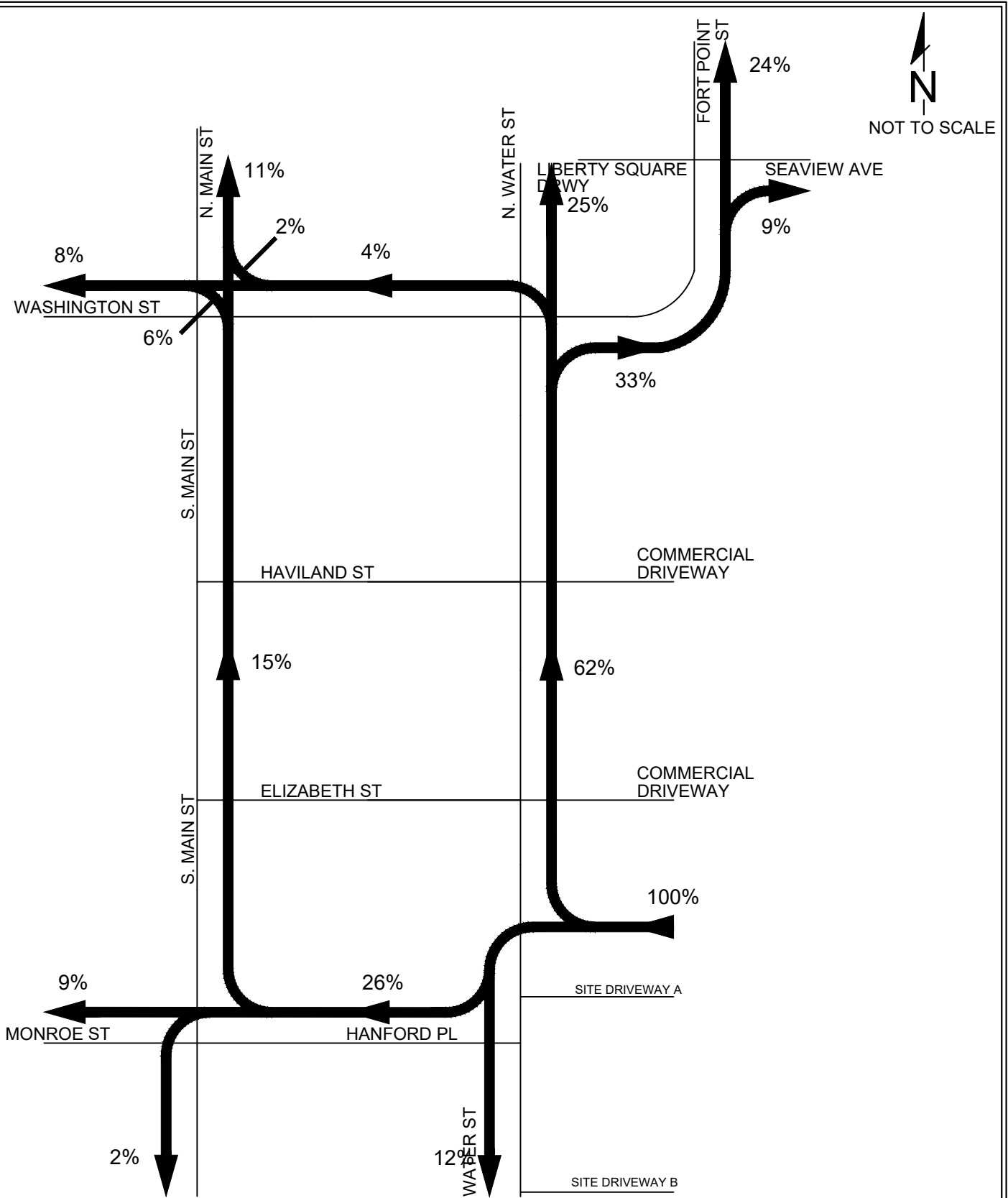
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Arrival Distribution
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 10

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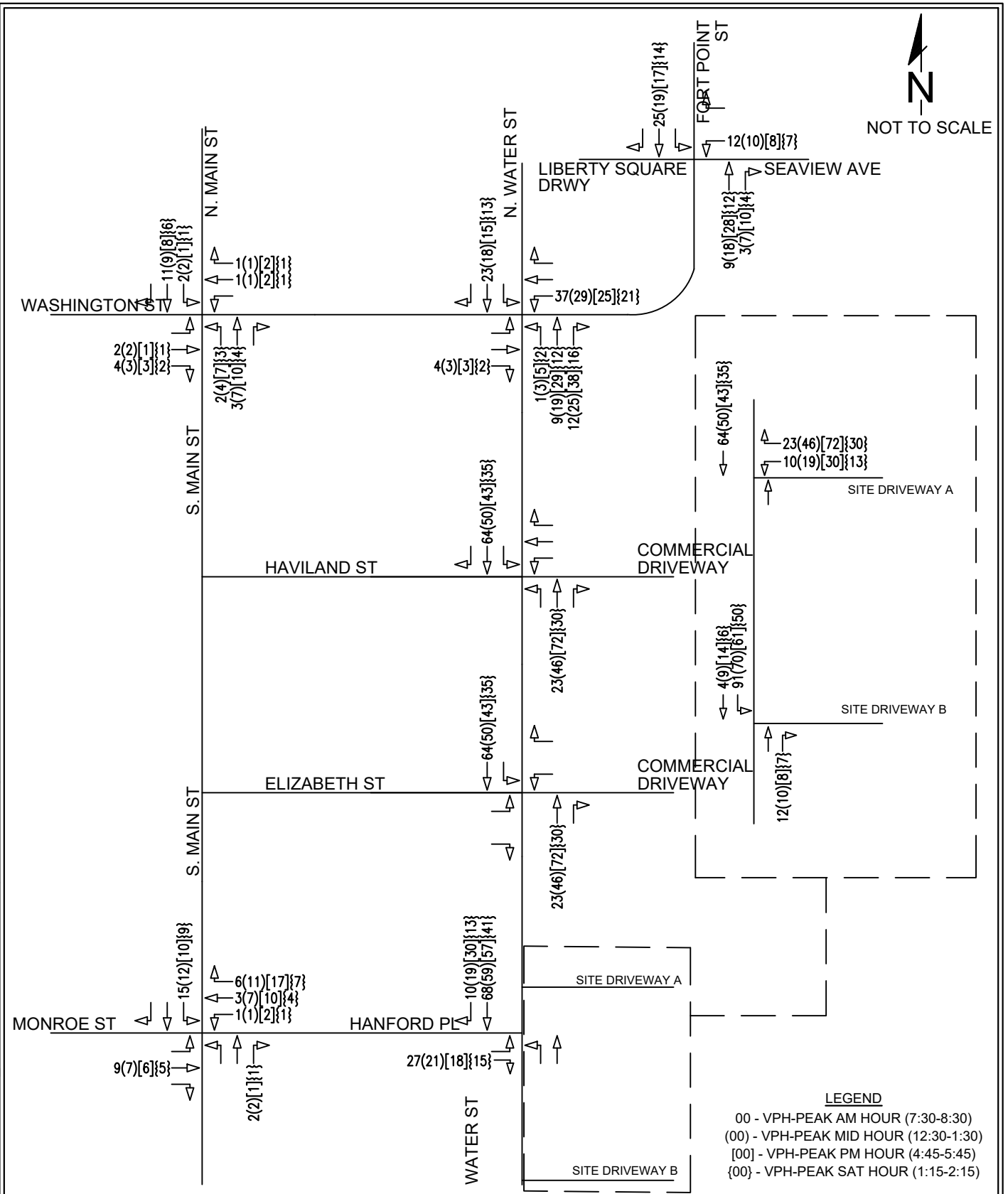
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Departure Distribution
108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 11



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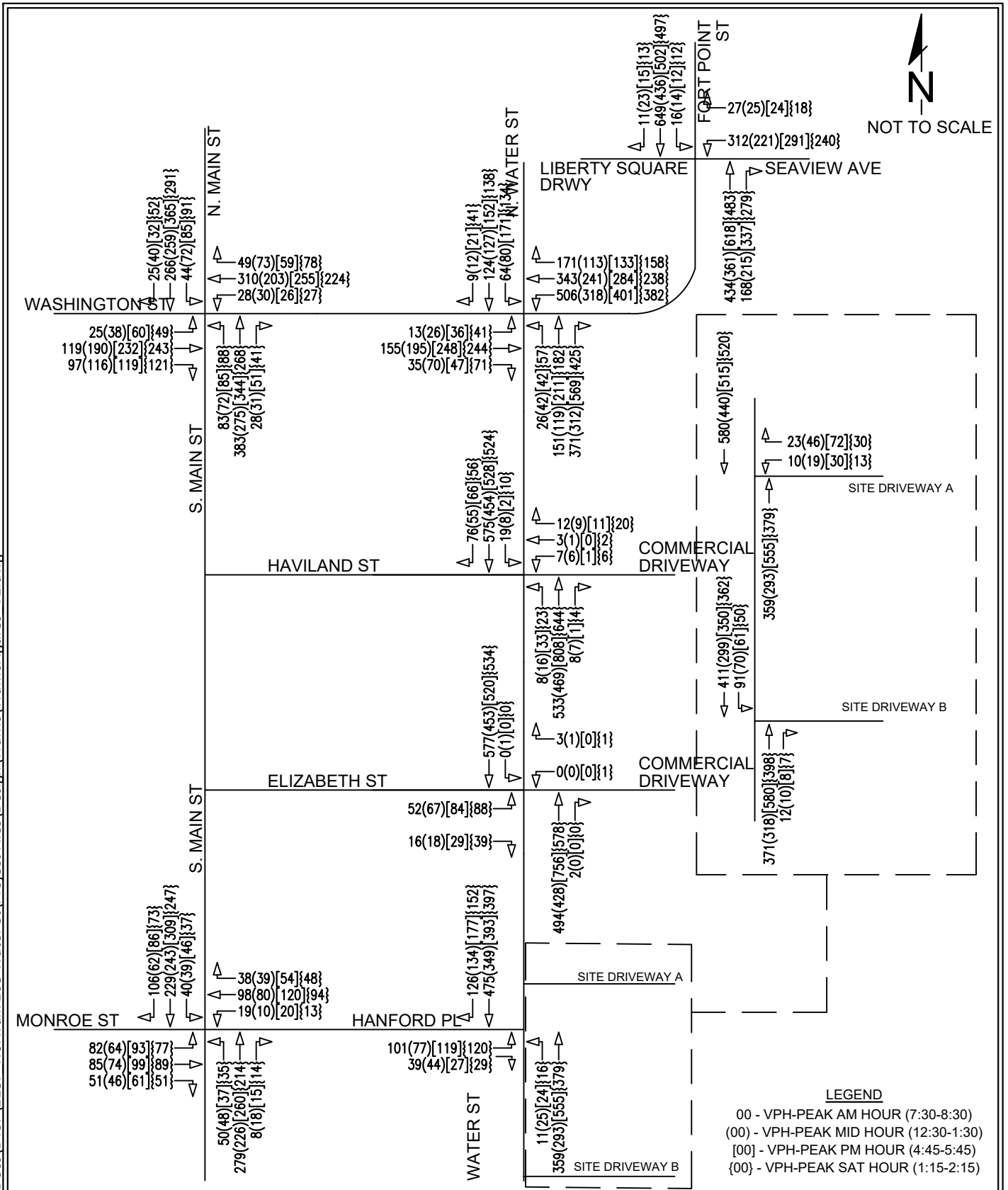
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Site Generated Traffic Volumes

108 Water Street
Norwalk, Fairfield County, CT

Project No. 1187
Scale: N.T.S.
June, 2025

Figure No. 12



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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
	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
	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	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)
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	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)
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	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)
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	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)
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	MIDDAY PEAK HOUR 2028
		BUILD	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	SAT PEAK HOUR 2028
		BUILD	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	MIDDAY PEAK HOUR
		2028	2028
		BUILD	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	SAT PEAK HOUR
		2028	2028
		BUILD	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

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak AM Hour

												
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	

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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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak AM Hour

												
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	

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Synchro 12 Report
Page 3

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak AM Hour

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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak AM Hour

												
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

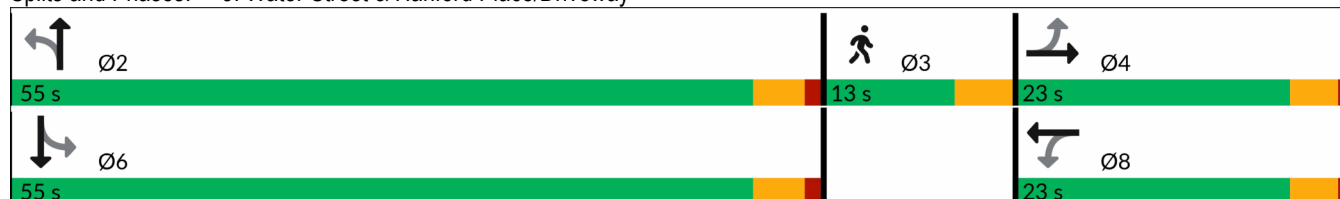
70th %ile Actuated Cycle: 76.3

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak AM Hour

												
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	

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DTS Provident Design Engineering

Synchro 12 Report
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Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Existing
 Peak AM Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak AM Hour

												
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	

Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Existing
 Peak AM Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak AM Hour

												
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

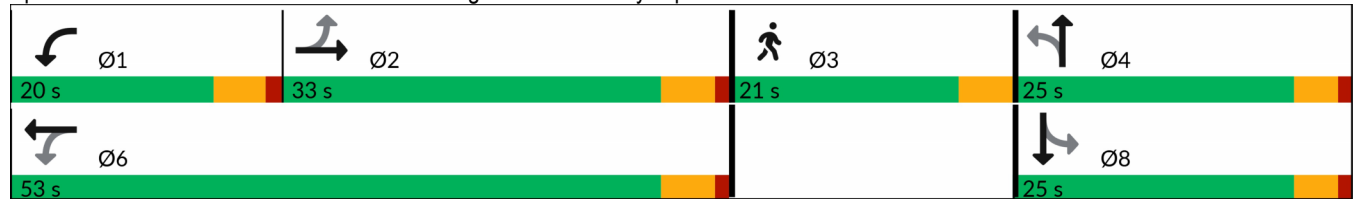
30th %ile Actuated Cycle: 49.4

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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak AM Hour

												
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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak AM Hour

												
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

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Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak AM Hour

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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak AM Hour

												
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

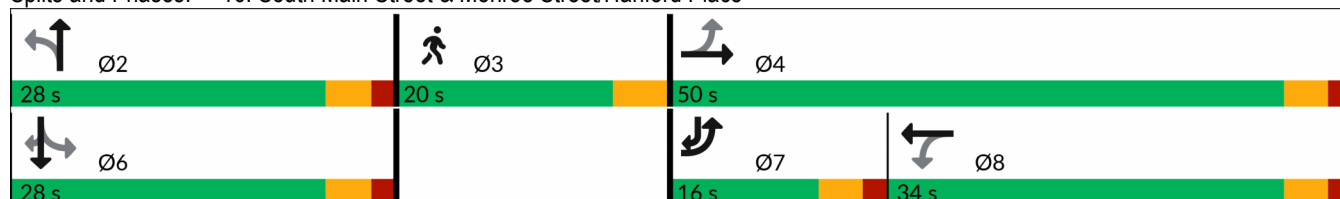
30th %ile Actuated Cycle: 58.6

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak AM Hour

												
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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak AM Hour

												
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	

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Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak AM Hour

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak AM Hour

												
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

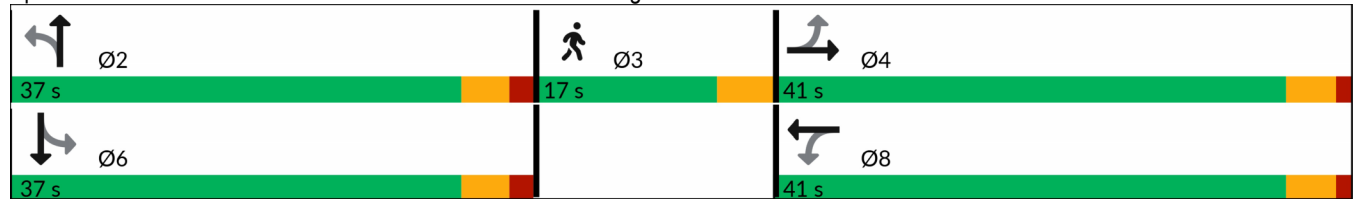
30th %ile Actuated Cycle: 47.6

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing

Peak AM Hour

												
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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing

Peak AM Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
 Peak AM Hour

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
Peak AM Hour

												
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

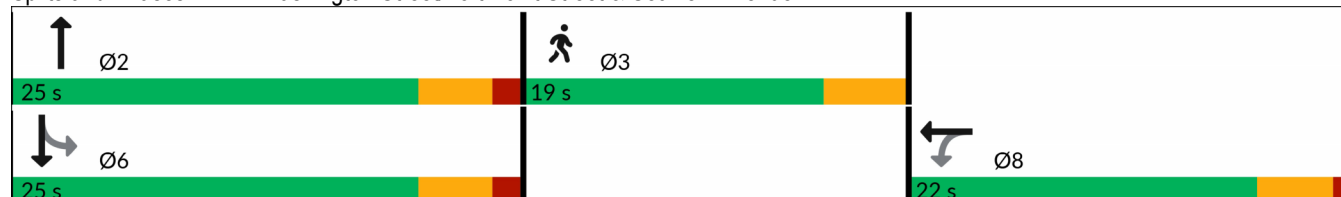
30th %ile Actuated Cycle: 32.7

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	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 Existing
Peak AM Hour

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	-	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 Existing
Peak AM Hour

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
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	NBRWBLn1	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	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak MID Hour

												
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	

Job No. 1187_108 Water Street
DTS Provident Design Engineering

Synchro 12 Report
Page 1

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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak MID Hour

												
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	

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Page 3

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak MID Hour

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	

Lanes, Volumes, Timings 3: Water Street & Hanford Place/Driveway

2025 Existing
Peak MID Hour

												
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

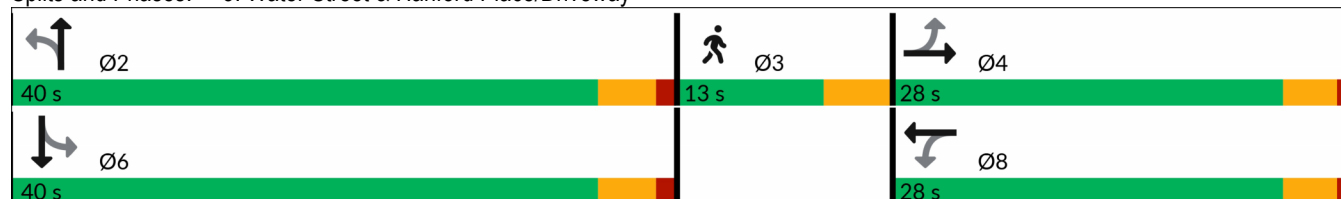
70th %ile Actuated Cycle: 57.3

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak MID Hour

												
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	

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Synchro 12 Report
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Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Existing
 Peak MID Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak MID Hour

												
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	

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Synchro 12 Report
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Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Existing
 Peak MID Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak MID Hour

												
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

 Ø1	 Ø2	 Ø3	 Ø4
18 s	23 s	21 s	27 s
 Ø6			 Ø8
41 s			27 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak MID Hour

												
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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak MID Hour

												
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

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Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak MID Hour

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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak MID Hour

												
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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak MID Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak MID Hour

												
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	

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Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 Existing
 Peak MID Hour

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak MID Hour

												
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

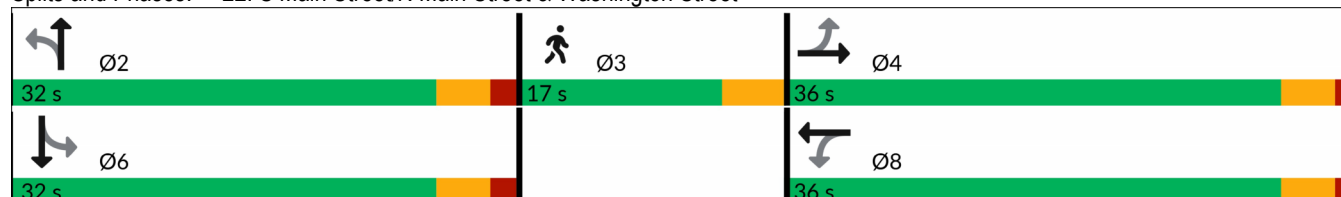
70th %ile Actuated Cycle: 74.7

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing

Peak MID Hour

												
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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
 Peak MID Hour

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing

Peak MID Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
 Peak MID Hour

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
Peak MID Hour

												
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

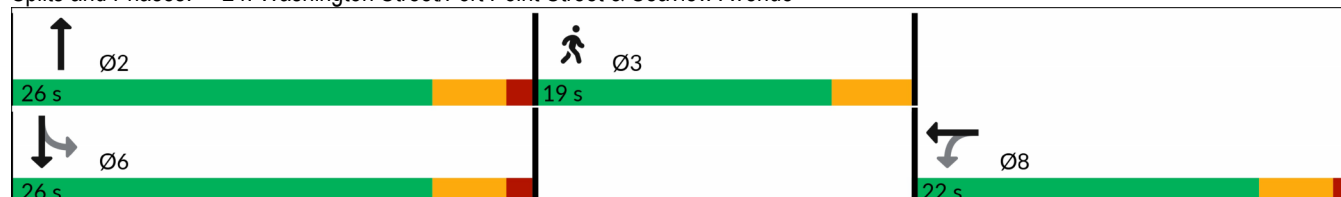
70th %ile Actuated Cycle: 63.8

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	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 Existing
Peak MID Hour

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	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 Existing
Peak MID Hour

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
Stage 1	463	463	-
Stage 2	418	485	-
Critical Hdwy	6	6.1	4.16
Critical Hdwy Stg 1	5	5.1	-
Critical Hdwy Stg 2	5	5.1	-
Follow-up Hdwy	3.5	4	2.254
Pot Cap-1 Maneuver	353	292	639
Stage 1	672	598	-
Stage 2	700	586	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	334	0	624
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	NBRWBLn1	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	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak PM Hour

												
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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak PM Hour

												
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	

Job No. 1187_108 Water Street
DTS Provident Design Engineering

Synchro 12 Report
Page 3

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak PM Hour

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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak PM Hour

												
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

 Ø2	 Ø3	 Ø4
49 s	13 s	29 s
 Ø6		 Ø8
49 s		29 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak PM Hour

												
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	

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DTS Provident Design Engineering

Synchro 12 Report
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Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Existing
 Peak PM Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak PM Hour

												
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	

Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Existing
 Peak PM Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak PM Hour

												
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

	Ø1		Ø2		Ø3		Ø4
10 s		36 s		21 s		32 s	
	Ø6						Ø8
46 s						32 s	

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak PM Hour

												
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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak PM Hour

												
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

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Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak PM Hour

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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak PM Hour

												
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

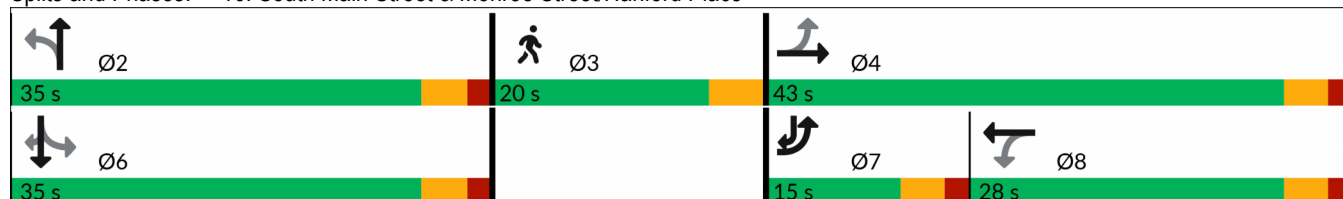
70th %ile Actuated Cycle: 95.6

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak PM Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak PM Hour

												
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	

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Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 Existing
 Peak PM Hour

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	

Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 Existing
 Peak PM Hour

												
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

 Ø2	 Ø3	 Ø4
42 s	17 s	36 s
 Ø6		 Ø8
42 s		36 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing

Peak PM Hour

												
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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
 Peak PM Hour

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing

Peak PM Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
 Peak PM Hour

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

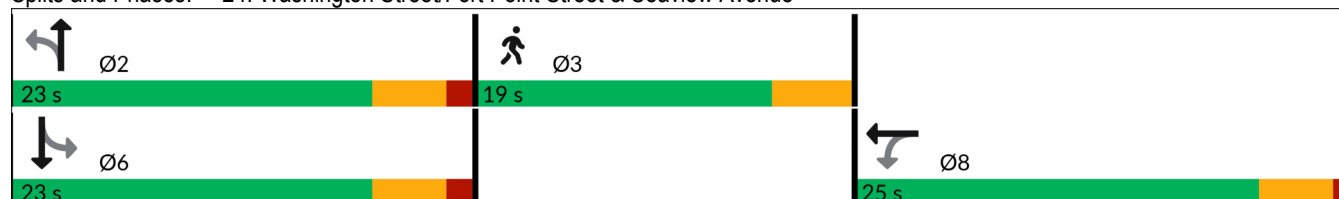
30th %ile Actuated Cycle: 35.3

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	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 Existing
Peak PM Hour

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	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 Existing
Peak PM Hour

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
Stage 1	788	788	-	-	-	-
Stage 2	471	579	-	-	-	-
Critical Hdwy	6	6.1	6	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	-	-
Pot Cap-1 Maneuver	219	173	447	1008	-	-
Stage 1	493	442	-	-	-	-
Stage 2	667	537	-	-	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	203	0	441	1008	-	-
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	NBRWBLn1	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	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak SAT Hour

												
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	

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DTS Provident Design Engineering

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Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak SAT Hour

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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak SAT Hour

												
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	

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Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak SAT Hour

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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 Existing
Peak SAT Hour

												
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

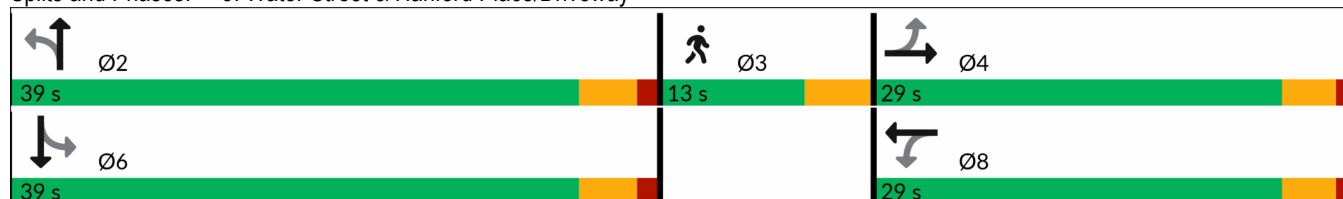
70th %ile Actuated Cycle: 61.9

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak SAT Hour

												
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	

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DTS Provident Design Engineering

Synchro 12 Report
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Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Existing
 Peak SAT Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak SAT Hour

												
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	

Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Existing
 Peak SAT Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Existing
Peak SAT Hour

												
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

 Ø1	 Ø2	 Ø3	 Ø4
17 s	27 s	21 s	24 s
 Ø6			 Ø8
44 s			24 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak SAT Hour

												
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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak SAT Hour

												
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

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Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak SAT Hour

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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Existing
Peak SAT Hour

												
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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak SAT Hour

												
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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak SAT Hour

												
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	

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Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 Existing
 Peak SAT Hour

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Existing
Peak SAT Hour

												
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

 Ø2	 Ø3	 Ø4
39 s	17 s	29 s
 Ø6		 Ø8
39 s		29 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing

Peak SAT Hour

												
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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
 Peak SAT Hour

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing

Peak SAT Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
 Peak SAT Hour

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Existing
Peak SAT Hour

												
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

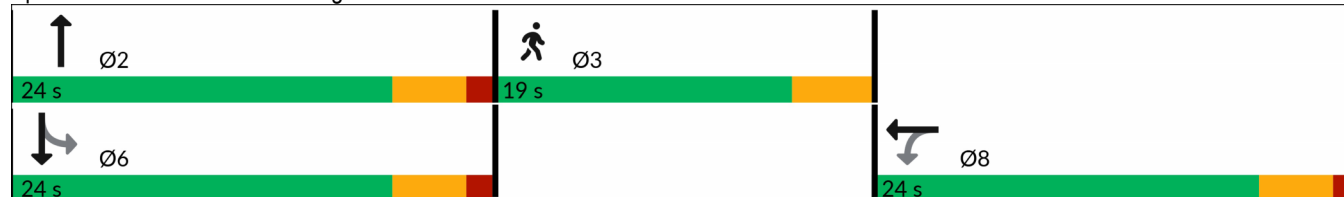
30th %ile Actuated Cycle: 31.9

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	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 Existing
Peak SAT Hour

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	-	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 Existing
Peak SAT Hour

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	NBRWBLn1	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	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak AM Hour

												
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	

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Synchro 12 Report
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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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak AM Hour

												
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	

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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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak AM Hour

												
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

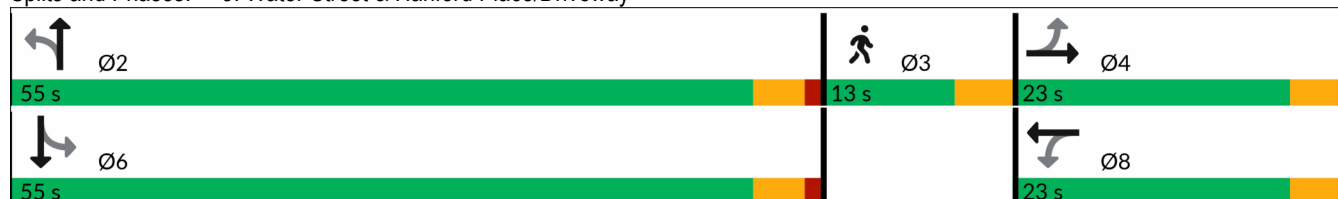
70th %ile Actuated Cycle: 81.4

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak AM Hour

												
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	

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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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak AM Hour

												
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	

Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 No-Build
 Peak AM Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak AM Hour

												
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

 Ø1 20 s	 Ø2 33 s	 Ø3 21 s	 Ø4 25 s
 Ø6 53 s			 Ø8 25 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak AM Hour

												
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	

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak AM Hour

												
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

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak AM Hour

												
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

 Ø2	 Ø3	 Ø4	
28 s	20 s	50 s	
 Ø6		 Ø7	 Ø8
28 s		16 s	34 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak AM Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak AM Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

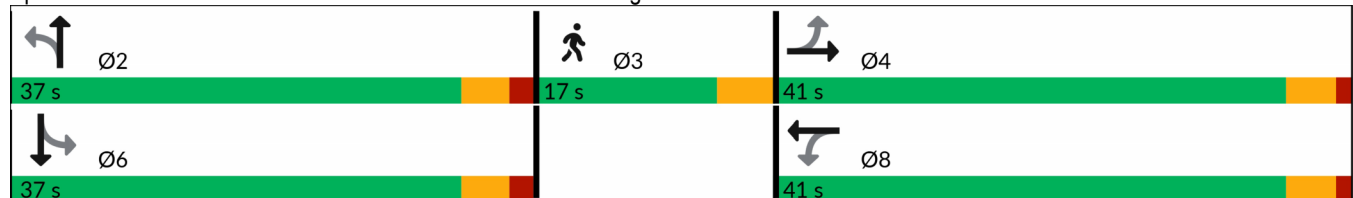
2025 No-Build
Peak AM Hour

												
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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 No-Build

Peak AM Hour

												
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	

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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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 No-Build
 Peak AM Hour

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	

24: Washington Street/Fort Point Street & Seaview Avenue

Peak AM Hour

												
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

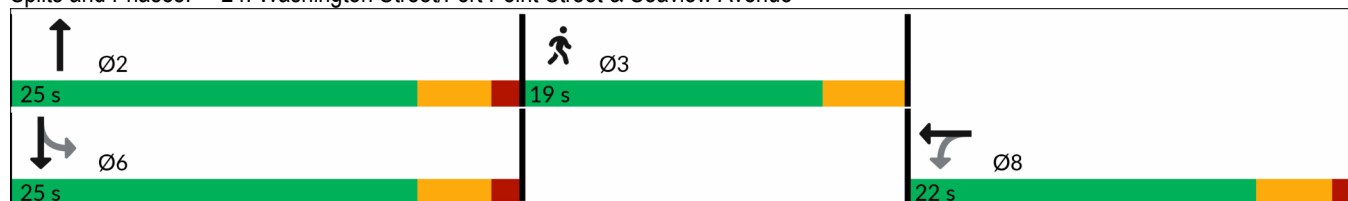
30th %ile Actuated Cycle: 33

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	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 No-Build
Peak AM Hour

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	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 No-Build
Peak AM Hour

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
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	NBRWBLn1	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	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak MID Hour

												
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	

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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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak MID Hour

												
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	

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Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak MID Hour

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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak MID Hour

												
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

 Ø2	 Ø3	 Ø4
40 s	13 s	28 s
 Ø6		 Ø8
40 s		28 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak MID Hour

												
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	

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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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak MID Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 No-Build
 Peak MID Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak MID Hour

												
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

 Ø1	 Ø2	 Ø3	 Ø4
18 s	23 s	21 s	27 s
 Ø6			 Ø8
41 s			27 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak MID Hour

												
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	

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak MID Hour

												
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

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak MID Hour

												
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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak MID Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak MID Hour

												
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	

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Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak MID Hour

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak MID Hour

												
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

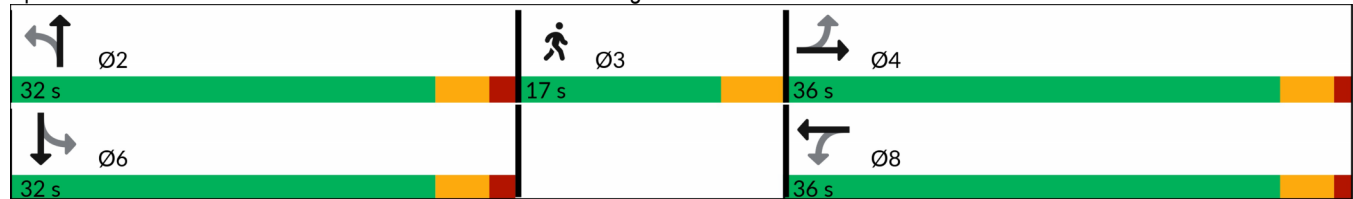
30th %ile Actuated Cycle: 42.5

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 No-Build

Peak MID Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 No-Build
 Peak MID Hour

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	

24: Washington Street/Fort Point Street & Seaview Avenue

Peak MID Hour

												
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

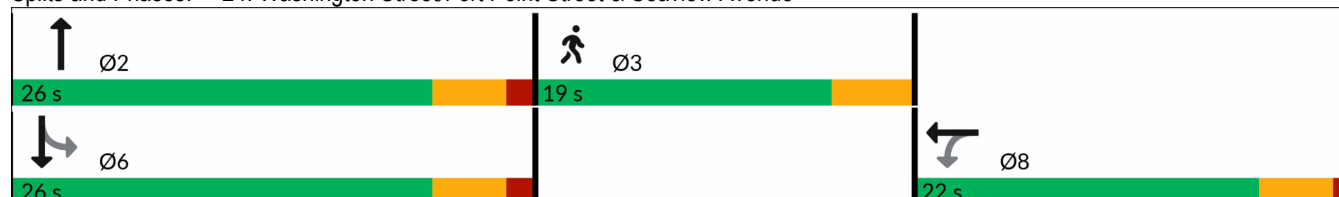
70th %ile Actuated Cycle: 65

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	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 No-Build
Peak MID Hour

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	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 No-Build
Peak MID Hour

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		Major2		Major2	
Conflicting Flow All	941	1009	472	496	0	0	467	0	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	NBRWBLn1	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	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak PM Hour

												
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	

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DTS Provident Design Engineering

Synchro 12 Report
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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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak PM Hour

												
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	

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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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak PM Hour

												
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

 Ø2	 Ø3	 Ø4
49 s	13 s	29 s
 Ø6		 Ø8
49 s		29 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak PM Hour

												
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	

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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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak PM Hour

												
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	

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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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak PM Hour

												
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

	Ø1		Ø2		Ø3		Ø4
10 s		36 s		21 s		32 s	
	Ø6						Ø8
46 s						32 s	

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak PM Hour

												
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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak PM Hour

												
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

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak PM Hour

												
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

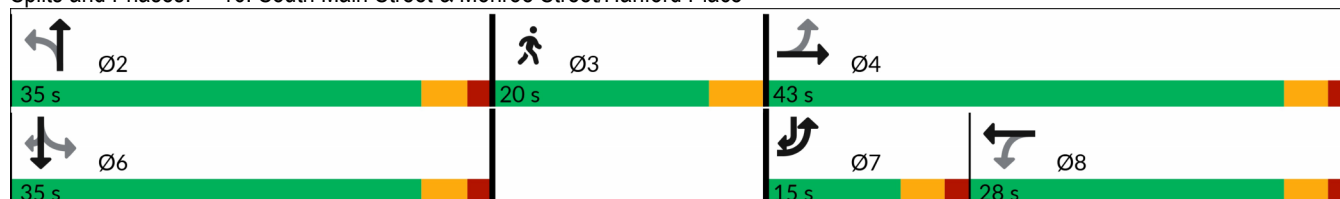
30th %ile Actuated Cycle: 64.9

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak PM Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak PM Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak PM Hour

												
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

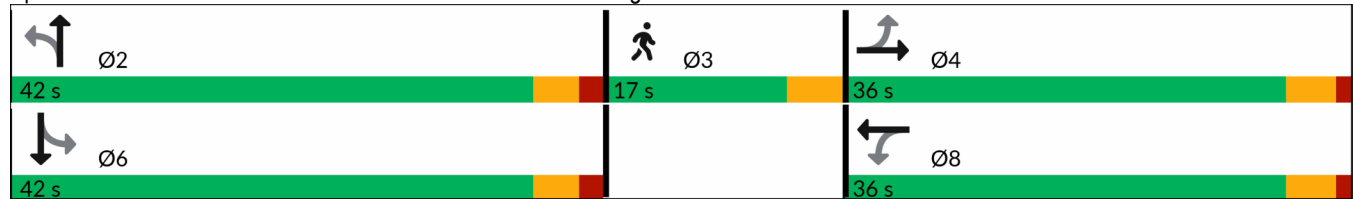
30th %ile Actuated Cycle: 62.1

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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 No-Build

Peak PM Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 No-Build
 Peak PM Hour

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

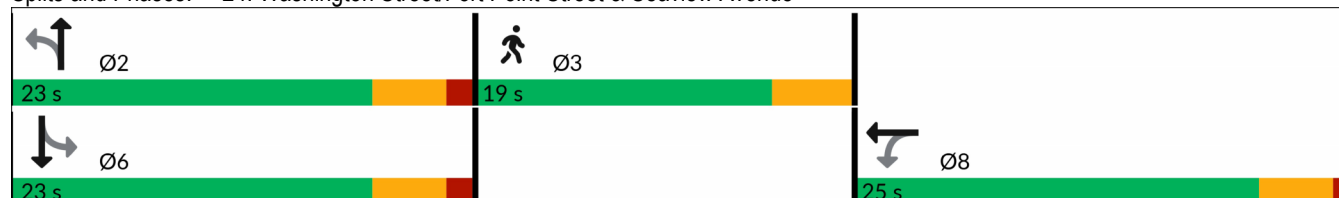
~ Volume exceeds capacity, queue is theoretically infinite.

