REGULAR MEETING – PLANNING AND ZONING COMMISSION
AGENDA

FEBRUARY 4, 2026, 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. 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 AND SEATING OF ALTERNATES

III. PUBLIC HEARINGS

A. #2025-94 SP/CSPR – Manresa Osprey, LLC – Longshore Avenue (District 5, Block 86, Lots 1 and 2) aka Manresa Island – Special permit and coastal site plan review application for excavation or grading of more than 1,000 cubic yards of earth material and soil disturbance of 10,000 square feet or more in accordance with Section 6.2.2.D of the Norwalk Zoning Regulations - Public hearing, report & recommended action

IV. DISCUSSION

A. #2026-03 R - Planning & Zoning Commission - Zoning Regulation Text Amendments to Article(s) 4, 6, 7 and 9 regarding Public Realm exemptions and fee-in-lieu; applicability of Workforce Housing to Artist Live/Work Unit uses; revisions to Band

Signs standards; revisions to the definition of "Dormer," and "Earth Processing and Contractor's Materials Storage Yard;" creation of "Landscape Nursery" use, definition, permitted zones and limitations; creation of definitions for "Patio," "Porch," "Stoop," and "Wetbar;" removal of "steps" from permitted Encroachments; modifications to the Village District Review Standards for minor projects

V. ACCEPTANCE OF MINUTES

A. Regular Meeting: January 21, 2026

VI. COMMENTS OF DIRECTOR

VII. COMMENTS OF COMMISSIONERS

VIII. ADJOURNMENT

UPCOMING MEETINGS

February 11, 2026; February 18, 2026

Special Permit Application

City of Norwalk Planning & Zoning Commission
Phone: 203-854-7780
www.norwalkct.gov

Date Received:

Per Section 8.4.8 of the Norwalk Zoning Regulations, Special Permits are for Uses, Buildings, or Structures that are considered to be generally appropriate in the applicable District, but because of their potential for impacts with Adjacent Uses, Buildings, or Structures, require individual review for specific locations.

1. **Address of Subject Property(s):**
   Longshore Avenue, Norwalk, CT
2. District: 5 Block: 86 Lot(s): 1 & 2
3. Zone: CD-1S, Overlay/Village District: No
4. Historic Structure(s): ☑ No ☐ Yes
5. Flood Hazard Zone: ☐ No ☑ Yes, Flood Zone(s) VE, AE, X
6. Coastal Area Management Zone: ☐ No ☑ Yes If yes, include application for Coastal Site Plan Review or specify Section allowing exemption: submitted herewith
7. Existing Use of Property:
   Vacant 26.8 portion of 120+ acre Manresa Island. See Schedule A attached hereto and made a part hereof.
8. Proposed Use of Property as Identified per **Table 4.3.9.A:** Building, Lot & Building Site Principal Uses:
   See Schedule A attached hereto and made a part hereof.

Applicant Information

Applicant Name: Manresa Osprey, LLC
Billing Address: 50 Day Street, South Norwalk, CT 06854
Phone Number: c/o E. Suchy 203-252-2656 Email: c/o E. Suchy - esuchy@carmodylaw.com
Signature: Carmody Torrance Sandak & Hennessey, LLP

Property Owner Information and Authorization

Owner of Record: Manresa Osprey, LLC
Billing Address: 50 Day Street, South Norwalk, CT 06854
Phone Number: c/o E. Suchy 203-252-2656 Email: c/o E. Suchy - esuchy@carmodylaw.com
Signature: Carmody Torrance Sandak & Hennessey, LLP

**By signing, the property owner confirms that the Applicant has been authorized to apply for Planning & Zoning approval, and attests that all information provided is true and accurate.*

MANRESA OSPREY LLC
LONGSHORE AVENUE, NORWALK, CONNECTICUT
APPLICATION FOR SPECIAL PERMIT
NARRATIVE – SCHEDULE A

BACKGROUND

Manresa Osprey LLC (hereinafter "Manresa Osprey") is the owner of real property with the improvements thereon located on Longshore Avenue in Norwalk, CT, designated as Tax Lots 1 and 2 in Block 86 of the Fifth Taxing District (the "Property"). The Property is 120+ acres, is zoned CD-1S[1] and is located within the coastal area management (CAM) zone (Zones X, VE (El 14, 15 & 17), AE (El. 14 & 15). Generally, the Property is bounded by Longshore Avenue to the north, to the south and west by tidal wetlands and Long Island Sound, and to the east by residentially developed properties, tidal wetlands and Long Island Sound. The Property is improved with multiple structures all used in connection with a former coal and later oil-powered electricity generating facility that was operational from the 1950s to 2013, after having previously been used as a retreat by the Jesuits.

There are various structures on the Property, including the eight-story electricity generating plant and an electrical substation. Four (4) oil tanks that served the plant, were demolished earlier this year. The plant had been owed by Connecticut Light & Power, then United Illuminating, and more recently by NRG. (Refer to "Topographic Survey of Property at Longshore Avenue in Norwalk, Connecticut Prepared for Manresa Osprey, LLC (Sheets 1-39)" dated September 3, 2025, revised to December 9, 2025, prepared by D'Andrea Surveying & Engineering, P.C., attached hereto and made a part hereof).

PROPOSAL

Manresa Osprey seeks approval for the adaptive reuse of 28.6-acres in the northern section of Tax Lot 2 to create the "North Forest" offering walking trails, boardwalks, observation areas, site grading, robust new landscaping, a new accessway for vehicles, an on-grade parking lot and a restroom pavilion. The portion of the Property proposed to be developed had previously been the area where coal ash from the power plant was deposited. Over time, nature allowed a birch forest to develop in this area. (Refer to "Layout Plan" (Sheets L-301-L306) dated 12/15/25 prepared by Scape and "Driveway & Parking Site Layout Plan (Overall)" dated 12/15/25 prepared by Tighe & Bond, and other documents attached and submitted hereto and made a part hereof as set forth on the Exhibit List).

More specifically, the North Forest will include a system of paved and unpaved loop trails with seating, hammocks and other amenities, pile supported boardwalks, selective tree clearing creating gathering and educational spaces, a 44-space parking lot, restrooms, lighting, removal of invasive species, along with wayfinding and interpretive signage. One area – the "Eco Node" will offer habitat viewing; the "Gather Node" is designed to provide a small area for rest and informal programming; the "Learn Node" is envisioned as an educational stop with signage or outdoor classroom use. Other than portable restrooms and a parking lot, Manresa Osprey does not propose any permanent structures on the Property at this time. This application contemplates walking, birdwatching, jogging and other forms of outdoor passive recreation. To achieve this proposal, Manresa Osprey anticipates that approximately 28,645± cubic yards of material will be brought to the North Forest area, thus necessitating this application for special permit.

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[1]Prior to February 19, 2024, the Property was zoned B Residence.

The North Forest is part of the broader Manresa Island Masterplan, a long-term, private initiative to "transform the former power plant peninsula into a resilient ecological preserve and publicly accessible waterfront park." (p. 5, "Coastal Resources Report" dated December 2025 prepared by eDesign Dynamics, attached hereto and made a part hereof). Furthermore, the Manresa Island Masterplan "envisions a connected system of coastal habitats including salt marsh, upland meadow, freshwater wetlands and forest, supported by low-impact public amenities such as trails, boardwalks, educational overlooks and small gathering areas. These improvements are designed to restore ecological function, expand habitat for state-listed species, improve climate resilience an offer the regional community, new opportunities for passive recreation, environmental education and shoreline access." (p. 12, "Coastal Resources Report").

This special permit application is submitted pursuant Sec. 6.2.2.D (grading) and 6.3.2.C (import/export of materials) of the City of Norwalk Zoning Regulations (the "Zoning Regulations"). Manresa Osprey hereby submits that the proposed use is permitted in and consistent with the current CD-1S zone and complies with the Zoning Regulations and standards of review for soil importing as set forth in Sec. 6.2.2.D and for special permits set forth in Sec. 8.4.8G.2 (a-o) as follows:

(a) Density of use and bulk of buildings. With the exception of a restroom structure which complies with the Zoning Regulations relating to accessory structures in the CD-1S zone, no other buildings are proposed as part of the North Forest component of the Manresa Island Masterplan. All buildings in the southern section of the Property are existing, nonconforming and are not part of this special permit application. (Refer to zoning table and parking table set forth on "Driveway & Parking Site Layout Plan (Overall)" dated 12/15/25 prepared by Tighe & Bond, attached hereto and made a part hereof).

(b) All proposed uses for which a site plan is required shall provide for ingress and egress to the site which does not adversely impact the normal flow of traffic or normal safe conditions of the roadways. Site plans shall be referred to the Department of Public Works (DPW) and the Transportation, Mobility and Parking Department (TMP) for review and recommendations. The Property will continue to be served by one (1) ingress and egress driveway from Longshore Avenue, which will be modified to accommodate vehicular and bus traffic. The application and supporting documentation have been forwarded to DPW, TMP, South Norwalk Electric and Water and the Water Pollution Control Authority for review and comment.

(c) The Commission may require such reasonable improvements as may be necessary to accommodate traffic increases caused by the proposed development to maintain existing levels of service to improve traffic safety. A traffic impact analysis, as specified below, may be required from the applicant to determine the extent of necessary improvements. "Based on the trip-generation estimates developed for Phase 1 and a qualitative review of access and circulation patterns, traffic associated with the North Forest is not expected to result in material adverse effects on the surrounding roadway network under the assumptions and conditions described in this statement." (p. 1, "Traffic Statement" dated December 12, 2025, prepared by Tighe & Bond, attached hereto and made a part hereof). The North Forest proposal "will introduce targeted access and circulation improvements at the site entrance to support public access while maintaining the natural character of the area." Longshore Avenue and the proposed interior access road will remain the sole vehicular access route providing consistent two-way width and adequate emergency vehicle clearance. The existing entry into the Property will be realigned to provide compliant sight

distance and turning geometry and will be improved to provide a bus stop and turnaround area.

(d) Availability of mass transit facilities and provision of sidewalks, with a minimum clearance of five (5') feet without obstructions. Sidewalks exist on the eastern side of Woodward Avenue north of its intersection with Longshore Avenue. No sidewalks are proposed on Longshore Avenue as a part of this application. Wheels Bus Route 2 terminates at Woodward and Dock Road. Discussions are underway with the Norwalk Transit District to extend this route to the entrance of the Property.

(e) Availability and compatibility of utilities. The Property is and will continue to be served by city water and sewer. (Refer to plans by Tighe & Bond, attached hereto and made a part hereof).

(f) Adverse impact from noise, odor, fumes, dust and artificial lighting. As noted, the North Forest will create passive recreation and educational use of the northern 28+ acres. A small, 44-space parking lot with limited, interior-facing lighting is proposed. Non-illuminated walking trails along the eastern section of the Property are in excess of 200 feet from property lines separating the Property from adjoining single-family, residentially developed parcels. Most of the existing vegetation will remain, with additional robust plantings proposed throughout the project site area. Based upon the design and proposed use of the North Forest, Manresa Osprey does not envision adverse impacts from noise, odor, dust, fumes or artificial lighting. (Refer to various landscape plans prepared by SCAPE, attached hereto and made a part hereof).

(g) Signs of size and design that are in harmony with the neighborhood. Limited wall and ground signs are proposed and will comply with the city's signage regulations.

(h) Adequacy of yards and open space, screening and buffering. Yards and open space, screening and buffering for the site comply with the Zoning Regulations for the CD-1S zone. With the exception of the small restroom proposed in the parking lot, no other structures are proposed for the Property at this time. The vast majority of existing landscaping will be maintained, with robust restorative landscaping within the North Forest. (Refer to zoning table and parking table set forth on "Driveway & Parking Site Layout Plan (Overall)" dated 12/15/25 prepared by Tighe & Bond, attached hereto and made a part hereof).

(i) Impact on neighborhood properties, as compared to uses and structures permitted as a matter of right. The creation of a passive park area in the northern section of the Property is compatible with uses in the general vicinity including parks, single- and two-family residential structures and club uses. The proposed North Forest is far less impactful than uses currently permitted in the CD-1S zone, including residential development of the site into single-family dwellings, office, religious facilities, convalescent/nursing homes, elementary and secondary schools, waterfront clubs, public utility supply and storage and other permitted uses.

(j) Existing land use in the area. The area surrounding the Property is generally developed with single- and two-family residences and a limited number of warehouses on Woodward Avenue to the north.

(k) Proximity of community facilities. Woodward Avenue Park is located to the north, less than ¼ mile from the entrance to the Property.

(l) Compliance with the Zoning Regulations and Plan of Conservation and Development. Manresa Island has been prominently identified in goals and strategies of the 2019 POCD advisory Plan of Conservation and Development. (POCD). In addition to "pursu[ing] planning and funding for public access to Long Island Sound on Manresa" and "seek[ing] public access to the coast in disposition plans for Manresa Island," the POCD recognized the importance of Manresa Island among city strategies for "opportunities to provide more public access to the water including streams as well as the Norwalk River and coastline" and "establish[ing] open space on the Manresa peninsula." This project achieves all of the goals for Manresa Island set forth in the POCD.

(m) Utilization of green infrastructure and other sustainability measures. Among the best management practices planned for the Property are infiltration basin/rain garden to provide controlled storage where stormwater runoff can slow down and allow sediment to settle and be trapped. Periodic internal street sweeping will remove sediment, trans and other debris before they can infiltrate into the stormwater management system and the inclusion of a hydrodynamic separator will serve as pretreatment and prevention of oil and sediment transport downstream. (Refer to "Drainage Memorandum" dated December 2025 prepared by Tighe & Bond, attached hereto and made a part hereof). The restroom facility will have a "green roof assembly." (Refer to "Site Details – Structures (Sheet L-910) dated 12/15/25 prepared by Scape, attached hereto and made a part hereof).

(n) Conservation of wetlands, watercourses and other ecologically viable lands. A petition to amend the City of Norwalk Inland Wetlands Map is pending before the City of Norwalk Conservation Commission, which if approved, will declassify two (2) sections of the Property as inland wetlands. Both areas are the result of human activity over time, and based upon recent evaluations, these areas no longer exhibit the characteristics necessary for them to remain classified as inland wetlands. Other pockets of inland wetlands on the Property will remain unchanged and not impacted by the North Forest proposal.

(o) No zoning violation exists on the property. There are no known zoning violations on the property.

MANRESA OSPREY LLC
LONGSHORE AVENUE, SOUTH NORWALK, CT
APPLICATION FOR SPECIAL PERMIT
LIST OF PROPERTY OWNERS WITHIN 100' OF THE SUBJECT PROPERTY

1.
5/84/139
Kevin Hobson
Danielle Sanchick
9 Outer Road
Norwalk, CT 06854

2.
5/84/97
Mark R. Smith
Nora Niedzielski-Eichner
7 Outer Road
Norwalk, CT 06854

3.
5/84/158
Emma O'Neill
Benjamin Cherner
5 Outer Road
Norwalk, CT 06854

4.
5/84/117
Emma O'Neill
Benjamin Cherner
3 Outer Road
Norwalk, CT 06854

5.
5/84/116
Village Creek Homeowners, Inc .
21 Outer Road
Norwalk, CT 06854

Mailing:
1 Outer Road
Norwalk, CT 06854-4704

6.
5/84/98
Adrienne Alaie
14 Outer Road
Norwalk, CT 06854

7.
5/84/144
Carlo Vona
Meredith Vona
19 Dock Road
Norwalk, CT 06854

8.
5/84/96
Ernie Grevers
Francis Grevers
17 Dock Road
Norwalk, CT 06854-4704

9.
5/84/95
Bruce D. Strolin
Helen T. Strolin
15 Dock Road
Norwalk, CT 06854-4704

10.
5/84/94
Robert W. Allen, Jr.
Louise Y. Wang
13 Dock Road
Norwalk, CT 06854-4704

11.
5/84/143
Axel Coelln
11 Dock Road
Norwalk, CT 06854

12.
5/84/115
Bradley Yeary
Byron Guzman-Lopez
9 Dock Road
Norwalk, CT 06854

13.
5/85B/90
Peter Mumma
184 Woodward Avenue
Norwalk, CT 06854

14.
5/85B/96
City of Norwalk
2 Longshore Avenue
Norwalk, CT 06854

Mailing:
c/o A. Lo
125 East Avenue
Norwalk, CT 06851-5702

15.
5/85B/97
Harbor Beach Company
27 Channel Avenue
Norwalk, CT 06854

Mailing:
2 Channel Avenue
Norwalk, CT 06854

16.
5/86/16A
William E. S. Browning
5 1/2 Longshore Avenue
Norwalk, CT 06854-4828

17.
5/85C/1
Melissa Anne Matuska
Mark Matuska
Adrian Matuska
1 Longshore Avenue
Norwalk, CT 06854

18.
5/84/123
Village Creek Homeowners, Inc.
21 Outer Road
Norwalk, CT 06854

Mailing;
c/o Treasurer
21 Outer Road
Norwalk, CT 06854

19.
5/85C/2
Jane Newman, trustee
3 Longshore Avenue
Norwalk, CT 06854

20.
5/85C/3
Jennifer & Todd Yarnold
5 Longshore Avenue
Norwalk, CT 06854

21.
5/85C/4
Margaret Teed
7 Longshore Avenue
Norwalk, CT 06854

22.
5/85C/69
Harbor Beach Company
38 Channel Avenue
Norwalk CT 06854

Mailing:
2 Channel Avenue
Norwalk, CT 06854

23.
5/85C/70
Harold & Carole Fass
61 Harbor View Avenue
Norwalk, CT 06854

24.
5/85C/5
Laraine Caplan
62 Harbor View Avenue
Norwalk, CT 06854

25.
5/84/157
Keith & Deborah Kreter
7 Dock Road
Norwalk, CT 06854

26.
5/85B/89
Beulah Sample, Trustee
182 Woodward Avenue
Norwalk, CT 06854

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:** Longshore Avenue, South Norwalk, CT 06854 **2.** D/B/L/U: 5/86/1 & 2

3. Proposed Work: Creation of "North Forest" for recreation, education **4.** Zone: CD-1S

5. Applicant Identification:

Applicant Name: Manresa Osprey, LLC

Address: 50 Day Street, South Norwalk, CT 06854

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

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

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

Name: Elizabeth Suchy, Esq.

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

Business Phone: 203-252-2656 Email: E. Suchy, Esq. - esuchy@carmodylaw.com

6. Property Owner, if different than applicant:

Owner Name: Manresa Osprey, LLC

Address: 50 Day Street, South Norwalk, CT 06854

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

7. Project Information:

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

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

8. 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)

9. Site Information:

a) Street Address or Geographical Description:
Longshore Avenue, South Norwalk, CT

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

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

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

e) Indicate the area of the project site: 28.6 acres **or** 1,245,816 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

10. Description of Proposed Project or Activity:

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

See Schedule A attached hereto and "Proposed Activities" (Sec. 3) in "Coastal Resources Report - Manresa Island - North Forest" dated December 2025, prepared by eDesign Dynamics, attached hereto and made a part hereof.

11. Description of Proposed Stormwater Best Management Practices:

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

See Section 2.4 "Low Impact Development and Best Management Practices" in "Drainage Memorandum" dated December 2025 prepared by Tighe & Bond, attached hereto and made a part hereof.

12. 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

13. Consistency with Applicable Coastal Resource Policies and Standards:

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

See Section 5 in "Coastal Resources Report" dated December 2025 prepared by eDesign Dynamics, attached hereto and made a part hereof.

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

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

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

* General Development policies are applicable to all proposed activities

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

15. Consistency With Applicable Coastal Use Policies and Standards:

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

See Section 5 in Coastal Resources Report dated December 2025 prepared by eDesign Dynamics, attached hereto and a made a part hereof.

16. 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)	☑	☐

17. 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.) *:

No water dependent uses are proposed for the North Forest project, but water-dependent uses will be proposed for the future development of the remaining 100 acres to the south. Refer to Schedule A attached hereto and made a part hereof.

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

18. Mitigation of Potential Adverse Impacts:

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

See Section 7 - Mitigation of Potential Adverse Impacts - set forth in Coastal Resources Report dated December 2025 prepared by eDesign Dynamics, attached hereto and made a part hereof.

19. 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*):

See response to #18 above.

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:** 12/18/2025

Agent's Signature: Carmody Torrance Sandak & Hennessey, LLP **DATE:** **12/18/2025**

MANRESA OSPREY LLC
LONGSHORE AVENUE, NORWALK, CONNECTICUT
APPLICATION FOR COASTAL SITE PLAN REVIEW
NARRATIVE – SCHEDULE A

BACKGROUND

Manresa Osprey LLC (hereinafter "Manresa Osprey") is the owner of real property with the improvements thereon located on Longshore Avenue in Norwalk, CT (the "Property"). Designated as Tax Lots 1 and 2 in Block 86 of the Fifth Taxing District, the Property is 120+ acres, is zoned CD-1S[1] and is located within the coastal area management (CAM) zone (Zones X, VE (El. 14, 15 & 17), AE (El. 13 & 15)). Generally, the Property is bounded by Longshore Avenue to the north, to the south, west and east by tidal wetlands and Long Island Sound and by several single-family residential properties to the east. The Property is improved with multiple structures, including an eight-story, decommissioned electricity generating plant and an electrical substation, all used in connection with a former coal and later oil-powered electricity generating facility that was operational from the 1950s to 2013, after having been used as a retreat by the Jesuits. Four (4) oil tanks that served the plant were demolished earlier this year. The plant had been owned by Connecticut Light & Power, then United Illuminating, and more recently by NRG. (Refer to "Topographic Survey of Property at Longshore Avenue in Norwalk, Connecticut Prepared for Manresa, LLC (Sheets 1-39)" dated September 3, 2025, revised to December 9, 2025, prepared by D'Andrea Surveying & Engineering, P.C., attached hereto and made a part hereof).

PROPOSAL

Manresa Osprey seeks coastal site plan approval for the adaptive reuse of a 28.6-acres in the northern section of Tax Lot 2 (the portion of the Property closest to Longshore Avenue) to create the "North Forest" which will offer passive recreation through a series of looped walking trails, boardwalks, observation areas, site grading, robust new landscaping, a new accessway for vehicles, an on-grade parking lot and a restroom pavilion. The portion of the Property proposed to be developed had previously been the area where coal ash from the power plant was deposited. Over time, nature allowed a birch forest to develop in this area. (Refer to "Layout Plan" (Sheets L-301-L306) dated 12/15/25 prepared by Scape, "Driveway & Parking Site Layout Plan (Overall)" dated 12/15/25 prepared by Tighe & Bond, and "Coastal Resources Report Manresa Island North Forest" dated December 2025 prepared by eDesign Dynamics, and other documents set forth on Exhibit List attached and submitted hereto and made a part hereof).

More specifically, the North Forest will include a 1.5-mile system of paved and unpaved loop trails with seating, hammocks and other amenities, pile supported boardwalks, selective tree clearing creating gathering and educational spaces, a 44-space parking lot, restrooms, lighting, removal of invasive species, along with wayfinding and interpretive signage are proposed. The North Forest proposes three pockets – "Eco," "Gather" and "Learn." In the Eco area, there will be a one-acre meadow, wet and dry grasslands, space for birdwatching and research. In the 0.67± acre clearing offering gathering space, a clearing and hammocks. "Learn" will be a 0.2± acre outdoor classroom with picnic areas, benches and views of Long Island Sound. Other than portable restrooms and a parking lot, Manresa Osprey does not propose any permanent structures on the Property at this time.

[1]Prior to February 19, 2024, the Property was zoned B Residence.

The North Forest is part of the broader Manresa Island Masterplan, "a long-term [private] effort to transform the former Manresa Power Plant peninsula into a resilient ecological preserve and publicly accessible waterfront park." (p. 5, "Coastal Resources Report – Manresa Island – North Forest" dated December 2025 prepared by eDesign Dynamics, attached hereto and made a part hereof). Furthermore, the Manresa Island Masterplan "envisions a connected system of coastal habitats including salt marsh, upland meadow, freshwater wetlands and forest, supported by low-impact public amenities such as trails, boardwalks, educational signage and small gathering areas. These improvements are designed to restore ecological function, expand habitat for state-listed species, improve climate resilience and offer the regional community, new opportunities for passive recreation, environmental education and shoreline access." (p. 12, Coastal Resources Report).

Should all requisite approvals and permits be issued, Manresa Osprey anticipates opening the North Forest in 2027.

This coastal site plan review application is submitted pursuant to Sec. 6.10.2B.2 (coastal overlay), Table 4.3.1-L and Sec. 8.4.5.F (coastal site plan review) of the City of Norwalk Zoning Regulations (the "Zoning Regulations") due to the nature of the grading activity and the proximity of activities within 50' of nearby tidal wetlands.[2] Manresa Osprey hereby submits that the proposed use is permitted in and consistent with the current CD-1S zone and complies with the Zoning Regulations and standards of review for coastal site plan applications set forth in Sec. 6.10.B.3b as follows:

(1) The characteristics of the site, including location and condition of all coastal resources. The site is located within the CAM zone. Tidal wetlands exist on the Property, but no activities proposed for the creation of the North Forest will occur within tidal wetlands. Some limited activity will occur within 50' of tidal wetlands. (Refer to p. 8-10, Sec. 2.1.1 to 2.1.1, Coastal Resources Report).

(2) The potential effects, both beneficial and adverse of the proposed activity on adjacent coastal systems and coastal resources. There are no adverse impacts to adjacent coastal systems and coastal resources anticipated by the proposed activity, as the proposed use is for passive recreational purposes. Minimal, low-impact public access features are proposed along with restored habitat connectivity and ecological function and enhanced vegetative buffers. "The North Forest 1 project avoids, minimizes and mitigates potential adverse impacts to coastal resources. (p. 29, Coastal Resources Report). Various measures are proposed to avoid direct impacts along with the minimization of indirect and long-term effects, including seasonal work windows, engineered controls, restoration plantings and species-specific best management practices. (Refer to p. 29-31, Sec. 7, Coastal Resources Report).

(3) The potential effects, both beneficial and adverse, of the proposed activity on future water-dependent development opportunities. This Application for Coastal Site Plan Review relates to a 28.6-acre inland section of the Property where there is no direct access to the waterfront and where water-dependent uses could be developed. The North Forest proposal does not impair future plans for the southern 100 acres where water-dependent activities, including the opening of more than one mile of waterfront for public access and other public recreational and educational activities are contemplated. (Refer to p. 27-28, Sec. 6.2, Coastal Resources Report).

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[2]An application for Significant Activity has been filed simultaneously herewith with the City of Norwalk Conservation Commission, along with a Petition to Amend the Inland Wetlands Map of the City of Norwalk since some previously identified areas no longer meet the statutory definition of wetlands In addition, Manresa Osprey has filed an Application for Special Permit with the City of Norwalk Planning & Zoning Commission relating to fill to be imported.

(4) The potential impact of a rise in sea level, coastal flooding and erosion patterns on both coastal resources and coastal development. The North Forest project avoids impact to all tidal wetlands and intertidal buffer zones, and does not involve any dredging, filling or in-water work within coastal resources. Enhanced vegetative cover and soil stability will reduce flood and erosion-related vulnerabilities while also improving water quality, reducing sediment/nutrient loading and enhancing upland infiltration before runoff reaches the Norwalk Harbor and Long Island Sound. (p. 11, Coastal Resources Report).

(5) Preservation of the dynamic form and integrity of coastal resource systems, including but not limited to minimization of alteration of current flows, depth, slope, natural erosion and sedimentation, biological communities and habitat. (Refer to p. 17-23, Sec. 5, Coastal Resources Report).

(6) The goals and policies of the Connecticut Coastal Management Act, as amended, and identification of any conflicts between the proposed development, use or activity and any goal or policy of the Act. The proposed North Forest meets the requirements of the Connecticut Coastal Management Act and is adequately protective of the interests of these regulations and the City of Norwalk's coastal resources. Furthermore, the North Forest is consistent with general development goals referenced in CGS Section 22a-92. (Refer to p. 26-28, Sec. 6 and p. 31-32, Sec. 8, Coastal Resources Report).

MANRESA OSPREY LLC
LONGSHORE AVENUE, SOUTH NORWALK, CT
APPLICATION FOR COASTAL SITE PLAN REVIEW
LIST OF PROPERTY OWNERS WITHIN 100' OF THE SUBJECT PROPERTY

1.
5/84/139
Kevin Hobson
Danielle Sanchick
9 Outer Road
Norwalk, CT 06854

2.
5/84/97
Mark R. Smith
Nora Niedzielski-Eichner
7 Outer Road
Norwalk, CT 06854

3.
5/84/158
Emma O'Neill
Benjamin Cherner
5 Outer Road
Norwalk, CT 06854

4.
5/84/117
Emma O'Neill
Benjamin Cherner
3 Outer Road
Norwalk, CT 06854

5.
5/84/116
Village Creek Homeowners, Inc .
21 Outer Road
Norwalk, CT 06854

Mailing:
1 Outer Road
Norwalk, CT 06854-4704

6.
5/84/98
Adrienne Alaie
14 Outer Road
Norwalk, CT 06854

7.
5/84/144
Carlo Vona
Meredith Vona
19 Dock Road
Norwalk, CT 06854

8.
5/84/96
Ernie Grevers
Francis Grevers
17 Dock Road
Norwalk, CT 06854-4704

9.
5/84/95
Bruce D. Strolin
Helen T. Strolin
15 Dock Road
Norwalk, CT 06854-4704

10.
5/84/94
Robert W. Allen, Jr.
Louise Y. Wang
13 Dock Road
Norwalk, CT 06854-4704

11.
5/84/143
Axel Coelln
11 Dock Road
Norwalk, CT 06854

12.
5/84/115
Bradley Yeary
Byron Guzman-Lopez
9 Dock Road
Norwalk, CT 06854

13.
5/85B/90
Peter Mumma
184 Woodward Avenue
Norwalk, CT 06854

14.
5/85B/96
City of Norwalk
2 Longshore Avenue
Norwalk, CT 06854

Mailing:
c/o A. Lo
125 East Avenue
Norwalk, CT 06851-5702

15.
5/85B/97
Harbor Beach Company
27 Channel Avenue
Norwalk, CT 06854

Mailing:
2 Channel Avenue
Norwalk, CT 06854

16.
5/86/16A
William E. S. Browning
5 1/2 Longshore Avenue
Norwalk, CT 06854-4828

17.
5/85C/1
Melissa Anne Matuska
Mark Matuska
Adrian Matuska
1 Longshore Avenue
Norwalk, CT 06854

18.
5/84/123
Village Creek Homeowners, Inc.
21 Outer Road
Norwalk, CT 06854

Mailing;
c/o Treasurer
21 Outer Road
Norwalk, CT 06854

19.
5/85C/2
Jane Newman, trustee
3 Longshore Avenue
Norwalk, CT 06854

20.
5/85C/3
Jennifer & Todd Yarnold
5 Longshore Avenue
Norwalk, CT 06854

21.
5/85C/4
Margaret Teed
7 Longshore Avenue
Norwalk, CT 06854

22.
5/85C/69
Harbor Beach Company
38 Channel Avenue
Norwalk CT 06854

Mailing:
2 Channel Avenue
Norwalk, CT 06854

23.
5/85C/70
Harold & Carole Fass
61 Harbor View Avenue
Norwalk, CT 06854

24.
5/85C/5
Laraine Caplan
62 Harbor View Avenue
Norwalk, CT 06854

25.
5/84/157
Keith & Deborah Kreter
7 Dock Road
Norwalk, CT 06854

26.
5/85B/89
Beulah Sample, Trustee
182 Woodward Avenue
Norwalk, CT 06854



LEGEND

- PROJECT LIMIT LINE
- EXISTING VEGETATION
- DIRECT CONSTRUCTION
- ENHANCEMENT PLANTING

	AREA OF DISTURBANCE (SF)
1. EXISTING VEGETATION TO REMAN	±334,560
2. DIRECT CONSTRUCTION IMPACT	±358,280
3. ENHANCEMENT PLANTING	±529,070
TOTAL AREA	**±1,221,910**

MANRESA ISLAND - NORTH FOREST
NORWALK, CT

AREA OF DISTURBANCE
FULL SITE

DATE: 12/08/2025
SCALE: AS SHOWN
FIGURE: 1

Tighe&Bond

Plotted On:Dec 08, 2025-1:18pm By: EBeattie
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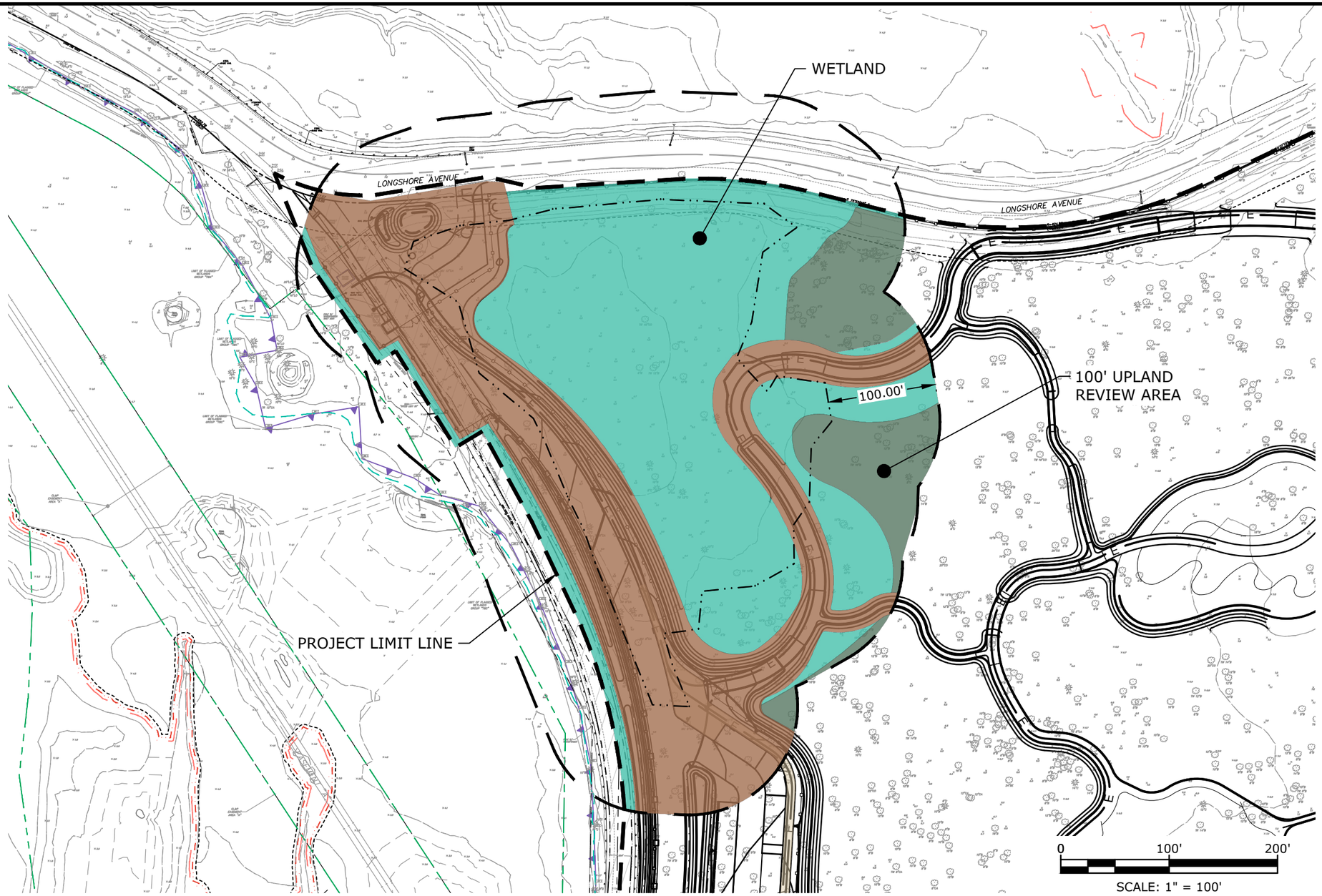

LEGEND

- PROJECT LIMIT LINE
- EXISTING VEGETATION
- DIRECT CONSTRUCTION
- ENHANCEMENT PLANTING

	AREA OF DISTURBANCE (SF)
1. EXISTING VEGETATION TO REMAN	±22,710
2. DIRECT CONSTRUCTION IMPACT	±86,400
3. ENHANCEMENT PLANTING	±100,650
TOTAL AREA	**±209,760**

MANRESA ISLAND - NORTH FOREST
NORWALK, CT

AREA OF DISTURBANCE
WETLAND AND UPLAND REVIEW AREA

DATE: 12/08/2025
SCALE: AS SHOWN
FIGURE: 2

Tighe&Bond

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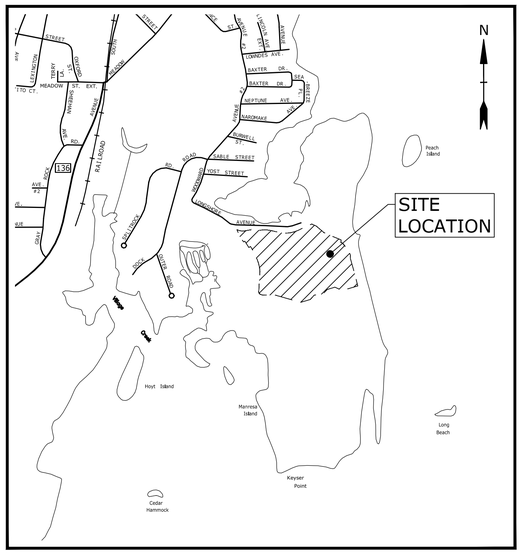
CITY OF NORWALK, CONNECTICUT

MANRESA ISLAND
NORTH FOREST ACCESS DRIVE AND PARKING

LOCAL APPROVALS
DECEMBER 15, 2025



LOCATION MAP
SCALE: 1" = 1000'

PREPARED BY:

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

SCAPE LANDSCAPE ARCHITECTURE DPC
277 BROADWAY 9th FLOOR
NEW YORK, NY 10007
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eDESIGN DYNAMICS
247 W 35TH STREET
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A K R F
440 PARK AVENUE SOUTH, 7TH FLR
NEW YORK, NY 10016
T+ 212 696 0670

STATE OF CONNECTICUT
CHARLES J. CROCE
20374
LICENSED PROFESSIONAL ENGINEER
12/12/2025

CHARLES J. CROCE, PE

STATE OF CONNECTICUT
ANDREW P. WHITE
27761
LICENSED PROFESSIONAL ENGINEER
12/12/2025

ANDREW P. WHITE, PE

PREPARED FOR:

MANRESA ISLAND CORPORATION

Last Saved: 12/12/2025
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LIST OF DRAWINGS

SHEET NO.	DRAWING NO.	DRAWING TITLE
		GENERAL
1	G-001	COVER SHEET
2	G-002	INDEX SHEET
3	G-003	AREA PLAN
		SURVEY
4 - 42	S-001 TO S-00X	TOPOGRAPHIC SURVEY OF PROPERTY AT LONGSHORE AVE IN NORWALK, CT
		CIVIL
43	C-001	GENERAL NOTES, LEGEND & ABBREVIATIONS (1)
44	C-002	GENERAL NOTES, LEGEND & ABBREVIATIONS (2)
45	C-010	EXISTING CONDITIONS PLAN (OVERALL)
46	C-011	EXISTING CONDITIONS PLAN (1)
47	C-012	EXISTING CONDITIONS PLAN (2)
48	C-013	EXISTING CONDITIONS PLAN (3)
49	C-014	EXISTING CONDITIONS PLAN (4)
50	C-015	EXISTING CONDITIONS PLAN (5)
51	C-016	EXISTING CONDITIONS PLAN (6)
52	C-100	DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (OVERALL)
53	C-101	DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (1)
54	C-102	DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (2)
55	C-103	DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (3)
56	C-104	DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (4)
57	C-105	DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (5)
58	C-106	DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (6)
59	C-200	DRIVEWAY & PARKING SITE LAYOUT PLAN (OVERALL)
60	C-201	DRIVEWAY & PARKING SITE LAYOUT PLAN (1)
61	C-202	DRIVEWAY & PARKING SITE LAYOUT PLAN (2)
62	C-210	DRIVEWAY & PARKING SITE MATERIAL PLAN (OVERALL)
63	C-211	DRIVEWAY & PARKING SITE MATERIAL PLAN (1)
64	C-212	DRIVEWAY & PARKING SITE MATERIAL PLAN (2)
65	C-300	DRIVEWAY & PARKING SITE GRADING & SOIL EROSION & SEDIMENT CONTROL PLAN (OVERALL)
66	C-301	DRIVEWAY & PARKING SITE GRADING & SOIL EROSION & SEDIMENT CONTROL PLAN (1)
67	C-302	DRIVEWAY & PARKING SITE GRADING & SOIL EROSION & SEDIMENT CONTROL PLAN (2)
68	C-311	SOIL EROSION & SEDIMENT CONTROL NOTES, NARRATIVE & DETAILS
69	C-400	DRIVEWAY & PARKING SITE DRAINAGE & UTILITY PLAN (OVERALL)
70	C-401	DRIVEWAY & PARKING SITE DRAINAGE & UTILITY PLAN (1)
71	C-402	DRIVEWAY & PARKING SITE DRAINAGE & UTILITY PLAN (2)
72	C-500	DRIVEWAY & PARKING SITE LIGHTING & FOOTCANDLE PLAN (OVERALL)
73	C-501	DRIVEWAY & PARKING SITE LIGHTING & FOOTCANDLE PLAN (1)
74	C-502	DRIVEWAY & PARKING SITE LIGHTING & FOOTCANDLE PLAN (2)
75	C-601	DRIVEWAY & PARKING DETAILS (1)
76	C-602	DRIVEWAY & PARKING DETAILS (2)
77	C-603	DRIVEWAY & PARKING DETAILS (3)
78	C-604	DRIVEWAY & PARKING DETAILS (4)
79	C-605	DRIVEWAY & PARKING DETAILS (5)
80	C-606	DRIVEWAY & PARKING DETAILS (6)
81	C-607	DRIVEWAY & PARKING DETAILS (7)
82	C-621	CITY OF NORWALK STANDARD DETAILS (1)
83	C-622	CITY OF NORWALK STANDARD DETAILS (2)
84	C-623	CITY OF NORWALK STANDARD DETAILS (3)
85	C-624	CITY OF NORWALK STANDARD DETAILS (4)
86	C-625	CITY OF NORWALK STANDARD DETAILS (5)
87	C-626	CTDOT HIGHWAY DESIGN GUIDE SHEET (1)
88	C-627	CTDOT HIGHWAY DESIGN GUIDE SHEET (2)
		LANDSCAPE ARCHITECTURE
89	L-001	GENERAL NOTES & ABBREVIATIONS
90	L-100A	TREE PROTECTIONS AND REMOVALS PLAN MATRIX
91	L-100B	TREE PROTECTIONS AND REMOVALS PLAN MATRIX
92	L-101	TREE PROTECTIONS AND REMOVALS PLAN (1)
93	L-102	TREE PROTECTIONS AND REMOVALS PLAN (2)
94	L-103	TREE PROTECTIONS AND REMOVALS PLAN (3)
95	L-104	TREE PROTECTIONS AND REMOVALS PLAN (4)
96	L-105	TREE PROTECTIONS AND REMOVALS PLAN (5)
97	L-106	TREE PROTECTIONS AND REMOVALS PLAN (6)
98	L-201	MATERIALS PLAN (1)
99	L-202	MATERIALS PLAN (2)
100	L-203	MATERIALS PLAN (3)
101	L-204	MATERIALS PLAN (4)
102	L-205	MATERIALS PLAN (5)
103	L-206	MATERIALS PLAN (6)
104	L-301	LAYOUT PLAN (1)
105	L-302	LAYOUT PLAN (2)
106	L-303	LAYOUT PLAN (3)
107	L-304	LAYOUT PLAN (4)
108	L-305	LAYOUT PLAN (5)
109	L-306	LAYOUT PLAN (6)
110	L-401	GRADING PLAN (1)
111	L-402	GRADING PLAN (2)
112	L-403	GRADING PLAN (3)
113	L-404	GRADING PLAN (4)
114	L-405	GRADING PLAN (5)
115	L-406	GRADING PLAN (6)
116	L-600	RESTORATION PLANTING PLAN
117	L-600A	RESTORATION PLANTING NOTES (1)
118	L-600B	RESTORATION PLANTING NOTES (2)
119	L-600C	RESTORATION PLANTING NOTES (3)
120	L-600.1	RESTORATION PLANTING SCHEDULE (1)
121	L-600.2	RESTORATION PLANTING SCHEDULE (2)
122	L-600.3	RESTORATION PLANTING SCHEDULE (3)
123	L-600.4	RESTORATION PLANTING SCHEDULE (4)
124	L-600.5	RESTORATION PLANTING SCHEDULE (5)
125	L-600.1A	RESTORATION SEEDING SCHEDULE (1)
126	L-600.2A	RESTORATION SEEDING SCHEDULE (2)
127	L-600.3A	RESTORATION SEEDING SCHEDULE (3)
128	L-601	RESTORATION PLAN ENLARGEMENT (1)
129	L-602	RESTORATION PLAN ENLARGEMENT (2)
130	L-603	RESTORATION PLAN ENLARGEMENT (3)
131	L-604	RESTORATION PLAN ENLARGEMENT (4)
132	L-605	RESTORATION PLAN ENLARGEMENT (5)
133	L-606	RESTORATION PLAN ENLARGEMENT (6)
134	L-610	SWITCHGRASS MEADOW ENHANCEMENT ENLARGEMENT PLAN
135	L-610A	SWITCHGRASS MEADOW ENHANCEMENT PLANTING & SEEDING SCHEDULE
136	L-611	ECO POCKET PLANTING & SEEDING PLAN
137	L-611A	ECO POCKET PLANTING & SEEDING SCHEDULE
138	L-612	TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 1 & 2
139	L-613	TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 3 & 4
140	L-614	TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 3 & 4
141	L-615	TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 5 & 6
142	L-616	TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 7 & 8
143	L-617	TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 9 & 10
144	L-618	TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 11
145	L-620	PLANTING ENLARGEMENT SCHEDULES
146	L-621	PLANTING ENLARGEMENT PLAN (1)
147	L-622	PLANTING ENLARGEMENT PLAN (2)
148	L-623	PLANTING ENLARGEMENT PLAN (3)
149	L-624	PLANTING ENLARGEMENT PLAN (4)
150	L-625	PLANTING ENLARGEMENT PLAN (5)
151	L-626	PLANTING ENLARGEMENT PLAN (6)
152	L-800	TRAIL PROFILE OVERALL KEY PLAN
153	L-801	TRAIL PROFILES (1)
154	L-802	TRAIL PROFILES (2)
155	L-803	TRAIL PROFILES (3)
156	L-804	TRAIL PROFILES (4)
157	L-805	TRAIL PROFILES (5)
158	L-806	TRAIL PROFILES (6)
159	L-807	TRAIL PROFILES (7)
160	L-808	TRAIL PROFILES (8)
161	L-901	SITE DETAILS (1)
162	L-902	SITE DETAILS (2)
163	L-903	SITE DETAILS (3)
164	L-910	SITE DETAILS (4)
165	L-920	SITE DETAILS (5)
166	L-930	SITE DETAILS (6)
167	L-931	SITE DETAILS (7)
168	L-932	SITE DETAILS (8)
169	L-960	SITE DETAILS (9)
170	L-961	SITE DETAILS - FENCING & BARRIER DETAILS
171	L-970	SITE DETAILS (10)
172	L-971	SITE DETAILS (11)
173	L-980	SITE DETAILS (12)
174	L-990	SITE DETAILS (13)
175	L-991	RESTORATION PLANTING DETAILS 1
176	L-992	RESTORATION PLANTING DETAILS 2
177	L-993	RESTORATION PLANTING DETAILS 3
178	L-994	SITE DETAILS (14)

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT
SCAPE LANDSCAPE ARCHITECTURE DPC
277 BROADWAY 9th FLOOR
NEW YORK, NY 10007
T+ 212 462 2628

CIVIL ENGINEER
Tighe&Bond
1000 BRIDGEPORT AVENUE #320
SHELTON, CT 06484
T+ 203 712 1100

ECOLOGICAL
eDESIGN DYNAMICS
247 W 35TH STREET
NEW YORK, NY 10001
T+ 646 688 3113

ENVIRONMENTAL
AKRF
440 PARK AVENUE SOUTH, 7TH FLR
NEW YORK, NY 10016
T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. CROCE · 20374 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

STATE OF CONNECTICUT · ANDREW P. WHITE · 27767 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

NOT FOR CONSTRUCTION

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS. FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

INDEX SHEET

PROJECT NO	SHEET NO
M5177-004	G-002
SCALE	
NO SCALE	
DRAWN BY	
J.PAPRIOTA	
CHECKED BY	
K.McCUTCHAN	
DATE	
12/15/2025	

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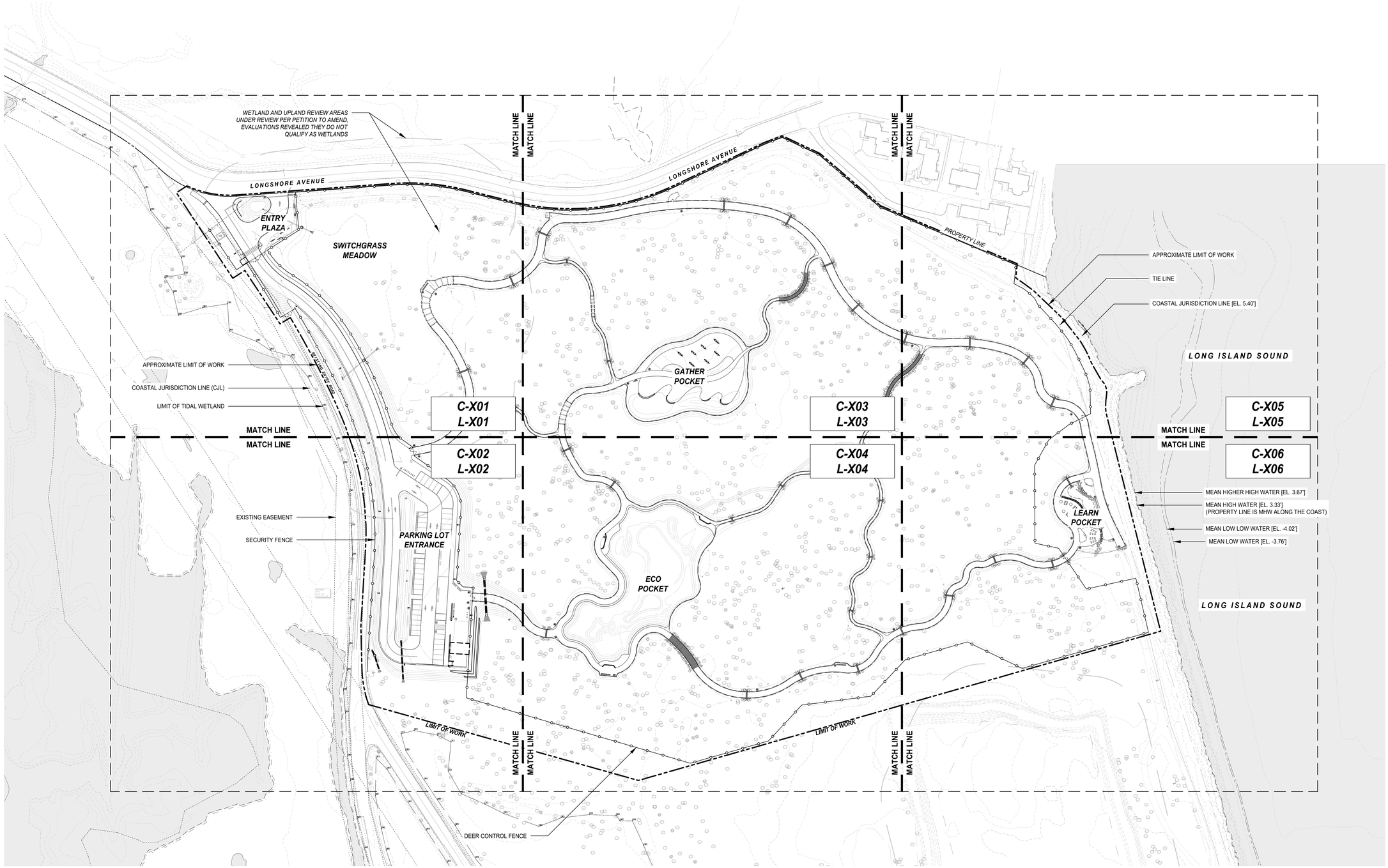
Last Saved: 12/12/2025
Plotted On: Dec 12, 2025 - 1:54pm By: EBeattie
Tighe & Bond: J:\M\M5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Drawings\AutoCAD\Sheet\North Forest\M5177-004-C-000-COVR.dwg

NOTES
1. OVERALL KEY PLAN INDICATES ORDER AND NUMBERING OF LANDSCAPE PLANS IN EACH PLAN SERIES.
2. "X" IN THE SHEET NUMBER REFERENCE INDICATES VARIABLE SHEET # FOR PLAN SERIES SEQUENCE.



1 AREA PLAN
SCALE: 1" = 80'-0"

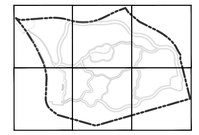
0 40' 80' 160' 240'

P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLT\G-003 AREA PLAN.dwg Plotted on: 12/12/2025 9:13:17 AM

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	**SCAPE LANDSCAPE ARCHITECTURE DPC** 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	**Tighe&Bond** 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	**eDESIGN DYNAMICS** 247 W. 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	**AKRF** 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL



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LOCAL APPROVAL

SHEET NAME

AREA PLAN

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 80'-0"	
DRAWN BY	
SCAPE	
CHECKED BY	
SCAPE	
DATE	
12/15/2025	

G-003

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SURVEY NOTES:
1) REFERENCE IS MADE TO A CERTAIN MAP ENTITLED "MARINE TERMINAL / SPCC FACILITIES" SITE PLAN TOWN OF NORWALK, CONNECTICUT, DRAWING NUMBER 20304-10 006 DATED FEBRUARY 9, 1993, PREPARED FOR THE CONNECTICUT LIGHT & POWER CO.

2) ELEVATIONS BELOW MEAN HIGH WATER WERE PROVIDED BY RACE COASTAL ENGINEERING, P.C.

3) THE LIMIT OF FLAGGED WETLANDS WERE PROVIDED BY AND OUTSIDE SOURCE AND FIELD LOCATED BY D'ANDREA SURVEYING & ENGINEERING, P.C.

4) TOTAL BUILDING AREA REFERS TO THE TOTAL ACREAGE MINUS THE TIDAL POND TO MEAN HIGH WATER.