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	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 No-Build
Peak PM Hour

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	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	0
Stage 1	545	0	-	420	433	-	0	-	-	-	-	0	0
Stage 2	412	0	-	562	551	-	0	-	-	-	-	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	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 No-Build
Peak PM Hour

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	NBRWBLn1	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	-	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak SAT Hour

												
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	

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Synchro 12 Report
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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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak SAT Hour

												
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	

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Synchro 12 Report
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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	

Lanes, Volumes, Timings
3: Water Street & Hanford Place/Driveway

2025 No-Build
Peak SAT Hour

												
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

 Ø2	 Ø3	 Ø4
39 s	13 s	29 s
 Ø6		 Ø8
39 s		29 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak SAT Hour

												
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	

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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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak SAT Hour

												
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	

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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 Effect 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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 No-Build
Peak SAT Hour

												
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

 Ø1	 Ø2	 Ø3	 Ø4
17 s	27 s	21 s	24 s
 Ø6			 Ø8
44 s			24 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak SAT Hour

												
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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak SAT Hour

												
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

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 No-Build
Peak SAT Hour

												
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

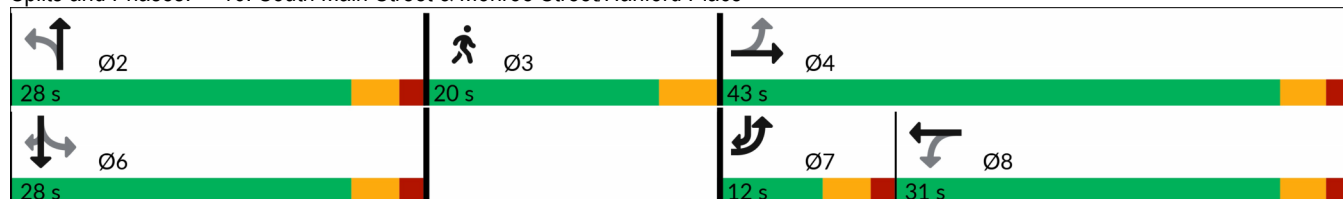
70th %ile Actuated Cycle: 83.7

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak SAT Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak SAT Hour

												
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	

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Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 No-Build
 Peak SAT Hour

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 No-Build
Peak SAT Hour

												
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

 Ø2	 Ø3	 Ø4
39 s	17 s	29 s
 Ø6		 Ø8
39 s		29 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 No-Build

Peak SAT Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 No-Build
 Peak SAT Hour

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

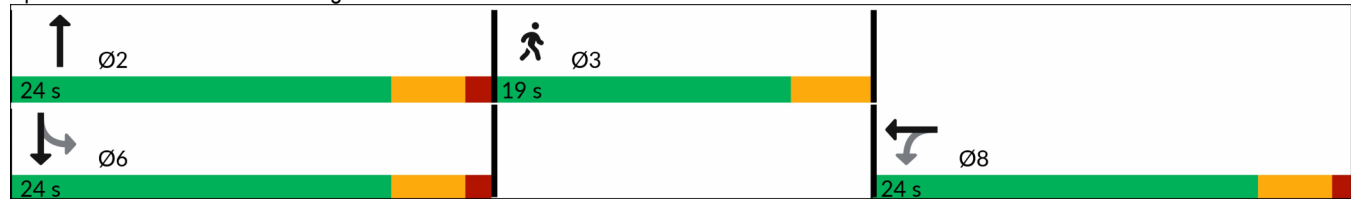
30th %ile Actuated Cycle: 32

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	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 No-Build
Peak SAT Hour

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	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	-	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 No-Build
Peak SAT Hour

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
Stage 1	707	707	-	-	-	-
Stage 2	541	611	-	-	-	-
Critical Hdwy	6	6.1	6	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	-	-
Pot Cap-1 Maneuver	222	184	478	995	-	-
Stage 1	533	477	-	-	-	-
Stage 2	624	521	-	-	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	204	0	466	995	-	-
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	NBRWBLn1	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	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak AM Hour

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	CI+Ex			CI+Ex	CI+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				CI+Ex	CI+Ex		

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Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak AM Hour

							
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		

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Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak AM Hour

							
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

	Ø2		Ø3		Ø4
55 s		13 s		23 s	
	Ø6				
55 s					

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak AM Hour

												
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	

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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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak AM Hour

												
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	

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Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Build
 Peak AM Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

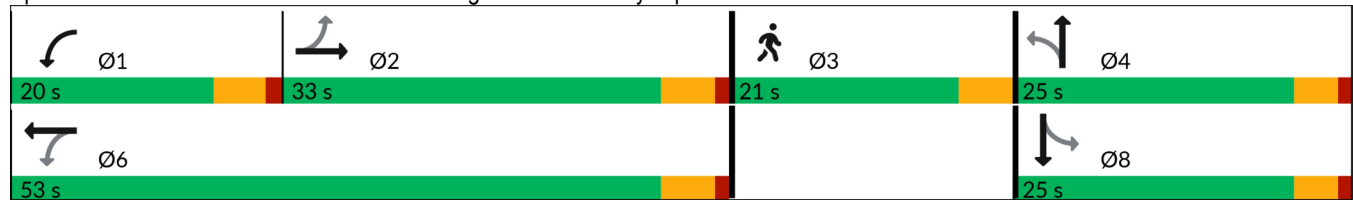
2025 Build
Peak AM Hour

												
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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak AM Hour

												
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	

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak AM Hour

												
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

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak AM Hour

												
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

 Ø2	 Ø3	 Ø4	
28 s	20 s	50 s	
 Ø6		 Ø7	 Ø8
28 s		16 s	34 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak AM Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak AM Hour

												
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	

Job No. 1187_108 Water Street
DTS Provident Design Engineering

Synchro 12 Report
Page 18

Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 Build
 Peak AM Hour

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak AM Hour

												
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

 Ø2	 Ø3	 Ø4
37 s	17 s	41 s
 Ø6		 Ø8
37 s		41 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Build

Peak AM Hour

												
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	

Lanes, Volumes, Timings

2025 Build

24: Washington Street/Fort Point Street & Seaview Avenue

Peak AM Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Build
 Peak AM Hour

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	

24: Washington Street/Fort Point Street & Seaview Avenue

Peak AM Hour

												
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

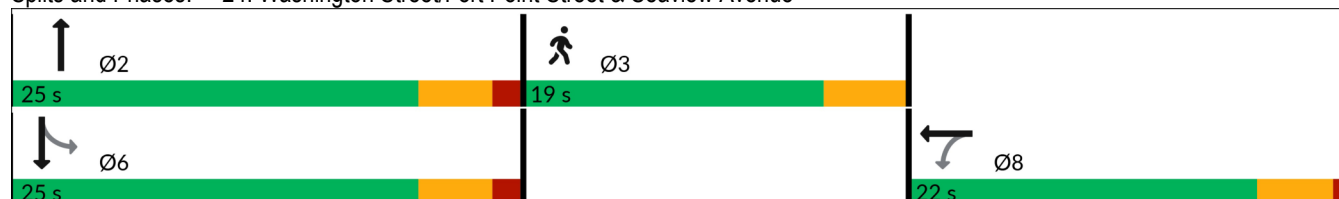
30th %ile Actuated Cycle: 33.1

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
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	NBRWBLn1	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	-

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 Build
Peak AM Hour

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	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 Build
Peak AM Hour

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
Stage 1	627	627	-	-	-	-
Stage 2	686	784	-	-	-	-
Critical Hdwy	6.14	6.43	6	4.1	-	-
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	-	-
Pot Cap-1 Maneuver	191	139	515	875	-	-
Stage 1	547	462	-	-	-	-
Stage 2	516	396	-	-	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	178	0	510	875	-	-
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	NBRWBLn1	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
Stage 1	410	-	-
Stage 2	645	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	250	642	-
Stage 1	670	-	-
Stage 2	523	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	221	642	-
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	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	326	-
HCM Lane V/C Ratio	-	-	0.087	-
HCM Ctrl Dly (s/v)	-	-	0	8.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak MID Hour

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		

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Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak MID Hour

							
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		

Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak MID Hour

							
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

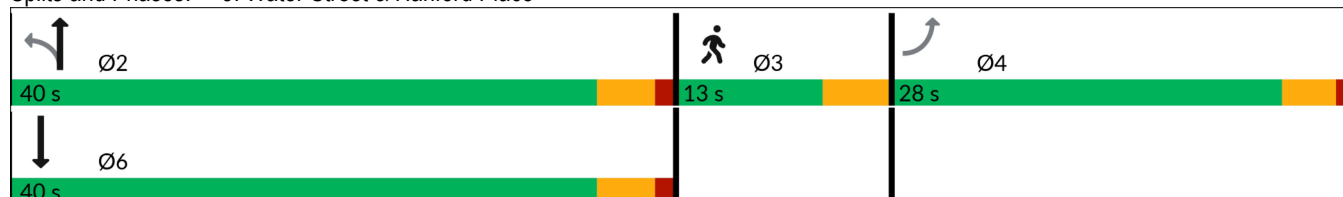
70th %ile Actuated Cycle: 65

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



Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak MID Hour

												
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	

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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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak MID Hour

												
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 Effect 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	

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Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Build
 Peak MID Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak MID Hour

												
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

 Ø1	 Ø2	 Ø3	 Ø4
18 s	23 s	21 s	27 s
 Ø6			 Ø8
41 s			27 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak MID Hour

												
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	

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak MID Hour

												
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

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak MID Hour

												
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

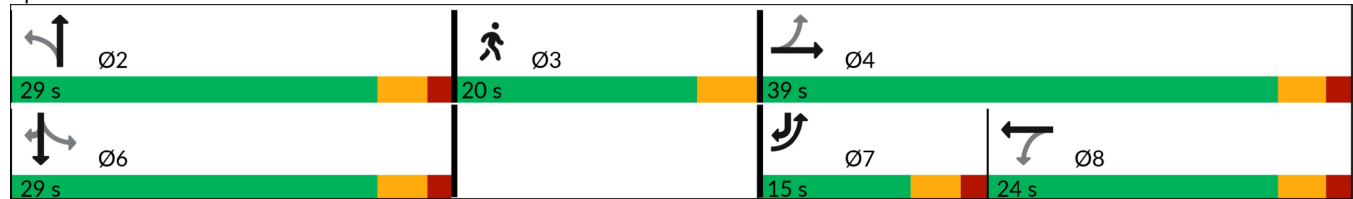
30th %ile Actuated Cycle: 58.8

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak MID Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak MID Hour

												
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	

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Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 Build
 Peak MID Hour

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	

Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

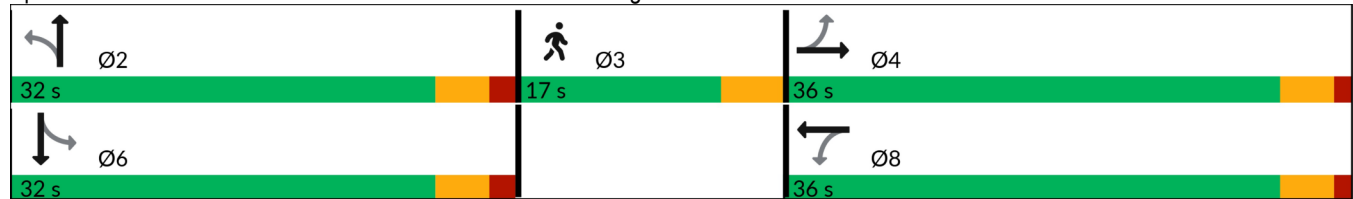
2025 Build
 Peak MID Hour

												
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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Build

Peak MID Hour

												
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	

Lanes, Volumes, Timings

24: Washington Street/Fort Point Street & Seaview Avenue

2025 Build

Peak MID Hour

												
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 Effect 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	

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Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Build
 Peak MID Hour

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	

24: Washington Street/Fort Point Street & Seaview Avenue

Peak MID Hour

												
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

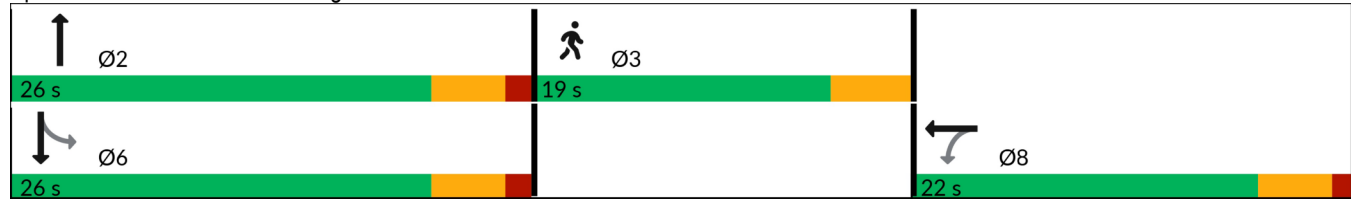
70th %ile Actuated Cycle: 66.1

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	

HCM 7th TWSC
5: Water Street & Site Driveway A

2025 Build
Peak MID Hour

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	NBRWBLn1	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	-	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 Build
Peak MID Hour

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
Stage 1	469	-	-	461	461	-	-	-
Stage 2	442	-	-	469	469	-	-	-
Critical Hdwy	7.38	-	6.48	7.1	6.5	7.2	-	-
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	-	-
Pot Cap-1 Maneuver	236	0	557	250	269	440	0	-
Stage 1	549	0	-	584	569	-	0	-
Stage 2	569	0	-	579	564	-	0	-
Platoon blocked, %							-	-
Mov Cap-1 Maneuver	235	-	557	236	264	431	-	-
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	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 Build
Peak MID Hour

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		Major2		Major2		Major2	
Conflicting Flow All	1040	1108	519	548	0	0	515	0	0	0	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	NBRWBLn1	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	-

HCM 7th TWSC
29: Water Street & Site Driveway B

2025 Build
Peak MID Hour

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
Stage 1	351	-	-
Stage 2	477	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	341	692	-
Stage 1	713	-	-
Stage 2	624	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	314	692	-
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	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	341	-
HCM Lane V/C Ratio	-	-	0.063	-
HCM Ctrl Dly (s/v)	-	-	0	8.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak PM Hour

							
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		

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Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak PM Hour

							
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		

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Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak PM Hour

							
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

 Ø2	 Ø3	 Ø4
49 s	13 s	29 s
 Ø6		
49 s		

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak PM Hour

												
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	

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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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak PM Hour

												
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	

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Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Build
 Peak PM Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak PM Hour

												
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

 Ø1	 Ø2	 Ø3	 Ø4
10 s	36 s	21 s	32 s
 Ø6			 Ø8
46 s			32 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak PM Hour

												
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	

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak PM Hour

												
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

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak PM Hour

												
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

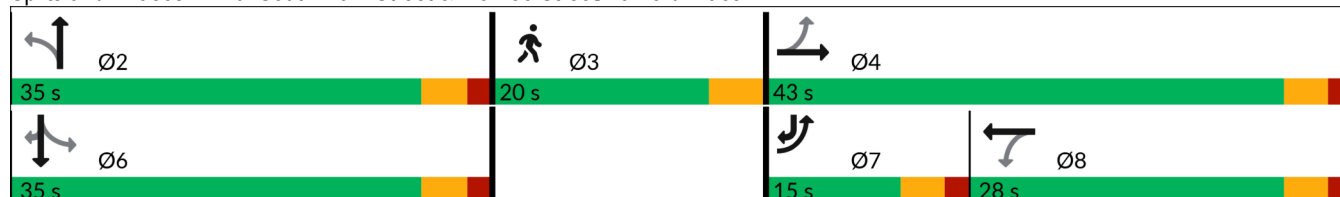
30th %ile Actuated Cycle: 69.5

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak PM Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak PM Hour

												
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	

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Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak PM Hour

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak PM Hour

												
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

 Ø2	 Ø3	 Ø4
42 s	17 s	36 s
 Ø6		 Ø8
42 s		36 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

2025 Build

24: Washington Street/Fort Point Street & Seaview Avenue

Peak PM Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Build
 Peak PM Hour

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	

24: Washington Street/Fort Point Street & Seaview Avenue

Peak PM Hour

												
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

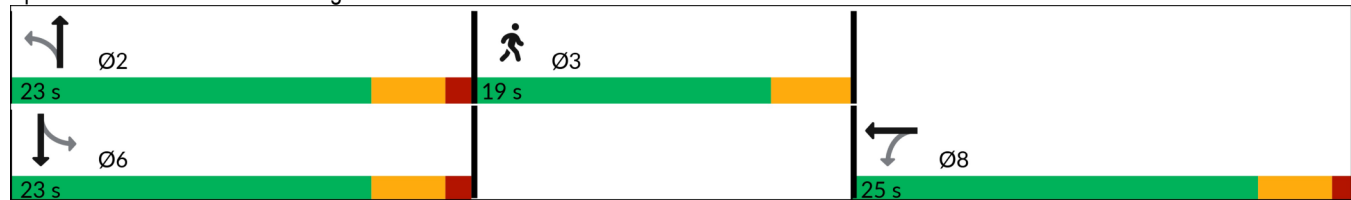
~ Volume exceeds capacity, queue is theoretically infinite.

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	

HCM 7th TWSC
5: Water Street & Site Driveway A

2025 Build
Peak PM Hour

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	NBRWBLn1	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	-	

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 Build
Peak PM Hour

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	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 Build
Peak PM Hour

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
Stage 1	905	905	-	-	-	-
Stage 2	542	653	-	-	-	-
Critical Hdwy	6	6.1	6	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	-	-
Pot Cap-1 Maneuver	172	135	386	947	-	-
Stage 1	440	396	-	-	-	-
Stage 2	623	502	-	-	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	157	0	381	947	-	-
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	NBRWBLn1	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
Stage 1	635	-	-
Stage 2	513	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	220	479	-
Stage 1	528	-	-
Stage 2	601	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	200	479	-
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	NBRWBLn1	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	-

Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak SAT Hour

							
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		

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Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak SAT Hour

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		

Lanes, Volumes, Timings
3: Water Street & Hanford Place

2025 Build
Peak SAT Hour

							
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

 Ø2	 Ø3	 Ø4
39 s	13 s	29 s
 Ø6		
39 s		

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak SAT Hour

												
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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak SAT Hour

												
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	

Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Build
 Peak SAT Hour

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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build
Peak SAT Hour

												
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

 Ø1	 Ø2	 Ø3	 Ø4
17 s	27 s	21 s	24 s
 Ø6			 Ø8
44 s			24 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak SAT Hour

												
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	

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak SAT Hour

												
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

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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	

Lanes, Volumes, Timings
16: South Main Street & Monroe Street/Hanford Place

2025 Build
Peak SAT Hour

												
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

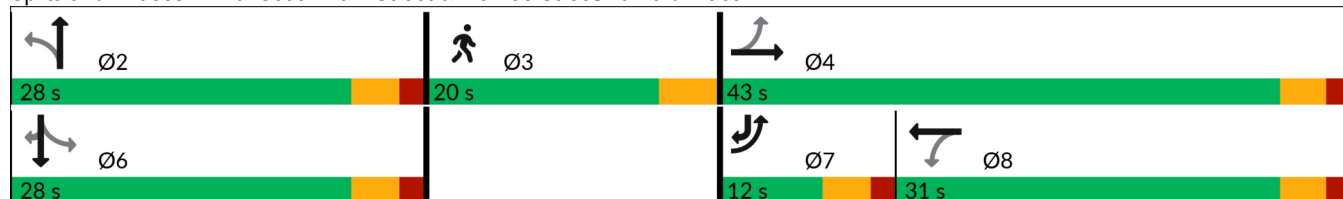
30th %ile Actuated Cycle: 49.1

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak SAT Hour

												
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	

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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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak SAT Hour

												
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	

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Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 Build
 Peak SAT Hour

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	

Lanes, Volumes, Timings
22: S Main Street/N Main Street & Washington Street

2025 Build
Peak SAT Hour

												
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

 Ø2	 Ø3	 Ø4
39 s	17 s	29 s
 Ø6		 Ø8
39 s		29 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

2025 Build

24: Washington Street/Fort Point Street & Seaview Avenue

Peak SAT Hour

												
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	

Job No. 1187_108 Water Street
DTS Provident Design Engineering

Synchro 12 Report
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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 Effect 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	

Lanes, Volumes, Timings
 24: Washington Street/Fort Point Street & Seaview Avenue

2025 Build
 Peak SAT Hour

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	

24: Washington Street/Fort Point Street & Seaview Avenue

Peak SAT Hour

												
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

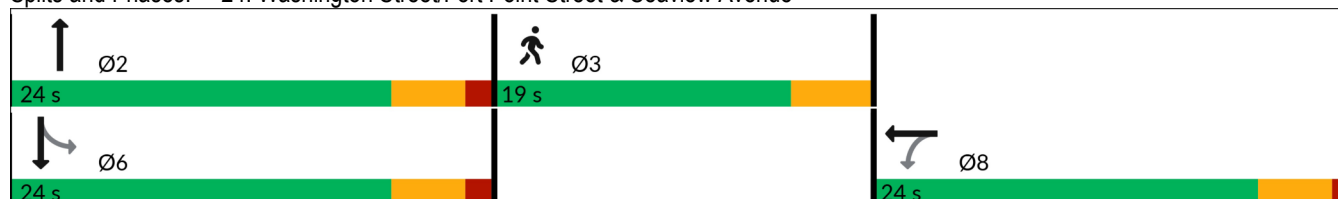
30th %ile Actuated Cycle: 32

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	

HCM 7th TWSC
5: Water Street & Site Driveway A

2025 Build
Peak SAT Hour

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	NBRWBLn1	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

HCM 7th TWSC
6: Water Street & Elizabeth Street/Driveway

2025 Build
Peak SAT Hour

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	-	-

HCM 7th TWSC
12: Water Street & Haviland Street/Driveway

2025 Build
Peak SAT Hour

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
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	NBRWBLn1	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	-

HCM 7th TWSC
29: Water Street & Site Driveway B

2025 Build
Peak SAT Hour

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
Stage 1	436	-	-
Stage 2	502	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	293	620	-
Stage 1	652	-	-
Stage 2	608	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	275	620	-
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	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	218	-
HCM Lane V/C Ratio	-	-	0.049	-
HCM Ctrl Dly (s/v)	-	-	0	8.4
HCM Lane LOS	-	-	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	

Lanes, Volumes, Timings
9: Water Street & Washington Street/Liberty Square

2025 Build With Improvements
Peak AM Hour

												
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 Effect 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	

Job No. 1187_108 Water Street
DTS Provident Design Engineering

Synchro 12 Report
Page 3

Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Build With Improvements
 Peak AM Hour

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	

9: Water Street & Washington Street/Liberty Square

Peak AM Hour

												
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

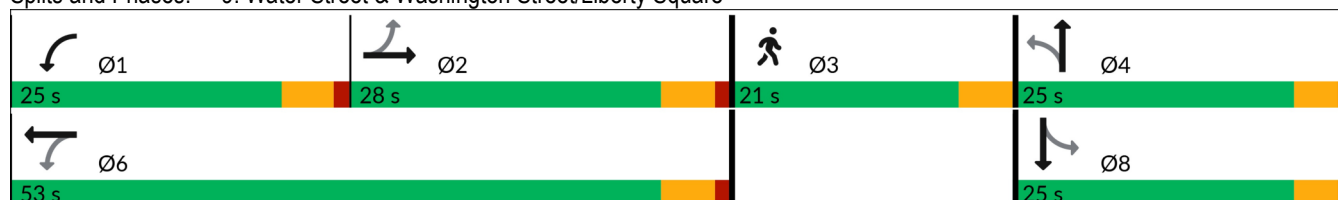
~ Volume exceeds capacity, queue is theoretically infinite.

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	

Lanes, Volumes, Timings

2025 Build With Improvements

22: S Main Street/N Main Street & Washington Street

Peak AM Hour

												
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	

Lanes, Volumes, Timings

2025 Build With Improvements

22: S Main Street/N Main Street & Washington Street

Peak AM Hour

												
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	

Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 Build With Improvements
 Peak AM Hour

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	

22: S Main Street/N Main Street & Washington Street

Peak AM Hour

												
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

 Ø2	 Ø3	 Ø4
41 s	17 s	37 s
 Ø6		 Ø8
41 s		37 s

Lane Group	Ø3
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

2025 Build With Improvements

9: Water Street & Washington Street/Liberty Square

Peak PM Hour

												
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 Effect 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	

Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Build With Improvements
 Peak PM Hour

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	

9: Water Street & Washington Street/Liberty Square

Peak PM Hour

												
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

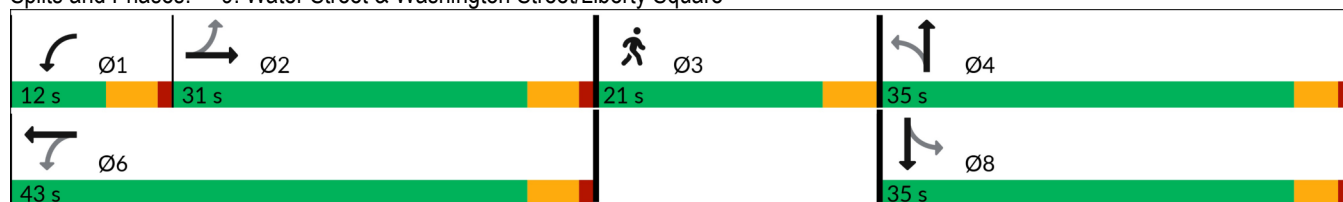
~ Volume exceeds capacity, queue is theoretically infinite.

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	

Lanes, Volumes, Timings

2025 Build With Improvements

22: S Main Street/N Main Street & Washington Street

Peak PM Hour

												
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	

Lanes, Volumes, Timings

2025 Build With Improvements

22: S Main Street/N Main Street & Washington Street

Peak PM Hour

												
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	

Job No. 1187_108 Water Street
DTS Provident Design Engineering

Synchro 12 Report
Page 3

Lanes, Volumes, Timings
 22: S Main Street/N Main Street & Washington Street

2025 Build With Improvements
 Peak PM Hour

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	

22: S Main Street/N Main Street & Washington Street

Peak PM Hour

												
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

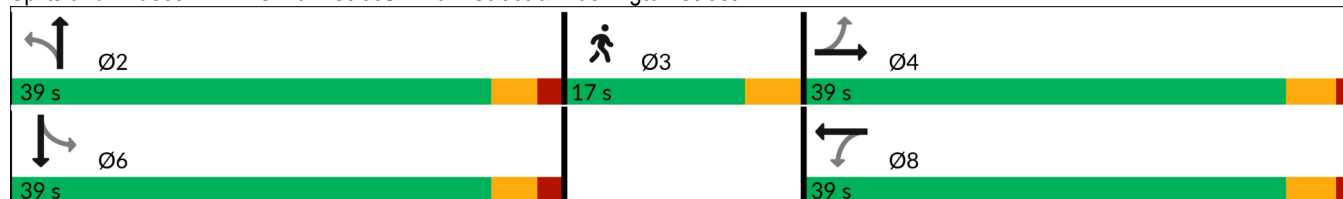
30th %ile Actuated Cycle: 59.8

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	

Lanes, Volumes, Timings

2025 Build With Improvements

9: Water Street & Washington Street/Liberty Square

Peak SAT Hour

												
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	

9: Water Street & Washington Street/Liberty Square

Peak SAT Hour

												
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	

Lanes, Volumes, Timings
 9: Water Street & Washington Street/Liberty Square

2025 Build With Improvements
 Peak SAT Hour

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	

9: Water Street & Washington Street/Liberty Square

Peak SAT Hour

												
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

 Ø1	 Ø2	 Ø3	 Ø4
17 s	25 s	21 s	26 s
 Ø6			 Ø8
42 s			26 s

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/Pedalcy clist	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	-73.411186	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

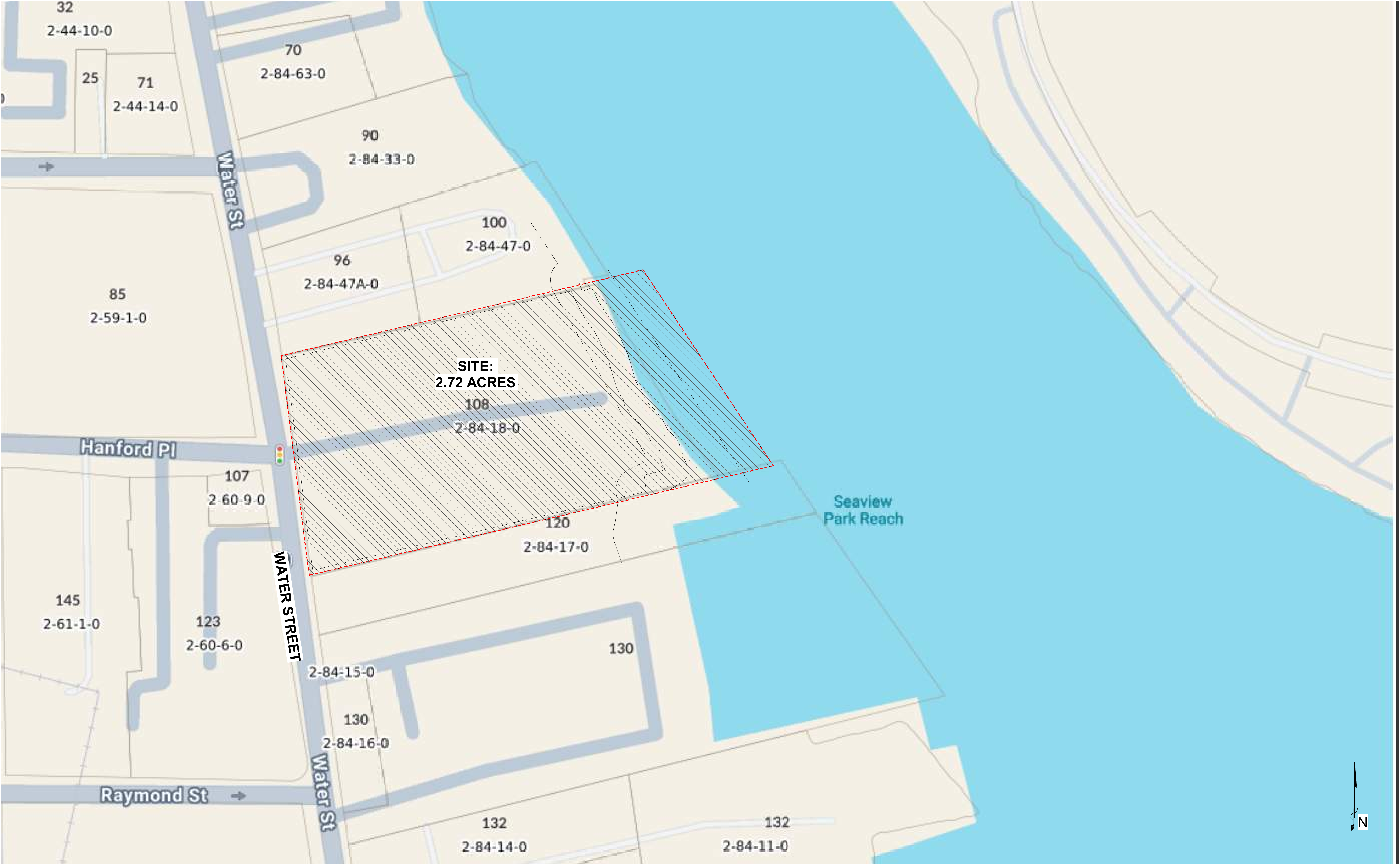
Parking Hourly Distribution - Saturday							
Land Use Code	221	710	822	822	-	-	Total Time of Day Parking Distribution
Land Use	Residential	Office	Personal Service	Restaurant	Marine Supply	Boat Slips	
Time of Day	Weekday/Saturday Composite	Weekday	Saturday	Saturday	All	All	
Size	59 Units	110,899 SF	3,444 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

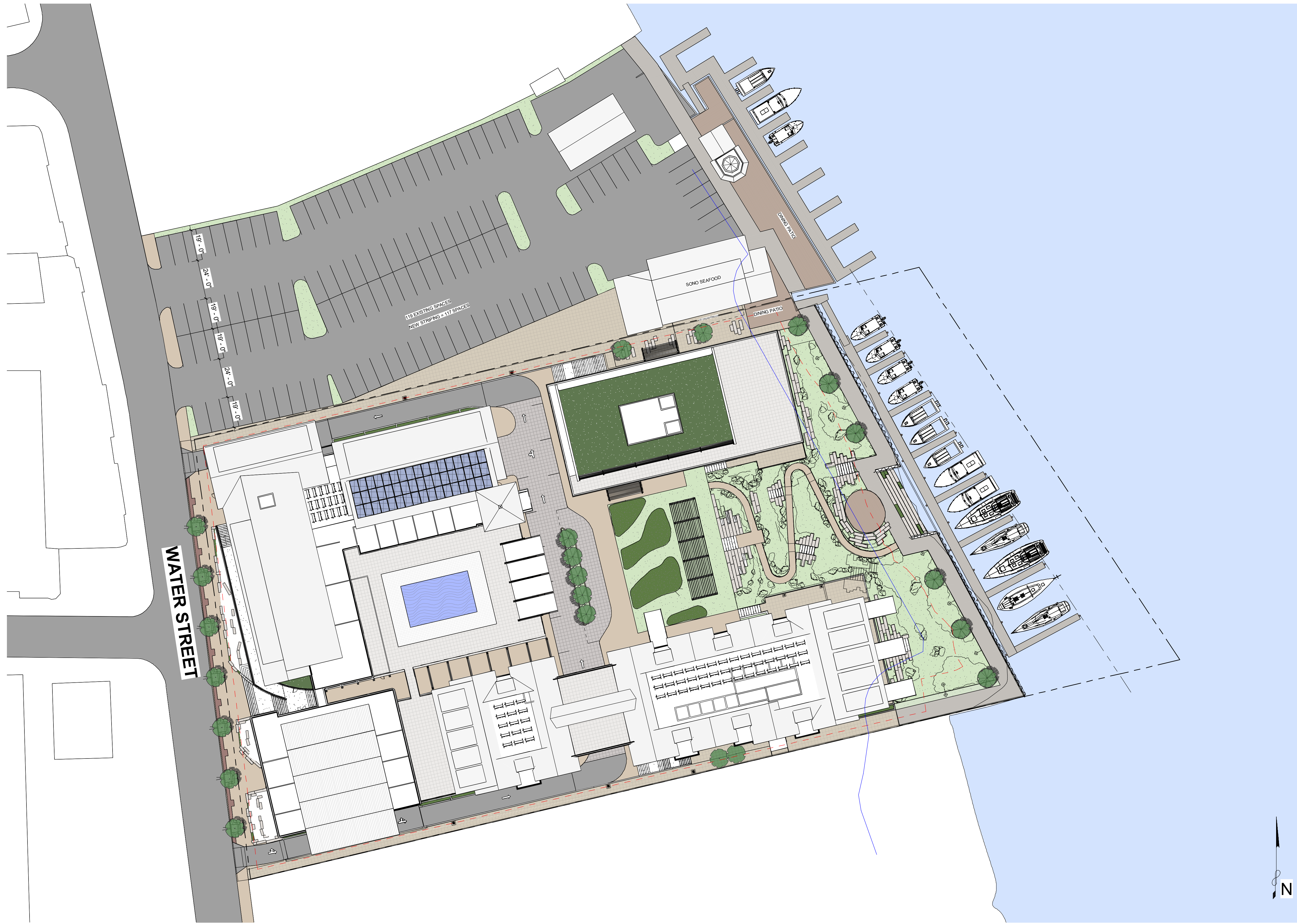
108 WATER ST

BEINFELD ARCHITECTURE

06/18/2025

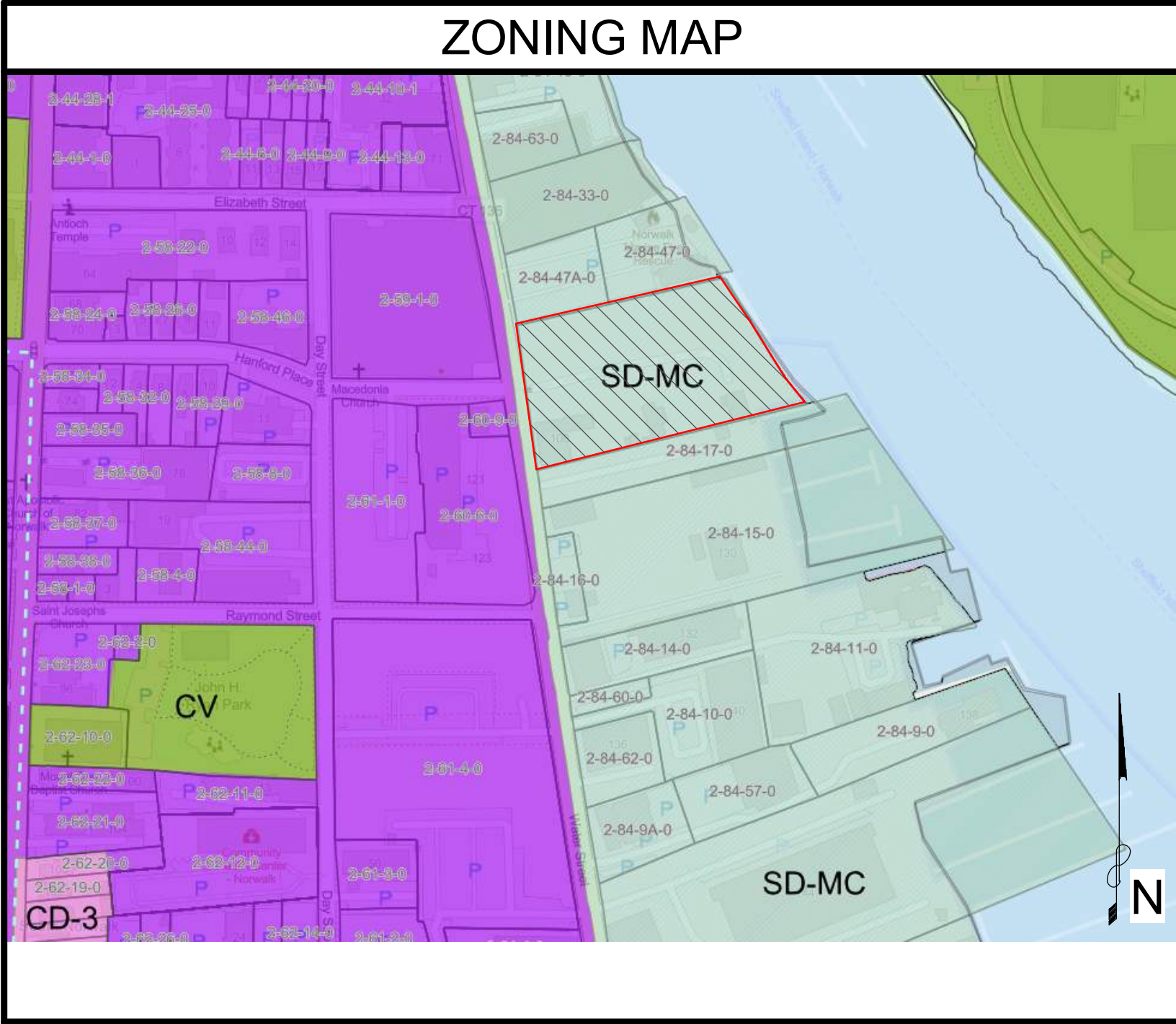






1
SD0.02
CONNECTIVITY MAP
1" = 30'-0"





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

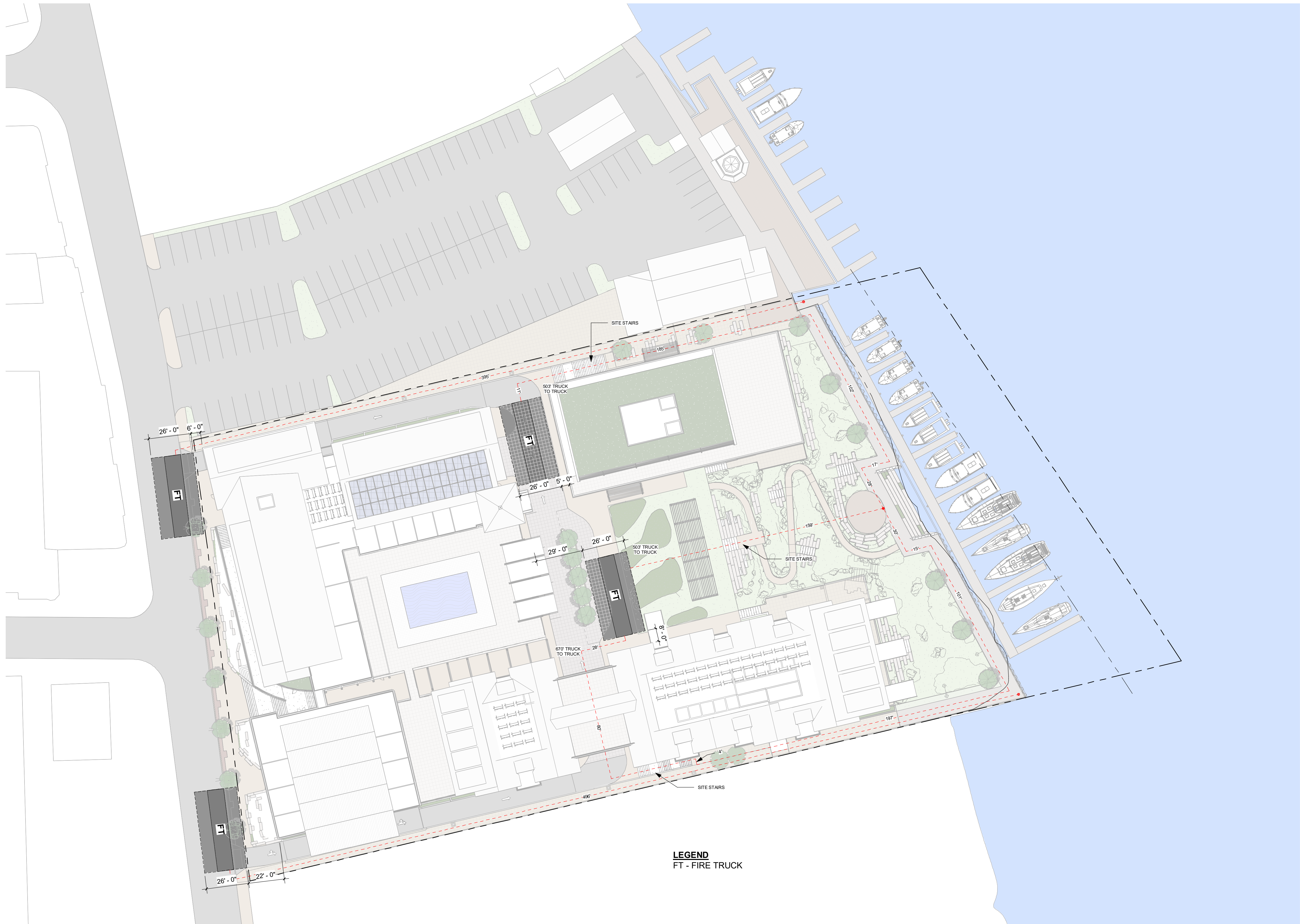
UNIT SCHEDULE	
UNIT TYPE	COUNT
LEVEL_02	
1 BR	8
2 BR	5
3 BR	4
	17
LEVEL_03	
1 BR	10
2 BR	7
3 BR	4
	21
LEVEL_04	
1 BR	7
2 BR	5
3 BR	5
4 BR	4
	21
	59

UNIT MIX

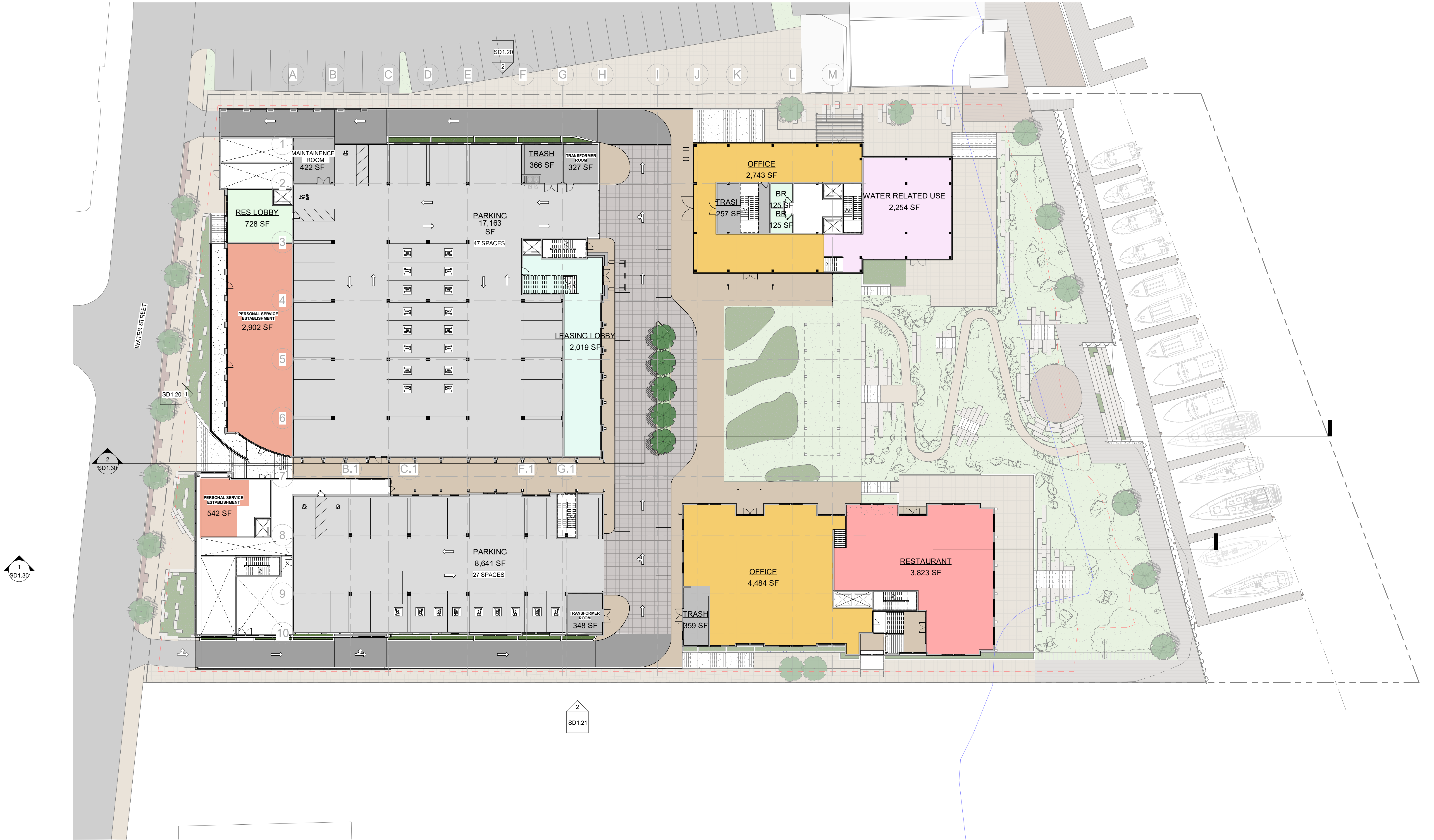
UNIT TYPE	COUNT	PERCENTAGE
1 BR	25	42%
2 BR	17	29%
3 BR	13	22%
4 BR	4	7%
	59	100%

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



1 AERIAL FIRE TRUCK ACCESS PLAN
SD0.30 1" = 30'-0"



1
SD1.11
OVERALL - LEVEL 01.2 - MEZZ.
1" = 20'-0"



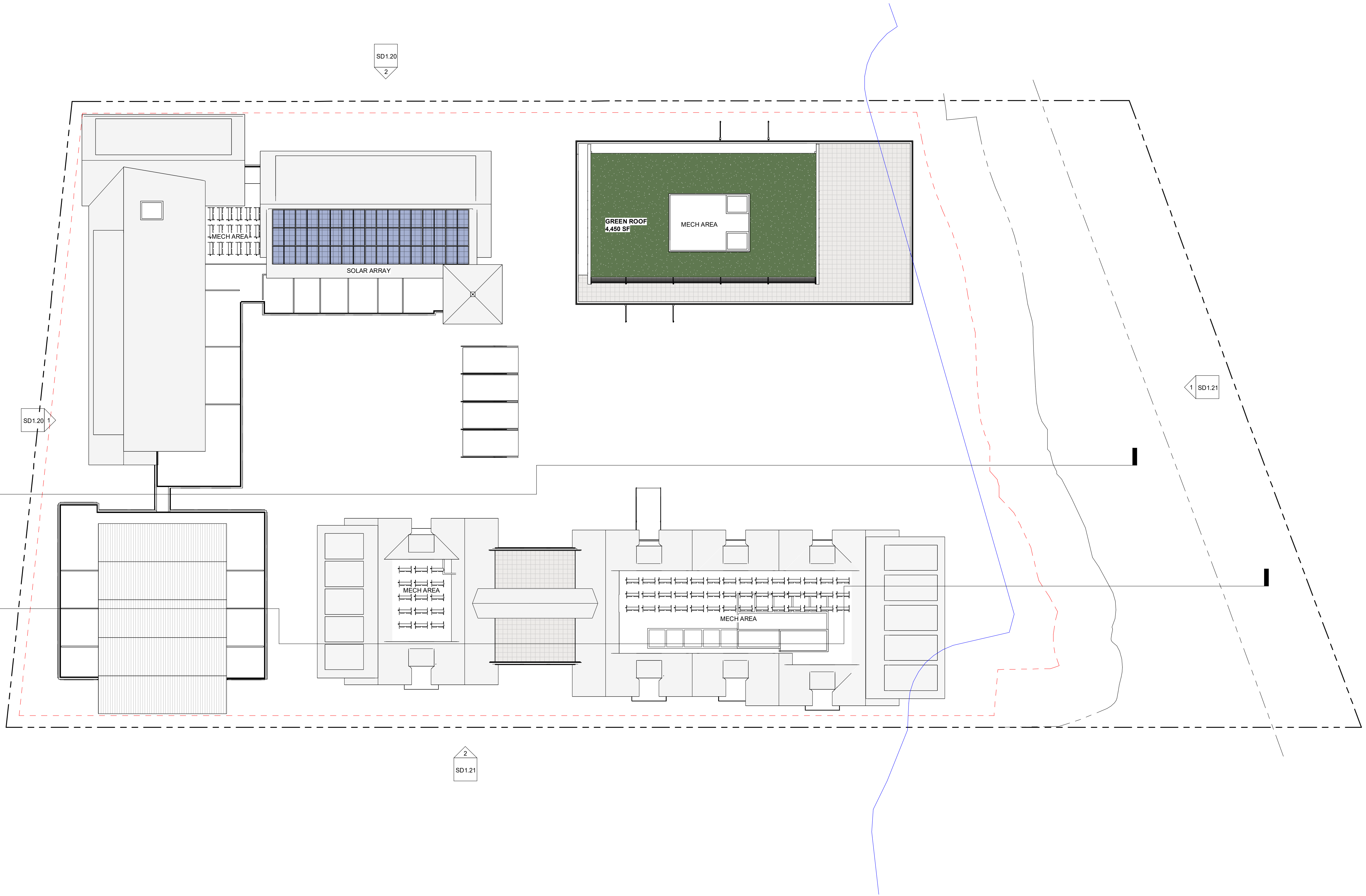
1 OVERALL - LEVEL 02
SD1.12 1" = 20'-0"



1 OVERALL - LEVEL 04
SD1.14 1" = 20'-0"

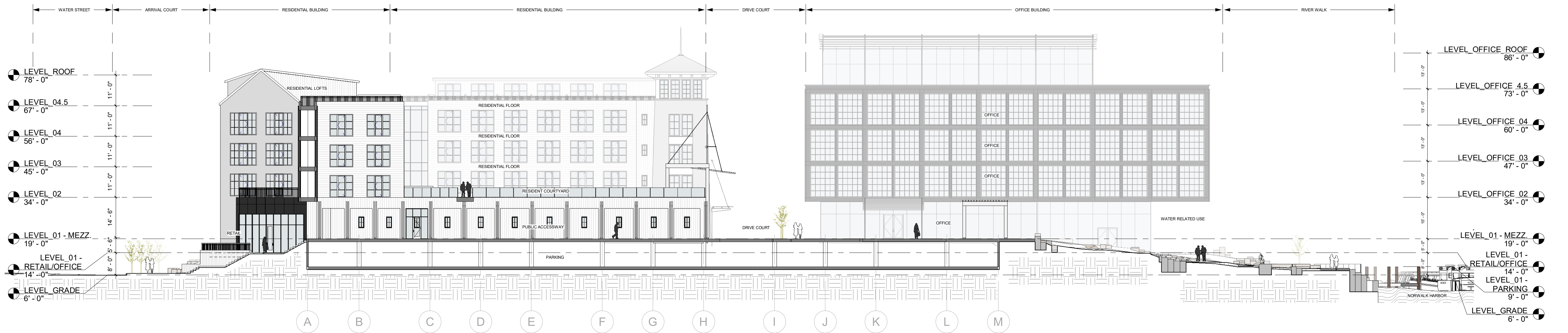
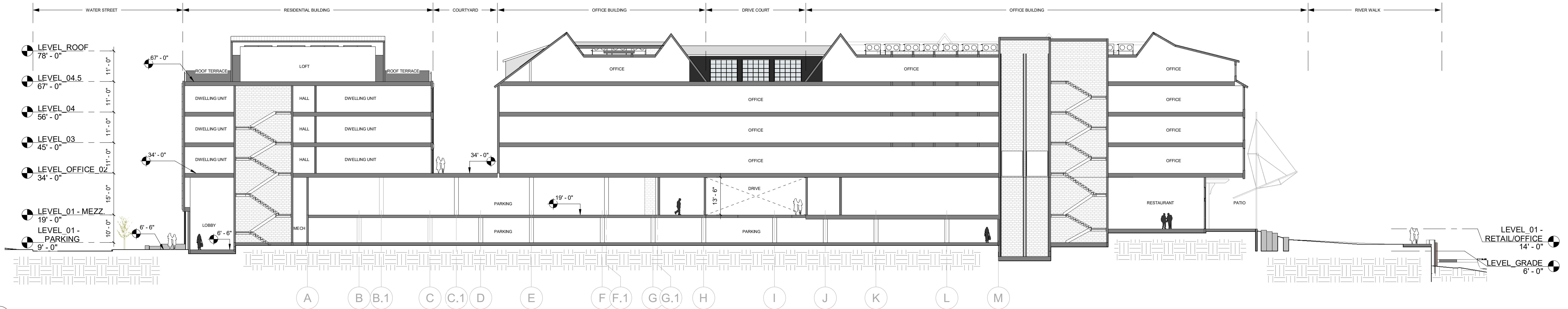


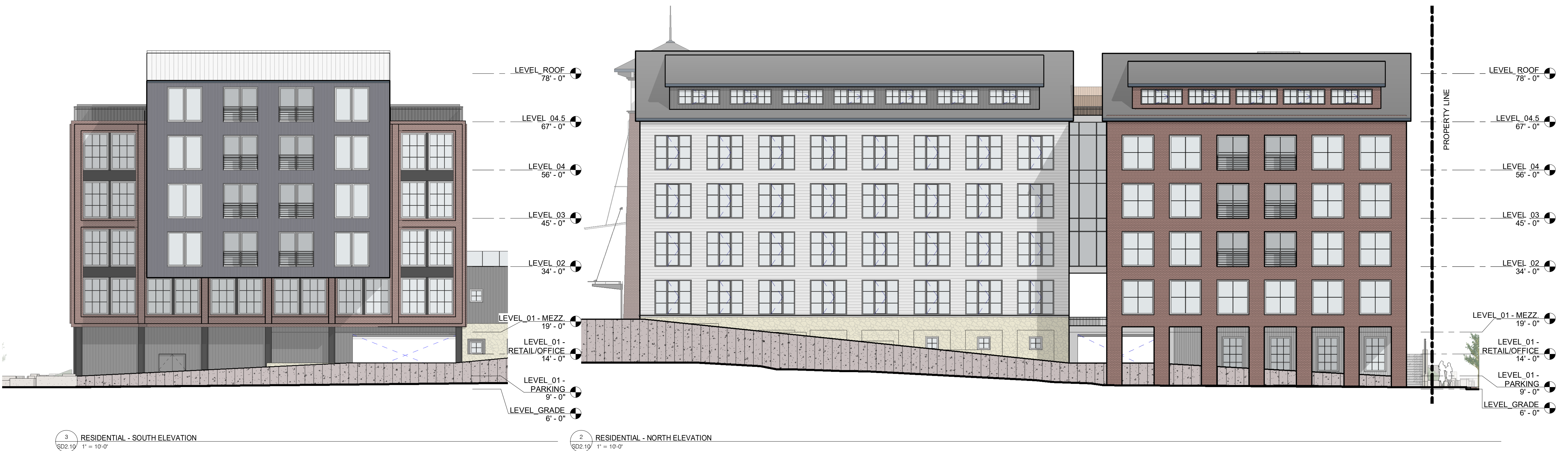
1 OVERALL - LEVEL 04.5
SD1.15 1" = 20'-0"



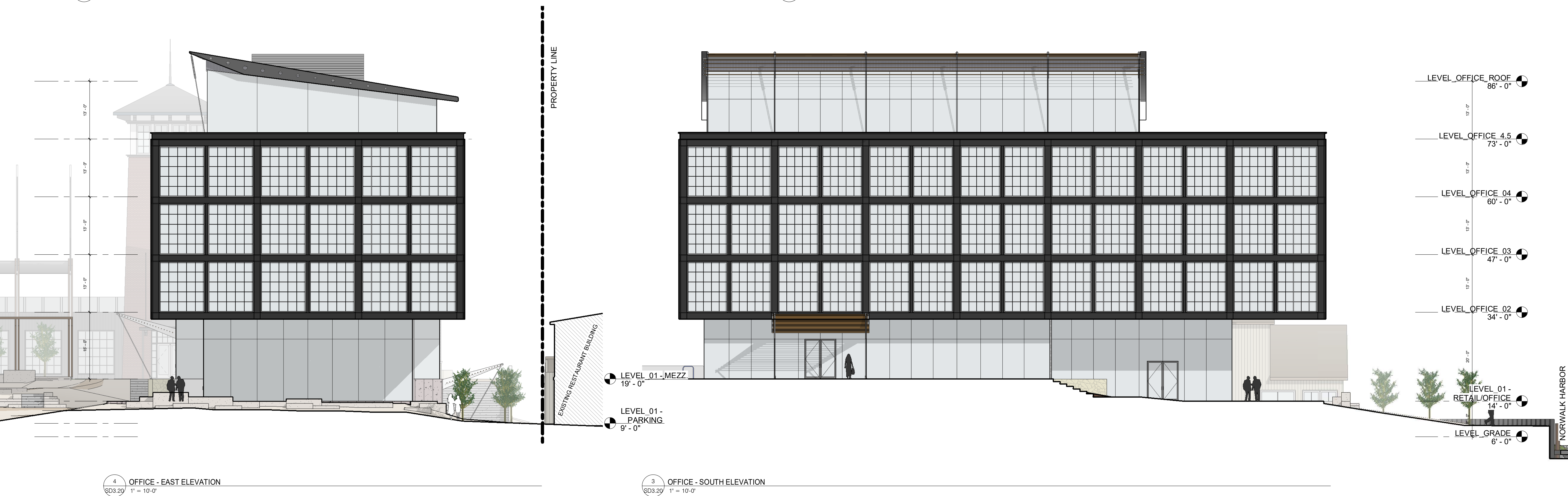
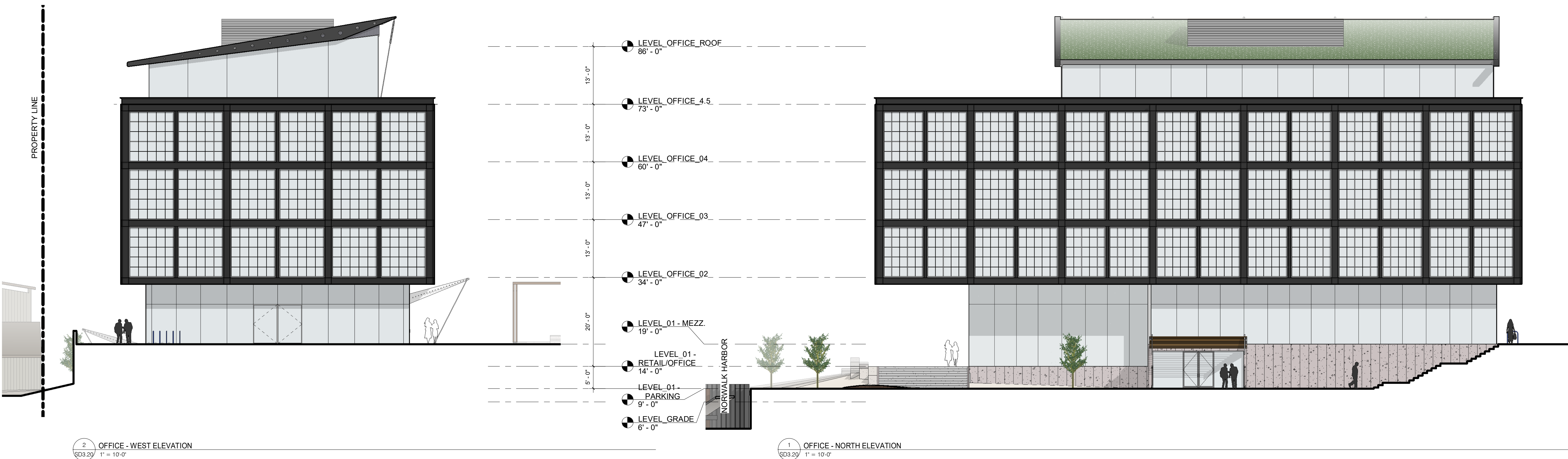
1 OVERALL - LEVEL ROOF
SD1.16 1" = 20'-0"

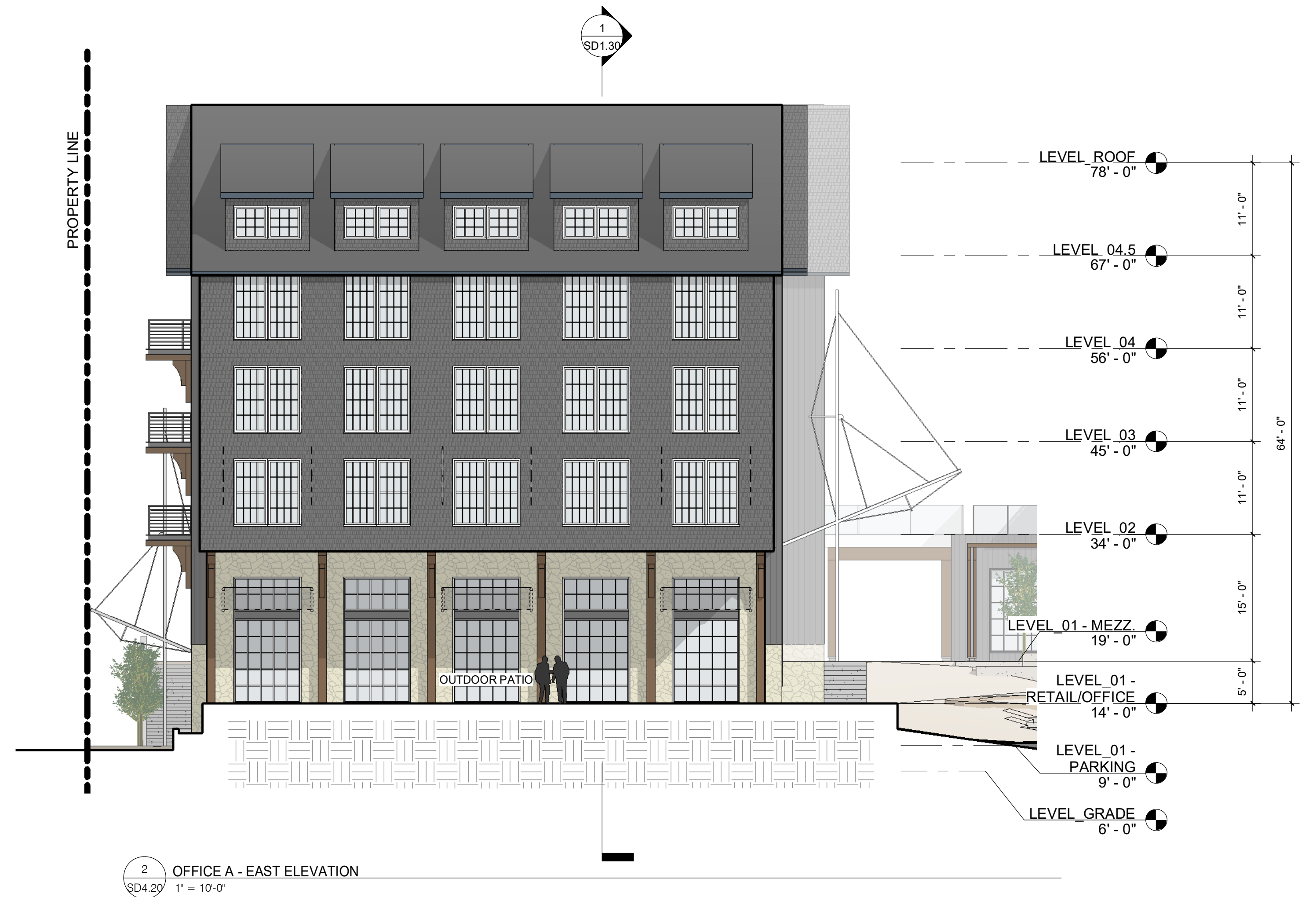


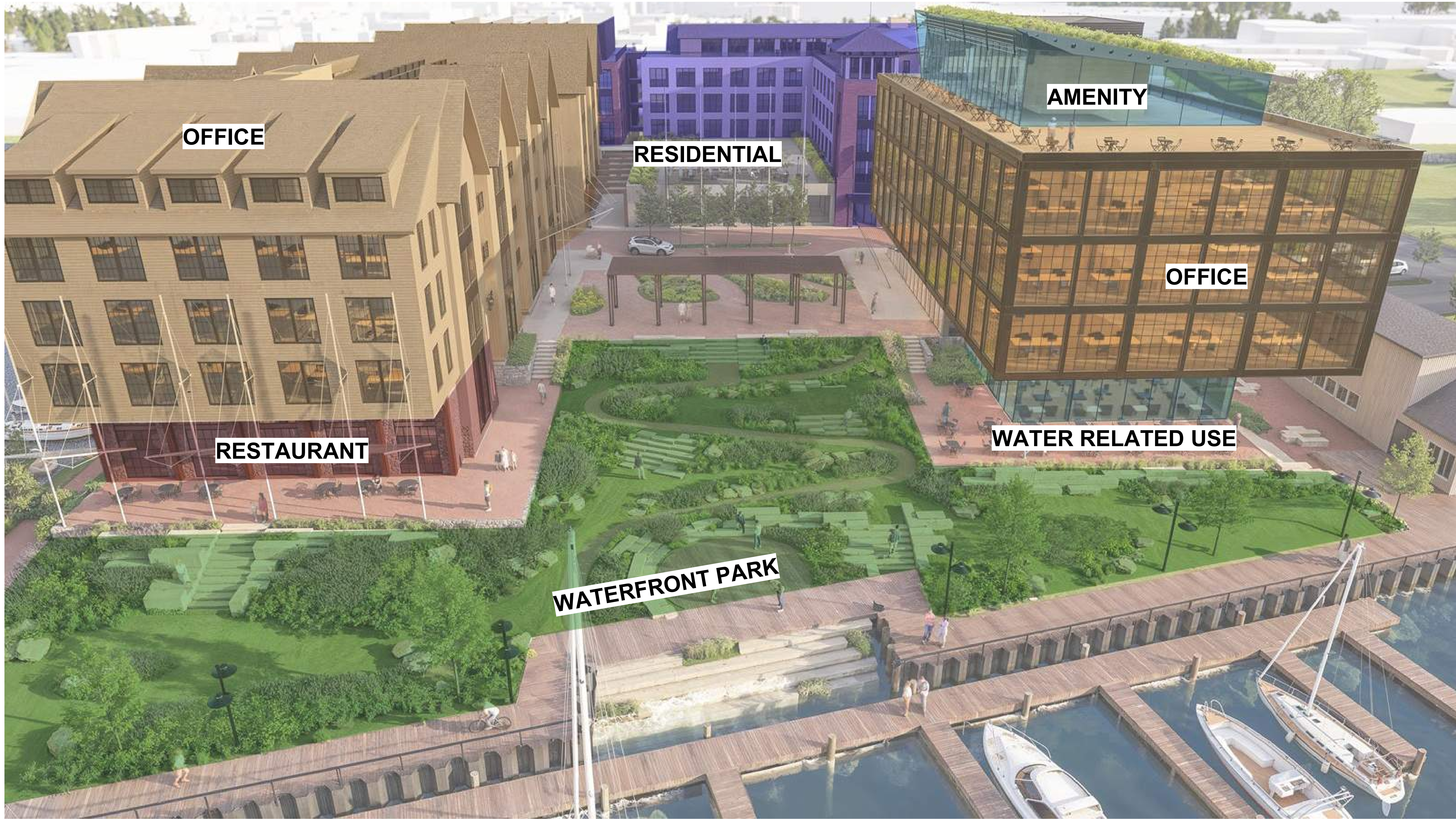








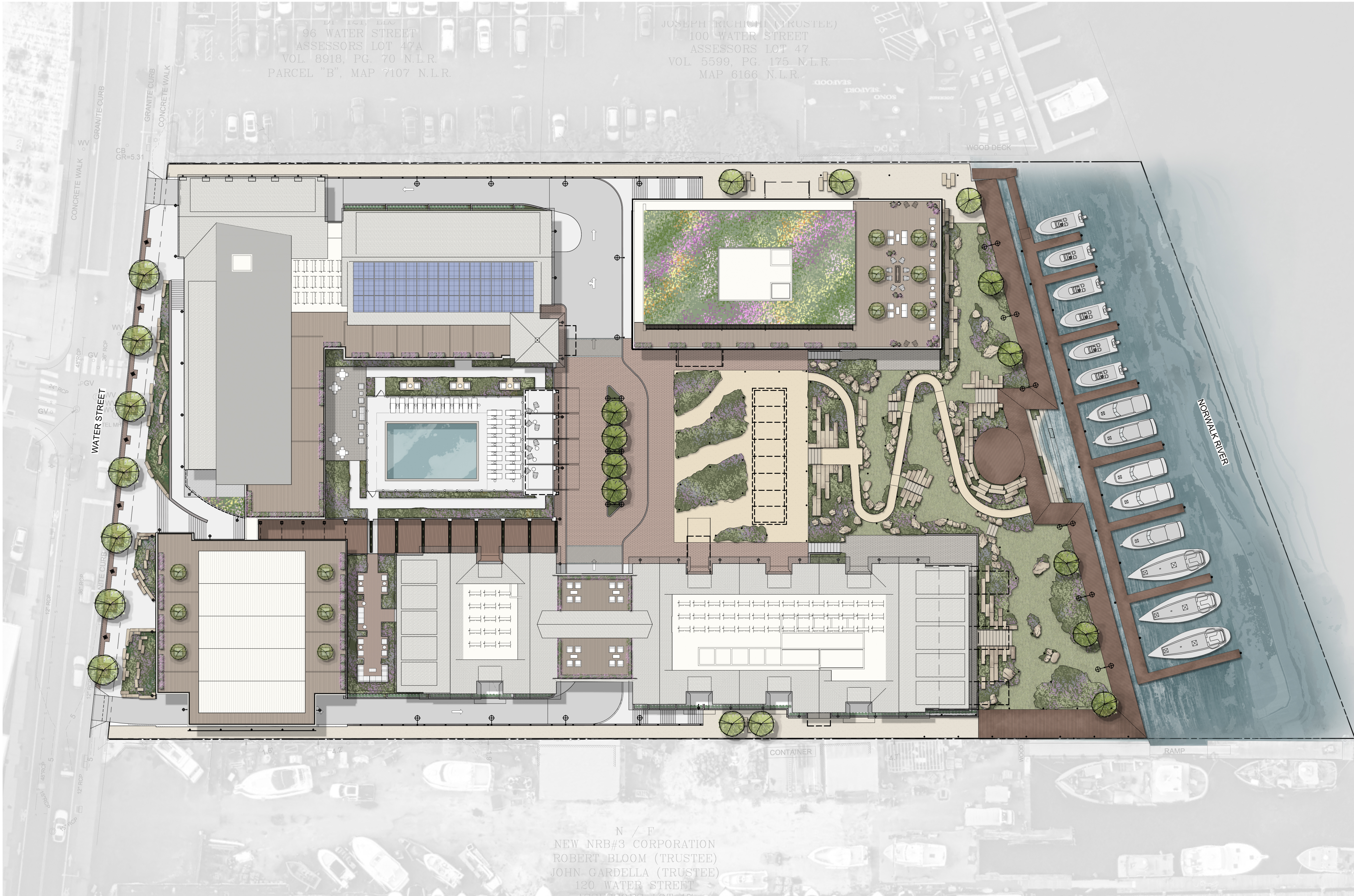








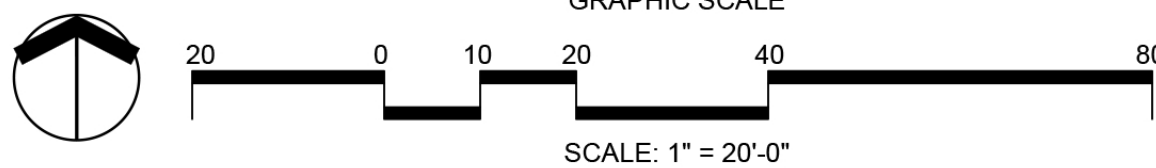




96 WATER STREET
ASSESSORS LOT 47A
VOL. 8918, PG. 70 N.L.R.
PARCEL "B", MAP 7107 N.L.R.

JOSEPH RICHICHI (TRUSTEE)
100 WATER STREET
ASSESSORS LOT 47
VOL. 5599, PG. 175 N.L.R.
MAP 6166 N.L.R.

N / F
NEW NRB#3 CORPORATION
ROBERT BLOOM (TRUSTEE)
JOHN GARDELLA (TRUSTEE)
120 WATER STREET



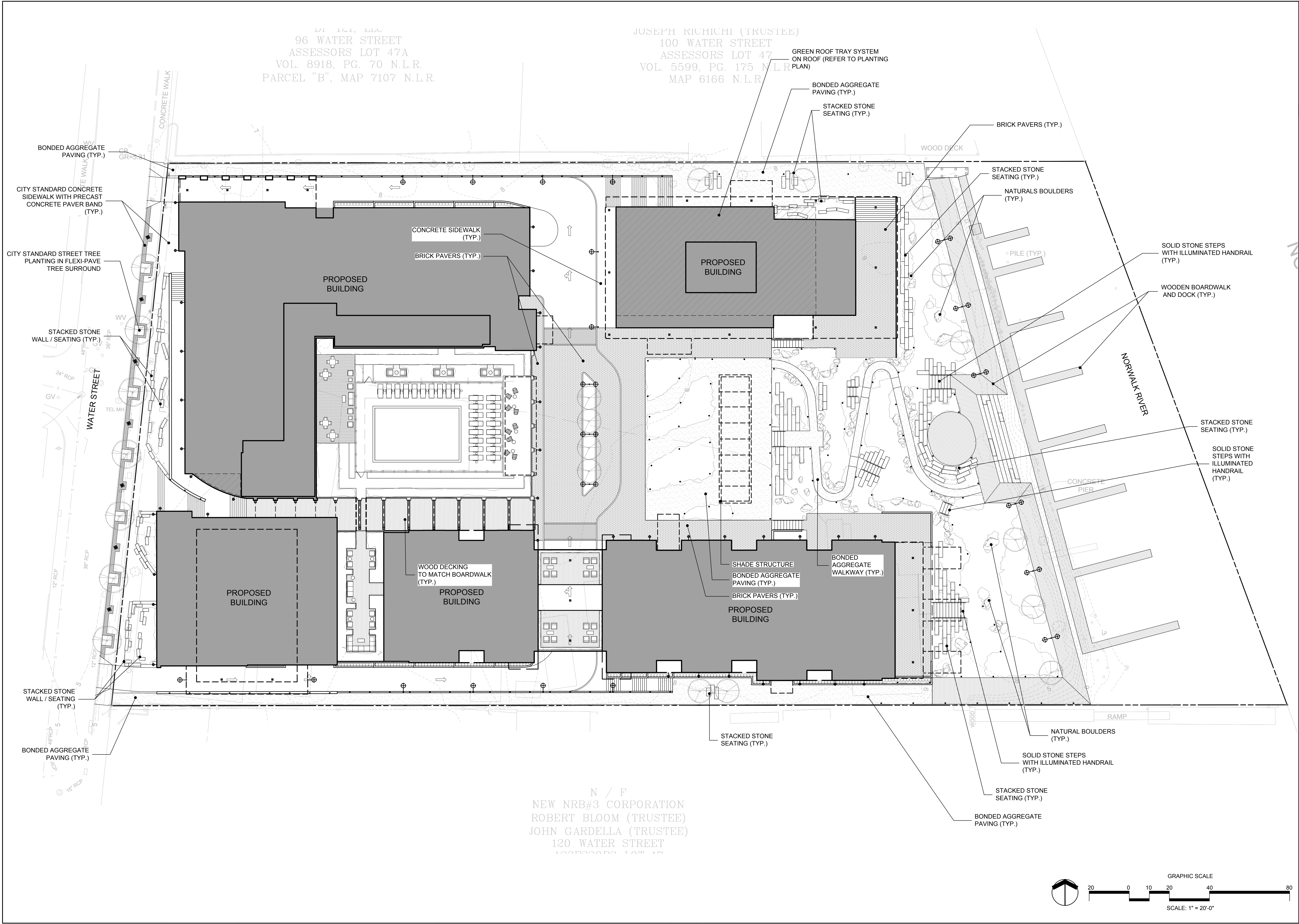
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landscape architecture, llc
11a N Main Street
SoNo, CT 203.354.6500
www.erlabs.com

NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		
1		

108 WATER STREET
WATER STREET
NORWALK, CT

PROJECT
DWG TITLE
SITE PLAN
RENDERING
JOB NO.
DATE
SCALE
1"=20'-0"

SPL-R



DI 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.

N / F
NEW NRB#3 CORPORATION
ROBERT BLOOM (TRUSTEE)
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NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		
1	MUNICIPAL REVIEW	25.06.13



108 WATER STREET
WATER STREET
NORWALK, CT

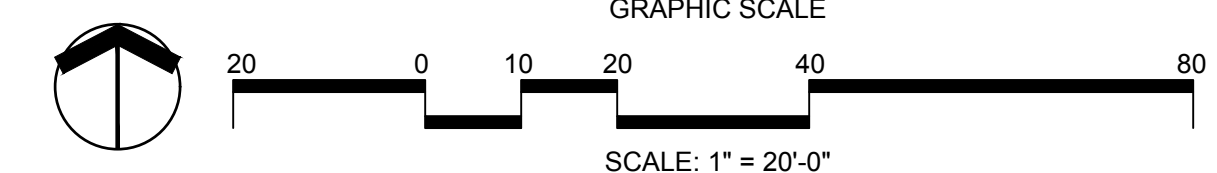
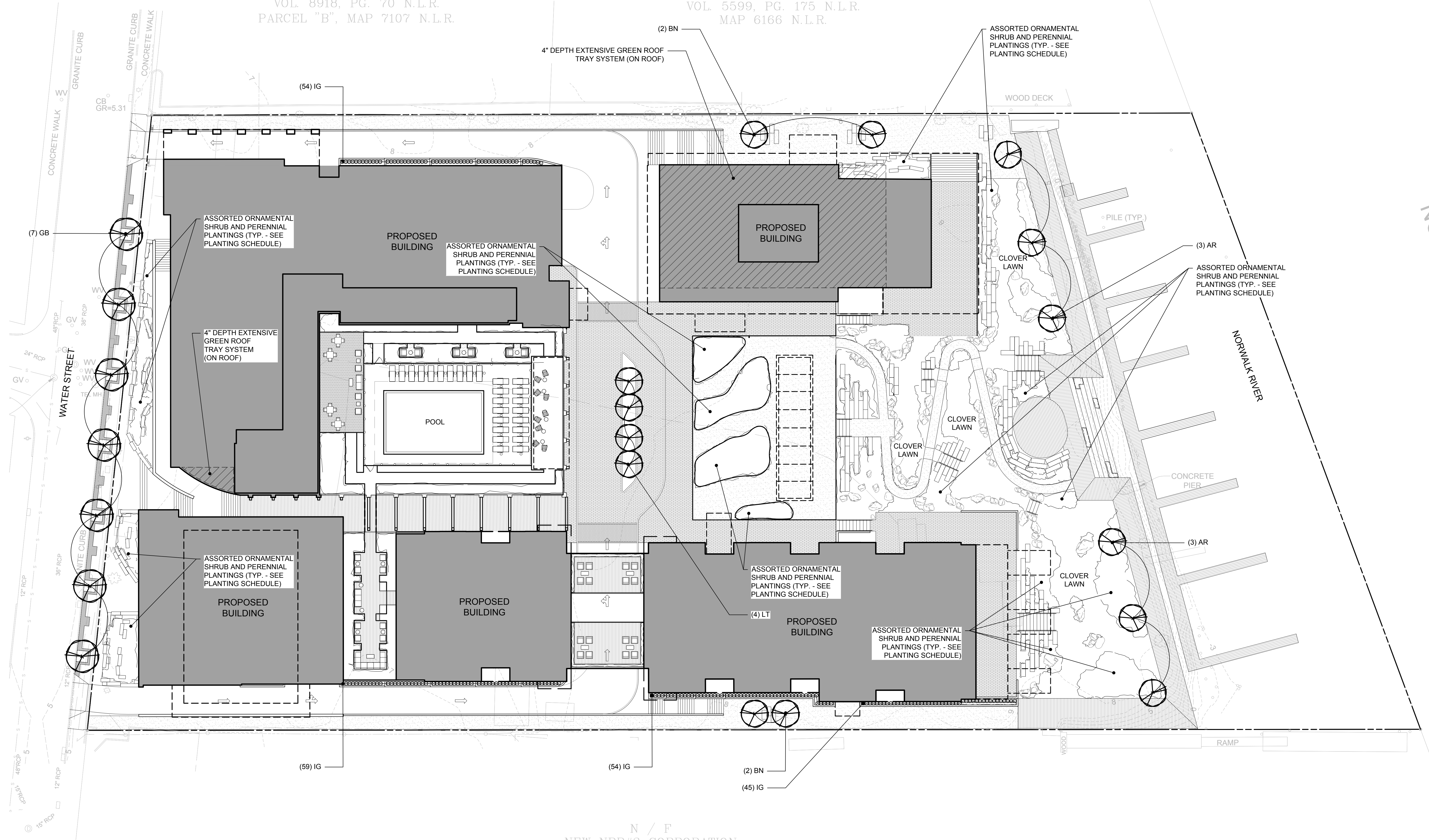
PROJECT
PROG. TITLE
OVERALL
SITE MATERIALS
PLAN

JOB NO.

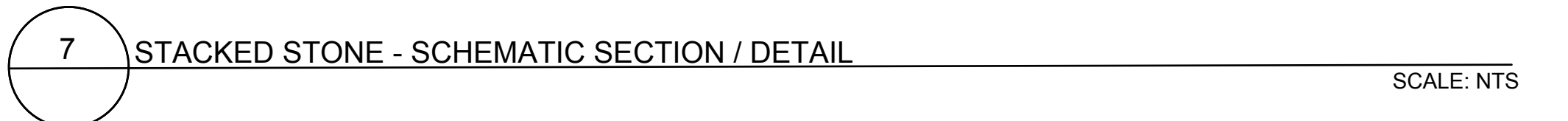
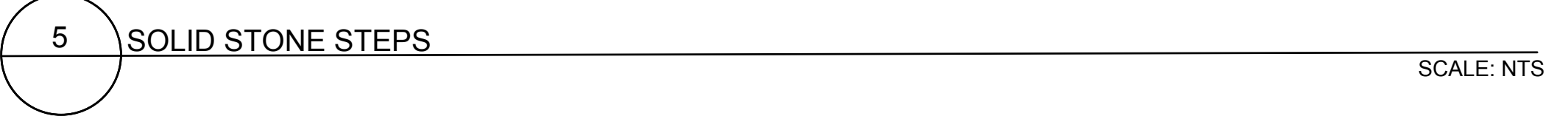
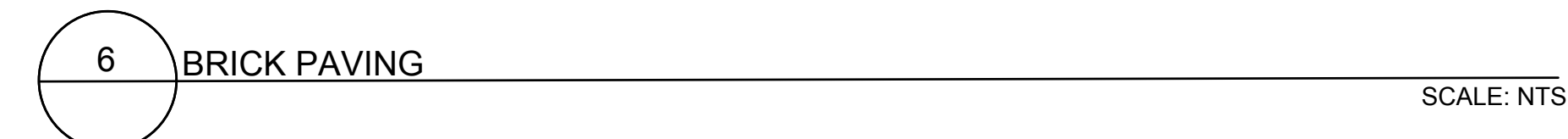
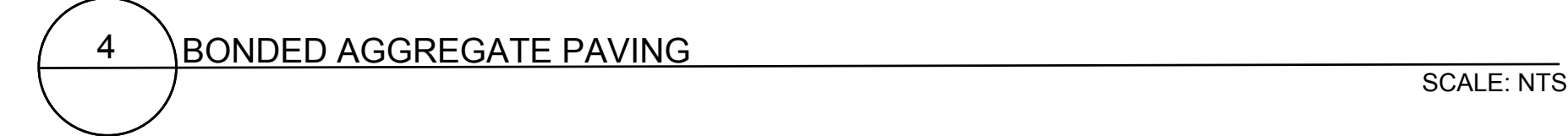
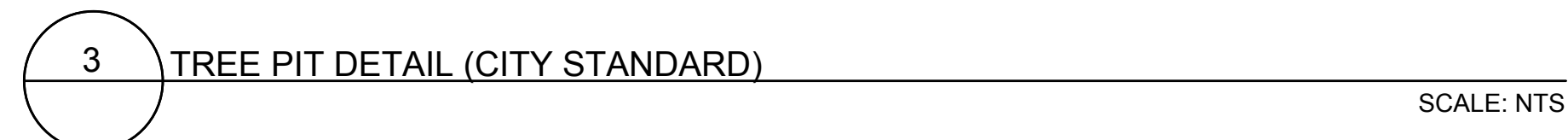
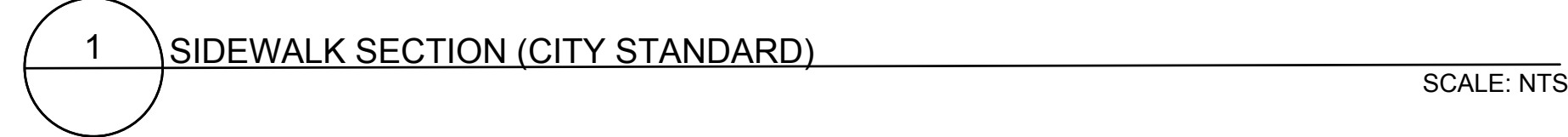
DATE
2025.06.13

SCALE
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SPL-1.0

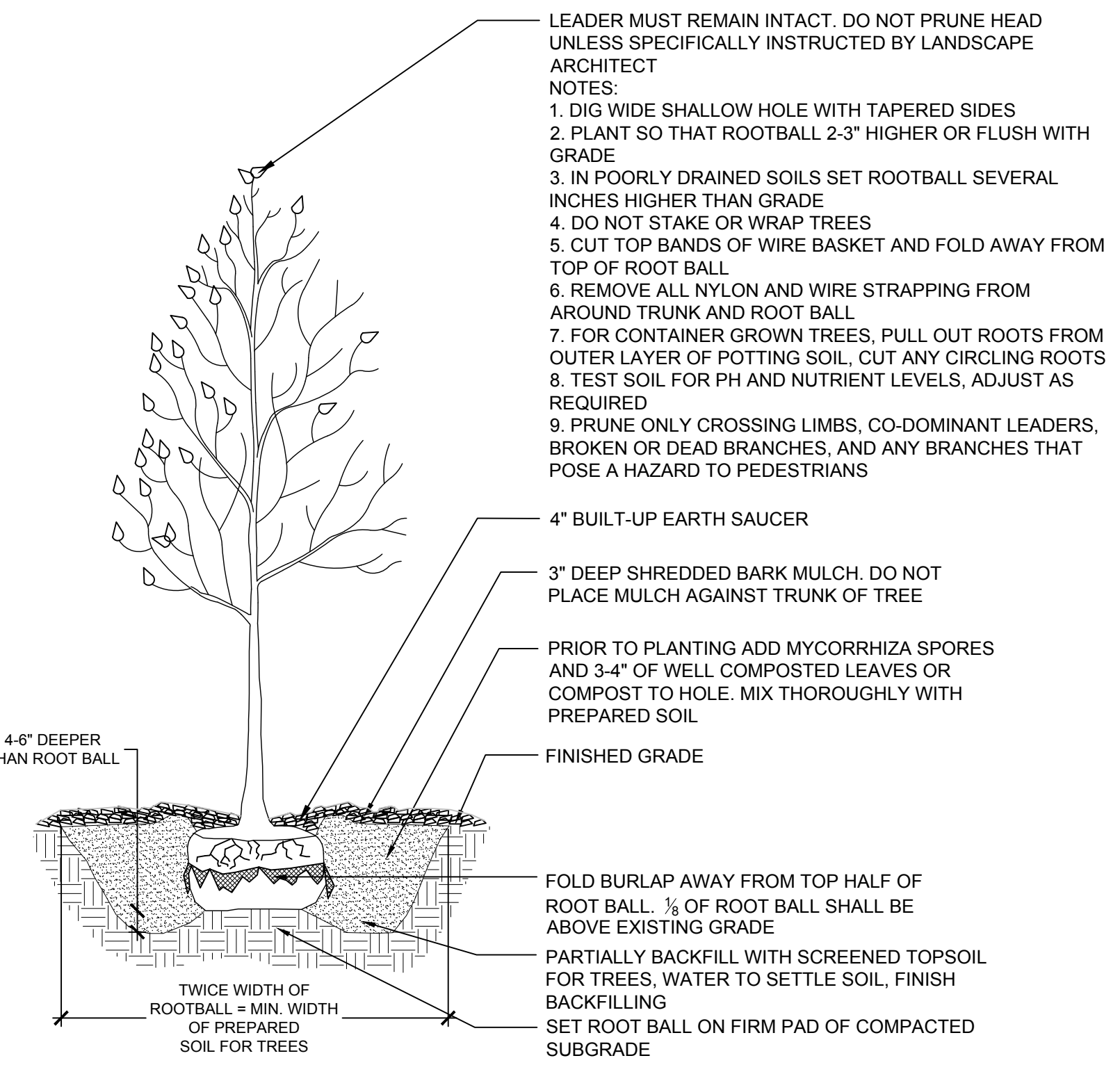
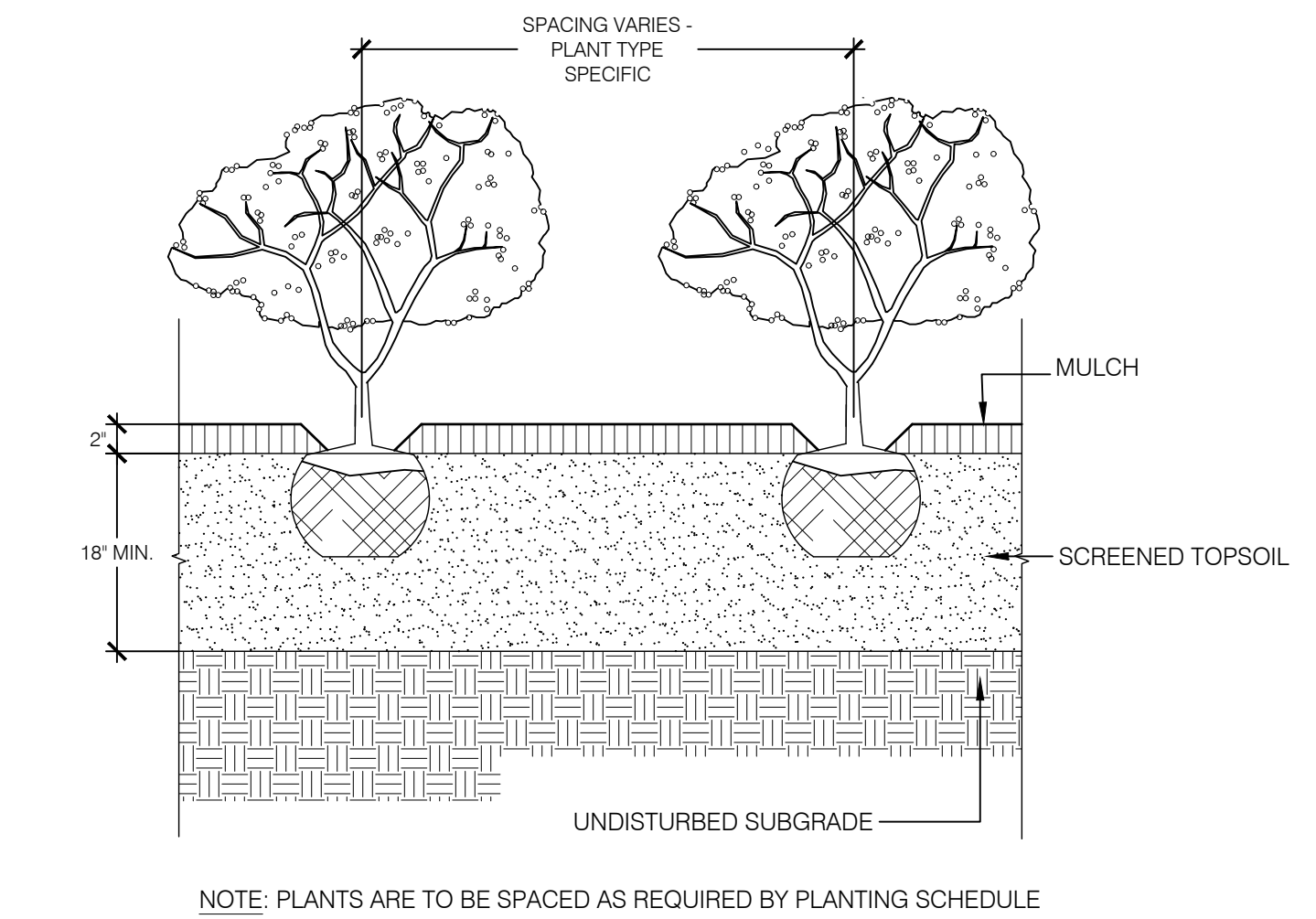


SYM	DESCRIPTION
[A]	CONCRETE SIDEWALK: 4000 PSI
[B]	CITY STANDARD BRICK PAVER - TYPE: HOLLAND STONE, SIZE: 4" x 8" (NOM.), COLORS: RED AND CHARCOAL. DISTRIBUTED BY O&G INDUSTRIES, CONTACT ANDREW AMATURO, PHONE: 860-559-3400.
[C]	BONDED AGGREGATE WALKWAY - STONE BLEND: RI BEIGE, BINDER: <u>Prof. DEKO</u> . CONTACT HENRI HILLMANN - PHONE: (860) 840-4637.
[D]	BRICK PAVERS - TYPE: <u>CLAY</u> , 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.