LEGEND:

-30-	EXISTING CONTOUR
× 25.3	EXISTING SPOT ELEVATION
	DECIDUOUS TREE
	CONIFEROUS TREE
	UTILITY POLE
C.B.	CATCH BASIN
SDMH	STORM DRAIN MANHOLE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE
CO	CLEAN OUT
TW	TOP OF WALL
BW	BOTTOM OF WALL
	WETLAND FLAG
E,T,C	ELEC, TELE, & CABLE SERVICES
	PROPERTY LINE
	EXISTING STONE WALL
	EXISTING RETAINING WALL
WG	WATER GATE
SSMH	SANITARY SEWER MANHOLE
CPP	CORRUGATED PLASTIC PIPE
	SIGN
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
	HANDICAP PARKING SPACE
W	WATER SERVICE
G	GAS SERVICE
WG	WATER GATE
GG	GAS GATE
SDMH	STORM DRAIN MANHOLE
	FIRE HYDRANT
MW	MONITORING WELL
LP	LIGHT POLE
	COASTAL JURISDICTION LINE (CJL)
	MEAN HIGHER HIGH WATER (MHHW)
	MEAN HIGH WATER LINE (MHW)
	MEAN LOW WATER (MLW)
	MEAN LOW LOW WATER (MLLW)
	PROPERTY LINE
	100' UPLAND REVIEW LIMIT
	LIMIT OF FLAGGED WETLANDS

TREE LEGEND
A – ASH
B – BIRCH
BA – BASSWOOD
BE – BEECH
BW – BLACK WALNUT
C – CEDAR
CA – CRABAPPLE
CH – CHESTNUT
CO – COTTONWOOD
DG – DOGWOOD
DW – UNKNOWN
F – FIR
HL – HONEYLOCUST
LO – LOCUST
M – MAPLE
O – OAK
P – PINE
PR – PEAR
SY – SYCAMORE
W – WILLOW
YP – YELLOW POPLAR

MU – MULTI
TR – TRIPLE
TW – TWIN

SUBJECT AREA

LOCATION MAP – 1"=1000'±

CONNECTICUT COORDINATE SYSTEM NAD 83 (2011)

PROPERTY LIES WITHIN FLOOD HAZARD ZONES "X" (AREA OF MINIMAL FLOOD HAZARD), "AE"(EL=13), "VE"(EL=17), "VE"(EL=15), AND "VE"(EL=14) AND "AE" (EL 15) AS DEPICTED ON FIRM MAP No. 09001C0533G, EFFECTIVE JULY 8, 2013, PUBLISHED BY FEMA AND DEPICTED HEREON.

HORIZONTAL CONTROL WAS ESTABLISHED USING THE GLOBAL POSITIONING SYSTEM (GPS). COORDINATES ARE BASED ON THE CONNECTICUT COORDINATE SYSTEM OF 1983, NAD83 (2011) EPOCH 2011.0. DISTANCES ARE IN US SURVEY FEET.

CONNECTICUT COORDINATE SYSTEM OF 1983

HORIZONTAL DATUM : NAD 83 (2011) EPOCH: 2011.0000
VERTICAL DATUM : NAVD 88

CORS CONTROL DATA (APRIL 25, 2025)

POINT	NORTHING	EASTING	DESCRIPTION
NYC1	473827.975	875960.023	NYC1/ARP
NYVH	592526.195	705618.119	NYVH/ARP
RVD1	577127.068	770701.164	RVD1/ARP

ELEVATIONS DEPICTED HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

THIS MAP IS A TOPOGRAPHIC SURVEY. TOPOGRAPHIC DATA IS IN ACCORDANCE WITH CLASS "T-2" TOPOGRAPHIC ACCURACY. BOUNDARY INFORMATION IS BASED ON A RESURVEY CONDUCTED IN ACCORDANCE WITH HORIZONTAL ACCURACY CLASS "A-2" AS DEFINED IN THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH SEC. 20-300b-20.

NEW MONUMENTATION HAS NOT BEEN SET IN THE COURSE OF MAKING THIS SURVEY.

ONLY COPIES OF THIS MAP, BEARING AN ORIGINAL IMPRINT OF THE SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

PARCEL 1 33± ACRES
PARCEL 2 96.79± ACRES
TOTAL = 129.79± ACRES
TOTAL BUILDING AREA = 117.5± ACRES (TO MEAN HIGH WATER), SEE NOTE 4

REFER TO MAPS 11966, 11965, 11967, 11968 N.L.R.

LAND LIES IN "CD-1S" ZONING DISTRICT

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

D'ANDREA SURVEYING & ENGINEERING, P.C.
Edwin W. Rhodes III
, SURVEYOR
EDWIN W. RHODES, III CT LS No. 70436
RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

STATE OF CONNECTICUT EDWIN W. RHODES No. 70436 LICENSED LAND SURVEYOR

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION, INCLUDING PHYSICAL EVIDENCE, AND UTILITY COMPANY SKETCHES. DEPICTED UTILITIES ARE APPROXIMATE, AND MAY BE INCOMPLETE. SURVEY DECLARATION OF ACCURACY DOES NOT EXTEND TO THE PLOTTING OF UNDERGROUND UTILITIES. UNDERGROUND UTILITY LOCATION SHALL BE FIELD VERIFIED AND MARKED PRIOR TO COMMENCING ANY EXCAVATION ACTIVITIES. "CALL BEFORE YOU DIG," 1-800-922-4455.

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET
SCALE
20 0 20
IN FEET



TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 1 OF 39

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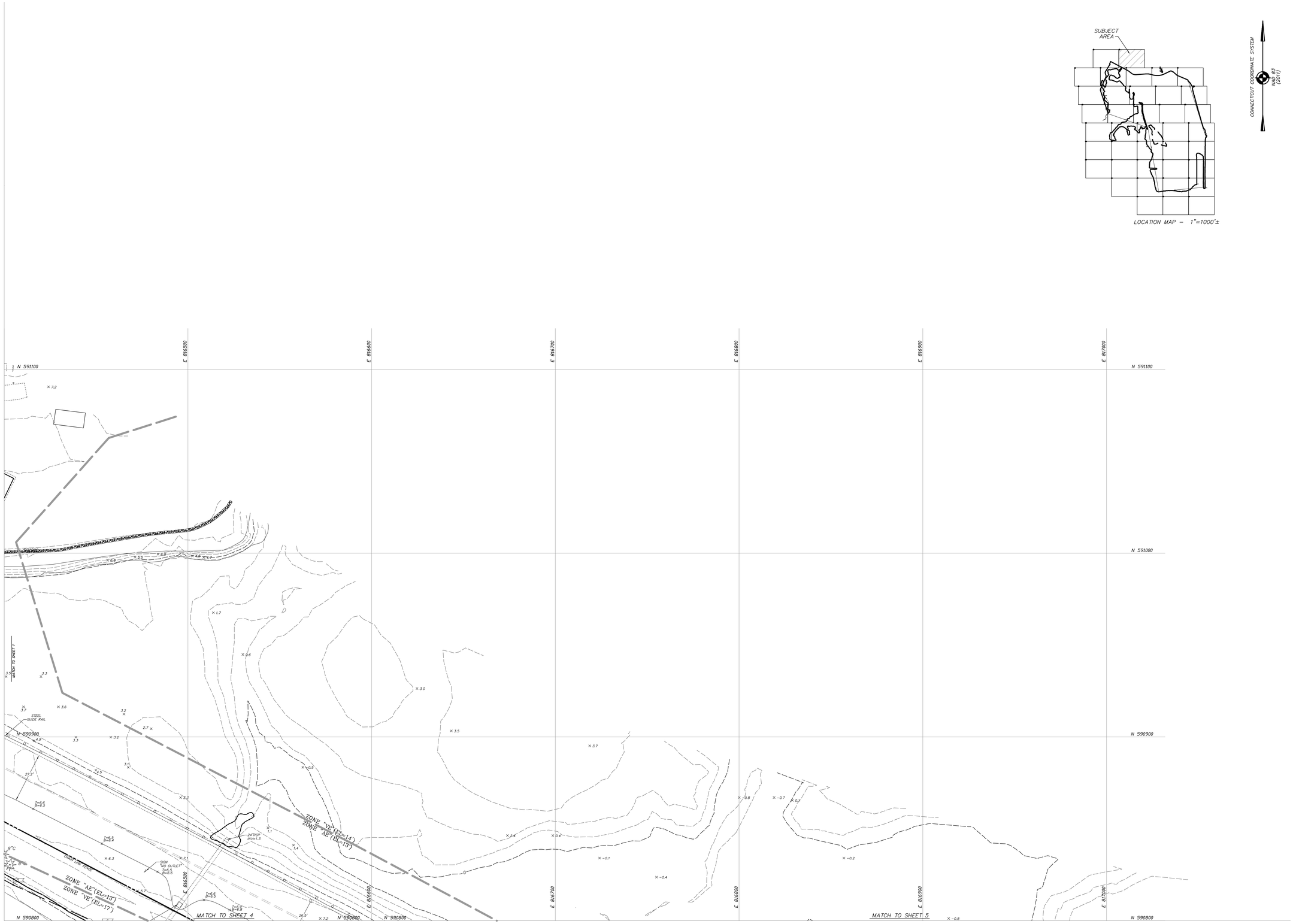
S:\WORKSPACE_PROJS_TO_SORT\TC_1.8.2.DWG
BY: CHRISTOPHER PROCTOR ON: 09/17/2025



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STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes III, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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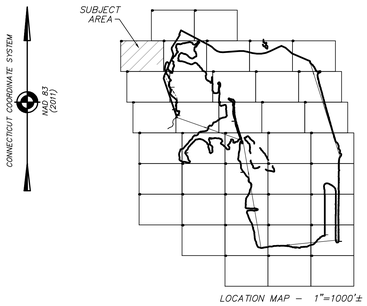
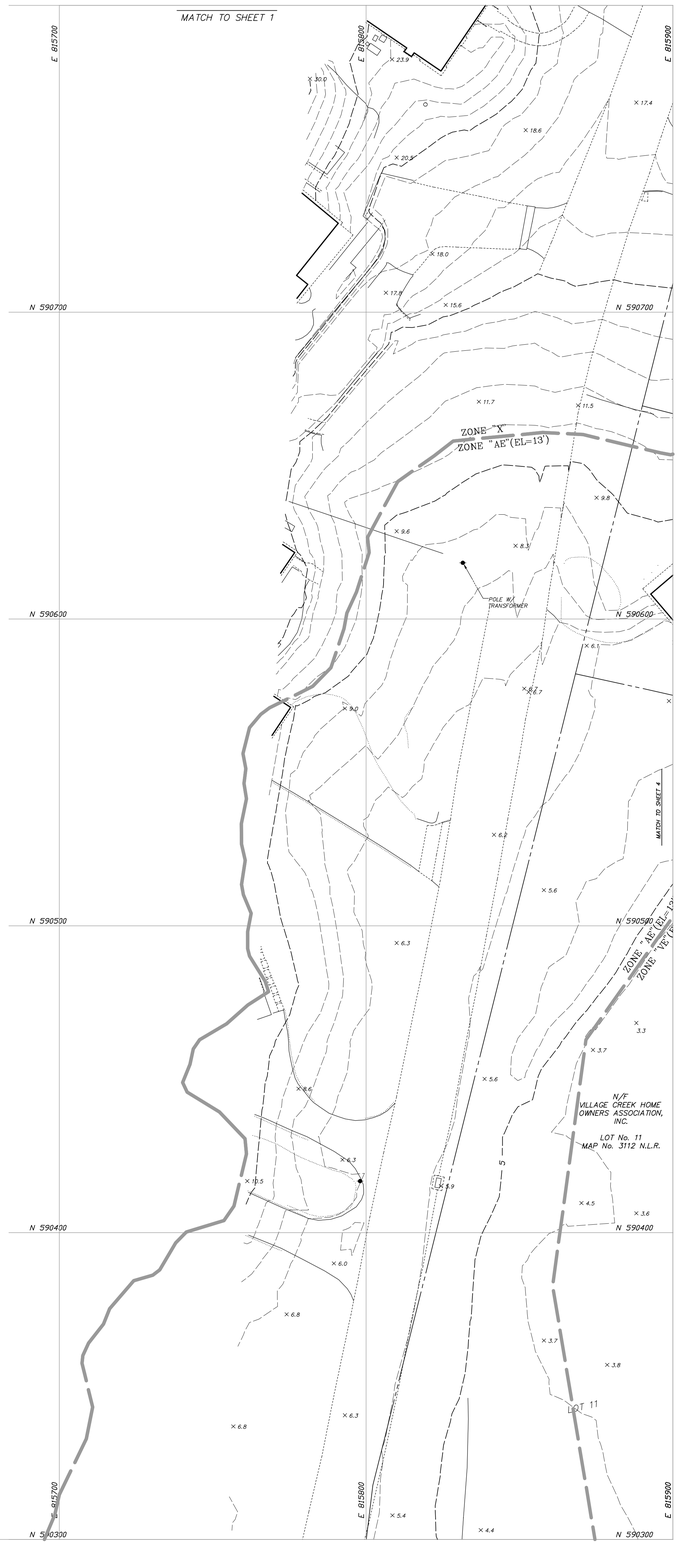
SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 2 OF 39



LOCATION MAP – 1"=1000'±



SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes

SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET

SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 3 OF 39

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CONNECTICUT COORDINATE SYSTEM
NAD 83 (2011)

MATCH TO SHEET 1

MATCH TO SHEET 2

DWELLING
No. 15 SHUCK ROAD
N/F
BRUCE STROLIN
HELEN T. STROLIN
LOT No. 8
MAP No. 3712 N.L.R.

DWELLING
No. 17 SHUCK ROAD
N/F
ERNIE GRIVERS
FRANCIS GREGERS
LOT No. 9
MAP No. 3712 N.L.R.

DWELLING
No. 19 SHUCK ROAD
N/F
CAROLYN VORVA
MEREDITH VORVA
LOT No. 10
MAP No. 3712 N.L.R.

LOT 10

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983–2001 TIDAL EPOCH

N 31°53'35" E 76.75

N 62°21'55" E 24.63

N 14°12'52" W 52.18

N 19°35'55" W 22.67

N 7°30'35" E 21.11

N 19°36'35" E 19.61

N 25°51'55" E 342.32

352.85

PROPERTY LINE

REMAINS OF RUBBLE WALL

LIMITS OF CONSERVATION EASEMENT No. 2 AS DEPICTED ON MAP No. 11967 N.L.R.

MEAN HIGH WATER LINE
ELEV= 3.3 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

APPROXIMATE LOCATION OF MEAN HIGH WATER AS DEPICTED ON MAPS No. 11966 & 11967 N.L.R.

MEAN HIGHER HIGH WATER (MHHW)
ELEV= 3.67 NAVD 88
1983–2001 TIDAL EPOCH

TIDAL CREEK

CL&P EASEMENT AREA "A"

17,839'± ALONG MEAN HIGH WATER

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983–2001 TIDAL EPOCH

LIMIT OF FLAGGED WETLANDS GROUP "TWA"

LIMIT OF EASEMENT "C"

LIMITS OF CONSERVATION EASEMENT No. 1, AS DEPICTED ON MAP No. 11967 N.L.R.

CB GR=5.7 INV=0.5(BOX CULVERT)

4'X6'BOX INV=-0.2

ASPHALT CURB

TRAIN LINE TRACKS

18"Ø

Fyh 8"Ø

18"Ø

SUBJECT AREA

LOCATION MAP – 1"=1000'±

N 590700
N 590600
N 590500
N 590400
N 590300

E 816000
E 816100
E 816200
E 816300
E 816400
E 816500
E 816600

MATCH TO SHEET 3
MATCH TO SHEET 5
MATCH TO SHEET 8
MATCH TO SHEET 9

CL&P EASEMENT AREA "A"

STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET

SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 4 OF 39

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SHOPDRAWINGS_SHEET_3_OF_3_1_8.DWG
Plotted: 09/03/2025 - 2:35pm
By: Edwin Rhodes

CONNECTICUT COORDINATE SYSTEM
NAD 83 (2011)

SUBJECT AREA

LOCATION MAP – 1"=1000'±

MATCH TO SHEET 2

MATCH TO SHEET 4

MATCH TO SHEET 9

MATCH TO SHEET 10

MATCH TO SHEET 6

PROPERTY LINE

LONGSHORE AVENUE

R=452.79
L=128.01

R=177.57
L=148.86

N 85°47'28" E
271.82

R=408.07
L=130.22

EDGE OF PAVEMENT

STEEL GUIDE RAIL

SIGN "25 MPH"

SIGN "DO NOT USE ENGINE BRAKES"

SIGN "SPEED BUMP AHEAD"

SIGN "SLOW DOWN"

SIGN "STOP AHEAD"

SIGN "SPEED LIMIT 30"

SIGN "25 MPH"

FRONTIER 3016

SNET 9708

SNET 2501

POLE W/ CAMERA

POLE W/ TRANSFORMER SNET 2251

GUARD HOUSE

MAIL BOX

MAIL CAGE

WATER METER PIT

APPROXIMATE LOCATION OF WATER SERVICE

ASPHALT DRIVE

CONCRETE SLAB

CONCRETE DRIVE

EARTHEN TRAIL

ALLEY

CHAIN LINK FENCE

WIRE ROPE GUARD RAIL

SUPPORT POLE

OVERHEAD WIRES

CURB LINE FENCE

LIMITS OF CONSERVATION EASEMENT No. 1 AS DEPICTED ON MAP No. 11967 N.L.R.

LIMIT OF FLAGGED WETLANDS GROUP "TWA"

LIMIT OF FLAGGED WETLANDS GROUP "TWC"

LIMIT OF UPLAND REVIEW

AREA 1: LIMIT OF PREVIOUSLY IDENTIFIED WETLANDS UNDER PETITION TO AMEND.

TIDAL POND

45° MCE

N 590700
N 590600
N 590500
N 590400
N 590300

E 816700
E 816800
E 816900
E 817000
E 817100
E 817200
E 817300

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET

SCALE
20 0 20
IN FEET

STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes CSE
SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 5 OF 39

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SKHOPHOMES_25CS_TS_SHEETS_1_4_5.DWG
WIDE / ARCH PLOT / 24x36 / 1:20 / 0.000

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

LONGSHORE AVENUE

S 75°55'45" E
83.02

PROPERTY LINE

R=424.83
L=293.25

EARTHEN TRAIL

N 64°31'45" E
155.65

PROPERTY LINE

R=458.43
L=50.73

CHAIN LINK FENCE

S 64°52'45" E
71.90

EARTHEN TRAIL

PROPERTY LINE

S 49°10'45" E
139.80

CHAIN LINK FENCE

POLE W/ TRANSFORMER

SIGN "HARBOR VIEW"

CHAIN LINK FENCE

MON
4.0

MONUMENT FOUND ON BEND (MKD)

MATCH TO SHEET 5

MATCH TO SHEET 7

MATCH TO SHEET 10

MATCH TO SHEET 11

LIMIT OF UPLAND REVIEW

100'

SUBJECT AREA

LOCATION MAP – 1"=1000'±

N 590800
N 590700
N 590600
N 590500
N 590400
N 590300

E 817400
E 817500
E 817600
E 817700
E 817800
E 817900
E 818000
E 817300
E 817200
E 817100
E 817000
E 816900

THIS SHALL NOT BE CONSIDERED A SEALED DOCUMENT

SHOREPOWER_2025_TS_SHEETS_1_8_1.DWG
REF: SHOREPOWER_2025_TS_REF.DWG

STATE OF CONNECTICUT
EDWIN W. RHODES III
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes III
SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436
RIVERSIDE, CONNECTICUT

SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION, INCLUDING PHYSICAL EVIDENCE, AND UTILITY COMPANY SKETCHES. DEPICTED UTILITIES ARE APPROXIMATE, AND MAY BE INCOMPLETE. SURVEY DECLARATION OF ACCURACY DOES NOT EXTEND TO THE PLOTTING OF UNDERGROUND UTILITIES. UNDERGROUND UTILITY LOCATION SHALL BE FIELD VERIFIED AND MARKED PRIOR TO COMMENCING ANY EXCAVATION ACTIVITIES. "CALL BEFORE YOU DIG," 1-800-922-4455.

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET

SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 6 OF 39

E. 818100 E. 818200 E. 818300 E. 818400 E. 818500 E. 818600 E. 818700

N 590700 N 590600 N 590500 N 590400 N 590300

DWELLING
No. 1
LONGSHORE AVENUE

PARCEL "A"
MAP No. 2223 N.L.R.

CHAIN LINK FENCE

S 66°56'45" E
313.41' (MAP, 1980 N.L.R.)
315'± (TO MEAN HIGH WATER)

PROPERTY LINE

EARTHEN TRAIL

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983–2001 TIDAL EPOCH

MEAN HIGH WATER LINE
ELEV= 3.3 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

ZONE "AE" (EL=13')
ZONE "VE" (EL=15')

MEAN HIGH WATER LINE
ELEV= 3.3 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983–2001 TIDAL EPOCH

MEAN HIGHER HIGH WATER (MHHW)
ELEV= 3.67 NAVD 88
1983–2001 TIDAL EPOCH

MEAN LOW WATER (MLW)
ELEV= -3.76 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

MEAN LOW LOW WATER (MLLW)
ELEV= -4.02 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

MEAN LOW WATER (MLW)
ELEV= -3.76 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

MU 12"CA
TW 8"B
TW 10"B
TW 14"M
TW 8"B
TW 20"CO
TW 8"B
14"M
24"M
32"CO
20"CO
18"CO
38"CO
22"B
18"BE
24"O
26"CO
14"typ.

MATCH TO SHEET 11

MATCH TO SHEET 12

SUBJECT AREA

LOCATION MAP – 1"=1000'±

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET

SCALE
20 0 20
IN FEET

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STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes CM — SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 7 OF 39

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SHEETPOWER_256_TS_SHEETS_1_8_3.DWG
WIN7, SHEETPOWER_256_TS_PORT.DWG

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

SUBJECT AREA

LOCATION MAP – 1"=1000'±

E 815400 E 815500 E 815600 E 815700 E 815800 E 815900 E 816000

N 590200 N 590100 N 590000 N 589900 N 589800

MATCH TO SHEET 3

MATCH TO SHEET 4

MATCH TO SHEET 2

MATCH TO SHEET 13

MONUMENT FOUND WEST 0.2'

N 82°21'44" E
38.05'

N 18°41'25" W
672.33'

PROPERTY LINE

OUTER ROAD

DWELLING
No. 3 OUTER ROAD
N/F
EMMA O'NEILL
BENJAMIN CHERNER
REVISED LOT No. 12
MAP No. 12625 N.L.R.

DWELLING
No. 5 OUTER ROAD
N/F
MARYANN L. KERSCHNER
REVISED LOT No. 13A
MAP No. 12625 N.L.R.

× 3.2 × 4.3 × 5.3 × 3.7 × 3.7 × 4.8 × 7.0 × 7.1 × 7.1 × 5.6 × 6.9 × 3.5 × 7.8 × 8.2 × 3.9 × 7.7 × 8.4 × 8.0 × 8.9 × 8.2 × 10.3

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes III, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436
RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

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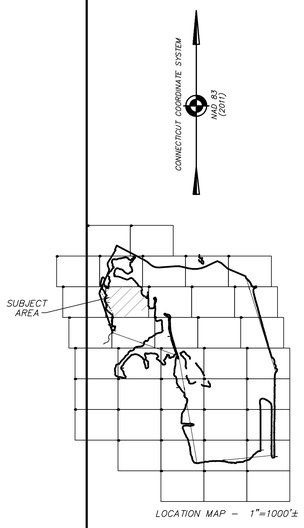
SCALE
20 0 20
IN FEET

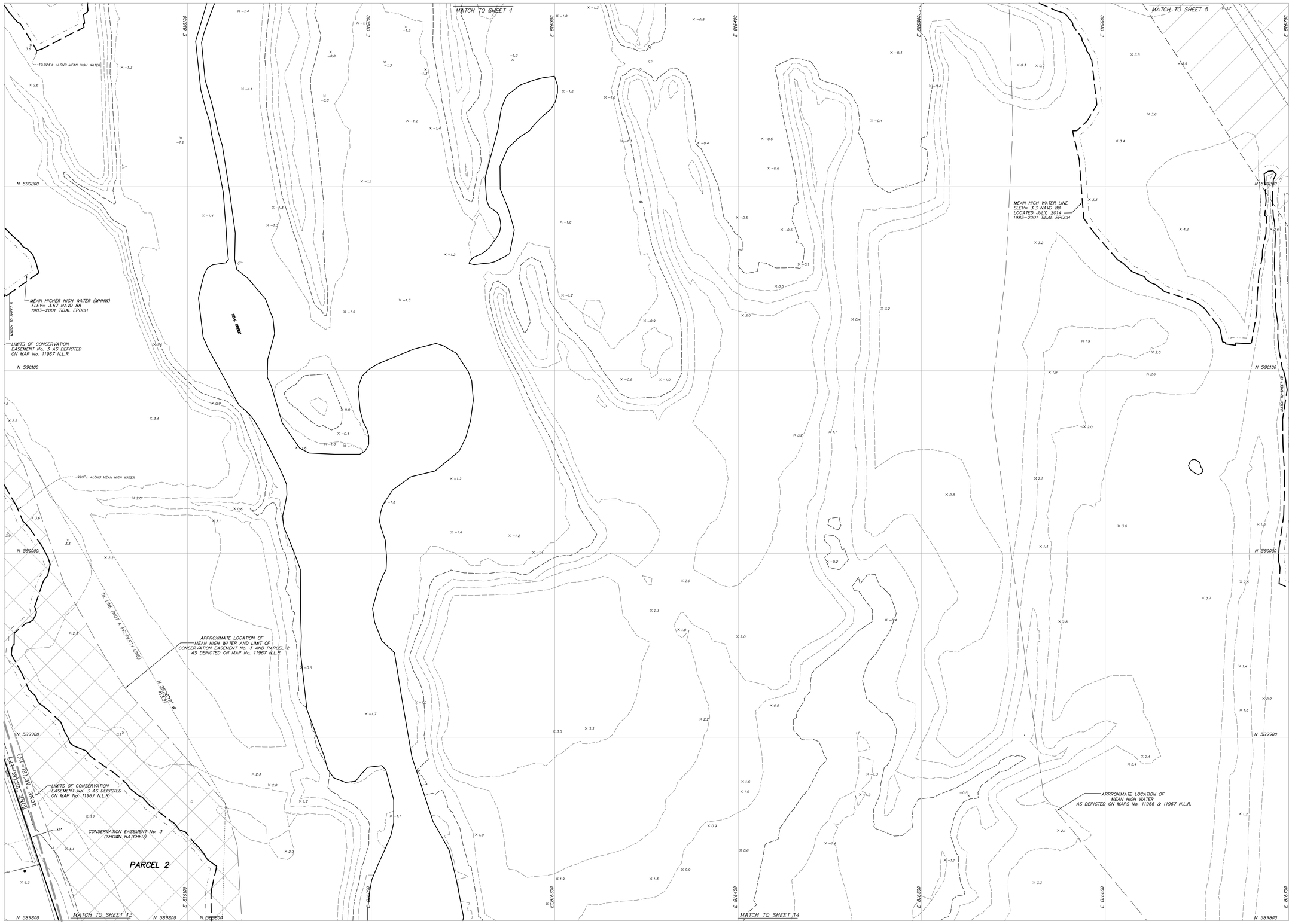
TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 8 OF 39

THIS SHALL NOT BE CONSIDERED A SEALED DOCUMENT

SHEET8_OF_39_TS_SHEET1_OF_1.DWG
NAD 83 (2011) CONNECTICUT STATE PLANE, U.S. SURVEY FEET





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STATE OF CONNECTICUT EDWIN W. RHODES No. 70436 LICENSED LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

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Edwin W. Rhodes III, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 9 OF 39



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D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes III, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT

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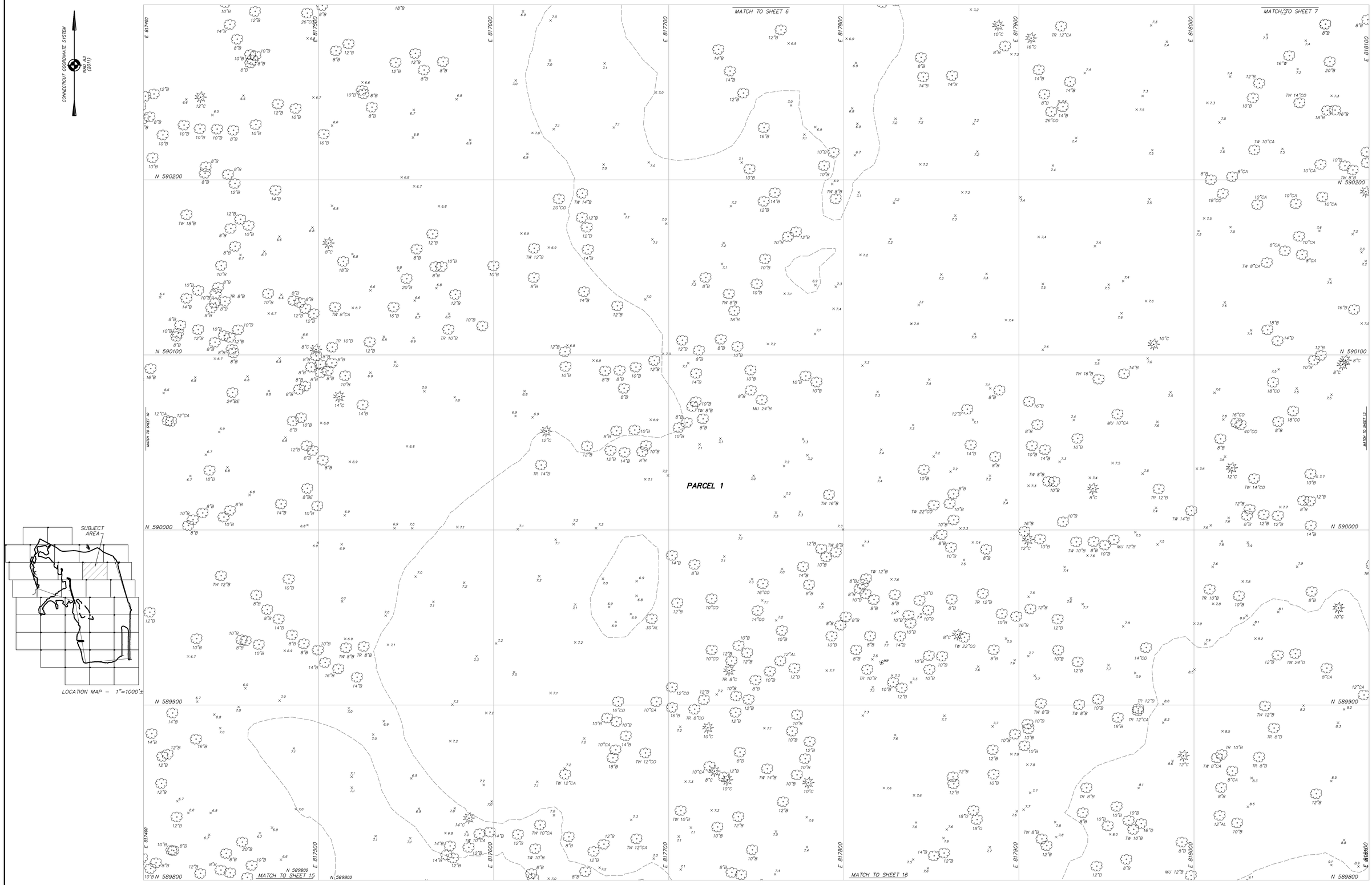
SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 10 OF 39



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STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

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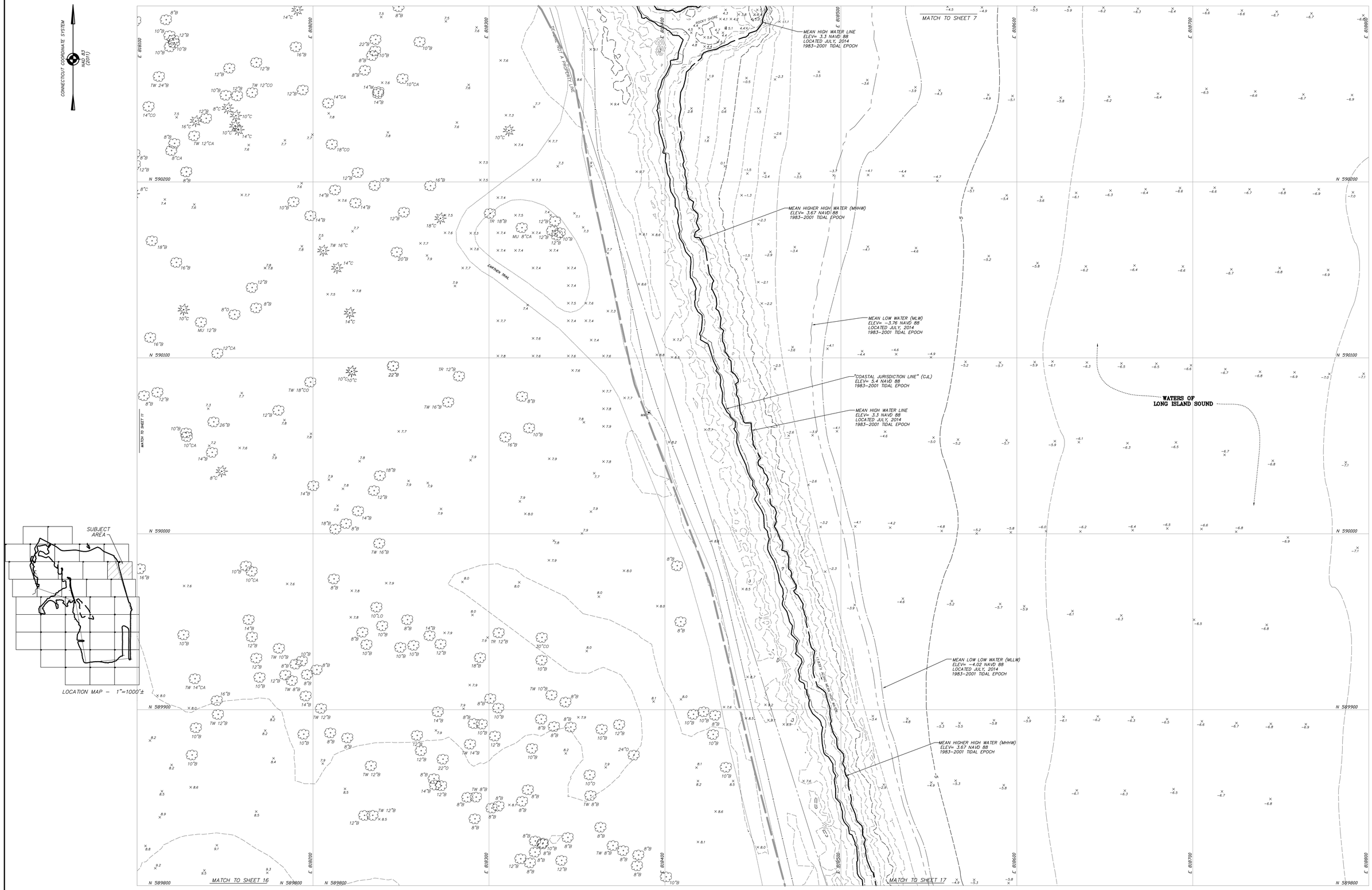
TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 11 OF 39



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SCALE
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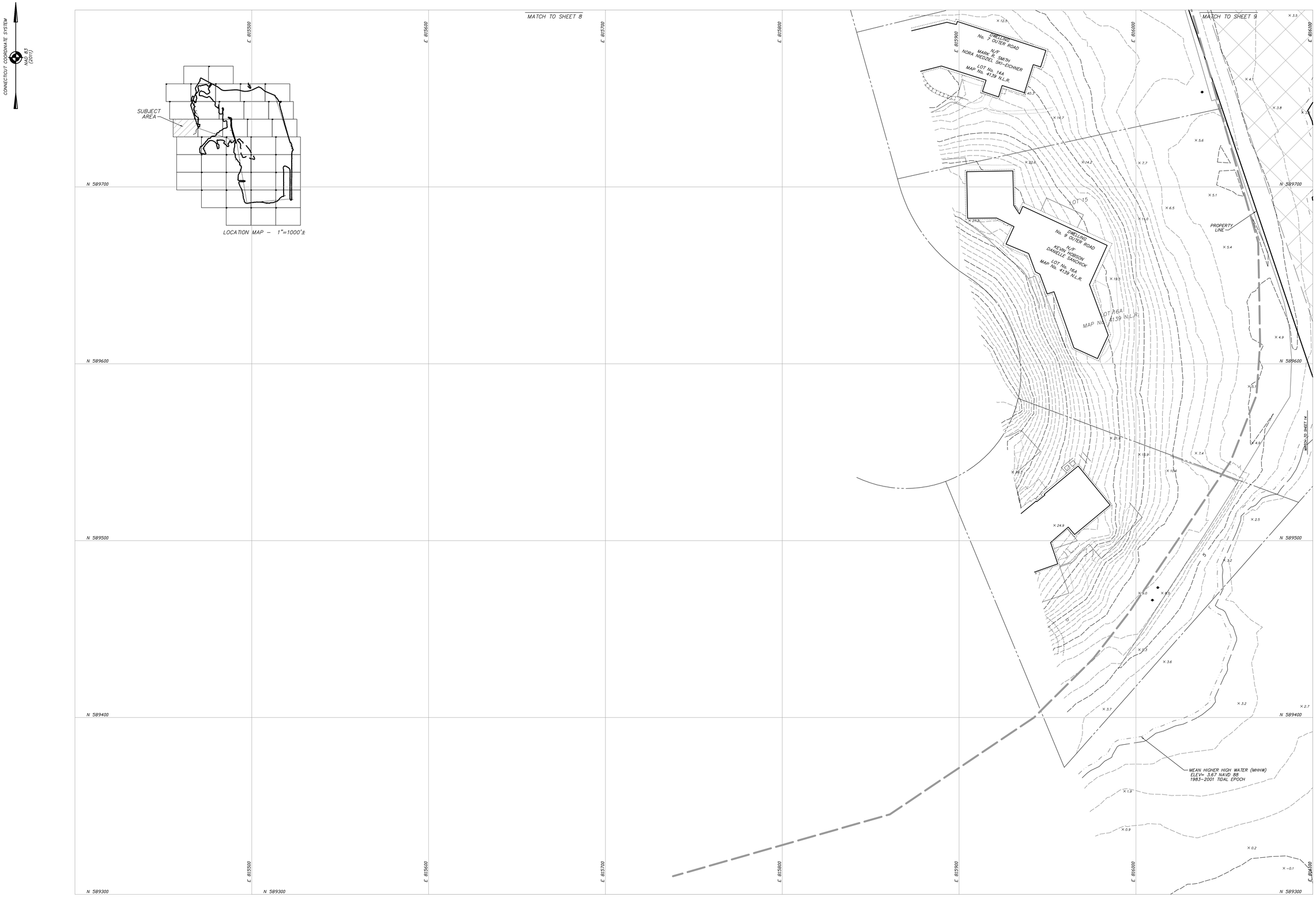
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 12 OF 39



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STATE OF CONNECTICUT EDWIN W. RHODES No. 70436 LICENSED LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes Cnl, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 13 OF 39

SHOREFORMER_25CS_TS_SHEETS_9_16_3.DWG
XREF: SHOREFORMER_25CS_TS_XREF.DWG

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

MATCH TO SHEET 9

MATCH TO SHEET 10

MATCH TO SHEET 15

MATCH TO SHEET 13

E 816300 E 816400 E 816500 E 816600 E 816700 E 816800

N 589700 N 589600 N 589500 N 589400 N 589300

TIDAL CREEK

TIE LINE (NOT A PROPERTY LINE)
S 71°51'18" E
278.95

APPROXIMATE LOCATION OF
MEAN HIGH WATER AND LIMIT OF
CONSERVATION EASEMENT No. 3
AS DEPICTED ON MAP No. 11967 N.L.R.

19,024± ALONG MEAN HIGH WATER

MONUMENT
FOUND
WEST 0.3'

MEAN HIGH WATER LINE
ELEV= 3.3 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

TIE LINE (NOT A PROPERTY LINE)
1143.10' (MAP)
1143.16' (COMPUTED)
N 70°34'56" W

SUBJECT
AREA

LOCATION MAP – 1"=1000'±

STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

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Edwin W. Rhodes CM

, SURVEYOR

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RIVERSIDE, CONNECTICUT

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SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR

MANRESA OSPREY, LLC

SHEET 14 OF 39

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SHORTCREEK_25CS_TS_SHEETS_3_14_1.DWG
REF: SHORTCREEK_25CS_TS_REF.DWG

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

MATCH TO SHEET 10

MATCH TO SHEET 11

MATCH TO SHEET 14

MATCH TO SHEET 16

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983–2001 TIDAL EPOCH

LIMIT OF FLAGGED WETLANDS GROUP "TWB"

LIMIT OF FLAGGED WETLANDS GROUP "TWC"

CL&P EASEMENT AREA "A"

19,024'± ALONG MEAN HIGH WATER

LIMIT OF FLAGGED WETLANDS GROUP "TWC"

MEAN HIGHER HIGH WATER (MHHW)
ELEV= 3.67 NAVD 88
1983–2001 TIDAL EPOCH

TIDAL POND

CHAIN LINK FENCE

WIRE GUARD RAIL

WIRE GUARDRAIL

HYDRANT

E 816900 E 817000 E 817100 E 817200 E 817300 E 817400 E 817500

N 589700 N 589600 N 589500 N 589400 N 589300

SUBJECT AREA

LOCATION MAP – 1"=1000'±

STATE OF CONNECTICUT
EDWIN W. RHODES III
No. 70436
LICENSED
LAND SURVEYOR

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RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 15 OF 39

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SHOREPOWER_25C5_TS_SHEETS_&_ALIGNS
2025-09-09 08:25:15 -05'00'

CONNECTICUT COORDINATE SYSTEM
NAD 83 (2011)

MATCH TO SHEET 11

MATCH TO SHEET 12

MATCH TO SHEET 15

MATCH TO SHEET 17

E 817600

E 817700

E 817800

E 817900

E 818000

E 818100

E 818200

N 589700

N 589600

N 589500

N 589400

N 589300

ZONE "AE"(EL=13')

ZONE "X"

LIMIT OF FLAGGED WETLANDS GROUP "TWB"

LIMIT OF FLAGGED WETLANDS GROUP "TWB"

LIMIT OF UPLAND REVIEW

SUBJECT AREA

LOCATION MAP – 1"=1000'±

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STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes

EDWIN W. RHODES, III CT LS No. 70436, SURVEYOR

RIVERSIDE, CONNECTICUT

SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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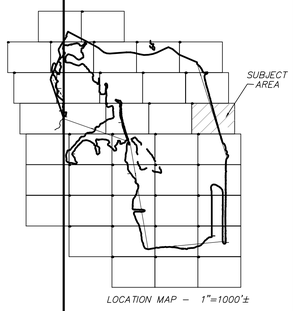
SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 16 OF 39





LOCATION MAP – 1"=1000'±

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STATE OF CONNECTICUT
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20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
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IN
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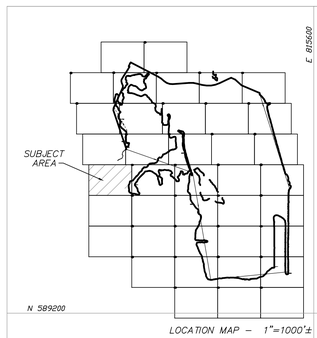
MANRESA OSPREY, LLC

SHEET 17 OF 39



LOCATION MAP – 1"=1000'±

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

E 815600
E 815700
E 815800
E 815900
E 816000
E 816100
E 816200

N 589200
N 589100
N 589000
N 588900
N 588800

× −0.3
× −0.6
× −0.8
× −0.7
× 2.1
× −1.9
× −2.1
× −2.5
× −2.8
× −2.9
× 0.2
× −2.0
× 3.9
× 3.1
× −0.2
× 3.7
× 1.3
× 3.2
× −0.1
0.1

TEAL CREEK

MEAN LOW WATER (MLW)
ELEV= −3.76 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes

, SURVEYOR

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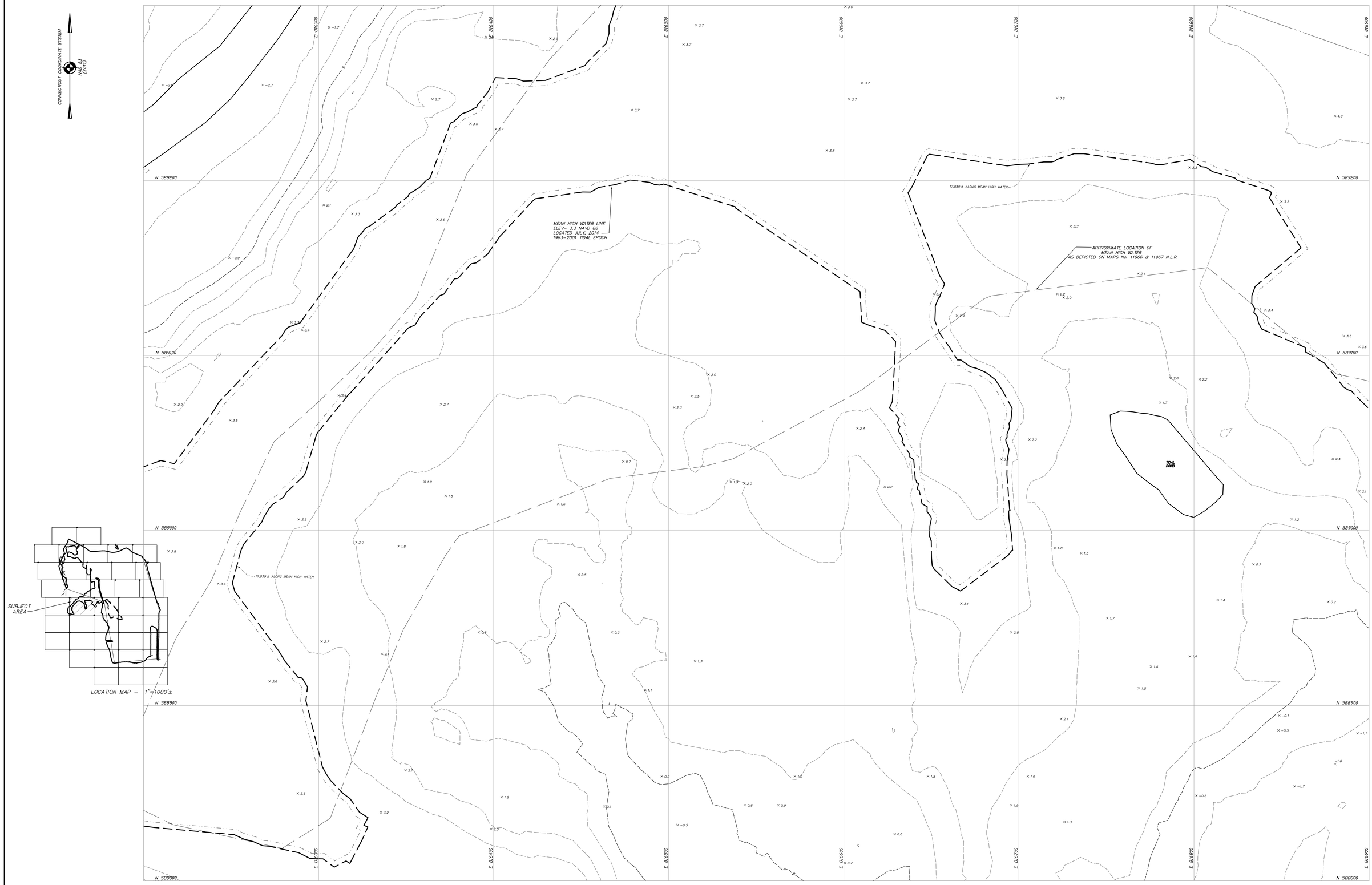
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

THIS SHALL NOT BE CONSIDERED A SEALED DOCUMENT

SHOREPOWER_2025_TS_SHEETS_17_24_1.DWG
REF: SHOREPOWER_2025_TS_REF.DWG



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SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes III, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION, INCLUDING PHYSICAL EVIDENCE, AND UTILITY COMPANY SKETCHES. DEPICTED UTILITIES ARE APPROXIMATE, AND MAY BE INCOMPLETE. SURVEY DECLARATION OF ACCURACY DOES NOT EXTEND TO THE PLOTTING OF UNDERGROUND UTILITIES. UNDERGROUND UTILITY LOCATION SHALL BE FIELD VERIFIED AND MARKED PRIOR TO COMMENCING ANY EXCAVATION ACTIVITIES, "CALL BEFORE YOU DIG," 1-800-922-4455.

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET
SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 19 OF 39



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STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

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TOPOGRAPHIC SURVEY
OF PROPERTY AT
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SHEET 20 OF 39



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No. 70436
LICENSED
LAND SURVEYOR

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IN FEET

TOPOGRAPHIC SURVEY
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LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 21 OF 39

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

E 818400 E 818600 E 818800 E 819000 E 819200

N 589200 N 589100 N 589000 N 588900 N 588800

MEAN LOW LOW WATER (MLW)
ELEV= -4.02 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

MEAN LOW WATER (MLW)
ELEV= -3.76 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

WATERS OF
LONG ISLAND SOUND

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983-2001 TIDAL EPOCH

MEAN HIGH WATER LINE
ELEV= 3.3 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

MEAN LOW LOW WATER (MLW)
ELEV= -4.02 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

MEAN LOW WATER (MLW)
ELEV= -3.76 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

LIMIT OF UPLAND REVIEW

EARTHEN BERM

ASPHALT DRIVE

GUARD RAIL

WIRE ROPE GUARD RAIL

CHAIN LINK FENCE

GATE

CONCRETE BLOCK BUILDING

METAL BUILDING

ASPHALT PAD

CONCRETE

EMO

GRAVEL

SOIL SURFACE MONITOR

MW

MU

TR

TW

SUBJECT AREA

LOCATION MAP - 1"=1000'±

STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes

SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 22 OF 39

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SHOREPOWER_25C3_TS_SHEETS_17_24_SAME
ART_SHORESTABS_25C3_TS_REV7.DWG

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

E. 815700 E. 815800 E. 815900 E. 816000 E. 816100 E. 816200

N 588700 N 588600 N 588500 N 588400 N 588300

× 0.5
× 0.2
× −2.0
× −2.5
× −3.9
−4.1 ×
MEAN LOW LOW WATER (MLLW)
ELEV= −4.02 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH
× −4.1
−4.3 ×

WATERS OF
LONG ISLAND SOUND

SUBJECT AREA

LOCATION MAP – 1"=1000'±

STATE OF CONNECTICUT
EDWIN W. RHODES III
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS
D'ANDREA SURVEYING & ENGINEERING, P.C.
Edwin W. Rhodes III SURVEYOR
EDWIN W. RHODES, III CT LS No. 70436
RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 23 OF 39

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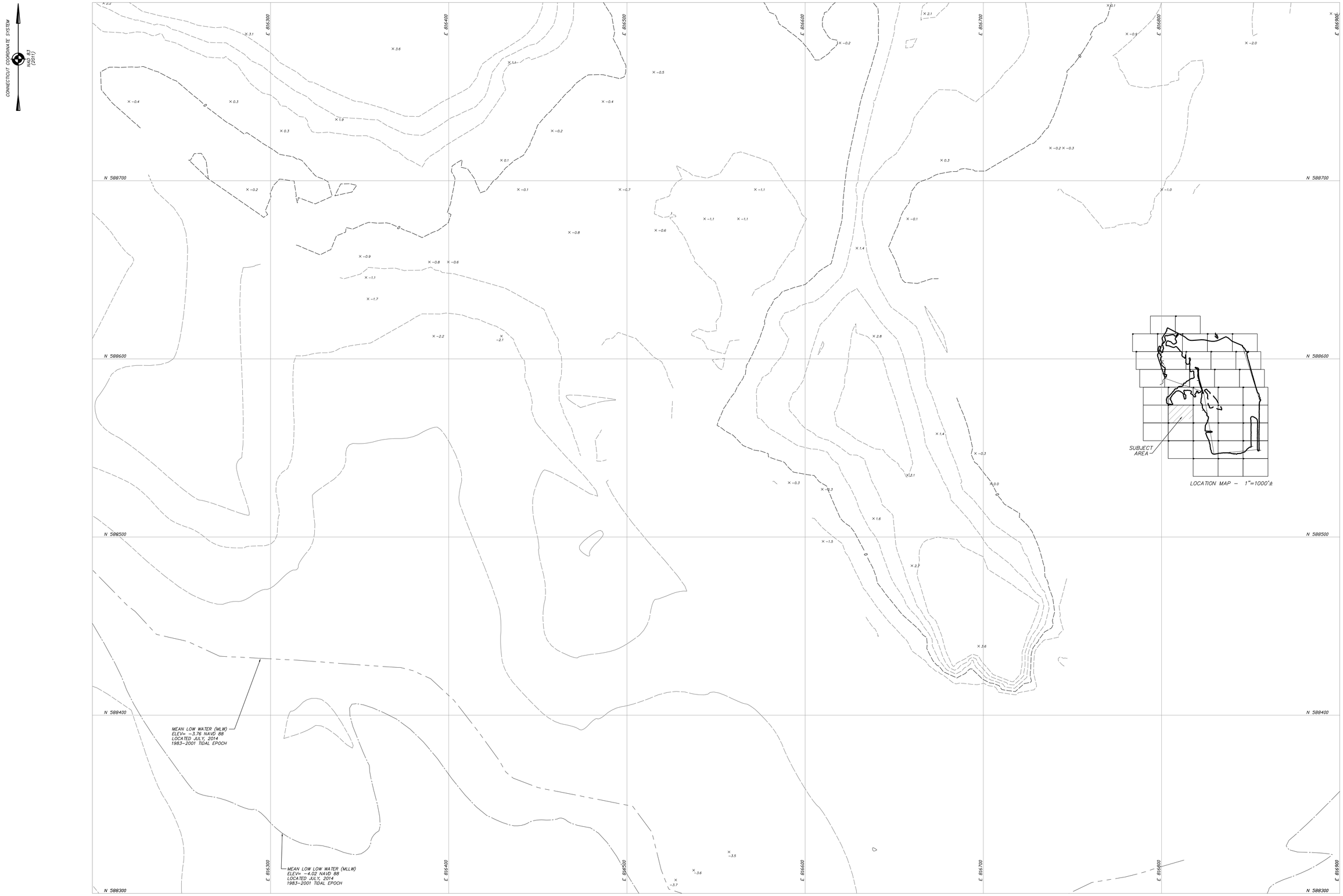
SHEETNUMBER_2025_TS_SHEETS_17_24_EXMS
2025_SURVEYNMS_2025_TS_MAP.DWG



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Edwin W. Rhodes III, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT

SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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TOPOGRAPHIC SURVEY
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LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 24 OF 39

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

WATERS OF
LONG ISLAND SOUND

SUBJECT AREA

LOCATION MAP – 1"=1000'±

LIMIT OF FLAGGED WETLANDS GROUP "TWC"

LIMIT OF FLAGGED WETLANDS GROUP "TWC"

17,836± ALONG MEAN HIGH WATER

MEAN LOW WATER (MLW)
ELEV= –3.76 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

MEAN LOW LOW WATER (MLLW)
ELEV= –4.02 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983–2001 TIDAL EPOCH

TIDAL POND

EASEMENT "C"

TIE LINE (NOT A PROPERTY LINE)
N 9°36'50" W
178.25'

SUBSTATION EASEMENT
AREA "C"
BOOK 6479 PAGE 20 N.L.R.