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

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 WARRANTY 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



SYM	QTY.	DESCRIPTION
L-1	9	LED AREA LIGHT (DUAL) - MODEL: <u>LBW-2-SD27-LED-x34-BW-BLP-A-TR5-12-010-MT.</u> TEMP: <u>2700K LED.</u> HEIGHT: <u>12'-0" POLE.</u> COLOR: <u>BLACK.</u> BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-2	10	LED AREA LIGHT (SINGLE) - MODEL: <u>LBW-1-SD27-LED-x34-BW-BLP-A-TR5-12-010-MT.</u> TEMP: <u>2700K LED.</u> HEIGHT: <u>12'-0" POLE.</u> COLOR: <u>BLACK.</u> BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-3	37	LED BUILDING MOUNT LIGHT - MODEL: <u>BWM-SD12-LED-L13-BLP-A-DT-CTW.</u> TEMP: <u>2700K LED.</u> BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-4	2	LED BUILDING MOUNT AREA LIGHT - MODEL: <u>LBW-SD27-LED-x43-BLP-A-CTW.</u> TEMP: <u>2700K LED.</u> BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-5	98	LED BOLLARD LIGHT - MODEL: <u>APB-36-LED-x52-BLP-A-CF1-MSH-D10-MT.</u> TEMP: <u>2700K LED.</u> BY TEKA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-6	24	RECESSED CANOPY LIGHT - MODEL: <u>F3SS-2-F-TM-WH-90W-11A-27-60-04-IC-PH1.</u> TEMP: <u>2700K LED.</u> BY LUCIFER LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-7	52	RECESSED WALL LIGHT - MODEL: <u>B24210-ADA.</u> TEMP: <u>2700K LED.</u> BY BEGA LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814
L-8	LF	LED LINEAR IN-GRADE LIGHT - MODEL: <u>ZNLT-SH-xx-ZGBL-24V-95C-27T-MG.</u> TEMP: <u>2700K LED.</u> BY PRECISE LED. CONTACT: CLIFF GILBERT. (203) 788-0814
L-9	LF	LED ILLUMINATED HANDRAIL - MODEL: <u>LR6P-LED-SS-IN-TM-ES-ASYM-DIM.</u> TEMP: <u>3000K LED.</u> BY COLE LIGHTING. CONTACT: CLIFF GILBERT. (203) 788-0814

1 L-1/ L-2: LED AREA LIGHT

SCALE: NTS

2 L-3: LED BUILDING MOUNTED LIGHT

3 L-4: LED BUILDING MOUNTED SCENCE

SCALE: NTS

4 L-5: LED BOLLARD LIGHT

SCALE: NTS

5 L-6: RECESSED CANOPY LIGHT

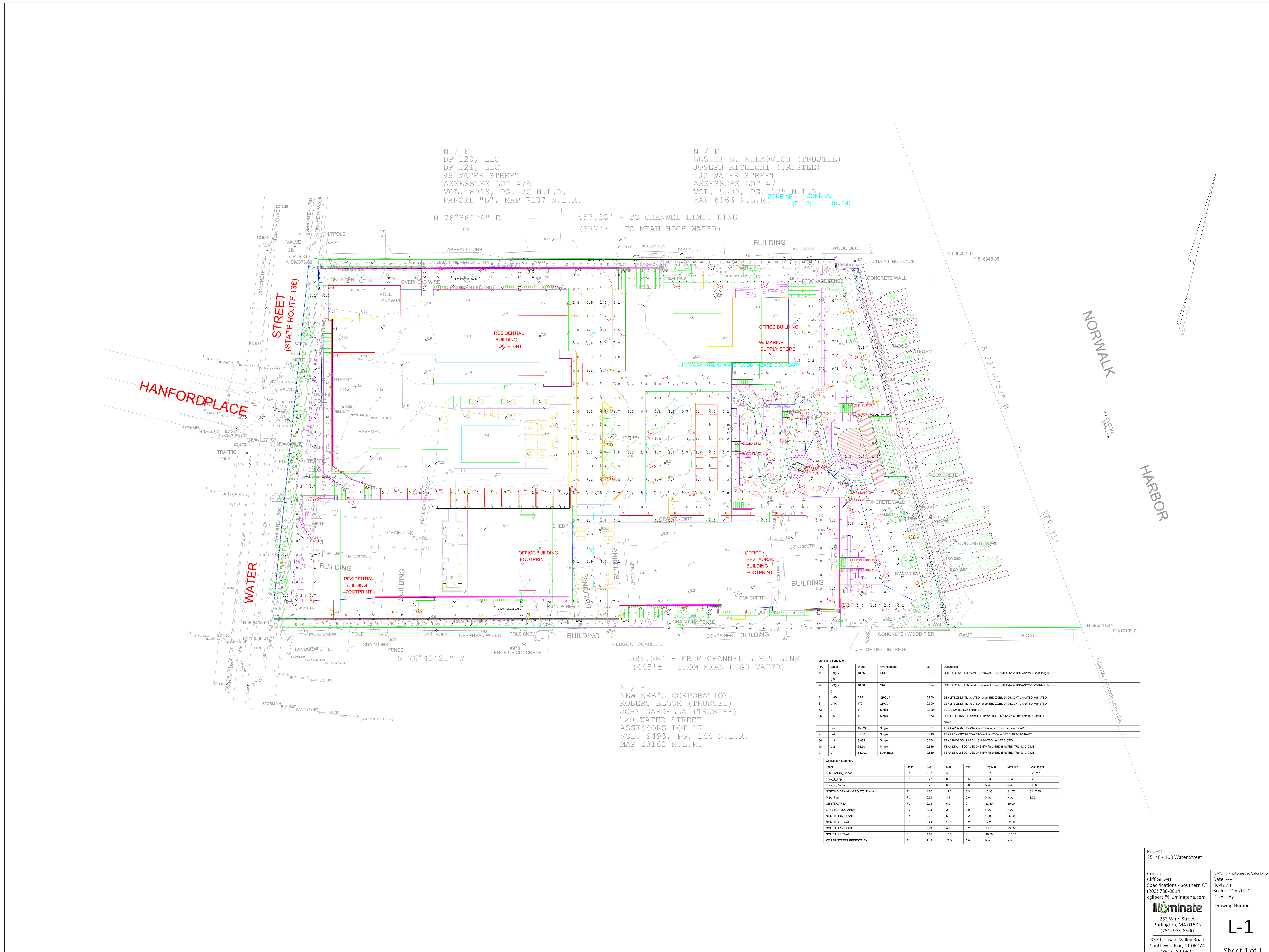
SCALE: NTS

7 L-8: LED LINEAR LIGHT STRIP (IN-GRADE AND COLUMN)
SCALE: NTS

23 www.colighting.com

6 L-7: RECESSED WALL LIGHT

SCALE: NTS



N / F
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.

N / F
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.

N 76°38'24" E — 457.38' - TO CHANNEL LIMIT LINE
(377'± - TO MEAN HIGH WATER)

S 76°42'21" W — 586.38' - FROM CHANNEL LIMIT LINE
(445'± - FROM MEAN HIGH WATER)

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.

Qty	Label	Units	Arrangement	LLF	Description
14	L-8(TYP) (R)	18.56	GROUP	0.324	COLE L180d-LED-metalTBD-dimerTBD-endsTBD-baseTBD-ASYM30-27K-lengthTBD
14	L-8(TYP) (L)	18.56	GROUP	0.324	COLE L180d-LED-metalTBD-dimerTBD-endsTBD-baseTBD-ASYM30-27K-lengthTBD
5	L-48B	69.7	GROUP	0.900	ZENLITE ZNL17L1-LyteTBD-lengthTBD-ZOBL-24-65C-27T-dimerTBD-wingTBD
8	L-8A	170	GROUP	0.900	ZENLITE ZNL17L1-LyteTBD-lengthTBD-ZOBL-24-65C-27T-dimerTBD-wingTBD
53	L-7	11	Single	0.900	MEGA R04150-40T-4inH-TBD
26	L-6	11	Single	0.973	LUCIFER F385-2-F-4inH-TBD-buffTBD-90S-11A-27-60-04-instH-TBD-coH-TBD-dimerTBD
81	L-5	10.924	Single	0.801	TEKA AP8-36-LED-X02-4inH-TBD-4inH-TBD-DP1-dimerTBD-MT
2	L-4	32.051	Single	0.819	TEKA LWV-5027-LED-X43-BW-4inH-TBD-mngTBD-T85-12-010-MT
86	L-3	8.862	Single	0.774	TEKA BW-5012-LED-X43-BW-4inH-TBD-mngTBD-T85-12-010-MT
10	L-2	32.051	Single	0.819	TEKA LWV-5027-LED-X43-BW-4inH-TBD-mngTBD-T85-12-010-MT
9	L-1	65.002	Back-Back	0.819	TEKA LWV-5027-LED-X43-BW-4inH-TBD-mngTBD-T85-12-010-MT

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
B25 STAIRS_Planar	Fc	1.87	4.2	0.7	2.67	6.00
dock_1_Top	Fc	3.27	6.7	0.5	6.54	13.40
dock_2_Planar	Fc	0.40	0.8	0.0	N.A.	0.8
NORTH SIDEWALK 6 TO 7FE_Planar	Fc	4.90	12.5	0.3	15.33	41.67
Slope_Top	Fc	0.95	3.4	0.0	N.A.	3.4
CENTER AREA	Fc	2.25	6.9	0.1	22.50	69.00
LANDSCAPING AREA	Fc	1.93	21.4	0.0	N.A.	21.4
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	1.98	4.7	0.2	9.90	23.50
SOUTH SIDEWALK	Fc	4.97	13.5	0.1	46.70	135.00
WATER STREET PEDESTRIAN	Fc	2.14	22.3	0.0	N.A.	22.3

Project:
25148 - 108 Water Street

Contact:
Cliff Gilbert
Specifications - Southern CT
(203) 788-0814
cgilbert@illuminate.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

L-1

Sheet 1 of 1

Page 779 of 906

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

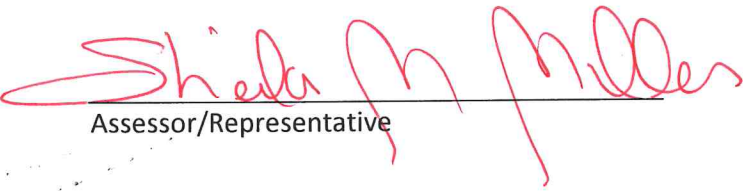
Property Location: 108 WATER ST

District: 2

Map/Block/Lot: 2 84 18 0

Map/Block/Lot (subdivided lot/new lot):

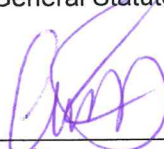
Unique ID: 2-84-18-0


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

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. Prioritization of Applicants for Rental.

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 displaced tenants, the priority categories shall be in effect for all subsequent Workforce Housing rentals in perpetuity.

12. Maximum Monthly Rental Payment.

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:

COUNTY OF FAIRFIELD : ss: Norwalk _____, 20

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 OVERALL - LEVEL 02
SD1.12 1" = 20'-0"



1 OVERALL - LEVEL 03
SD1.13 1" = 20'-0"



1 OVERALL - LEVEL 04
SD1.14 1" = 20'-0"

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



SCALE: 1" = 100'

0 50 100 200
Feet

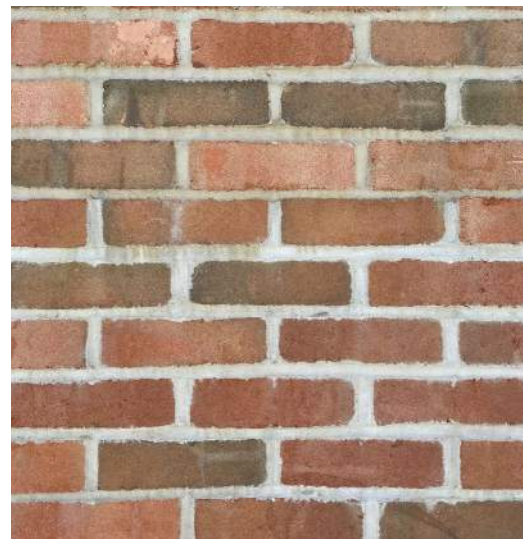
108 Water Street
2-84-18-0

Aerial photographs taken April, 2019

108 Water Street

BEINFELD ARCHITECTURE

06.26.2025



1. Brick



2. Aluminum Panel



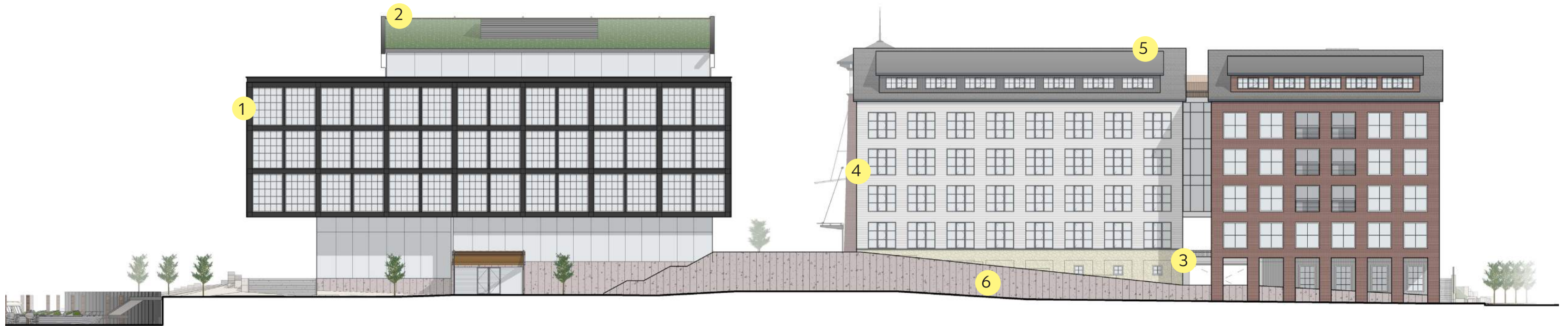
3. Corrugated Metal Vertical Roofing



4. Asphalt Shingles



5. Vertical Wood Plank



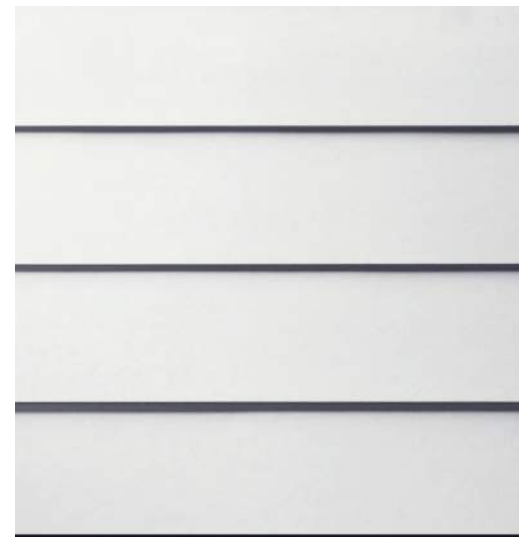
1. Windows



2.Green Roof



3. Stone Foundation



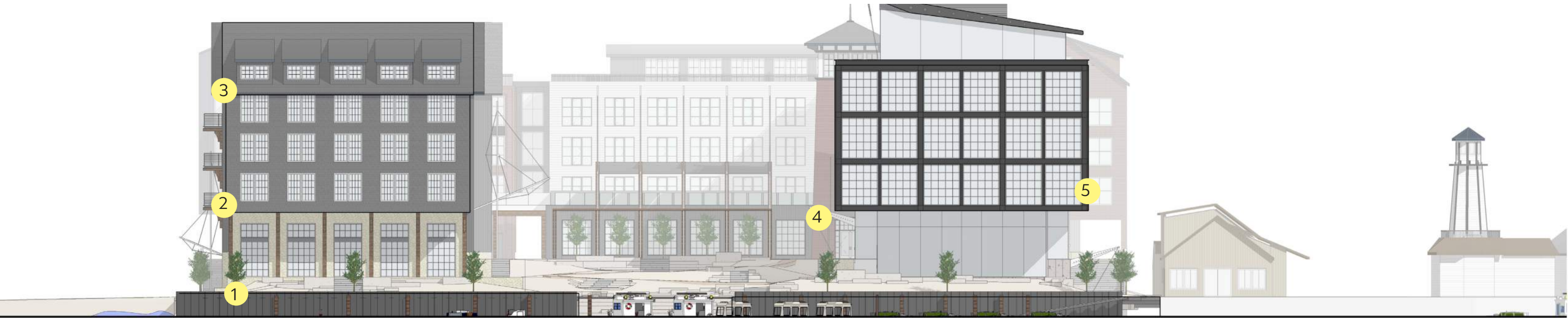
4. Hardie Plank Clapboard Siding



5. Asphalt Roof



6. Concrete Panel



1 SITE - EAST ELEVATION
SD1.21 1/16" = 1'-0"



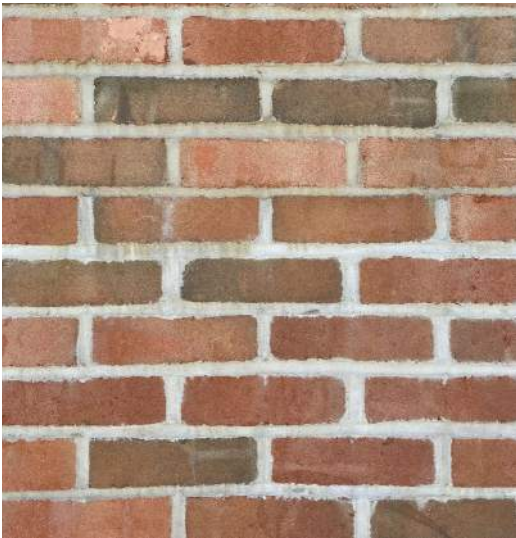
1. Stone Foundation



2. Grey Washed Cedar Shakes



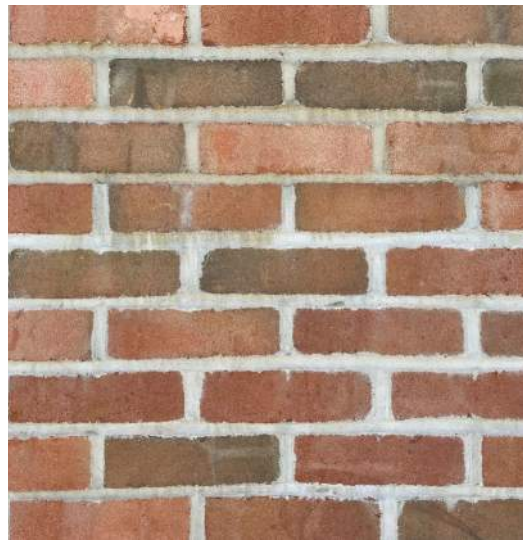
3. Asphalt Roof



4 Brick



5. Window



1. Brick



2. Vertical Grey Washed Cedar Siding



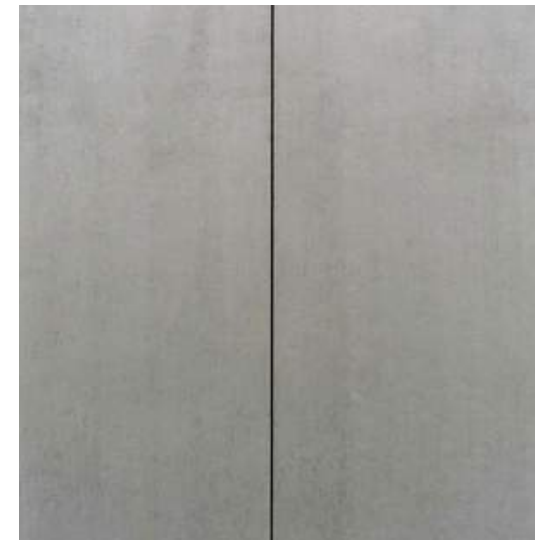
3. Grey Washed Cedar Shakes



4. Stone Foundation



5. Asphalt Shingles



6. Concrete Panel



CITY OF NORWALK
Planning and Zoning

Norwalk City Hall, Room 129
125 East Avenue
Norwalk, CT 06856-5125

MEMORANDUM

TO: Planning and Zoning Commission – Galen Wells, Chair

FROM: Amelia Williams, Land Use Planner

DATE: July 9, 2025

SUBJECT: **Preliminary Coastal Site Plan Review of 108 Water Street for Application #2025-51 SPR CAM** for the construction of a 4.5 story, 59-unit, mixed-use building.

District: 2 **Block:** 84 **Lot:** 18 **Zone:** SD-MC **Flood Zone:** VE-14 and AE-12

Upon review of our records and maps, it appears that the property at 108 Water Street directly abuts the Norwalk Harbor and is entirely within the VE-14 and AE-15 flood zones. The applicant proposes a complete redevelopment of the property, with extensive grading and site work. Below are some initial concerns as they pertain to consistency with the Connecticut Coastal Area Management Act (CCMA):

- The property has been historically used for marine services, including boat repair and marine construction, which are water-dependent uses. The CCMA includes definitions of adverse impacts on future water-dependent development opportunities and activities which include:
 - Locating a non-water-dependent use at a site that (i) is physically suited for a water-dependent use for which there is a reasonable demand, or (ii) has been identified for a water-dependent use in the plan of development of the municipality or the zoning regulations [CGS section 22a-93(17)(A)].
 - Replacement of a water-dependent use with a non-water-dependent use [CGS section 22a-93(17)(B)].
 - Siting of a non-water-dependent use which would substantially reduce or inhibit existing public access to marine or tidal waters [CGS section 22a-93(17)(C)].

In accordance with CGS section 22a-106, a municipal board or commission reviewing a coastal site plan must determine whether or not the potential adverse impacts of the proposed activity on both coastal resources and future water-

dependent uses are acceptable. If any of the above three conditions apply, the proposed non-water-dependent use may preclude existing or future water-dependent uses and create unacceptable adverse impacts. Upon such a determination, the proposed use should be modified or conditioned if such impacts can be mitigated to a level which is consistent with applicable goals and policies of the CCMA or, if modification cannot achieve consistency, the project should be denied.

- There are no water-dependent uses proposed for this waterfront site. The currently proposed “space related to a water-dependent use within the building (to be determined)” is insufficient. It is CCMA policy to give high priority and preference to uses and facilities which are dependent upon proximity to the water. Developable waterfront property, particularly property that can support an active water-dependent use is extremely rare and valuable in Connecticut. Because the proposed private boat slips and boardwalk demonstrate that the site is capable of supporting water-dependent uses, the coastal site plan must be modified to incorporate some type of water-dependent use in order to ensure that future water-dependent use opportunities at the site are not lost.
- It is also CCMA policy to consider in the planning process the potential impact of a rise in sea level, coastal flooding and erosion patterns on coastal development so as to minimize damage to and destruction of life and property and minimize the necessity of public expenditure and shoreline armoring to protect future new development from such hazards. This property is partially within the VE flood zone, which is a high hazard coastal zone. The proposed building and boardwalk should be relocated out of the VE flood zone, as the current proposal indicates the building foundation is partially within the zone.
- The submitted flood preparedness plan only addresses potential issues on-site. Access to and from the site during flooding events should also be considered. Water Street consistently floods during non-storm events, including during spring tides throughout the year. Aside from residents of the development, this can also impact emergency vehicle access especially during storm events.
- Stormwater should be retained and treated on-site to the maximum extent practicable using appropriate best management practices. The applicant should determine whether or not it is possible to increase the percentage of site area treated to more than 79%.
- Staff is concerned about the feasibility of the proposed public access. The six foot wide walkways are narrow and do not appear open or welcoming in the renderings.

The walkways should be widened to at least ten feet and signage should be proposed that clearly identifies this as public access. This will require a signage manual be submitted to the Commission for review. Coastal public access areas should always be carefully designed and include appropriate amenities to provide attractive and usable public facilities. It's also important to ensure that coastal public access is ensured through a duly executed and legally binding access easement.

- Staff would recommend moving the boardwalk West (out of the VE flood zone) and installing a robust buffer of salt-tolerant native plantings along the bulkhead.
- Plans and details are needed pertaining to the proposed reconstruction of the bulkhead wall.
- The applicant should demonstrate that the proposed boat slips are feasible given the bathymetry along the existing bulkhead and the location of the Federal Navigation Channel.
- The Coastal Site Plan Application form indicates four applicable adverse impacts. However, the associated Coastal Area Management Assessment submitted by the applicant describes these four impacts as favorable. Revisions must be completed to accurately reflect the proposal across submitted materials.



CITY OF NORWALK
Planning and Zoning

Norwalk City Hall, Room 129
125 East Avenue
Norwalk, CT 06856-5125

MEMORANDUM

TO: Planning and Zoning Commission – Galen Wells, Chair

FROM: Amelia Williams, Land Use Planner

DATE: July 9, 2025

SUBJECT: **Preliminary Coastal Site Plan Review of 108 Water Street for Application #2025-51 SPR CAM** for the construction of a 4.5 story, 59-unit, mixed-use building.

District: 2 **Block:** 84 **Lot:** 18 **Zone:** SD-MC **Flood Zone:** VE-14 and AE-12

Upon review of our records and maps, it appears that the property at 108 Water Street directly abuts the Norwalk Harbor and is entirely within the VE-14 and AE-15 flood zones. The applicant proposes a complete redevelopment of the property, with extensive grading and site work. Below are some initial concerns as they pertain to consistency with the Connecticut Coastal Area Management Act (CCMA):

- The property has been historically used for marine services, including boat repair and marine construction, which are water-dependent uses. The CCMA includes definitions of adverse impacts on future water-dependent development opportunities and activities which include:
 - o Locating a non-water-dependent use at a site that (i) is physically suited for a water-dependent use for which there is a reasonable demand, or (ii) has been identified for a water-dependent use in the plan of development of the municipality or the zoning regulations [CGS section 22a-93(17)(A)].
 - o Replacement of a water-dependent use with a non-water-dependent use [CGS section 22a-93(17)(B)].
 - o Siting of a non-water-dependent use which would substantially reduce or inhibit existing public access to marine or tidal waters [CGS section 22a-93(17)(C)].

In accordance with CGS section 22a-106, a municipal board or commission reviewing a coastal site plan must determine whether or not the potential adverse impacts of the proposed activity on both coastal resources and future water-

dependent uses are acceptable. If any of the above three conditions apply, the proposed non-water-dependent use may preclude existing or future water-dependent uses and create unacceptable adverse impacts. Upon such a determination, the proposed use should be modified or conditioned if such impacts can be mitigated to a level which is consistent with applicable goals and policies of the CCMA or, if modification cannot achieve consistency, the project should be denied.

- There are no water-dependent uses proposed for this waterfront site. The currently proposed “space related to a water-dependent use within the building (to be determined)” is insufficient. It is CCMA policy to give high priority and preference to uses and facilities which are dependent upon proximity to the water. Developable waterfront property, particularly property that can support an active water-dependent use is extremely rare and valuable in Connecticut. Because the proposed private boat slips and boardwalk demonstrate that the site is capable of supporting water-dependent uses, the coastal site plan must be modified to incorporate some type of water-dependent use in order to ensure that future water-dependent use opportunities at the site are not lost.

The proposed development incorporates water-dependent uses consistent with the Connecticut Coastal Management Act (CCMA) and Norwalk’s Zoning Regulations

The above memo inaccurately states that there are no water-dependent uses proposed at this waterfront site; however, there are multiple water-dependent uses proposed for this site as recognized under CCMA.

First, the applicant has proposed a large portion at ground level of the office building for a water-dependent use and has begun meetings with varied potential tenants to utilize that space. As the tenant has not been determined at present, we cannot identify what operation will occur specifically at that space but have committed to providing a water dependent use within that space.

Second, pursuant to the CGS § 22a-93 (16) “Water-dependent uses” are defined as the kind of uses that require direct access to the water, and include “water-based recreational uses”, recreational boating facilities, and waterfront dock and port facilities. This proposal includes both boat slips for recreational use as well as waterfront docks.

Finally, under the definition, “uses which provide general public access to marine or tidal waters” are recognized as an additional, standalone, water-dependent use. The introduction of public access in an otherwise non-water dependent development can mitigate the adverse impact on future water-dependent development activities, bringing it into conformance with CCMA policies – even without any of the other water dependent uses proposed by this application. More specifically, as stated in the Connecticut Coastal Management Manual, “Adverse impacts may be mitigated by providing coastal public access.”

New Boat Slips/Dockage & Public Access

The project introduces boat slips where none currently exist. Based on the CCMA's definition of "water-dependent use", the primary use today ("boat storage") is not a water dependent use since no direct access to the water is required, as the boats were trailed from off-site. The current site contains no public access and no docks. A limited portion of the property is used for dock building, which will be more than offset by the introduction of new docks, waterfront access, and space for active water-dependent operators.

Dedicated Interior Space for Additional Water-Dependent Activities

The plan designates interior space specifically tied to Norwalk's zoning definition of a water-dependent uses as set forth in Article 9. The applicant has actively engaged with potential operators who would utilize this space in conjunction with the new dock facilities. Potential water-dependent uses discussed with operators include: Kayak and paddleboard rental and launch, Boat club operations, and oyster hatchery and educational programming. While the applicant cannot secure binding commitments from operators until site plan approval and a clear construction timeline are established, discussions with potential tenants are ongoing. It is not realistic or customary to require lease execution prior to site plan approval, given the estimated two-year construction and delivery horizon.

These contemplated uses directly rely on waterfront access and are consistent with the above statutory definition of water-dependent uses, as well as Norwalk's definition of a water-dependent use. Further, these are in line with the goals and policies set forth in CGS § 22a-92, which the municipal commission is likewise required to follow, including: giving preference to uses and facilities that are dependent on proximity to the water, ensuring that development of the coastal area proceeds in an appropriate manner without disrupting the environment or "sound economic growth", and resolving conflicts "between competing uses" in a manner that minimizes adverse impact but provides "long term and stable economic benefits." These goals are similar to the goals and policies set forth in the Norwalk Harbor Management Plan as well as Norwalk's Plan of Conservation and Development, including the vision that "Norwalk Harbor remains a major center of water-based activities on Long Island Sound, providing opportunities for recreation and commerce: public access for recreation and education, recreational boating...."

Net Increase in Water-Dependent Use and Public Access is also Consistent with Marine District

An increase in public access is also aligned with the goals identified in in the establishment of the of the SD-MC district ("Marine Mixed-Use is allowed to incentivize the kind of investment stakeholders and community members would like to see in this area to advance public benefit priorities...") as well as the Habor Management Plan goals #3 Recreational Uses, #4 Water-Dependent Uses and Facilities, #7 Economic Benefits, and #10 Public Access to Norwalk Harbor ("Provide new water access areas in appropriate locations to increase opportunities for public use and enjoyment of the Harbor.").

While the proposed development may displace an existing water-dependent use, it more than makes up for that by providing boat slips, docks, public access and a new dedicated space for an additional water dependent use. The development creates new opportunities for water dependent uses while simultaneously improving public access and environmental quality. This represents a net benefit to the community, the waterfront, and is aligned with the goals and policies of the CCMA.

in sea level, coastal flooding and erosion patterns on coastal development so as to minimize damage to and destruction of life and property and minimize the necessity of public expenditure and shoreline armoring to protect future new development from such hazards. This property is partially within the VE flood zone, which is a high hazard coastal zone. The proposed building and boardwalk should be relocated out of the VE flood zone, as the current proposal indicates the building foundation is partially within the zone.

- The submitted flood preparedness plan only addresses potential issues on-site. Access to and from the site during flooding events should also be considered. Water Street consistently floods during non-storm events, including during spring tides throughout the year. Aside from residents of the development, this can also impact emergency vehicle access especially during storm events.

We understand that Water Street experiences flooding during spring tides and storm events, which can affect both resident access and emergency vehicles. While these conditions are driven largely by tidal surcharge into the City's storm drain system, our project has been designed to help reduce the burden on that system and to support near-term and long-term improvements.

As noted in our engineering report, our proposed work reduces peak stormwater runoff to the City system by more than 55% and reduces total runoff volume by over 60% compared to existing conditions. In addition, we are advancing a solution to the Water Street flooding by committing to fund the design and provide the materials for a backflow preventer on the Water Street outlet pipe at 130 Water Street, in coordination with Norwalk DPW. As such, we are considering as part of the planning process the potential impact of a rise in sea level and coastal flooding so as to minimize damage, in accordance with the legislative goals and policies set forth in the CCMA. This device would help limit tidal surcharge and reduce nuisance flooding along Water Street during spring tides and minor surge events. This reduction in nuisance flooding would not only benefit our development, but all residents and traffic that uses Water Street, including emergency vehicles.

Finally, our building has been intentionally designed so that the lobby elevations can be easily converted to align with the recommended elevation for a future raised Water Street. This will allow the project to integrate seamlessly with any City-led effort to elevate the roadway and improve long-term resiliency.

- Stormwater should be retained and treated on-site to the maximum extent practicable using appropriate best management practices. The applicant should determine whether or not it is possible to increase the percentage of site area treated to more than 79%.

The site area captured and treated via the stormwater management system (whether permeable walking surfaces or underground infiltration) represent 79% of the total site area. This includes approximately 91% of the total impervious coverage on-site.

Areas not captured include: 1) the streetscape to the front of the building which, as is typical, sheet flows toward the right-of-way and into the City drainage infrastructure and 2)

landscaped courtyard areas east of the building that either sheet flow directly to the harbor or are captured via low-lying area drains and piped to the harbor. These areas include substantial landscaping improvements that do not exist on-site under existing conditions.

With this in mind, the site drainage management system, as designed, meets the zoning (75% of the site area treated) and DPW drainage (reduction in flows and volumes up to and including the 100-year storm) requirements. This is also aligned with the watershed management planning considerations set forth in the Connecticut Coastal Management Manual.

- Staff is concerned about the feasibility of the proposed public access. The six foot wide walkways are narrow and do not appear open or welcoming in the renderings.

The walkways should be widened to at least ten feet and signage should be proposed that clearly identifies this as public access. This will require a signage manual be submitted to the Commission for review. Coastal public access areas should always be carefully designed and include appropriate amenities to provide attractive and usable public facilities. It's also important to ensure that coastal public access is ensured through a duly executed and legally binding access easement.

The applicant acknowledges staff's concern and emphasizes that the project has been carefully designed to ensure that public access to the waterfront is clear, inviting, and usable. While the building can be accessed from both the north and south sides, the primary public entrance is via the central walkway, which incorporates a grand staircase and a direct pathway to the waterfront. The intent is to create a strong visual and physical connection that naturally draws the public toward the harbor. This central pathway also includes an elevator for ADA access to the waterfront.

In addition to the primary, central pathway, the accessory access points on the north and south sides, at six feet in width, meet accessibility requirements and are proportioned to the scale of the site while balancing other critical design elements. The applicant believes the combination of width, landscaping, and articulation creates an open and welcoming environment. That said, we are willing to collaborate with staff to refine the design details, including signage, and wayfinding to ensure the public clearly understands and feels invited to utilize the waterfront access. We have also designed the north access path so that our neighbors to the north can easily add width to the access and create an additional grand path from Water Street to SONO Seafood. Should our neighbors wish to connect to our access path we will cooperate with their efforts; however, they would need to obtain P&Z approval and construct the additional path.

The applicant is also prepared to provide a legally binding access easement as required, ensuring permanent public access consistent with CCMA policy.

- Staff would recommend moving the boardwalk West (out of the VE flood zone) and installing a robust buffer of salt-tolerant native plantings along the bulkhead.

The applicant appreciates staff's recommendation and the concern for resilience within the VE flood zone. However, the purpose of the proposed boardwalk is to maximize public access to

the waterfront, consistent with the goals of the CCMA and the City's waterfront planning policies. Relocating the boardwalk away from the water's edge would significantly reduce its utility and diminish the visual and physical connection to the harbor that this amenity is intended to provide.

The proposed building foundations are located entirely in the AE Zone and in accordance with the flood hazard standards of the City of Norwalk. Retail and office space is at elevation +14' whereas the existing BFE of the AE Zone is 12'. With the habitable space at or above elevation +19', the project is being planned and designed to minimize the potential impacts on life and property considering future sea level rise as there is at least 5 additional feet of safety factor.

While the boardwalk is located in the VE Zone, there are no zoning or FEMA regulations that restrict it. Water-dependent access structures are typically located in the VE Zone due to their functional requirements of accessing the water at the shoreline where most VE Zones are present. The boardwalk foundation will be designed appropriately for the flood loads including sea level rise contribution such that damage potential is minimal. As an accessory structure, it is not anticipated that its position in the VE Zone will risk life and property as it would not be expected to be in use during times of storms.

The boardwalk will be designed and constructed to meet current standards for safety and durability within coastal environments and will be properly secured to mitigate risk in storm events.

- Plans and details are needed pertaining to the proposed reconstruction of the bulkhead wall.

See attached for proposed bulkhead.

- The applicant should demonstrate that the proposed boat slips are feasible given the bathymetry along the existing bulkhead and the location of the Federal Navigation Channel.

See attached for proposed dock slips demonstrating feasibility of docks in relation to the Federal Navigation Channel.

- The Coastal Site Plan Application form indicates four applicable adverse impacts. However, the associated Coastal Area Management Assessment submitted by the applicant describes these four impacts as favorable. Revisions must be completed to accurately reflect the proposal across submitted materials.

The Coastal Site Plan Application form application lists 4 items as applicable: CGS § 22a-93(15)(D), CGS § 22a-93(15) (C), CGS § 22a-93(15)(A) and CGS § 22a-93(15)(E). The CAM Assessment report lists all the potentially relevant/applicable items, and makes clear that the items are checked because there is a positive impact on these items, not because of a negative impact. Therefore, the applicant will revise the CAM form to "Not Applicable" as necessary, since these items are relevant only for their positive impact and these factors do not degrade or otherwise have a negative impact on any of the applicable items, which is the definition of "Adverse impact on costal resources" under the CCMA.



CITY OF NORWALK
Christine Cardascia, P.E.
Assistant Engineer /
Department of Engineering
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Norwalk, CT 06851
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www.norwalkct.gov
ccardascia@norwalkct.gov
dpwpermits@norwalkct.gov

July 30, 2025

Sent via email to: ablank@wrkk.com

Adam Blank, Esq.
Wofsey Rosen Kweskin & Kuriansky, LLC

RE: 108 Water Street (District 02, Block 84, Lot 18)
Proposed Mixed-Use Development
Department of Engineering's Plan Review Comments

Dear Mr. Blank:

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 "Zoning Site Development Plan Depicting 108 water Street Norwalk, CT Prepared for 108 Water Street L.L.C.," prepared by Redniss and Mead, Inc., dated 06/13/2025
- Engineering Report titled "108 Water Street Development Site Engineering Report," prepared by Redniss and Mead, Inc., dated 06/13/2025

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. Storm drain systems within covered parking areas must be designed, inspected, and final acceptance signed and sealed by a professional engineer licensed in the State of Connecticut. The storm drain systems shall have pretreatment (i.e. oil/water separator) and discharge into the sanitary sewer system in accordance with the State of Connecticut Department of Energy and Environmental Protection (CTDEEP) and City of Norwalk requirements. **Please note, no floor drains that are proposed in covered parking areas shall be below the 100-year flood elevation, as to not overburden the City Sewer system.** Storm drain system within uncovered parking areas shall be pretreated and discharge into the storm drain system. Please revise the plans accordingly.
2. The model currently utilizes only the weir as the primary outlet device for both chamber systems. The City believes the model may be more accurate if the 12" and 15" pipes are included as part of the outlet configuration. Please clarify and or revise accordingly.

3. In the HydroCAD report, Infil #2 has a weir invert of 7.3' while the plans call for the invert of 7.2'. Please revise accordingly.
4. Any proposed drainage structures located within the City right-of-way, including manholes, shall not include internal ladders.
5. Please update the catch basin detail to the most recent City of Norwalk Standard Detail Drawing.
6. Any existing sanitary sewer lateral connections or proposed disconnections must be clearly shown on the plans, including details for capping, abandonment, or new connection work in accordance with City standards.
7. For Type B driveways, the back of apron shall be a minimum of 4 feet in width. Please revise the driveway detail to comply with this requirement.
8. Please confirm that a minimum clearance of 4 feet is maintained between the proposed tree wells and all adjacent fixed infrastructure, including but not limited to fire hydrants and light poles, to ensure compliance with accessibility requirements.
9. The proposed construction entrance appears to conflict with an existing traffic mast arm and signal infrastructure. Please confirm and revise accordingly.
10. 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.
11. 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

MEMORANDUM**August 15, 2025**

TO: Christine Cardascia, P.E., Assistant Engineer - DPW
FROM: Vincent J. Hynes, P.E., Redniss & Mead
CC: Adam Blank, Esq., Wofsey Rosen Kveskin & Kuriansky, LLC
RE: **108 Water Street: District 2, Block 84, Lot 18**
Proposed Mixed-Use Development
DPW Plan Review Comments

This memorandum is in response to comments received via your memo sent on July 30, 2025 regarding the recent submission of the plans for 108 Water Street. 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 – Storm drain systems within covered parking areas must be designed, inspected, and final acceptance signed and sealed by a professional engineer licensed in the State of Connecticut. The storm drain systems shall have pretreatment (i.e. oil/water separator) and discharge into the sanitary sewer system in accordance with the State of Connecticut Department of Energy and Environmental Protection (CTDEEP) and City of Norwalk requirements. Please note, no floor drains that are proposed in covered parking areas shall be below the 100-year flood elevation, as to not overburden the City Sewer system. Storm drain system within uncovered parking areas shall be pretreated and discharge into the storm drain system. Please revise the plans accordingly.

Understood. It is not proposed to have any floor drains within the lower level of parking as the elevation is below the 100-year flood elevation.

Should the design progress and include floor drains on the upper level of parking, those drains will be collected and treated with an oil/water separator prior to discharging into the sanitary sewer system.

2 – The model currently utilizes only the weir as the primary outlet device for both chamber systems. The City believes the model may be more accurate if the 12" and 15" pipes are included as part of the outlet configuration. Please clarify and or revise accordingly.

Please refer to the revised hydrocad model results attached hereto. Each infiltration system outlet has been modified to represent the weir device routed to a primary outlet consisting of downstream pipes. A 12" pipe is sufficient for the infiltration #1 outlet, while an update was made to include an 18" pipe for the infiltration #2 outlet.

3 – In the HydroCAD report, Infil #2 has a weir invert of 7.3' while the plans call for the invert of 7.2'. Please revise accordingly.

The callout for meter manhole #2 (MMH#2) on sheet SE-2 and corresponding detail on sheet SE-7 are revised to include the weir elevation of 7.3'.

4 – Any proposed drainage structures located within the City right-of-way, including manholes, shall not include internal ladders.

Noted. The design plans include a doghouse manhole (MH#1) for connection to the City system. A detail of the doghouse manhole is provided on the original sheet SE-7 and does not include internal ladders.

5 – Please update the catch basin detail to the most recent City of Norwalk Standard Detail Drawing.

The City standard catch basin detail has been removed from plan sheet SE-8 as there are no new catch basins proposed within the City right-of-way.

6 – Any existing sanitary sewer lateral connections or proposed disconnections must be clearly shown on the plans, including details for capping, abandonment, or new connection work in accordance with City standards.

Site plan sheet SE-4 (Site Removals Plan) includes notation that the contractor shall verify existing sanitary sewer lateral locations to be abandoned, and the laterals shall be capped within two feet of the existing sanitary sewer mains in accordance with WPCA requirements.

7 – For Type B driveways, the back of apron shall be a minimum of 4 feet in width. Please revise the driveway detail to comply with this requirement.

It is understood that the City is revising the standard City detail. With that, the detail on sheet SE-6 is revised to indicate the required 4' width for the back of the apron.

8 – Please confirm that a minimum clearance of 4 feet is maintained between the proposed tree wells and all adjacent fixed infrastructure, including but not limited to fire hydrants and light poles, to ensure compliance with accessibility requirements.

Please refer to the revised site plan sheet ZSP-1A which reflects a modified streetscape design and includes pertinent dimensions indicating at least 4' of clearance between proposed streetscape elements and existing infrastructure to remain.

9 – The proposed construction entrance appears to conflict with an existing traffic mast arm and signal infrastructure. Please confirm and revise accordingly.

It is intended to utilize the existing curb cut as the construction entrance, which lies between the existing traffic poles. The revised site plan sheet SE-3 includes a callout indicating that the construction access gate shall align with the existing driveway curb cut.

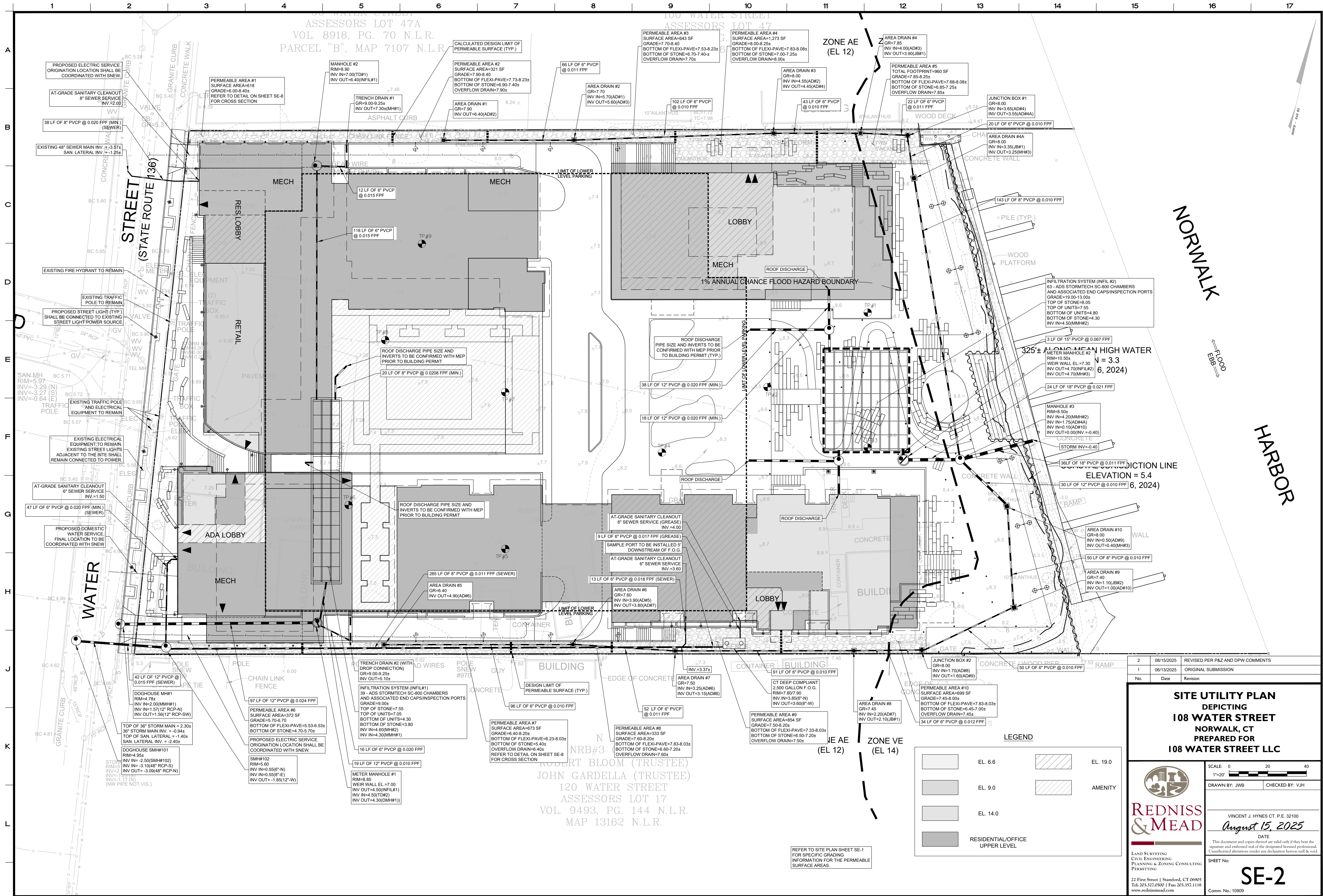
10 – The plan shall be revised to include the driveway sight line distance to ensure no obstruction in excess of two (2) feet high are within the sight line triangle, in conformance with the City's Roadway Standards.

Site plan sheet ZSP-1A includes a sight line triangle at the exit driveway of the site. No obstructions in excess of two feet high are within the triangle.

11 – 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.



No.

Date

Revision

2

08/15/2025

REVISED PER P&Z AND DPW COMMENTS

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.rednissandmead.com

SCALE: 0 20 40

1"=20'

DRAWN BY: JWB

CHECKED BY: VJH

VINCENT J. HYNES CT. P.E. 32100

August 15, 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 and void.

SHEET No:

SE-2

Comm. No.: 10909

Page 827 of 906

MEMORANDUM**August 15, 2025**

TO: Ralph Kolb, P.E., Sr. Environmental Engineer - WPCA
FROM: Vincent J. Hynes, P.E., Redniss & Mead
CC: Adam Blank, Esq., Wofsey Rosen Kweskin & Kuriansky, LLC
RE: **108 Water Street: District 2, Block 84, Lot 18**
Proposed Mixed-Use Development
WPCA Plan Review Comments

This memorandum is in response to comments received via your memo sent on August 13, 2025 regarding the recent submission of the plans for 108 Water Street. 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 – The plans shall be revised to more clearly show the pipe size, material, and slope for the proposed sanitary sewer lateral in the City ROW.

Refer to revised site plan sheet SE-2 for preliminary pipe sizing and slopes with respect to the sanitary sewer lateral. Final sizes to be confirmed prior to the request for a building permit.

2 – The Site Utility Plan shall include the location of all existing utility mains, both in the property and the right-of-way, as well as the proposed location of the service connection(s). The Utility Plan shall also depict all existing utilities to remain and/or be abandoned.

Refer to revised site plan sheet SE-2 for existing utility main information, including callouts for existing utilities which will remain within the streetscaped frontage. Existing utility services to be removed are noted on the site removals plan, sheet SE-4 and reference is made that the contractor shall coordinate with the pertinent utility companies to remove and/or abandon existing site laterals.

3 – WPCA recommends that a manhole or other appropriate means of access be installed on the private sewer lateral for maintenance activities (cleaning, rodding), televising, or bypassing flow from the lateral.

Refer to revised site plan sheet SE-2 for on-site sewer manhole and cleanout locations. At minimum, cleanouts will be located at the lateral outside of the building perimeter for each lateral connection.

4 – Please confirm if proposed wastewater discharge from the site requires a Connecticut Department of Energy and Environmental Protection Miscellaneous Industrial Users (MIU) or Significant Industrial Users (SIU) General Permit.

A pool is proposed which will require a CT DEEP MIU Permit. The permit requirements will be reviewed with the team and filed prior to the request for a discharge permit associated with the pool. An SIU is not required to our knowledge based upon the uses proposed.

5 – Please confirm if a Food Preparation Establishment (Class 2, 3 and 4) is proposed, and if so, please include any grease recovery units.

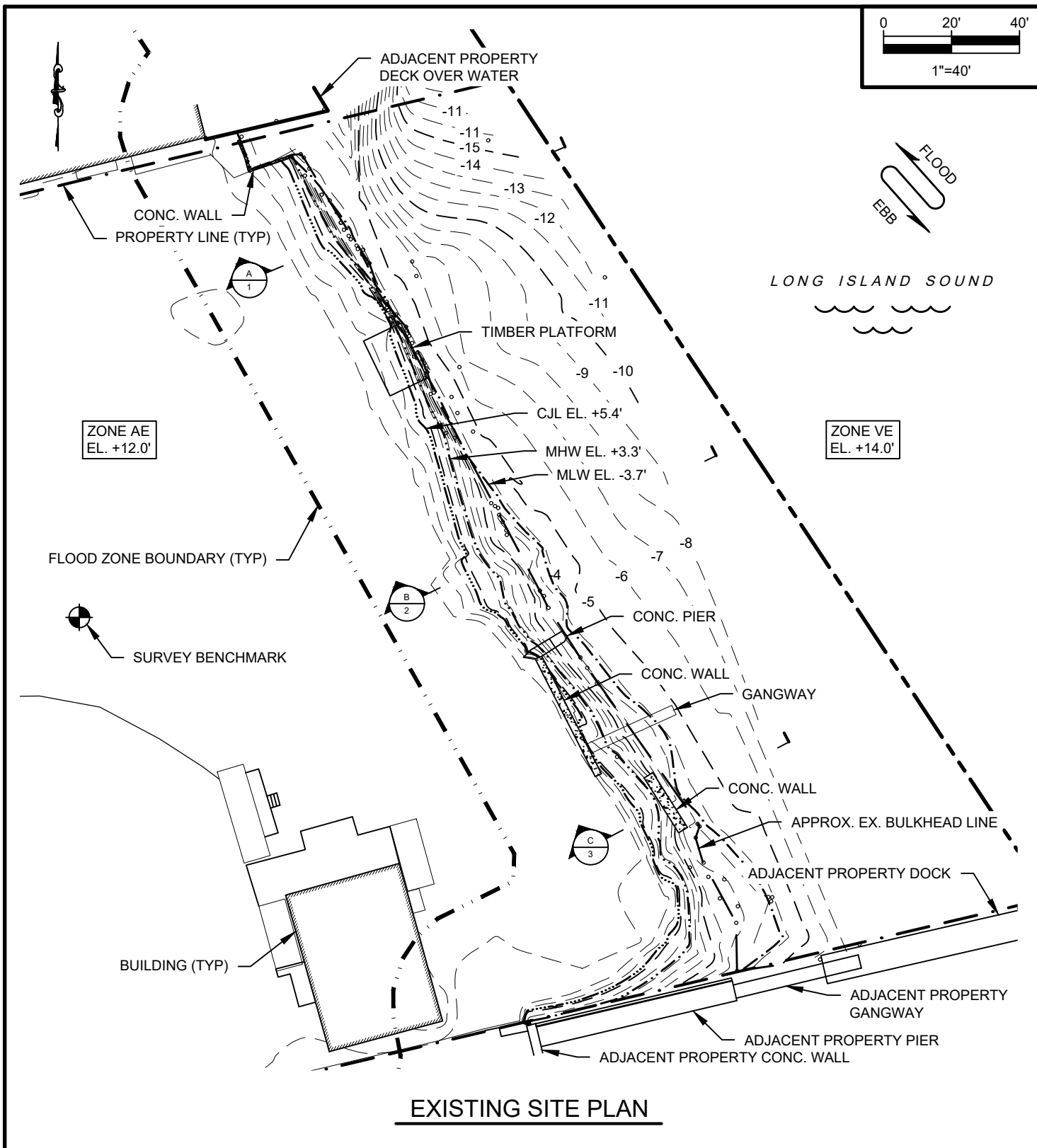
A restaurant establishment is proposed within the building. Refer to revised site plan sheet SE-2 for a preliminary layout of a 2,500-gallon FOG unit (details on revised site plan sheet SE-8). The project team will review the final details of the FOG upon receiving a tenant layout plan.

6 – Please confirm if garage floor drains exist or are proposed as part of the project. If so, an oil / water separator connected to the City's sanitary sewer system would be required and approved by the Connecticut Department of Energy and Environmental Protection and WPCA. If applicable, submit the following:

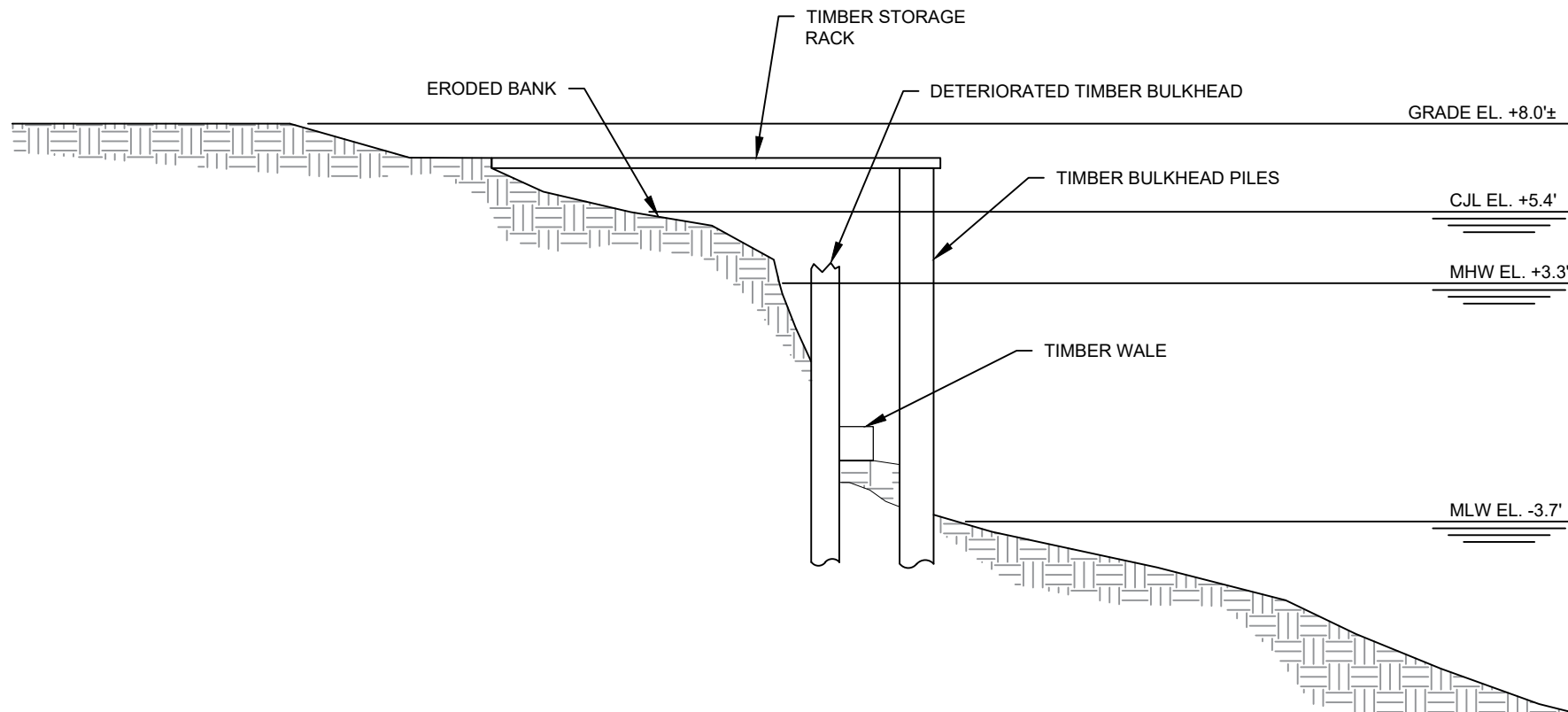
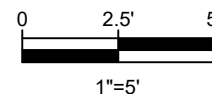
- a. Identify size and location of oil/water separator*
- b. Include oil/water separator details (cut sheets / shop drawings)*
- c. Include all plumbing to/from oil/water separator on drawings.*

It is not proposed to have any floor drains within the lower level of parking as the elevation is below the 100-year flood elevation.

Should the design progress and include floor drains on the upper level of parking, those drains will be collected and treated with an oil/water separator prior to discharging into the sanitary sewer system.



 611 Access Road Stratford, CT 06615 Tel: 203-377-0663 racecoastal.com	Prepared For: SPINNAKER REAL ESTATE PARTNERS, LLC 1 N. WATER STREET, SUITE #100 NORWALK, CT 06854	SEAL: 	Date: 06-16-2025	Rev.:
	Project: WATERFRONT DEVELOPMENT 108 WATER STREET NORWALK, CT 06854	DRAFT	Drawn By: MHM/MJS	Checked By: ADS
			Datum: NAVD 88	Scale: 1"=40'
			Project No.: 2025053	Drawing No.: 1 of 5
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SECTION A



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Prepared For: SPINNAKER REAL ESTATE
PARTNERS, LLC
1 N. WATER STREET, SUITE #100
NORWALK, CT 06854

Project: WATERFRONT DEVELOPMENT
108 WATER STREET
NORWALK, CT 06854

SEAL:

DRAFT

Date:
06-16-2025

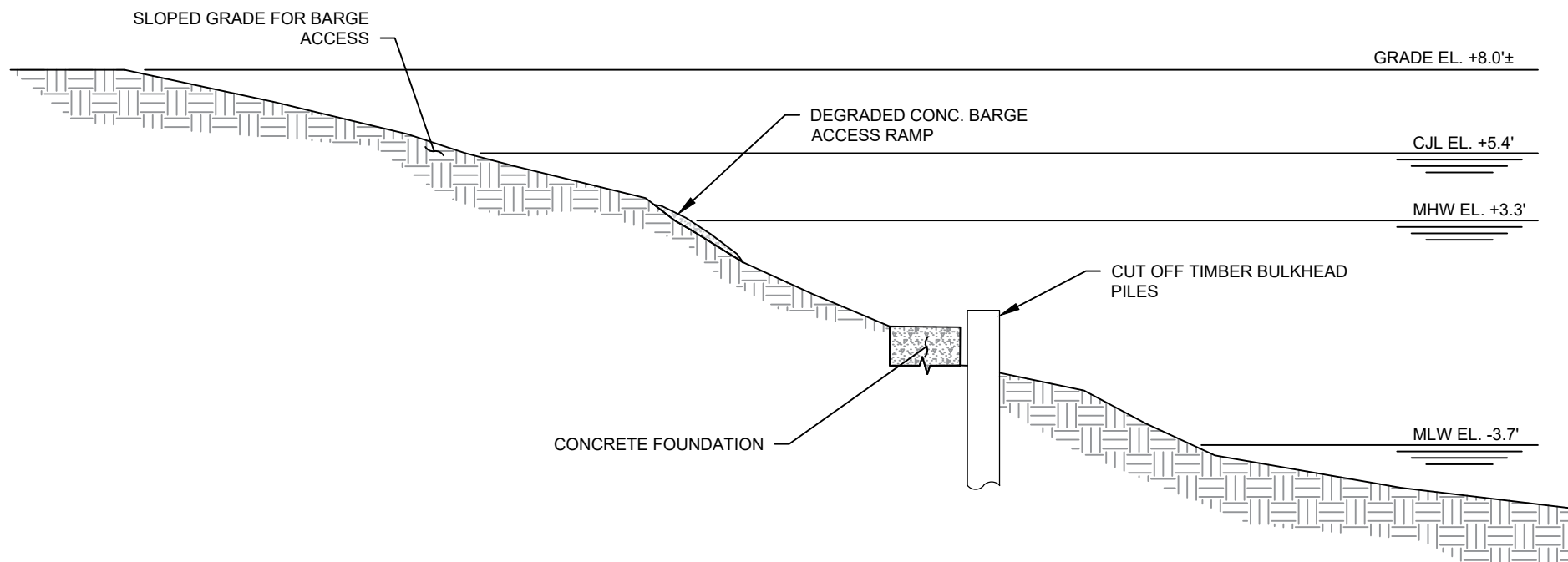
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NAVD 88 1"=5'

Project No.: Drawing No.:
2025053 2 of 5

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SECTION B



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Project: WATERFRONT DEVELOPMENT
108 WATER STREET
NORWALK, CT 06854

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SEAL:

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Date:
06-16-2025

Drawn By:
MHM/MJS

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Project No.:
2025053

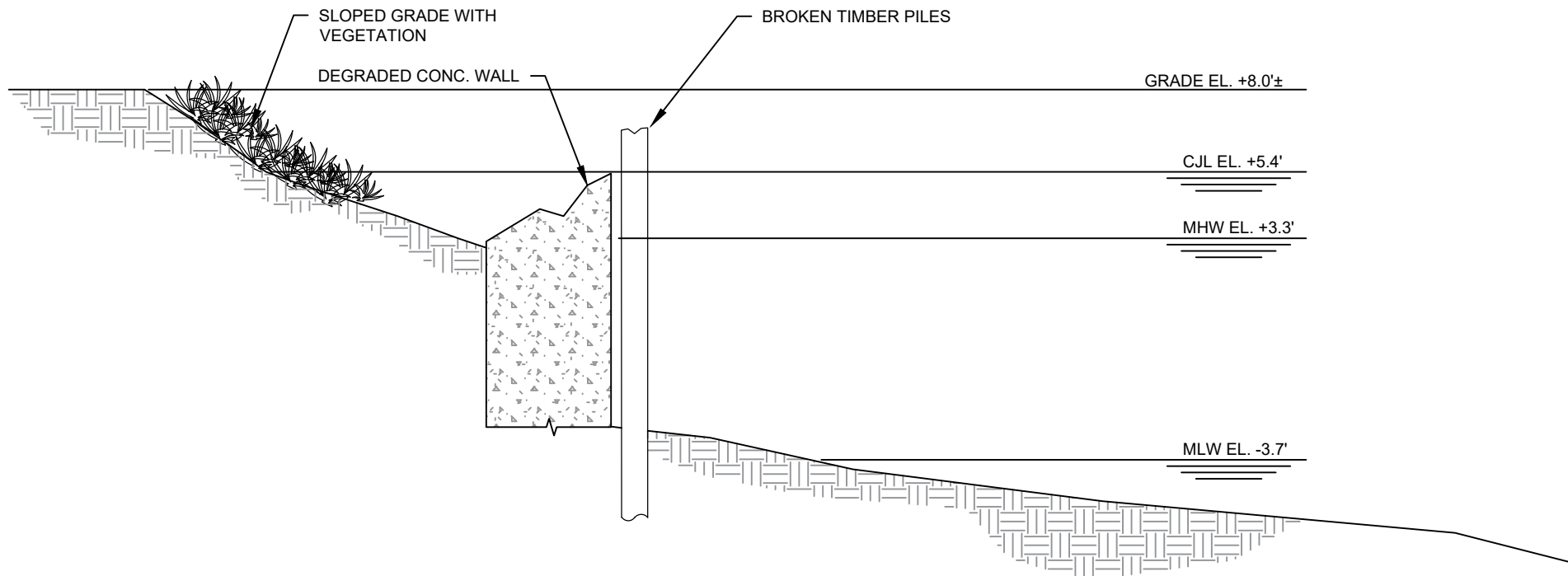
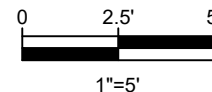
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ADS

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1"=5'

Drawing No.:
3 of 5

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SECTION C



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Prepared For: SPINNAKER REAL ESTATE
PARTNERS, LLC
1 N. WATER STREET, SUITE #100
NORWALK, CT 06854

Project: WATERFRONT DEVELOPMENT
108 WATER STREET
NORWALK, CT 06854

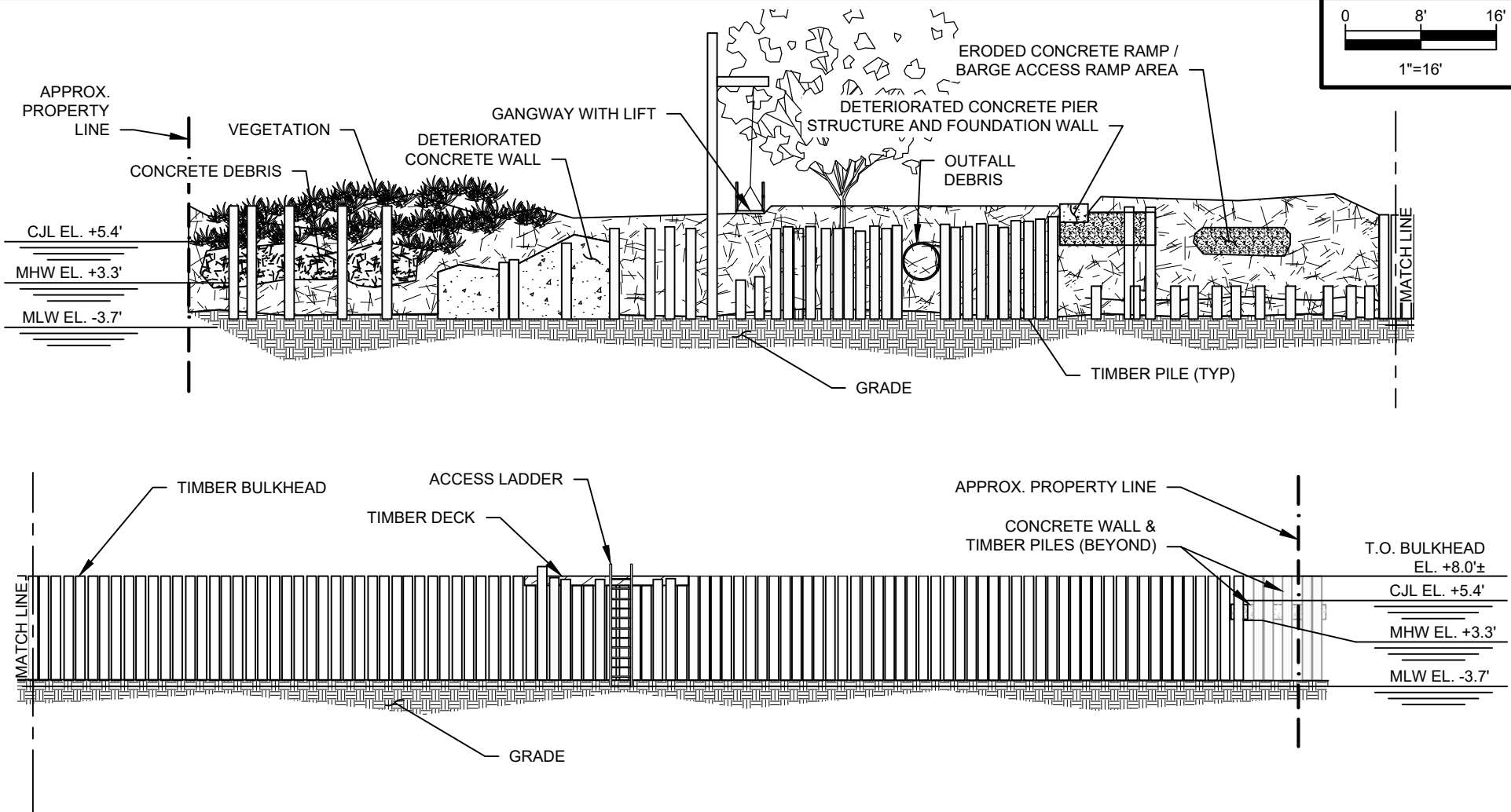
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Datum:	NAVD 88	Scale:	1"=5'
Project No.:	2025053	Drawing No.:	4 of 5



EXISTING ELEVATION PLAN



611 Access Road Stratford, CT 06615
Tel: 203-377-0663 racecoastal.com

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Prepared For: SPINNAKER REAL ESTATE
PARTNERS, LLC
1 N. WATER STREET, SUITE #100
NORWALK, CT 06854

Project: WATERFRONT DEVELOPMENT
108 WATER STREET
NORWALK, CT 06854

SEAL:

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Date:
06-16-2025

Drawn By:
MHM/MJS

Datum:
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Project No.:
2025053

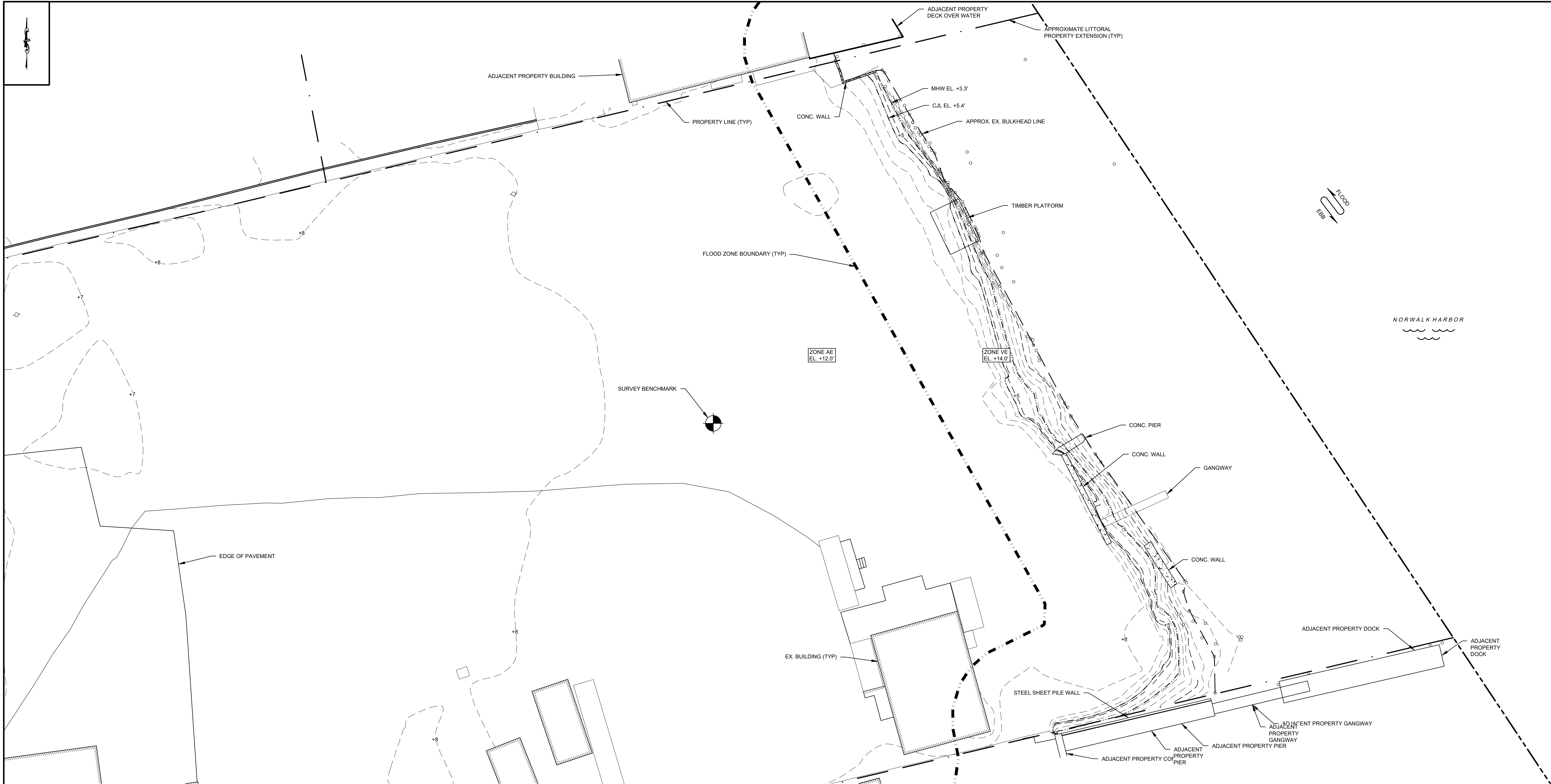
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5 of 5

NOT VALID WITHOUT ENGINEER'S SEAL



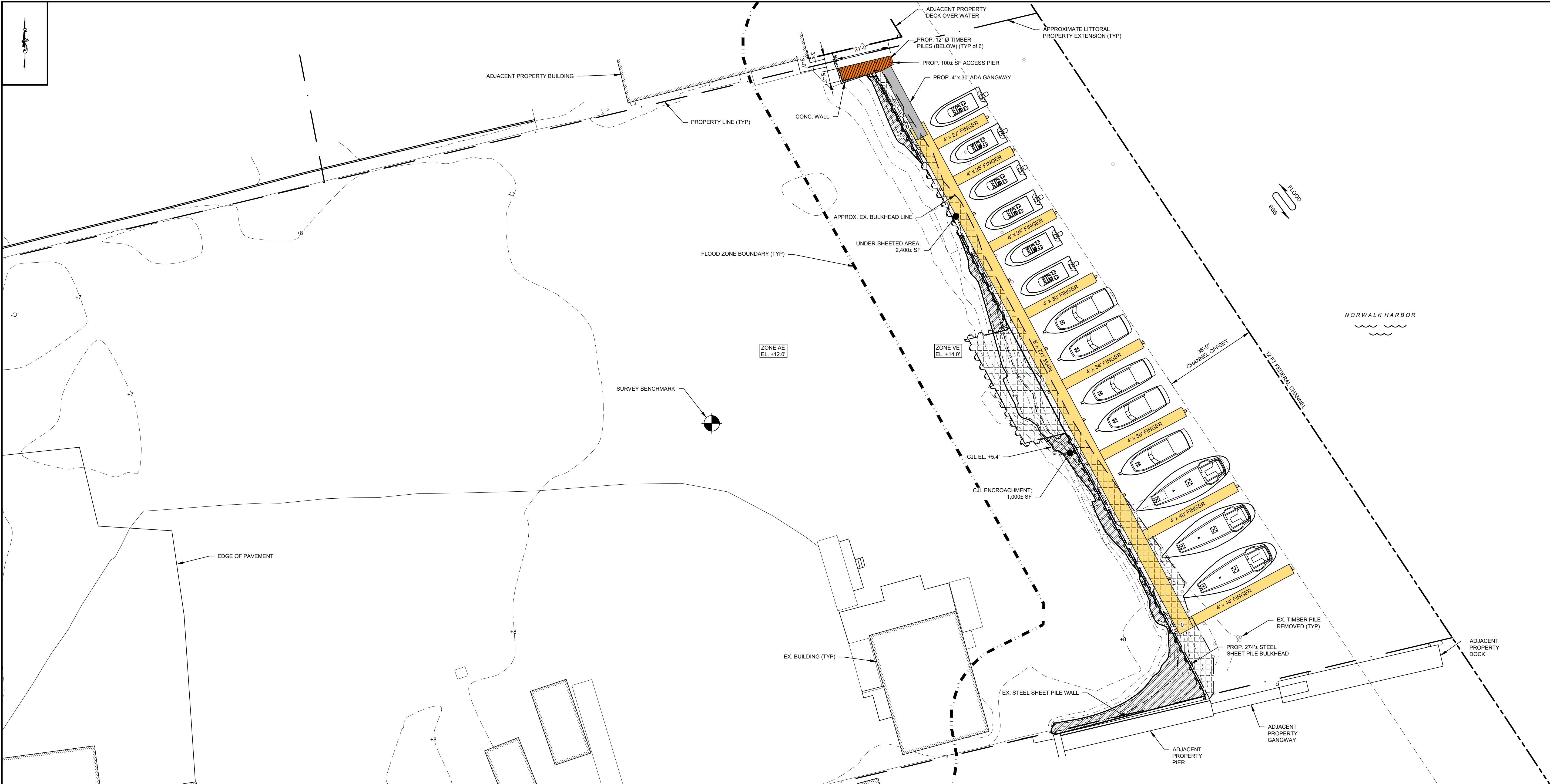
EXISTING SITE PLAN
SCALE: 1" = 20'-0"



REV	DATE	DESCRIPTION
PROGRESS		
NOT FOR CONSTRUCTION		
RACE COASTAL ENGINEERING 611 Access Road Stratford, CT 06615 Tel.: 203-377-0663 racecoastal.com		
OWNERSHIP AND CONDITIONS OF USE: Drawings and Specifications, as instruments of professional service, are and shall remain the property of RACE Coastal Engineering, Inc. Documents are not to be used, in whole or in part, for other projects or purposes or by any other parties than those authorized by contract without the specific written authorization of RACE Coastal Engineering, Inc. The use of this document is contingent upon payment to RACE Coastal Engineering, Inc. for services rendered. Non-payment shall give RACE Coastal Engineering, Inc. the authority to bar document use by any and all parties.		
THIS DRAWING IS COPYRIGHTED		
Prepared for SPINNAKER REAL ESTATE PARTNERS LLC 1 NORTH WATER ST SUITE 100 NORWALK, CT 06854		
Project WATERFRONT DEVELOPMENT 108 WATER ST NORWALK, CT 06854		
Drawing EXISTING SITE PLAN		
Designed MJHS	Drawn MJHS	Checked
Job No. 2025053	Date 5/30/2025	Drawing No. 1 of 3

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SLIP COUNT	
BOAT LENGTH (FT)	QUANTITY
40	3
35	2
30	4
25	4
20	1
TOTAL	14

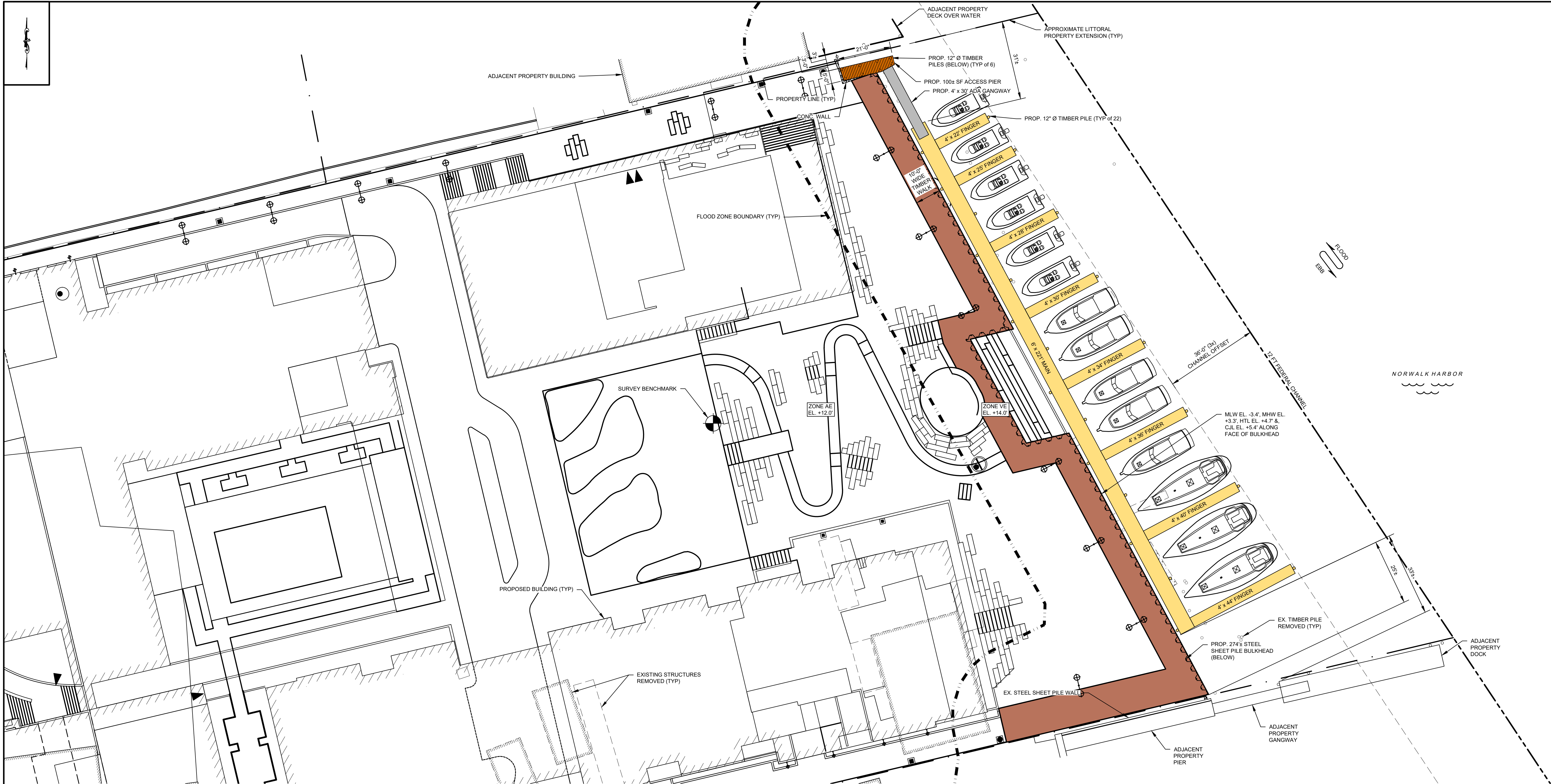


WATERFRONT CONCEPT
SCALE: 1" = 20'-0"

REV	DATE	DESCRIPTION
PROGRESS NOT FOR CONSTRUCTION		
RACE COASTAL ENGINEERING		611 Access Road Stratford, CT 06615 Tel.: 203-377-0663 racecoastal.com
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Project WATERFRONT DEVELOPMENT 108 WATER ST NORWALK, CT 06854		
Drawing WATERFRONT CONCEPT OVERLAID ON EXISTING PLAN		
Designed MJHS	Drawn MJHS	Checked
Job No. 2025053	Date 5/30/2025	Drawing No. 2 of 3

DRAFT

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WATERFRONT CONCEPT
SCALE: 1" = 20'-0"

SLIP COUNT	
BOAT LENGTH (FT)	QUANTITY
40	3
35	2
30	4
25	4
20	1
TOTAL	14



REV	DATE	DESCRIPTION
PROGRESS NOT FOR CONSTRUCTION		
		611 Access Road Stratford, CT 06615 Tel.: 203-377-0663 racecoastal.com
OWNERSHIP AND CONDITIONS OF USE: Drawings and Specifications, as instruments of professional service, are and shall remain the property of RACE Coastal Engineering, Inc. Documents are not to be used, in whole or in part, for other projects or purposes or by any other parties than those authorized by contract without the specific written authorization of RACE Coastal Engineering, Inc. The use of this document is contingent upon payment to RACE Coastal Engineering, Inc. for services rendered. Non-payment shall give RACE Coastal Engineering, Inc. the authority to bar document use by any and all parties.		
THIS DRAWING IS COPYRIGHTED		
Prepared for SPINNAKER REAL ESTATE PARTNERS LLC 1 NORTH WATER ST SUITE 100 NORWALK, CT 06854		
Project WATERFRONT DEVELOPMENT 108 WATER ST NORWALK, CT 06854		
Drawing WATERFRONT CONCEPT OVERLAID ON PROPOSED DEVELOPMENT		
Designed MJHS	Drawn MJHS	Checked
Job No. 2025053	Date 5/30/2025	Drawing No. 3 of 3

DRAFT

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Flood Preparedness Plan

for

108 Water Street, Norwalk, CT

prepared for

108 Water Street, LLC

issued on

August 18, 2025

Prepared by Redniss & Mead, Inc.

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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).

As part of the emergency communication procedures, ownership will enroll tenants in a text message alert system to provide timely updates in the event of a flood or severe weather emergency. This system will allow management to send critical safety instructions, evacuation notices, and other urgent information directly to tenants' mobile devices.

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 Flood 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. Electrocutation 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.