SUBSTATION EASEMENT
AREA "B"
BOOK 6479 PAGE 20 N.L.R.

EASEMENT "F"

CHAIN LINK FENCE

GRAVEL AREA

GATE

LIMIT OF EASEMENT "B"

LIGHT POLE

CONCRETE WALL (BARRIER)

ASPHALT DRIVE

GUIDERAIL (BEAM)

T-POLE No.71

POLE W/ TRANSFORMER

LIMIT OF GRAVEL

APPROXIMATE LOCATION OF WATER SERVICE

BOLLARD (TYPICAL)

PROPANE TANK

MAG NAIL
N 588316.38
E 817405.47
EL=8.91

SUBSTATION EASEMENT
AREA "A"
BOOK 6479 PAGE 20 N.L.R.

FRONTIER 8263

AT&T 2264

TW 18"DC

TW 14"AL

TW 24"LO

22"LO

20"LO

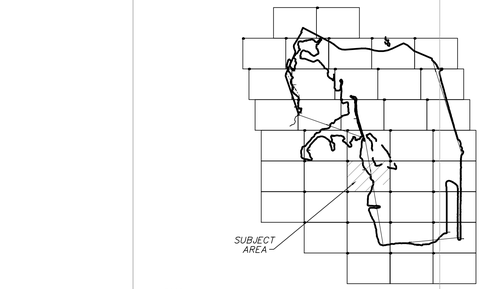
24"LO

16"O

10"SY 8"B

N 588700
N 588600
N 588500
N 588400
N 588300

E 817000
E 817100
E 817200
E 817300
E 817400
E 817500
E 817600



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SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 25 OF 39

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DRAWINGS: 25C5_TC_ONLY_25_33_1.DWG
REF: 24C5_TC_ONLY_25C5_TC_MASTER.DWG

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

LIMIT OF EASEMENT "D"

LIMIT OF FLAGGED WETLANDS GROUP "TWA"

EDGE OF ASPHALT

SUBSTATION EASEMENT AREA "D"
BOOK 6479 PAGE 20 N.L.R.

LIMIT OF FLAGGED WETLANDS GROUP "W2"

BENCHMARK
"L"CUT/BASE
ELEV= 8.83
DATUM: NAVD 88

POND

PROPOSED CONSTRUCTION EASEMENT No. 3

2.0976 ACRES

ZONE "X"
ZONE "AE" (EL=13')

BENCHMARK
IRON PIN
ELEV= 10.43
DATUM: NAVD 88

CONCRETE WALL (BARRIER)

GRAVEL AREA

RELAY HOUSE

SERVICE DRIVE

ASPHALT CURB

CHAIN LINK FENCE

REMAINS OF CONCRETE

CONCRETE PIERS (TYPICAL)

OVERHEAD WIRING

N 588700
N 588600
N 588500
N 588400
N 588300

E 817700
E 817800
E 817900
E 818000
E 818100
E 818200
E 818300

SUBJECT AREA

LOCATION MAP – 1"=1000'±

STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

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NORWALK, CONNECTICUT
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MANRESA OSPREY, LLC

SHEET 26 OF 39

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DOWNTOWN_2ACC_TS_SHEETS_25_10_31.dwg
DEP: SURVEY\DWG_PLOTS_TS_NEW.pdf

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

E 818400 E 818500 E 818600 E 818700 E 818800 E 818900 E 819000

N 588700 N 588600 N 588500 N 588400 N 588300

ZONE "X"
ZONE "AE" (EL=13')
ZONE "VE" (EL=15')
ZONE "VE" (EL=17')

SETTLING POND
GRAVEL
WOOD GUARD RAILING
PUMP CHAMBER
CLARIFIER
STEEL CATWALK
CONCRETE PAD
WASTE WATER TREATMENT BUILDING
EQUALIZATION BASIN #1
CHAIN LINK FENCE
FIRE HYDRANT
SEWER HOLDING TANK ACCESS
CONCRETE SLAB
CONSTRUCTION ACCESS ROAD
LIMIT OF CONSTRUCTION EASEMENT No.2
OVERHEAD PIPING
EDGE OF ASPHALT
ASPHALT
TEMPORARY BUILDING
CHANNEL EDGE
ASPHALT DRIVE
CB
SDMH
EMH
MW
MH
HYD
LP

MEAN HIGHER HIGH WATER (MHHW)
ELEV= 3.67 NAVD 88
1983-2001 TIDAL EPOCH

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983-2001 TIDAL EPOCH

MEAN HIGH WATER LINE
ELEV= 3.3 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

MEAN LOW LOW WATER (MLLW)
ELEV= -4.02 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

MEAN LOW WATER (MLW)
ELEV= -3.76 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

WATERS OF LONG ISLAND SOUND

LOCATION MAP – 1"=1000'±

SUBJECT AREA

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STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes
, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436
RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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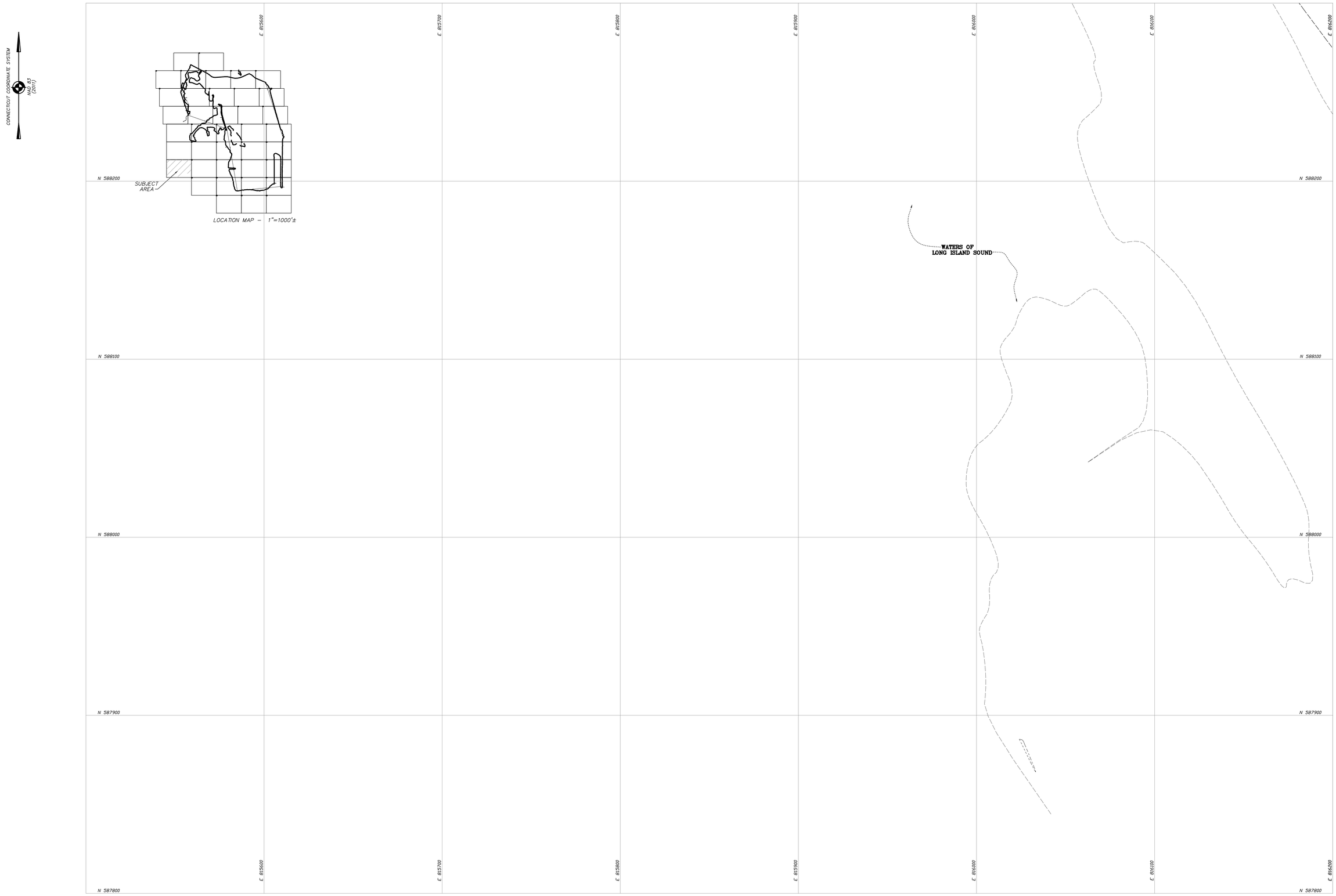
SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 27 OF 39

SHOREZONE_2505.15_SHEET5_25_32_LONG
BEIT_SHOREZONE_2505.15_SHEET.DWG



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IN
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SHEET 28 OF 39



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TOPOGRAPHIC SURVEY
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NORWALK, CONNECTICUT
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MANRESA OSPREY, LLC

SHEET 29 OF 39

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

MEAN LOW WATER (MLW)
ELEV= -3.76 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

LIMIT OF FLAGGED WETLANDS GROUP "1"/C"

BENCHMARK
SPIKE / T-POLE
ELEV= 10.47
DATUM: NAVD 88

EASEMENT AREA "K" (160' AGL)

EASEMENT AREA "J" (340' AGL)

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983-2001 TIDAL EPOCH

WATERS OF LONG ISLAND SOUND

ZONE "AE" (EL=13')

ZONE "AE" (EL=17')

LIMIT OF GRAVEL

ASPHALT DRIVE

CHAIN LINK FENCE

TUNNEL

LOCATION MAP - 1"=1000'±

SUBJECT AREA



SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes LS SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

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SHEET 30 OF 39

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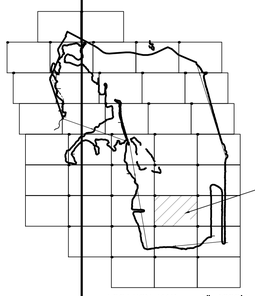
SHOREPOWER_25CS_TS_SHEETS_25_12_11.DWG
REF: SURVEY/REF_25CS_TS_WEST.DWG

CONNECTICUT COORDINATE SYSTEM
NAD 83 (2011)



LOCATION MAP – 1"=1000'±

TURBINE ROOM
BOILER ROOM
ADMINISTRATIVE BUILDING
ELECTRICAL SWITCH GEAR
SERVICE DRIVE
EDGE OF ASPHALT
ASPHALT CURB
ASPHALT DRIVE
ASPHALT PARKING
STONE CURB
CHAIN LINK FENCE
STEEL PLATE
STEEL WALK-WAY
STEEL DUCT WORK
COMMUNICATIONS DISH
FIRE HYDRANT (TYPICAL)
BOLLARD (TYPICAL)
APPROXIMATE LOCATION OF WATER SERVICE
APPROXIMATE LOCATION OF 5000 GALLON SEPTIC TANK
STACK HEIGHT EL=359.2±
INTERMITTENT POND
EASEMENT AREA "G" (245' AGL)
(FOOTPRINT OF FORMER TANK)
TANK – B
OIL STORAGE TANK
TANK REMOVED
JUNE 2025
CONCRETE PIERS (TYPICAL)
72"WATER INTAKE
72"WATER INTAKE
ZONE "AE" (EL=13')
ZONE "X"

N 588200
N 588100
N 588000
N 587900
N 587800
E 817700
E 817800
E 817900
E 818000
E 818100
E 818200
E 818300

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes III SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT

SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

STATE OF CONNECTICUT EDWIN W. RHODES III No. 70436 LICENSED LAND SURVEYOR

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION, INCLUDING PHYSICAL EVIDENCE, AND UTILITY COMPANY SKETCHES. DEPICTED UTILITIES ARE APPROXIMATE, AND MAY BE INCOMPLETE. SURVEY DECLARATION OF ACCURACY DOES NOT EXTEND TO THE PLOTTING OF UNDERGROUND UTILITIES. UNDERGROUND UTILITY LOCATION SHALL BE FIELD VERIFIED AND MARKED PRIOR TO COMMENCING ANY EXCAVATION ACTIVITIES. "CALL BEFORE YOU DIG," 1-800-922-4455.

CONTOUR INTERVAL = ONE FOOT
1 INCH = 20 FEET

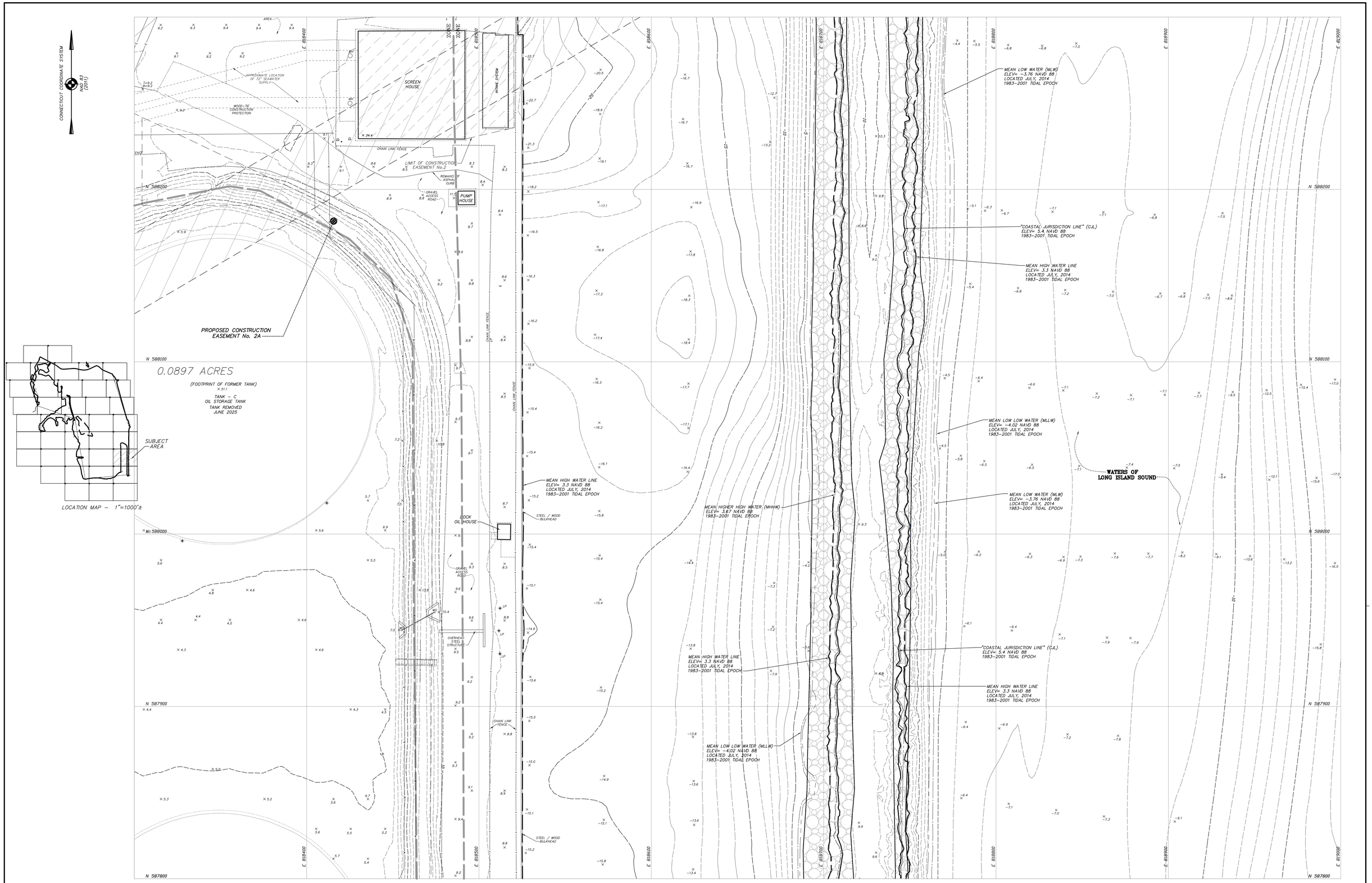
SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 31 OF 39

THIS SHALL NOT BE CONSIDERED A SEALED DOCUMENT

SHOWPOWER_2ACC_TO_SHEETS_25_10_31.DWG
DEPT - SURVEY\PROJECTS\2025_TS_MOP.DWG



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STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 32 OF 39

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

E 816300 E 816400 E 816500 E 816600 E 816700 E 816800 E 816900

N 587700 N 587600 N 587500 N 587400 N 587300

WATERS OF
LONG ISLAND SOUND

SUBJECT
AREA

LOCATION MAP – 1"=1000'±

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SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes

_____, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT

SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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1 INCH = 20 FEET

SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 33 OF 39

CONNECTICUT COORDINATE SYSTEM
NAD 83
(2011)

E. 817000 E. 817100 E. 817200 E. 817300 E. 817400 E. 817500 E. 817600

N 587700 N 587600 N 587500 N 587400 N 587300

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983–2001 TIDAL EPOCH

MEAN HIGH WATER LINE
ELEV= 3.3 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

MEAN HIGHER HIGH WATER (MHHW)
ELEV= 3.67 NAVD 88
1983–2001 TIDAL EPOCH

MEAN LOW LOW WATER (MLLW)
ELEV= –4.02 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

MEAN LOW LOW WATER (MLLW)
ELEV= –4.02 NAVD 88
1983–2001 TIDAL EPOCH

MEAN LOW WATER (MLW)
ELEV= –3.76 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

WATERS OF
LONG ISLAND SOUND

MEAN LOW LOW WATER (MLLW)
ELEV= –4.02 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

SDMH
RIM=8.5
INV=0.0(10"–NE)
INV=1.1±(30"–SW)
W/ BACKFLOW BAFFLE

CB
GR=9.0
INV=1.8(30"–E)
INV=2.6(18"–N)
INV=0.1(30"–W)
SUMP= –0.1

MU 12"AL
SDMH
CATE
30"RCP
30"RCP
30"RCP
30"RCP
30"RCP
12"
30"RCP
INV=1.0
DRILL HOLE FOUND, NORTH 0.3', WEST 0.7'
DH
36"CO
30"CO
24"CH
30"CO
24"O
34"O
34"YP
36"CO

SUBJECT AREA

LOCATION MAP – 1"=1000'±

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes CSE, SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436

RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

STATE OF CONNECTICUT EDWIN W. RHODES No. 70436 LICENSED LAND SURVEYOR

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SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 34 OF 39

THIS SHALL NOT BE CONSIDERED A SEALED DOCUMENT

SHOWPAGE: 34 OF 39 SHEETS, 33 IN ZONE
DWG: SURVEY.DWG, 2025-12-09 07:49:27 AM

CONNECTICUT COORDINATE SYSTEM
NAD 83 (2011)

EASEMENT "G" 245' AGL

E 817700 | E 817800 | E 817900 | E 818000 | E 818100 | E 818200 | E 818300

N 587700 | N 587600 | N 587500 | N 587400 | N 587300

STACK SHACK

SHIPPING COMMAND STORAGE BUILDING

OIL PUMP HOUSE

2025 MIC ALTERNATE POWER FEED

OVERHEAD PIPING

OVERHEAD WIRES

CB
GR=7.8
INV=2.2(15"-N)
INV=2.05(30"-W)
INV=2.1(24"-E)
SUMP=3.0

TRANSFORMER

CLMP 24,339—
THREE (3)
TRANSFORMERS

EVERSOURCE
30602

EASEMENT AREA "I" (107' AGL)

30' WIDE

IP 14"CO

CHAIN LINK FENCE

APPROXIMATE LOCATION OF SEPTIC SYSTEM LEACHING FIELDS PER SITE PLAN RECORDS SEE NOTE #1

GRAVEL STAGING AREA (CTDOT)

EASEMENT AREA "H" (173' AGL)

CB
GR=8.6
INV=(SILTED)

ZONE "AE" (EL=13')
ZONE "VE" (EL=17')

LIMIT OF CONSTRUCTION
EASEMENT No.3
(TO BE ELIMINATED)

EXISTING BUILDING

PIN
N 587474.60
E 817634.65
EL=8.74

BENCHMARK
SQ.CUT / LEDGE
ELEV= 6.47
DATUM: NAVD 88

1257.98'
S 84°27'01" W

TIE LINE (NOT A PROPERTY LINE)

17,639'± ALONG MEAN HIGH WATER

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983-2001 TIDAL EPOCH

MEAN LOW LOW WATER (MLLW)
ELEV= -4.02 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

MEAN HIGHER HIGH WATER (MHHW)
ELEV= 3.67 NAVD 88
1983-2001 TIDAL EPOCH

MEAN LOW WATER (MLW)
ELEV= -3.76 NAVD 88
LOCATED JULY, 2014
1983-2001 TIDAL EPOCH

WATERS OF LONG ISLAND SOUND

SUBJECT AREA

LOCATION MAP — 1"=1000'±

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STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

D'ANDREA SURVEYING & ENGINEERING, P.C.

Edwin W. Rhodes Cert SURVEYOR

EDWIN W. RHODES, III CT LS No. 70436
RIVERSIDE, CONNECTICUT SEPTEMBER 3, 2025 DECEMBER 2, 2025 DECEMBER 9, 2025

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1 INCH = 20 FEET
SCALE
20 0 20
IN FEET

TOPOGRAPHIC SURVEY
OF PROPERTY AT
LONGSHORE AVENUE
IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 35 OF 39

DRAWINGS_25C_TC_06CT_LS_35_SURV.DWG
2025-12-09 08:25:43 AM EST

CONNECTICUT COORDINATE SYSTEM
NAD 83 (2011)

(FOOTPRINT OF FORMER TANK)
TANK – A
OIL STORAGE TANK
TANK REMOVED MAY 2025

PIN N 587715.33 E 818501.81 El=8.98

CHAIN LINK FENCE

GRAVEL ACCESS ROAD

DOCK BUILDING

MEAN HIGH WATER LINE
ELEV= 3.3 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

STEEL / WOOD BULKHEAD

17,839'± ALONG MEAN HIGH WATER

CONCRETE WALL

LIMIT OF CONSTRUCTION EASEMENT No.2

FIRE HYDRANT

FIRE FIGHTING EQUIPMENT REMOVED MAY 2025

LIMIT OF CONSTRUCTION EASEMENT No.3 (TO BE ELIMINATED)

MEAN LOW LOW WATER (MLLW)
ELEV= –4.02 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

"COASTAL JURISDICTION LINE" (CJL)
ELEV= 5.4 NAVD 88
1983–2001 TIDAL EPOCH

MEAN LOW WATER (MLW)
ELEV= –3.76 NAVD 88
LOCATED JULY, 2014
1983–2001 TIDAL EPOCH

MEAN HIGHER HIGH WATER (MHHW)
ELEV= 3.67 NAVD 88
1983–2001 TIDAL EPOCH

WOOD BOOM

WATERS OF LONG ISLAND SOUND

N 587700
N 587600
N 587500
N 587400
N 587300

E 818400
E 818500
E 818600
E 818700
E 818800
E 818900
E 819000

SUBJECT AREA

LOCATION MAP – 1"=1000'±

STATE OF CONNECTICUT · EDWIN W. RHODES · No. 70436 · LICENSED · LAND SURVEYOR

SEE SHEET 1 FOR CERTIFICATIONS

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IN FEET

TOPOGRAPHIC SURVEY
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IN
NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 36 OF 39

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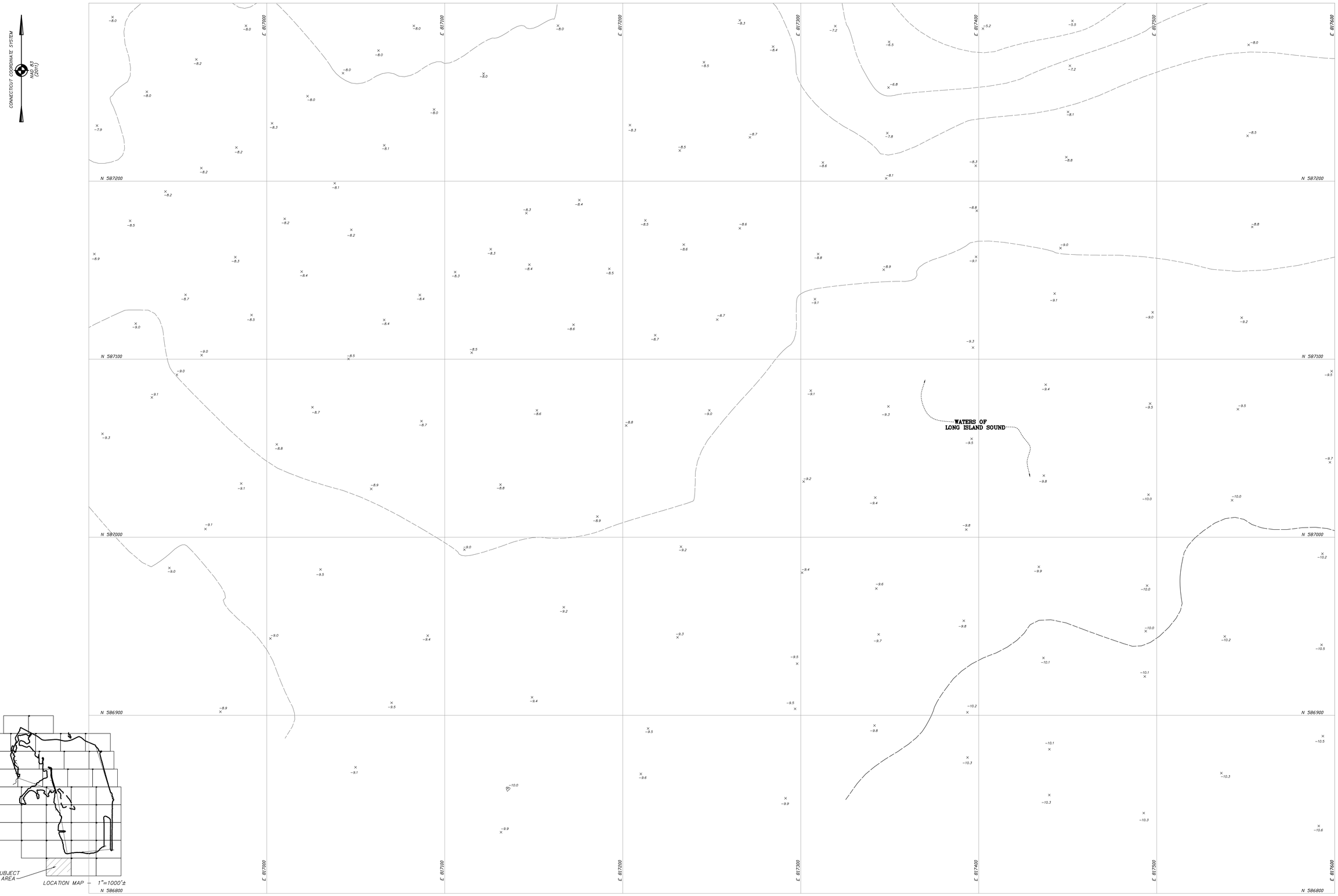
DWGFORMAT_ANSI_D_22x34_TO_24x36.DWG
DWG - WORKSPACE_ANSI_D_ARCH.DWT



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NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 37 OF 39



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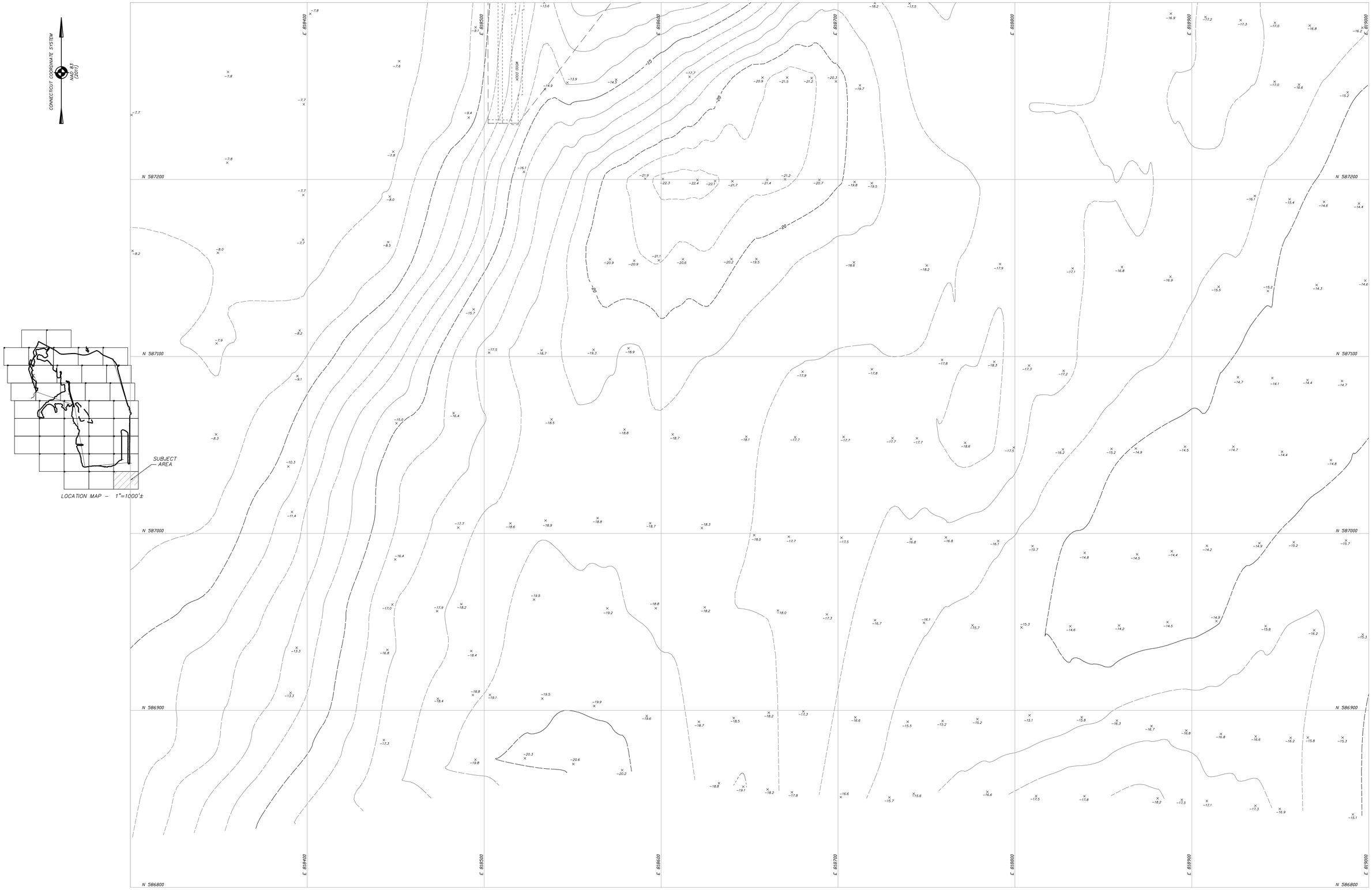
SHEET 38 OF 39



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SHOREFORMER_25CS_TS_SHEETS_33_39.DWG
XREF: SHOREFORMER_25CS_TS_XREF.DWG

STATE OF CONNECTICUT
EDWIN W. RHODES
No. 70436
LICENSED
LAND SURVEYOR

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NORWALK, CONNECTICUT
PREPARED FOR
MANRESA OSPREY, LLC

SHEET 39 OF 39

LEGEND

DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		
PROPERTY LINE ADJACENT		
RIGHT-OF-WAY LINE		
EASEMENT LINE		
LIMITS OF WORK		
INTERMEDIATE CONTOURS		
INDEX CONTOURS	5	25
SPOT GRADE	x 5.2	+ 32.0
MAGNITUDE & DIRECTION OF SLOPE		0.0%
STORM DRAIN	SD	SD
STORM UNDERDRAIN		UD
GRAVITY SANITARY SEWER	SS	SS
SANITARY SEWER FORCE MAIN	SFM	SFM
SANITARY SEWER LOW PRESSURE	SSLP	SSLP
SANITARY SEWER COMBINED	COMB	COMB
WATER SERVICE	W	W
POTABLE WATER	PW	PW
FIRE SERVICE		F
HIGH PRESSURE FIRE SERVICE		F-HP
UNDERGROUND ELECTRIC	E	E
PRIMARY ELECTRIC SERVICE	PE	PE
SECONDARY ELECTRIC	SE	SE
OVERHEAD ELECTRIC	OE	OE
TELEPHONE SERVICE	T	T
TEL-DATA SERVICE	T–D	T-D
COMMUNICATIONS SERVICE	T–C	T-C
CABLE TV SERVICE	CTV	CTV
GAS SERVICE	G	G
CHILLED WATER RETURN	CWR	CWR
CHILLED WATER SUPPLY	CWS	CWS
HOT WATER RETURN	HWR	HWR
HOT WATER SUPPLY	HWS	HWS
STEAM CONDENSATE	C	C
LOW PRESSURE STEAM	LPS	LPS
MEDIUM PRESSURE STEAM	MPS	MPS
HIGH PRESSURE STEAM	HPS	HPS
OXYGEN SERVICE		O
OVERHEAD UTILITY (UNSPECIFIED)	OHW	
CURB		
EDGE OF PAVEMENT		
DIRT ROAD		
SIDEWALK		
RETAINING WALL		
STONE WALL		
FENCE - UNSPECIFIED		X
FENCE - CHAIN LINK		
FENCE - WOOD POST		
GUARDRAIL		
GUIDERAIL		
STORM DRAIN STRUCTURES	MANHOLE (D) CATCH BASIN	MANHOLE AREA DRAIN CATCH BASIN
SANITARY SEWER STRUCTURES	MANHOLE (S) TANK	MANHOLE TANK
WATER SERVICE STRUCTURES	HYDRANT MANHOLE (W) VALVE	HYDRANT MANHOLE (W) VALVE
GAS SERVICE STRUCTURES	MANHOLE (G) VALVE	MANHOLE (G) VALVE
ELECTRIC SERVICE STRUCTURES	UTILITY CO. POLE # MANHOLE (E) LIGHT	UTILITY CO. POLE # MANHOLE (E) LIGHT
TELECOMMUNICATIONS MANHOLE	(T)	(T)
TREELINE		EVERGREEN DECIDUOUS
TREE	8"Ø	

ABBREVIATIONS

ABDN('D)	ABANDON(ED)
AC	ASBESTOS CEMENT PIPE
BC	BITUMINOUS CURB
BFP	BACK FLOW PREVENTOR
BIT	BITUMINOUS
BL	BASELINE
BLDG	BUILDING
BND	BOUND
BOC	BOTTOM OF CURB
BOT	BOTTOM
BS	BOTTOM OF STEP
BW	BOTTOM OF WALL
CATV	CABLE TELEVISION
CB	CATCH BASIN
CCW	CEMENT CONCRETE WALK
CEM	CEMENT
CI	CAST IRON PIPE
CJL	COASTAL JURISDICTION LINE
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CO	CLEAN OUT
CONC	CONCRETE
CPP	CORRUGATED POLYETHYLENE PIPE
CY	CUBIC YARD
DH	DRILL HOLE
DI	DUCTILE IRON PIPE
DIA	DIAMETER
DMH	DRAIN MANHOLE
E	EAST
EF	EACH FACE
EG	EXISTING GRADE
EL/ELEV	ELEVATION
ELEC	ELECTRIC
EMH	ELECTRIC MANHOLE
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST	EXISTING
FES	FLARED END SECTION
FF	FINISH FLOOR
FM	FORCE MAIN
G	GAS
GG	GAS GATE
GRAN	GRANITE
HC	HANDICAP
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
HYD	HYDRANT
IN	INCHES
INV	INVERT
IP	IRON PIN
L	LENGTH OF CURB
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS

ABBREVIATIONS CONT'D

MJ	MECHANICAL JOINT
N	NORTH
NITC	NOT IN THIS CONTRACT
NTS	NOT TO SCALE
N/A	NOT APPLICABLE
N/F	NOW OR FORMERLY
OC	ON CENTER
OCS	OUTLET CONTROL STRUCTURE
OH	OVERHEAD
PB	PLANT BED
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCPP	PERFORATED CORRUGATED POLYETHYLENE PIPE
PERF	PERFORATED
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
PROT	PROTECT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYLCHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REV	REVISION
ROW	RIGHT OF WAY
RT	RIGHT
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
S	SOUTH
SAN	SANITARY
SCH	SCHEDULE
SF	SQUARE FOOT
SMH	SEWER MANHOLE
SS	STAINLESS STEEL
STA	STATION
STL	STEEL
STRM	STORM
T	TANGENT LENGTH
TC	TOP OF CURB
TEL	TEL-DATA
TP	TEST PIT
TS	TOP OF STEP
TW	TOP OF WALL
TYP	TYPICAL
UP	UTILITY POLE
W	WATER
WG	WATER GATE
WV	WATER VALVE
XFMR	TRANSFORMER

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT
SCAPE LANDSCAPE ARCHITECTURE DPC
277 BROADWAY 9th FLOOR
NEW YORK, NY 10007
T+ 212 462 2628

CIVIL ENGINEER
Tighe&Bond
1000 BRIDGEPORT AVENUE #320
SHELTON, CT 06484
T+ 203 712 1100

ECOLOGICAL
eDESIGN DYNAMICS
247 W 35TH STREET
NEW YORK, NY 10001
T+ 646 688 3113

ENVIRONMENTAL
AKRF
440 PARK AVENUE SOUTH, 7TH FLR
NEW YORK, NY 10016
T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. CROTE · 20374 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

GENERAL NOTES, LEGEND & ABBREVIATIONS (1)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-001

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GENERAL NOTES

1. REFERENCE IS MADE TO PLAN ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY AT LONGSHORE AVENUE IN NORWALK, CONNECTICUT PREPARED FOR MANRESA, LLC" DATED DECEMBER 9, 2025 PREPARED BY D'ANDREA SURVEYING & ENGINEERING, P.C.
2. NOTIFY CALL BEFORE YOU DIG AT 1-800-922-4455 AND OTHER UTILITY OWNERS IN THE AREA NOT ON THE CALL BEFORE YOU DIG LIST AT LEAST 72 HOURS PRIOR TO ANY DIGGING, TRENCHING, ROCK REMOVAL, DEMOLITION, BORING, BACKFILLING, GRADING, LANDSCAPING, OR ANY OTHER EARTH MOVING OPERATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORT OF EXISTING UTILITIES AND REPAIR OR REPLACEMENT COSTS OF UTILITIES DAMAGED DURING CONSTRUCTION, WHETHER ABOVE OR BELOW GRADE. REPLACE DAMAGED UTILITIES IMMEDIATELY AT NO ADDITIONAL COST TO THE OWNER AND AT NO COST TO THE PROPERTY OWNER
4. NOT ALL OF THE UTILITY SERVICES TO BUILDINGS ARE SHOWN. THE CONTRACTOR SHALL ANTICIPATE THAT EACH PROPERTY HAS SERVICE CONNECTIONS FOR THE VARIOUS UTILITIES.
5. BOLD TEXT AND LINES INDICATE PROPOSED WORK. LIGHT TEXT AND LINES INDICATE APPROXIMATE EXISTING CONDITIONS.
6. TIGHE & BOND ASSUMES NO RESPONSIBILITY FOR ANY ISSUES, LEGAL OR OTHERWISE, RESULTING FROM CHANGES MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM TIGHE & BOND.
7. EXCAVATE ADDITIONAL TEST PITS TO LOCATE EXISTING UTILITIES AS DIRECTED OR APPROVED BY THE ENGINEER.
8. NOTIFY THE ENGINEER OF ANY UTILITIES IDENTIFIED DURING CONSTRUCTION THAT ARE NOT SHOWN ON THE DRAWINGS OR THAT DIFFER IN SIZE OR MATERIAL.
9. THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY; COORDINATION WITH THE OWNER, ALL SUBCONTRACTORS, AND WITH OTHER CONTRACTORS WORKING WITHIN THE LIMITS OF WORK, THE MEANS AND METHODS OF CONSTRUCTING THE PROPOSED WORK.
10. OBTAIN, PAY FOR AND COMPLY WITH PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK. ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE JURISDICTIONAL AUTHORITIES.
11. SHORE UTILITY TRENCHES WHERE FIELD CONDITIONS DICTATE AND/OR WHERE REQUIRED BY LOCAL, STATE AND FEDERAL HEALTH AND SAFETY CODES.
12. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS ARE OBSERVED THAT VARY SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING FOR RESOLUTION OF THE CONFLICTING INFORMATION.
13. PROTECT AND MAINTAIN ALL UTILITIES IN THE AREAS UNDER CONSTRUCTION DURING THE WORK. LEAVE ALL PIPES AND STRUCTURES WITHIN THE LIMITS OF THE CONTRACT IN A CLEAN AND OPERABLE CONDITION AT THE COMPLETION OF THE WORK. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SAND AND SILT FROM DISTURBED AREAS FROM ENTERING THE DRAINAGE SYSTEM.
14. NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICT, ERROR, AMBIGUITY, OR DISCREPANCY WITH THE PLANS OR BETWEEN THE PLANS AND ANY APPLICABLE LAW, REGULATION, CODE, STANDARD SPECIFICATION, OR MANUFACTURER'S INSTRUCTIONS.
15. EXCAVATE WITH EQUIPMENT SELECTED TO MINIMIZE DAMAGE TO EXISTING UTILITIES OR OTHER FACILITIES. HAND EXCAVATE AS NECESSARY TO LOCATE UTILITIES AND AVOID DAMAGE.
16. TAKE NECESSARY MEASURES AND PROVIDE CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE, AND STRENGTH TO PREVENT ACCESS TO ALL WORK AND STAGING AREAS AT THE COMPLETION OF EACH DAYS WORK.
17. NO OPEN TRENCHES WILL BE ALLOWED OVER NIGHT. THE USE OF ROAD PLATES TO PROTECT THE EXCAVATION WILL BE CONSIDERED UPON REQUEST, BUT BACKFILLING IS PREFERRED.
18. THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY TRAFFIC CONTROL/SAFETY DEVICES TO ENSURE SAFE VEHICULAR AND PEDESTRIAN ACCESS THROUGH THE WORK AREA, OR FOR SAFELY IMPLEMENTING DETOURS AROUND THE WORK AREA. PERFORM TRAFFIC CONTROL IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED TRAFFIC CONTROL PLAN.
19. MAINTAIN EMERGENCY ACCESS TO ALL PROPERTIES WITHIN THE PROJECT AREA AT ALL TIMES DURING CONSTRUCTION.
20. WHEN WORKING IN THE ROAD, PROVIDE THE OWNER AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES A DETAILED PLAN OF APPROACH INDICATING METHODS OF PROPOSED TRAFFIC ROUTING ON A DAILY BASIS. PROVIDE COORDINATION TO ENSURE COMMUNICATION AND COORDINATION BETWEEN THE OWNER, CONTRACTOR AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES THROUGHOUT THE CONSTRUCTION PERIOD.
21. REMOVE AND DISPOSE OF ALL CONSTRUCTION-RELATED WASTE MATERIALS AND DEBRIS IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS.
22. THE TERM "DEMOLISH" USED ON THE DRAWINGS MEANS TO REMOVE AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
23. THE TERM "ABANDON" USED ON THE DRAWINGS MEANS TO LEAVE IN PLACE AND TAKE APPROPRIATE MEASURES TO DECOMMISSION AS SPECIFIED OR NOTED ON THE DRAWINGS.
24. ALL PROPOSED WORK MAY BE ADJUSTED IN THE FIELD BY THE OWNER'S PROJECT REPRESENTATIVE TO MEET EXISTING CONDITIONS.

OVERALL SITE DEMOLITION PLAN NOTES

1. THE CONTRACTOR SHALL TAKE EXTREME CARE TO PROTECT ALL EXISTING STRUCTURES, SURFACE IMPROVEMENTS, LANDSCAPING, ETC. OUTSIDE THE PROJECT LIMIT LINE AND SHALL RESTORE ANY DAMAGE TO THESE ITEMS TO PRE-DAMAGE CONDITION OR BETTER.
2. CONTRACTOR TO DEMOLISH, REMOVE, AND LEGALLY DISPOSE OF MISCELLANEOUS POLES, BIT CONC PAVEMENT, CONCRETE WALK, CURBING, SITE SIGNAGE NOT CALLED OUT TO BE REUSED, ETC. AND ALL ITEMS INDICATED TO BE REMOVED WITHIN THE PROJECT LIMIT LINE.
3. THE CONTRACTOR SHALL PROTECT EXISTING UTILITY STRUCTURES NOT IDENTIFIED FOR REMOVAL DURING UTILITY AND SURFACE DEMOLITION OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE INCURRED TO EXISTING UTILITY STRUCTURES AND SHALL REPAIR OR REPLACE THE EXISTING UTILITY STRUCTURES TO PRE-DAMAGED CONDITION OR BETTER TO THE SATISFACTION OF THE OWNER AND AT NO ADDITIONAL COST TO THE OWNER.
4. THE PLAN IS PROVIDED TO SHOW THE GENERAL EXTENT OF THE SITE UTILITY REMOVAL AND DEMOLITION. NOT ALL ITEMS REQUIRING REMOVAL MAY BE SHOWN OR CALLED OUT. THE CONTRACTOR IS RESPONSIBLE TO REMOVE AND PROPERLY DISPOSE OF ALL ITEMS ON THE SITE (ABOVE GROUND OR BELOW GROUND) WHICH ARE NOT REQUIRED TO BE SAVED OR PROTECTED AND WHICH WILL NOT BE INCORPORATED INTO THE FINAL CONSTRUCTION.
5. THE PROVISIONS OF WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH THE RULES, LAWS AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC PHYSICAL OR CHEMICAL HAZARDS POSED TO THE CONTRACTOR'S EMPLOYEES IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. REFER TO APPLICABLE HEALTH AND SAFETY SPECIFICATIONS.
6. PRIOR TO DEMOLITION WORK OF ANY UTILITY COMPANY, THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANY. THE CONTRACTOR SHALL COORDINATE ANY REMOVAL OF EXISTING UTILITIES WITH THE RESPECTIVE UTILITY COMPANY.
7. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES NOT IDENTIFIED FOR REMOVAL OR ABANDONMENT. COORDINATE WITH PROPOSED STORMWATER MANAGEMENT WORK, SEE SHEETS C-400.
8. ACTUAL SAWCUT LIMITS, PAVEMENT/CONCRETE REMOVAL AND REPLACEMENT, SHALL BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION. SAWCUT, REMOVAL, AND REPLACEMENT LIMITS SHALL COINCIDE WITH THE NEAREST JOINT IN CONCRETE WALK REQUIRED TO INSTALL THE PROPOSED WORK.
9. ALL ITEMS IDENTIFIED FOR REMOVAL/DEMOLITION SHALL BE DISPOSED OF LEGALLY OFF-SITE. ALL COSTS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE.
10. TOPSOIL REMOVED DURING DEMOLITION SHALL BE STOCKPILED FOR RE-USE. REFER TO SITE GRADING AND SOIL EROSION AND SEDIMENT CONTROL PLAN C-300. REUSE OF TOPSOIL MUST ADHERE TO REQUIREMENTS INCLUDED IN THE CTDEEP-APPROVED SOIL MATERIAL MANAGEMENT PLAN AND MATERIAL ACCEPTANCE PROTOCOL.
11. THE CONTRACTOR SHALL MAINTAIN SITE UTILITIES AND STORM DRAINAGE FLOWS BY MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER BEFORE ANY SHUTDOWN OF UTILITIES.
12. FOR ADDITIONAL DEMOLITION & CITY PERMIT REQUIREMENTS, SEE CONTRACT SPECIFICATIONS.
13. ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES AND IS NOT PROVIDED WITH A SPECIFIC SITE IMPROVEMENT (PAVING, SIDEWALK, LANDSCAPING, ETC.) SHALL HAVE 4" TOPSOIL AND TURF ESTABLISHMENT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
14. SAWCUT EXISTING PAVEMENT AND SIDEWALK AREAS AS REQUIRED BY THE CONTRACT DRAWINGS OR THE OWNER'S REPRESENTATIVE PRIOR TO THE START OF ANY EXCAVATION AND AT ALL LOCATIONS WHERE THE PROPOSED PAVEMENT/CONCRETE WALK MEET EXISTING PAVEMENT/CONCRETE WALK.
15. UNLESS OTHERWISE NOTED ON THE PLANS, REMOVAL OF EXISTING BIT CONC PAVEMENT SHALL INCLUDE REMOVAL OF ALL ADJACENT CURBING.
16. ATTENTION IS CALLED TO THE PROXIMITY OF EXISTING BUILDINGS TO THE EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES TO REMAIN. IMPLEMENT DEMOLITION WORK TO PREVENT DISTURBANCE TO THE ADJACENT UTILITIES, STRUCTURES AND OTHER FEATURES TO REMAIN. INSTALL TEMPORARY SHEETING AND SHORING METHODS AS REQUIRED TO PROTECT AGAINST EXCAVATION COLLAPSE AND IMPACT TO UTILITIES, STRUCTURES AND OTHER FEATURES TO REMAIN.
17. DEMOLISH, REMOVE, AND LEGALLY DISPOSE OF MISCELLANEOUS POLES, UTILITY (STORM, SANITARY, ELECTRIC, COMMUNICATIONS, WATER, SITE MECHANICAL) PIPING, STRUCTURES, AND APPURTENANCES NOT CALLED OUT TO BE REUSED, ETC. AND ALL ITEMS INDICATED TO BE REMOVED WITHIN THE PROJECT LIMIT LINE.
18. COMPLY WITH THE REQUIREMENTS FOR EROSION AND SEDIMENTATION CONTROL, SEE SHEET C-300.
19. MAINTAIN EXISTING STORM SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED STORM SEWER IN LOCATIONS WHERE STORM SEWER ARE BEING INSTALLED, REPLACED OR RELOCATED.
20. MAINTAIN SANITARY SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED SANITARY SEWER IN LOCATIONS WHERE SEWERS ARE BEING INSTALLED, REPLACED OR RELOCATED.
21. PRIOR TO REMOVING OR ABANDONING ANY UTILITY, ALL TEMPORARY OR PERMANENT UTILITIES MUST BE IN PLACE. FACILITY UTILITY SHUTDOWNS ARE TO BE SCHEDULED AND APPROVED BY MANRESA WILDS.
22. INDICATE UTILITY TYPE, DEPTH, SIZE, MATERIAL AND CONDITION OF UTILITY AT ALL TEST PIT LOCATIONS. PROVIDE TO THE ENGINEER AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION.

SITE LAYOUT PLAN NOTES

1. ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES AND IS NOT PROVIDED WITH A SPECIFIC SITE IMPROVEMENT (PAVING, SIDEWALK, LANDSCAPING, ETC.) SHALL HAVE 4" TOPSOIL AND TURF ESTABLISHMENT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, UNTIL FINAL RESTORATION PER LANDSCAPE DRAWINGS.
2. THE GENERAL CONTRACTOR SHALL PROVIDE FIELD ENGINEERING SERVICES TO ESTABLISH AND RECORD GRADES, LINES, AND ELEVATIONS.
3. THE GENERAL CONTRACTOR SHALL RETAIN A LAND SURVEYOR REGISTERED BY THE STATE OF CONNECTICUT TO LAY OUT THE BUILDING, UNDERGROUND UTILITY LINES, AND OTHER SITE WORK FROM THE HORIZONTAL AND VERTICAL CONTROL INFORMATION FURNISHED BY THE OWNER AND TO ESTABLISH AND RECORD THE NECESSARY ELEVATIONS, AT NO ADDITIONAL COST TO THE OWNER.
4. THE LOCATIONS OF ITEMS NOT DIMENSIONED ON THE DRAWINGS SHALL BE FIELD STAKED BY THE CONTRACTOR AND THEIR LOCATIONS APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

SITE GRADING AND SESC PLAN NOTES

1. THE CONTRACTOR SHALL VERIFY ALL GRADES AND EXISTING CONDITIONS, AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE.
3. PRIOR TO PAVING, PLANTING AND SEEDING, ALL FINAL GRADING SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE.
4. MAKE SMOOTH TRANSITIONS BETWEEN ALL SLOPE CHANGES AND FEATHER EDGES OF ALL CUTS AND FILLS TO BLEND WITH EXISTING CONDITIONS.
5. THE CONTRACTOR SHALL ADJUST THE TOP OF FRAME/GRATE ELEVATIONS OF ALL EXISTING AND PROPOSED SANITARY/STORM/WATER MANHOLES, CATCH BASINS, AREA DRAINS, VALVE COVERS AND APPURTENANCES, WITHIN THE PROJECT LIMIT LINE TO MEET THE PROPOSED GRADES.
6. ALL EXCAVATED MATERIAL NOT REQUIRED FOR GRADING OR FILLING SHALL BE REMOVED PROMPTLY FROM THE SITE AND DISPOSED OF LEGALLY OFF-SITE PER THE PROJECT SPECIFICATIONS.
7. EXCAVATION OF ANY TYPE SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT UNDERGROUND UTILITIES OR STRUCTURES ARE NOT DAMAGED. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY FOR ANY DAMAGED INCURRED DURING EXCAVATION OPERATIONS. ALL EXCAVATION SHALL BE IN CONFORMANCE WITH THE LATEST OSHA REQUIREMENTS.
8. ALL WORK TO BE CONFINED WITHIN THE CONTRACT LIMITS WITH NO CLEARING, EXCAVATION, OR DEPOSITION OF FILL TO TAKE PLACE WITHIN REGULATED AREAS OUTSIDE OF THE PROJECT LIMITS.
9. ALL DRIVEWAYS, ROADS, STAIRS, AND SIDEWALKS DISTURBED BY THE CONSTRUCTION IN OR OUTSIDE THE PROJECT LIMIT LINE SHALL BE RETURNED TO THEIR ORIGINAL CONDITION OR BETTER AND SHALL BE GRADED TO MEET THE PROPOSED CONSTRUCTION AS DIRECTED BY THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
10. THE CONTRACTOR STAGING/LAYDOWN AREA FOR THE NORTH FOREST PROJECT IS INTENDED TO BE MAINTAINED WITHIN THE LIMIT OF DISTURBANCE FOR THE PROPOSED WORK AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL NOT EXPAND THE LIMIT OF DISTURBANCE TO GROUND, TREES, OR VEGETATION BEYOND THE LIMITS OF GRADING OR CLEARING SHOWN ON THESE DRAWINGS.
11. ACCESS TO THE CONTRACTOR STAGING/LAYDOWN AREA FROM OFF-SITE SHALL BE LIMITED TO BEING ALONG THE EXISTING SITE ACCESS DRIVE AND/OR THE PROPOSED ACCESS DRIVE ALIGNMENT TO THE PROPOSED PARKING AREA TO MITIGATE THE POTENTIAL FOR IMPACTS TO AREAS BEYOND THE PROPOSED GRADING AND CLEARING LIMITS.
12. ACCESS TO WORK AREA THROUGH OUT THE NORTH FOREST PROJECT AREA SHALL BE LIMITED TO BEING ALONG THE PROPOSED TRAIL ALIGNMENT, TO MITIGATE THE POTENTIAL FOR IMPACTS TO AREAS BEYOND THE PROPOSED GRADING AND CLEARING LIMITS.