Figure 1

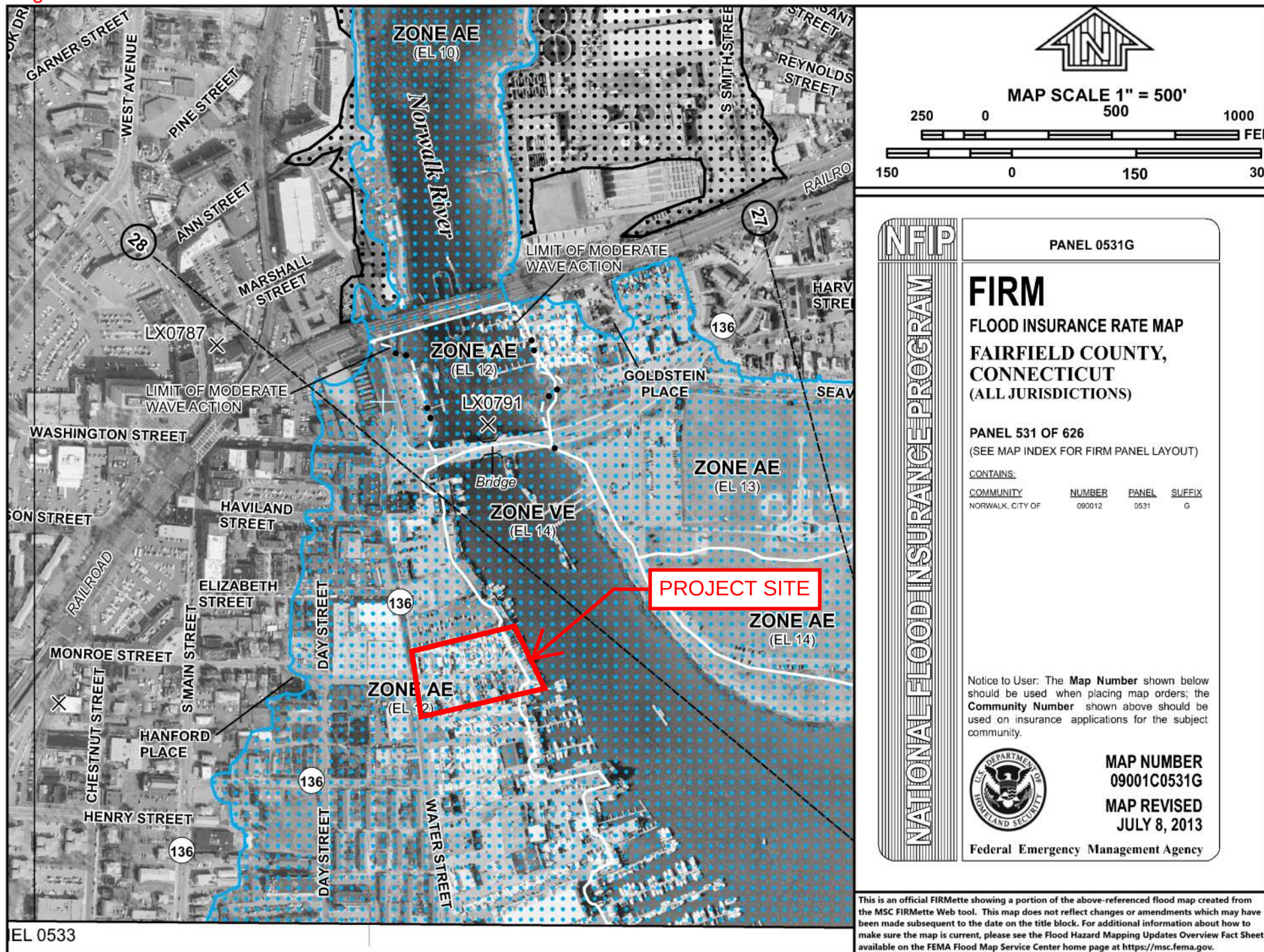
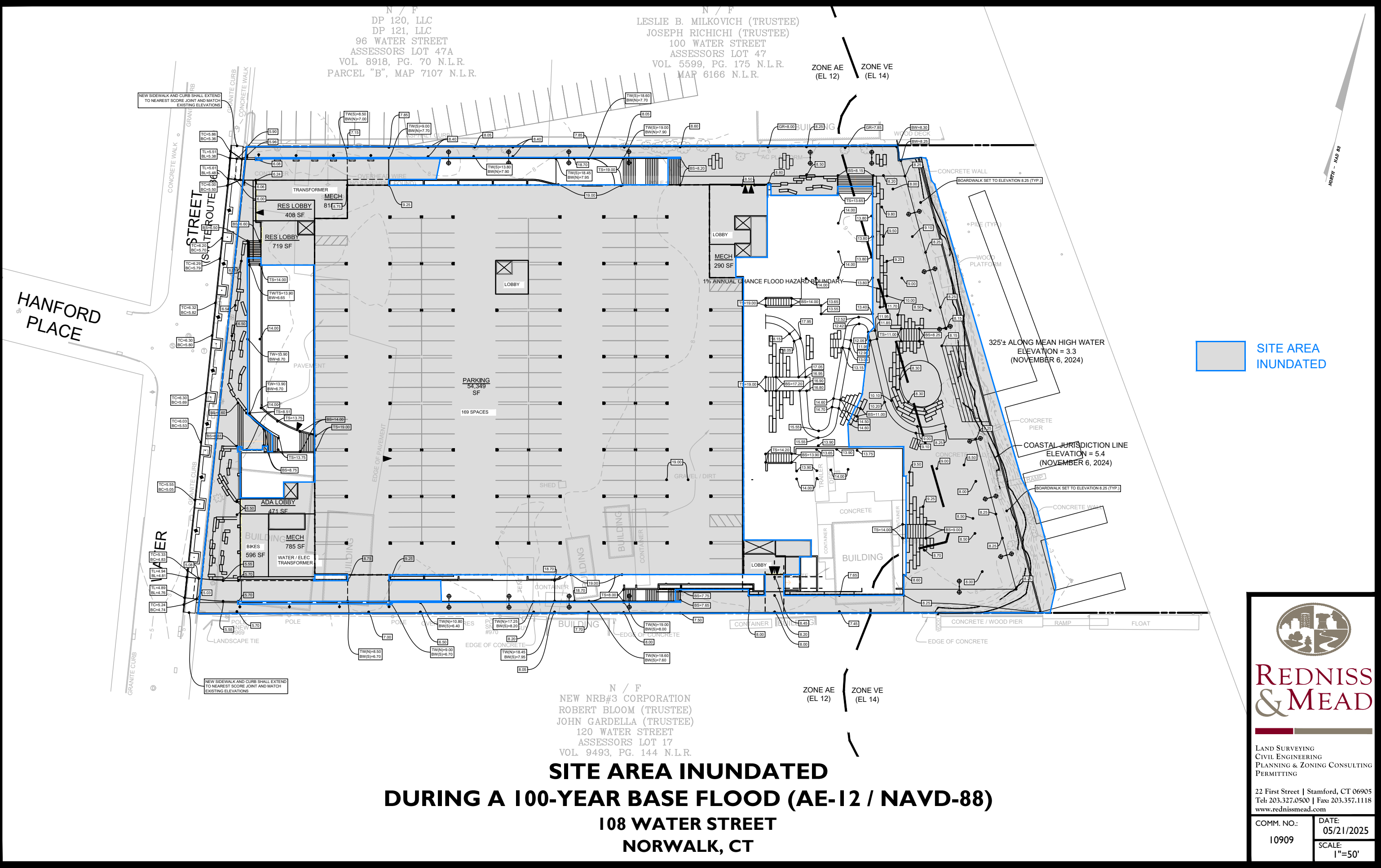
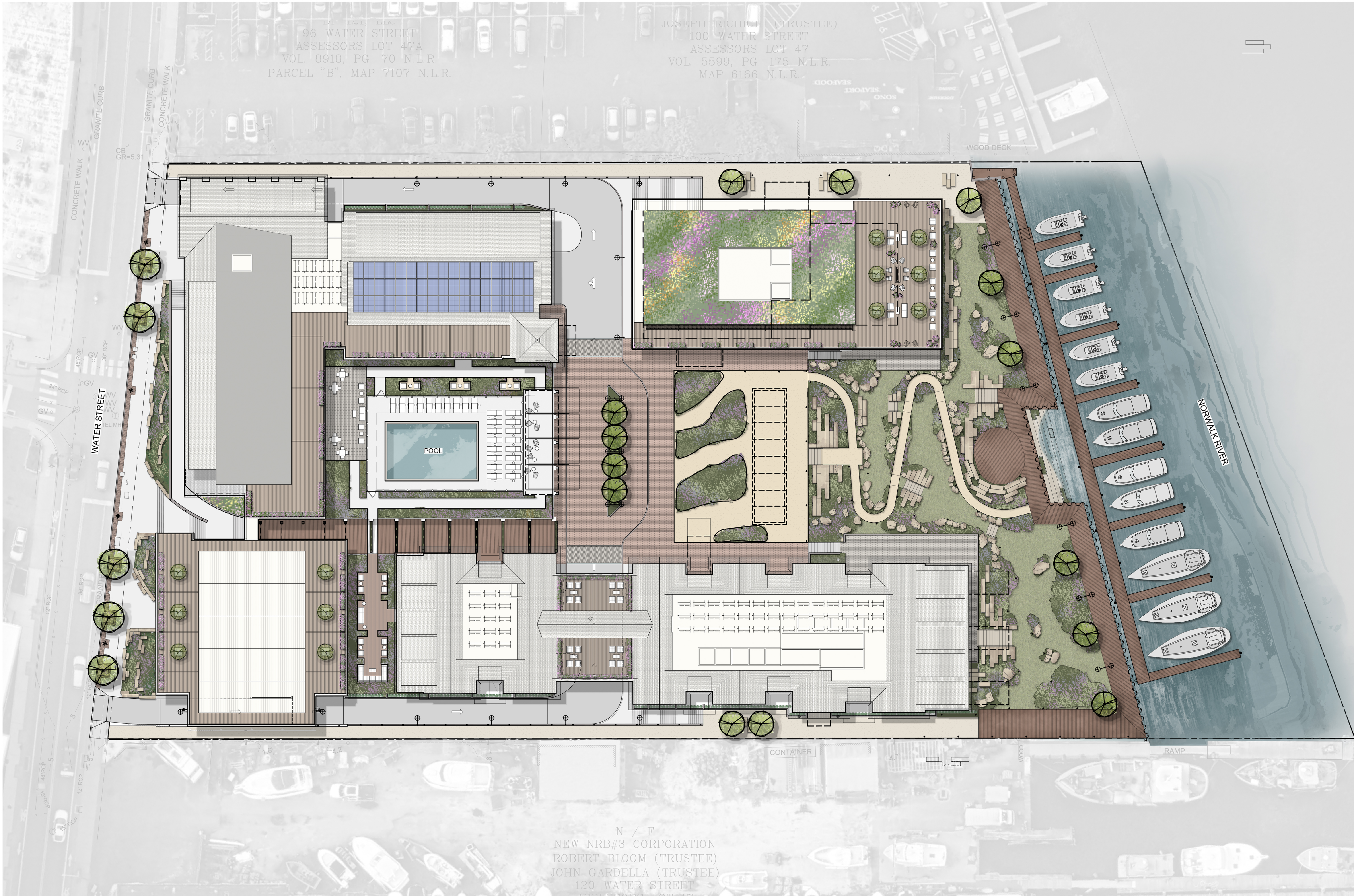


Figure 2



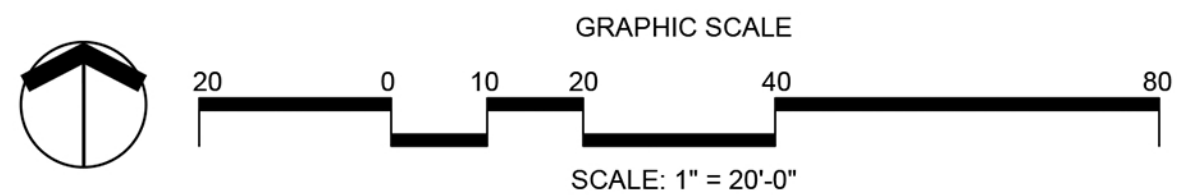
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96 WATER STREET
ASSESSORS LOT 47A
VOL. 8918, PG. 70 N.L.R.
PARCEL "B", MAP 7107 N.L.R.

JOSEPH RICHICHI (TRUSTEE)
100 WATER STREET
ASSESSORS LOT 47
VOL. 5599, PG. 175 N.L.R.
MAP 6166 N.L.R.

N / F
NEW NRB#3 CORPORATION
ROBERT BLOOM (TRUSTEE)
JOHN GARDELLA (TRUSTEE)
120 WATER STREET



erla

landscape architecture, llc

11a N Main Street
SoNo, CT 06880
203.354.6500
www.erlains.com

NO.	ISSUE	DATE
7		
6		
5		
4		
3		
2		
1	MUNICIPAL REVIEW	25.08.15

PROJECT
108 WATER STREET

DWG TITLE
SITE PLAN
RENDERING

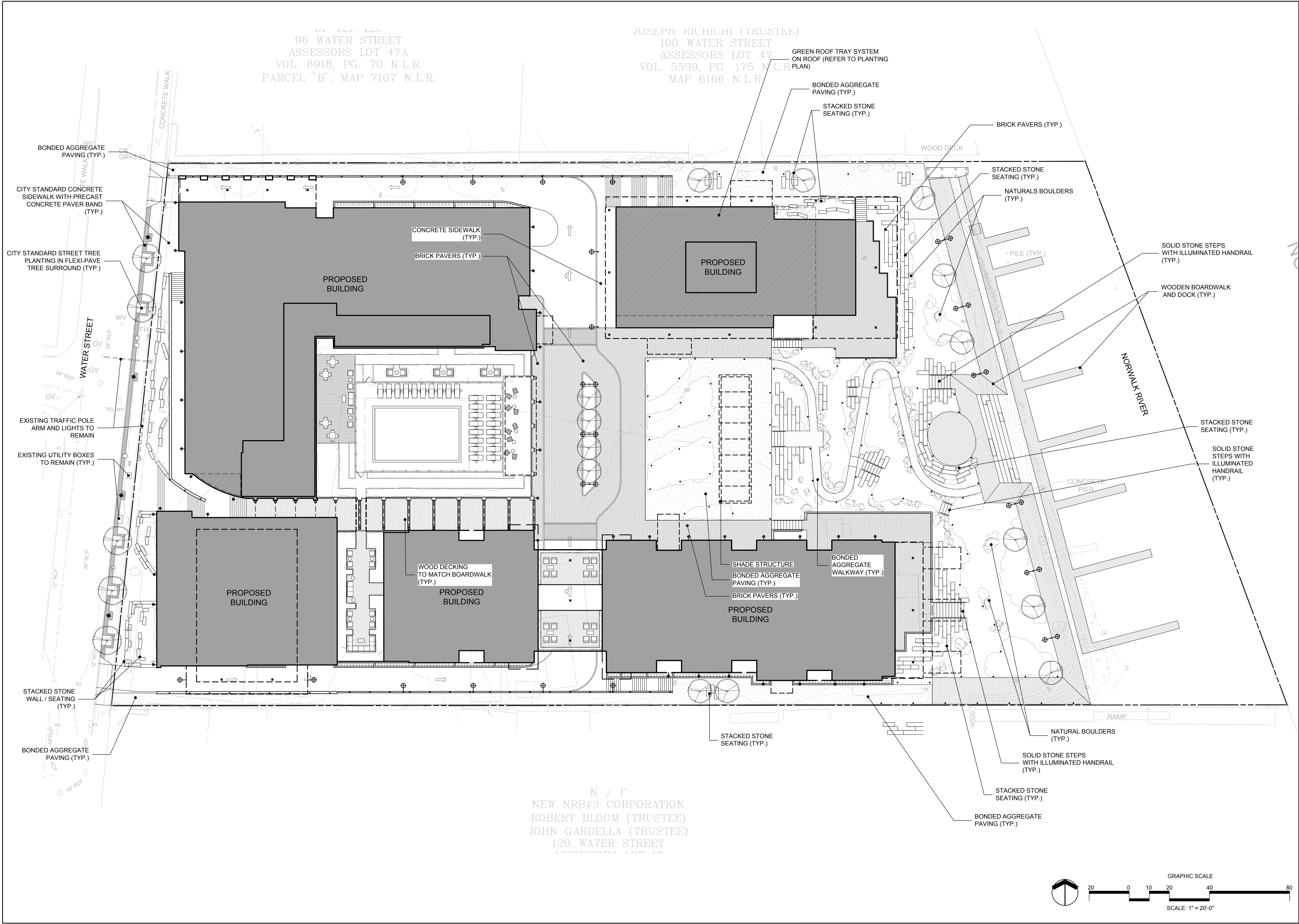
JOB NO.

DATE
2025.06.13

SCALE
1"=20'-0"

SEAL OF THE TOWN OF NORWALK, CONNECTICUT

SPL-R



DI 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.

N / F
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 ROBERT BLOOM (TRUSTEE)
 JOHN GARDELLA (TRUSTEE)
 120 WATER STREET
 ASSESSORS LOT 48

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NO.	ISSUE	DATE
7		
6		
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4		
3	MUNICIPAL REVIEW - REVISED	25.08.15
2	MUNICIPAL REVIEW	25.06.13
1		

108 WATER STREET

WATER STREET NORWALK, CT

PROJECT

OVERALL SITE MATERIALS PLAN

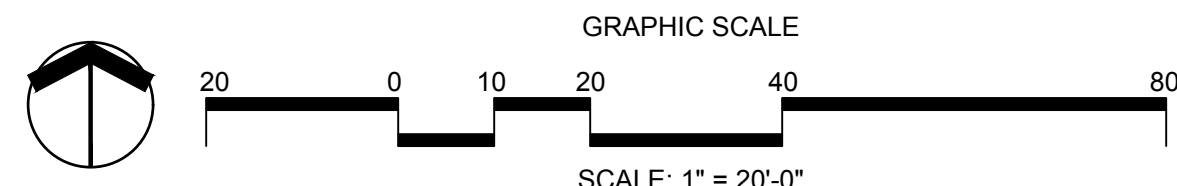
DATE

2025.06.13

SCALE

1"=20'-0"

SPL-1.0



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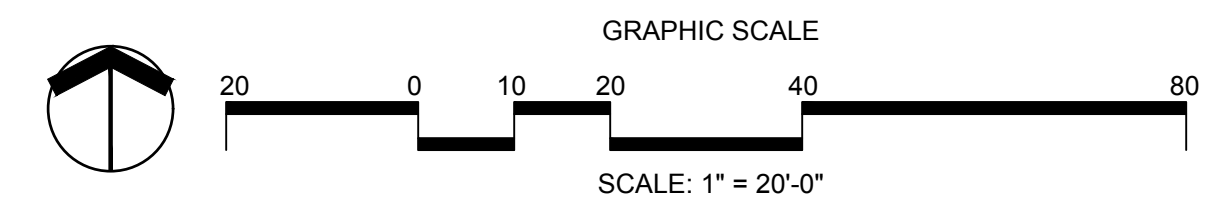
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1	MUNICIPAL REVIEW	25.08.13

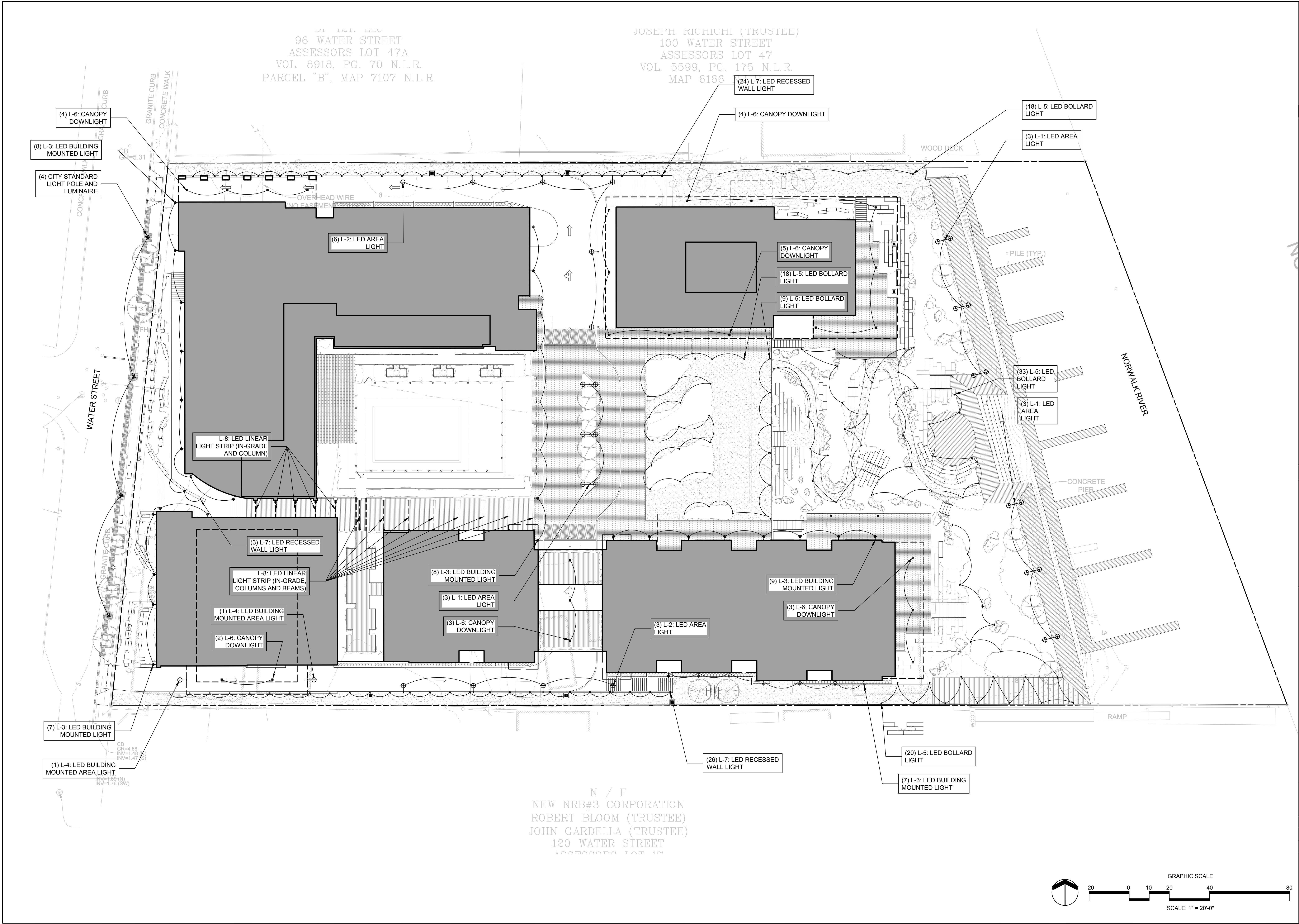


108 WATER STREET
WATER STREET
NORWALK, CT

PROJECT	OVERALL PLANTING PLAN
DWG TITLE	
JOB NO.	
DATE	
SCALE	2025.06.13 1"=20'-0"

SPL-2.0





DI 121, LLC
96 WATER STREET
ASSESSORS LOT 47A
VOL. 8918, PG. 70 N.L.R.
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NO.	ISSUE	DATE
7		
6		
5		
4		
3	MUNICIPAL REVIEW - REVISED	25.08.15
2	MUNICIPAL REVIEW	25.06.13
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PROJECT
108 WATER STREET
WATER STREET
NORWALK, CT

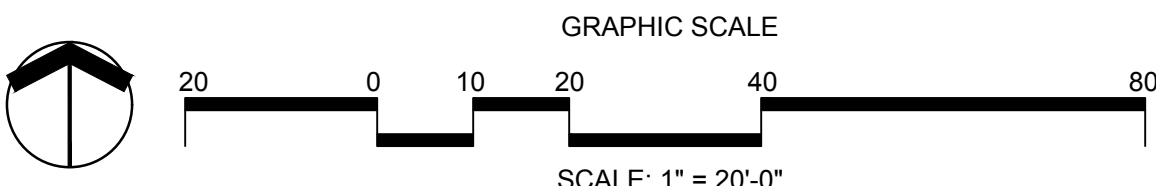
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OVERALL
SITE LIGHTING
PLAN

JOB NO.

DATE
2025.06.13

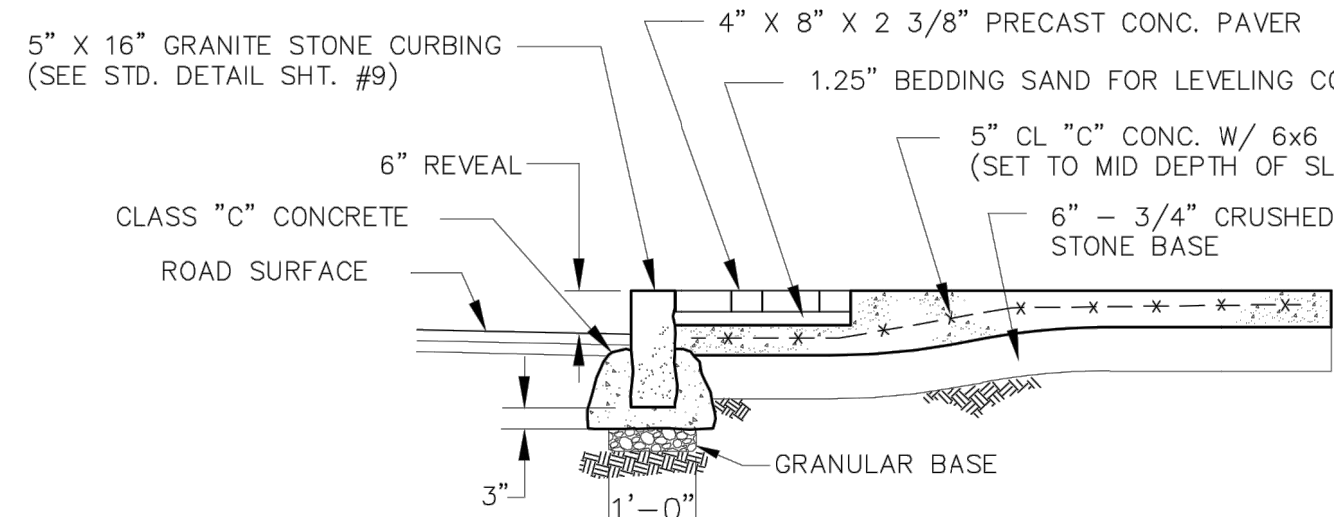
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SPL-3.0



SITE MATERIALS SCHEDULE

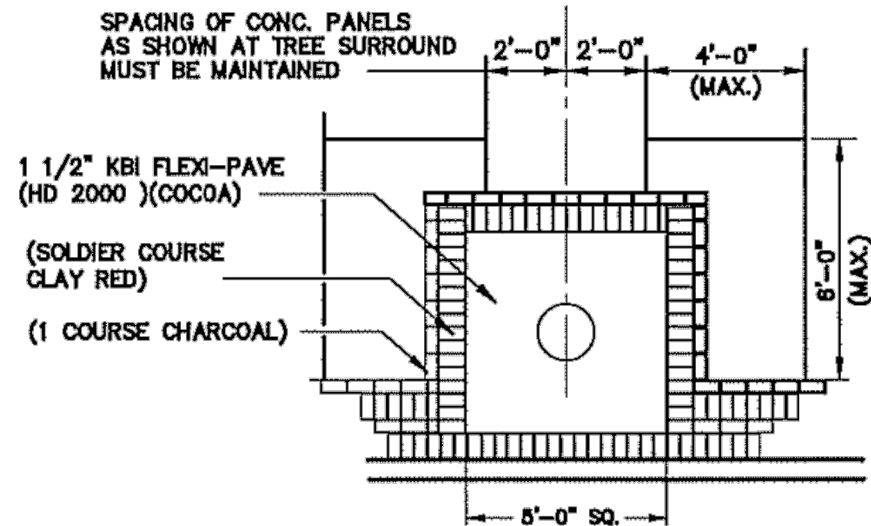
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A	CONCRETE SIDEWALK: 4000 PSI
B	CITY STANDARD BRICK PAVER - TYPE: HOLLAND STONE, SIZE: 4" x 8" (NOM.), COLORS: RED AND CHARCOAL. DISTRIBUTED BY O&G INDUSTRIES, CONTACT ANDREW AMATURO, PHONE: 860-559-3400.
C	BONDED AGGREGATE WALKWAY - STONE BLEND: RI 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

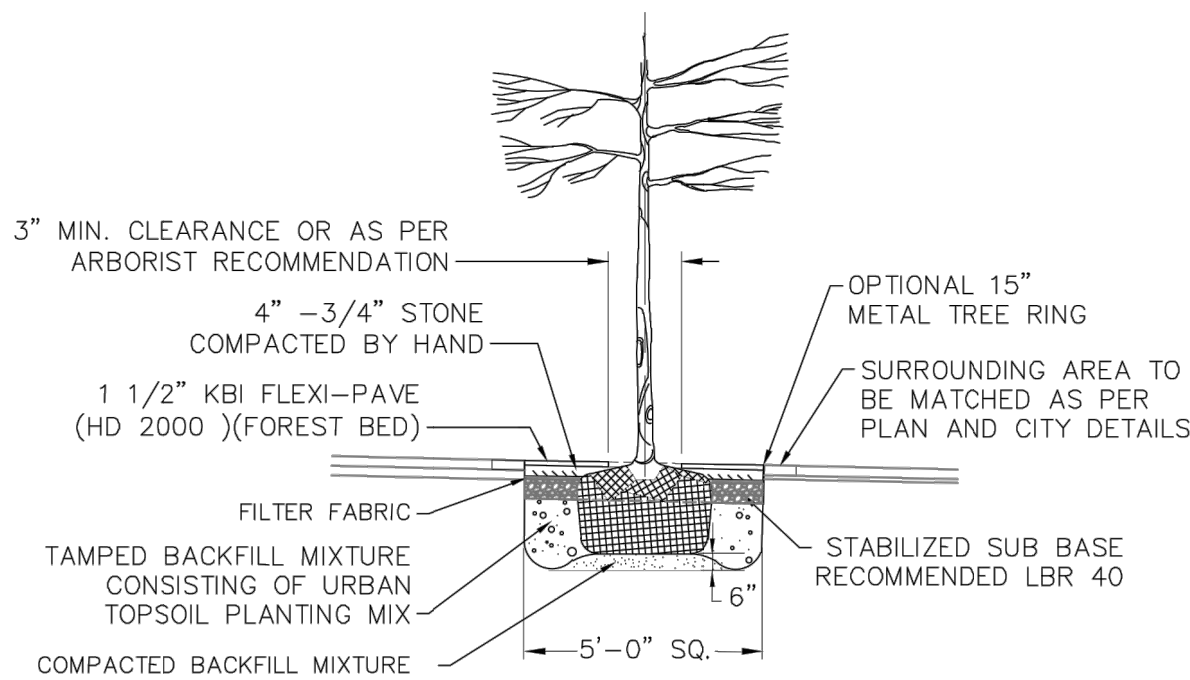
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2 TREE PIT FLEXI-PAVE DETAIL (CITY STANDARD)

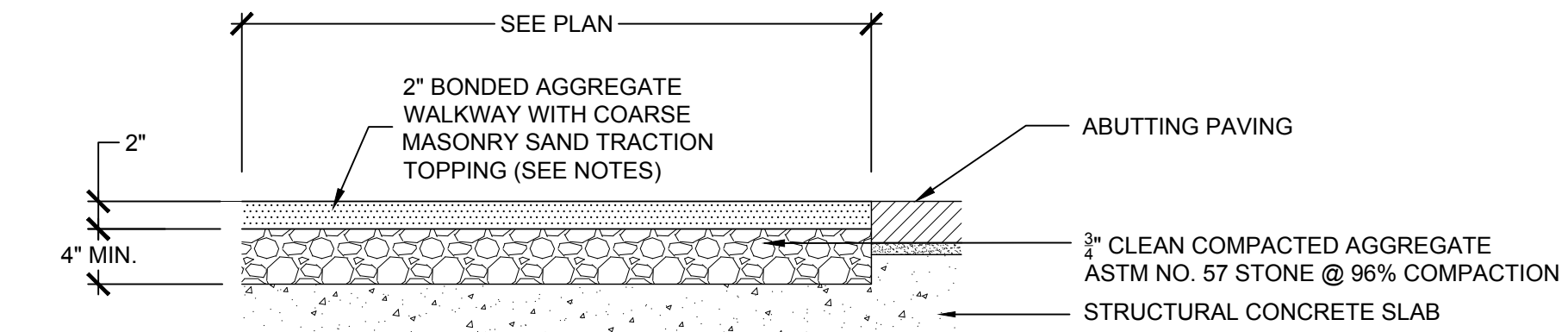
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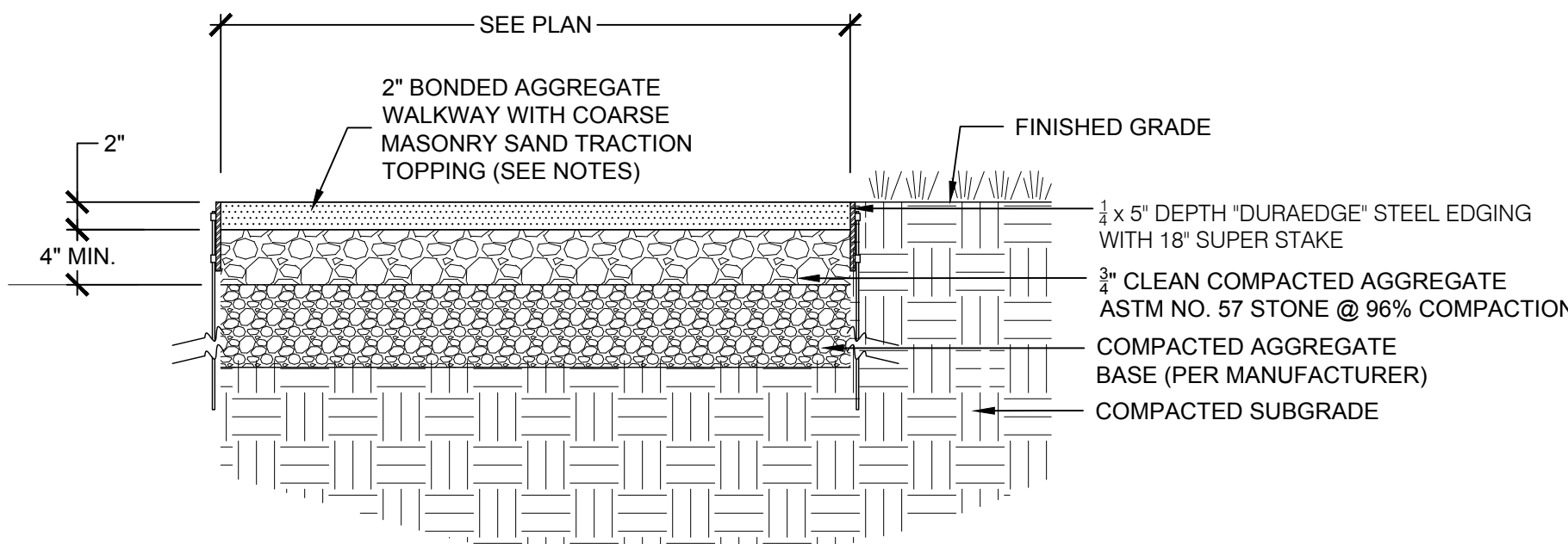
KBI FLEXI-PAVE
TREE SURROUND DETAIL

3 TREE PIT DETAIL (CITY STANDARD)

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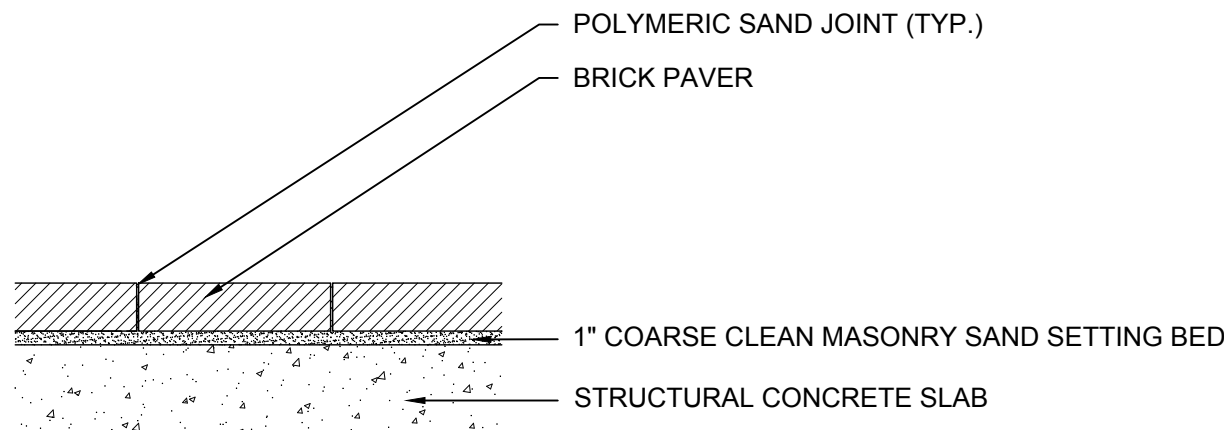
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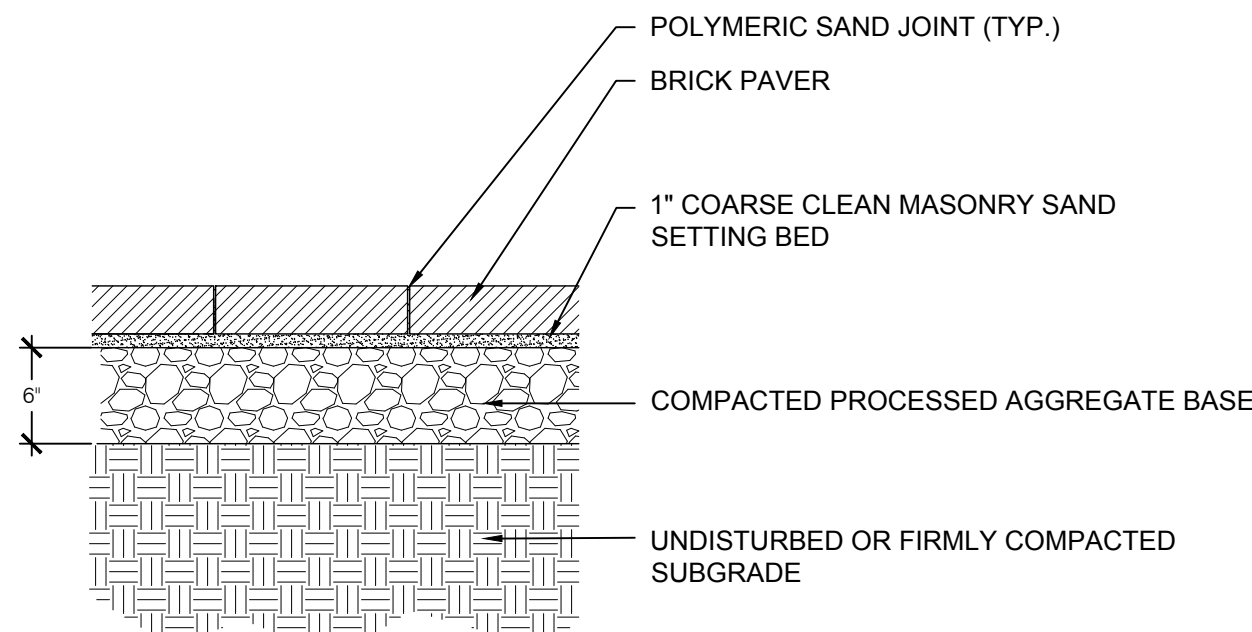
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4 BONDED AGGREGATE PAVING

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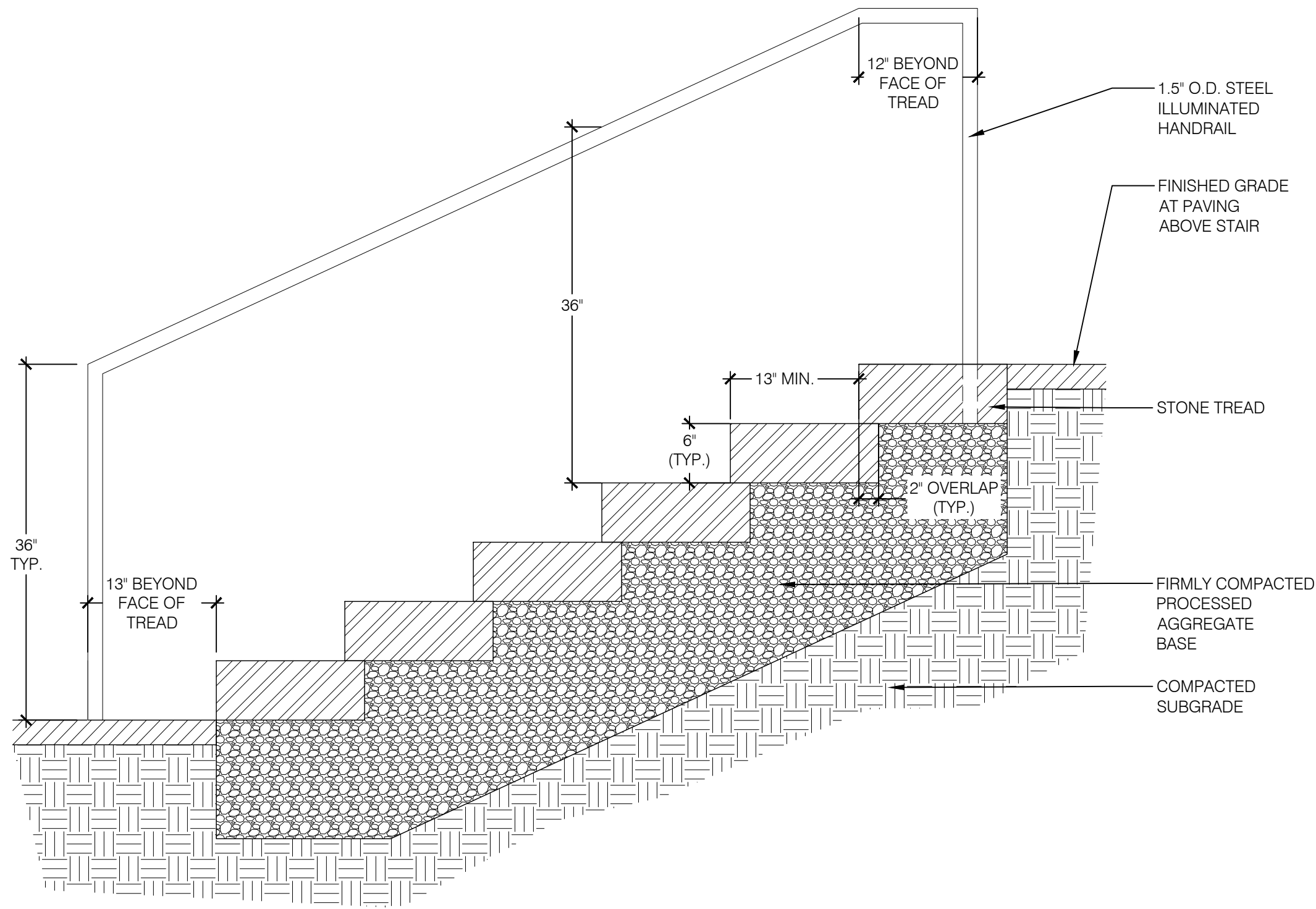
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ON - GRADE

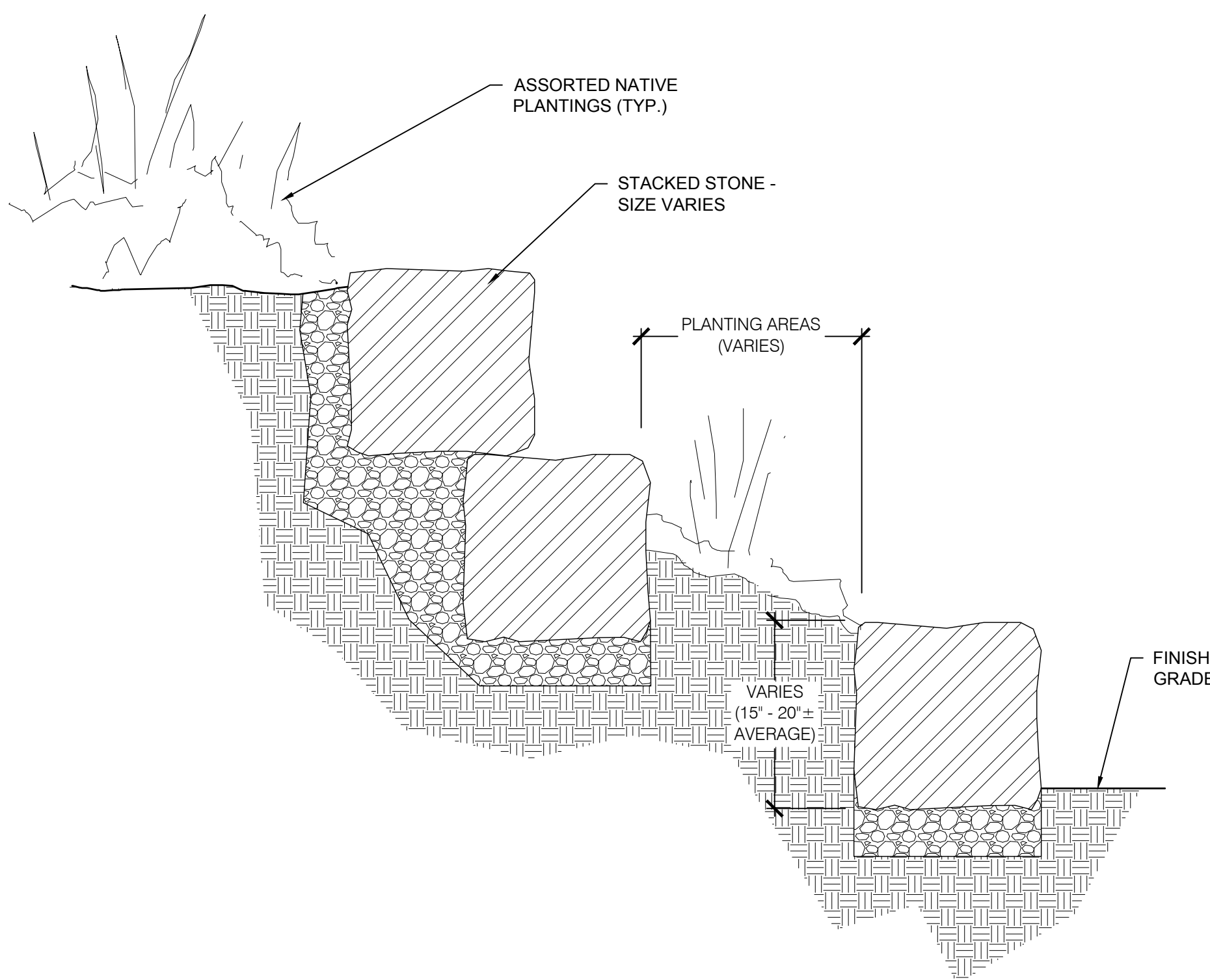
6 BRICK PAVING

SCALE: NTS



5 SOLID STONE STEPS

SCALE: NTS



7 STACKED STONE - SCHEMATIC SECTION / DETAIL

SCALE: NTS

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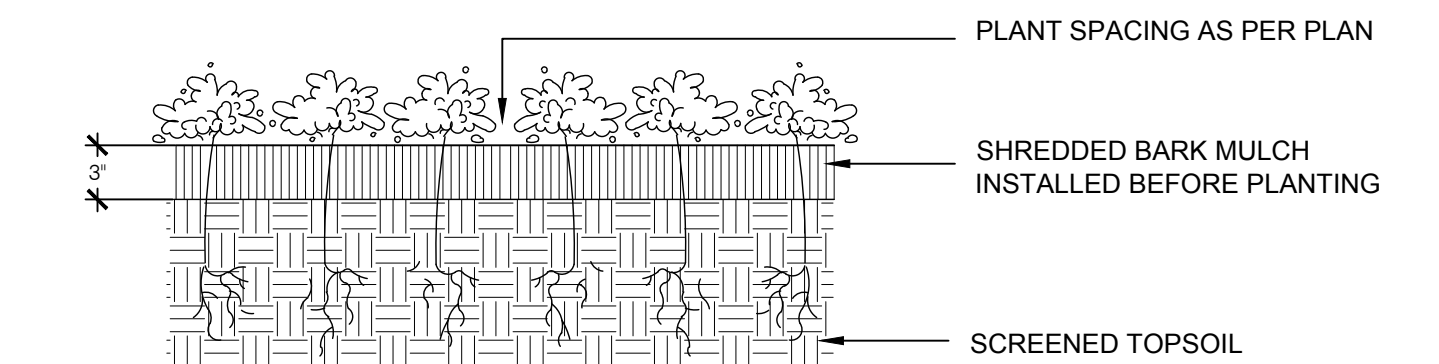
108 WATER STREET
WATER STREET
NORWALK, CT