HANDICAPPED ACCESSIBILITY NOTES

1. EXCEPT AT HANDICAPPED RAMPS, GRADING ALONG HANDICAPPED ACCESSIBLE ROUTES SHALL NOT EXCEED 5% (1 FOOT VERTICAL IN 20 FEET HORIZONTAL) LONGITUDINALLY, OR 2% (1 FOOT VERTICAL IN 50 FEET HORIZONTAL) CROSS SLOPE.
2. SLOPES IN HANDICAPPED PARKING AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION.

SITE DRAINAGE AND UTILITY PLAN NOTES

1. THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE WORK DONE BY THE RESPECTIVE UTILITY COMPANIES.
2. THE MANHOLE FRAME AND COVER SHALL BE CENTERED ON THE PRECAST OPENING. UNDER NO CIRCUMSTANCES WILL AN OFFSET FRAME AND COVER BE ACCEPTABLE. PRIOR TO FINAL PAVING, THE CONTRACTOR SHALL CHECK ALL MANHOLE STRUCTURES TO ASSURE THE FRAME AND COVER IS CENTERED ON THE PRECAST OPENING. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL WORK REQUIRED TO CENTER FRAME AND COVER.
3. INSTALL "FERNCO" STYLE FLEXIBLE COUPLINGS AT ALL LOCATIONS WHERE JOINING PIPES OF DIFFERENT MATERIALS AND/OR SIZES PER MANUFACTURER'S RECOMMENDATIONS.
4. ALL PIPES AND FITTINGS SPECIFIED AS HDPE SHALL BE ADS N-12 WT (WATERTIGHT) PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, HILLIARD, OHIO, UNLESS OTHERWISE NOTED.
5. ALL PIPES AND FITTINGS SPECIFIED AS DI SHALL BE CLASS 52, UNLESS OTHERWISE NOTED.
6. ALL GRAVITY PIPES AND FITTINGS SPECIFIED AS PVC SHALL BE CLASS SDR-35, UNLESS OTHERWISE NOTED.
7. THE CONTRACTOR SHALL MAINTAIN EXISTING STORM SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED STORM SEWER IN LOCATIONS WHERE STORM SEWER ARE BEING INSTALLED, REPLACED OR RELOCATED.
8. THE CONTRACTOR SHALL ADJUST THE TOP OF FRAME/GRATE ELEVATIONS OF ALL EXISTING AND PROPOSED SANITARY/STORM/WATER MANHOLES, CATCH BASINS, AREA DRAINS, VALVE COVERS AND APPURTENANCES, WITHIN THE PROJECT LIMIT LINE TO MEET THE PROPOSED GRADES.

SITE STAGING PLAN NOTES

1. THE CONTRACTOR STAGING/LAYDOWN AREA FOR THE NORTH FOREST PROJECT IS INTENDED TO BE MAINTAINED WITHIN THE LIMIT OF DISTURBANCE FOR THE PROPOSED WORK AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL NOT EXPAND THE LIMIT OF DISTURBANCE TO GROUND, TREES, OR VEGETATION BEYOND THE LIMITS OF GRADING OR CLEARING SHOWN ON THESE DRAWINGS.
2. ACCESS TO THE CONTRACTOR STAGING/LAYDOWN AREA FROM OFF-SITE SHALL BE LIMITED TO BEING ALONG THE EXISTING SITE ACCESS DRIVE AND/OR THE PROPOSED ACCESS DRIVE ALIGNMENT TO THE PROPOSED PARKING AREA TO MITIGATE THE POTENTIAL FOR IMPACTS TO AREAS BEYOND THE PROPOSED GRADING AND CLEARING LIMITS.
3. ACCESS TO WORK AREA THROUGH OUT THE NORTH FOREST PROJECT AREA SHALL BE LIMITED TO BEING ALONG THE PROPOSED TRAIL ALIGNMENT, TO MITIGATE THE POTENTIAL FOR IMPACTS TO AREAS BEYOND THE PROPOSED GRADING AND CLEARING LIMITS.

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. CROTE · 20374 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

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LOCAL APPROVALS

SHEET NAME

GENERAL NOTES, LEGEND & ABBREVIATIONS (2)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO
C-002

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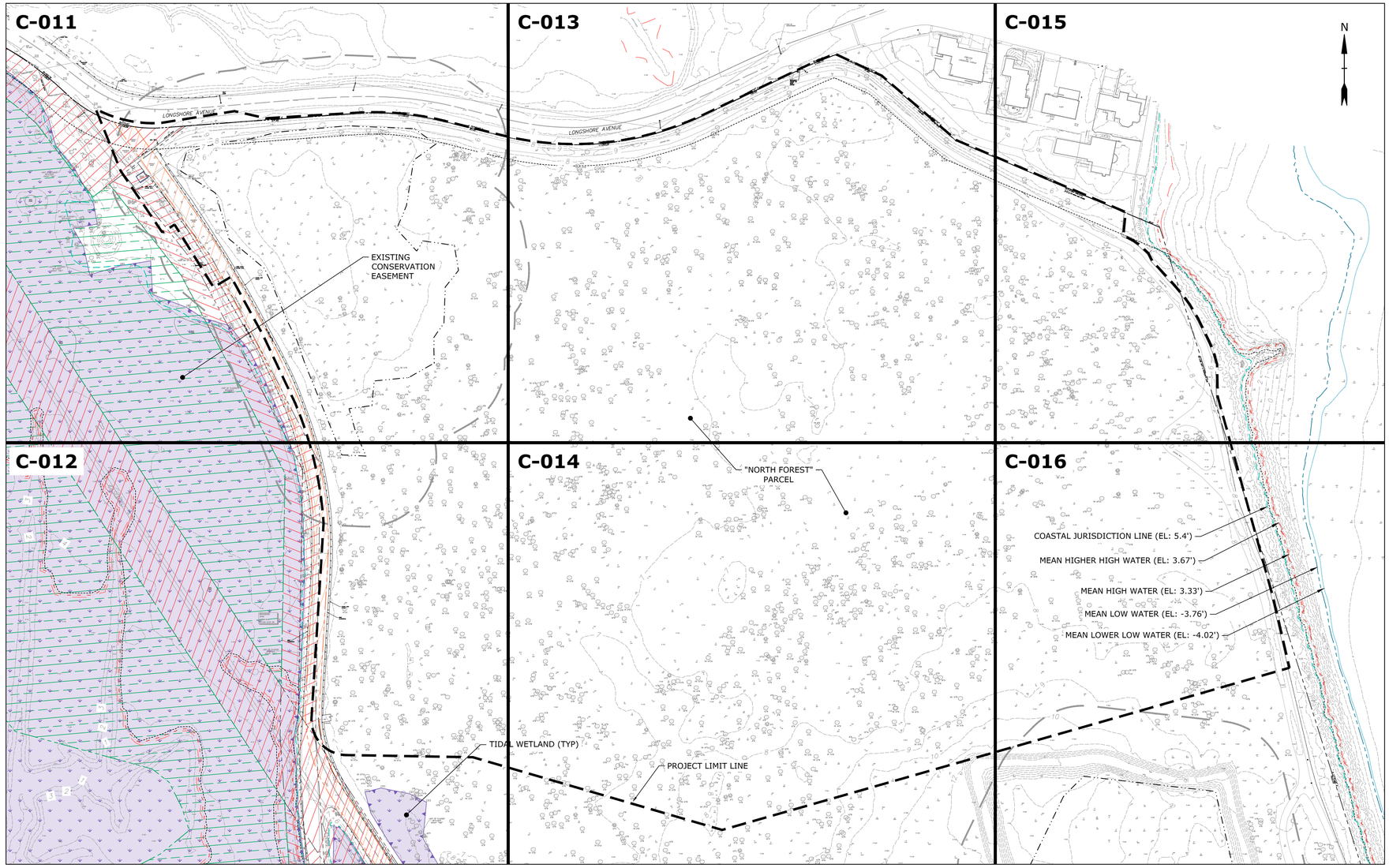


OVERALL EXISTING CONDITIONS PLAN
SCALE: 1" = 80'

LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
- MEAN LOW WATER (EL: -3.76')
- MEAN LOWER LOW WATER (EL: -4.02')
- 100' UPLAND REVIEW AREA
- LIMIT OF INLAND WETLANDS
- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

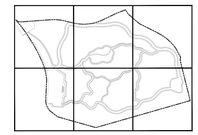
OVERALL EXISTING CONDITIONS PLAN NOTES

1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.
2. ALL ELEVATIONS BASED ON NAVD 88 DATUM.
3. PROPERTY LINE IS MEAN HIGH WATER ALONG THE COAST

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628
CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100
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ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING EXISTING CONDITIONS PLAN (OVERALL)

PROJECT NO	SHEET NO
M5177-004	C-010
SCALE: 1" = 80'	
DRAWN BY: J.PAPROTA	
CHECKED BY: K.McCUTCHAN	
DATE: 12/15/2025	

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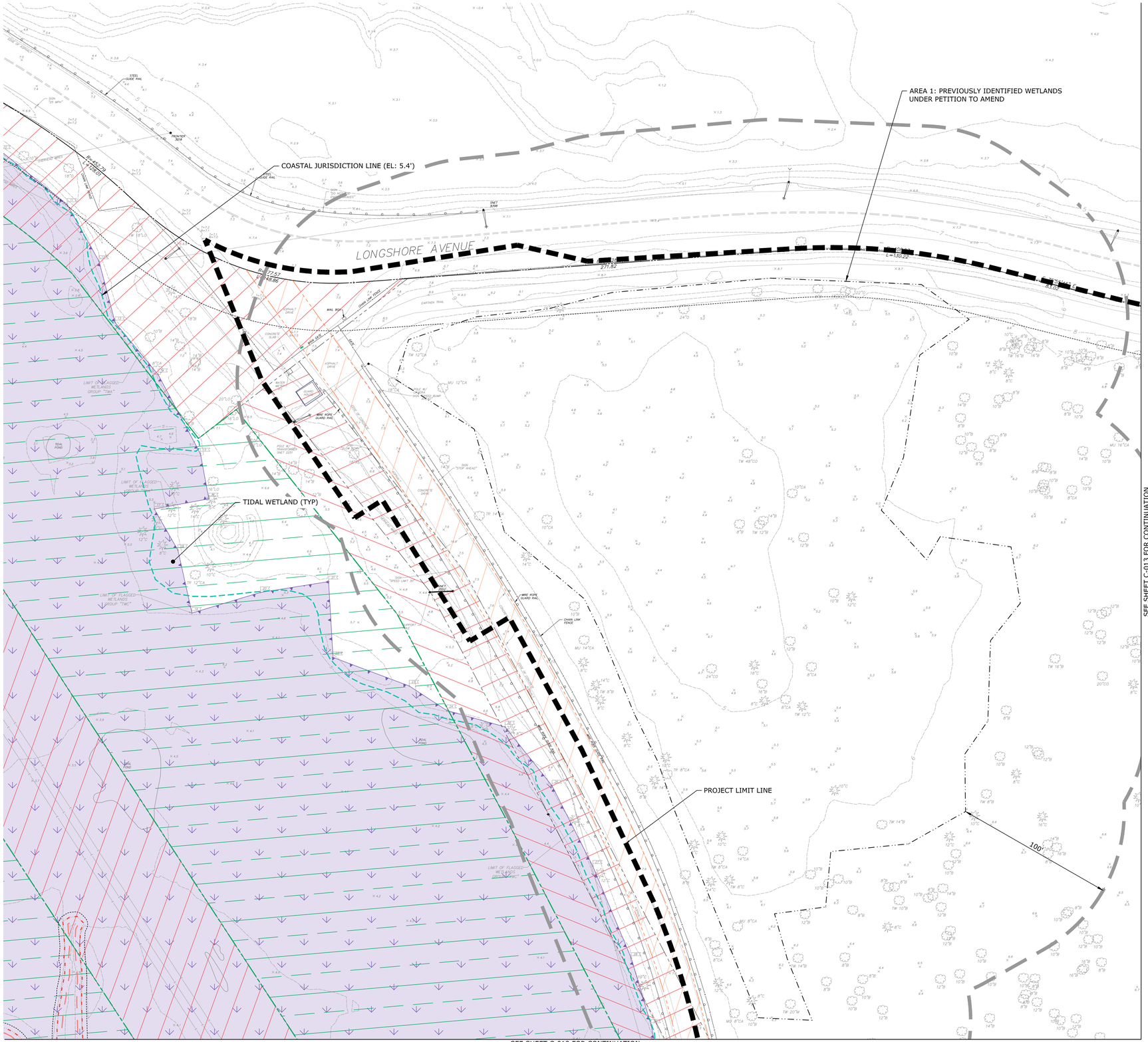

LEGEND:

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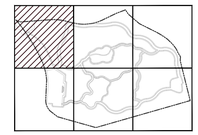
- LIMIT OF INLAND WETLANDS
- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628

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SHEET NAME

DRIVEWAY & PARKING EXISTING CONDITIONS PLAN (1)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-011

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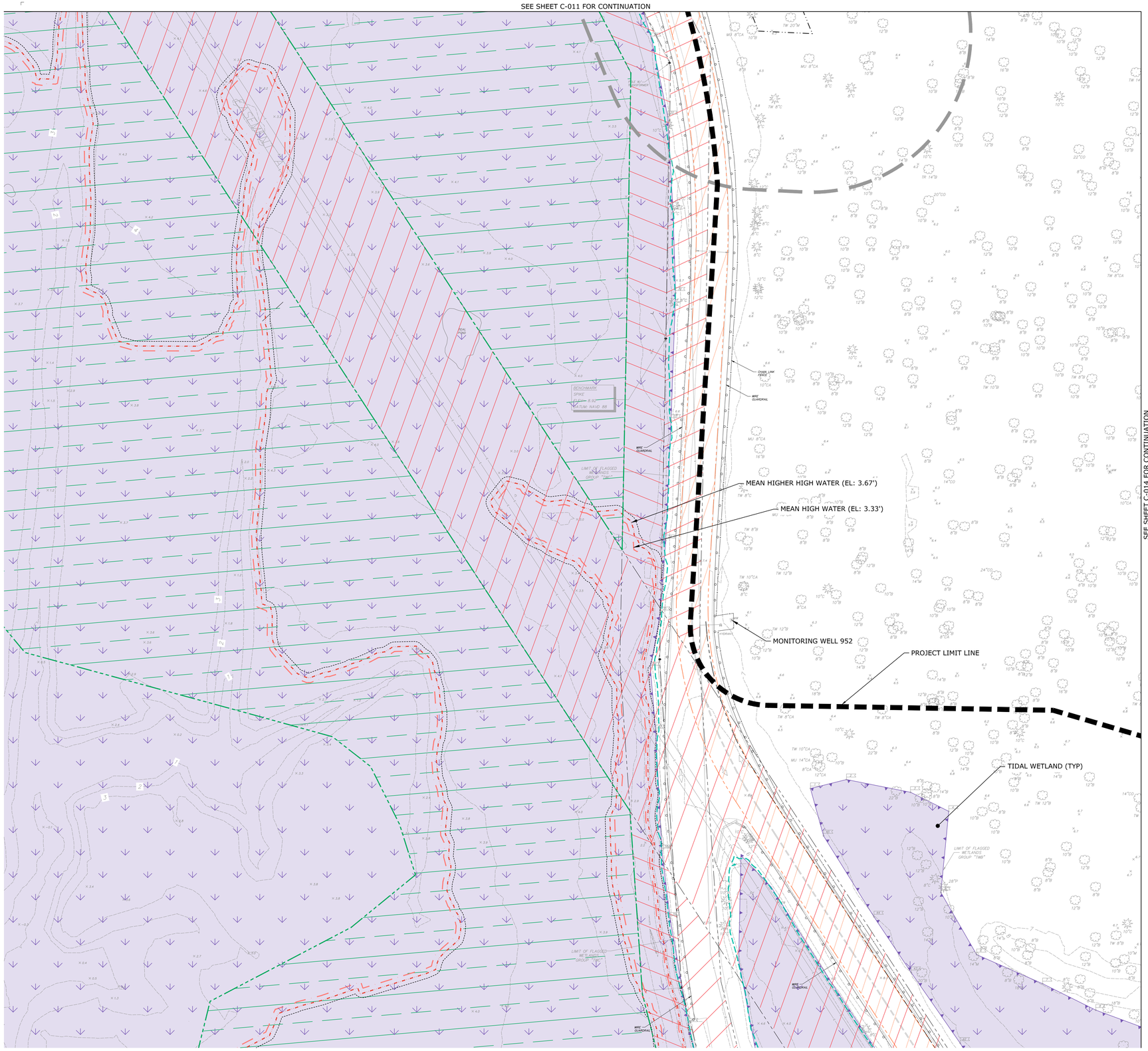
SEE SHEET C-011 FOR CONTINUATION



N

LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
- MEAN LOW WATER (EL: -3.76')
- MEAN LOWER LOW WATER (EL: -4.02')
- 100' UPLAND REVIEW AREA
- LIMIT OF INLAND WETLANDS
- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

0 30' 60'

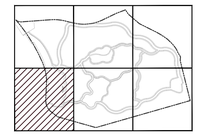
SCALE: 1" = 30'

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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Tighe&Bond
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SHELTON, CT 06484
T+ 203 712 1100

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STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING EXISTING CONDITIONS PLAN (2)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-012

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N

LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
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- LIMIT OF INLAND WETLANDS
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- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

0 30' 60'

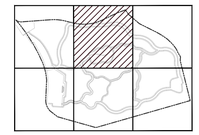
SCALE: 1" = 30'

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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STATE OF CONNECTICUT — ANDREW P. WHITE — 27761 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING EXISTING CONDITIONS PLAN (3)

PROJECT NO	SHEET NO
M5177-004	C-013
SCALE: 1" = 30'	
DRAWN BY: J.PAPROTA	
CHECKED BY: K.MCUTCHAN	
DATE: 12/15/2025	

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SEE SHEET C-013 FOR CONTINUATION

SEE SHEET C-012 FOR CONTINUATION

SEE SHEET C-016 FOR CONTINUATION

N

PROJECT LIMIT LINE

LIMIT OF FLAGGED WETLANDS GROUP "TWB"

LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
- MEAN LOW WATER (EL: -3.76')
- MEAN LOWER LOW WATER (EL: -4.02')
- 100' UPLAND REVIEW AREA
- LIMIT OF INLAND WETLANDS
- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

0 30' 60'

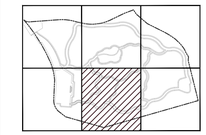
SCALE: 1" = 30'

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING EXISTING CONDITIONS PLAN (4)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-014

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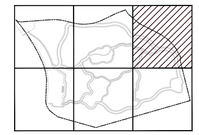
MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING EXISTING CONDITIONS PLAN (5)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.MCUTCHAN
DATE	12/15/2025

SHEET NO

C-015

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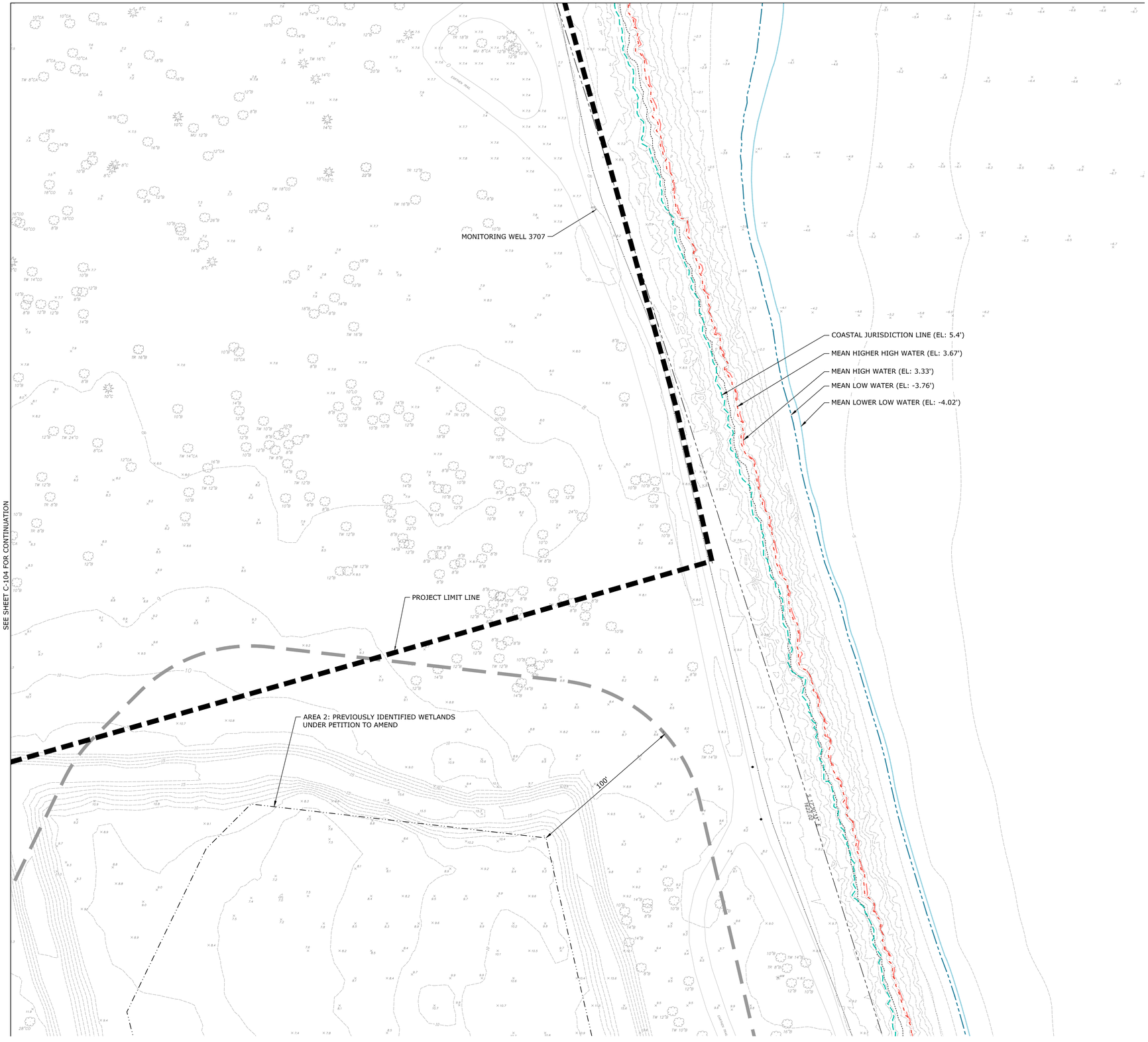
SEE SHEET C-105 FOR CONTINUATION

SEE SHEET C-104 FOR CONTINUATION



LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
- MEAN LOW WATER (EL: -3.76')
- MEAN LOWER LOW WATER (EL: -4.02')
- 100' UPLAND REVIEW AREA
- LIMIT OF INLAND WETLANDS
- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

0 30' 60'

SCALE: 1" = 30'

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING EXISTING CONDITIONS PLAN (6)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-016

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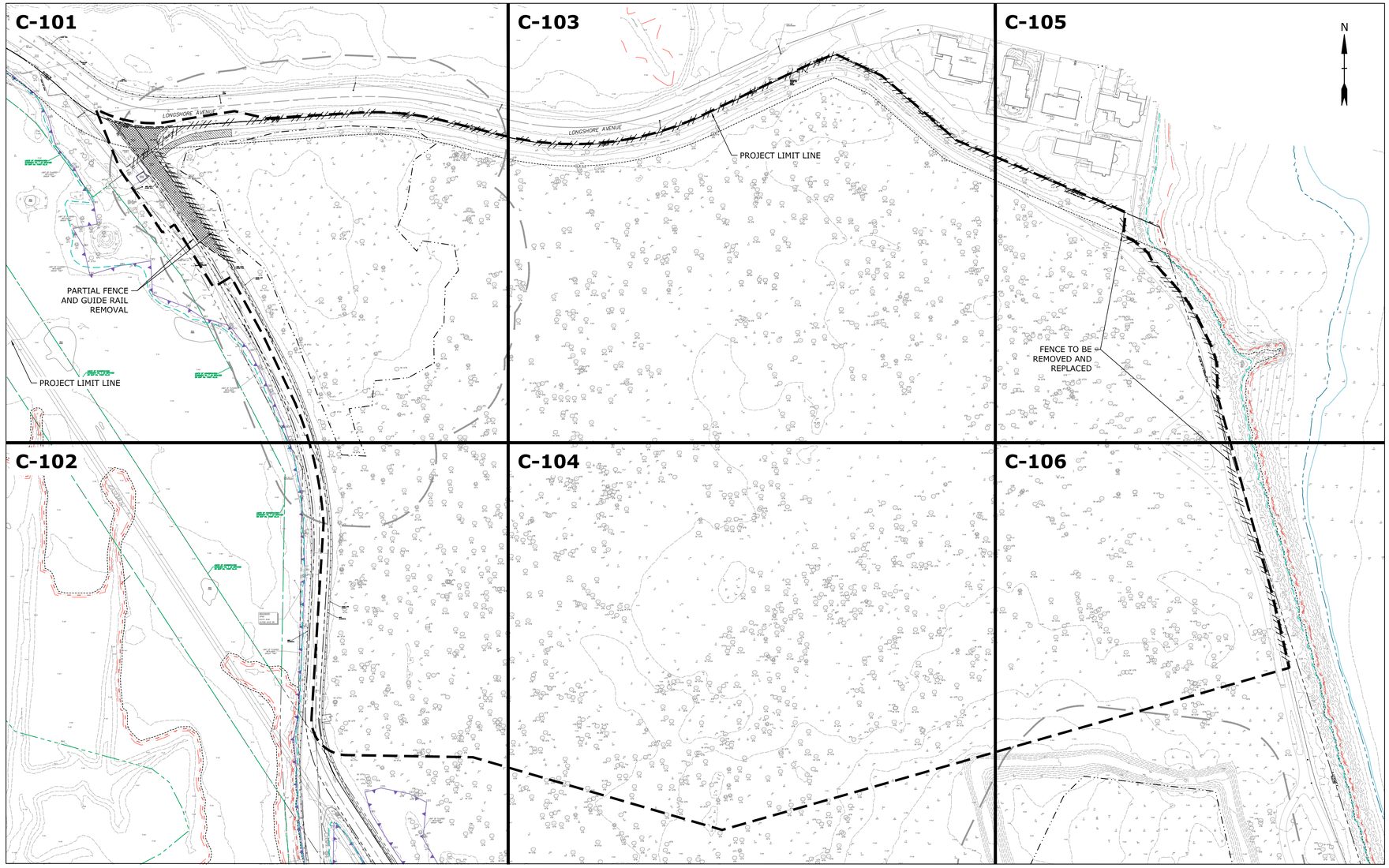


OVERALL DRIVEWAY & PARKING SITE SURFACE AND UTILITY DEMOLITION PLAN

SCALE: 1" = 80'

SITE SURFACE AND UTILITY DEMOLITION PLAN LEGEND

- PROJECT LIMIT LINE
- SAWCUT
- REMOVE BIT CONC PAVEMENT
- REMOVE CONCRETE
- MILL EX BIT CONC PAVEMENT
- REMOVE EARTHEN MATERIAL
- REMOVE SURFACE FEATURE
- ABANDON PIPE/STRUCTURE
- REMOVE STRUCTURE
- REMOVE PIPE
- CUT AND CAP PIPE
- CUT FOR FUTURE CONNECTION
- TP# TEST PIT

EXISTING CONDITIONS LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
- MEAN LOW WATER (EL: -3.76')
- MEAN LOWER LOW WATER (EL: -4.02')
- 100' UPLAND REVIEW AREA
- LIMIT OF INLAND WETLANDS
- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

OVERALL SITE SURFACE AND UTILITY DEMOLITION PLAN NOTES

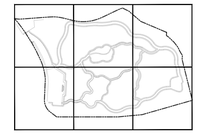
1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (OVERALL)

PROJECT NO	M5177-004
SCALE	1" = 80'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-100

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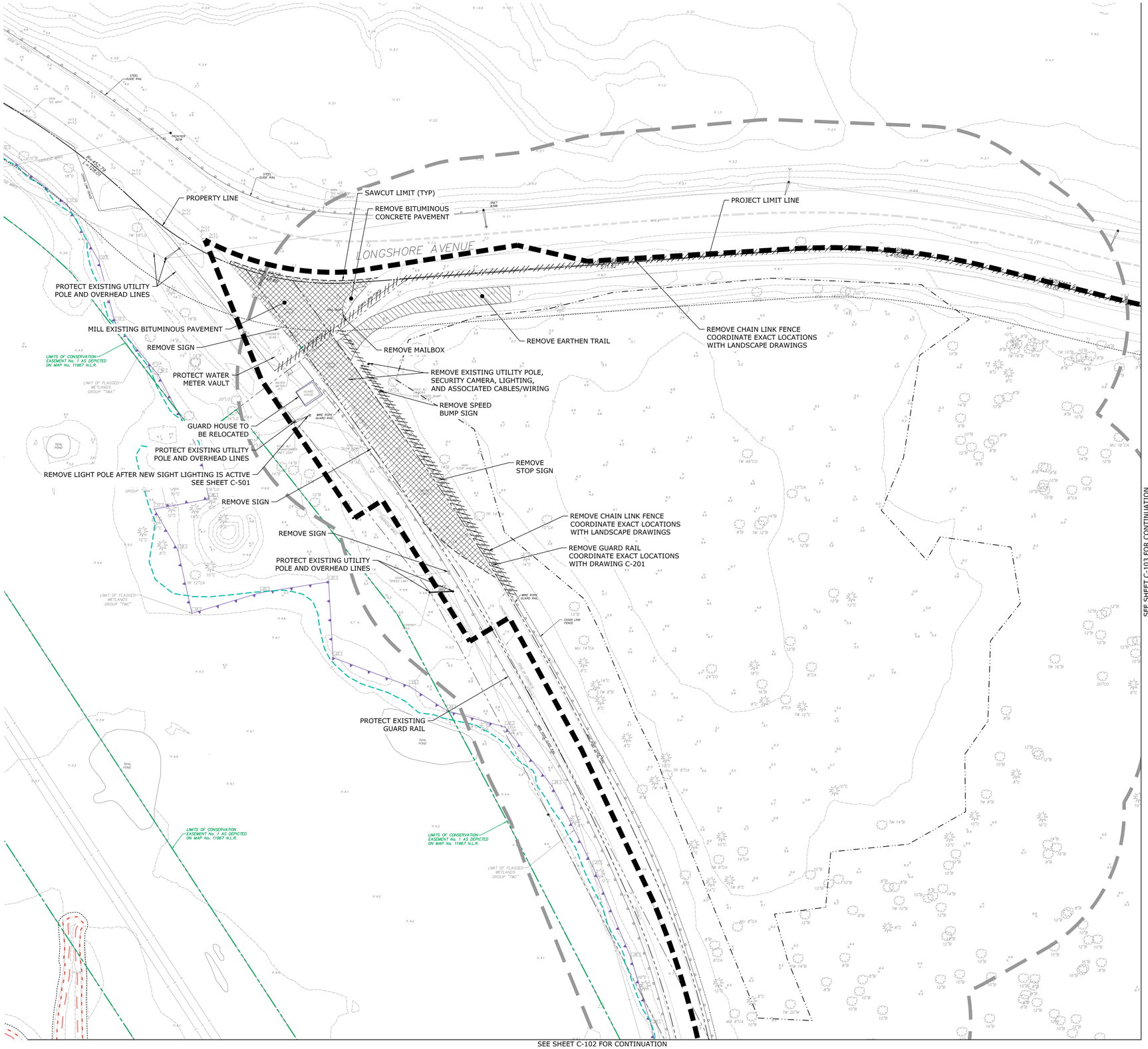

SEE SHEET C-103 FOR CONTINUATION

N

EXISTING CONDITIONS LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
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- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

SITE SURFACE AND UTILITY DEMOLITION PLAN LEGEND

- PROJECT LIMIT LINE
- SAWCUT
- REMOVE BIT CONC PAVEMENT
- REMOVE CONCRETE
- MILL EX BIT CONC PAVEMENT
- REMOVE EARTHEN MATERIAL
- REMOVE SURFACE FEATURE
- ABANDON PIPE/STRUCTURE
- REMOVE STRUCTURE
- REMOVE PIPE
- CUT AND CAP PIPE
- CUT FOR FUTURE CONNECTION
- TP# TEST PIT

0 30' 60'

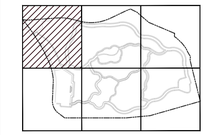
SCALE: 1" = 30'

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN



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MANRESA ISLAND CORPORATION

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CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

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12/12/2025

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STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (1)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.MCUTCHAN
DATE	12/15/2025

SHEET NO

C-101

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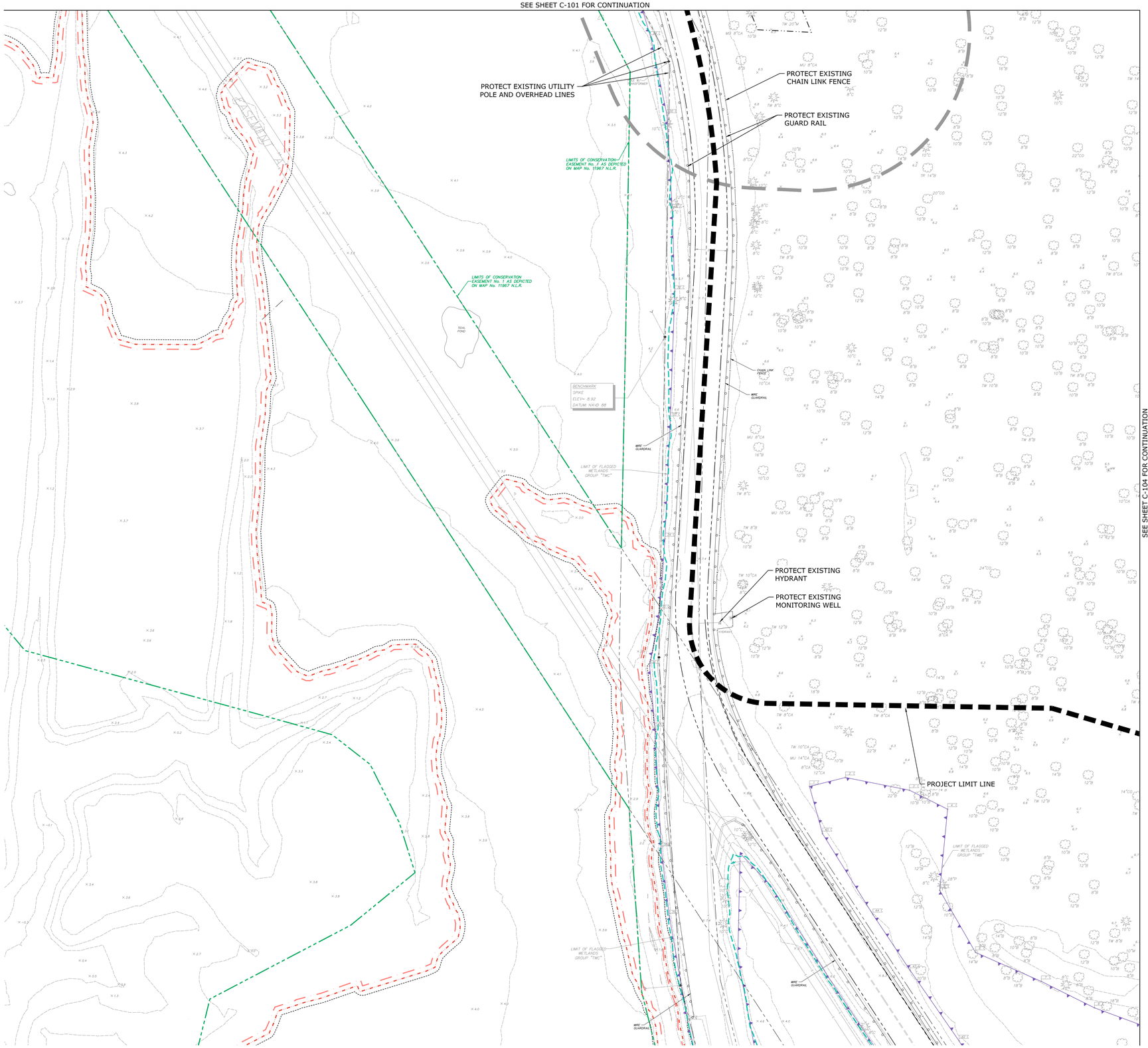
SEE SHEET C-101 FOR CONTINUATION



SEE SHEET C-104 FOR CONTINUATION

N

0 30' 60'

SCALE: 1" = 30'

EXISTING CONDITIONS LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
- MEAN LOW WATER (EL: -3.76')
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- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

SITE SURFACE AND UTILITY DEMOLITION PLAN LEGEND

- PROJECT LIMIT LINE
- SAWCUT
- REMOVE BIT CONC PAVEMENT
- REMOVE CONCRETE
- MILL EX BIT CONC PAVEMENT
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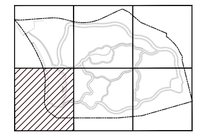
- REMOVE STRUCTURE
- REMOVE PIPE
- CUT AND CAP PIPE
- CUT FOR FUTURE CONNECTION
- TEST PIT

TP#

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT ANDREW P. WHITE 27767 LICENSED PROFESSIONAL ENGINEER
12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (2)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.MACUTCHAN
DATE	12/15/2025

SHEET NO

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EXISTING CONDITIONS LEGEND:

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- TIE-LINE
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SITE SURFACE AND UTILITY DEMOLITION PLAN LEGEND

- PROJECT LIMIT LINE
- SAWCUT
- REMOVE BIT CONC PAVEMENT
- REMOVE CONCRETE
- MILL EX BIT CONC PAVEMENT
- REMOVE EARTHEN MATERIAL
- REMOVE SURFACE FEATURE
- ABANDON PIPE/STRUCTURE
- REMOVE STRUCTURE
- REMOVE PIPE
- CUT AND CAP PIPE
- CUT FOR FUTURE CONNECTION
- TEST PIT

TP#

0 30' 60'

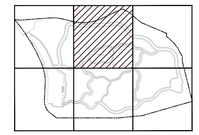
SCALE: 1" = 30'

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

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STATE OF CONNECTICUT · CHARLES J. CROCE · 20374 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (3)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.MCUTCHAN
DATE	12/15/2025

SHEET NO

C-103

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SEE SHEET C-103 FOR CONTINUATION

SEE SHEET C-102 FOR CONTINUATION

SEE SHEET C-106 FOR CONTINUATION

PROJECT LIMIT LINE

LIMIT OF FLAGGED WETLANDS GROUP "TWB"

N

EXISTING CONDITIONS LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
- MEAN LOW WATER (EL: -3.76')
- MEAN LOWER LOW WATER (EL: -4.02')
- 100' UPLAND REVIEW AREA
- LIMIT OF INLAND WETLANDS
- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

SITE SURFACE AND UTILITY DEMOLITION PLAN LEGEND

- PROJECT LIMIT LINE
- SAWCUT
- REMOVE BIT CONC PAVEMENT
- REMOVE CONCRETE
- MILL EX BIT CONC PAVEMENT
- REMOVE EARTHEN MATERIAL
- REMOVE SURFACE FEATURE
- ABANDON PIPE/STRUCTURE
- REMOVE STRUCTURE
- REMOVE PIPE
- CUT AND CAP PIPE
- CUT FOR FUTURE CONNECTION
- TEST PIT (TP#)

0 30' 60'

SCALE: 1" = 30'

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. CROCE · 20374 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (4)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-104

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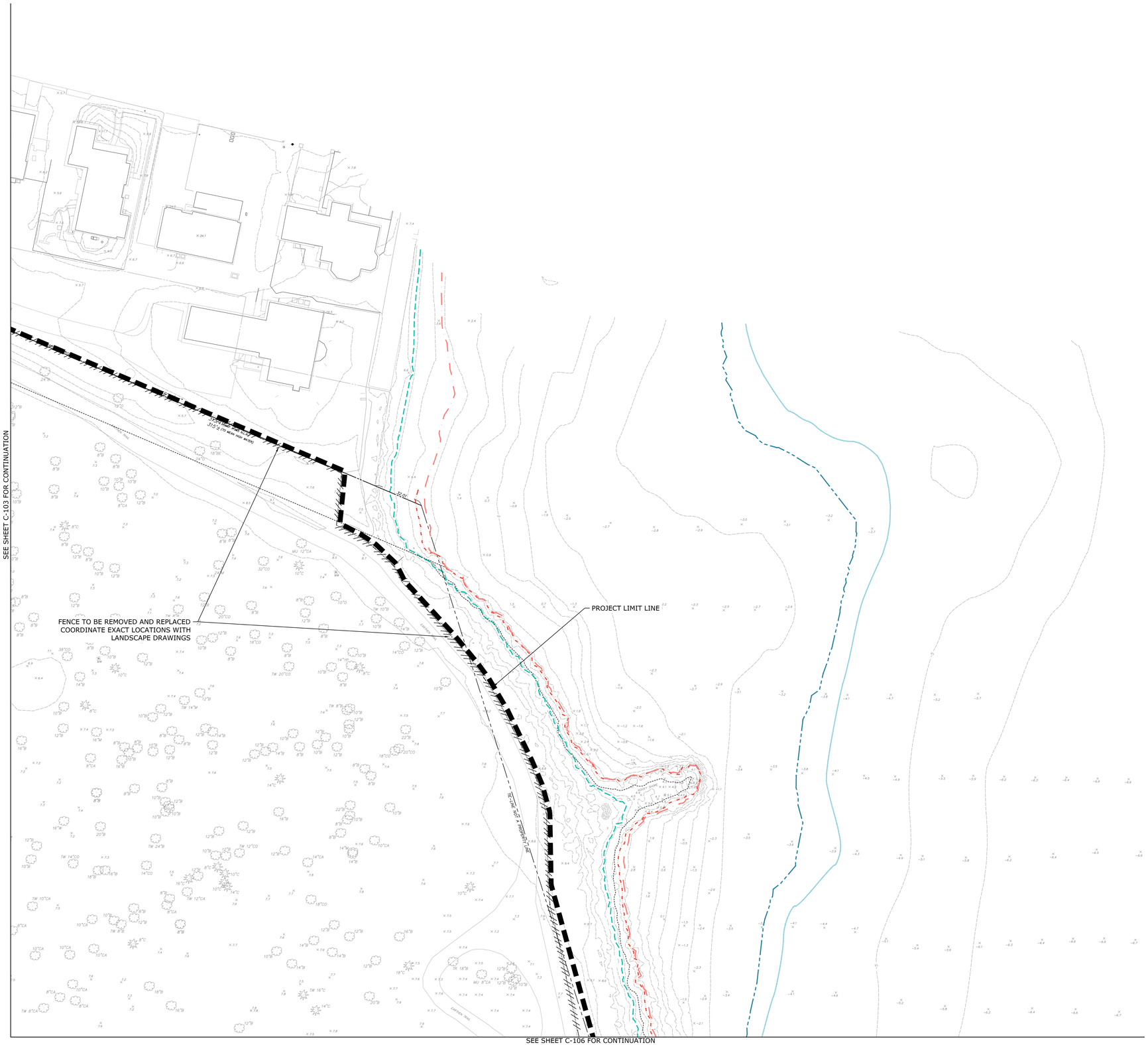


N

EXISTING CONDITIONS LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
- MEAN LOW WATER (EL: -3.76')
- MEAN LOWER LOW WATER (EL: -4.02')
- 100' UPLAND REVIEW AREA
- LIMIT OF INLAND WETLANDS
- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

SITE SURFACE AND UTILITY DEMOLITION PLAN LEGEND

- PROJECT LIMIT LINE
- SAWCUT
- REMOVE BIT CONC PAVEMENT
- REMOVE CONCRETE
- MILL EX BIT CONC PAVEMENT
- REMOVE EARTHEN MATERIAL
- REMOVE SURFACE FEATURE
- ABANDON PIPE/STRUCTURE
- REMOVE STRUCTURE
- REMOVE PIPE
- CUT AND CAP PIPE
- CUT FOR FUTURE CONNECTION
- TP# TEST PIT

0 30' 60'

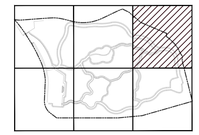
SCALE: 1" = 30'

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT
SCAPE LANDSCAPE ARCHITECTURE DPC
277 BROADWAY 9th FLOOR
NEW YORK, NY 10007
T+ 212 462 2628

CIVIL ENGINEER
Tighe&Bond
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SHELTON, CT 06484
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ECOLOGICAL
eDESIGN DYNAMICS
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T+ 646 688 3113

ENVIRONMENTAL
AKRF
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NEW YORK, NY 10016
T+ 212 696 0670

NUMBER	DATE	ISSUE
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12/12/2025

STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

NOT FOR CONSTRUCTION

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (5)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.MCUTCHAN
DATE	12/15/2025

SHEET NO

C-105

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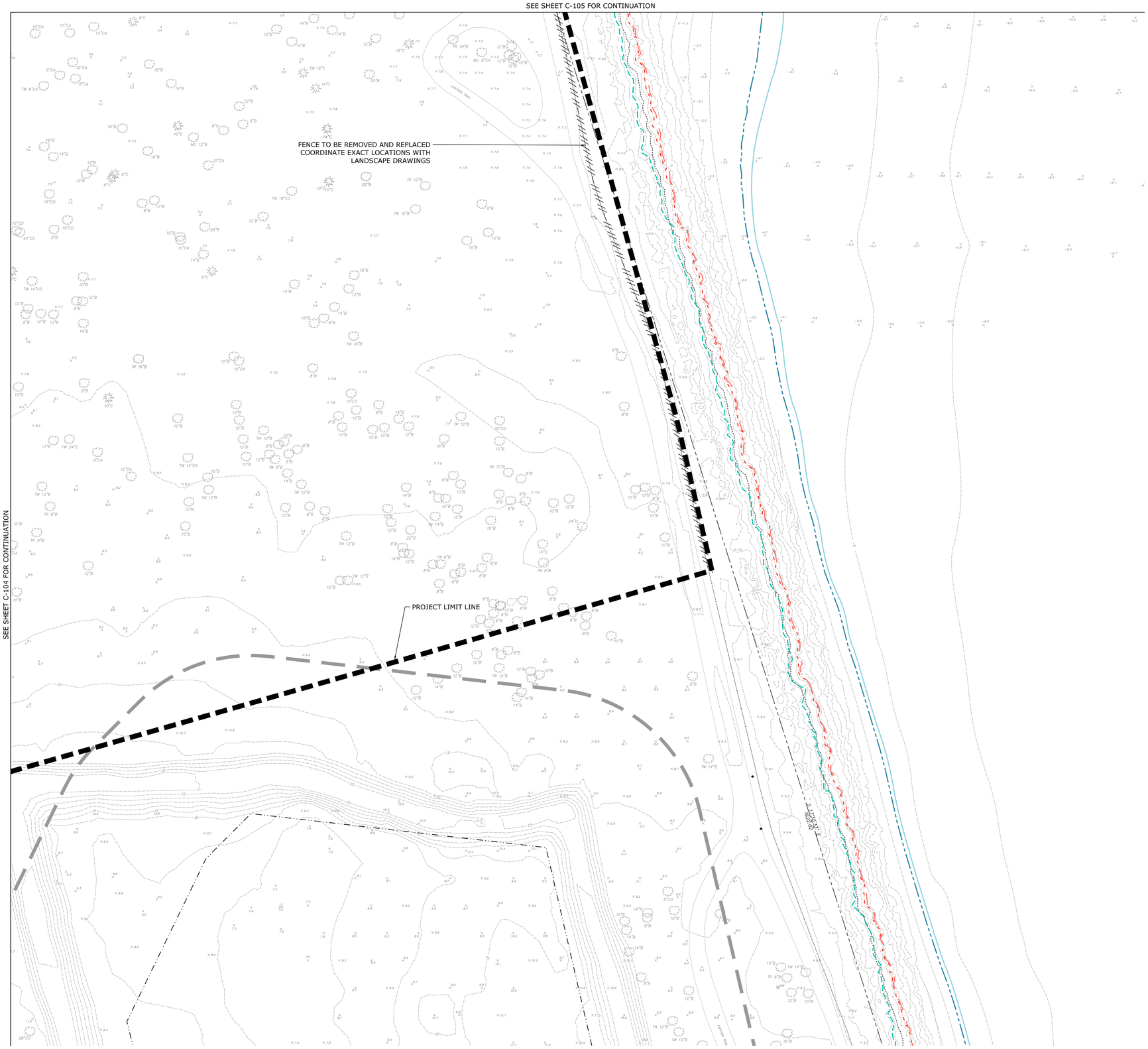

N

EXISTING CONDITIONS LEGEND:

- PROPERTY LINE
- TIE-LINE
- SETBACK LINE
- COASTAL JURISDICTION LINE (EL: 5.4')
- MEAN HIGHER HIGH WATER (EL: 3.67')
- MEAN HIGH WATER (EL: 3.33')
- MEAN LOW WATER (EL: -3.76')
- MEAN LOWER LOW WATER (EL: -4.02')
- 100' UPLAND REVIEW AREA
- LIMIT OF INLAND WETLANDS
- LIMIT OF TIDAL WETLANDS
- EXISTING EVERSOURCE EASEMENT
- EXISTING CONSERVATION EASEMENT AREA
- EXISTING CTDOT CONSTRUCTION EASEMENT

SITE SURFACE AND UTILITY DEMOLITION PLAN LEGEND

- PROJECT LIMIT LINE
- SAWCUT
- REMOVE BIT CONC PAVEMENT
- REMOVE CONCRETE
- MILL EX BIT CONC PAVEMENT
- REMOVE EARTHEN MATERIAL
- REMOVE SURFACE FEATURE
- ABANDON PIPE/STRUCTURE
- REMOVE STRUCTURE
- REMOVE PIPE
- CUT AND CAP PIPE
- CUT FOR FUTURE CONNECTION
- TP# TEST PIT

0 30' 60'
SCALE: 1" = 30'

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT
SCAPE LANDSCAPE ARCHITECTURE DPC
277 BROADWAY 9th FLOOR
NEW YORK, NY 10007
T+ 212 462 2628

CIVIL ENGINEER
Tighe&Bond
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ENVIRONMENTAL
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NUMBER	DATE	ISSUE
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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE SURFACE & UTILITY DEMOLITION PLAN (6)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-106

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OVERALL DRIVEWAY AND PARKING SITE LAYOUT PLAN
SCALE: 1" = 80'

SITE LAYOUT PLAN NOTES

1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.

SITE LAYOUT PLAN LEGEND:

PROPOSED PARKING SPACES COUNT (X)

SIGN LEGEND:

A — STOP (30x30) 31-0552

B — DO NOT ENTER (30x30) 31-1119

C — RESERVED PARKING, PERMIT REQUIRED, VIOLATORS WILL BE FINED MIN. $150, VAN ACCESSIBLE (18x24) (18x6) 31-0648

ZONING REGULATIONS FOR SUB-URBAN SINGLE FAMILY COMMUNITY DISTRICT (CD-1S)						
	CD-1S		EXISTING		PROPOSED	
PRINCIPAL FRONTAGE MIN. FRONT YARD (FT)	PRINCIPAL BLDG	ACCESSORY BLDG	PRINCIPAL BLDG	ACCESSORY BLDG	PRINCIPAL BLDG	ACCESSORY BLDG
	30	20 + PRINCIPAL FRONT YARD SETBACK	2408	62	NO CHANGE	NO CHANGE
SECONDARY FRONTAGE MIN. FRONT YARD (FT)	PRINCIPAL BLDG	ACCESSORY BLDG	PRINCIPAL BLDG	ACCESSORY BLDG	PRINCIPAL BLDG	ACCESSORY BLDG
	20	20	N/A	N/A	NO CHANGE	NO CHANGE
MIN. SIDE YARD (FT)	6		200' (±)		NO CHANGE	
MIN. REAR YARD (FT)	15		400' (±)		NO CHANGE	
LOT/BUILDING SITE WIDTH (FT)	50 (MIN)		1070		NO CHANGE	
LOT/BUILDING SITE AREA (SQFT)	6,250 (MIN)		5,445,000		NO CHANGE	
MAX PRIMARY BUILDING HEIGHT (STORIES/FT)	2.5 STORIES / 32 FT		8 STORIES / 160 (±)		NO CHANGE	
MAX TOTAL PRIMARY BUILDING HEIGHT (FT)	40		160 (±)		NO CHANGE	
MAX ACCESSORY BUILDING HEIGHT (STORIES/FT)	1.5 STORIES / 15 FT		6 STORIES / 95 (±)		NO CHANGE	
MAX TOTAL ACCESSORY BUILDING HEIGHT (FT)	20		95 (±)		NO CHANGE	

CURVE TABLE								
CURVE #		STATION	NORTHING	EASTING	DELTA (Δ)	TANGENT	LENGTH	RADIUS
C1	P.C. P.I. P.T.	11+73.58 - 12+40.38	N: 590,498.94 N: 590,470.23 N: 590,452.61	E: 816,902.01 E: 816,920.23 E: 816,949.31	26° 23' 48.7"	34.01'	66.80'	145.00'
C2	P.C. P.I. P.T.	12+40.38 - 13+67.50	N: 590,452.61 N: 590,419.11 N: 590,364.73	E: 816,949.31 E: 817,004.63 E: 817,039.65	26° 00' 41.3"	64.67'	127.12'	280.00'
C3	P.C. P.I. P.T.	13+67.50 - 17+66.70	N: 590,364.73 N: 590,191.08 N: 589,984.91	E: 817,039.65 E: 817,151.49 E: 817,138.80	36° 18' 19.2"	206.56'	399.20'	630.00'
C4	P.C. P.I. P.T.	19+11.73 - 19+62.00	N: 589,840.14 N: 589,808.20 N: 589,806.24	E: 817,129.89 E: 817,127.92 E: 817,159.86	90° 00' 00.0"	32.00'	50.27'	32.00'
C5	P.C. P.I. P.T.	20+85.00 - 21+13.27	N: 590,084.57 N: 590,075.96 N: 590,060.40	E: 817,201.54 E: 817,214.54 E: 817,213.58	60° 00' 04.6"	15.59'	28.27'	27.00'
C6	P.C. P.I. P.T.	30+31.08 - 30+69.14	N: 590,601.33 N: 590,580.24 N: 590,568.90	E: 816,942.27 E: 816,944.00 E: 816,926.14	62° 18' 30.6"	21.16'	38.06'	35.00'

LINE TABLE				
LINE #	LENGTH	DIRECTION	START POINT	END POINT
L1	173.58'	S32° 23' 51.43"E	N: 590645.51, E: 816809.01	N: 590498.94, E: 816902.01
L2	145.04'	S3° 31' 20.35"W	N: 589984.91, E: 817138.80	N: 589840.14, E: 817129.89
L3	38.00'	S86° 28' 39.65"E	N: 589806.24, E: 817159.86	N: 589803.90, E: 817197.79
L4	287.99'	S3° 31' 24.94"W	N: 590060.40, E: 817213.58	N: 589772.95, E: 817195.88
L5	85.00'	S56° 28' 39.65"E	N: 590131.51, E: 817130.68	N: 590084.57, E: 817201.54
L6	57.86'	S57° 36' 08.57"W	N: 590568.90, E: 816926.14	N: 590537.90, E: 816877.29
L7	31.08'	S4° 42' 22.06"E	N: 590632.30, E: 816939.72	N: 590601.33, E: 816942.27

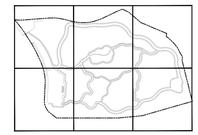
PARKING TABLE

	NUMBER OF SPACES
VAN ACCESSIBLE SPACES:	2
STANDARD SPACES:	38
TOTAL SPACES:	40
BUS LOADING:	2

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
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SEAL

STATE OF CONNECTICUT — CHARLES J. CROCE — 20374 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT — ANDREW P. RUTZ — 27761 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE LAYOUT PLAN (OVERALL)

PROJECT NO	M5177-004
SCALE	1" = 80'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO **C-200**

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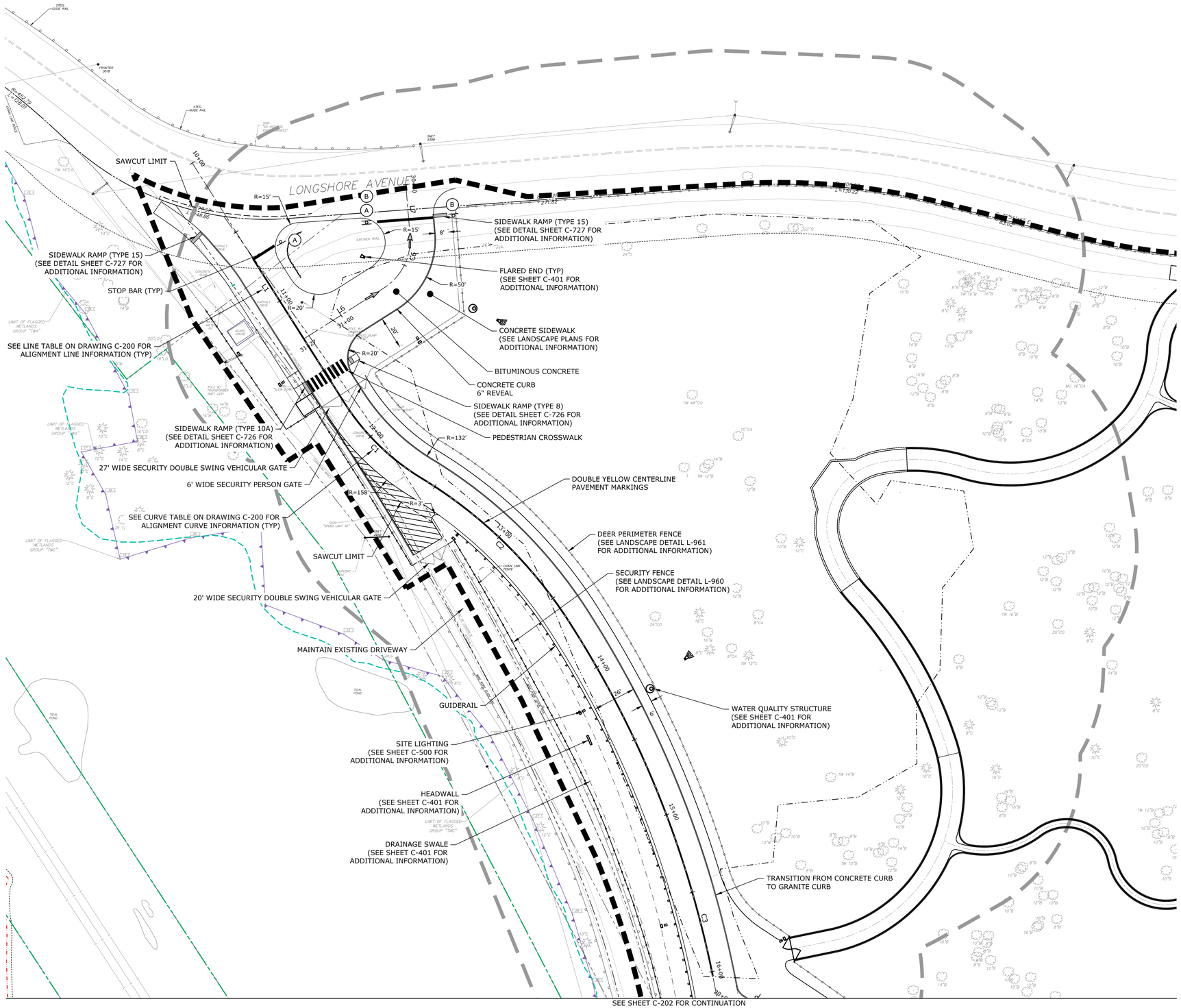

SITE LAYOUT PLAN LEGEND:

PROPOSED PARKING SPACES COUNT (X)

SIGN LEGEND:

A — STOP (30x30) 31-0552

B — DO NOT ENTER (30x30) 31-1119

C — RESERVED PARKING PERMIT REQUIRED / VIOLATORS WILL BE FINED MIN. $150 / VAN ACCESSIBLE (18x24) (18x6) 31-0648

SITE LAYOUT PLAN NOTES

1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

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STATE OF CONNECTICUT — CHARLES J. CODE — 20374 — REGISTERED PROFESSIONAL ENGINEER — 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT — ANDREW P. WHITE — 27761 — REGISTERED PROFESSIONAL ENGINEER — 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE LAYOUT PLAN (1)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-201

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SEE SHEET C-201 FOR CONTINUATION

TRANSITION FROM BITUMINOUS CONCRETE PAVEMENT TO ASPHALT DRIVEWAY WITH STONE CHIP SEAL

DRAINAGE SWALE (SEE SHEET C-402 FOR ADDDITIONAL INFORMATION)

GRANITE CURB 6" REVEAL

FLUSH GRANITE CURB

GRANITE CURB FLUSH TO FLARED END PAVERS, 6" REVEAL TO LANDSCAPED AREA

BITUMINOUS CONCRETE PAVEMENT (TYP.)

GRANITE CURB FLUSH TO FLARED END PAVERS, 6" REVEAL TO LANDSCAPED AREA

RAIN GARDEN (SEE SHEET C-402 FOR ADDDITIONAL INFORMATION)

FLUSH GRANITE CURB

GRANITE CURB 6" REVEAL

GRANITE WHEEL STOP (TYP OF 22)

GRANITE CURB FLUSH TO FLARED END PAVERS, 6" REVEAL TO LANDSCAPED AREA

DRAINAGE SWALE (SEE SHEET C-402 FOR ADDDITIONAL INFORMATION)

FLUSH GRANITE CURB

GRANITE CURB 6" REVEAL

GUIDERAIL

FLARED END SECTION (SEE SHEET C-402 FOR ADDITIONAL INFORMATION)

TRANSITION FROM BITUMINOUS CONCRETE PAVEMENT TO ASPHALT DRIVEWAY WITH STONE CHIP SEAL

TRANSITION FROM CONCRETE CURB TO GRANITE CURB

FLUSH GRANITE CURB

FLUSH GRANITE CURB

ASPHALT DRIVEWAY WITH STONE CHIP SEAL (THROUGH PARKING LOT ONLY) (SEE DETAIL SHEET C-701 FOR ADDITIONAL INFORMATION)

PERMEABLE PAVERS (TYP) (SEE DETAIL SHEET C-702 FOR ADDITIONAL INFORMATION)

CONCRETE SIDEWALK (SEE LANDSCAPE DETAIL SHEET L-901 FOR ADDITIONAL INFORMATION)

GRANITE CURB 6" REVEAL

SITE FURNISHINGS SEE LANDSCAPE DRAWINGS FOR ADDITIONAL INFORMATION (TYP)

TRANSITION GRANITE CURB 0" TO 6"

FLUSH GRANITE CURB

TRANSITION GRANITE CURB 6" TO 0"

SITE WALL SEE LANDSCAPE DRAWINGS FOR ADDITIONAL INFORMATION (TYP)

GRANITE CURB 6" REVEAL

SITE STAIRS SEE LANDSCAPE DRAWINGS FOR ADDITIONAL INFORMATION

SITE LIGHTING (SEE SHEET C-500 FOR ADDITIONAL INFORMATION)

FLARED END (SEE SHEET C-402 FOR ADDITIONAL INFORMATION)

EASEMENT

TIDAL POND

LIMIT OF FLAGGED WETLANDS GROUP "TWC"

LIMIT OF FLAGGED WETLANDS GROUP "TWB"

BUS LOADING

SITE LAYOUT PLAN LEGEND:

PROPOSED PARKING SPACES COUNT (X)

SIGN LEGEND:

A — STOP (30x30) 31-0552

B — DO NOT ENTER (30x30) 31-1119

C — RESERVED PARKING PERMIT REQUIRED VIOLATORS WILL BE FINED MIN. $150 VAN ACCESSIBLE (18x24) (18x6) 31-0648

SITE LAYOUT PLAN NOTES

1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.

0 30' 60'

SCALE: 1" = 30'

N

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628

CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100

ECOLOGICAL — eDESIGN DYNAMICS, 247 W 35TH STREET, NEW YORK, NY 10001, T+ 646 688 3113

ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT — CHARLES J. CROCE — 20374 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT — ANDREW P. WHITE — 27761 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE LAYOUT PLAN (2)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-202

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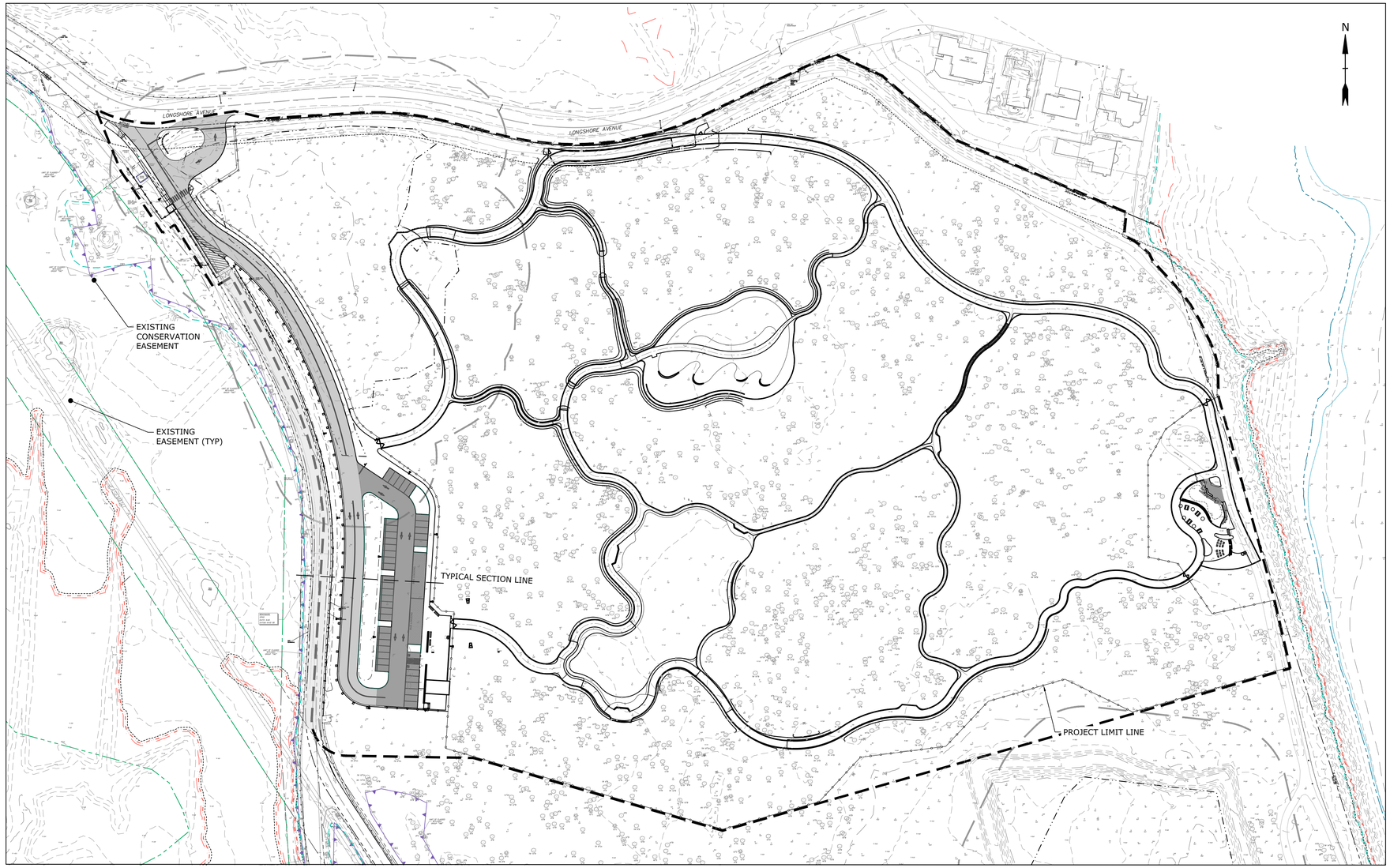


OVERALL DRIVEWAY AND PARKING SITE MATERIALS PLAN

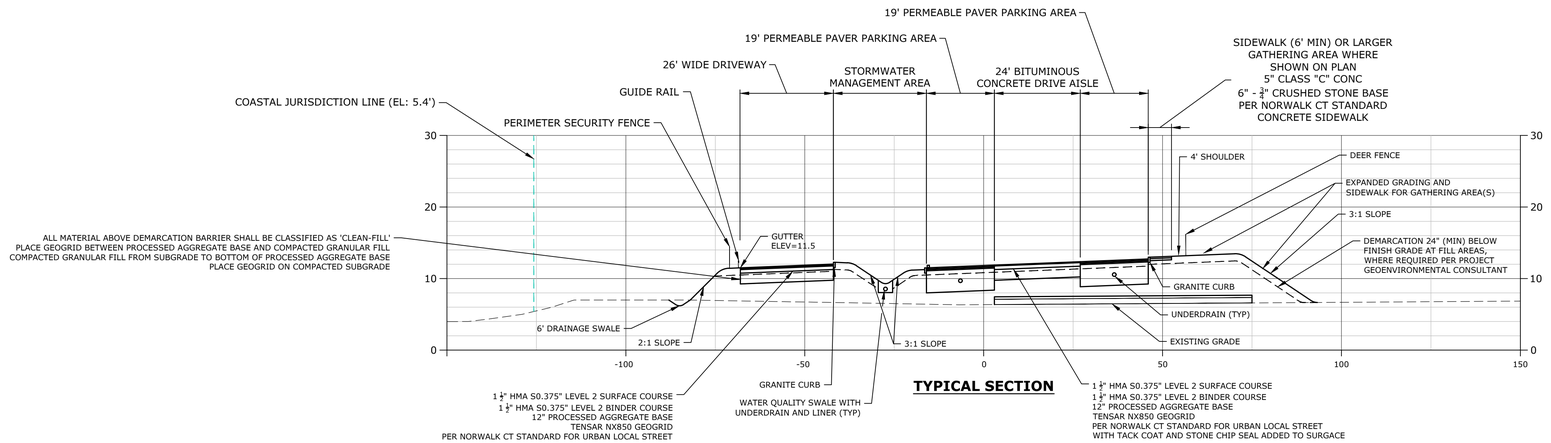
SCALE: 1" = 80'

MATERIALS SITE PLAN NOTES

1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.
2. SEE LANDSCAPE DRAWINGS FOR PLANTINGS AND RESTORATION BEYOND THE LIMITS OF HARDSCAPE SURFACES.

SITE LAYOUT PLAN LEGEND:

- BITUMINOUS CONCRETE PAVEMENT
- EXISTING BITUMINOUS CONCRETE TO REMAIN
- CONCRETE SIDEWALK
- PERMEABLE PAVERS
- BITUMINOUS CONCRETE PAVEMENT WITH STONE CHIP SEAL



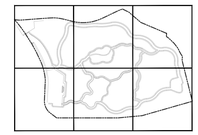
TYPICAL SECTION

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE MATERIAL PLAN (OVERALL)

PROJECT NO	M5177-004
SCALE	AS SHOWN
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-210

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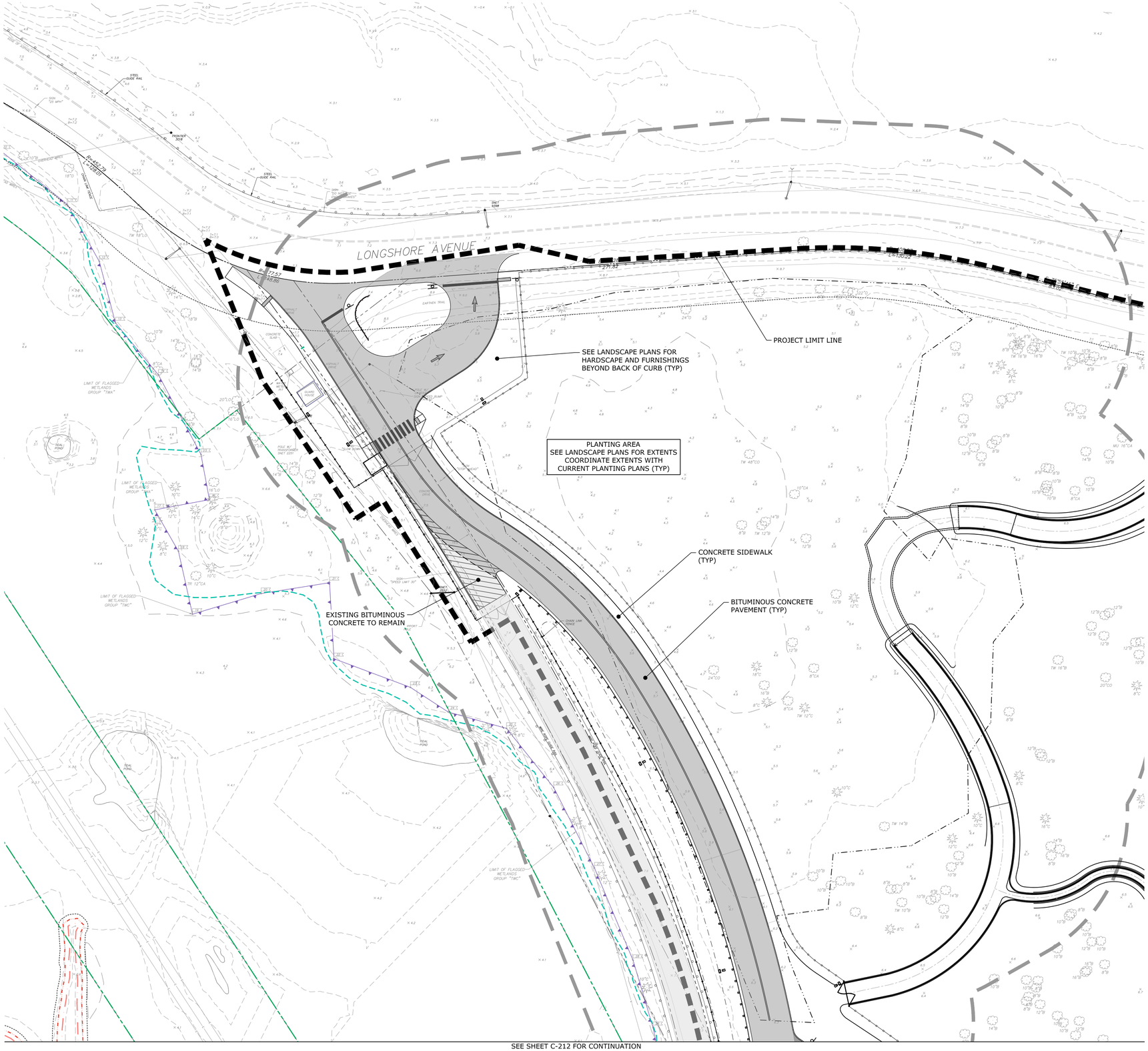


N

0 30' 60'

SCALE: 1" = 30'

SITE LAYOUT PLAN LEGEND:

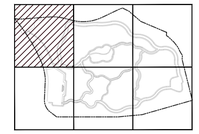
- BITUMINOUS CONCRETE PAVEMENT
- EXISTING BITUMINOUS CONCRETE TO REMAIN
- CONCRETE SIDEWALK
- PERMEABLE PAVERS
- BITUMINOUS CONCRETE PAVEMENT WITH STONE CHIP SEAL

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN



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STATE OF CONNECTICUT · CHARLES J. CROTE · 20374 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE MATERIAL PLAN (1)

PROJECT NO	SHEET NO
M5177-004	C-211
SCALE: 1" = 30'	
DRAWN BY: J.PAPROTA	
CHECKED BY: K.McCUTCHAN	
DATE: 12/15/2025	

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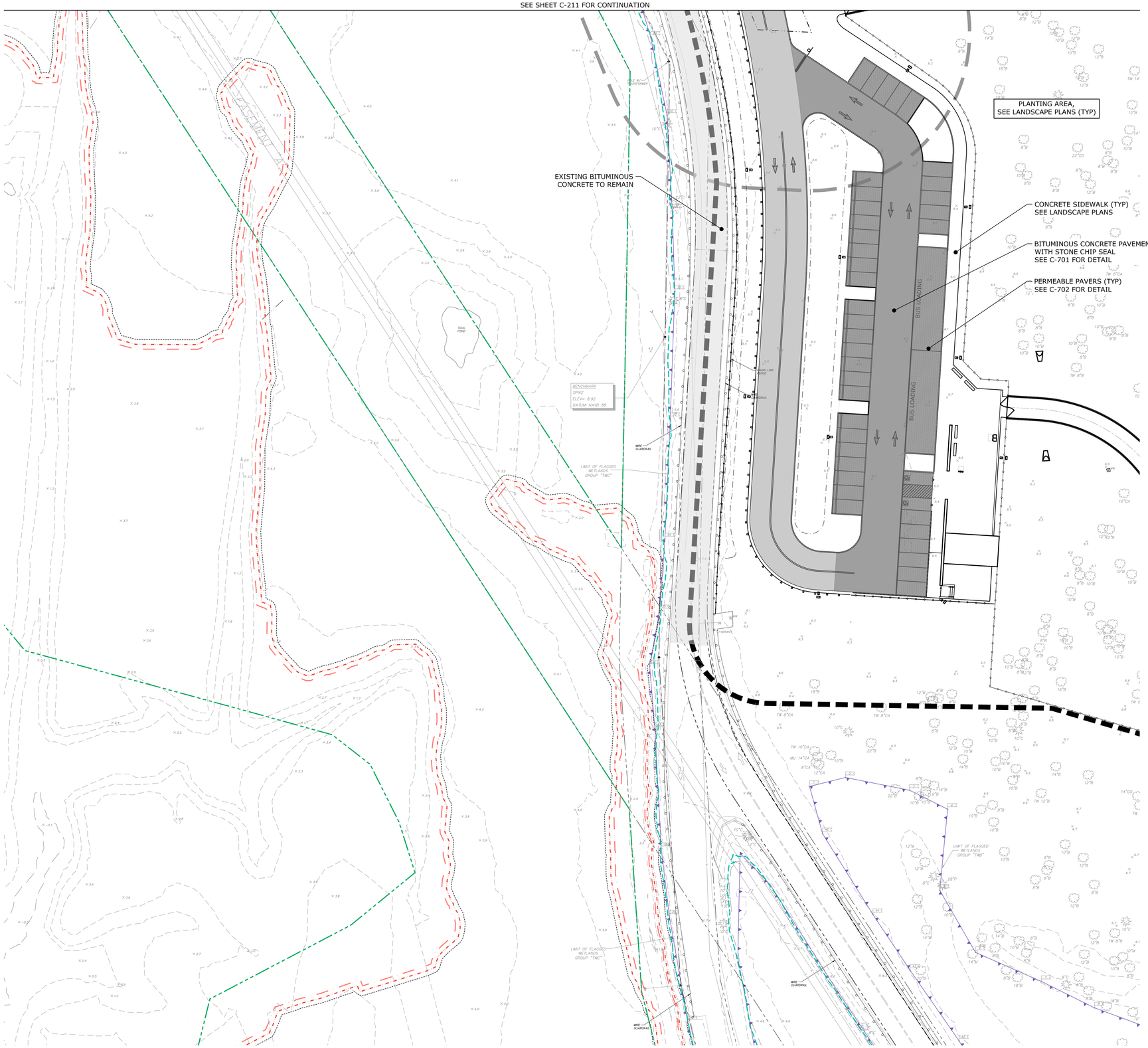
SEE SHEET C-211 FOR CONTINUATION



SITE LAYOUT PLAN LEGEND:

- BITUMINOUS CONCRETE PAVEMENT
- EXISTING BITUMINOUS CONCRETE TO REMAIN
- CONCRETE SIDEWALK
- PERMEABLE PAVERS
- BITUMINOUS CONCRETE PAVEMENT WITH STONE CHIP SEAL

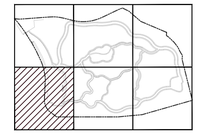
0 30' 60'

SCALE: 1" = 30'

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE MATERIAL PLAN (2)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-212

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OVERALL DRIVEWAY & PARKING SITE GRADING AND SOIL EROSION AND SEDIMENTATION CONTROL PLAN
SCALE: 1" = 80'

GRADING PLAN LEGEND

- 680 - EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- 695.0 - EXISTING SPOT ELEVATION
- 680 - PROPOSED INDEX CONTOUR
- 682 - PROPOSED INTERMEDIATE CONTOUR
- +695.0 - PROPOSED SPOT ELEVATION
- PROPOSED CATCH BASIN
- PROPOSED YARD DRAIN
- PROPOSED MANHOLE

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. SEE SHEET C-311 FOR SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

SOIL EROSION AND SEDIMENT CONTROL LEGEND

- SILT FENCE
- S.S. SILT SACK INLET PROTECTION
- STRAW WATTLE
- CONSTRUCTION ENTRANCE

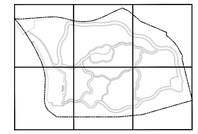
SITE GRADING & SESC PLAN NOTES

1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION FOR SITE GRADING AND SEE SHEET C-311 FOR ADDITIONAL INFORMATION FOR SOIL EROSION AND SEDIMENTATION CONTROL.
2. SEE SHEETS L-401 TO L-406 FOR LANDSCAPE GRADING PLANS.

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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LOCAL APPROVALS

SHEET NAME
DRIVEWAY & PARKING SITE GRADING & SOIL EROSION & SEDIMENT CONTROL PLAN (OVERALL)

PROJECT NO	M5177-004
SCALE	1" = 80'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025
SHEET NO	C-300

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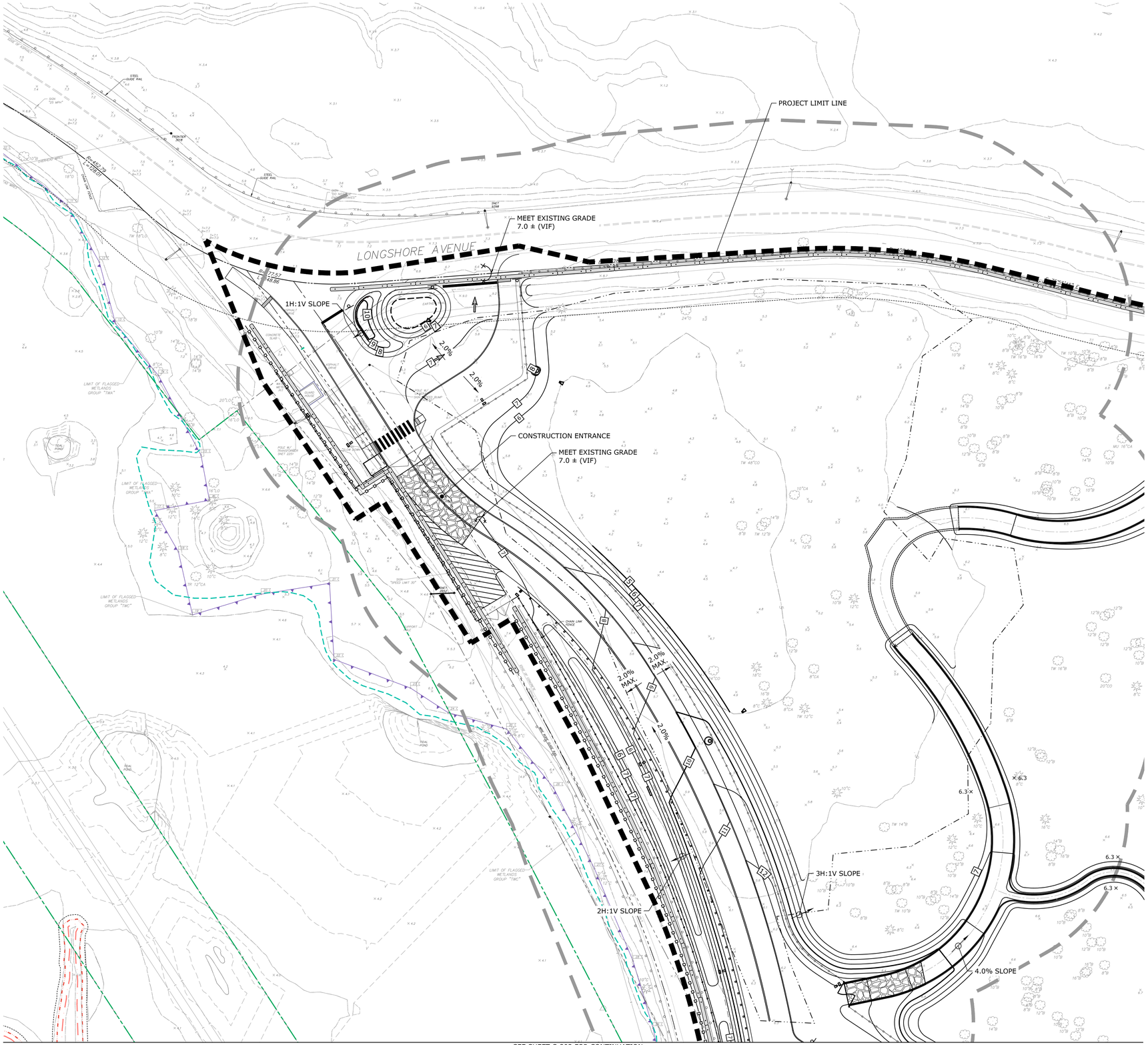

N

0 30' 60'

SCALE: 1" = 30'

GRADING PLAN LEGEND

- 680 - EXISTING INDEX CONTOUR
- 681 - EXISTING INTERMEDIATE CONTOUR
- 695.0 - EXISTING SPOT ELEVATION
- 680 - PROPOSED INDEX CONTOUR
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- +695.0 - PROPOSED SPOT ELEVATION
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SOIL EROSION AND SEDIMENT CONTROL NOTES

1. SEE SHEET C-311 FOR SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

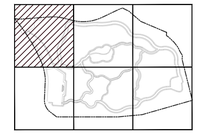
SOIL EROSION AND SEDIMENT CONTROL LEGEND

- SILT FENCE
- S.S. SILT SACK INLET PROTECTION
- STRAW WATTLE
- CONSTRUCTION ENTRANCE

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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LOCAL APPROVALS

SHEET NAME
DRIVEWAY & PARKING SITE GRADING & SOIL EROSION & SEDIMENT CONTROL PLAN (1)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPAIOITA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO
C-301

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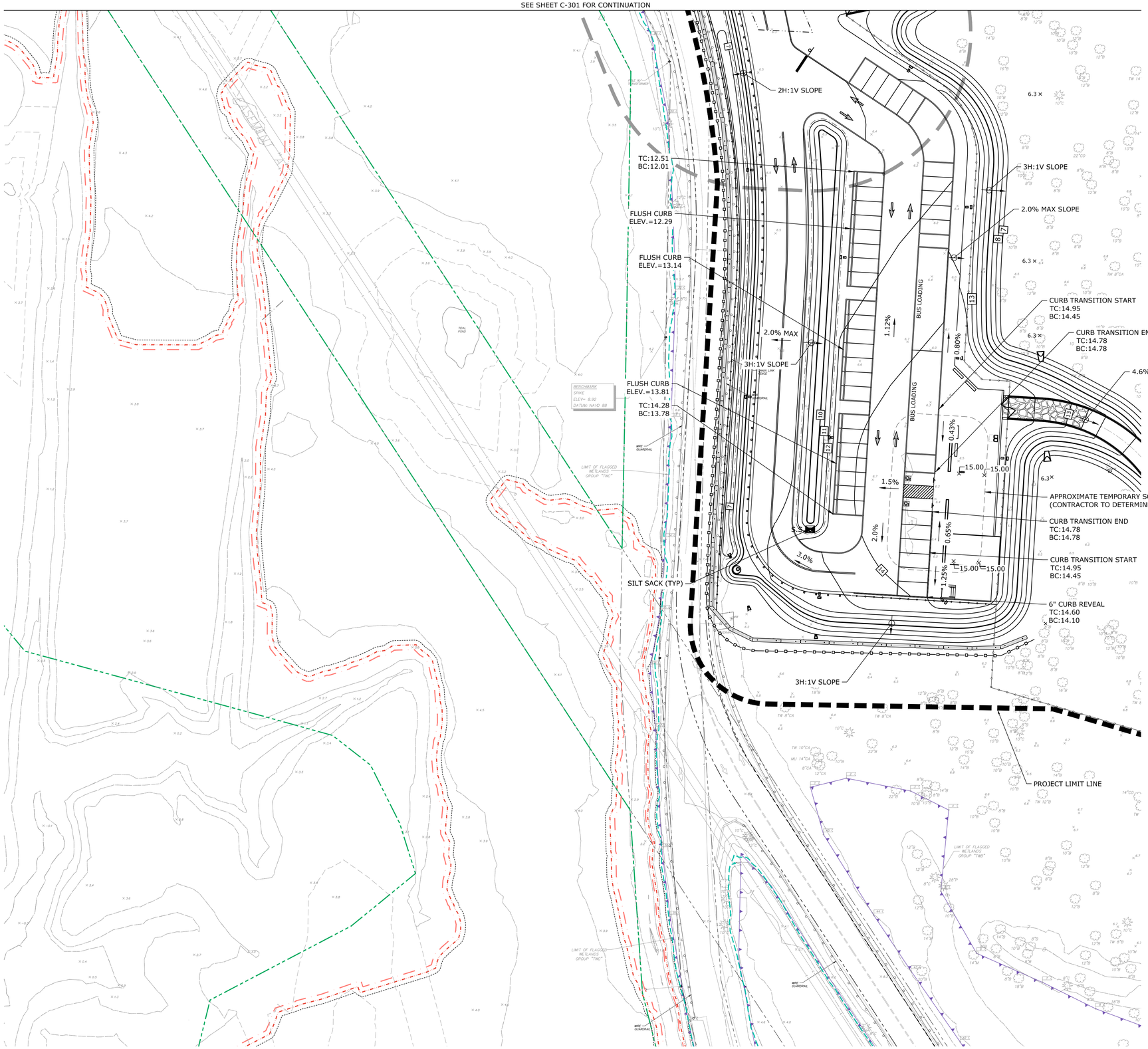
SEE SHEET C-301 FOR CONTINUATION



GRADING PLAN LEGEND

- 680 — EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- 695.0 — EXISTING SPOT ELEVATION
- 680 — PROPOSED INDEX CONTOUR
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- +695.0 — PROPOSED SPOT ELEVATION
- PROPOSED CATCH BASIN
- PROPOSED YARD DRAIN
- PROPOSED MANHOLE

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. SEE SHEET C-311 FOR SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

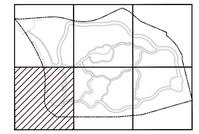
SOIL EROSION AND SEDIMENT CONTROL LEGEND

- SILT FENCE
- S.S. — SILT SACK INLET PROTECTION
- STRAW WATTLE
- CONSTRUCTION ENTRANCE

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE GRADING & SOIL EROSION & SEDIMENT CONTROL PLAN (2)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025
SHEET NO	C-302

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SOIL EROSION AND SEDIMENT CONTROL NOTES

1. SEE DRAWING C-624 FOR ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL DETAILS
2. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE "2024 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL", AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.
3. LAND DISTURBANCE SHALL BE KEPT TO THE MINIMUM NECESSARY FOR CONSTRUCTION OPERATIONS.
4. INSTALL ALL EROSION CONTROL MEASURES AS SHOWN ON THE PLAN AND ELSEWHERE AS ORDERED BY THE ENGINEER OR THE TOWN.
5. PROTECT ALL CATCH BASINS WITH A SILT SACKS, HAYBALE RING, SILT FENCE OR BLOCK AND STONE INLET PROTECTION THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED AS NOTED ON PLANS.
6. WHENEVER POSSIBLE, INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO CONSTRUCTION. SEE "SOIL EROSION AND SEDIMENTATION CONTROL NARRATIVE".
7. INSTALL ADDITIONAL CONTROL MEASURES DURING THE CONSTRUCTION PERIOD AS ORDERED BY THE ENGINEER.
8. MAINTAIN ALL SEDIMENTATION AND EROSION CONTROL MEASURES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
9. SEDIMENT REMOVED SHALL BE DISPOSED OF OFF-SITE IN A MANNER AS REQUIRED BY THE OWNER'S REPRESENTATIVE.
10. THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF ALL CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.
11. PROTECT ALL DISTURBED AREAS EXPOSED FOR MORE THAN 7 DAYS WITH A TEMPORARY VEGETATIVE COVER. SEED THESE AREAS WITH PERENNIAL RYEGRASS AT THE RATE OF 40 LBS. PER ACRE (1 LB. PER 1,000 SQ. FT). APPLY SOIL AMENDMENTS AND MULCH AS REQUIRED TO ESTABLISH A UNIFORM STAND OF VEGETATION OVER ALL DISTURBED AREAS.
12. THE CONSTRUCTION CONTRACTOR SHALL UTILIZE APPROVED METHODS/MATERIALS FOR PREVENTING THE BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES ONTO ADJACENT PROPERTIES AND SITE AREAS.
13. THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A SUPPLY OF SILT FENCE/HAYBALES AND ANTI-TRACKING CRUSHED STONE ON SITE FOR EMERGENCY REPAIRS.
14. THE CONTRACTOR SHALL INSPECT WEEKLY AT A MINIMUM, ALL DRAINAGE STRUCTURES AND CLEAN THEM AS NEEDED TO PREVENT THE BUILD-UP OF SILT.
15. THE CONSTRUCTION CONTRACTOR SHALL CAREFULLY COORDINATE THE PLACEMENT OF EROSION CONTROL MEASURES WITH THE PHASING OF CONSTRUCTION.
16. KEEP ALL PAVED ROADWAYS CLEAN. SWEEP BEFORE FORECASTED STORMS.
17. TREAT ALL UNPAVED SURFACE WITH 4" MINIMUM OF TOPSOIL PRIOR TO FINAL STABILIZATION.
18. INSTALL HAYBALE BARRIERS AND SILT FENCING ALONG THE TOE OF CRITICAL CUT AND FILL SLOPES.
19. THE CONTRACTOR SHALL NOTIFY THE TOWN ENVIRONMENTAL OFFICIAL PRIOR TO THE INSTALLATION OF EROSION CONTROLS, CUTTING OF TREES, OR ANY EXCAVATION.
20. COVER ALL TRUCKS CONTAINING MATERIALS BEFORE LEAVING THE SITE.
21. CHECK ALL SEDIMENTATION AND EROSION CONTROLS WEEKLY AND/OR AFTER EACH RAINFALL EVENT. MAKE NECESSARY REPAIRS IMMEDIATELY.
22. INSPECT AND REPAIR EROSION AND SEDIMENT CONTROLS PRIOR TO FORECASTED RAIN EVENTS.
23. REMOVE EROSION CONTROLS WHEN ALL DISTURBED AREAS HAVE BEEN STABILIZED AND THE TOWN HAS PROVIDED AUTHORIZATION. DISTURBED AREAS SHALL BE SEEDED AND MULCHED.

SOIL EROSION AND SEDIMENTATION CONTROL NARRATIVE

MANRESA ISLAND CORPORATION IS PROPOSING TO CONSTRUCT A PARK CONSISTING OF TRAILS AND AMENITIES IN THE NORTH FOREST PORTION OF MANRESA ISLAND, LOCATED IN NORWALK, CONNECTICUT, ALONG WITH A PARKING AREA, ACCESS DRIVE, AND BUS LOADING AREAS TO FACILITATE VISITORS TO THE PARK. PROPOSED STORMWATER MANAGEMENT FEATURES INCLUDE INFILTRATION BASIN/RAINGARDENS, HYDRODYNAMIC SEPARATORS, BIO-FILTRATION SWALES, AND PERMEABLE PAVING AND PAVERS.

ANTICIPATED RESPONSIBLE PARTY FOR INSPECTION OF SESCs: MANRESA ISLAND CORPORATION

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL CONFORM TO THE STANDARDS OUTLINED IN THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION (CTDEEP), "2024 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL", LATEST REVISION.

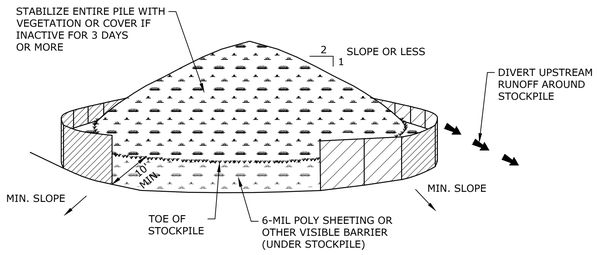
AREA OF DISTURBANCE IS APPROXIMATELY 8.25 ACRES.

ESTIMATED:
PROJECT START: MARCH 2026
PROJECT COMPLETION: DECEMBER 2026

UPON COMPLETION OF THE PROJECT THE PROJECT AREA WILL HAVE A WEIGHTED CN OF APPROXIMATELY 65, WITH THE SITE ULTIMATELY DISCHARGING TO THE LONG ISLAND SOUND. THE SIDE SLOPES OF THE PROPOSED ACCESS DRIVE WILL BE MONITORED FOR STABILITY AND EROSION UNTIL FINAL STABILIZATION IS COMPLETED.

CIVIL ROADWAY AND HARDSCAPE CONSTRUCTION SEQUENCE

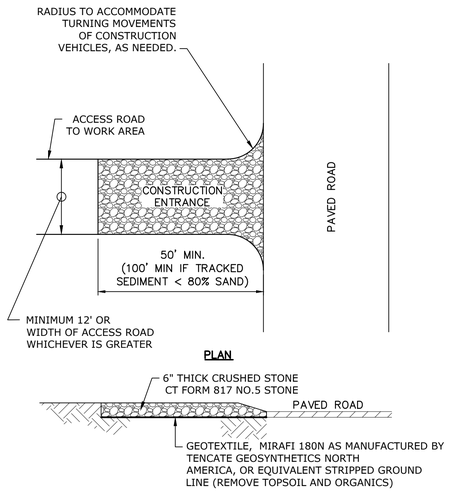
1. FLAG THE LIMITS OF CONSTRUCTION.
2. HOLD PRECONSTRUCTION MEETING. (REMEMBER TO CALL BEFORE YOU DIG 1-800-922-4455).
3. INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS AND TREE PROTECTION DEVICES IN ACCORDANCE WITH THE SOIL EROSION AND SEDIMENT CONTROL PLANS.
4. STRIP ALL TOPSOIL WITHIN THE PROJECT AREA AND STOCKPILE ALL TOPSOIL ON-SITE.
5. STRIP AND/OR MILL EXISTING BITUMINOUS PAVEMENT AS IDENTIFIED ON THE SITE DEMOLITION PLANS.
6. PERFORM THE BULK GRADING TO RAISE THE ACCESS DRIVE AND PARKING AREA TO SUBGRADE.
7. INSTALL BELOW GROUND DRAINAGE IMPROVEMENTS, SITE LIGHTING CONDUITS, FOUNDATIONS, HANDHOLES, AND OTHER UTILITY AND TRENCHING OPERATIONS.
8. INSTALL SUBBASE FOR ACCESS DRIVES, PARKING AREAS, AND WALKWAYS.
9. COMPLETE ROUGH GRADING ACTIVITIES.
10. INSTALL CURBING, AND CONCRETE WALKWAYS.
11. INSTALL NEW BITUMINOUS PAVEMENT AS SHOWN ON THE SITE PLANS.
12. COMPLETE THE BALANCE OF SITE WORK AND STABILIZATION OF ALL OTHER DISTURBED AREAS.
13. RESTORE ALL LANDSCAPED AREAS IN ACCORDANCE WITH SITE PLANS AND SPECIFICATIONS.
14. AFTER SITE IS STABILIZED REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS (E.G. GEOTEXTILE SILT FENCES AND HAYBALES).



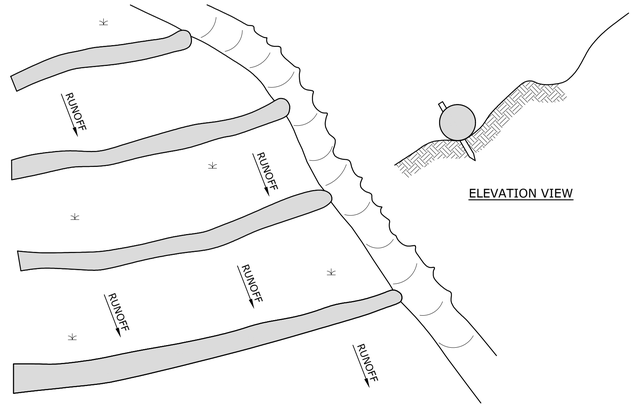
INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY, STABLE AND NOT SUBJECT TO PERIODIC TIDAL FLOODING EVENTS. STOCKPILES SHALL MAINTAIN A MINIMUM DISTANCE OF 100 FEET FROM WETLAND AREAS AND 50 FEET FROM PROPERTY LINE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2H:1V.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR HAYBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
4. STOCKPILING PROCEDURES SUBJECT TO REQUIREMENTS INCLUDED IN CTDEEP'S GENERAL PERMIT CONTAMINATED SOIL AND/OR SEDIMENT MANAGEMENT (STAGING AND TRANSFER) AND THE SITE-SPECIFIC CTDEEP - APPROVED SOIL/MATERIALS MANAGEMENT PLAN (SMMP) AND MATERIAL ACCEPTANCE PROTOCOL (MAP).
5. A 6-MIL POLYETHYLENE (POLY) SHEETING OR OTHER VISIBLE BARRIER (E.G., LAYER OF STONE) IS REQUIRED BENEATH THE STOCKPILE ON NON-HARDSCAPED SURFACES (E.G., ON-SITE SOIL, FILL MATERIALS, SOLID WASTE) TO PREVENT INTERMINGLING.

TEMPORARY SOIL STOCKPILE HOLDING AREA
NO SCALE



CONSTRUCTION ENTRANCE
NO SCALE



STRAW WATTLE
NO SCALE

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL





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THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

SOIL EROSION & SEDIMENT CONTROL NOTES, NARRATIVE & DETAILS

PROJECT NO	M5177-004
SCALE	AS SHOWN
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025
SHEET NO	C-311

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OVERALL DRIVEWAY & PARKING SITE DRAINAGE AND UTILITY PLAN
SCALE: 1" = 80'

0 80' 160'
SCALE: 1" = 80'

DRAINAGE AND UTILITY PLAN LEGEND

- PROPERTY LINE
- PROPOSED STORM SEWER
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED WATER SERVICE
- PROPOSED FIRE HYDRANT
- PROPOSED ELECTRIC SERVICE

DRAINAGE AND UTILITY PLAN NOTES

1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628
CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100
ECOLOGICAL — eDESIGN DYNAMICS, 247 W 35TH STREET, NEW YORK, NY 10001, T+ 646 688 3113
ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

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12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE DRAINAGE & UTILITY PLAN (OVERALL)

PROJECT NO	SHEET NO
M5177-004	C-400
SCALE: 1" = 80'	
DRAWN BY: J.PAPROTA	
CHECKED BY: K.McCUTCHAN	
DATE: 12/15/2025	

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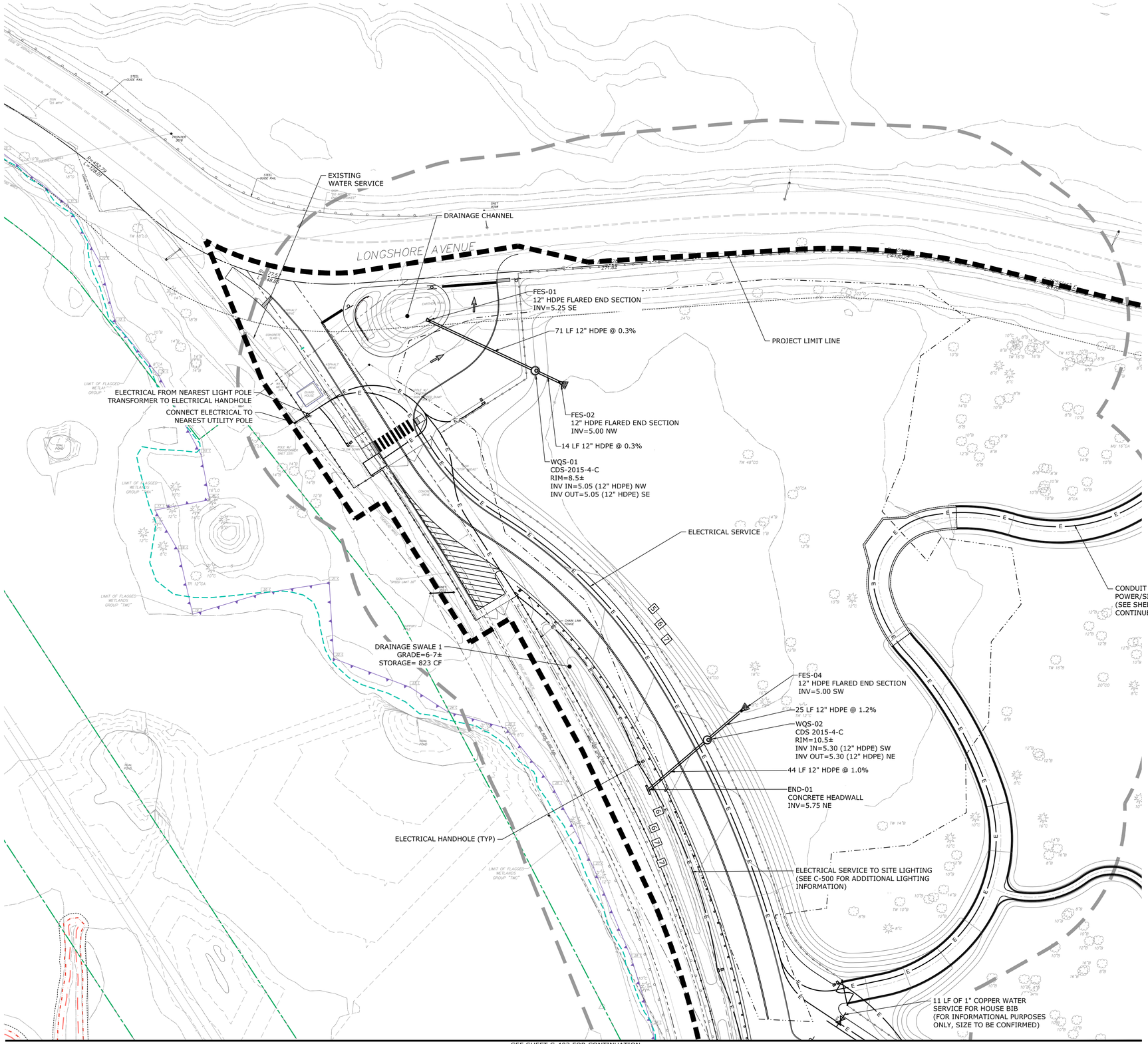

DRAINAGE AND UTILITY PLAN LEGEND

- PROPERTY LINE
- PROPOSED STORM SEWER
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED WATER SERVICE
- PROPOSED FIRE HYDRANT
- PROPOSED ELECTRIC SERVICE

DRAINAGE AND UTILITY PLAN NOTES

1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT
SCAPE LANDSCAPE ARCHITECTURE DPC
277 BROADWAY 9th FLOOR
NEW YORK, NY 10007
T+ 212 462 2628

CIVIL ENGINEER
Tighe&Bond
1000 BRIDGEPORT AVENUE #320
SHELTON, CT 06484
T+ 203 712 1100

ECOLOGICAL
eDESIGN DYNAMICS
247 W 35TH STREET
NEW YORK, NY 10001
T+ 646 688 3113

ENVIRONMENTAL
AKRF
440 PARK AVENUE SOUTH, 7TH FLR
NEW YORK, NY 10016
T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT — CHARLES J. CROCE — 20374 — REGISTERED PROFESSIONAL ENGINEER
12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT — ANDREW P. WHITE — 27767 — LICENSED PROFESSIONAL ENGINEER
12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE DRAINAGE & UTILITY PLAN (1)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025
SHEET NO	C-401

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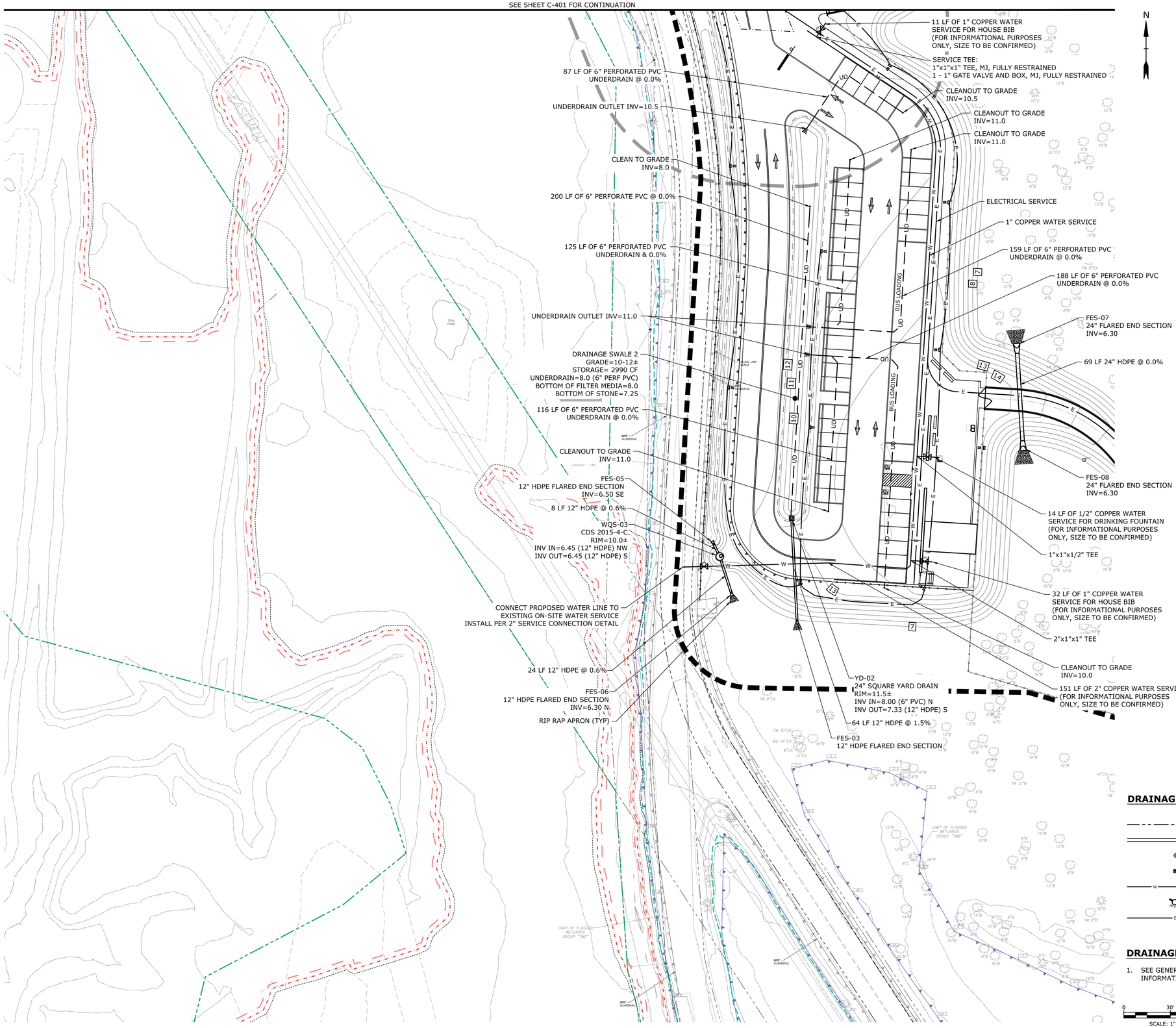
SEE SHEET C-401 FOR CONTINUATION



DRAINAGE AND UTILITY PLAN LEGEND

- PROPERTY LINE
- PROPOSED STORM SEWER
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED WATER SERVICE
- PROPOSED FIRE HYDRANT
- PROPOSED ELECTRIC SERVICE

DRAINAGE AND UTILITY PLAN NOTES

1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.