PROJECT	DATE
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PROJ. TITLE	SCALE
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SPL-4.0

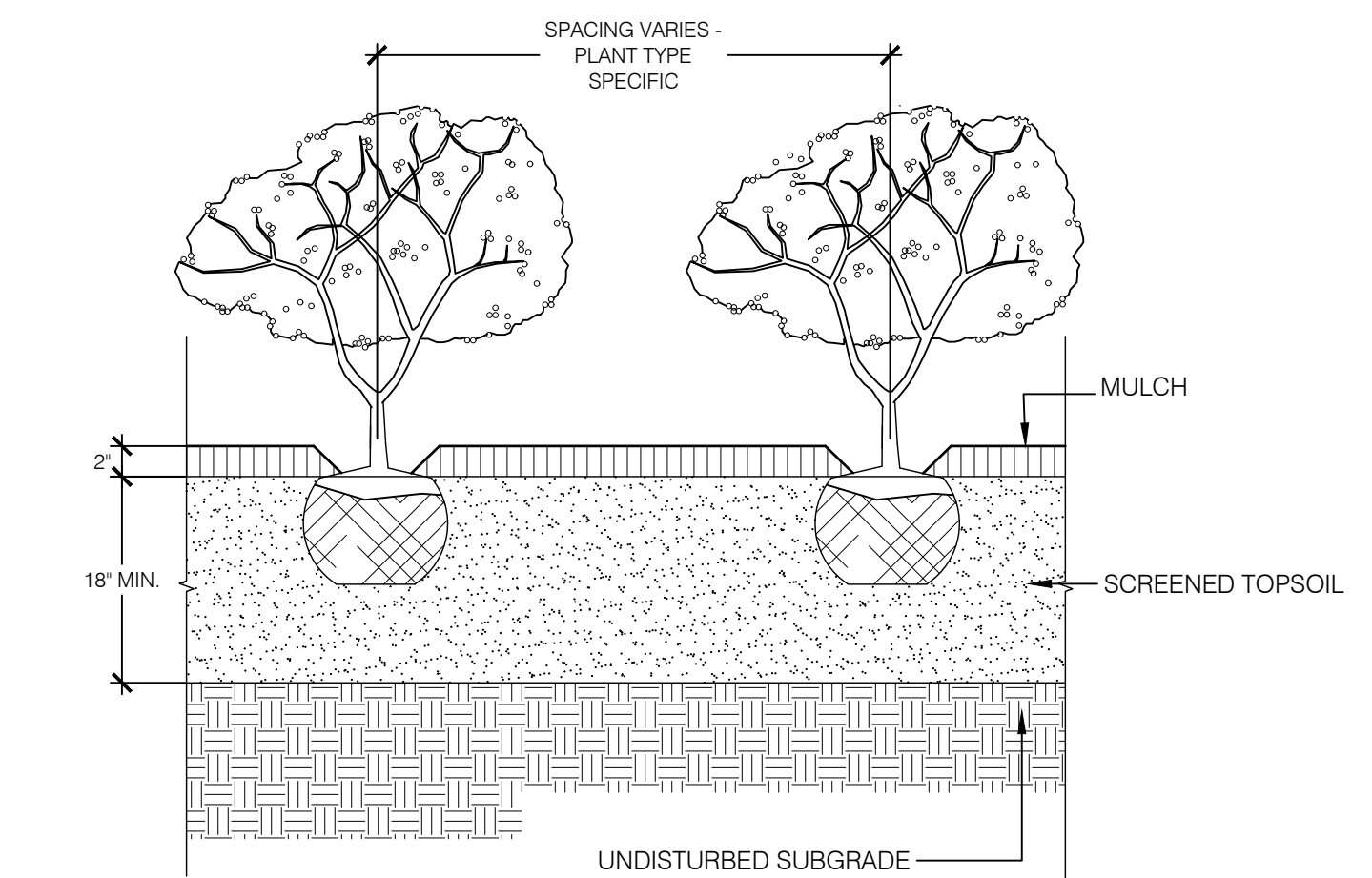
SYM	QTY	BOTANICAL NAME	COMMON NAME	ROOT	MIN. SIZE	COMMENTS
TREES						
AR	6	Acer rubrum 'October Glory'	October Glory Red Maple	B&B	4 - 4.5" CAL.	Full, Branching at 6'-0" Min.
BN	4	Betula nigra 'Heritage'	Heritage River Birch	B&B	3.5 - 4" CAL.	Single Trunk, Branching at 6'-0" Min.
GB	5	Ginkgo biloba '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

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 WARRANTY 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

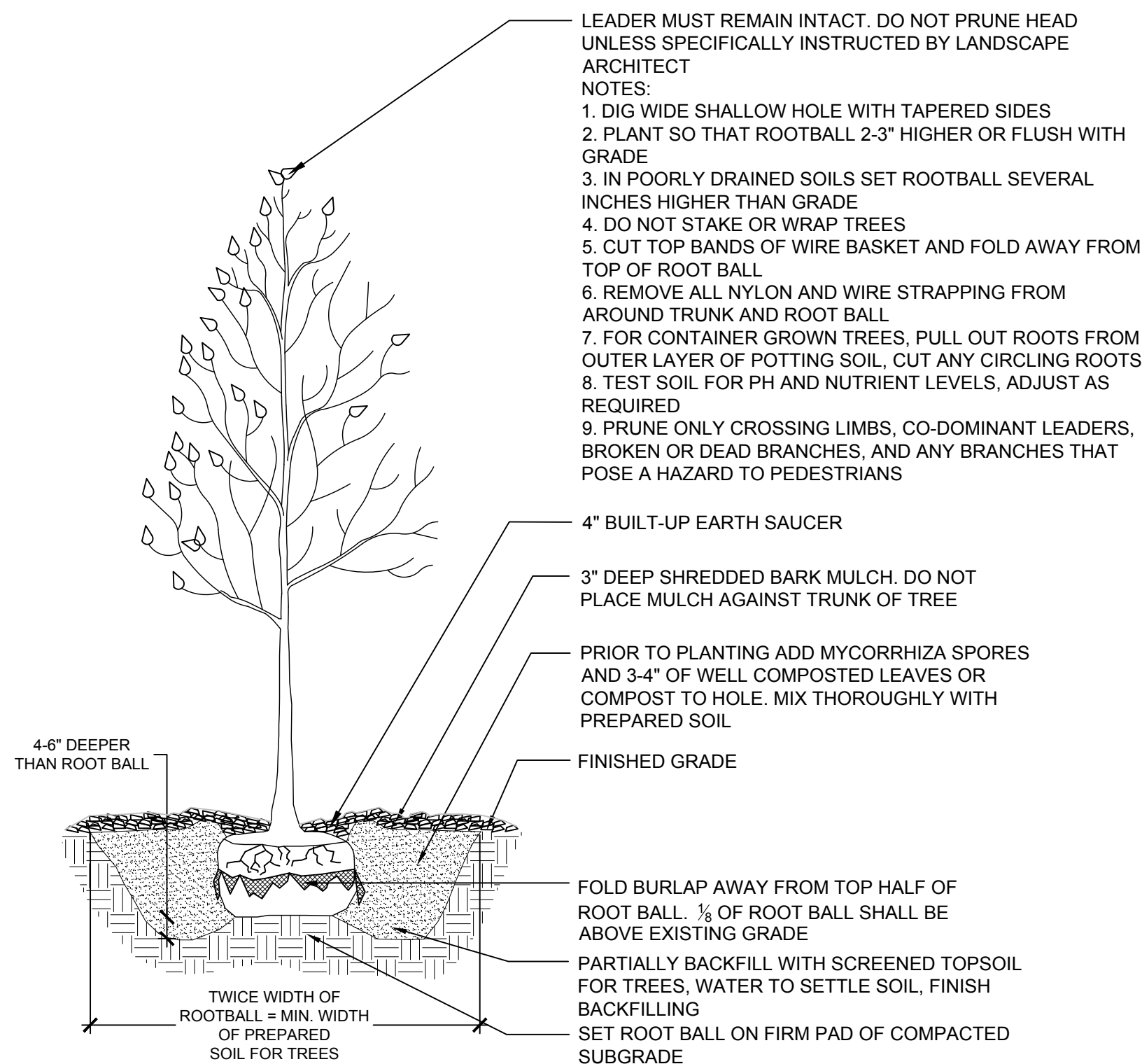
SCALE: NTS



NOTE: PLANTS ARE TO BE SPACED AS REQUIRED BY PLANTING SCHEDULE

2 SHRUB PLANTING DETAIL

SCALE: NTS



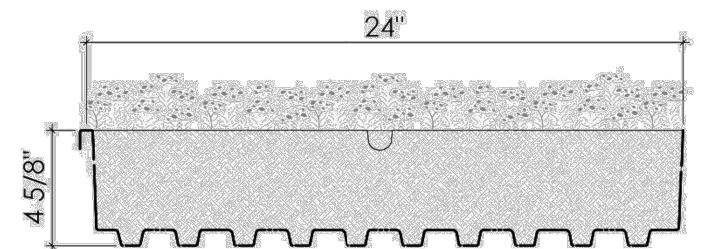
3 TREE PLANTING DETAIL

SCALE: NTS



(Patented: 7,603,808)
Product NUMBER: PL4

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.



- 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.

- Post-Consumer Recycled Content: 88%
- Manufacturing Location: Washougal, WA 98671



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

- *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.

Columbia Green Technologies • 79 SE Taylor St. • Suite 102 • Portland, OR 97214 • (503) 327-8723 • www.columbia-green.com Page 1 of 2
Details and specifications subject to change without prior notice. Please call to verify current specifications. 2016.05.16

4 PRE-GROWN EXTENSIVE GREEN ROOF TRAY SYSTEM SCALE: NTS

PROJECT		108 WATER STREET		 				e r i c r a i n s	
TRNG TITLE		SITE PLANTING DETAILS							
JOB NO.									
DATE		2025.06.13							
SCALE		AS NOTED		NO.		ISSUE		DATE	
SPL-4.1				7					
				6					
				5					
				4					
				3					
		2		MUNICIPAL REVIEW - REVISED		25.08.15			
		1		MUNICIPAL REVIEW		25.06.13			
								11a N Main Street SoNo, CT 203.354.6500 www.erlcrains.com	

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 - B2P - 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 (B2P: BZW, BLP, BLW, WHS, WHW, SAP, VER)

Premium Finish (ABP: AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRM, HUG, NBP, OCP, RMG, SDS, SMG, TWS, WCP, WVR)

(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

1 L-1/ L-2: LED AREA LIGHT

SCALE: NTS

BEACON WALL MOUNT

IP65 RATED

DATE: PROJECT: TYPE:

CATALOG NUMBER LOGIC:



Finish to match fixture.

Eliminates glow in upper window. Material and finish to match fixture.

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

SD16 - 16" Shade

SOURCE

LED - Line Voltage*

L10 - 10W LED/2700K

L11 - 10W LED/3000K

L12 - 10W LED/4000K

L13 - 10W LED 2200K-3600K (Warm Dimming)

L15 - 20W LED/2700K

L16 - 20W LED/3000K

L17 - 20W LED/4000K

L18 - 20W LED/2200-3600K (Warm Dimming)

FINISH (See page 2 for full-color swatches)

Standard Finishes (B2P: BZW, BLP, BLW, WHP, WHW, SAP, VER)

Premium Finish (ABP: AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRM, HUG, NBP, OCP, RMG, SDS, SMG, TWS, WCP, WVR)

(Also available in RAL Finishes

Copper Finishes (NAT, BP, GP)

RINGS

A - Aluminum***

B - Brass**

ACCESSORIES (select one)

S - Stainless Steel**

DT - Dark Top Shield***

MSH - Mesh Screen****

OPTION****

CLR - Clear Coat Protection (Available on NAT finish only)

CANOPY

CRW - Round Canopy

COB - Square Canopy

CTW - Rectangular Canopy

2 L-3: LED BUILDING MOUNTED LIGHT

SCALE: NTS

LARGE BEACON WALL MOUNT

IP65 RATED

DATE: PROJECT: TYPE:

CATALOG NUMBER LOGIC:



Driver Housing Required. Configure and Price Separately.

Stainless rings are provided in Natural (NAT) regardless of finish choice.

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 (B2P: BZW, BLP, BLW, WHS, WHW, SAP, VER)

Premium Finish (ABP: AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRM, HUG, NBP, OCP, RMG, SDS, SMG, TWS, WCP, WVR)

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)

3 L-4: LED BUILDING MOUNTED SCENCE

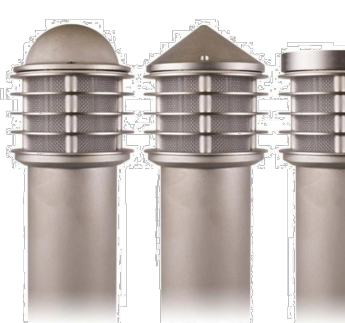
SCALE: NTS

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 x52 - 16W LED/2700K x53 - 10W LED/3000K x53 - 16W LED/3000K x54 - 10W LED/4000K x54 - 16W LED/4000K

FINISH (See page 2 for full-color swatches)

Standard Finishes (B2P: BZW, BLP, BLW, WHP, WHW, SAP, VER)

Premium Finish (ABP: AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRM, HUG, NBP, OCP, RMG, SDS, SMG, TWS, WCP, WVR)

Also available in RAL Finishes

Copper Finishes (NAT, BP, GP)

RINGS

A - Aluminum

B - Brass

S - Stainless Steel*

CAP STYLE

CD1 - Cone Cap**

CD1 - Dome Cap**

CF1 - Flat Cap**

ACCESSORIES

MSH - 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
- Battle options to 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.

ORDERING INFORMATION - FIXTURE										24	JAS-2022 INDICATED BY SHADING	
SHAPE	RATING	TYPE	FINISH	BATTLE FINISH	CRI	WATTAGE	CCT	OPTIC/USE	MEDIA	INSTALL TYPE	CILING THICKNESS	OVERLAP
F3SS	2	F	WH	WH	90S	11A	30	60	04	IC	1	
1 F3SS	2	FS	Adapt. 2000K	POWDERCOAT	POWDERCOAT	STATIC WHITE	5000K	1000				

August 27, 2025

Norwalk Planning and Zoning Commission
c/o Bryan Baker, Principal Planner
125 East Avenue
Norwalk, CT 06851

Subject: 108 Water Street, Norwalk; Coastal Site Plan Review

Dear Commissioners:

Thank you for notifying this office of the proposed coastal site plan application noted above. Acting as the Commissioner's staff, our office has reviewed the application for consistency with the policies and standards of the Connecticut Coastal Management Act (CCMA). Based upon our review, we find that there are significant coastal management concerns regarding the residential component of this proposal and offer the following comments for the commission's consideration.

The applicant is proposing to redevelop the site at 108 Water Street and construct a mixed-use development consisting of boat slips with upland marina support, a public access boardwalk, office space, personal service establishments, a restaurant, residential apartments including 59 units, and 249 parking spaces, nearly all of which will be garaged, as well as another "future water-dependent use". .

We support the concept of the marina development at the site and recognize that the applicant is currently pursuing the necessary DEEP authorization for in-water work associated with the upland marina component. We also support the provision of public access and the park-like setting that is proposed at this site and appreciate the applicant's efforts in that regard, with 37% of the site proposed to be publicly accessible space, as well as their desire for the space to be a catalyst for greater connectivity of public access walkways along the harbor. The proposal also includes a stormwater retention and treatment system which is a significant improvement over current conditions.

However, the proposal to locate a high-density residential use at the site raises significant coastal management concerns.

Section 22a-92(b)(2)(F) of the CCMA requires the Planning and Zoning Commission to manage coastal hazard areas to ensure that **hazards to life and property are minimized**. This CCMA policy goes beyond Federal Emergency Management Agency (FEMA) construction practices and requires municipal land use commissions to make decisions to minimize threats to life in addition to threats to property (see attached Connecticut Coastal Management Program fact sheets).

The site at 108 Water Street is located entirely within FEMA Flood Hazard Zones AE-12 and VE-14. The proposed offices and residential units and the majority of the development will occur within the AE-12 zone. Concerns regarding increased residential density in flood-prone areas are tied, in part, to providing adequate dry egress for emergency evacuation during storms and flooding situations. The elevation of most of the site is approximately 8 feet, sloping down to a road elevation that is at or below 6 feet. Accordingly, there is no route of dry egress from the site for access by emergency services and/or emergency evacuation in a storm or flood, as Water Street is, itself, flood prone. Ensuring pathways for safe evacuation is a critical issue that must carefully considered and addressed in the planning process in all identified flood hazard areas, including South Norwalk and especially the Water Street Marine Commercial District, where existing flooding is likely to worsen with rising sea levels and increased storm intensity.

Prudent coastal management planning and development recognizes the potential hazards of each coastal site and avoids locating uses and placing people in predictable, life-threatening hazardous conditions. Water Street in particular is subject to frequent coastal flooding and is mentioned several times in the Norwalk Plan of Conservation and Development (POCD) as an area of flooding concern, including being a location of concern for the impacts of up to 20 inches of sea level rise. This is a reference to projections made by the Connecticut Institute for Resilience and Climate Adaptation (CIRCA) which, based off their research, recommends that Connecticut municipalities plan for up to 20 inches of sea level rise higher than the national tidal datum in Long Island Sound by 2050. The POCD specifically mentions “the aptly named Water Street” as a roadway which is prone to flooding in Norwalk. The POCD also cautions that the community expressed concerns with coastal flooding in South Norwalk, with Water Street specifically being identified. Further, as part of its *Resilient Connecticut* project, CIRCA has also identified Zones of Shared Risk (ZSR) within the Water Street area. These ZSR are regions that face common flood, wind, or heat-related challenges, and CIRCA has determined that the Water Street area, in addition to other nearby areas, is shown to be a ZSR for all three factors.

The risk of flooding on Water Street and in South Norwalk has additionally led to the area being the subject of the *Resilient South Norwalk* study, a pilot project report for the *Resilient Connecticut* program developed by CIRCA to analyze options for municipalities in Connecticut to address flood effects due to climate change. The study reports that key roadways within the project area, including Water Street, currently experience chronic flooding throughout the year. Water Street can also experience four to five feet of storm surge flooding during major storm events, and even more frequent 10-year storm events can cause two to three feet of flooding. We have attached photos of several flooding events on Water Street for the Commission's consideration.

Accordingly, as Water Street continues to face chronic flooding issues and rising sea levels will likely increase the frequency and severity of these problems, placing a high-density residential use at a property within a FEMA-designated coastal hazard area with no dry egress constitutes a significant increase in hazards to life and property, and would knowingly put people at great risk from future coastal storms and flood events. Therefore, we find the residential component of the project inconsistent with the policies of the CCMA and we recommend the residential proposal be denied.

Should you have any questions regarding this letter, please feel free to contact Braden Lynn of my staff at braden.lynn@ct.gov.

Sincerely,



Brian P. Thompson
Director
Land and Water Resources Division

BPT/BL

Attachments:

Coastal Hazard Area Fact Sheet

Dry Egress Fact Sheet

Photos of Water Street



*Photo 1: View south of high tide flood waters; Sept. 26, 2023
(Norwalk Police Dept. photo)*



Photo 2: View north; December 2022 (Norwalk Police Dept. photo)



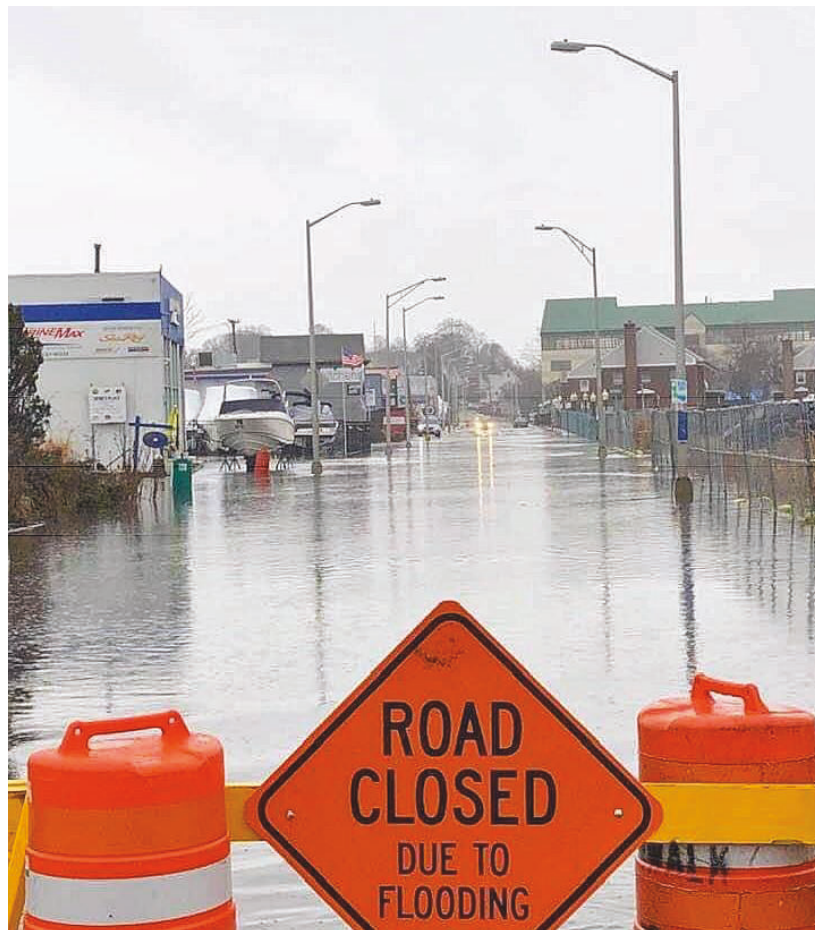
*Photo 3: View north; December 2022
(Norwalk Police Dept. photo)*



*Photo 4: Road closed; December 2022
(Norwalk Police Dept. photo)*



Photo 5: View south; October 2021 (NBC Connecticut news photo)



*Photo 6: View south; December 2018
(Connecticut Post news photo)*



Photo 7: View south; October 2018 (The Hour news photo)



Photo 8: View south; October 2018 (The Hour news photo)



Photo 9: View south; March 2018 (Greenwich Time news photo)



Photo 10: View north; January 2018 (The Hour news photo)



Photo 11: View south; January 2016 (Norwalk Police Dept. photo)



Photo 12: View south; pre-2013 (NancyOnNorwalk news photo)



Photo 13: View north; 2012 (NancyOnNorwalk news photo)



Photo 14: View south; 2012 (Connecticut Post contributed news photo)



Connecticut Coastal Management Program Fact Sheet for *COASTAL HAZARD AREAS*

What are Coastal Hazard Areas?

Coastal hazard areas are statutorily defined as those land areas inundated during coastal storm events or subject to erosion induced by such events, including flood hazard areas as defined and determined by the National Flood Insurance Act and all erosion hazard areas as determined by the Commissioner [Connecticut General Statutes (CGS) Section 22a-93(7)(H)]. In general, coastal flood hazard areas include all areas designated as within A-zones and V-zones by the Federal Emergency Management Agency (FEMA). A-zones are subject to still-water flooding during so called "100-year" flood events. During 100-year flood events, V-zones are subject to direct action by waves three feet or more in height.

Why are they valuable?

Coastal hazard areas encompass most other important coastal resources, can serve as flood storage areas, and provide numerous open space and recreational opportunities. They are, by their nature, hazardous areas for structural development, especially residential-type uses.

What are the statutory policies that apply?

To manage coastal hazard areas so as to ensure that development proceeds in such a manner that hazards to life and property are minimized and to promote nonstructural solutions to flood and erosion problems except in those instances where structural alternatives prove unavoidable and necessary to protect infrastructural facilities, water-dependent uses, commercial and residential structures and substantial appurtenances attached or integral thereto constructed as of January 1, 1995, or a cemetery or burial grounds [CGS Section 22a-92(b)(2)(F)].

To maintain the natural relationship between eroding and depositional coastal landforms; to minimize the adverse impacts of erosion and sedimentation on coastal land uses through the promotion of nonstructural mitigation measures. Structural solutions are permissible when necessary and unavoidable for the protection of infrastructural facilities, water-dependent uses, commercial and residential structures and substantial appurtenances attached or integral thereto constructed as of January 1, 1995, or a cemetery or burial grounds, **and** where there is no feasible, less environmentally damaging alternative **and** where all reasonable mitigation measures and techniques have been provided to minimize adverse environmental impacts [CGS Section 22a-92(b)(2)(J)].

To maintain, enhance, or, where feasible, restore natural patterns of water circulation and fresh and saltwater exchange in the placement or replacement of culverts, tide gates or other drainage or flood control structures [CGS Section 22a-92(c)(2)(B)].

“Feasible, less environmentally damaging alternative” includes, but is not limited to, relocation of an inhabited structure to a landward location; elevation of an inhabited structure; restoration or creation of a dune or vegetated slope, or living shoreline techniques utilizing a variety of structural and organic materials, such as tidal wetland plants, submerged aquatic vegetation, coir fiber logs, sand fill and stone to provide shoreline protection and maintain or restore coastal resources and habitat. [CGS Section 22a-92(e)].

“Reasonable mitigation measures and techniques” includes, but is not limited to, provisions for upland migration of on-site tidal wetlands, replenishment of the littoral system and the public beach with suitable sediment at a frequency and rate equivalent to the sediment removed from the site as a result of the proposed structural solution, or on-site or off-site removal of existing shoreline flood and erosion control structures from public or private shoreline property to the same or greater extent as the area of shoreline impacted by the proposed structural solution. [CGS Section 22a-92(e)].

In addition, the Connecticut Coastal Management Act defines as an adverse impact:

Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones [CGS Section 22a-3(15)(B)].

During the coastal site plan review process, a determination must be made that adverse impacts have been avoided and unavoidable adverse impacts have been minimized in order to lawfully approve the application.

In the case of any application for a shoreline flood and erosion control structure that is denied on the basis of a finding that there may be feasible, less environmentally damaging alternatives to such structure or that reasonable mitigation measures and techniques have not been provided, the municipal commission must propose on the record, in writing, the types of feasible alternatives or mitigation measures and techniques that the applicant may investigate. However, this does not shift the burden from the applicant to prove that he/she is entitled to approval of the proposed shoreline flood and erosion control structure or to present alternatives to such structure [CGS Section 22a-92(f)].

See the [Coastal Site Plan Review](#) and [Adverse Impacts](#) fact sheets for further information.

What can a municipality do to minimize impacts to these sensitive coastal resources?

- Update municipal Plan of Conservation and Development, Municipal Coastal Program, if applicable, and zoning regulations and subdivision regulations to better manage development in coastal hazard areas by incorporating language that reflects the following guidance.

- Employ non-structural flood and erosion control techniques such as erosion setbacks and buffers, location of vulnerable uses out of hazard areas, vegetative stabilization, and construction of dunes as the primary means of controlling flood and erosion hazards except in instances where such non-structural techniques would be inadequate to protect infrastructural facilities (such as sewer and water lines), water-dependent uses, commercial and residential structures and substantial appurtenances attached or integral thereto constructed as of January 1, 1995, or a cemetery or burial grounds, and where there is no feasible, less environmentally damaging alternative and where all reasonable mitigation measures and techniques have been provided to minimize adverse environmental impacts
- Utilize structural flood and erosion control techniques such as groins, seawalls, and revetments only when: (1) the structures are being placed to provide protection to infrastructural facilities, water dependent uses, commercial and residential structures and substantial appurtenances attached or integral thereto constructed as of January 1, 1995, or a cemetery or burial grounds; (2) non-structural techniques have been explored and are found to be infeasible; (3) there is no other less environmentally damaging alternative; and (4) all reasonable mitigation measures and techniques are employed to minimize adverse environmental impacts.
- To assist in identifying feasible alternatives or mitigation measures and techniques for shoreline flood and erosion control structures, update the municipal Plan of Conservation and Development and/or Municipal Coastal Program to identify: (1) areas where vulnerable inhabited structures can be relocated to a landward location; (2) areas where dunes, vegetated slopes, and/or living shoreline techniques can be created or located to provide shoreline protection **and** maintain or restore coastal resources and habitat; (3) areas that can allow for upland migration of on-site tidal wetlands; (4) areas where replenishment of the littoral system and the public beach can provide for reasonable mitigation measures or techniques to offset new shoreline flood and erosion control structures; and (5) public and private shoreline properties where existing shoreline flood and erosion control structures can be removed and replaced in order to provide a reasonable mitigation measure or technique for new shoreline flood and erosion control structures.
- Update the municipal Plan of Conservation and Development and/or Municipal Coastal Program to (1) take into consideration risks associated with increased coastal erosion, depending on site topography, caused by a rise in sea level as anticipated in sea level change scenarios published by the National Oceanic and Atmospheric Administration in [Technical Report OAR CPO-1](#); (2) identify the impacts of such increased erosion on infrastructure and natural resources; and (3) make recommendations for the siting of future infrastructure and property development to minimize the use of areas prone to such erosion [CGS Section 16a-27(h)].

- Where applicable, require that all new development in erosion-prone areas, particularly in any erosion hazard areas designated by the Commissioner of the Department of Energy and Environmental Protection, be set back from the water to create a safety buffer strip consisting of natural vegetative cover. The width of this buffer should be based on the predicted erosion rate in conjunction with the anticipated “useful life” of the proposed structure.
- Apply the National Flood Insurance Program flood plain management requirements [24 Code of Federal Regulations (CFR) 60.3] to: 1) all activities in designated A-zones and floodways; and 2) to all new construction or substantial improvements in designated coastal high hazard zones (V-zones).
- Prevent development of high-density residential-type uses (e.g., condominium complexes, elderly housing, hospitals, assisted living facilities, hotels/motels, etc.) in V-zones. Allow such uses in A-zones only if access to the site is not flood-prone and the applicant can demonstrate the project has been designed so that risks to life and property are not increased.
- Site all facilities that have the potential to cause pollution or hazardous conditions as a result of flooding or erosion, such as energy or oil and chemical handling facilities, outside of coastal hazard areas (A- and V-zones). If a facility, because of its water-dependent nature, cannot be located outside of a coastal flood hazard area, incorporate flood-proofing measures in the design of the facility to protect against flooding including extreme conditions (generally a 500-year frequency flood event or greater).
- Site all new or substantially improved buildings, dwellings and non-water-dependent structures out of the designated coastal high hazard area (V-Zone).
- Elevate sufficiently above the base flood level the lowest floor of a new or substantially improved water-dependent building and habitable structure which cannot functionally be sited outside the V-Zone to minimize the impacts of wave action generated by 100 year frequency storm events.
- Maintain or restore natural vegetation in coastal high hazard areas (V-Zones) to serve as buffers against storm, wind, and wave energy.
- Maintain or restore natural landforms within or adjacent to coastal hazards areas that serve as buffers to flood and erosion such as beaches, dunes and wetlands.
- Avoid any use or activity which would significantly increase floodwater elevations, or otherwise increase flood or erosion hazards.
- Maintain or restore natural patterns of littoral transport and avoid uses and activities which interrupt or alter natural sediment transport from eroding source areas to depositional receiving areas.

- Apply all coastal policies and use guidelines for other coastal resources where they occur within coastal hazard areas (see individual coastal resource fact sheets).

Does the DEEP regulate activities in coastal flood hazard areas?

Maybe, depending on the location and specifics of the proposed activity. The DEEP has direct regulatory jurisdiction over activities occurring in tidal wetlands and/or waterward of the [coastal jurisdiction line](#). If any construction activities or structure(s), in part or in whole, or any incidental work proposed in conjunction with the construction of structure(s) is proposed at or waterward of the coastal jurisdiction line, authorization from the DEEP's Land and Water Resources Division (LWRD) would be required prior to construction in accordance with the Tidal Wetlands Act (CGS Sections 22a-28 through 22a-35) and/or the statutes governing the placement of structures, dredging, or filling in tidal, coastal or navigable waters (CGS Sections 22a-359 through 22a-363g, inclusive).

While each municipality implements its own flood management regulations, LWRD provides training and technical and planning assistance to municipalities using guidelines developed under the National Flood Insurance Program. However, each municipality maintains its regulatory jurisdiction over its flood management regulations.

What's the difference between DEEP and municipal regulatory areas?

As mentioned above, the DEEP has direct regulatory jurisdiction over activities occurring in tidal wetlands and/or waterward of the coastal jurisdiction line. The Town regulates upland activities waterward to the mean high water mark. In general, the mean high water mark is lower than (waterward of) the coastal jurisdiction line. Therefore, on gently sloping shorelines, there will be an area of overlapping jurisdictions (because the coastal jurisdiction line will be landward of mean high water). Along steep shorefronts, for instance along a seawall, the coastal jurisdiction line and mean high water mark will be more closely aligned or even coincide as the same line. The area of overlapping jurisdictions will be minimal in that case. Regardless of whether the DEEP and/or the municipality have jurisdiction, the same statutory policies and standards apply in both jurisdictions (see the [State and Municipal Regulatory Jurisdictions](#) fact sheet).

1. This fact sheet is one of 13 that detail coastal resources. Fact sheets are available for the following coastal resources: beaches and dunes, bluffs and escarpments, coastal hazard areas, coastal waters, developed shorefront, estuarine embayments, intertidal flats, islands, rocky shorefronts, shellfish beds, shorelands, submerged aquatic vegetation, and tidal wetlands.



Connecticut Coastal Management Program Fact Sheet for *DRY EGRESS*

What is Dry Egress?

The Department of Energy and Environmental Protection (DEEP) considers dry egress to mean a dry access pathway leading from a residential development within a coastal flood hazard area to a location outside of the coastal floodplain to serve as an emergency evacuation egress pathway during storms or flood events. The specific design of the pathway should ideally be set at or above the 100-year base flood elevation established by the Federal Emergency Management Agency (FEMA), be at least four (4) feet wide for pedestrian use and wider if possible for use by emergency vehicles, and be constructed of materials designed to support use by a wheelchair or emergency vehicle as appropriate for its entire length.

Why is Dry Egress Important?

Many areas in coastal Connecticut already experience chronic flooding during storms as well as “sunny day” tidal flooding during a full moon high tide, and these flooding impacts are anticipated to increase over time due, in part, to the effects of climate change. This will make it increasingly difficult to meet state flood management regulatory requirements concerning new critical activities such as high-density residential developments that are proposed within a coastal flood hazard area or floodplain. If dry egress cannot be provided, then critical activity residential developments cannot receive state flood management certification.

Irrespective of state funding, municipal planning and zoning authorities will often receive coastal site plan applications for privately funded high-density residential developments proposed within a coastal flood hazard area. DEEP has consistently advised municipal planning and zoning authorities that increasing high-density residential development in coastal flood hazard areas, especially where none currently exists, is generally inconsistent with the Connecticut Coastal Management Act, specifically the policy contained in CGS Section 22a-92(b)(2)(F) that requires that coastal hazard areas be managed to ensure that development proceeds in such a manner that hazards to life and property are minimized. This policy goes beyond FEMA building requirements, as it discourages imprudent coastal planning and zoning that would knowingly put people in harm’s way in the first place. Requiring the provision of dry egress for high-density residential developments proposed in coastal flood hazard areas, either as a condition of coastal

site plan approval or through specific criteria established in municipal zoning regulations, is one way to meet the intent of this CCMA policy.

What are the Requirements for State Actions Involving Residential Developments?

Flood Management Act

When the State of Connecticut undertakes a proposed state action under Connecticut General Statutes (CGS) Section 25-68b (see definition below), that state action must meet the flood management requirements of the Flood Management Act (CGS Section 25-68 et seq. and associated regulations).

According to CGS Section 25-68b(8), a proposed state action means:

individual activities or a sequence of planned activities proposed to be undertaken by a state department, institution, or agency, any state or federal grant or loan proposed to be used to fund a project that affects land use, or proposed transfer of real property belonging to the state.

Often, state funds are used to support municipal or private land use developments, and those projects can sometimes contain high-density residential uses as a component. However, CGS Section 25-68b(4) defines “critical activity” to mean:

any activity, including, but not limited to, the treatment, storage, and disposal of hazardous waste, and the siting of hospitals, housing for the elderly, schools, or **residences**, within the .2 per cent floodplain in which the Commissioner of DEEP determines that even a slight chance of flooding is too great.

State actions must obtain a certification from the DEEP pursuant to CGS Section 25-68 (d)(b) to ensure that:

1) The proposal will not

- obstruct flood flows or result in an adverse increase in flood elevations,
- significantly affect the storage or flood control value of the floodplains,
- cause an adverse increase in flood velocities, or an adverse flooding impact upon upstream, downstream or abutting properties, or

- **pose a hazard to human life, health or property in the event of a base flood or “base flood for a critical activity”^{*};**
- (2) The proposal complies with the provisions of the National Flood Insurance Program;
- (3) The state agency has acquired, through public or private purchase or conveyance, easements and property in floodplains when the base flood or base flood for a critical activity is elevated above the increment authorized by the National Flood Insurance Program or the flood storage loss would cause adverse increases in such base flood flows;
- (4) The proposal promotes long-term non-intensive floodplain uses and has utilities located to discourage floodplain development;**
- (5) The agency has considered and will use to the extent feasible flood-proofing techniques[†]; and
- (6) The agency has flood forecasting and warning capabilities.**

How Can Dry Egress Help to Satisfy Flood Management Requirements?

DEEP has interpreted that dry egress for a critical activity like residential development can address several aspects of the Certification process under the State’s Flood Management Act:

- **CGS Section 25-68(d)(b)(1): dry egress is a means of reducing risks to human life.**
- **CGS Section 25-68(d)(4): non-intensive floodplain uses – if an agency is unable to demonstrate that an investment would promote long-term, non-intensive floodplain uses (i.e., high-density residential development), the agency shall request an exemption to Section 25-68(d)(b)(4).** As part of the exemption request process an agency must demonstrate that an activity: is in the public interest; will not injure persons or property and Complies with the National Flood Insurance Program. **DEEP can typically support an exemption request under this subsection of the statute by a**

^{*} The “base flood for a critical activity” means the flood that has at least a .2 per cent chance of being equaled or exceeded in any year. Such flood may be designated as the B zone on maps published for the National Flood Insurance Program

[†] CGS Section 25-68b(6) defines “Flood-proofing” as any combination of structural or nonstructural additions, changes or adjustments which reduce or eliminate flood damage to real estate or improved real property, to water and sanitary facilities, and to structures and their contents, including, but not limited to, for properties within the coastal boundary, as established pursuant to subsection (b) of section 22a-94, not less than an additional two feet of freeboard above base flood and any additional freeboard necessary to account for the most recent sea level change scenario updated pursuant to subsection (b) of section 25-68o;

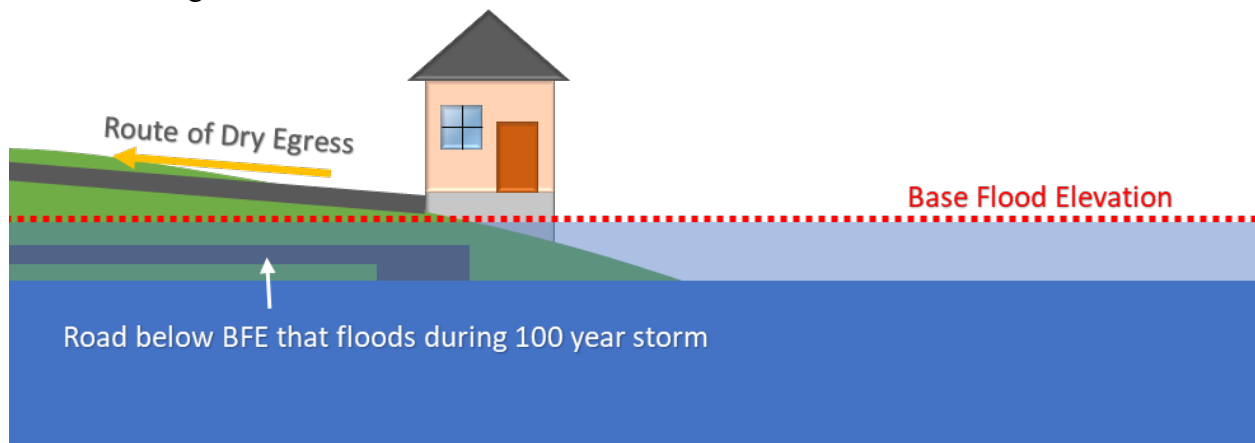
proposal incorporating dry egress, as dry egress is a means of reducing risks to human life.

- **CGS Section 25-68(d)(6): if an agency does not have flood forecasting and warning capabilities to warn a private residential development of a pending storm where they would need to evacuate before the storm hits, then providing dry egress resolves this issue as residents have a way out during a flood event. Likewise, first responders in emergency vehicles have safe access to assist with evacuations.**

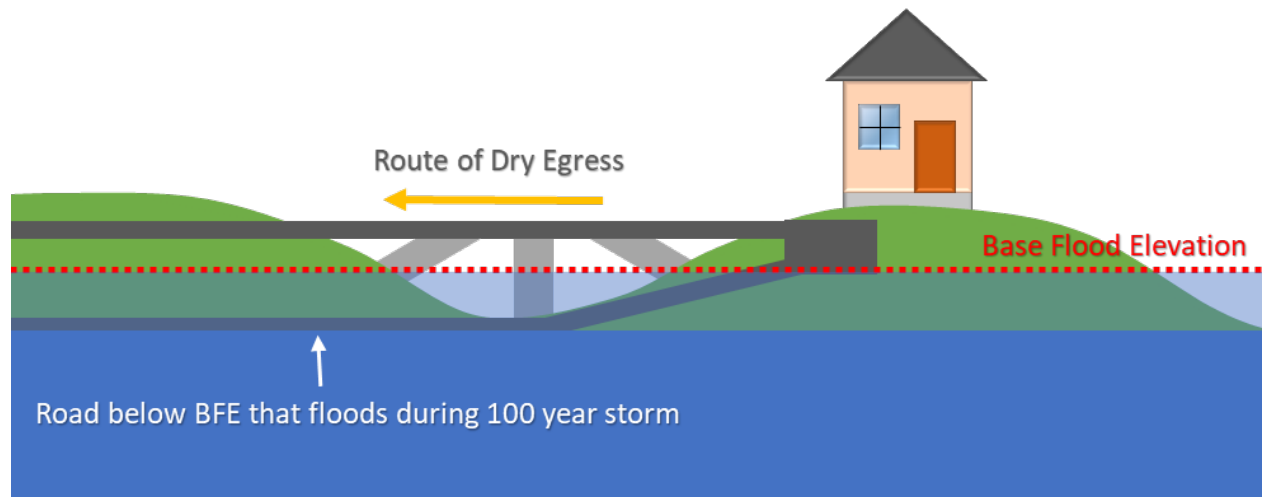
What are Other Dry Egress Considerations for State Agencies and Municipalities?