0 30' 60'

SCALE: 1" = 30'

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628

CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100

ECOLOGICAL — eDESIGN DYNAMICS, 247 W 35TH STREET, NEW YORK, NY 10001, T+ 646 688 3113

ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT — CHARLES J. CROTE — 20374 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

STATE OF CONNECTICUT — ANDREW P. WHITE — 27761 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

NOT FOR CONSTRUCTION

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE DRAINAGE & UTILITY PLAN (2)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-402

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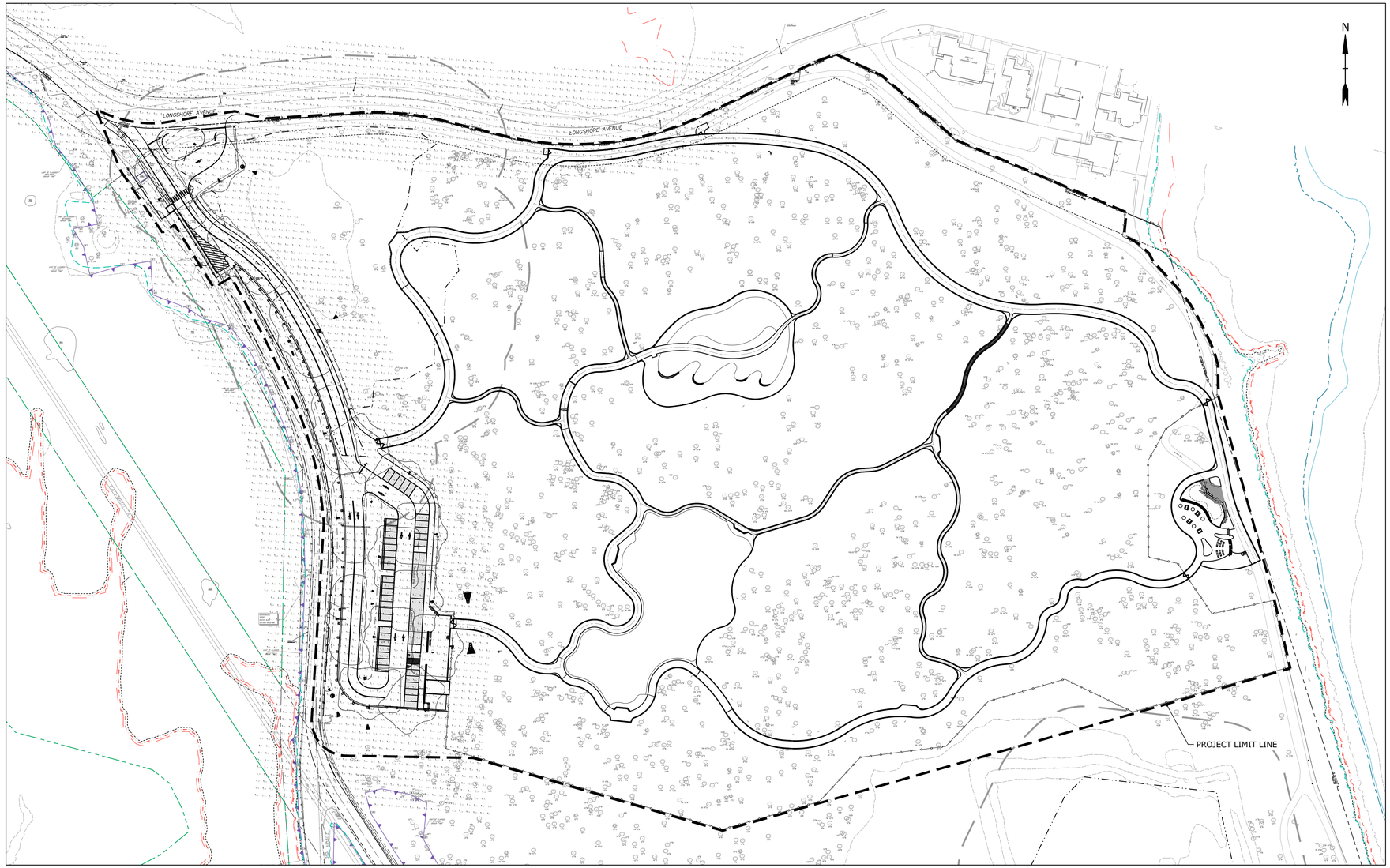


OVERALL DRIVEWAY & PARKING SITE LIGHTING AND FOOTCANDLE PLAN
SCALE: 1" = 80'

LIGHTING/PHOTOMETRICS PLAN LEGEND:

POLE MOUNTED SITE LIGHT	SL
PULL BOX	

Luminaire Schedule					
Qty	Label	Watts	Arrangement	LLF	Description
10	SL4	145.6	Single	0.900	BEACON VP-2-320L-145-3K7-4F-UNV-A-BLT_SSA-B-24-40B-1-B3-BLT-UL (24' MOUNTING HEIGHT)
6	SL3	145.6	Single	0.900	BEACON VP-2-320L-145-3K7-3-UNV-A-BLT_SSA-B-24-40B-1-B3-BLT-UL (24' MOUNTING HEIGHT)

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	Fc	0.60	7.0	0.0	N.A.	N.A.
DRIVE LANE BEYOND GATE	Fc	2.50	6.0	1.0	2.50	6.00
PARKING LOT	Fc	3.42	7.0	1.0	3.42	7.00

SITE LIGHTING PLAN NOTES

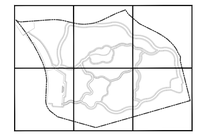
1. SEE GENERAL NOTES SHEET C-002 FOR ADDITIONAL INFORMATION.



SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. CROCE · 20374 · REGISTERED PROFESSIONAL ENGINEER
12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · REGISTERED PROFESSIONAL ENGINEER
12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE LIGHTING & FOOTCANDLE PLAN (OVERALL)

PROJECT NO	M5177-004
SCALE	1" = 80'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO
C-500

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N

LIGHTING/PHOTOMETRICS PLAN LEGEND:

POLE MOUNTED SITE LIGHT	SL
PULL BOX	

0 30' 60'

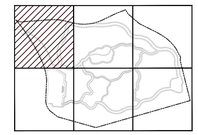
SCALE: 1" = 30'

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT CHARLES J. CROTE 20374 LICENSED PROFESSIONAL ENGINEER 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT ANDREW P. WHITE 27769 LICENSED PROFESSIONAL ENGINEER 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE LIGHTING & FOOTCANDLE PLAN (1)

PROJECT NO	M5177-004
SCALE	1" = 30'
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-501

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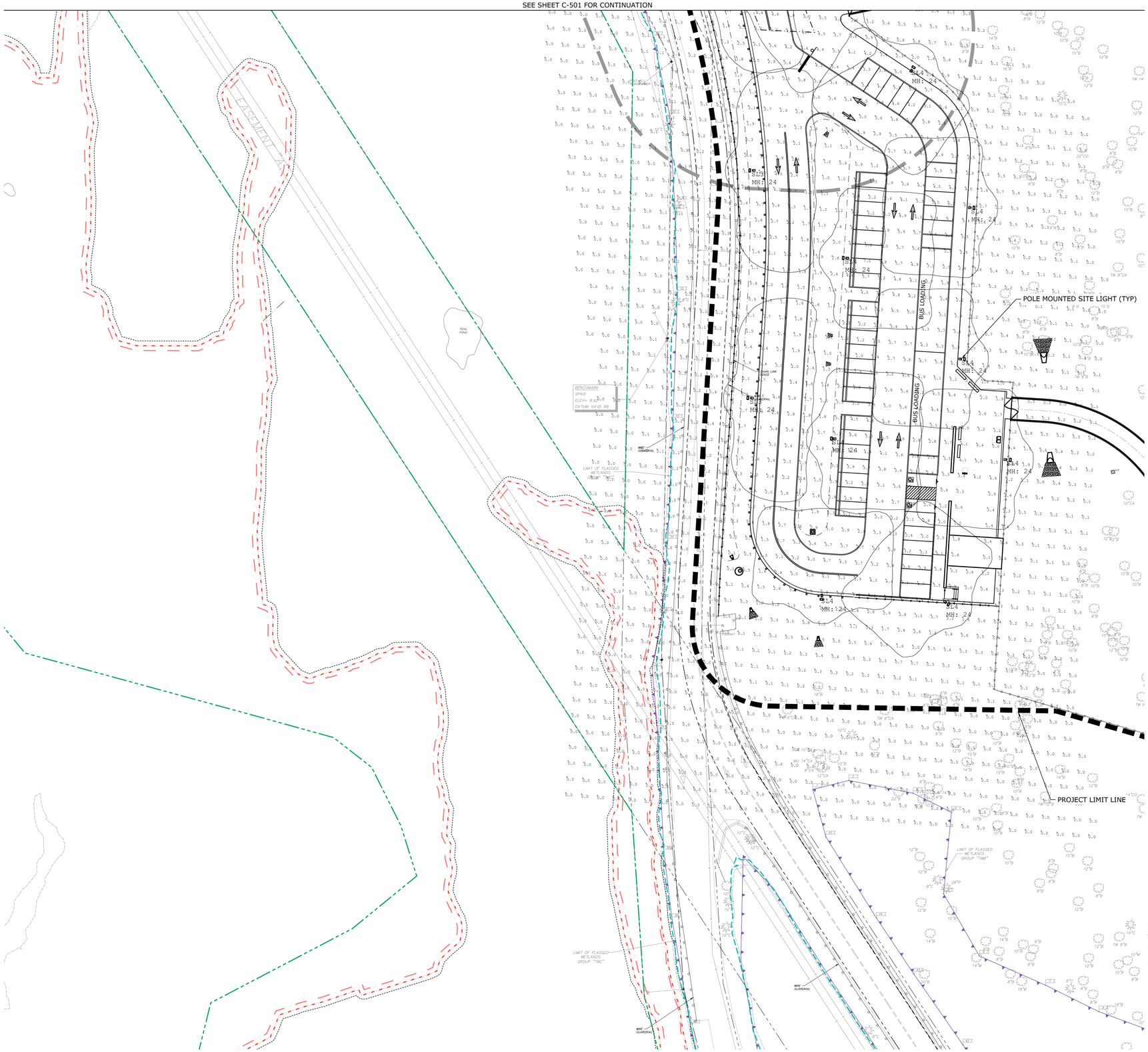
SEE SHEET C-501 FOR CONTINUATION



LIGHTING/PHOTOMETRICS PLAN LEGEND:

POLE MOUNTED SITE LIGHT — SL

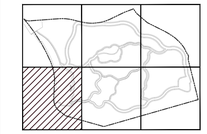
PULL BOX — PB

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN



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MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
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STATE OF CONNECTICUT — CHARLES J. CROTE — 20374 — LICENSED PROFESSIONAL ENGINEER
12/12/2025

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12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING SITE LIGHTING & FOOTCANDLE PLAN (2)

PROJECT NO	M5177-004
SCALE	AS SHOWN
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-502

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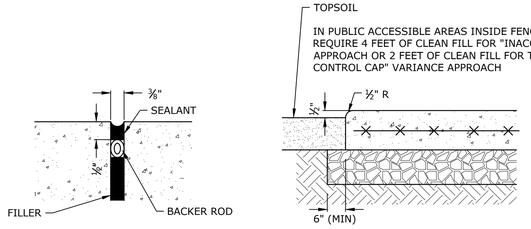
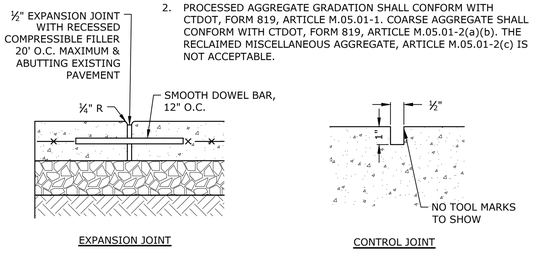


SECTION ABUTTING TOPSOIL

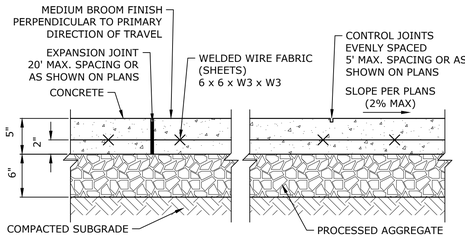
NOTES:

1. CONCRETE SHALL CONFORM WITH CTDOT, FORM 819, ARTICLE M.03.02-1. CLASS PCC04462.
2. PROCESSED AGGREGATE GRADATION SHALL CONFORM WITH CTDOT, FORM 819, ARTICLE M.05.01-1. COARSE AGGREGATE SHALL CONFORM WITH CTDOT, FORM 819, ARTICLE M.05.01-2(a)(b). THE RECLAIMED MISCELLANEOUS AGGREGATE, ARTICLE M.05.01-2(c) IS NOT ACCEPTABLE.



EXPANSION JOINT

CONTROL JOINT

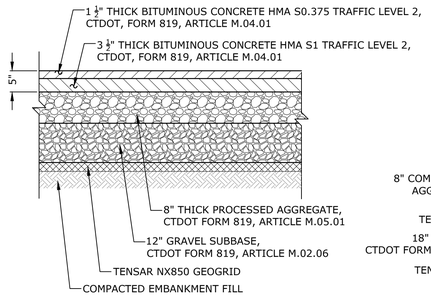


CONCRETE SIDEWALK

DETAIL 1
SCALE: NONE

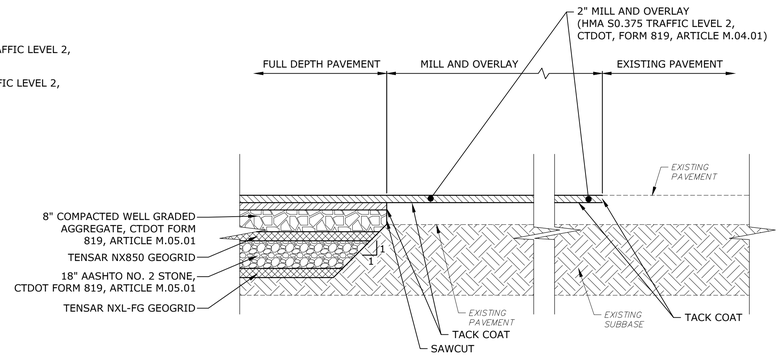
NOTES:

1. PROCESSED AGGREGATE GRADATION SHALL CONFORM WITH CTDOT, FORM 819, ARTICLE M.05.01-1. COARSE AGGREGATE SHALL CONFORM WITH CTDOT, FORM 819, ARTICLE M.05.01-2(a)(b). THE RECLAIMED MISCELLANEOUS AGGREGATE, ARTICLE M.05.01-2(c) IS NOT ACCEPTABLE.
2. ALL BITUMINOUS CONCRETE, SUBBASE, AND LIQUID BITUMEN SHALL CONFORM TO THE MATERIALS, EQUIPMENT AND SPECIFICATION REQUIREMENTS IN CTDOT FROM 819, INCLUDING ALL ADDENDA.
3. FOR AREAS BENEATH NEW FILL THE SUBGRADE SHALL BE PROPERLY COMPACTED AND INSPECTED PRIOR TO PLACEMENT OF GEOGRID SYSTEMS. THE GEOGRID SYSTEM SHALL INCLUDE A LAYER OF TENSAR NXL-FG GEOGRID PLACED ON THE PREPARED SUBGRADE, OVERLAIN BY 18 INCHES OF AASHTO NO. 2 SOTNE, FOLLOWED BY A LAYER OF TENSAR NX850 GEOGRID, OVERLAIN BY 8 INCHES (MIN) OF COMPACTED WELL-GRADED AGGREGATE. ALL NEW FILL MATERIALS SHALL BE PLACED AND COMPACTED ABOVE THIS GEOGRID SECTION.
4. WHERE ACCESS DRIVE IS CONSTRUCTED ABOVE NEW FILL MATERIAL, AN ADDITIONAL GEOGRID LAYER SHALL BE INSTALLED BENEATH THE PAVEMENT SECTION INCLUDING TENSAR NX850 OVERLAIN WITH APPROXIMATELY 8 INCHES OF COMPACTED WELL-GRADED AGGREGATE.



BITUMINOUS CONCRETE PAVEMENT - ON-SITE

DETAIL 2
SCALE: NONE

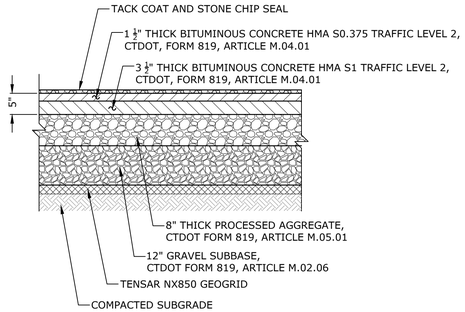


MILL AND OVERLAY TRANSITIONS AT EXISTING PAVEMENT

DETAIL 3
SCALE: NONE

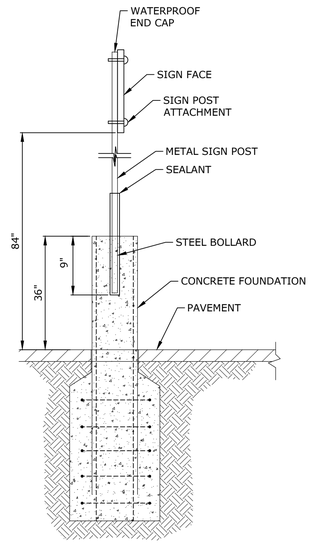
NOTES:

1. PROCESSED AGGREGATE GRADATION SHALL CONFORM WITH CTDOT, FORM 819, ARTICLE M.05.01-1. COARSE AGGREGATE SHALL CONFORM WITH CTDOT, FORM 819, ARTICLE M.05.01-2(a)(b). THE RECLAIMED MISCELLANEOUS AGGREGATE, ARTICLE M.05.01-2(c) IS NOT ACCEPTABLE.
2. ALL BITUMINOUS CONCRETE, SUBBASE, AND LIQUID BITUMEN SHALL CONFORM TO THE MATERIALS, EQUIPMENT AND SPECIFICATION REQUIREMENTS IN CTDOT FROM 819, INCLUDING ALL ADDENDA.



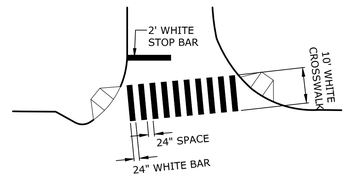
BITUMINOUS CONCRETE PAVEMENT WITH STONE CHIP SEAL - ON-SITE

DETAIL 4
SCALE: NONE



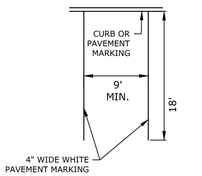
BOLLARD SIGN MOUNTING DETAIL

DETAIL 9
SCALE: NONE



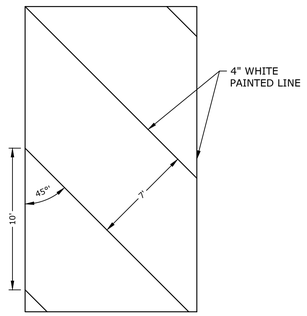
CROSSWALK & STOP BAR

DETAIL 5
SCALE: NONE



TYPICAL 90° PARKING STALL

DETAIL 6
SCALE: NONE

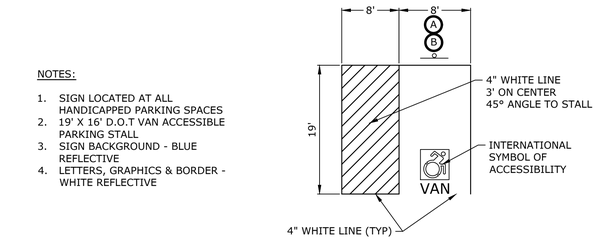


PAVEMENT MARKING ISLAND

DETAIL 7
SCALE: NONE

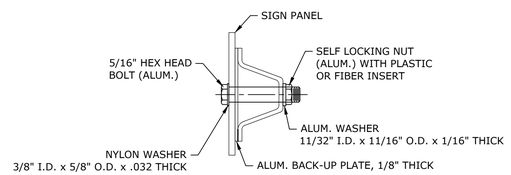
NOTES:

1. SIGN LOCATED AT ALL HANDICAPPED PARKING SPACES
2. 19' X 16' D.O.T VAN ACCESSIBLE PARKING STALL
3. SIGN BACKGROUND - BLUE REFLECTIVE
4. LETTERS, GRAPHICS & BORDER - WHITE REFLECTIVE



ACCESSIBLE PARKING STRIPING DETAILS

DETAIL 8
SCALE: NONE



TYPICAL SIGN PANEL ATTACHMENT

DETAIL 10
SCALE: NONE

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

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NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. CROCE · 20374 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

NOT FOR CONSTRUCTION

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS. FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING DETAILS (1)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO
C-601

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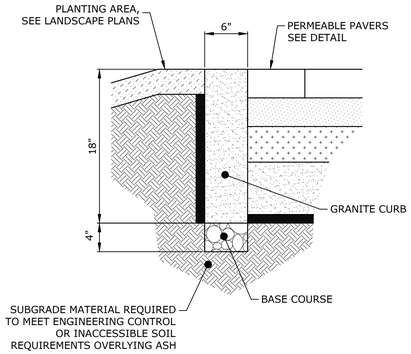
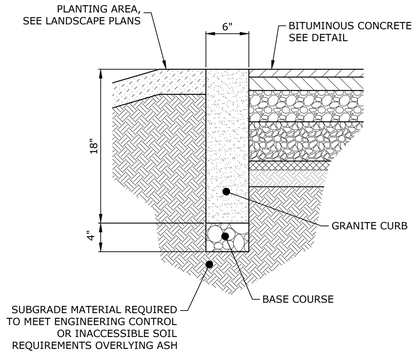
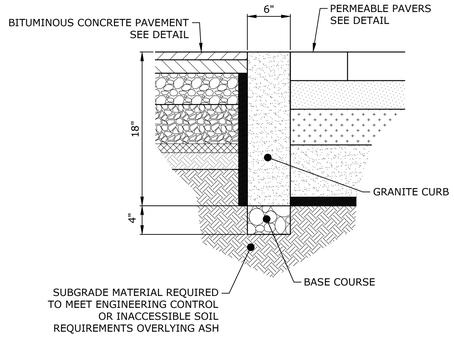


PERMEABLE PAVERS
TO PLANTING AREA



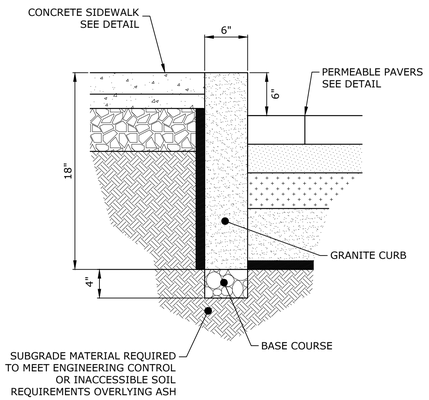
BITUMINOUS CONCRETE PAVEMENT
TO PLANTING AREA



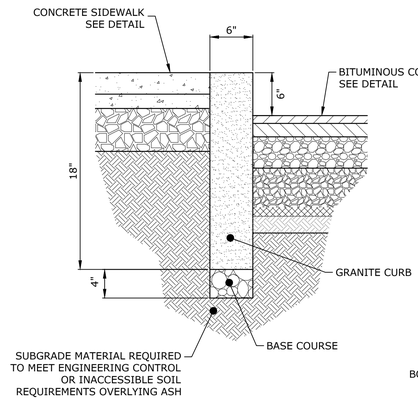
PERMEABLE PAVERS
TO BITUMINOUS CONCRETE PAVEMENT

FLUSH GRANITE CURB DETAIL

NO SCALE



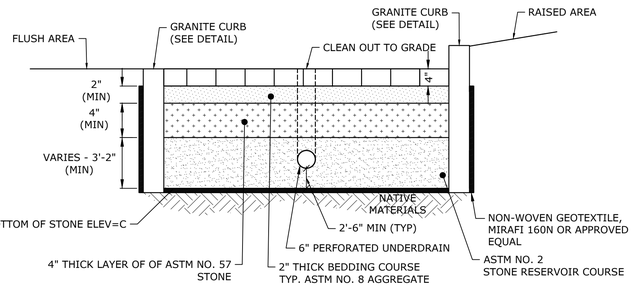
CONCRETE SIDEWALK TO
PERMEABLE PAVERS



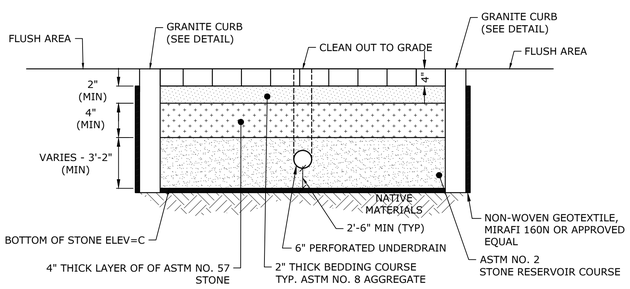
CONCRETE SIDEWALK TO
BITUMINOUS CONCRETE CURB

6" REVEAL GRANITE CURB DETAIL

NO SCALE



PERMEABLE PAVERS WITH FLUSH GRANITE
CURB AND 6" REVEAL GRANITE CURB



PERMEABLE PAVERS WITH
FLUSH GRANITE CURB

NOTES:

1. THE ASTM NO. 2 STONE SUBBASE MATERIAL SHOULD BE SPREAD IN MINIMUM 6 IN. LIFTS. COMPACTION IS DONE WITH A 10 TON STEEL VIBRATORY ROLLER OR A 13,500 IBF PLATE COMPACTOR. GREATER LIFT THICKNESSES ARE NORMAL (I.E. 12 IN.) WHEN USING EITHER OF THESE COMPACTORS. WHEN USING A ROLLER, THE FIRST TWO PASSES ARE IN VIBRATORY MODE AND THE LAST TWO ARE IN STATIC MODE. COMPACTION IS COMPLETED WHEN NO VISIBLE MOVEMENT CAN BE SEEN IN THE BASE WHEN ROLLED BY THE COMPACTOR. PLATE COMPACTORS WITH COMPACTION INDICATORS SHOULD BE USED TO DETERMINE WHEN COMPACTION IS COMPLETED. STONES WILL COMPACT MORE COMPLETELY IF MOISTENED DURING COMPACTION. AGGREGATES SHALL NOT BE CRUSHED BY THE COMPACTOR.

2. THE ASTM NO. 57 BASE LAYER IS SPREAD AND COMPACTED AS ONE 4 IN. LIFT. THE STONE MATERIAL SHOULD BE MOIST DURING COMPACTION FOR BETTER CONSOLIDATION. LIKE THE SUBBASE AGGREGATE, THE INITIAL PASSES WITH THE ROLLER CAN BE WITH VIBRATION TO CONSOLIDATE THE BASE MATERIAL. THE FINAL PASSES SHOULD BE WITHOUT VIBRATION. A 13,500 IBF PLATE COMPACTOR ALSO CAN BE USED TO COMPACT THE ASTM NO. 57 BASE LAYER.

3. WHEN SUBBASE AND BASE LIFTS ARE COMPACTED THE SURFACE SHOULD THEN BE TOPPED WITH 2 IN. THICK LAYER OF MOIST ASTM NO. 8 CRUSHED STONE BEDDING LAYER. THIS LAYER IS SCREENED AND LEVELED OVER THE ASTM NO. 57 BASE. METAL RAILS ARE PLACED ON THE COMPACTED ASTM NO. 57 LAYER AND ARE USED TO GUIDE SCREEDING ELEVATIONS. VARIOUS SIZES OF SCREEDING EQUIPMENT CAN BE USED RANGING FROM HAND TOOLS, BUCKET SCREEDS POWERED MANUALLY OR BY MACHINE, OR A MODIFIED ASPHALT SPREAD THAT USES A LASER GUIDANCE SYSTEM TO MAINTAIN ELEVATIONS. THE SURFACE TOLERANCE OF THE SCREEDED ASTM NO. 8 BEDDING MATERIAL SHOULD BE ± 3/8 IN. OVER 10 FT. THE CONCRETE PAVERS SHOULD BE PLACED IMMEDIATELY AFTER THE ASTM NO. 8 STONE BEDDING IS PLACED AND SCREEDED. CONSTRUCTION EQUIPMENT AND FOOT TRAFFIC SHOULD BE KEPT OFF THE SCREEDED LAYER.

4. AFTER SCREENING THE BEDDING MATERIAL, THE PAVERS ARE PLACED ON THIS LAYER. PAVER INSTALLATION CAN BE BY HAND OR WITH MECHANICAL EQUIPMENT.

5. THE PAVER JOINTS ARE FILLED WITH ASTM NO. 8 STONE. DEPENDING ON THE PICP AREA, SPREADING AND SWEEPING CAN BE DONE WITH SHOVELS AND BROOMS, OR LARGER AREAS WITH BOBCATS AND SWEPT INTO THE PAVER JOINTS WITH POWERED BROOMS OR SWEEPERS. ONCE THE JOINTS ARE FULL (WITHIN ¾ IN. OF THE PAVER SURFACE), THE SURFACE MUST BE SWEPT CLEAN PRIOR TO COMPACTION AS LOOSE STONES ON THE SURFACE CAN MAR THE PAVERS, WHEN IN CONTACT WITH A PLATE COMPACTOR.

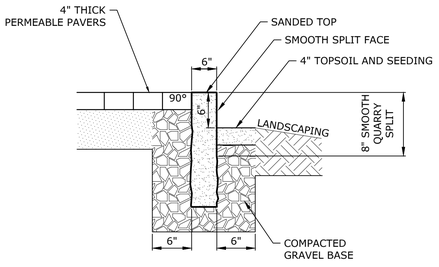
6. AFTER THE PICP SURFACE IS SWEPT CLEAN, IT IS COMPACTED WITH A PLATE COMPACTOR. A MINIMUM OF TWO PASSES SHOULD BE MADE WITH THE SECOND PASS IN A PERPENDICULAR DIRECTION FROM THE FIRST PASS. THE PATH OF THE PLATE COMPACTOR SHOULD OVERLAP SEVERAL INCHES. FOR PAVING UNITS 3-‑1/8 IN. TO 4 IN. THICK, THE PLATE COMPACTOR SHOULD EXERT A MINIMUM 5,000 IBF AT 70 TO 90 HZ.

7. COMPACTION CAN CAUSE SOME SETTLEMENT OF THE STONES INSIDE THE JOINTS. IF THE STONES ARE MORE THAN ¾ IN. FROM THE PAVER SURFACE, THEY SHOULD BE TOPPED UP TO THIS LEVEL WITH ADDITIONAL STONES. THE PAVER SURFACE SHOULD BE SWEPT CLEAN PRIOR TO OPENING THE PICP TO TRAFFIC. AGGREGATES IN THE PAVER JOINTS CAN SETTLE IN EARLY IN THE LIFE OF THE PAVEMENT. SOME SETTLEMENT CAN BE REDUCED THROUGH CONSISTENT, THROUGH COMPACTION OF THE BASE, PAVERS AND BEDDING LAYERS. HOWEVER, IT IS ADVISABLE FOR THE CONTRACTOR TO RETURN TO THE SITE AFTER SIX MONTHS, INSPECT THE JOINTS AND TOP THEM UP WITH AGGREGATE IF THEY HAVE SETTLED TO MORE THAN IN. BELOW THE PAVER SURFACE.

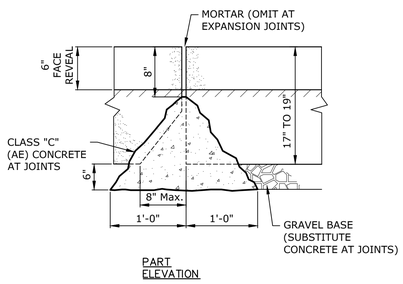
8. THE ABOVE CONSTRUCTION NOTES ARE FROM THE PERMEABLE INTERLOCKING CONCRETE PAVEMENTS MANUAL BY DAVID R. SMITH -- FOURTH EDITION. ADDITIONAL INFORMATION FOR THE DESIGN, SPECIFICATIONS, CONSTRUCTION, AND MAINTENANCE OF PICP ARE IN THE MANUAL.

PERMEABLE PAVERS DETAIL

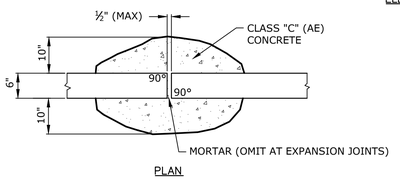
NO SCALE



CROSS SECTION



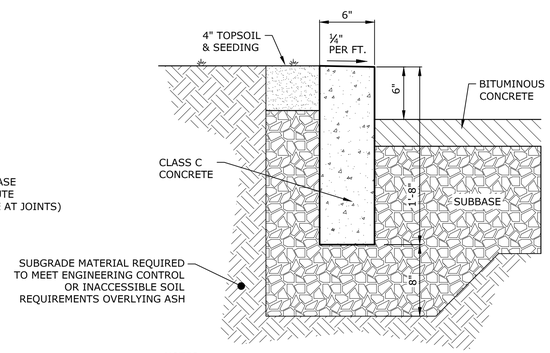
PART
ELEVATION



PLAN

GRANITE CURB REAR REVEAL DETAIL

NO SCALE

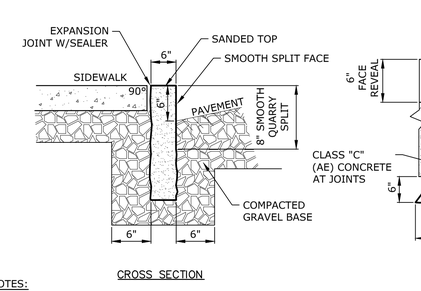


NOTES:

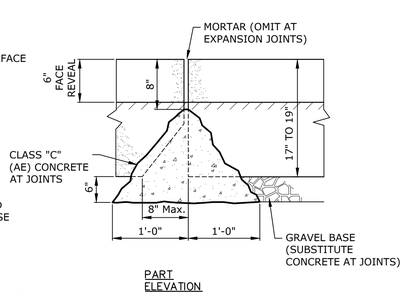
1. CONSTRUCT CURBING IN SECTIONS NOT TO EXCEED 10 FEET IN LENGTH, SUCH THAT THE CURBING JOINTS ALIGN WITH JOINTS IN THE CONCRETE PAVEMENT SLAB. NO SECTION SHALL BE LESS THAN 6 FEET IN LENGTH.

CONCRETE CURB

NO SCALE



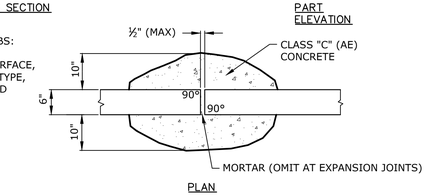
CROSS SECTION



PART
ELEVATION

NOTES:

1. FOR JOINTS AT STONE CURBS: TOOL SEALANT WITH SAND GRANULES ADHERED TO SURFACE, MATCH STONE COLOR AND TYPE, COLOR TO BE SELECTED AND APPROVED BY LANDSCAPE ARCHITECT



PLAN

GRANITE CURB DETAIL

NO SCALE

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628

CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100

ECOLOGICAL — eDESIGN DYNAMICS, 247 W 35TH STREET, NEW YORK, NY 10001, T+ 646 688 3113

ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT — CHARLES J. CROCE — 26374 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

STATE OF CONNECTICUT — ANDREW P. WIKE — 27781 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING DETAILS (2)

PROJECT NO	SHEET NO
M5177-004	C-602
SCALE	
NO SCALE	
DRAWN BY	
J.PAPROTA	
CHECKED BY	
K.MCUTCHAN	
DATE	
12/15/2025	

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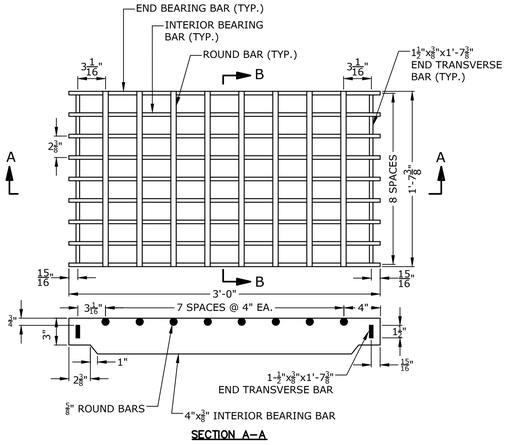
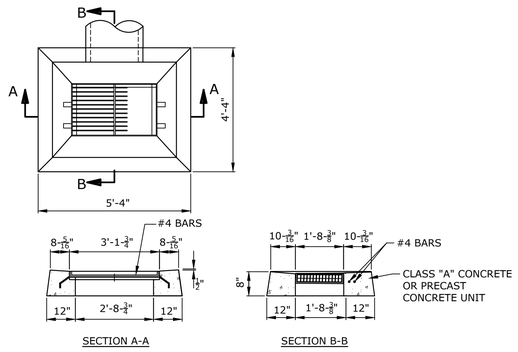


SECTION A–A

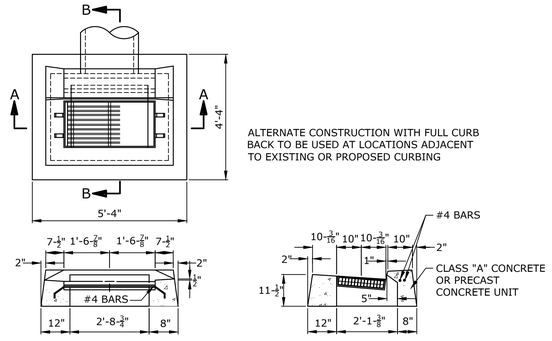
TYPE 'A' GRATE
NO SCALE



NOTE:

1. ALTERNATE CONSTRUCTION WITH FULL CURB BACK TO BE USED AT LOCATIONS ADJACENT TO EXISTING OR PROPOSED

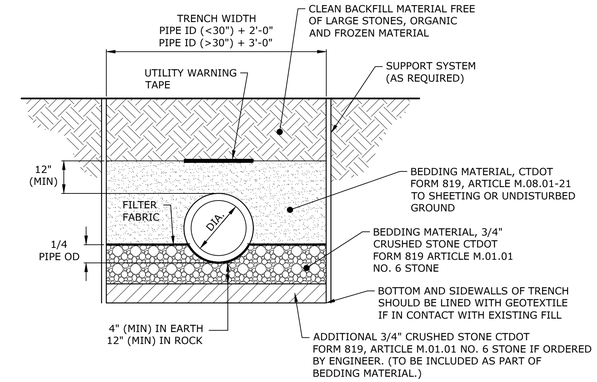
CONNECTICUT DEPARTMENT OF TRANSPORTATION
TYPE "CL" CATCH BASIN TOP
NO SCALE



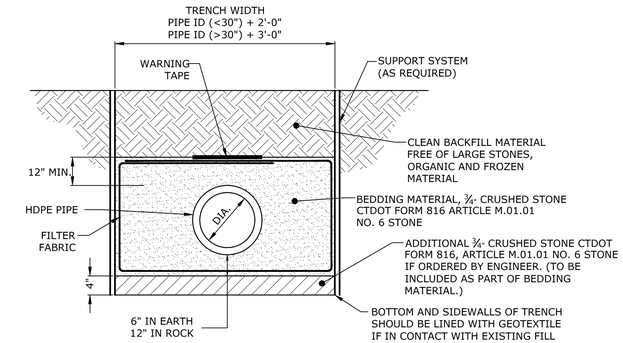
NOTE:

FRAMES AND GRATES SHALL BE GALVANIZED IN ACCORDANCE WITH M.06.03 FORM 819.

CONNECTICUT DEPARTMENT OF TRANSPORTATION
TYPE "C" CATCH BASIN TOP
NO SCALE



CIRCULAR DIP/RCP TRENCH BEDDING
NO SCALE



HDPE TRENCH BEDDING
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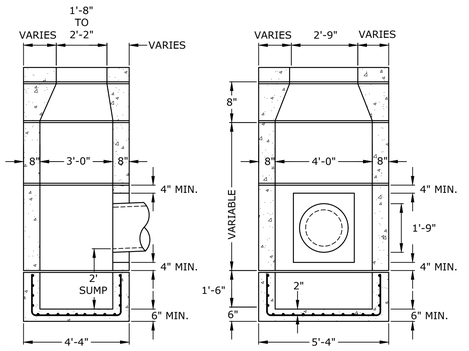
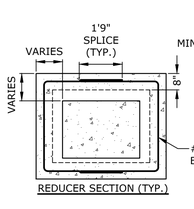
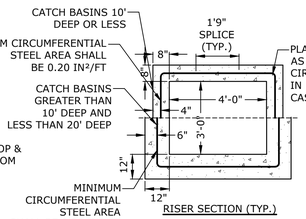
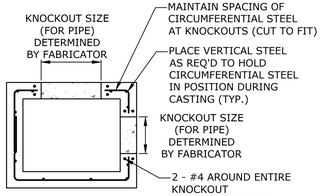




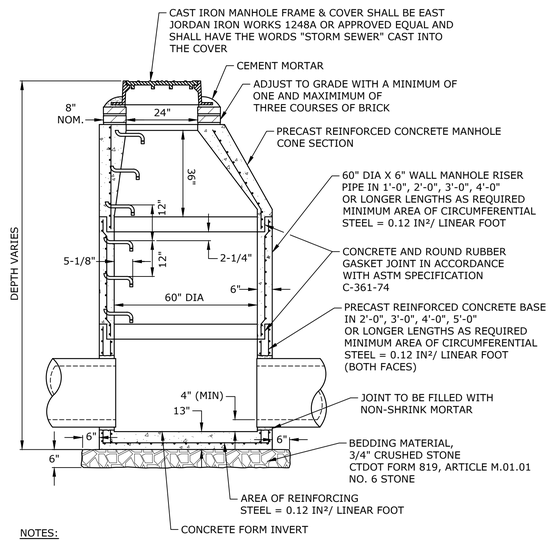




NOTES

1. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
2. DETAILS ON THIS SHEET SHOW STANDARD REINFORCEMENT. WELDED WIRE FABRIC WITH AN AREA EQUAL TO OR GREATER THAN THE REINFORCING SHOWN MAY BE SUBSTITUTED.
3. ALL LAP SPLICES, DEVELOPMENT LENGTHS, BENDS FOR REINFORCEMENT, AND WELDED WIRE FABRIC SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
4. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 2", EXCEPT FOR BENEATH BOTTOM REINFORCEMENT IN TOP SLABS, WHERE THE MINIMUM MAY BE 1½"
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH FC'=4,000PSI SHALL BE OBTAINED BEFORE SHIPPING.
6. BASES AND RISERS AT A DEPTH OF 20' AND GREATER SHALL BE DESIGNED BY THE CONTRACTOR AND WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
7. SEE CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD DRAWING 507-K FOR CATCH BASIN FRAMES AND GRATES.
8. FOR DOT MAINTENANCE PERSONNEL, RISERS MAY BE PREFABRICATED WITH PIPE OPENINGS IN ALL FOUR WALLS. ADEQUATE REINFORCING AROUND PIPE OPENINGS TO CONFORMING TO THESE PLANS SHALL BE PROVIDED. ANY RISERS USED WHERE A PIPE OPENING IS TO REMAIN IN PLACE MUST BE FORMED UP WITH BRICK AS DIRECTED BY THE ENGINEER.
9. RISERS SHALL NEVER HAVE CORNER PIPE ENTRIES. WHERE THE ALIGNMENT OF THE PIPE WITH RESPECT TO THE CORNER OF THE CATCH BASIN CANNOT BE CHANGED, A ROUND STRUCTURE CONFORMING TO ASTM C478 SHALL BE USED. REINFORCING FOR THE ROUND TOP SLAB WITH A RECTANGULAR OPENING SHALL CONFORM TO DETAILS SHOWN HERE.
10. ALL PIPE OPENINGS SHALL BE CLOSED USING MATERIALS WHICH CONFORM TO STATE OF CONNECTICUT STANDARD SPECIFICATIONS SECTION M.08.02. IF THE ENGINEER DETERMINES THAT THE CLOSURE OF ANY PIPE OPENING IS UNSATISFACTORY, THE CONTRACTOR SHALL RECLOSE SAID OPENING AT NO ADDITIONAL COST TO THE STATE. KNOCKOUTS FOR PIPE OPENINGS SHALL NOT RESULT IN A REDUCED WALL THICKNESS.
11. THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS AND SUPPLEMENTALS SHALL GOVERN.
12. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME (THE 12" THICKNESS SHALL START AFTER THE FIRST 10")
13. BUTYL RUBBER JOINT SEAL SHALL CONFORM TO AASHTO M-198 AND MORTAR SHALL CONFORM TO THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS MATERIAL SECTION M11.04.
14. SHRINKAGE AND TEMPERATURE REINFORCEMENT SHALL BE PROVIDED IN THE TOPS OF SLABS. THE TOTAL AREA OF REINFORCEMENT PROVIDED SHALL BE AT LEAST 0.125 IN²/FT IN EACH DIRECTION. THE MAXIMUM SPACING OF THIS REINFORCEMENT SHALL NOT EXCEED 18 INCHES.
15. THE DETAILS SHOWN IN THE PLAN VIEW FOR THE PRECAST CONCRETE ROUND STRUCTURES SHALL ALSO BE USED FOR CONVERTING MANHOLES TO CATCH BASINS.

ON-SITE TYPE 'C' & 'CL' CATCH BASIN
NO SCALE



NOTES:

1. REINFORCING STEEL WELDED WIRE FABRIC SHALL CONFORM TO LATEST ASTM SPECIFICATION A185.
2. REINFORCING STEEL DEFORMED BARS SHALL CONFORM TO LATEST ASTM SPECIFICATION A615.
3. CONCRETE COMPRESSIVE STRENGTH: 5,000 PSI - 28 DAYS.
4. MANHOLE STEP TO CONFORM TO OSHA AND ASTM SPECIFICATIONS.
5. MONOLITHIC BASE SECTION.

60" DIA MANHOLE DETAIL
NO SCALE

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NORWALK, CT

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CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100
ECOLOGICAL — eDESIGN DYNAMICS, 247 W 35TH STREET, NEW YORK, NY 10001, T+ 646 688 3113
ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT — CHARLES J. CROCE — 20374 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

STATE OF CONNECTICUT — ANDREW P. WHITE — 27761 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING DETAILS (3)

PROJECT NO	SHEET NO
M5177-004	C-603
SCALE: NO SCALE	
DRAWN BY: J.PAPROTA	
CHECKED BY: K.McCUTCHAN	
DATE: 12/15/2025	

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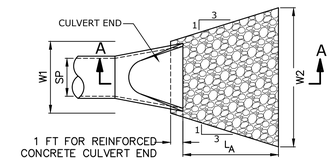
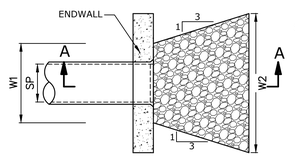


CULVERT END PLAN VIEW



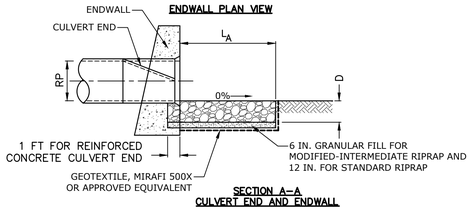
SP= { MAX. INSIDE PIPE SPAN (NON-CIRCULAR SECTIONS) INSIDE PIPE DIAMETER (CIRCULAR SECTIONS)

RP= { MAX. INSIDE PIPE RISE (NON-CIRCULAR SECTIONS) INSIDE PIPE DIAMETER (CIRCULAR SECTIONS)

L_A = LENGTH OF RIPRAP APRON MEASURED FROM THE END OF CULVERT END SECTION OR FACE OF ENDWALL

D= { 12 IN. MODIFIED RIPRAP 18 IN. INTERMEDIATE RIPRAP 36 IN. STANDARD RIPRAP

ENDWALL PLAN VIEW



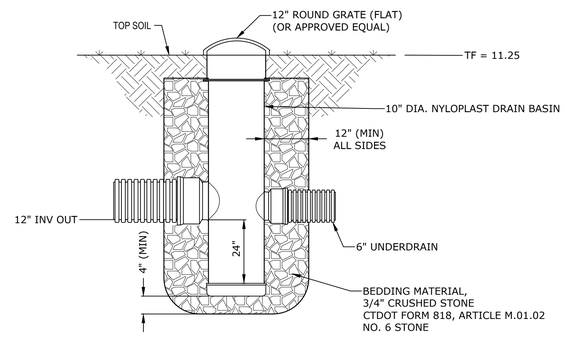
SECTION A–A
CULVERT END AND ENDWALL

NOTE:

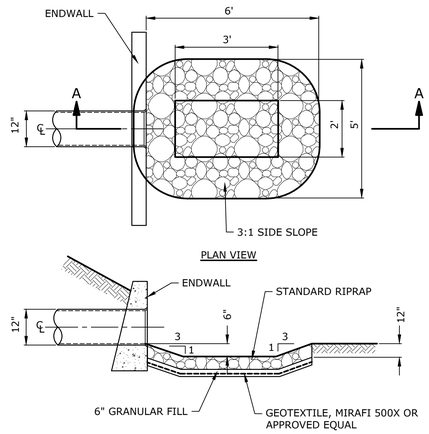
1. RIPRAP SIZE AND GRADATION TO MEET CTDOT FORM 819 SECTION M.12.02.

	APRON LENGTH (LA)	APRON WIDTH (W1)	APRON WIDTH (W2)	SP
	(FEET)	(FEET)	(FEET)	(FEET)
FES-02	3.5	3.0	5.5	1.0
FES-03	4.0	3.0	6.0	1.0
FES-04	3.0	3.0	5.5	1.0
FES-06	4.5	3.0	6.0	1.0
FES-08	9.0	6.0	12.5	1.0

TYPE "A" RIPRAP APRON
NO TO SCALE



YARD DRAIN (RAIN GARDEN OUTLET CONTROL STRUCTURE)
NO SCALE



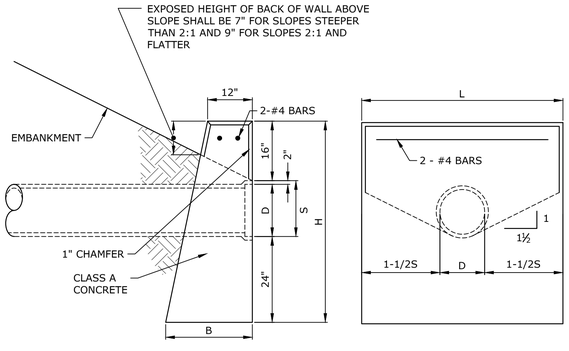
PLAN VIEW

SECTION A-A

NOTE:

1. RIPRAP SIZE AND GRADATION TO MEET CTDOT FORM 819 SECTION M.12.02.

PREFORMED SCOUR HOLE
NO SCALE



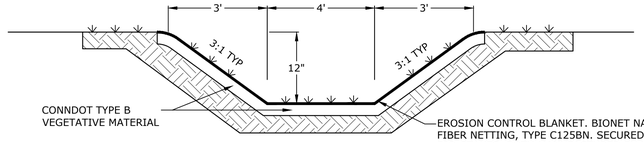
SECTION

ELEVATION

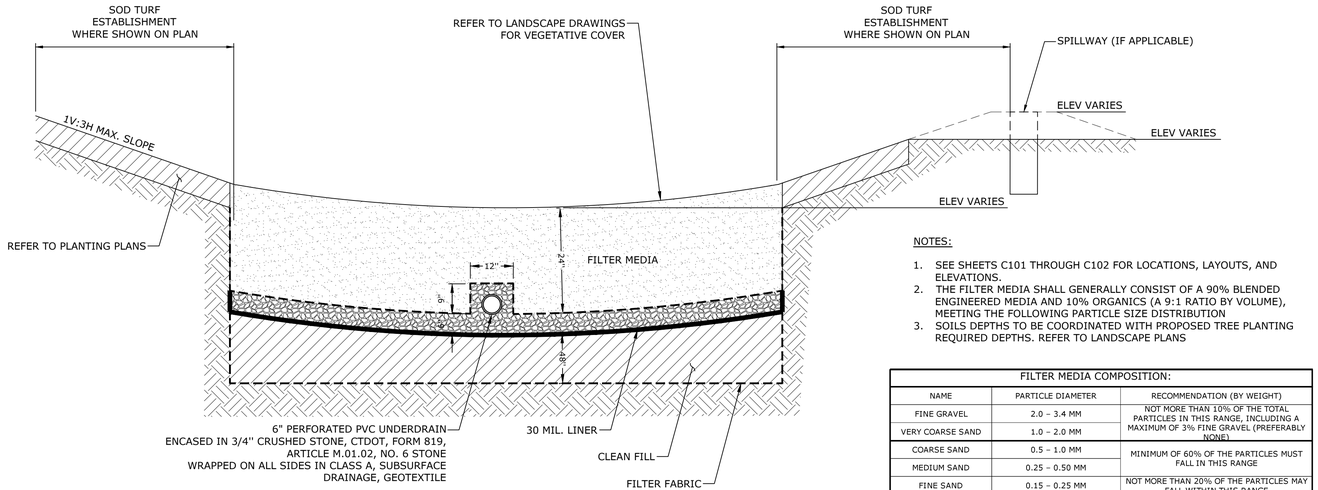
H=TOTAL HEIGHT OF ENDWALL
B=WIDTH OF BASE
D=INSIDE DIAMETER OF PIPE
S=HEIGHT OF SLOPE ABOVE PIPE INVERT AT FACE OF WALL (D+2)
L=LENGTH OF WALL (3S+D)

D	B	H	L	S	BATTER
12"	1'-11¼"	4'-6"	4'-6"	1'-2"	2½"
15"	1'-11⅝"	4'-9"	5'-6"	1'-5"	2½"
18"	2'-0½"	5'-0"	6'-6"	1'-8"	2½"
24"	2'-1¾"	5'-6"	8'-6"	2'-2"	2½"
30"	2'-3"	6'-0"	10'-6"	2'-8"	2½"
36"	2'-7⅛"	6'-6"	12'-6"	3'-2"	3"
42"	2'-9"	7'-0"	14'-6"	3'-8"	3"
48"	2'-10½"	7'-6"	16'-6"	4'-2"	3"

CONCRETE ENDWALL/HEADWALL
NO SCALE



GRASS LINED DRAINAGE SWALE
NO SCALE



RAIN GARDEN TYPICAL CROSS SECTION
NO SCALE

NOTES:

1. SEE SHEETS C101 THROUGH C102 FOR LOCATIONS, LAYOUTS, AND ELEVATIONS.
2. THE FILTER MEDIA SHALL GENERALLY CONSIST OF A 90% BLENDED ENGINEERED MEDIA AND 10% ORGANICS (A 9:1 RATIO BY VOLUME), MEETING THE FOLLOWING PARTICLE SIZE DISTRIBUTION
3. SOILS DEPTHS TO BE COORDINATED WITH PROPOSED TREE PLANTING REQUIRED DEPTHS. REFER TO LANDSCAPE PLANS

FILTER MEDIA COMPOSITION:		
NAME	PARTICLE DIAMETER	RECOMMENDATION (BY WEIGHT)
FINE GRAVEL	2.0 – 3.4 MM	NOT MORE THAN 10% OF THE TOTAL PARTICLES IN THIS RANGE, INCLUDING A MAXIMUM OF 3% FINE GRAVEL (PREFERABLY NONE)
VERY COARSE SAND	1.0 – 2.0 MM	
COARSE SAND	0.5 – 1.0 MM	MINIMUM OF 60% OF THE PARTICLES MUST FALL IN THIS RANGE
MEDIUM SAND	0.25 – 0.50 MM	
FINE SAND	0.15 – 0.25 MM	NOT MORE THAN 20% OF THE PARTICLES MAY FALL WITHIN THIS RANGE
VERY FINE SAND	0.05 – 0.15 MM	NOT MORE THAN 5%
SILT	0.002 – 0.05 MM	NOT MORE THAN 5%
CLAY	LESS THAN 0.002 MM	NOT MORE THAN 3%
TOTAL FINES	VERY FINE SAND + SILT + CLAY	LESS THAN OR EQUAL TO 10%

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NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL



12/12/2025



12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING DETAILS (4)

PROJECT NO	SHEET NO
M5177-004	C-604
SCALE	
NO SCALE	
DRAWN BY	
J.PAPROTA	
CHECKED BY	
K.McCUTCHAN	
DATE	
12/15/2025	

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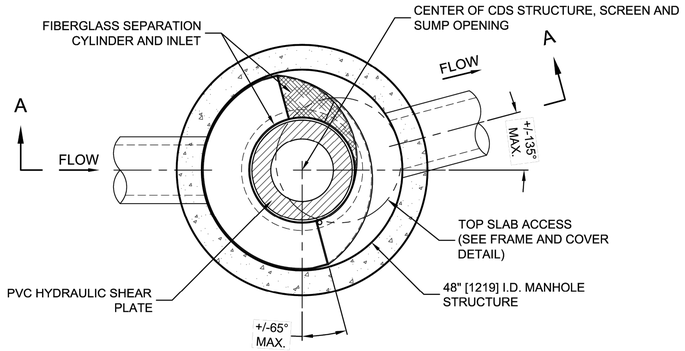
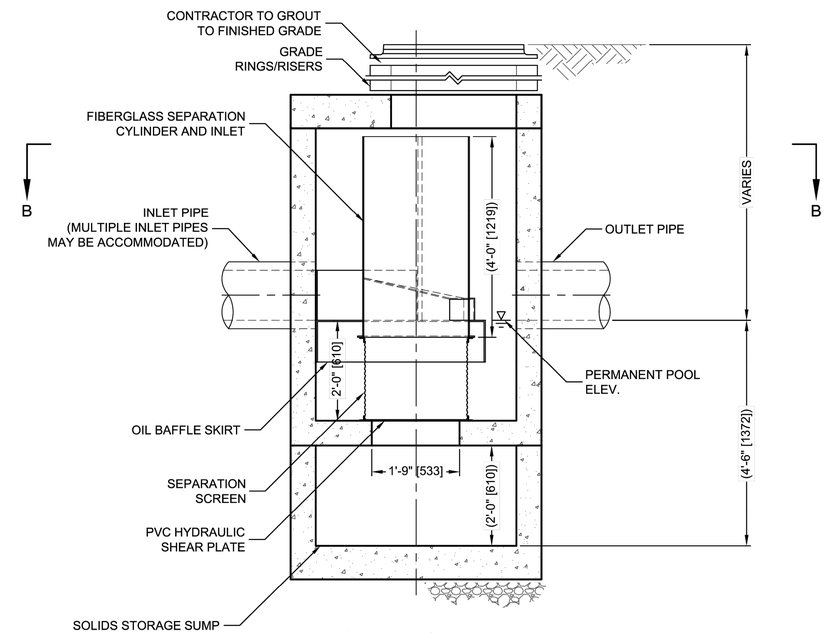


PLAN VIEW B-B
N.T.S.



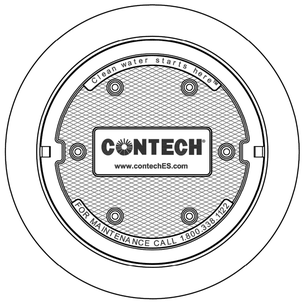
ELEVATION A-A
N.T.S.

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,766,946; 6,641,720; 6,511,595; 6,851,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS2015-4-C DESIGN NOTES

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (CFS OR L/s)	*
PEAK FLOW RATE (CFS OR L/s)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
INLINE CDS
STANDARD DETAIL

C:\USERS\SCHLAGHTERH\DESKTOP\CDS DETAILS 180 MICRON SIZING\ACAD\CDS2015-4-C-DTL.DWG 5/19/2014 5:16 PM

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ENVIRONMENTAL
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440 PARK AVENUE SOUTH, 7TH FLR
NEW YORK, NY 10016
T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. MOORE · 20374 · REGISTERED PROFESSIONAL ENGINEER
12/12/2025

STATE OF CONNECTICUT · ANDREW P. WHITE · 27767 · REGISTERED PROFESSIONAL ENGINEER
12/12/2025

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LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING DETAILS (5)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO
C-605

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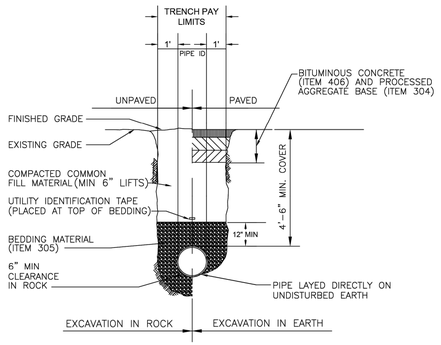
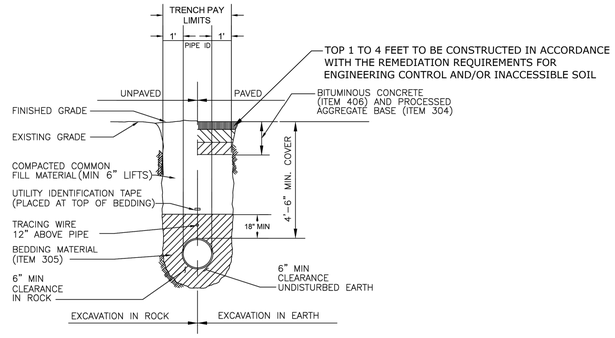
J:\M\M5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Drawings\AutoCAD\Sheet\North Forest\M5177-004-C-701-DETL.dwg Plotted on: 12/12/2025 2:05:21 PM



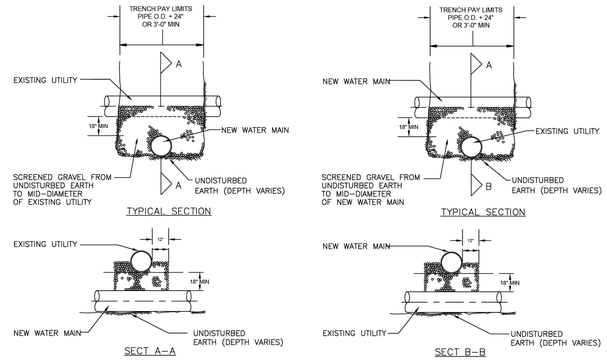
TYPICAL DIP WATER MAIN TRENCH DETAIL

NOT TO SCALE



TYPICAL HDPE WATER MAIN TRENCH DETAIL

NOT TO SCALE

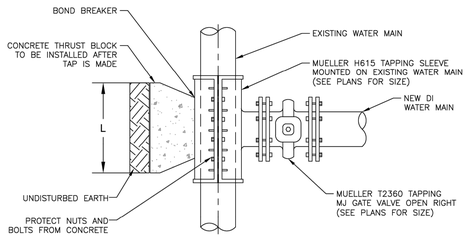


UTILITY CROSSING DETAIL

NOT TO SCALE

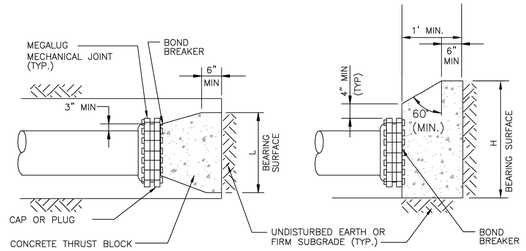
NOTES:

1. USE ABOVE DETAIL WHEN 4.5' MIN. COVER OVER NEW WATERMAIN CANNOT BE ACHIEVED/MAINATAINED VERIFY WITH ENGINEER PRIOR TO WATERMAIN INSTALLATION.
2. PROVIDE CONCRETE ENCASEMENT WHERE 18" MINIMUM SEPERATION CANNOT BE MAINTAINED, OR AS DIRECTED BY THE ENGINEER.
3. PLEASE REFER TO STATE OF CONNNECTICUT DEPARTMENT OF PUBLIC HEALTH DRINKING WATER SECTION, WATER MAIN DESIGN AND CONSTRUCION GUIDLINES" STANDARDS WHEN CROSSING A UTILITY, OR AS DIRECTED BY THE ENGINEER.



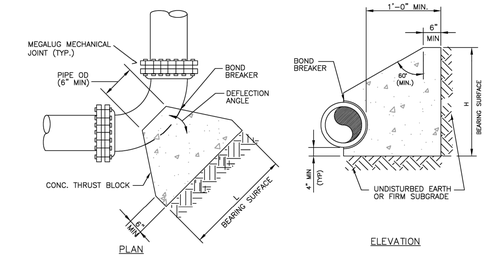
TYPICAL TAPPING SLEEVE CONNECTION

NOT TO SCALE



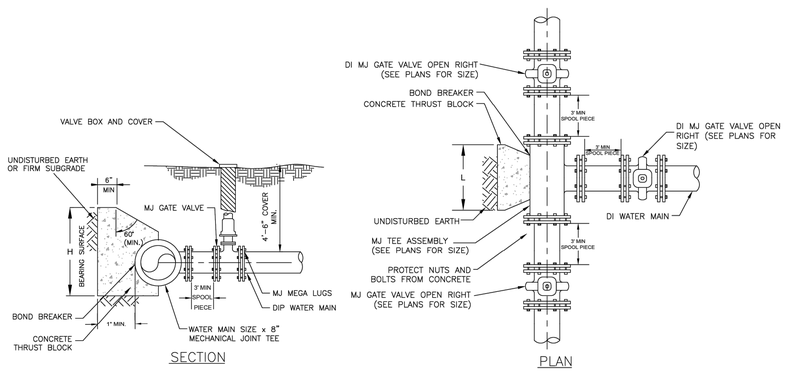
TYPICAL CAP AND PLUG (DETAIL)

NOT TO SCALE



TYPICAL THRUST BLOCK FOR BENDS

NOT TO SCALE



TYPICAL TEE CONNECTION

NOT TO SCALE

CONCRETE THRUST BLOCK DIMENSIONS FOR AVERAGE SOIL CONDITIONS

PIPE SIZE	PLUG, CAP, TEE OR TAP SLEEVE		90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	H	L	H	L	H	L	H	L	H	L
4"	1'–0"	2'–0"	1'–0"	2'–0"	1'–0"	1'–4"	0'–9"	1'–0"	0'–6"	1'–0"•
6"	1'–0"	2'–0"	1'–0"	2'–0"	1'–0"	1'–4"	0'–9"	1'–0"	0'–6"	1'–0"
8"	1'–4"	2'–8"	1'–4"	2'–8"	1'–4"	1'–6"	1'–0"	1'–0"	0'–9"	1'–0"
10"	1'–8"	3'–4"	1'–8"	3'–4"	1'–8"	2'–0"	1'–3"	1'–3"	1'–0"	1'–0"
12"	2'–0"	4'–0"	2'–0"	4'–0"	2'–0"	2'–2"	1'–6"	1'–6"	1'–3"	1'–3"
14"	2'–4"	4'–8"	2'–4"	4'–8"	2'–4"	2'–6"	1'–9"	1'–9"	1'–4"	1'–4"
16"	2'–8"	5'–4"	2'–8"	5'–4"	2'–8"	3'–0"	2'–0"	2'–0"	1'–6"	1'–6"
18"	3'–0"	6'–0"	3'–0"	6'–0"	3'–0"	3'–4"	2'–3"	2'–3"	1'–8"	1'–8"
20"	3'–4"	6'–8"	3'–4"	6'–8"	3'–4"	3'–8"	2'–6"	2'–6"	2'–0"	2'–0"
24"	4'–0"	8'–0"	4'–0"	8'–0"	4'–0"	4'–4"	3'–0"	3'–0"	2'–3"	2'–3"

PAYMENT AMOUNT PER CONCRETE THRUST BLOCK

PIPE SIZE	PLUG, CAP, TEE OR TAP SLEEVE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
4"	0.07 CY	0.07 CY	0.05 CY	0.03 CY	0.02 CY
6"	0.07 CY	0.07 CY	0.05 CY	0.03 CY	0.02 CY
8"	0.13 CY	0.13 CY	0.07 CY	0.04 CY	0.03 CY
10"	0.20 CY	0.20 CY	0.12 CY	0.07 CY	0.04 CY
12"	0.30 CY	0.30 CY	0.16 CY	0.08 CY	0.07 CY
14"	0.40 CY	0.40 CY	0.22 CY	0.11 CY	0.07 CY
16"	0.53 CY	0.53 CY	0.30 CY	0.15 CY	0.08 CY
18"	0.67 CY	0.67 CY	0.37 CY	0.19 CY	0.10 CY
20"	0.82 CY	0.82 CY	0.45 CY	0.23 CY	0.15 CY
24"	1.19 CY	1.19 CY	0.64 CY	0.33 CY	0.19 CY

NOTES:

1. ALL CONCRETE THRUST BLOCKS TO BE PLACED AGAINST UNDISTURBED EARTH.
2. THRUST BLOCKS TO BE USED AT ALL FITTINGS, HYDRANTS, AND AS DIRECTED BY THE ENGINEER.
3. FIELD LOC GASKETS MAY BE REQUIRED TO BE INSTALLED PER THE ENGINEER'S DIRECTION.

REMARKS

DESIGNED BY:
DRAWN BY:
APPROVED BY:
DATE:

FIRST DISTRICT WATER DEPARTMENT

NORWALK FIRST TAXING DISTRICT WATER DEPARTMENT
NORWALK, CONNECTICUT

STANDARD DETAILS

STANDARD DETAILS I

SHEET NO. 1

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628

CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100

ECOLOGICAL — eDESIGN DYNAMICS, 247 W 35TH STREET, NEW YORK, NY 10001, T+ 646 688 3113

ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT — CHARLES J. CROCE — 20374 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

STATE OF CONNECTICUT — ANDREW P. WHITE — 27761 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

NOT FOR CONSTRUCTION

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING DETAILS (6)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO **C-606**

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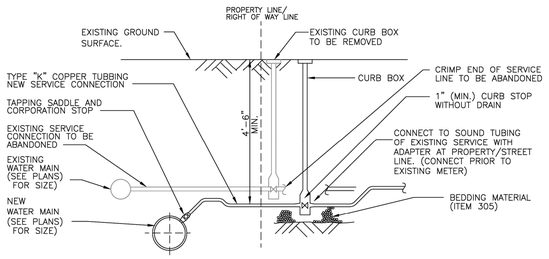
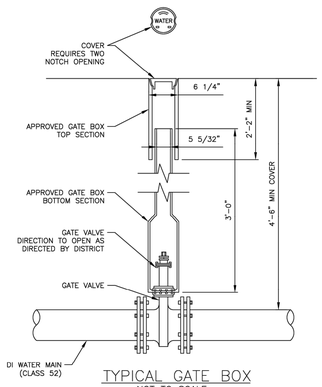


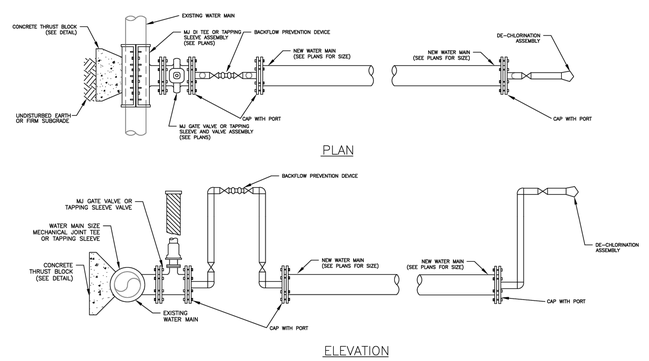
SERVICE CONNECTION DETAIL
REPLACING SERVICE
NOT TO SCALE

NOTES:
1. THE ACTUAL SIZE OF WATER SERVICE CONNECTIONS ARE NOTED ON THE PLANS TO THE FULLEST EXTENT POSSIBLE BUT DISCREPANCIES MAY EXIST AND SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY.



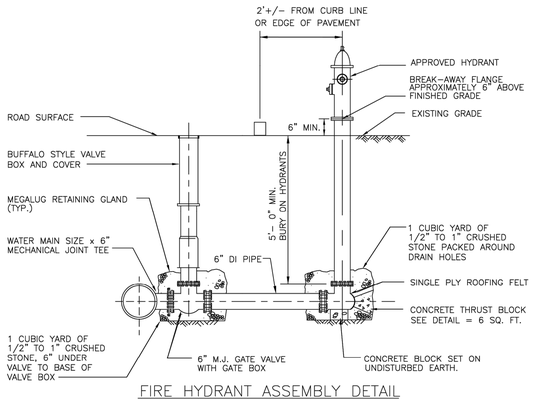
TYPICAL GATE BOX
NOT TO SCALE

NOTES:
1. INSULATE FOR MAINS/GATES 12" AND SMALLER.

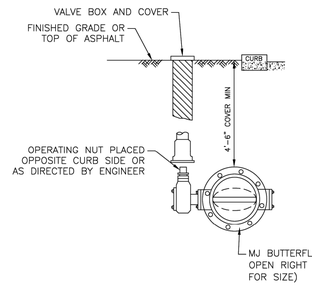


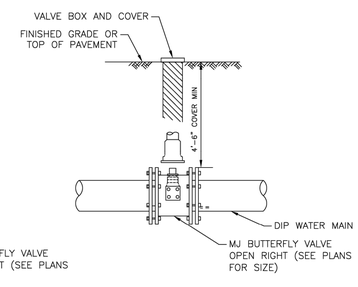
STANDARD TESTING AND CHLORINATING ASSEMBLY
NOT TO SCALE

NOTES
1. BACKFLOW PREVENTION DEVICE MUST BE INSTALLED BETWEEN EXISTING WATER FACILITIES AND NEW (UNTESTED) WATER FACILITIES.
1. NEW MAIN CAN BE FILLED FOR TESTING BY CHOICE OF THE CONTRACTOR (EXISTING WATER MAIN, FIRE HYDRANT, ETC.) AND SHALL BE APPROVED BY THE ENGINEER.
2. SEE ITEM 700, IN THE FIRST TAXING DISTRICT WATER DEPARTMENT STANDARD SPECIFICATIONS, FOR DETAILS ON TESTING AND CHLORINATING OF NEW WATER MAINS.

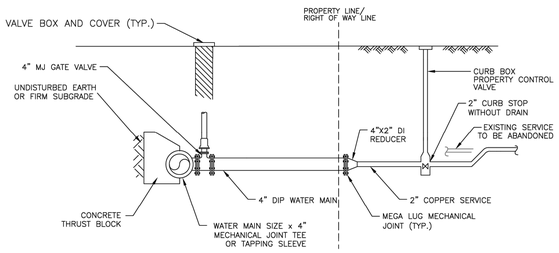


FIRE HYDRANT ASSEMBLY DETAIL
NOT TO SCALE



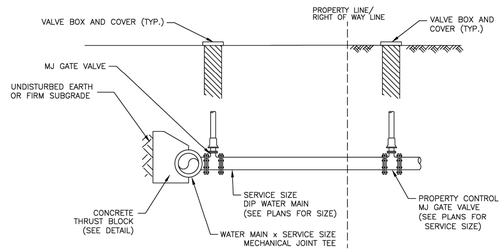


TYPICAL BUTTERFLY VALVE
NOT TO SCALE



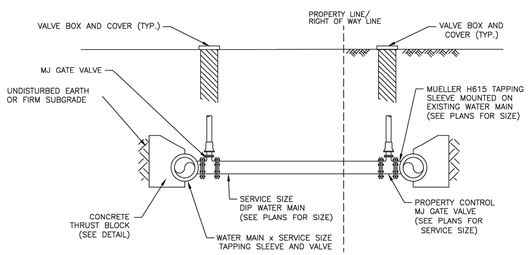
2" SERVICE CONNECTION DETAIL
(SERVICE REPLACEMENT)
NOT TO SCALE

NOTES:
1. THE ACTUAL SIZE OF WATER SERVICE CONNECTIONS ARE NOTED ON THE PLANS TO THE FULLEST EXTENT POSSIBLE BUT DISCREPANCIES MAY EXIST AND SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY.



LARGER THAN 2" SERVICE CONNECTION DETAIL
(SERVICE REPLACEMENT)
NOT TO SCALE

NOTES:
1. THE ACTUAL SIZE OF WATER SERVICE CONNECTIONS ARE NOTED ON THE PLANS TO THE FULLEST EXTENT POSSIBLE BUT DISCREPANCIES MAY EXIST AND SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY.



LARGER THAN 2" SERVICE CONNECTION WITH TAPPING SLEEVE DETAIL
(SERVICE REPLACEMENT)
NOT TO SCALE

NOTES:
1. THE ACTUAL SIZE OF WATER SERVICE CONNECTIONS ARE NOTED ON THE PLANS TO THE FULLEST EXTENT POSSIBLE BUT DISCREPANCIES MAY EXIST AND SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY.

REVISIONS

DESIGNED BY:
DRAWN BY:
APPROVED BY:
DATE:

FIRST DISTRICT WATER DEPARTMENT

NORWALK FIRST TAXING DISTRICT WATER DEPARTMENT
NORWALK, CONNECTICUT

STANDARD DETAILS

STANDARD DETAILS II

SHEET NO. 2

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. CROCE · 26374 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

DRIVEWAY & PARKING DETAILS (7)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.MCUTCHAN
DATE	12/15/2025

SHEET NO

C-607

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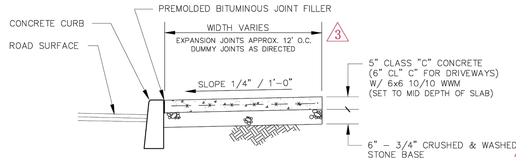
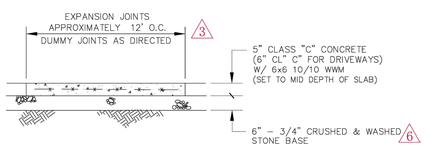


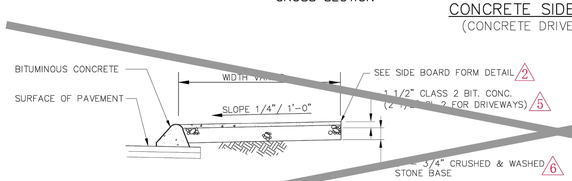
CROSS SECTION



LONGITUDINAL SECTION

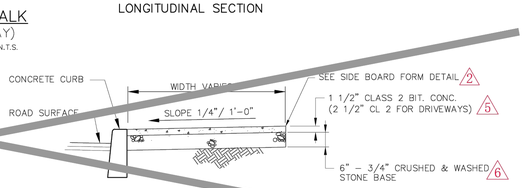
CONCRETE SIDEWALK
(CONCRETE DRIVEWAY)

N.T.S.



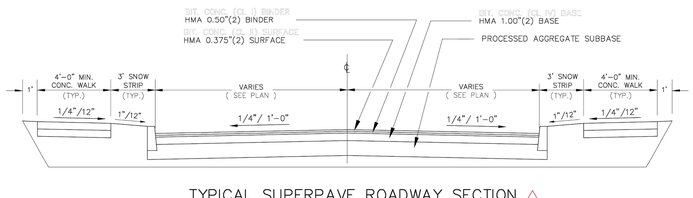
BITUMINOUS CONCRETE SIDEWALK/DRIVEWAY
BITUMINOUS CONC. LIP CURBING

N.T.S.



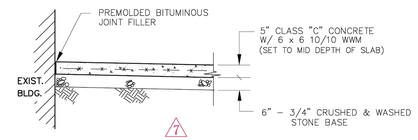
BITUMINOUS CONCRETE SIDEWALK/DRIVEWAY
CONC. CURBING

N.T.S.

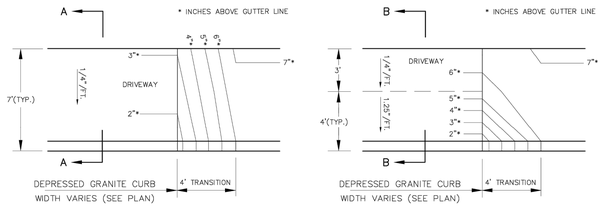


TYPICAL SUPERPAVE ROADWAY SECTION 6
(WHERE SNOW STRIP INCLUDED)

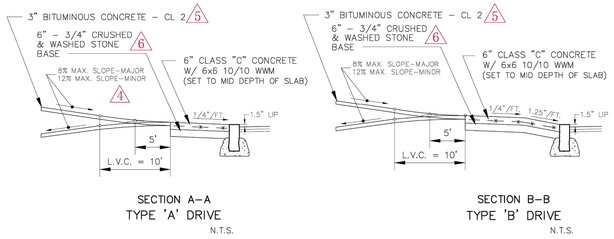
N.T.S.



TYPICAL CONSTRUCTION JOINT
BETWEEN PROPOSED SIDEWALK & EXIST. BUILDING



PLAN



SECTION A-A
TYPE 'A' DRIVE

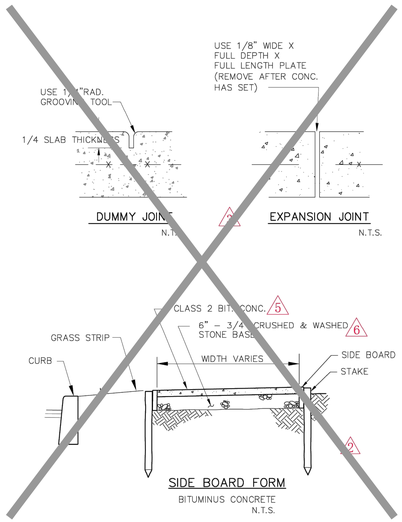
N.T.S.

SECTION B-B
TYPE 'B' DRIVE

N.T.S.

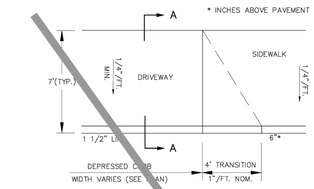
CONCRETE DRIVEWAY RAMP
W/ GRANITE CURB

(TYPE 'A' OR 'B' TO SUIT FIELD CONDITIONS)

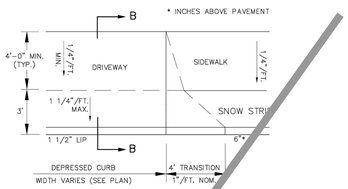


SIDE BOARD FORM
BITUMINOUS CONCRETE
N.T.S.

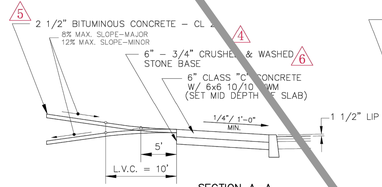
NOTE:
1.) CLASS "C" MIN. 3300 PSI AT 28 DAYS.
or CLASS "F" MIN. 4400 PSI AT 28 DAYS.



PLAN

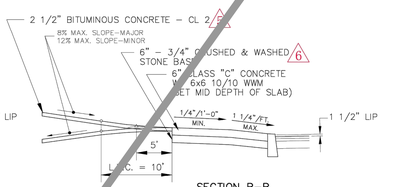


PLAN



SECTION A-A
TYPE 'A' DRIVE
(WITHOUT SNOW STRIP)

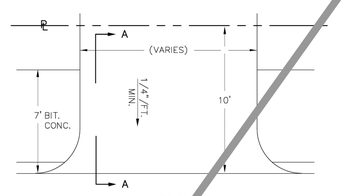
N.T.S.



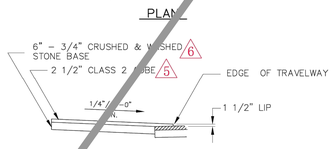
SECTION B-B
TYPE 'B' DRIVE
(WITH SNOW STRIP)

N.T.S.

CONCRETE APRON
W/ CONC. CURBING

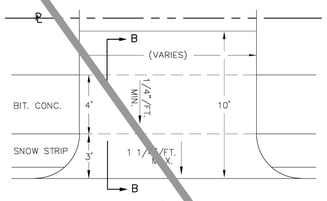


PLAN



SECTION A-A
TYPE 'A' DRIVE

N.T.S.



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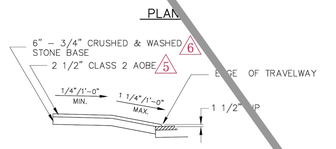


SECTION B-B
TYPE 'B' DRIVE

N.T.S.

BITUMINOUS CONCRETE APRON
BIT. LIP CONC. CURBING

	REVISIONS	DATE	BY
1	REDRAWN & REISSUED	4/13/09	
2	ADDED SIDE BOARD FORM	8/10/09	f.j.w
3	ADDED CONC. SIDEWALK JOINT DETAILS	10/8/10	f.j.w
4	REVISED TO MAJOR/MINOR SLOPE	11/4/10	f.j.w
5	REVISED TO CLASS 2 BIT CONC. ONLY	10/21/16	f.j.w
6	MODIFIED TO INCLUDE HMA AND TO CHG		f.j.w
	PROCESS TO ¾" STONE	5/17/19	
7	REMOVED GEN. NOTES FOR SIDEWALK RAMPS,		
	ADD TYP. CONST. JT. BETWEEN WALK & BLDG		
	ADD CONC. STRENGTH NOTE.	1/7/21	f.j.w

APPROVED BY:	ANTHONY R. CARR	P.E.# 28018	DATE
	CHIEF OF OPERATIONS AND PUBLIC WORKS		
APPROVED BY:	VANESSA N. VALADARES	P.E.# 28346	DATE
	PRINCIPAL ENGINEER		
DESIGNED BY : COMMITTEE		DRAWN BY : F.J.W.	
CHECKED BY :		CHECKED BY :	

CITY OF NORWALK
DEPARTMENT OF PUBLIC WORKS

DRIVEWAY APRONS
CURB RAMPS
ROADWAY SECTION
& SIDEWALK

STANDARD DETAILS

8

DATE : MARCH, 2021 | PROJ. # :
SCALE : AS NOTED | SHEET ____ OF ____

NOTES:

1. WORK SHALL COMPLY WITH THE CURRENT CITY OF NORWALK DEPARTMENT OF PUBLIC WORKS STANDARD DETAIL DRAWINGS. THE STANDARD DETAIL DRAWINGS ARE AVAILABLE ON THE CITY ENGINEERING DEPARTMENT WEBSITE AT: (HTTPS://WWW.NORWALKCT.ORG/1622/ENGINEERING).

Q:\CAD\StandardDetailDrawings 1-21 (12_17_2020)(2_5_21)\DWG\#8.dwg, #8 Sidewalks&Ramps-11x17 (pdf), 4/13/2021 9:32:48 AM, DWG To PDF.pc3

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT
SCAPE LANDSCAPE ARCHITECTURE DPC
277 BROADWAY 9th FLOOR
NEW YORK, NY 10007
T+ 212 462 2628

CIVIL ENGINEER
Tighe&Bond
1000 BRIDGEPORT AVENUE #320
SHELTON, CT 06484
T+ 203 712 1100

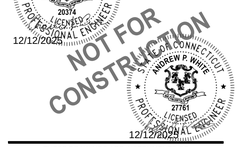
ECOLOGICAL
eDESIGN DYNAMICS
247 W 35TH STREET
NEW YORK, NY 10001
T+ 646 688 3113

ENVIRONMENTAL
AKRF
440 PARK AVENUE SOUTH, 7TH FLR
NEW YORK, NY 10016
T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL





THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

CITY OF NORWALK STANDARD DETAILS (1)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-621

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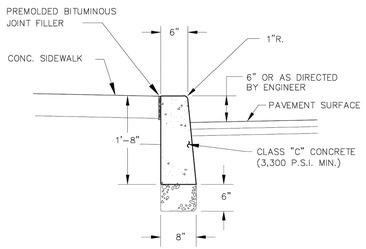
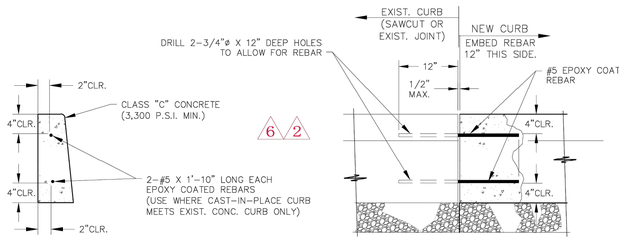


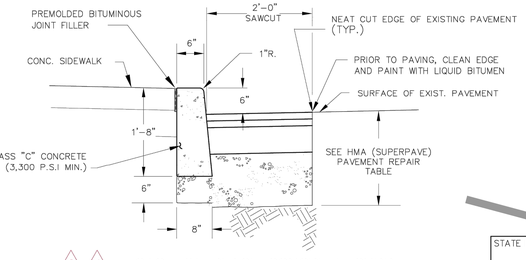
6 4 CAST-IN-PLACE CONCRETE CURB

EXPANSION JOINTS @ APPROX. 12'-0" O.C. (TYP.)



6 2 CONCRETE CURB

USE REBAR WHERE CAST-IN-PLACE CURB MEETS EXISTING CURB AT SAWCUT OR EXIST. JOINT

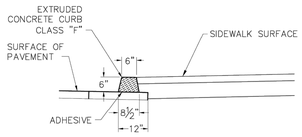


6 4 CAST-IN-PLACE CONCRETE CURB

EXPANSION JOINTS @ APPROX. 12'-0" O.C. (TYP.)

(EXISTING PAVEMENT)

NOT IN ROAD RECONSTRUCTION AREA



EXTRUDED CONCRETE CURB

X"=STONE SIZE & (Y)=LEVEL e.g. 0.50"(2)						
	0.375"(2)	0.50"(2)	1.00"(2)	0.50"(3)	1.00"(3)	P.A.B.
STATE ROAD				4" (PLACED IN 2 LIFTS)	6" (PLACED IN 2 LIFTS)	12"
MAJOR ARTERIAL				4" (PLACED IN 2 LIFTS)	6" (PLACED IN 2 LIFTS)	14"
MINOR ARTERIAL		6.5" (PLACED IN 3 LIFTS)				12"
COLLECTOR		6" (PLACED IN 3 LIFTS)				12"
LOCAL	3" (PLACED IN 2 LIFTS)					12"

PAVEMENT REPAIR TABLE

HMA (SUPERPAVE) 5

ALLOWABLE COMPACTED THICKNESS PER LIFT		
STONE SIZE	LIFT THICKNESS	
	MIN.	MAX.
0.375"	1.5"	2"
0.50"	2.0"	2.5"
1.00"	3.0"	5.0"

8

7

	A	B	C	D
	CL 2	CL 1	CL 4	P.A.B.
MAJOR ARTERIAL	—	4"	6"	14"
MINOR ARTERIAL	—	6.5"	—	12"
COLLECTOR	—	6"	—	12"
LOCAL	3"	—	—	12"

PAVEMENT REPAIR TABLE

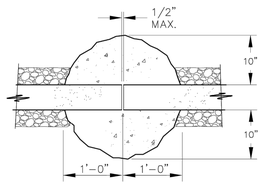
(MARSHALL MIX)

MAXIMUM ALLOWABLE UNCOMPACTED THICKNESS PER LIFT:

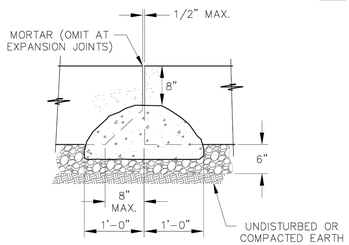
CLASS 2 – 2" THK.

CLASS 1 – 2 1/2" THK.

CLASS 4 – 4" THK.

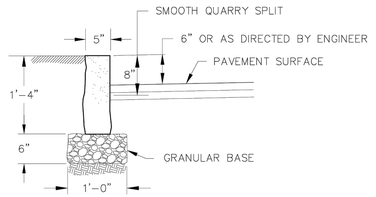


PLAN @ JOINT

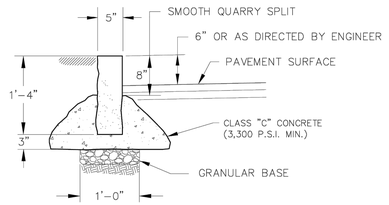


ELEVATION @ JOINT

4



NON-JOINT SECTION



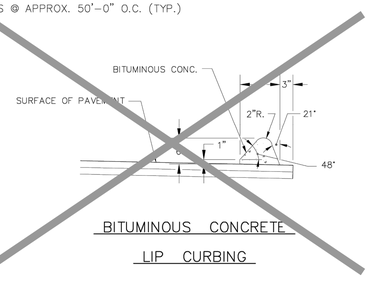
SECTION @ JOINT

GRANITE & PRECAST CONCRETE CURB

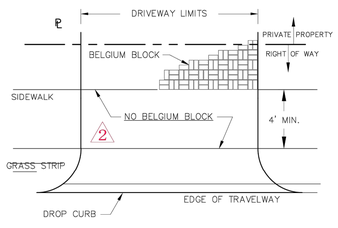
JOINT TREATMENT

(GRANITE CURB SHOWN)

EXPANSION JOINTS @ APPROX. 50'-0" O.C. (TYP.)

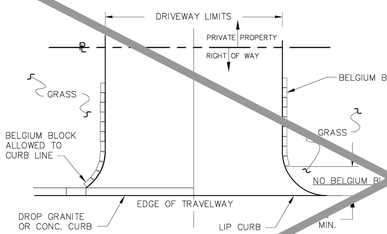


BITUMINOUS CONCRETE LIP CURBING



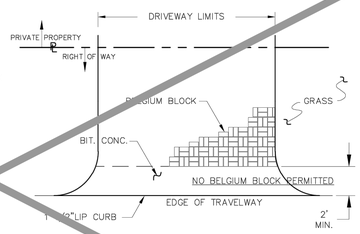
PLAN N.T.S.

CONCRETE OR BITUMINOUS CONC. DRIVE APRON W/ BELGIUM BLOCK W/ CONCRETE, BIT. CONC., OR GRANITE CURB W/ SIDEWALK



PLAN N.T.S.

2 BELGIUM BLOCK DRIVEWAY EDGING NO SIDEWALK



PLAN N.T.S.

BIT. CONC. DRIVE APRON W/ BELGIUM BLOCK NO SIDEWALK OR CURB BIT. CONC. LIP FOR DRIVEWAY

THE CITY TAKES NO RESPONSIBILITY FOR ANY DAMAGE TO BELGIUM BLOCK INSTALLED WITHIN ROAD RIGHT OF WAY.

CONCRETE NOTE:

CLASS "C" MIN. 3300 PSI AT 28 DAYS or CLASS "F" MIN. 4400 PSI AT 28 DAYS.

SEE "STANDARD DETAIL DRAWINGS":

#8 – DRIVEWAY APRONS, CURB RAMPS, ROADWAY SECTION & SIDEWALK

7 #10(X) – PAVERS IN SIDEWALKS & CROSSWALKS (X)= a, b, c or d. "Location dependant."

FOR DRIVEWAY AND SIDEWALK CONSTRUCTION DETAILS

	REVISIONS	DATE	BY
1	REDRAWN & REISSUED	4/8/09	fjw
2	ADDED BELGIUM BLOCK EDGING PLAN & REBAR @ C.I.P. CONC. CURB	9/17/10	fjw
3	ADDED MAX. LIFT THKNESS NOTE	12/5/11	fjw
4	MODIFIED CURB JOINT TREATMENT & RELABELED CONC. CURB TO CAST-IN PLACE	10/12/12	fjw
5	ADDED SUPERPAVE TABLE	12/5/12	fjw
6	ADDED CLASS"C" NOTE TO CONC. CURB	2/19/19	fjw
7	MODIFIED #10 NOTE, REMOVED MARSHALL MIX TABLE, ADDED EXTRUDED CONC. CURB		
	ADDED MIN. CONC. STRENGTH	12/17/20	fjw
8	ADD MARSHALL MIX TABLE, CHG. PAVEMENT REPAIR TABLE UNCOMPACTED TO COMPACTED, 1.75" TO 2"	3/28/22	fjw

APPROVED BY:	ANTHONY R. CARR	P.E.# 28018	DATE
	CHIEF OF OPERATIONS AND PUBLIC WORKS		
APPROVED BY:	VANESSA N. VALADARES	P.E.# 28346	DATE
	PRINCIPAL ENGINEER		
DESIGNED BY :	COMMITTEE	DRAWN BY :	F.J.W.
CHECKED BY :		CHECKED BY :	

CITY OF NORWALK
DEPARTMENT OF PUBLIC WORKS

CURB DETAILS
BELGIUM BLOCKS IN DRIVEWAYS
STANDARD DETAILS

9

DATE : MARCH, 2021 DPW PROJ. :

SCALE : N.T.S. SHEET ___ OF ___

NOTES:

1. WORK SHALL COMPLY WITH THE CURRENT CITY OF NORWALK DEPARTMENT OF PUBLIC WORKS STANDARD DETAIL DRAWINGS. THE STANDARD DETAIL DRAWINGS ARE AVAILABLE ON THE CITY ENGINEERING DEPARTMENT WEBSITE AT: (HTTPS://WWW.NORWALKCT.ORG/1622/ENGINEERING).

Q:\CAD\StandardDetailDrawings 1-21 (12_17_2020)(2_5_21)\DWG\#9.dwg, 3/29/2022 1:41:59 PM, DWG To PDF.pc3

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SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628

CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100

ECOLOGICAL — eDESIGN DYNAMICS, 247 W 35TH STREET, NEW YORK, NY 10001, T+ 646 688 3113

ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT CHARLES J. CROSE 20374 REGISTERED PROFESSIONAL ENGINEER 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT ANDREW P. WITT 27761 REGISTERED PROFESSIONAL ENGINEER 12/12/2025

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

CITY OF NORWALK STANDARD DETAILS (2)

PROJECT NO	SHEET NO
M5177-004	C-622
SCALE	
NO SCALE	
DRAWN BY	
J.PAPROTA	
CHECKED BY	
K.McCUTCHAN	
DATE	
12/15/2025	

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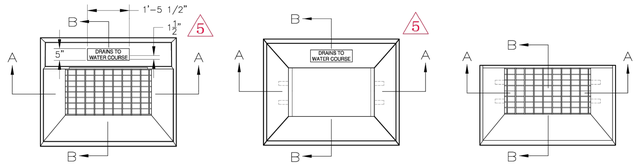
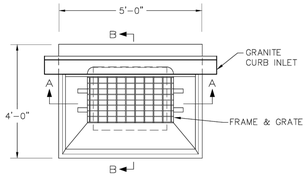


CATCH BASIN TOP DETAILS

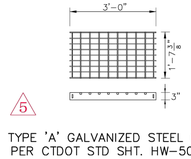
N.T.S.

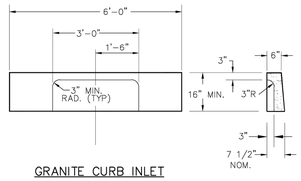
NOTE: ALL STEEL GRATES AND FRAMES TO BE GALVANIZED IN CONFORMANCE WITH FORM 816 ARTICLE M.06.03.



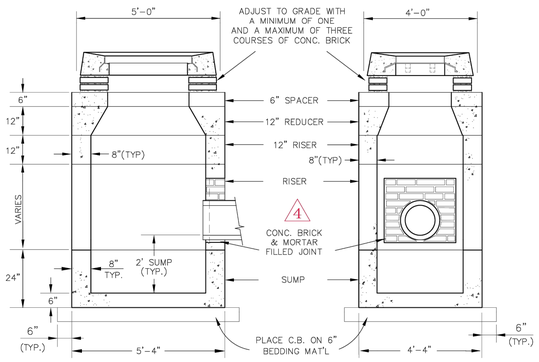
GRANITE CURB CATCH BASIN

NOTE: TO BE USED IN ALL AREAS WHERE GRANITE CURB IS USED





NOTES:
1. ALL C.B.'S CONSTRUCTED, MODIFIED OR REPLACED SHALL HAVE "DRAINS TO WATER COURSE" CAST INTO THE CATCH BASIN TOP. THIS IS A NO PAY ITEM TO BE INCLUDED IN C.B. COSTS.
2. THE WORDS "DRAINS TO WATER COURSE" SHALL BE CAST INTO THE CATCH BASIN TOP USING 1 1/2" LETTERS.

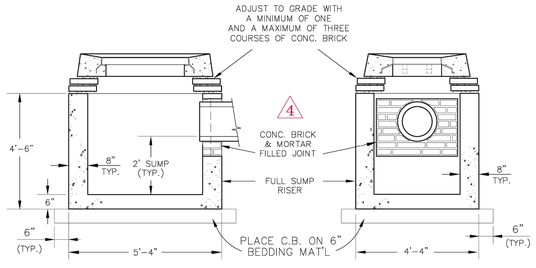


NOTES: 1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN HS-20 TRUCK LOAD. ALL JOINTS ARE TO BE MORTARED. CATCH BASIN SHALL CONFORM TO ASTM C478.
2. KNOCK OUTS ARE TO BE APPLIED ONLY AS REQ'D TO ACCOMMODATE PIPES LOCATED PER PROJECT DESIGN.

STANDARD CATCH BASIN DETAIL

N.T.S.

NOTE: TYPE "CL" CATCH BASIN TOP SHOWN. SEE CATCH BASIN TOP DETAILS (ABOVE) FOR OTHER CB TOP STYLES.



NOTES: 1. ALL CATCH BASIN COMPONENTS TO BE PRE-CAST REINFORCED CONCRETE, ABLE TO WITHSTAND THE APPLIED EARTH LOADS WITH AN HS-20 TRUCK LOAD. ALL JOINTS ARE TO BE MORTARED. CATCH BASIN SHALL CONFORM TO ASTM C478.
2. KNOCK OUTS ARE TO BE APPLIED ONLY AS REQ'D TO ACCOMMODATE PIPES LOCATED PER PROJECT DESIGN.

SHALLOW CATCH BASIN DETAIL

N.T.S.

NOTE: TYPE "CL" CATCH BASIN TOP SHOWN. SEE CATCH BASIN TOP DETAILS (ABOVE) FOR OTHER CB TOP STYLES.

CATCH BASIN FILTER INSERT NOTES

1.) USE FILTER INSERTS WHERE SHOWN ON DESIGN PLANS OR AS REQUIRED BY D.P.W. ENGINEERING. FILTER USED SHALL BE FROM D.P.W. APPROVED SUPPLIERS LIST:
"ULTRA-URBAN FILTER W/SMART SPONGE FILTER MEDIA" -ABTECH INDUSTRIES, SCOTTSDALE, AZ, 1-800-543-8999
"TRANSPO ENVIROSAFE MODULAR STORMWATER CATCH BASIN FILTER" -TRANSPO INDUSTRIES, NEW ROCHELLE, NY, 1-914-636-1000
OR OTHER APPROVED FILTER.

2.) ALLOW 24" MINIMUM CLEARANCE BETWEEN BOTTOM OF GRATE AND TOP OF PIPE INLET OR OUTLET.

3.) INSTALL AND MAINTAIN ACCORDING TO MANUFACTURERS RECOMMENDATIONS.

REVISIONS	DATE	BY
1 REDRAWN & REISSUED	4/28/09	fjw
2 REV FILTER INSERT NOTE	8/13/09	fjw
3 MODIFIED CATCH BASIN GRATE	1/25/11	fjw
4 MOD. CATCH BASIN WALL THICKNESS, DESC. & KNOCKOUT NOTE	12/6/12	fjw
5 NEW CB W/"DRAINS TO WATER COURSE" NOTE & NEW CB GRATE DESC.	3/6/17	fjw

APPROVED BY: ANTHONY R. CARR	P.E.# 28018	DATE	
CHIEF OF OPERATIONS AND PUBLIC WORKS			
APPROVED BY: VANESSA N. VALADARES	P.E.# 28346	DATE	
PRINCIPAL ENGINEER OF DESIGN			
DESIGNED BY : COMMITTEE	DRAWN BY : F.J.W.		
CHECKED BY :	CHECKED BY :		

CITY OF NORWALK
DEPARTMENT OF PUBLIC WORKS

TYPE "C" TYPE "CL" TYPE "C-M" CATCH BASIN TOPS
"DRAINS TO WATER COURSE" DETAIL
GRANITE CURB INLET CATCH BASIN
STANDARD CATCH BASIN
SHALLOW CATCH BASIN
STANDARD DETAILS

6

DATE : MARCH, 2021 | PROJ # :
SCALE : AS NOTED | SHEET ____ OF ____

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NOTES:

1. WORK SHALL COMPLY WITH THE CURRENT CITY OF NORWALK DEPARTMENT OF PUBLIC WORKS STANDARD DETAIL DRAWINGS. THE STANDARD DETAIL DRAWINGS ARE AVAILABLE ON THE CITY ENGINEERING DEPARTMENT WEBSITE AT: (HTTPS://WWW.NORWALKCT.ORG/1622/ENGINEERING).

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SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

CHARLES J. CROCE — 20374 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

ANDREW P. WHITE — 27761 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

NOT FOR CONSTRUCTION

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LOCAL APPROVALS

SHEET NAME

CITY OF NORWALK STANDARD DETAILS (3)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-623

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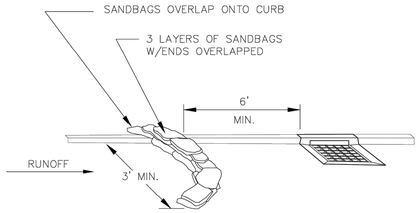
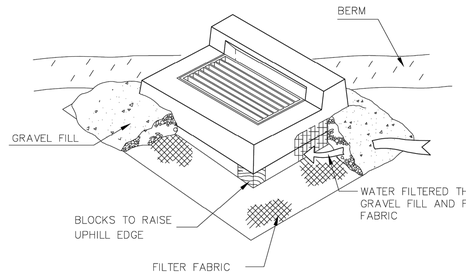


SAND BAG CURB INLET SEDIMENT BARRIER

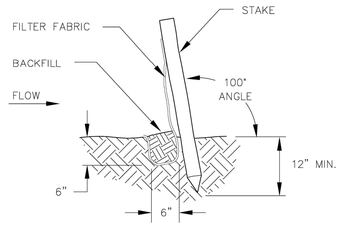
EROSION AND SEDIMENT CONTROL INSTALLATION DETAIL

N.T.S.

NOTE: RAISE AND PROTECT CATCH BASIN TOPS WITH CRUSHED STONE AS SOON AS POSSIBLE TO PERMIT DRAINAGE TO ENTER STORM SYSTEMS, WHEN ROADWAY IS BROUGHT UP TO SUBBASE BEFORE PAVING.



WHERE DIRECTED BY ENGINEERING, CONTRACTOR SHALL CONSTRUCT STONE DIKE IN LIEU OF THE FILTER FABRIC CHECK DAM.