Examples of Dry Egress

In the figure below, a route of dry egress is created from a residential structure in a floodplain to an upland area following a route that is outside of the floodplain. This is an alternative to the existing road, shown below, that becomes inundated during a flood event and does not function as a route of egress.



In the figure below, a route of dry egress is created in the form of an elevated roadway or path. While the residential structure is not in the floodplain, the existing route of egress is, so an alternative route must be created to provide for dry egress.



Note that if a proposed route of dry egress is proposed over coastal, tidal, or navigable waters or traverses or directly impacts tidal wetlands, it would likely be subject to the DEEP's Structures, Dredging, and Fill and/or Tidal Wetlands regulatory programs.

August 29, 2025

Memorandum

To: Planning & Zoning Commission – Galen Wells, Chair
From: Bryan Baker, AICP, Principal Planner
Re: #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

Commissioners,

The applicant has submitted a coastal site plan review application to redevelop the property at 108 Water Street into a 4 ½ story, mixed-use development, containing 59 dwelling units, approximately 90,000 square feet of commercial space, approximately 44,000 square feet of public realm space, 14 boat slips, and 249 parking spaces.

108 Water Street is a 2.72-acre waterfront property located in the SD-MC (Marine Commercial) zone. The property is currently utilized primarily for seasonal boat storage with a dock building business near the water.

As part of the coastal site plan review, the Commission is responsible for reviewing the criteria within Section 22a-106 of the Connecticut General Statutes, which can be summarized as follows: *“In determining the acceptability of potential adverse impacts of the proposed activity described in the coastal site plan on both coastal resources and future water-dependent development opportunities a municipal board or commission shall: (1) Consider the characteristics of the site, including the location and condition of any of the coastal resources defined in section 22a-93; (2) consider the potential effects, both beneficial and adverse, of the proposed activity on coastal resources and future water-dependent development opportunities; and (3) follow all applicable goals and policies stated in section 22a-92 and identify conflicts between the proposed activity and any goal or policy.”*

The applicant has submitted a Coastal Area Management Assessment (the assessment) noting what coastal resources are applicable to the property and their location in relation to the property:

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

As noted by the applicant, the most applicable coastal resources are coastal hazard areas and developed shorefront. The Connecticut General Statutes further define each of these resources as follows:

Coastal hazard areas: means those land areas inundated during coastal storm events or subject to erosion induced by such events, including flood hazard areas as defined and determined by the National Flood Insurance Act, as amended and all erosion hazard areas as determined by the commissioner

Developed shorefront: means those harbor areas which have been highly engineered and developed resulting in the functional impairment or substantial alteration of their natural physiographic features or systems

This can be summarized as; 108 Water Street is an already developed property in the flood zone. As detailed in the assessment regarding impacts to the applicable coastal resources, the property is proposed to be redeveloped with a structure that is compliant with the flood zone regulations which requires that the first finished floor of residential structures be constructed two feet above the base flood elevation. The applicant is also proposing to reduce the impervious surface that currently exists on the site by approximately 12,000 square feet and install new drainage infrastructure that will treat about 79% of the site runoff when none is treated under existing conditions. Therefore, Staff agrees with the findings of the assessment that the development will not have adverse impacts on coastal resources.

In determining the acceptability of potential adverse impacts of the proposed activity described in the coastal site plan on future water-dependent development opportunities, it is important to define what “water-dependent uses,” are:

Water-dependent uses: means those uses and facilities which require direct access to, or location in, marine or tidal waters and which therefore cannot be located inland, including but not limited to: Marinas, recreational and commercial fishing and boating facilities, finfish and shellfish processing plants, waterfront dock and port facilities, shipyards and boat building facilities, water-based recreational uses, navigational aides, basins and channels, industrial uses dependent upon water-borne transportation or requiring large volumes of cooling or process water which cannot reasonably be located or operated at an inland site and uses which provide general public access to marine or tidal waters

As the site currently exists, the dock building business would be considered a water-dependent use and the boat storage would not be considered a water-dependent use. The proposed development will replace the existing water-dependent use with other water-dependent uses which are public access to marine or tidal waters, waterfront dock, and a space within a portion of the proposed building for a future water-dependent use/tenant. The proposed development will likely prevent some of the more intense water-dependent uses from occurring on the property such as finfish and shellfish processing plants, shipyards, and industrial uses in favor of providing public access and waterfront docks. The existing site conditions provide for the possibility of more intense

water-dependent uses however it prevents water-dependent uses like public access and waterfront docks. Therefore, the applicant is not proposing to remove water-dependent sites from the property, but to provide different water-dependent uses.

Additionally, the application was referred to the Connecticut Department of Energy and Environmental Protection (DEEP) and the Norwalk Harbor Management Commission (HMC). Both agencies completed reviews and issued recommendations to the Commission. The HMC found the application to be consistent with the city's Harbor Management Plan. DEEP found that the application was consistent with the Connecticut Coastal Management Act (CCMA) except for the residential portion of the project. DEEP also emphasized the importance of a means of dry egress from the site during flood events. To address the concerns regarding dry egress from the site, the applicant has provided documentation that they will fund the installation of a duckbill backflow preventer to reduce Water Street flooding by up to 18" as well as the development reducing total stormwater runoff by over 60%. The Commission must evaluate whether the improvements and plans offered by the applicant are sufficient in addressing the concern of dry egress from the site during flood events. A study, initiated by the city, regarding dry egress and the potential raising of Water Street is pending.

Staff notes that the SD-MC zoning district (formerly titled "Marine Commercial") was created in 1987, which 108 Water Street was re-zoned to at that time from Heavy Industrial. When the Marine Commercial zone was created it permitted multifamily uses via special permit and was found to be consistent with the CCMA. The 2024 regulation re-write removed the special permit requirement for the residential portion of mixed-use structures, like the one proposed, however the density did not change. Therefore, developments like the one proposed generally have been allowed within the Marine Commercial zone since its adoption in 1987.

As part of the site plan review portion of the application, the proposed structure has a footprint that exceeds 5,000 square feet as well as a gross floor area that exceeds 20,000 square feet which requires a site plan review application. Below is a zoning chart demonstrating that, as proposed, the application complies with the zoning regulations.

Regulation	Allowed	Proposed	Compliant
Impervious surface coverage	80% max, 90% max if use LID practices and provide a vegetative buffer against the water, required access to the water shall not be included in calculations	94,694sf (79.8%)	Yes
Front setback	5 ft. min.	5 ft.	Yes
Side setback	5 ft. min.	5 ft.	Yes
Rear setback	25 ft. from the Coastal Jurisdiction Line	28 ft.	Yes
Density	1 Dwelling Unit per 2,000sf	59 units	Yes
Principal building height	4 ½ stories max.	4 ½ stories	Yes
Principal building ceiling height	May not exceed 13 ft. from finished floor to finished floor, except for first floor commercial use which must be a minimum of 15 ft. with a maximum of 25 ft.	First floor: 25' Other floors: 11'	Yes
Main entrance	Main entrance must be in Façade of Principal Frontages	Within façade of principal frontage	Yes
Façade position	Parallel to straight Frontage Line or to tangent of curved Frontage Line	Parallel to straight Frontage Line	Yes

Blank walls	Not Permitted at Frontage, unless located within the Flood Hazard Zone Overlay and required to be elevated, then shall comply with 4.3.7.C	No blank walls proposed	Yes
Primary building material on facades	Brick, natural stone, wood, cementitious siding, authentic stucco over masonry	Brick	Yes
Building types	Townhouse, live/work, jewel box, commercial, mixed use, flex, civic	Mixed use	Yes

The one outstanding item is clarification by the applicant that the proposed development will comply with Section 8.4.5.N.2.g (sustainable building requirements) of the regulations. It appears that the applicant has chosen the option to retain at least 75% of the development's stormwater on-site but confirmation that the building will be certifiable as LEED Silver, Enterprise Green Communities, or National Green Building Standard Silver requires confirmation.

Staff offers the following resolutions for consideration by the Commission:

Draft resolution to approve:

THEREFORE, BE IT RESOLVED by the Norwalk Planning & Zoning Commission that application #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 be **APPROVED** subject to the following:

1. That the buildings and site will be developed in accordance with the following plans:
 - a. Per site plan package entitled “Zoning Site Plan Depicting 108 Water Street,” prepared by Redniss & Mead, dated 8/15/2025; and
 - b. Per architectural drawings entitled “108 Water St,” prepared by Beinfield Architecture, dated 6/18/2025; and
 - c. Per landscape site plans entitled “108 Water Street,” prepared by Eric Rains Landscape Architecture, LLC, dated 6/13/2025; and
2. That the overhead service wires and all other utilities shall be installed underground; and
3. That prior to the issuance of a zoning permit the applicant shall provide documentation that the application complies with Section 8.4.5.N.2.g of the zoning regulations; and
4. That an easement agreement shall be filed on the Norwalk Land Records detailing the public access areas and all limitations associated with such areas; and
5. That the applicant has agreed to pay for the installation of a duckbill backflow preventer at the city's stormwater outflow pipe; and
6. That a final Workforce Housing Plan showing a total of three workforce housing units shall be submitted to Staff for review and approval and shall include deed restriction documents, architectural floor plans and a breakdown of the number of bedrooms for each workforce housing unit provided. All such workforce housing units shall be deed restricted in perpetuity and meet all requirements of the Workforce Housing Regulations; and
7. That a surety bond be submitted, in an amount to be determined by the Staff, to guarantee the installation of the required erosion and sediment controls prior to the issuance of a zoning permit; and
8. 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 of the Staff, as needed; and

9. That a Connecticut licensed engineer shall certify that all 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
10. That a surety bond be submitted to guarantee the completion and maintenance of the site plan and any modifications to the plan and all work required as a condition of approval under this special permit/coastal site plan review prior to the issuance of a COZC; and

BE IT FURTHER RESOLVED that this application complies with all applicable sections of the Norwalk Zoning Regulations; and

BE IT FUTHER RESOLVED that the effective date of this approval is September 12, 2025.

Draft resolution to deny:

THEREFORE, BE IT RESOLVED by the Norwalk Planning & Zoning Commission that application #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 be **DENIED** due to the following:

- 1.

Sincerely,

Bryan Baker

Bryan Baker, AICP
Principal Planner
City of Norwalk
203-854-7705
bbaker@norwalkct.gov

CITY OF NORWALK
PLANNING & ZONING COMMISSION MINUTES
August 20, 2025

PRESENT: Galen Wells, Chair (arrived at 6:32 pm); Chapin Bryce (acting as Chair until Ms. Wells arrived); Diana Lenkowsky; Louis Schulman; Darius Williams; Tammy Langalis; Richard Roina; Jacquen Jordan-Byron (arrived after the roll call at 6:08 and left at 7:15 pm)

STAFF: Steve Kleppin; Bryan Baker; Amelia Williams

OTHERS: Chris Ching; Atty Liz Suchy; Vincent Hynes; Adam Bovilsky; Adam Palmer; Eric Rains; Atty Adam Blank; Atty Emma Dignoti; Wayne D'Avanzo; Aleksandra Moch; Brad Craighead;

I. CALL TO ORDER

Mr. Bryce called the meeting to order at 6:05 p.m. It should be noted that this meeting was held on Zoom.com with participants calling in, separately. Mr. Baker explained that the public hearing would be opened later in the meeting but there would be no public participation or presentation until the next Planning & Zoning Commission meeting.

II. ROLL CALL

Mr. Baker called the roll. Mr. Bryce said that Ms. Lenkowsky would be seated for the entire meeting.

III. REVIEW AND ACTION ON APPLICATIONS

A. #2025-62 CAM – Christopher Ching – 4 Splitrock Road – Construct a flood complaint deck, with a screened porch and steps to grade, and a new patio at a single family residence within 50' of a tidal wetland - Report & recommended action

Christopher Ching began the presentation about how the deck would be replaced and a patio would be added. He explained what had been done in the upland review area. They are not disturbing the wetlands. The porch would be flood compliant. All improvements would be in the rear of the property. He said he was in support of being environmentally compliant and would follow the commission's best practices.

Ms. Williams had no additional comments and explained why the applicant was before the commission. She then discussed the resolution.

There was a discussion about the concrete patio and whether it could be made of a pervious material.

**** MS. LANGALIS MOVED: THEREFORE BE IT RESOLVED** that application #2025 - 62 CAM – Christopher Ching – 4 Splitrock Road – Construct a flood complaint deck, with a screened porch and steps to grade, and a new patio at a single family residence within 50' of a tidal wetland be **APPROVED** subject to the following conditions:

1. That the building and site be developed in accordance with the following plans:
 - a. Per the site plan dated 6/12/2025 and revised 7/7/25 prepared by Advanced Land Surveying, Westport, CT
 - b. Per architectural plans received 8/11/2025 prepared by C&H Restoration LLC, West Haven, CT
2. That all required soil sedimentation and erosion controls are in place prior to the start of any construction; and
3. That any additional needed soil sedimentation and erosion controls be installed at the direction of the Staff; and
4. That any changes to the plans be reviewed by Staff prior to implementation; and
5. 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
6. 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 Building Zone Regulations for the City of Norwalk; and

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BE IT FURTHER RESOLVED that these 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 August 29th, 2025.

You must obtain a zoning approval and a building permit prior to any work on the site.

Mr. Roina seconded.

Ms. Langalis said that she had sold this property in the past but the commissioners agreed this was not a conflict.

Chapin Bryce; Diana Lenkowsky; Louis Schulman; Darius Williams; Tammy Langalis; Richard Roina approved.

No one opposed.

Jacquen Jordan-Byron abstained.

Ms. Langalis thanked the applicant for working with the city and not using pesticides.

B. #2025-60 R/SPR – Sound Communities, Inc. – 79 South Main Street (District 2, Block 57, Lot 7) – Zoning Regulation Text Amendment Application regarding Pocket Park Private Frontage Types and Site Plan Review Application to Construction of a seven-story, 68-dwelling unit, mixed-use development - Preliminary review

Atty Liz Suchy began the presentation by introducing the project team. She then explained the current property and showed them the site plan. She explained how the property would be redeveloped which would include housing for low-income seniors. The current buildings would be demolished. The regulations would be revised to allow for a pocket park and have green space. The area does not have many parks. She also explained which departments that they had received approvals as well as which had given them comments to address. She asked for a public hearing on the text amendment but that it was discretionary for the site plan application.

There was a discussion about whether there would be an architectural review. Mr. Baker said that it is going through the Redevelopment Agency. It would be shared with the commission at the public hearing.

Vincent Hynes, the engineer on the project, continued the presentation by discussing the size of the property and how it is currently being used. He discussed the pervious condition and that there was no water quality treatment. He said that they are following the city's landscape regulations and are working with the Redevelopment Agency and Transportation, Mobility and Parking (TMP). He then described the proposed drainage plan. He also discussed the pocket park and the public realm area. There was a discussion about the parking on one side and whether it was only for residents. There was a concern about non-residents using it.

Adam Bovilsky, Executive Director of the Norwalk Housing Authority, said that some of the units will be available for public housing replacement and some of them would be available to other seniors who met the financial requirements. The information would be published and available for anyone to apply. There was a discussion about the housing that was being replaced and whether it could be rehabbed. Mr. Bovilsky explained how this was a phased project. There was a discussion about the wait lists for senior housing. There was also a discussion about the location of Leroy Downs Housing.

Adam Palmer, the architect on the project, continued the presentation and said they were working on studies to determine the best use of the site. He discussed how this project would be done first, and residents of Leroy Downs would move into the new building. He discussed a walking path. Eric Rains, the landscape architect, discussed the proposed seating and paving on the project. Mr. Palmer then showed them the plans for the interior of the project, including parking and the residential units on floors 2-6. He also discussed the plans for solar and then showed them the exterior elevations for the proposed building. He also showed them renderings of the pocket park.

There was a discussion about the exterior colors of the project and the differences in the renderings. Mr. Palmer said they would clarify this to the residents. Mr. Hynes also clarified that they would be treating 78% of the storm water on site.

There was a discussion about the purpose of the solar panels for the building. It would be used for common areas and not for the residential units. Since the units have their own meters, it could only go back to the building.

Atty Suchy further explained the text amendment. She said that they would continue to work through comments of the departments. They would be on a tight schedule for the housing authority to move forward this year. She requested that a public hearing only be held for the text amendment since it is required.

At this point, there was a discussion as to whether the commission would hold a public hearing for the site plan. There was a discussion about the businesses being displaced. Mr. Bovilsky explained how they had helped them. Mr. Palmer explained the parking, ground floor and residential units. There was a discussion about having an onsite management office, especially since it would be a senior housing building. Mr. Bovilsky said that they would be doing this over time in all of their buildings. There was a discussion about the number of units allowed under the regulations. Since this was a low income housing property, Mr. Baker said that the city would have 68 more units with this development.

**** MR. SCHULMAN MOVED: THEREFORE BE IT RESOLVED** that a public hearing be held for both the site plan and text amendment applications #2025-60 R/SPR – Sound Communities, Inc. – 79 South Main Street (District 2, Block 57, Lot 7) – Zoning Regulation Text Amendment Application regarding Pocket Park Private Frontage Types and Site Plan Review Application to Construction of a seven-story, 68-dwelling unit, mixed-use development.

Ms. Lenkowsky seconded.

Chapin Bryce; Diana Lenkowsky; Louis Schulman; Darius Williams; Jacquen Jordan-Byron approved.

Richard Roina; Tammy Langalis opposed.

Galen Wells abstained.

Both public hearings will be held at the same meeting on September 17, 2025. Before the next presentation, Mr. Bryce said that the meeting would be continued with Ms. Wells as the chair.

C. #2025-53 CSPR – BPC Capital Management VI, LLC c/o Bradford P. Craighead – 7 Park Street (District 1, Block 68, Lot 1) – Construction of addition to existing historic structure and change of use to 11 dwelling units - Report & recommended action

Atty Adam Blank began the presentation with an introduction of the project team. He explained that since it was in the East Avenue Village District and in the coastal area management zone, the application came before the commission. An architectural peer review had been completed by the city's consultant, BFJ Planning. He also noted that the property is not near coastal resources.

Atty Emma Dignoti continued the presentation by orienting the property on an aerial map. There is an historic home on the property being used as an office, and showed them a photo of the current structure. The historic home would be renovated

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and an additional 11 residential units would be added. All of the buildings are connected and are one building. She noted that this would be a straightforward site plan application. The applicant has received some signoffs while they received comments from other departments which they will comply with. She discussed the comments from BFJ which the applicant mostly agreed to comply with. However, there was one comment about Juliet balconies, which the applicant believed were in keeping with the style of the building. BFJ had suggested removing them. She then discussed the other projects that the Craigheds had done over the last 10 years. Most had been done in the East Avenue area. She discussed their most recent project at 3 Park Street. There would be a slight decrease in impervious surfaces. The recreation area would be larger than required. She then summarized the traffic report. She oriented the commissioners as to the location of the property on an aerial map.

Wayne D'Avanzo, the engineer on the property, continued the presentation by explaining how they would modify the traffic flow as well as the sidewalk. He also discussed the parking spaces on the property, as well as the drainage system.

At this point, Ms. Jordan-Byron left the meeting.

Frank Diurno, the architect on the project, continued the presentation by showing the plans for the project which included an addition to the current property. He discussed the interior floors of the building which included a lower grade and three stories above. He showed them the exterior elevations which included the walkways. No doors would face outwards to the parking lot. He discussed the units below grade which would be filled with natural light so they would not feel they were below grade. and the Juliet balconies which would create interest.

Ms. Lenkowsky said that she appreciated that the applicant agreed with many of BFJ's comments.

Aleksandra Moch continued the presentation by noting that since they were not near the Norwalk River, the project could not impact it. However, she did say that there were two phases that could have an impact, one was the construction phase, especially if there are storms. She explained what they were proposing to do. They would also have a tracking pad so that trucks would not carry silt on their tires. She also explained how there would not be any increase in storm water runoff.

Atty Dignoti ended the presentation.

Mr. Bryce said that he liked the patio in the front.

Atty Blank said that the commissioners should look at 3 Park Street which was similar to this project. Brad Craighead said that they loved the location of this project.

**** MR. BRYCE MOVED: THEREFORE BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2025-53 CSPR – BPC Capital Management VI, LLC c/o Bradford P. Craighead – 7 Park Street (District 1, Block 68, Lot 1) – Construction of addition to existing historic structure and change of use to 11 dwelling units be **APPROVED** subject to the following:

1. That the buildings and site will be developed in accordance with the following plans:

a. Per the zoning location survey detailing 7 Park Street prepared by Wayne J. Arcamone, dated 4/8/25; and

b. Per site plans entitled “Drainage Plan,” prepared by Fairfield County Engineering, LLC, dated 8/8/25; and

c. Per architectural drawings entitled “7 Park Street Multifamily,” prepared by Balance Architecture, dated 6/30/25; and

2. That the overhead service wires and all other utilities shall be installed underground; and

3. That the applicant has agreed to include all recommendations by Planning & Zoning Staff’s memorandum dated 7/30/25 and Transportation, Mobility & Parking Staff’s memorandum dated 8/7/25 and 8/20/25; and

a. That item 3.b within TMP’s 8/7/25 memo shall apply to this approval; and

4. That the applicant has agreed to include all recommendations by BFJ Planning’s village district review memorandum dated 7/30/25, except for BFJ’s recommendation to remove the Juliet-style balconies; and

5. That a final Workforce Housing Plan showing a total of one (1) workforce housing unit shall be submitted to Staff for review and approval and shall include deed restriction documents, architectural floor plans and a breakdown of the number of bedrooms for each workforce housing unit provided. All such workforce housing units shall be deed restricted in perpetuity and meet all requirements of the Workforce Housing Regulations; and

6. That a surety bond be submitted, in an amount to be determined by the Staff, to guarantee the installation of the required erosion and sediment controls prior to the issuance of a zoning permit; and

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7. 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 of the Staff, as needed; and

8. That a Connecticut licensed engineer shall certify that all 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

9. That a surety bond be submitted to guarantee the completion and maintenance of the site plan and any modifications to the plan and all work required as a condition of approval under this special permit/coastal site plan review prior to the issuance of a 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 approval is August 29, 2025.

Mr. Williams seconded.

At this point, the commissioners reviewed the resolution which included TMP's comments which had been received that day.

Galen Wells; Chapin Bryce; Diana Lenkowsky; Louis Schulman; Darius Williams; Richard Roina; Tammy Langalis approved.

No one opposed.

No one abstained.

IV. PUBLIC HEARINGS

A. #2025-48 SP – Enrico R. Costantini, Esq. – 284 New Canaan Avenue – After-the-fact clearing of 15,000 square feet to be restored with plantings - Public hearing, report & recommended action B. #2025-49 SP – Enrico R. Costantini, Esq. – 284 New Canaan Avenue – Request to modify Special Permit #12-16 to expand the area of the previously approved contractor's yard and change the stormwater management - Public hearing, report & recommended action

This public hearing was opened and continued to the commission's next meeting on September 17, 2025. There was also a discussion about having the

commissioners do a site visit. Mr. Kleppin noted that it was a public meeting so he informed all of the rules.

**** MR. SCHULMAN MOVED: THEREFORE BE IT RESOLVED** that the public hearings for applications #2025-48 SP – Enrico R. Costantini, Esq. – 284 New Canaan Avenue – After-the-fact clearing of 15,000 square feet to be restored with plantings - Public hearing, report & recommended action and #2025-49 SP – Enrico R. Costantini, Esq. – 284 New Canaan Avenue – Request to modify Special Permit #12-16 to expand the area of the previously approved contractor's yard and change the stormwater management, be opened and continued to the Planning & Zoning Commission agenda on September 17, 2025.

Mr. Bryce seconded.

Galen Wells; Chapin Bryce; Diana Lenkowsky; Louis Schulman; Darius Williams; Richard Roina; Tammy Langalis approved.

No one opposed.

No one abstained.

V. DISCUSSION

A. Additional Zoning Regulation Changes

Mr. Baker began the presentation by noting that these were more changes to the zoning regulations. Some came up because of recent applications. There would be a change to allow building materials on facades. Another change would be for the expiration for building permits. Another change would be for the Artist Live/Work regulations. He also discussed the amendments to encroachments. There would also be changes in relation to variances, non-conformities, mergers of properties. There would be a change to sport fields being used as either principal use and accessory use. There would also be a change to non-building components and where it would be placed in the regulations. There would be a discussion with TMP about the size of driveways before a change was made to the regulations. There was a discussion about inground pools and lot coverage. There was a discussion about screening for dumpsters due to some properties no longer receiving trash pickup from the city. The dumpsters would have to be at the rear of the property. Another change would be made to the maximum height of the fence at the front of a property in the industrial zone. There would be a change to allow some flexibility and discretion as to the addition of sidewalks and street trees in front of single family construction. There was a discussion as to whether the houses should be required to add the sidewalks even if the ones next to them do not have them. Another change would be to private frontage types.

There was a discussion about when the public hearing would be scheduled, either in October or November.

VI. ACCEPTANCE OF MINUTES

A. Regular Meeting: August 6, 2025

**** MR. SCHULMAN MOVED to approve the August 6, 2025 minutes.**

Ms. Langalis seconded.

Galen Wells; Diana Lenkowsky; Louis Schulman; Tammy Langalis; approved.

No one opposed.

Darius Williams; Richard Roina; Chapin Bryce abstained.

Mr. Baker said that he had not added the minutes for the July 16 meeting to the agenda. They decided to wait until the next meeting to vote on them.

VII. COMMENTS OF DIRECTOR

Mr. Kleppin said that they had been interviewing vendors for online permitting software. He hoped to have a new platform by January 2027.

VIII. COMMENTS OF COMMISSIONERS

Mr. Schulman said that he noticed that the fountain at the Pearl was working.

Ms. Lenkowsky asked about the Grey Barns application. Mr. Kleppin said that the neighbor had appealed the decision but thought it would take 12-18 months to go through the courts.

IX. ADJOURNMENT

Mr. Bryce made a Motion to Adjourn.

Mr. Williams seconded.

Galen Wells; Chapin Bryce; Diana Lenkowsky; Louis Schulman; Darius Williams; Tammy Langalis; Richard Roina approved.

No one opposed.

No one abstained.

The meeting was adjourned at 8:07 p.m.

Respectfully submitted,

Diana Palmentiero

CITY OF NORWALK
PLANNING & ZONING COMMISSION MINUTES
July 16, 2025

PRESENT: Galen Wells, Chair; Diana Lenkowsky; Louis Schulman; Chapin Bryce; Jacquen Jordan-Byron; Darius Williams (arrived at 6:14 pm); Richard Roina (arrived at 6:22 pm); Tammy Langalis (arrived at 7:01 pm)

STAFF: Bryan Baker; Amelia Williams

OTHERS: Atty Liz Suchy; Vince Hynes; Caitlin Drury; Atty Adam Blank; Seelan Pather; Brian Dempsey; Henry Conroy; Andy Soumelidis; Jeff Byington; Mella Kernanl Bill Andriopoulos; Maria Genovese; Ryan Murphy; Laurie Mira; Mark Fischl; Diane Lauricella; Chia West

I. CALL TO ORDER

Ms. Wells called the meeting to order at 6:07 p.m. It should be noted that this meeting was held on Zoom.com with participants calling in, separately.

II. ROLL CALL

Mr. Baker called the roll. Ms. Wells seated Ms. Lenkowsky for the entire meeting. She said that she would have to recuse herself from the Shoreham Country Club application since Ms. Lenkowsky is a member and a neighbor.

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

Atty Liz Suchy began the presentation with an introduction of the applicant and the project team. She gave a brief overview of the application process as well as the application before the zoning board of Appeals (ZBA). She noted that there was a public hearing held during the ZBA process and did not think another was necessary. She explained the zoning regulations as well as which zone the property was located. She explained the variances that were necessary and granted by ZBA. She believed that application met all of the zoning regulations. They had received all necessary approvals from city departments, as well as from the Harbor Management Commission.

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There was a discussion about the swimming pool between two properties. Atty Suchy said that they were separate entities and there would be another application from the other property in August or September.

There was a discussion about the comments from neighbors. Atty Suchy said that the neighbors did not share any objections to this project.

Vince Hines, the engineer on the project, continued the presentation with an explanation of the Coltech system being used on the property. There was also a discussion about a retaining wall that is being removed.

Caitlin Drury discussed grading on the property.

At this time, there were no other comments from the Planning & Zoning Dept. staff.

**** MS. JORDAN-BYRON MOVED: THEREFORE 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

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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.

Mr. Bryce seconded.

The commissioners then reviewed the draft resolution. There was a discussion about whether a public hearing should be held. Mr. Baker explained how the staff would determine whether to recommend a public hearing. They generally do not have public hearings for single family residences.

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Galen Wells; Diana Lenkowsky; Louis Schulman; Chapin Bryce; Jacquen Jordan-Byron approved.

No one opposed.

Darius Williams and Richard Roina abstained.

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

Atty Liz Suchy began the presentation with a background of the application. She gave a description of the property and introduced the project team. She described the current property. She believed it met all the zoning requirements. She showed them the proposed site plan. There was also a discussion about an easement to be recorded on the land records. There were 2 separate parcels.

**** MR. SCHULMAN MOVED: 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.

Mr. Bryce seconded.

At this time they reviewed the motion.

Galen Wells; Diana Lenkowsky; Louis Schulman; Chapin Bryce; Jacquen Jordan-Byron; Darius Williams; Richard Roina approved.

No one opposed.

No one abstained.

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

Atty Adam Blank began the presentation by introducing the project team. He then showed them a slide presentation which included a map of where the project would be constructed. He also showed them the aerial photograph of the current property. There would be a publicly accessible park and boardwalk with increased waterfront access. Currently there is no public access to the property.

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There was a discussion about whether there would be a public hearing. Mr. Baker said that because of the size of the project, he expected that the commission would hold a public hearing. Atty Blank said that the application would also go before the Harbor Commission. Since it was not in the redevelopment area, there would not be a design review.

Atty Blank discussed the number of parking spaces and that the traffic analysis showed that there would be more parking than needed at peak hours. The residential housing units are larger than typical ones, including 2, 3 and 4 bedroom units. Atty Blank said that there would be affordable units with a couple of them being larger units.

Atty Blank gave a brief history of the property, noting that it had been a material storage yard as well as a boat storage yard. He explained that they were seeking permits for boat slips from the Department of Energy and Environmental Protection (DEEP). He also described the current conditions of the lot which lacked a drainage system and had no green area. The proposed plan would improve the water quality from the site.

The project would incorporate residential as well as retail and office uses. It was the hope that employees would live in the development, thus creating a walkable environment. They would restore a bulkhead and add a grand staircase down to the water, so that the public would have access to the water. There would also be a boardwalk and restaurant.

Atty Blank noted that in the marine commercial zone, where this project is located, public realm is not required. The applicant was proposing that over an acre of land become part of the public realm area. They would be creating connectivity between the harbor and Water Street.

Atty Blank then discussed the flood elevations and that the structures would be above base flood elevations so that it would be unlikely that there would be flooding in these living areas. However, they have submitted a flood preparedness plan.

There was also office space as part of the project, although it is a tough market for office space. If they could not lease space, they would return to the commission for alternate uses of the space. He suggested that by adding the office space it would help restaurants on Washington Street.

Vincent Hynes continued the presentation with a description of the site which did not include any formal drainage system. He showed them a top-down view of the site. There would be a decrease in impervious surfaces which included the addition of

permeable surface walkways. He also said that they were adding a green roof area to the top of a building, which would be a green element for storm water management and sustainability. He also discussed the infiltration systems. He also discussed the erosion controls to minimize construction impacts on the neighborhood.

He then discussed the flood zone in which the building is proposed and the drainage on Water Street. He also noted that the lobbies could be elevated in the future, to elevation 9. There was a discussion about building to a 9 ft. height, instead of doing it in the future. It was explained that Water Street may be elevated in the future. To do it now, would mean that they would need an ADA ramp that is 4 ft. higher as well as stairs.

There was a discussion about the possible implementation of a backflow preventer, similar to the one at 130 Water Street. Mr. Bryce asked if this was something that they could look into before the next meeting in September. Mr. Hynes said that they would have to work with DPW and DEEP as well.

Seelan Pather, the architect on the project, continued the presentation by showing them an aerial view of the current lot. He noted that there is no connection from Water St. to the water across the site. He discussed the permeability of the project, of which there are three ways. There is a walkway down and across. There will be another walkway to the south. The last one would be a grand staircase which would give access to several levels. There would also be a spot where pedestrians could literally touch the water. He showed them the proposed plans which included an ADA lobby which was lower to the ground. There were some lobbies that were higher. He then described the parking levels. He also described the amenity level which included a pool. The office building would also have a roof deck. There would also be a restaurant and retail spaces. He showed them the exterior designs, influenced by maritime architecture and included water related uses.

There was a discussion about traffic leaving the site. At this point, Brian Dempsey, the traffic engineer, continued the presentation. There would be a one way entrance and there would be another one way out of the property. TMP had made a suggestion about the traffic flow which they were analyzing. There was also a discussion about a pedestrian walkway as well as the traffic signal nearby. There was also a discussion about parking on Water St.

Atty Blank reminded the commissioners that since this was a site plan review application traffic is not a consideration for the commission. Traffic is only considered

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for the points on ingress and egress, and not for the traffic on the roadways. He did say that the applicant was working with TMP.

Ms. Langalis said that she had joined the meeting at 7:01 pm. She then asked questions about who owns the docks and how they would be leased. Henry Conroy, from Spinnaker Real Estate Partners, said that his company would own the dock slips and would accommodate tenants, whether it be from the office space, restaurant or residential. There would be 14 dock slips. It would not be appropriate for rowing clubs.

There was a discussion about the location of the office and residential buildings, being closer to the water, which was looked at both ways by the project team. Mr. Conroy said that they were feeling positive about leasing the office space from the feedback that they have already received, especially for Class A office space. There was a discussion about the parking which can be shared by the residential and office tenants and would be sufficient for this property. There was also a discussion about the landscape which would be plants that could tolerate the salt water.

**** MR. SCHULMAN MOVED: THEREFORE BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that a public hearing be held for application #2025-51 SPR/CAM - Spinnaker Acquisitions LLC - 108 Water Street (District 2, Block 84, Lot 18).

Mr. Bryce seconded.

Galen Wells; Diana Lenkowsky; Louis Schulman; Chapin Bryce; Jacquen Jordan-Byron; Darius Williams; Richard Roina approved.

No one opposed.

No one abstained.

Mr. Baker said that the public hearing would be either September 3 or 17. There was a discussion about whether there should be an architectural review of this project. Mr. Baker explained that they could do it but that the regulations have less requirements in the marine zone.

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)

Mr. Baker explained that the commission would have to approve the expenditure for the village district peer review since the project was in the East Avenue Village District.

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**** MR. SCHULMAN MOVED: THEREFORE BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that a Village District Peer Review Expenditure (fee paid by applicant) for application #2025-53 CAM/SPR - BPC Capital Management VI, LLC c/o Bradford P. Craighead - 7 Park Street (District 1, Block 68, Lot 1) be **APPROVED**.

Mr. Bryce seconded.

Galen Wells; Diana Lenkowsky; Louis Schulman; Chapin Bryce; Jacquen Jordan-Byron; Darius Williams; Richard Roina approved.

No one opposed.

No one abstained.

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

Ms Wells opened the public hearing and explained that Ms. Lenkowsky would be recused from this application.

Atty Suchy then began the presentation with an introduction of the project team. She also explained the application process. She gave a brief overview of the property which included the zone. At this time, the site plan was shared. She gave a brief history of the Shore & Country Club as well as the current structures on the property. She also explained the club's yearly schedule and how many employees they had at different times of the year. She explained that there is a master plan which would modernize the property. This application would be the first phase of it. She described the new structures, some of which would be FEMA compliant. A parking lot would be reconfigured and tennis courts moved. She said that the project was consistent with the Harbor Management Plan. They have also received sign-offs from the various city departments.

Andy Soumelidis, the engineer on the project, continued the presentation with the proposed site plan. He showed them where new tennis courts would be placed as well as new parking. He described how they were going to upgrade the storm water drainage. He also explained the utilities on the property. He showed them pictures of fences that would deaden the sound of pickleball.

There was a discussion about adding solar panels over the new parking area. Mr. Soumelidis suggested that they install solar panels on the roof of the clubhouse when they do that phase of the project. There was also a discussion about using permeable pavers. There was a discussion about additional green spaces in the parking areas. There was also a discussion about sustainability requirements.

Jeff Byington addressed the comment about solar panels over the parking area. He explained it was a bit early in the process. Atty Suchy said they would keep it in mind for the next phase of the project. Mr. Bryce noted that other projects had used solar covered parking which had worked well for them.

Mella Kernan discussed the lawn that would be in place for runoff from the tennis courts. She said that the club was not in the high velocity zone. She noted that the pro shop is not FEMA compliant or ADA compliant which they would now be able to provide. She noted that the tennis pro would be able to see all 10 of the tennis courts from one vantage point. There would be a small retail store, as well as ADA compliant bathroom facilities. She also discussed a transformer that is below the base flood line which would be moved to plus 2 over the base flood line. She described how water would be allowed to flow through flood vents since it is a flood area. She said they were not in a velocity zone. She described the roof plan. She showed them the elevations of the exterior of the building, as well as other views of the building. She noted that they did try to maintain the residential nature of the neighborhood with the materials being used. She showed them views from the tennis courts and clubhouse. She discussed the privet hedge, along with other plantings, for screening. She said they would look into the impervious pavers. She explained the parking for the clubhouse. There would be shade trees. She also explained the lighting design. William Rutherford, the landscape architect, noted the privet's height.

At this point, the hearing was opened for the public to make comments. However, no one spoke for or against the project.

Ms. Williams said that the only issue was the screening along the northern border. She had recommended continuing the vinyl fence while the applicant proposed landscaping. She wanted to hear the decision that the commission would make on this proposal.

Atty Suchy ended the presentation and requested that the commission act on the application that evening.

**** MR. BRYCE MOVED: BE IT RESOLVED** that application #2025 - 43 SP CAM – The Norwalk Country Club Company and Shore & Country Club, Inc. – 220

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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 vegetative screening, approved by Staff, be provided 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 the feasibility of installing as much permeable paving as possible in the new parking area be considered; and

13. That no changes to the seawall are permitted without City review and DEEP approval; and

14. 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 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.

Mr. Schulman seconded.

They began their review of the resolution. There was discussion about a chain link fence. There was a discussion about using permeable paving on the site. There was also a discussion about the parking area. Mr. Bryce said that he would agree to the changes in the resolution.

Galen Wells; Louis Schulman; Chapin Bryce; Jacquen Jordan-Byron; Darius Williams; Richard Roina; Tammy Langalis approved.

No one opposed.

No one abstained.

At this point, the commissioners decided to take a break, as there were still two more public hearings. They returned to the meeting at 8:50 pm.

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

Ms. Wells opened the public hearing. Atty Liz Suchy began the presentation by introducing the project team. She then gave a brief history of the application and noted that the green cards, evidencing notice of the public hearing, had been delivered to the Planning & Zoning Department staff. A sign notifying the public of the hearing had also been placed on the property and remained there during the meeting. She had not received any calls in opposition to the application and had received a letter of support. She explained about the zone that the property is located in. She also gave a brief history of the business which had been in the city for over 100 years. Multiple generations of the family had worked in the business and one member of the family would speak about the recycling process. Atty Suchy described the business in detail. By working with the P&Z staff, they had developed a recycling definition for use in the revised zoning regulations. She began to discuss the proposed building which would now be FEMA compliant. She said that the applicant had received all necessary sign-offs and would reply to all comments that they had received.

Andy Soumelidis, the engineer on the project, continued the presentation by showing them an aerial view of the property. He explained the current drainage system which did not include any treatment. He discussed the proposed site plan which included a new building, receiving/shipping area, and garage bays. The parking would be reorganized with more landscaping, street trees and curbing. He discussed the proposed drainage system. He also said that currently the site is 100% buildings and asphalt but that they are now adding landscaped areas. He also discussed the landscaping plan. He said that trees would be scattered throughout the site.

Bill Andriopoulos, the architect on the project, introduced his colleague, Maria Genovese. He then showed them the proposed plans, beginning on the first floor, which included lobby, employee break room, and even a museum space for Mr. Lajoie's racing memorabilia. He explained how materials would be received and moved to the processing area. There would be an area for equipment maintenance. He then described the second floor which included a conference room and open office area.

There was a discussion about the use of the garage space. There was also a discussion about the mitigation practices for any toxic fumes coming from the site. There were concerns about debris in the air. Mr. Andriopoulos said that the work is

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done in the building. They also shared a picture of the front of the current building. Mr. Andriopoulos then showed the proposed plans for the exterior of the building. Maria Genovese shared the elevations as well as other exteriors. Mr. Andriopoulos discussed the materials that would be used. Ms. Genovese shared the simulated wood that was made of aluminum which would be recyclable. Much of the operation would be hidden in the building from the street. There was also a discussion about the landscaping around the building.

Ryan Murphy continued the presentation by explaining what the business does, who they work with. He explained how the materials were collected, how they were melted to become new products. They do not take plastics at this time but they are looking into it. He addressed concerns about dust and noises. There was also a discussion about the number of employees that are employed. There was a discussion about signage for the property. Mr. Murphy said that the drainage does not go into the city's drainage system. The system is tested during the year.

At this point, the meeting was opened to the public for comments.

Laurie Mira, 25 Split Rock Road, said she was on the Norwalk River Watershed Associates. She said that there would be a microforest built across the street. She had concerns about the landscaping in the front which seemed minimal. She asked if the owner could work with her organization to landscape with native plants. She wanted to add more trees. She also had concerns about the filtration system.

Mark Fischl, 129 Woodward Avenue, at the Sports House, said that he was at the building behind this property. He was in support of the project.

Diane Lauricella, 21 Little Fox Lane, had concerns about the water quality coming off the site. She said that she is in favor of recycling but wondered what they did with the residue from it.

Chia West asked about the auto crushing equipment.

Ms. Williams said that the application does not respond fully to regulations and recommended keeping the public hearing open to receive further materials. The public will have an opportunity to speak on the new materials.

Atty Suchy made some closing remarks about the parking which was legally non-conforming. She wanted to address other comments but understood if the commission decided to wait two weeks until the next meeting. Ms. Wells asked her to wait until the next meeting for the rebuttal.

**** MR. SCHULMAN MOVED** to continue the public hearing for application #2025-46 SP CAM – Lajoie Auto Wrecking Company, Inc. – 40 Meadow Street (District 2, Block 91, Lot 51) until August 6, 2025.

Mr. Bryce seconded.

Galen Wells; Louis Schulman; Chapin Bryce; Diana Lenkowsky; Jacquen Jordan-Byron; Darius Williams; Richard Roina; Tammy Langalis approved.

No one opposed.

No one abstained.

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

Ms. Wells opened the public hearing. Mr. Baker began the presentation by noting that these are changes that the staff recommended. He addressed the first one which was for non-conforming parking locations. He also discussed the changes to a use table for Commercial Recreation Establishments. Another change was for clustered single-family dwellings in the Silvermine Tavern Village District. He noted the referrals.

At this point, Ms. Wells opened the hearing to the public for comments.

Diane Lauricella, 21 Little Fox Lane, had comments on the commercial recreational establishments. She asked that instead of bouncy house businesses being placed in the industrial zone, there should be clean industries being placed in this zone, to provide jobs for residents.

Ms. Wells closed the public hearing. Mr. Baker explained that commercial recreational establishments were no longer allowed in the industrial zone, as of 2022.

**** MR. SCHULMAN MOVED: 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:

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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.

Mr. Bryce seconded.

Galen Wells; Louis Schulman; Chapin Bryce; Diana Lenkowsky; Jacquen Jordan-Byron; Darius Williams; Richard Roina; Tammy Langalis approved.

No one opposed.

No one abstained.

V. ACCEPTANCE OF MINUTES

A.Regular Meeting: July 2, 2025

**** MS. LANGALIS MOVED to approve the July 2, 2025 minutes.**

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Mr. Willians seconded.

Galen Wells; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Darius Williams approved.

No one opposed.

Richard Roina; Chapin Bryce and Jacquen Jordan-Byron abstained.

VI. DISCUSSION

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

This item was moved to the commission's next meeting.

VII. COMMENTS OF DIRECTOR

There were no comments from Mr. Baker.

VIII. COMMENTS OF COMMISSIONERS

Mr. Schulman said that the fountain at the Pearl was still not working. Mr. Baker said he would look into it. Mr. Schulman would also like to start a discussion about architectural review for any areas of the city that don't require it when they are over a certain size.

IX. ADJOURNMENT

Ms. Jordan-Byron made a Motion to Adjourn. Check this -video

Ms. Langalis seconded.

Galen Wells; Louis Schulman; Chapin Bryce; Diana Lenkowsky; Jacquen Jordan-Byron; Darius Williams; Richard Roina; Tammy Langalis approved.

No one opposed.

No one abstained.

The meeting was adjourned at 10:09 p.m.

Respectfully submitted,

Diana Palmentiero