SILT FENCE INSTALLATION DETAIL

N.T.S.

A) MINIMUM LENGTH OF SILT FENCE IS 15 LF.

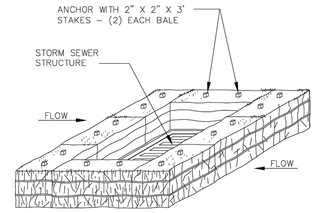
B) MAXIMUM POST SPACING IS 10 LF.

C) JOINTS ONLY AT SUPPORT POST WITH MINIMUM 6" OVERLAP, SECURELY SEALED.

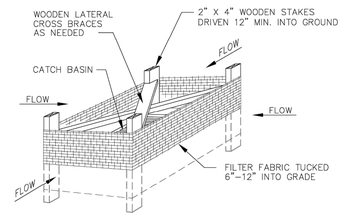
D) SEDIMENTATION DEPOSITS SHALL BE REMOVED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILT FENCE.

E) SILT FENCE SHALL NOT BE USED IN A WATER COURSE.

F) UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS AND WHEN DIRECTED BY THE ENGINEER, FENCE WILL BE REMOVED AND ANY SEDIMENTATION WILL BE THINLY SPREAD UPON EXISTING GROUND COVER.



HAY BALE INSTALLATION AT CATCH BASIN

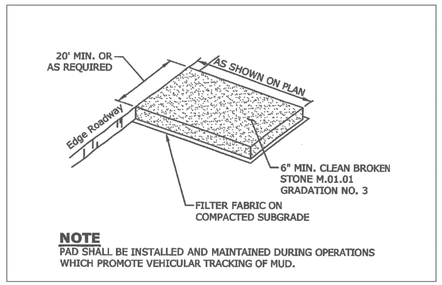


SILT FENCE INSTALLATION AT CATCH BASIN

CATCH BASIN IN A DEPRESSION

SEDIMENTATION CONTROL SYSTEM FOR CATCH BASIN

N.T.S.

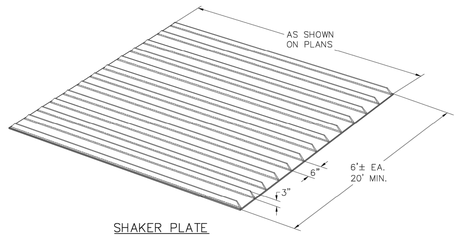


NOTE

PAD SHALL BE INSTALLED AND MAINTAINED DURING OPERATIONS WHICH PROMOTE VEHICULAR TRACKING OF MUD.

ANTI–TRACKING PAD

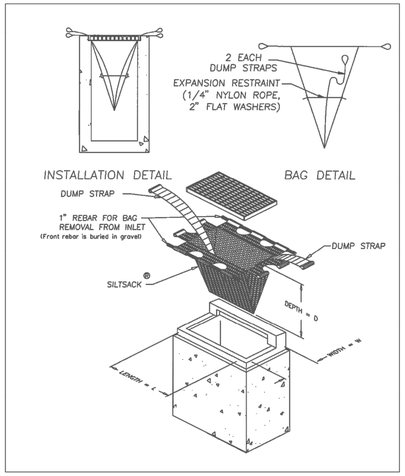
N.T.S.



SHAKER PLATE

N.T.S.

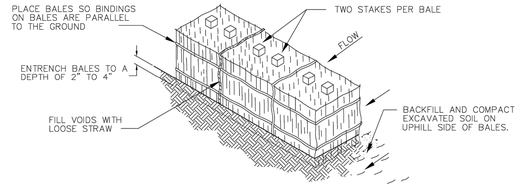
NOTE: PLATE MAY BE PLACED ON EXISTING PAVED SURFACE AT ENTRANCE/EXIT OF CONSTRUCTION SITE TO REDUCE TRACKING OF MUD AND DIRT ONTO PUBLIC ROADS.



INLET SEDIMENT CONTROL DEVICE

(SILT SACK)

N.T.S.



HAY BALE INSTALLATION

N.T.S.

A) IDEALLY, BALES SHOULD BE ENTRENCHED 2 TO 4 INCHES AND TIGHTLY BUTTED TOGETHER. BALES CAN BE SUCCESSFULLY PLACED WITHOUT A TRENCH IF GOOD GROUND CONTACT IS MADE. REMOVE HEAVY BRUSH AND FILL ALL VOIDS WITH LOOSE STRAW.

B) BALES SHALL BE ONLY USED AS A TEMPORARY BARRIER AND FOR NO LONGER THAN 60 DAYS. THEY SHALL NOT BE USED ON A JOB ADJACENT TO A RESIDENTIAL NEIGHBORHOOD, RESIDENCES OR ADJACENT TO OR IN A WATERCOURSE.

C) WHEN SEDIMENTATION DEPOSITS REACH WITHIN 3" OF THE TOP OF BALES, REMOVE SEDIMENTATION OR ADD ADDITIONAL BALES ON SEDIMENTATION DIRECTLY BEHIND FIRST ROW OF BALES AS DIRECTED BY ENGINEER.

D) UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS AND WHEN DIRECTED BY ENGINEER, HAY BALES WILL BE REMOVED AND USED AS MULCH. ANY SEDIMENTATION WILL BE THINLY SPREAD UPON ESTABLISHED GROUND COVER.

	REVISIONS	DATE	BY
1	REDRAWN & REISSUED	2/3/09	FJW
2	ADDED ANTI–TRACKING PAD & SHAKER PLATE	3/2/17	FJW

APPROVED BY: ANTHONY R. CARR		P.E.# 28018	DATE
CHIEF OF OPERATIONS AND PUBLIC WORKS			
APPROVED BY: VANESSA N. VALADARES		P.E.# 28346	DATE
PRINCIPAL ENGINEER			
DESIGNED BY : COMMITTEE	DRAWN BY : F.J.W.		
CHECKED BY :	CHECKED BY :		

CITY OF NORWALK
DEPARTMENT OF PUBLIC WORKS

EROSION & SEDIMENTATION CONTROL

STANDARD DETAILS

13

DATE : MARCH, 2021 | PROJ. # :

SCALE : N.T.S. | SHEET ___ OF ___

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NOTES:

1. WORK SHALL COMPLY WITH THE CURRENT CITY OF NORWALK DEPARTMENT OF PUBLIC WORKS STANDARD DETAIL DRAWINGS. THE STANDARD DETAIL DRAWINGS ARE AVAILABLE ON THE CITY ENGINEERING DEPARTMENT WEBSITE AT: (HTTPS://WWW.NORWALKCT.ORG/1622/ENGINEERING).

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. CROCKETT · 20374 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDREW P. WHITE · 27767 · LICENSED PROFESSIONAL ENGINEER · 12/12/2025

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS. FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

CITY OF NORWALK STANDARD DETAILS (4)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-624

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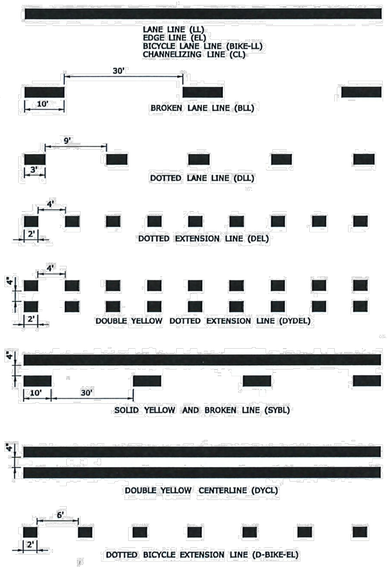


NOTES:

GENERAL:

1. AREA OF PAVEMENT MARKING SYMBOLS AS INDICATED IS APPROXIMATE.
2. REFER TO STANDARD SHEET TR-1210.04 FOR PAVEMENT MARKING LINE DETAILS.

RAILROAD GRADE CROSSINGS:

3. RAILROAD MARKINGS SHALL BE WHITE.
4. ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS THE APPROACH LANES AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

PARKING STALLS:

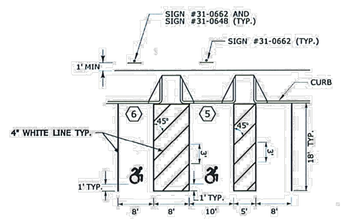
(5) AUTOMOBILE ACCESSIBLE PARKING SPACES SHALL BE 15' WIDE INCLUDING 5' OF CROSSHATCH.

(6) VAN ACCESSIBLE PARKING SPACES SHALL BE 16' WIDE INCLUDING 8' OF CROSSHATCH.

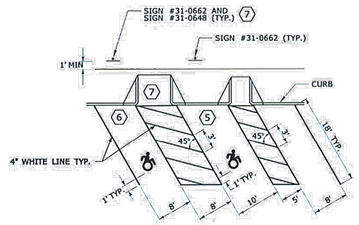
(7) ACCESS AISLES FOR ANGLED VAN PARKING SPACES SHALL BE LOCATED ON THE PASSENGER SIDE OF THE PARKING SPACE.

8. CROSS HATCHED ACCESS AISLES SHALL NOT BE SHARED BETWEEN PARKING SPACES.

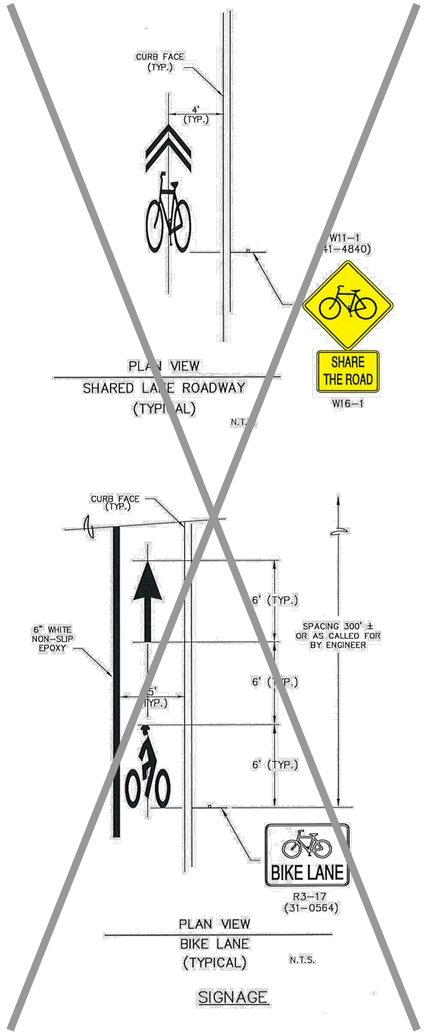
TYPICAL PERPENDICULAR PARKING STALLS DETAIL



TYPICAL ANGLE PARKING STALLS DETAIL

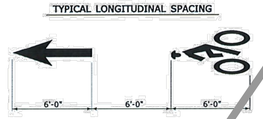


ACCESSIBLE PARKING SPACE SYMBOL

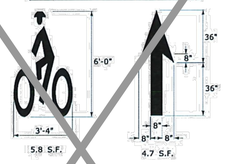


SIGNAGE

TYPICAL LONGITUDINAL SPACING



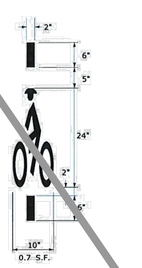
BICYCLE LANE SYMBOL MARKING



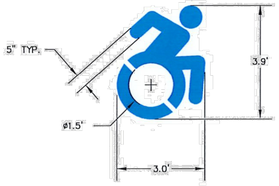
SHARED LANE SYMBOL MARKING

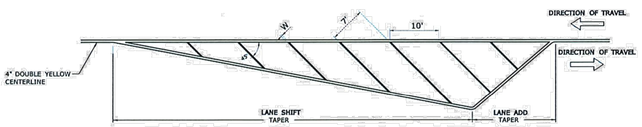


BICYCLE DETECTOR SYMBOL MARKING



ACCESSIBLE PARKING SPACE SYMBOL
BLUE EPOXY PAINT
N.T.S.
5.3 S.F.





CROSS HATCHED ISLAND DETAIL
(YELLOW)

W IS TO BE 6" WHEN POSTED SPEED ≤ 45 MPH
W IS TO BE 12" WHEN POSTED SPEED > 45 MPH
CROSS HATCHED ISLANDS ARE TO BE INSTALLED WHERE CALLED FOR ON THE PLANS

NOTES:

1) SIGN NUMBERS LISTED REFER TO MUTCD SIGN NUMBERS. CT DOT CATALOG OF SIGNS NUMBERS ARE IN PARENTHESIS WHERE THEY ARE CURRENTLY AVAILABLE.

2) ALL SIGNS AND CHANNEL POSTS SHALL BE INSTALLED IN ACCORDANCE WITH CT DOT STANDARD DETAIL SHEETS TR-1208_01 AND TR-1208_02 INCLUDING THE USE OF BREAKAWAY FEATURES. THE SIGNS AND CHANNEL POSTS SHALL BE INSTALLED BY THE CITY OF NORWALK PERSONNEL.

3) THE CITY OF NORWALK SHALL MAINTAIN THE PAVEMENT MARKINGS AND SIGNAGE RELATED TO THE BIKE LANES ON STATE ROUTE 136 BETWEEN THE WATER STREET / NORTH WATER STREET INTERSECTION AND THE SEAVIEW AVENUE INTERSECTION CONSISTING OF DASHED LANE LINES, SHOULDER LINES FOR BIKE LANES, BIKE LANE SYMBOLS, ARROWS, SHARROWS AND ASSOCIATED SIGNAGE AS INDICATED ON THIS DRAWING (EXCLUDING THE EXISTING DOUBLE YELLOW CENTERLINE, CROSS WALKS, LANE USE CONTROL ARROWS AND STOP BARS).

REVISIONS		DATE	BY
1	ORIGINAL ISSUE	12/17/20	TJW

APPROVED BY:	ANTHONY R. CARR	P.E.# 28018	DATE:
	CHIEF OF OPERATIONS AND PUBLIC WORKS		
APPROVED BY:	VANESSA N. VALADARES	P.E.# 28346	DATE:
	PRINCIPAL ENGINEER		
DESIGNED BY:		DRAWN BY:	
CHECKED BY:		CHECKED BY:	

CITY OF NORWALK
DEPARTMENT OF PUBLIC WORKS

SPECIAL DETAILS
PAVEMENT MARKINGS
AND SIGNAGE

TR-1210_09
TR-1210_04

17

DATE: MARCH, 2021 | DPW PROJ.:
SCALE: NTS | SHEET ___ OF ___

Q:\CAD\StandardDetailDrawings\1-21 (12-17-2020)\2-5-21\DWG\#16 & #17 CTDOT TR-1210_03 - 04 - 09.dwg, 11x17 (#17), 4/13/2021 1:47:39 PM, dpw_mp_c6004a.pc3

NOTES:

1. WORK SHALL COMPLY WITH THE CURRENT CITY OF NORWALK DEPARTMENT OF PUBLIC WORKS STANDARD DETAIL DRAWINGS. THE STANDARD DETAIL DRAWINGS ARE AVAILABLE ON THE CITY ENGINEERING DEPARTMENT WEBSITE AT: (HTTPS://WWW.NORWALKCT.ORG/1622/ENGINEERING).

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628

CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100

ECOLOGICAL — eDESIGN DYNAMICS, 247 W 35TH STREET, NEW YORK, NY 10001, T+ 646 688 3113

ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT — CHARLES J. CROCE — 26374 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT — ANDREW P. WINTER — 27761 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

CITY OF NORWALK STANDARD DETAILS (5)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.MCUTCHAN
DATE	12/15/2025

SHEET NO

C-625

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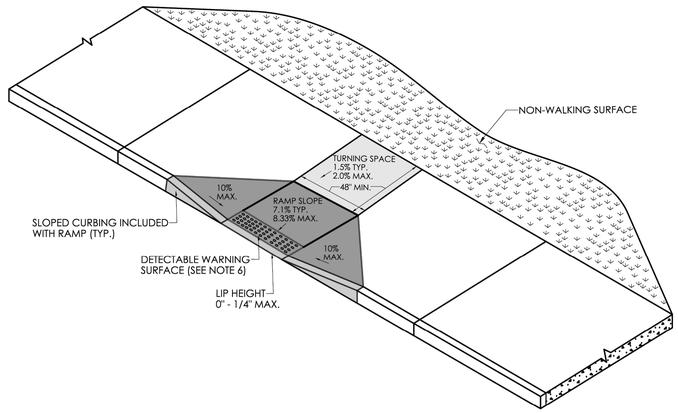
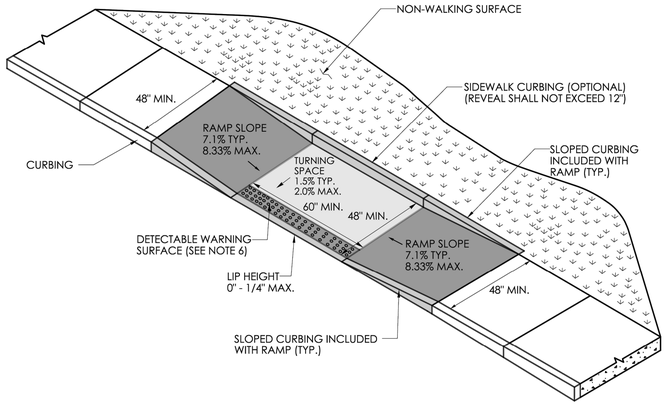
GENERAL NOTES:

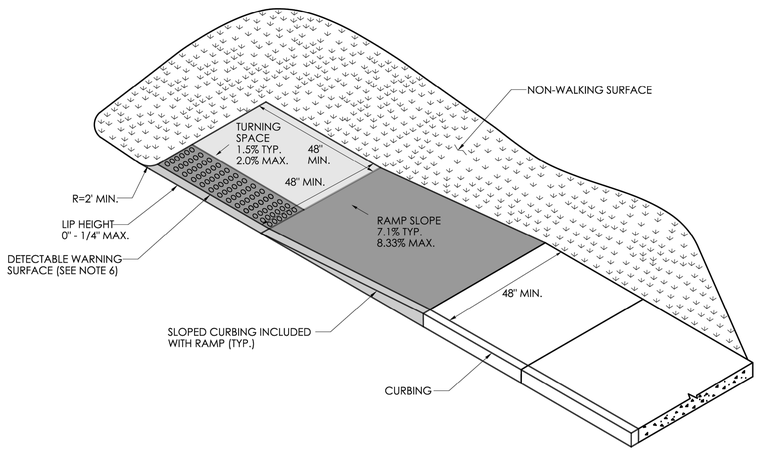
1. SIDEWALK RAMPS SHALL HAVE A COARSE BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP.
2. VERTICAL SURFACE DISCONTINUITIES AT JOINTS SHALL NOT EXCEED ¼ INCH.
3. REMOVAL OF EXISTING SIDEWALK FOR NEW RAMP INSTALLATIONS SHALL BE TO THE NEAREST EXPANSION OR CONTRACTION JOINT.
4. THE RUNNING SLOPE OF THE CURB RAMP SHALL BE 8.33 PERCENT MAXIMUM BUT SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET.
5. DETECTABLE WARNING SURFACES SHALL BE INSTALLED ON SIDEWALK RAMPS AT PEDESTRIAN STREET CROSSINGS, PEDESTRIAN REFUGE ISLANDS AND RAILROAD CROSSINGS ALONG STREETS OR HIGHWAYS.
6. DETECTABLE WARNING SURFACES SHALL EXTEND 2 FEET MIN. IN THE DIRECTION OF PEDESTRIAN TRAVEL AND SPAN THE ENTIRE RAMP OPENING.
7. ALL GUIDESHEET VALUES COMPLY WITH PROWAG DRAFT 2013 GUIDELINES. UPDATED VALUES WILL BE MADE TO COMPLY WITH PROWAG FINAL RULE ONCE OFFICIALLY THE LAW.
8. CTDOT DESIGN STANDARD USE THE PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG) SEE ENGINEERING DIRECTIVE ED-2019-7.
9. CURB RAMPS SHALL BE CONSTRUCTED SO THAT WATER WILL NOT ACCUMLATE WITHIN THE PEDESTRIAN ACCESS ROUTE.



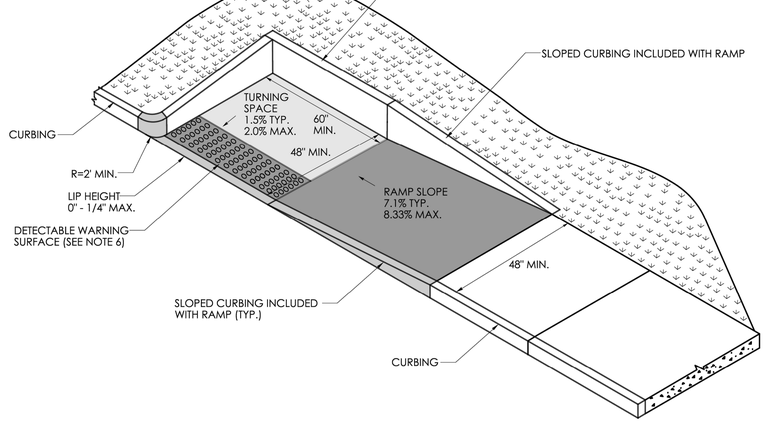
PERPENDICULAR RAMP WITH 48" BY-PASS (TYPE 8)



PARALLEL RAMP WITH TURNING SPACE CONSTRAINED ON TWO (2) OR MORE SIDES (TYPE 9)



PARALLEL RAMP WITH TURNING SPACE CONSTRAINED ON ONE SIDE (TYPE 10a)



PARALLEL RAMP WITH TURNING SPACE CONSTRAINED ON TWO (2) OR MORE SIDES (TYPE 10b)

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:

DESIGNER/DRAFTER: CHECKED BY:

CTDOT CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: **TEST PROJECT**

TOWN(S): **VARIOUS**

DRAWING TITLE: **CONCRETE SIDEWALK RAMPS SHEET 4 OF 11**

PROJECT NO.:

DRAWING NO.:

SHEET NO.:

LASTED SAVED BY: klipatrickdj **FILE NAME:** C:\Users\Klipatrickdj\State of Connecticut\DOT Engineering Services - Documents\HWY_STD_GUIDE_DWG\B - Going for signatures\Jan 2025 Stnd & Guide Shts\CTDOT_HIGHWAY_GD Jan 2025 [10-30-24].dgn
PLOTTED DATE: 10/30/2024

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT — SCAPE LANDSCAPE ARCHITECTURE DPC, 277 BROADWAY 9th FLOOR, NEW YORK, NY 10007, T+ 212 462 2628
CIVIL ENGINEER — Tighe&Bond, 1000 BRIDGEPORT AVENUE #320, SHELTON, CT 06484, T+ 203 712 1100
ECOLOGICAL — eDESIGN DYNAMICS, 247 W 35TH STREET, NEW YORK, NY 10001, T+ 646 688 3113
ENVIRONMENTAL — AKRF, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT — CHARLES J. CROE — 20374 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT — ANDREW P. WHITE — 27761 — LICENSED PROFESSIONAL ENGINEER — 12/12/2025

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

CTDOT HIGHWAY DESIGN GUIDE SHEET (1)

PROJECT NO: M5177-004
SHEET NO: **C-626**
SCALE: NO SCALE
DRAWN BY: J.PAPROTA
CHECKED BY: K.McCUTCHAN
DATE: 12/15/2025

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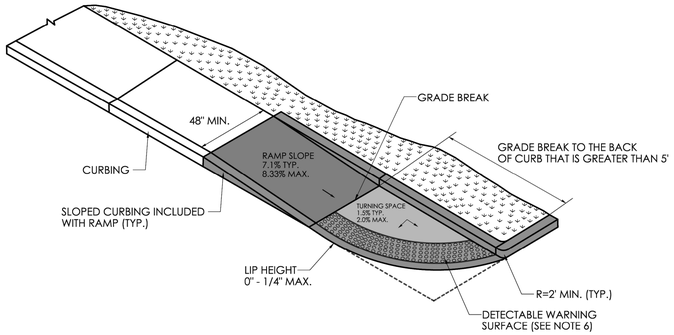
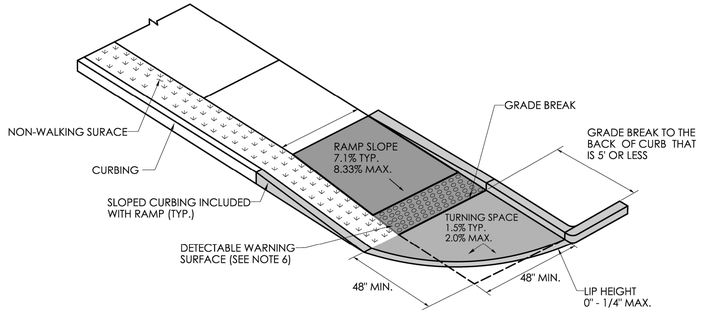


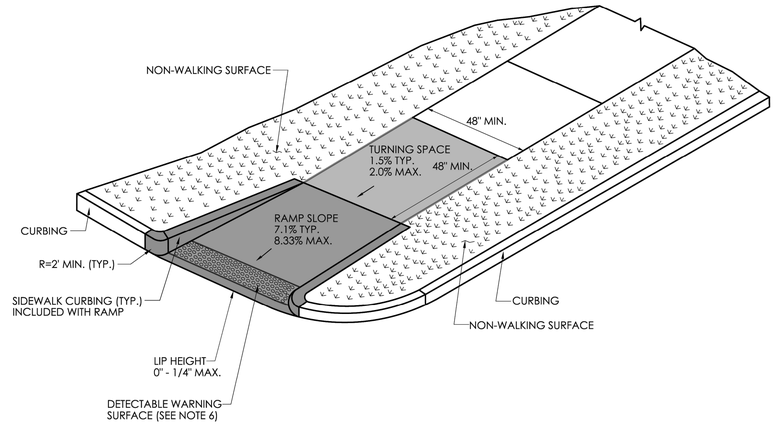
SINGLE DIRECTION PERPENDICULAR RAMP
GRADE BREAK TO THE BACK OF CURB
GREATER THAN 5'
(TYPE 14)



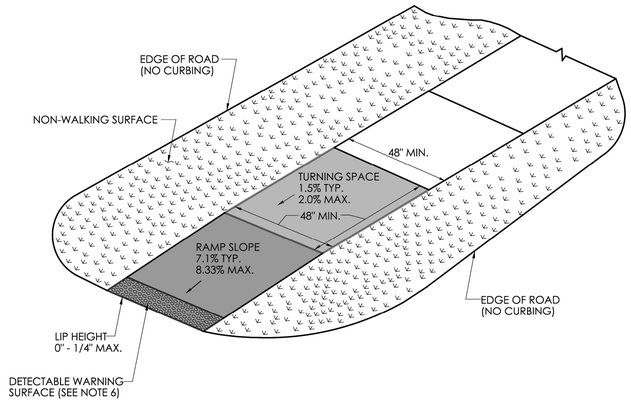
SINGLE DIRECTION PERPENDICULAR RAMP
WITH GRADE BREAK TO THE BACK
OF CURB THAT IS 5' OR LESS
(TYPE 15)

GENERAL NOTES:

1. SIDEWALK RAMPS SHALL HAVE A COARSE BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP.
2. VERTICAL SURFACE DISCONTINUITIES AT JOINTS SHALL NOT EXCEED ¼ INCH.
3. REMOVAL OF EXISTING SIDEWALK FOR NEW RAMP INSTALLATIONS SHALL BE TO THE NEAREST EXPANSION OR CONTRACTION JOINT.
4. THE RUNNING SLOPE OF THE CURB RAMP SHALL BE 8.33 PERCENT MAXIMUM BUT SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET.
5. DETECTABLE WARNING SURFACES SHALL BE INSTALLED ON SIDEWALK RAMPS AT PEDESTRIAN STREET CROSSINGS, PEDESTRIAN REFUGE ISLANDS AND RAILROAD CROSSINGS ALONG STREETS OR HIGHWAYS.
6. DETECTABLE WARNING SURFACES SHALL EXTEND 2 FEET MIN. IN THE DIRECTION OF PEDESTRIAN TRAVEL AND SPAN THE ENTIRE RAMP OPENING.
7. ALL GUIDESHEET VALUES COMPLY WITH PROWAG DRAFT 2013 GUIDELNES. UPDATED VALUES WILL BE MADE TO COMPLY WITH PROWAG FINAL RULE ONCE OFFICIALLY THE LAW.
8. CTDOT DESIGN STANDARD USE THE PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG) SEE ENGINEERING DIRECTIVE ED-2019-07.
9. CURB RAMPS SHALL BE CONSTRUCTED SO THAT WATER WILL NOT ACCUMLATE WITHIN THE PEDESTRIAN ACCESS ROUTE.



SINGLE DIRECTION PERPENDICULAR RAMP
RETURN CURB WITH NON-WALKING SURFACE
(TYPE 16)



SINGLE DIRECTION PERPENDICULAR RAMP
NO CURB WITH NON-WALKING SURFACE
(TYPE 17)

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:

DESIGNER/DRAFTER: CHECKED BY:

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: **TEST PROJECT**

TOWN(S): **VARIOUS**

DRAWING TITLE: **CONCRETE SIDEWALK RAMPS SHEET 6 OF 11**

PROJECT NO.:

DRAWING NO.:

SHEET NO.:

LASTED SAVED BY: klipatrickdj **FILE NAME:** C:\Users\klipatrickdj\State of Connecticut\DOT Engineering Services - Documents\HWY_STD_GUIDE_DWG\B - Going for signatures\Jan 2025 Stnd & Guide Shts\CTDOT_HIGHWAY_GD Jan 2025 [10-30-24].dgn
PLOTTED DATE: 10/30/2024

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	SCAPE LANDSCAPE ARCHITECTURE DPC 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	Tighe&Bond 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	eDESIGN DYNAMICS 247 W 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	AKRF 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT · CHARLES J. CROCKER · 26374 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · ANDREW P. WHITE · 27761 · LICENSED PROFESSIONAL ENGINEER
12/12/2025

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVALS

SHEET NAME

CTDOT HIGHWAY DESIGN GUIDE SHEET (2)

PROJECT NO	M5177-004
SCALE	NO SCALE
DRAWN BY	J.PAPROTA
CHECKED BY	K.McCUTCHAN
DATE	12/15/2025

SHEET NO

C-627

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GENERAL NOTES

GENERAL NOTES

1. THE DRAWINGS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS, AND EXISTING CONDITIONS - INCLUDING STRUCTURES, SURFACE AND SUBSURFACE UTILITIES, PAVEMENTS AND LANDSCAPE - AT SITE PRIOR TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES IN DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE, NO WORK SHALL PROCEED UNTIL A RESOLUTION HAS BEEN AGREED UPON TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.

2. LANDSCAPE DESIGN DOCUMENTS SHOULD BE USED FOR THE UNDERSTANDING OF LANDSCAPE ELEMENTS ONLY. INFORMATION FROM OTHER DISCIPLINES REPRESENTED IN THIS SET IS DIAGRAMMATIC ONLY. REFER TO SPECIFIC DISCIPLINE DOCUMENTS FOR ACCURATE INFORMATION AND DETAILS RELATED TO ALL WORK OTHER THAN LANDSCAPE.

3. THE SPECIFICATIONS CONTAIN ADDITIONAL REQUIREMENTS AND TOGETHER WITH THE DRAWINGS DESCRIBE THE PROJECT REQUIREMENTS. WHERE THERE ARE DISCREPANCIES BETWEEN THE SPECIFICATIONS AND THE DRAWINGS, THE CONTRACTOR SHALL ADVISE THE OWNER'S REPRESENTATIVE AND REQUEST A CLARIFICATION PRIOR TO COMMENCING WORK. ANY DEVIATIONS OR CHANGES IN THESE DRAWINGS WITHOUT WRITTEN ACCEPTANCE OF THE OWNER'S REPRESENTATIVE SHALL ABSOLVE THE OWNER'S REPRESENTATIVE OF ANY AND ALL RESPONSIBILITY OF SAID DEVIATION OR CHANGE.

4. THE EXISTING MATERIALS, CONDITIONS, LOCATIONS, AND ELEVATIONS ON THE DRAWINGS ARE BASED UPON SURVEY INFORMATION PROVIDED BY THE OWNER AND HAVE NOT BEEN VERIFIED BY THE LANDSCAPE ARCHITECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD MEASURE AND VERIFY LOCATIONS, TOPOGRAPHIC CONTOURS, SPOT ELEVATIONS, UTILITIES, AND OTHER EXISTING CONDITIONS IN THE FIELD PRIOR TO BIDDING AND CONSTRUCTION. NOTIFY THE OWNER AND LANDSCAPE ARCHITECT OF ANY DISCREPANCIES. THE LANDSCAPE ARCHITECT IS NOT LIABLE FOR ERRORS, OMISSIONS, NEGLIGENCE, ACTS, AND/OR WORK PRODUCT ARISING OUT OF OR RELATED TO MISSING OR INACCURATE SURVEY INFORMATION OR FAILURE TO VERIFY EXISTING CONDITIONS BY THE CONTRACTOR. THE BASIS OF DESIGN HAS BEEN ESTABLISHED BY THE INFORMATION PROVIDED IN THE FOLLOWING DOCUMENTS:

   SURVEY: *SHOREPOWER_25CS_TS_XREF_EMAIL.dwg*
   DATE: *SEPTEMBER 4, 2025*

5. EXISTING SOILS AND SUBSURFACE CONDITIONS ARE BASED UPON A GEOTECHNICAL REPORT *2025_10_20_Manresa Island_Geotech Engineering Report_Program Space.pdf* (DRAFT) PREPARED BY *AKRF, INC* AND DATED *OCTOBER 20, 2025* PROVIDED BY THE OWNER (*MANRESA ISLAND CORPORATION*) AND HAS NOT BEEN VERIFIED BY THE LANDSCAPE ARCHITECT. EARTHWORK, PAVEMENT PROFILES, SITE STRUCTURAL FOOTINGS AND FOUNDATIONS SHALL BE BASED UPON THIS REPORT.

6. PROPOSED NEW CONDITIONS SHOWN IN THESE DRAWINGS ARE PRESUMED TO BE ACCURATE BASED UPON AVAILABLE INFORMATION PROVIDED BY THE PROJECT TEAM. THE BASIS OF DESIGN HAS BEEN ESTABLISHED BY THE INFORMATION PROVIDED IN THE FOLLOWING DOCUMENTS:

   CIVIL: *M5177-004-C-DESN.dwg*

7. CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT A MINIMUM OF 10 BUSINESS DAYS PRIOR TO COMMENCEMENT OF WORK. PROVIDE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT WITH A PROPOSED SCHEDULE PRIOR TO BEGINNING WORK. KEEP THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT INFORMED OF THE PROGRESS OF WORK AND REPORT IMMEDIATELY ANY CHANGES TO THE SCHEDULE, DIFFICULTIES, DISCREPANCIES, OR PROBLEMS WITH THE INSTALLATION OF THE WORK.

8. PROTECT EXISTING FEATURES AND UTILITIES TO REMAIN DURING CONSTRUCTION UNTIL FINAL COMPLETION. IF LIVE UTILITIES ARE ENCOUNTERED WHICH WERE NOT INDICATED PREVIOUSLY, PROTECT THE SAME FROM DAMAGE AND IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE, AND AFFECTED UTILITY PROVIDER. DO NOT PROCEED UNTIL FURTHER INSTRUCTIONS ARE RECEIVED FROM THE OWNER'S REPRESENTATIVE.

9. THE PROJECT INVOLVES CONSTRUCTION ADJACENT TO EXISTING FACILITIES AND INCLUDES TRANSITIONS TO IMPROVEMENTS TO REMAIN AT THE LIMIT OF WORK. CONFLICTS BETWEEN NEW IMPROVEMENTS AND EXISTING IMPROVEMENTS TO REMAIN ARE TO BE CLARIFIED BY OWNER'S REPRESENTATIVE.

10. THE PROJECT INVOLVES CONSTRUCTION WITHIN EXISTING ROADWAY AND INFRASTRUCTURE SYSTEMS AND ADJACENT TO EXISTING FACILITIES WHICH ARE TO REMAIN OPERATIONAL AND ACCESSIBLE AT ALL TIMES. CONSTRUCTION IS TO BE PHASED PER THE CONSTRUCTION MANAGER OR AS OTHERWISE APPROVED BY THE OWNER'S REPRESENTATIVE.

11. THE LANDSCAPE ARCHITECT SHALL BE PERMITTED TO MAKE REASONABLE ADJUSTMENTS TO LAYOUT AND GRADING IN ACCORDANCE WITH APPLICATION CITY OF NORWALK ZONING REGULATIONS TO MEET THE DESIGN INTENT AND TO RESPOND TO DISCREPANCIES BETWEEN FIELD CONDITIONS AND DOCUMENTATION.

12. NO CHANGES SHALL BE MADE TO THE DESIGN OR LAYOUT WITHOUT THE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT WHICH APPROVAL SHALL NOT BE UNREASONABLY WITHHELD.

13. THESE DOCUMENTS ARE SUBJECT TO MODIFICATIONS DURING CONSTRUCTION SHOULD CONDITIONS ARISE THAT WERE NOT APPARENT DURING THEIR PREPARATION. ANY SUCH MODIFICATIONS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR ACCEPTANCE AND THE MUNICIPALITY AS MAY BE REQUIRED.

14. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS OR CODES AND THE APPLICABLE REQUIREMENTS OF ALL REGULATORY AGENCIES.

15. THE CONTRACTOR SHALL SECURE ALL REQUIRED PERMITS AND APPROVALS FROM LOCAL OR SUPERVISORY AUTHORITIES. POST ON THE SITE OR HAVE AVAILABLE FOR REVIEW BY INSPECTORS.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK WITH THE WORK OF OTHER CONTRACTORS AND SUBCONTRACTORS ON SITE, INCLUDING BUT NOT LIMITED TO IRRIGATION, CARPENTERS, PLUMBERS, AND ALL OTHER SPECIALTY TRADES. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS AND SCHEDULE OF GENERAL CONTRACTOR.

17. USE AND SECURITY OF CONTRACTOR'S STAGING AREA TO BE APPROVED BY THE OWNER'S REPRESENTATIVE. STAGING AREAS OUTSIDE PROJECT LIMIT OF WORK TO BE RESTORED TO ORIGINAL CONDITIONS.

MATERIALS AND LAYOUT NOTES

1. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.

2. DIMENSIONS ARE INDICATED ON PLANS FOR HORIZONTAL CONTROL ARE ACCURATE IF MEASURED ON A LEVEL LINE. MEASURE HORIZONTAL CONTROL DIMENSIONS ON A LEVEL LINE, NOT PARALLEL WITH GROUND SLOPE.

3. DIMENSIONS ARE TO FACE OF FINISH UNLESS OTHERWISE NOTED.

4. WHERE DIMENSIONS ARE NOTED TO BE VERIFIED IN FIELD (VIF) THE DIMENSION SHOWN IS THE DESIGN BASIS, BUT MAY DIFFER FROM ACTUAL CONDITIONS. CONTRACTOR SHALL VERIFY THESE DIMENSIONS WHILE LAYING OUT THE WORK AND REPORT ANY DISCREPANCIES BETWEEN THE DESIGN BASIS AND ACTUAL DIMENSIONS TO THE LANDSCAPE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK. WHERE DIMENSIONS ARE NOTED +/- FIELD DIMENSIONS MAY VARY FROM THE NOTED DIMENSIONS BY MINOR AMOUNTS.

5. ALL ITEMS SHOWN IN THESE DOCUMENTS ARE NEW UNLESS OTHERWISE NOTED.

6. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO CONSTRUCTION OF PAVEMENTS, CURBS, WALKS, STEPS, WALLS, RAILINGS, FENCING, FURNISHINGS, PLANTINGS, STRUCTURES, LIGHTING, MANUFACTURED SOILS AND OTHER ELEMENTS, DAILY CLEAN-UP, MAINTENANCE AND GUARANTEE.

7. VERIFY ALL DIMENSIONS AND SITE CONDITIONS IN THE FIELD, FOR AGREEMENT WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF THE LANDSCAPE ARCHITECT AND CONSTRUCTION MANAGER IN WRITING, PRIOR TO COMMENCEMENT OF WORK.

8. THE CONTRACTOR SHALL USE CARE DURING CONSTRUCTION TO AVOID DISTURBING OR DAMAGING ADJACENT STRUCTURES. EITHER SUB-GRADE OR ABOVE-GRADE, ANY DAMAGE TO EXISTING STRUCTURES RESULTING FROM CONSTRUCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

9. KEEP THE SITE CLEAN AND NEAT; REGULARLY WATER DOWN WORK ROADS AND AREAS ADJACENT TO THE SITE TO KEEP THEM FREE OF DUST AND AIR-BORN POLLUTANTS.

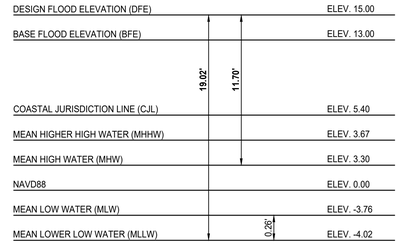
10. ALL QUESTIONS WHICH MAY ARISE AS TO THE QUALITY OF ACCEPTABILITY OF MATERIALS FURNISHED, WORK PERFORMED, PROGRESS OF THE WORK, INTERPRETATION OF DRAWINGS AND SPECIFICATIONS, AND ALL QUESTIONS AS TO ACCEPTABLE FULFILLMENT OF THE CONTRACT BY THE CONTRACTOR SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT IN WRITING FOR CLARIFICATION. SUCH QUESTIONS SHALL BE SUBMITTED WELL IN ADVANCE OF COMMENCING THE WORK IN QUESTION, OR IN THE CASE OF WORK THAT IS IN PROGRESS, SUCH WORK SHALL BE SUSPENDED UNTIL THE CONTRACTOR PROVIDES CLARIFICATION.

11. ALL WORK AND MATERIALS REJECTED BY THE LANDSCAPE ARCHITECT AS FAILING TO COMPLY THE CONTRACT DOCUMENTS SHALL BE PROMPTLY REMOVED, REPLACED, AND/OR RE-EXECUTED BY THE CONTRACTOR WITHOUT COST TO THE OWNER AND SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR WITHOUT COST TO THE OWNER AND SHALL INCLUDE MAKING GOOD ALL WORK OF THE CONTRACTOR AND OTHER CONTRACTORS DESTROYED OR DAMAGED BY SUCH REMOVAL OR REPLACEMENT.

12. WHERE NEW CONSTRUCTION ABUTS EXISTING CURB OR PAVEMENTS, THE EXISTING MATERIAL SHALL BE CLEANLY SAW CUT TO PROVIDE A FLUSH AND NEAT MATCH WITH NO TRIP HAZARD.

13. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL PAVEMENT LAYOUT AND PATTERN TO THE LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION, SHOP DRAWINGS ALL CLEARLY INDICATE ALL JOINTING, TYPICAL AND OTHERWISE, POINTS OF BEGINNING AND LOCATIONS OF UNIQUE CONDITIONS.

DATUM CHART (REFERENCE DATUM = NAVD88)



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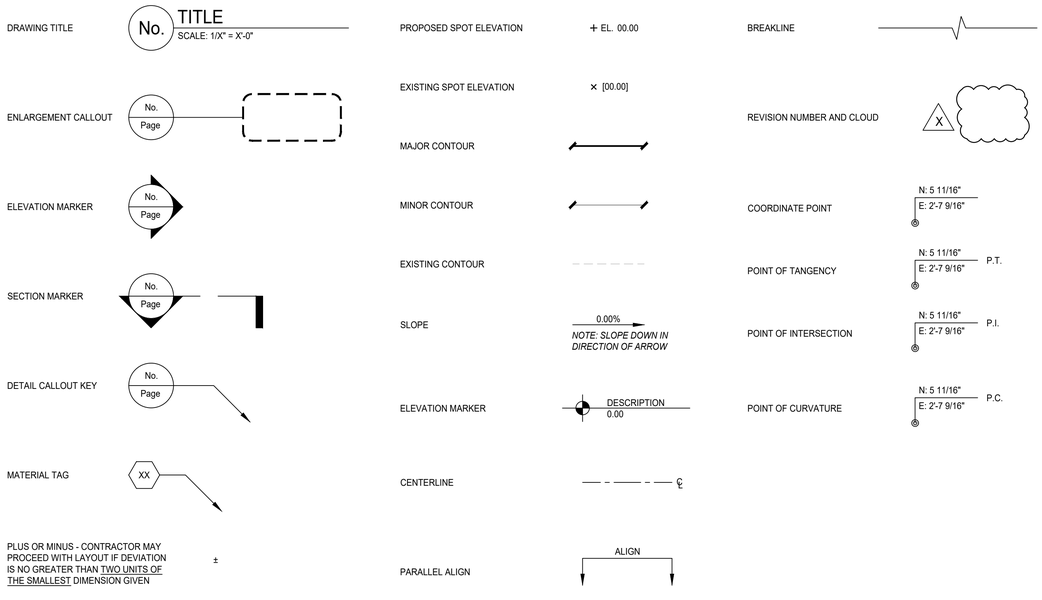
ABBREVIATIONS (LANDSCAPE SHEETS)

&	AND
@	AT
#	NUMBER
%	PERCENT
AC	ASPHALTIC CONCRETE
AD	AREA DRAIN
ADJ	ADJACENT
AGG	AGGREGATE
ALT	ALTERNATE / ALTERNATIVE
APPROX	APPROXIMATE
ARCH	ARCHITECTURE
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
AVG	AVERAGE
B&B	BALLED AND BURLAPPED
BC	BOTTOM OF CURB
BFE	BASE FLOOD ELEVATION
BLDG	BUILDING
BR	BOTTOM OF RAMP
BS	BOTTOM OF STEP
BTH	BROWN TRUNK HEIGHT
BTWN	BETWEEN
BW	BOTTOM OF WALL
CAL	CALIPER
CF	CUBIC FEET
CIP	CAST IN PLACE
CIR	CIRCLE
CJ	CONTROL JOINT
CJL	COASTAL JURISDICTION LINE
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CNJ	CONSTRUCTION JOINT
CONC	CONCRETE
CONT	CONTAINER
CONT	CONTINUOUS
COORD	COORDINATE
CORP	CORPORATION
CSS	CRUSHED STONE SCREENINGS
CRZ	CRITICAL ROOT ZONE
CUP	CONCRETE UNIT PAVEMENT
CY	CUBIC YARDS
DBH	DIAMETER AT BREAST HEIGHT
DF	DRINKING FOUNTAIN
DFE	DESIGN FLOOD ELEVATION
DI	DRAIN INLET
DIA, ø	DIAMETER
DIM	DIMENSION
DN	DOWN
DTL	DETAIL
DWG(S)	DRAWINGS
E	EAST
EA	EACH
ELEC	ELECTRIC
EL, ELEV	ELEVATION
ENG	ENGINEER
ETC	ETCETERA
EW	EACH WAY
EQ	EQUAL
EX	EXISTING
FDC	FIRE DEPARTMENT CONNECTIONS
FFE	FINISH FLOOR ELEVATION
FF&E	FURNITURE, FIXTURES AND EQUIPMENT
FG	FINISH GRADE
FIN	FINISH
FS	FINISH SURFACE
FT	FEET OR FOOT
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BREAK
GH	GROUND HYDRANT
HDG	HOT DIP GALVANIZED
HT	HEIGHT
HOR	HORIZONTAL, HORIZONTALLY
HP	HIGH POINT
HSS	HOLLOW STRUCTURAL SECTIONS
ID	INSIDE DIAMETER
IJ	ISOLATION JOINT
IN	INCH OR INCHES
INFO	INFORMATION
INV	INVERT
JB	JUNCTION BOX
JT	JOINT
L	LENGTH
LA	LANDSCAPE ARCHITECT
LB(S)	POUND(S)
LF	LINEAR FEET
LOW	LIMIT OF WORK
LP	LOW POINT
MAX	MAXIMUM
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MECH	MECHANICAL
MTL	METAL
MH	MANHOLE
MHW	MEAN HIGH WATER
MHHW	MEAN HIGHER HIGH WATER
MIN	MINIMUM
MISC	MISCELLANEOUS
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
MFR	MANUFACTURER
N	NORTH
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OD	OUTSIDE DIAMETER
OF/CI	OWNER FURNISHED/CONTRACTOR INSTALLED
OPP	OPPOSITE
PA	PLANTING AREA
PCF	POUND PER CUBIC FEET
PED	PEDESTRIAN
PERF	PERFORATED
PERP	PERPENDICULAR
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
PREFAB	PREFABRICATED
PSF	POUND PER SQUARE FEET
PSI	POUND PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLY VINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
REBAR	REINFORCING BAR
REF	REFERENCE
REINF	REINFORCED
REP	REPRESENTATIVE
REQ	REQUIREMENT
RET	RETAINING
REV	REVISION
RIM	RIM ELEVATION OF UTILITY STRUCTURE
RO	ROUGH OPENING
RPL	RECYCLED PLASTIC LUMBER
ROW	RIGHT-OF-WAY
S	SOUTH
SAD	SEE ARCHITECTURAL DRAWINGS
SCHED	SCHEDULE
SF	SQUARE FEET
SIM	SIMILAR
SJ	SCORE JOINT
SK	SKETCH
SP	SPACES
SPEC(S)	SPECIFICATION(S)
SOG	SLAB ON GRADE
SQ	SQUARE
SS	STAINLESS STEEL
SSD	SEE STRUCTURAL DRAWINGS
STD	STANDARD
STL	STEEL
STRUC	STRUCTURAL
S/W	STORMWATER
SY	SQUARE YARD
T&B	TOP AND BOTTOM
TBD	TO BE DETERMINED
TC	TOP OF CURB
TD	TRENCH DRAIN
TEMP	TEMPORARY
TF	TOP OF FOOTING
TG	TOP OF GRATE
THK	THICK
THRU	THROUGH
TOF	TOP OF FOOTING
TOS	TOP OF STRUCTURE
TPZ	TREE PROTECTION ZONE
TR	TOP OF RAMP
TS	TOP OF STEP / STAIR
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VAR	VARIES
VEH	VEHICULAR
VERT	VERTICAL, VERTICALLY
VIF	VERIFY IN FIELD
W	WEST
W/	WITH
WL	WATER LEVEL
W/O	WITHOUT
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
WPM	WATERPROOF MEMBRANE

SYMBOL LEGEND (LANDSCAPE SHEETS)



SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

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ENVIRONMENTAL — **A K R F**, 440 PARK AVENUE SOUTH, 7TH FLR, NEW YORK, NY 10016, T+ 212 696 0670

NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL



THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVAL

SHEET NAME

GENERAL NOTES AND ABBREVIATIONS

PROJECT NO	2349.1
SCALE	NTS
DRAWN BY	SCAPE
CHECKED BY	SCAPE
DATE	12/15/2025

SHEET NO **L-001**

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TREE PROTECTION SCHEDULE

EXISTING TREES

TREE NO	SPECIES	DBH	STATUS
0	B	12"	REMAIN
1	B	8"	REMAIN
2	B	TW 12"	REMAIN
3	CO	14"	REMAIN
4	B	14"	REMAIN
5	B	8"	PROTECT
6	B	8"	SPECIMEN
7	B	10"	REMAIN
8	B	10"	REMAIN
9	B	8"	REMAIN
10	B	10"	REMAIN
11	B	10"	REMAIN
12	B	TW 8"	REMAIN
13	B	12"	REMAIN
14	B	8"	REMAIN
15	B	10"	REMAIN
16	B	8"	REMAIN
17	B	8"	REMAIN
18	B	14"	REMAIN
19	B	10"	REMAIN
20	B	TW 12"	REMAIN
21	B	8"	REMAIN
22	B	8"	REMAIN
23	B	12"	REMAIN
24	B	TW 12"	REMAIN
25	B	TW 12"	REMAIN
26	B	14"	REMAIN
27	B	12"	REMAIN
28	B	12"	REMAIN
29	O	22"	REMAIN
30	B	8"	REMAIN
31	B	14"	REMAIN
32	B	12"	REMAIN
33	B	8"	REMAIN
34	B	TW 8"	REMAIN
35	B	8"	REMAIN
36	B	8"	REMAIN
37	B	8"	REMAIN
38	B	8"	REMAIN
39	B	8"	REMAIN
40	B	10"	REMAIN
41	B	8"	REMAIN
42	B	8"	PROTECT
43	B	8"	PROTECT
44	B	12"	PROTECT
45	B	14"	REMAIN
46	B	12"	REMAIN
47	B	12"	REMAIN
48	B	8"	REMAIN
49	B	8"	REMAIN
50	B	12"	PROTECT
51	B	8"	REMAIN
52	B	8"	REMAIN
53	B	8"	REMAIN
54	B	8"	REMAIN
55	B	8"	PROTECT
56	B	TW 8"	PROTECT
57	B	8"	REMAIN
58	B	TW 8"	REMAIN
59	O	10"	REMAIN
60	O	24"	REMAIN
61	B	12"	REMAIN
62	B	10"	REMAIN
63	B	TW 10"	REMAIN
64	B	8"	REMAIN
65	B	8"	REMAIN
66	B	8"	REMAIN
67	B	8"	REMAIN
68	B	10"	REMAIN
69	B	12"	REMAIN
70	B	TW 14"	REMAIN
71	B	8"	REMAIN
72	B	10"	REMAIN
73	B	10"	REMAIN
74	B	8"	REMAIN
75	B	10"	REMAIN
76	CO	30"	REMAIN
77	B	TR 12"	REMAIN
78	B	18"	REMAIN
79	B	12"	REMAIN
80	B	14"	REMAIN
81	B	8"	PROTECT
82	B	10"	REMAIN
83	B	10"	REMAIN
84	B	10"	PROTECT
85	B	8"	PROTECT
86	B	10"	SPECIMEN
87	LO	10"	SPECIMEN
88	B	TW 16"	SPECIMEN
89	B	14"	SPECIMEN
90	B	12"	SPECIMEN
91	B	18"	SPECIMEN
92	B	14"	REMAIN
93	B	8"	SPECIMEN
94	B	18"	SPECIMEN
95	B	8"	REMOVE
96	B	10"	PROTECT
97	CA	10"	PROTECT
98	B	TW 10"	PROTECT
99	B	14"	SPECIMEN
100	B	12"	PROTECT
101	B	12"	PROTECT
102	B	10"	PROTECT
103	B	TW 12"	PROTECT
104	B	16"	PROTECT
105	B	10"	PROTECT
106	B	10"	SPECIMEN
107	B	10"	PROTECT
108	CA	TW 14"	PROTECT
109	CA	12"	PROTECT
110	CA	8"	PROTECT
111	B	12"	PROTECT
112	B	10"	PROTECT
113	B	TW 12"	PROTECT
114	B	TR 8"	PROTECT
115	B	TR 8"	PROTECT
116	CA	8"	PROTECT
117	B	10"	REMAIN
118	B	8"	REMAIN
119	C	10"	REMAIN
120	O	TW 24"	SPECIMEN
121	B	12"	PROTECT
122	B	TR 16"	REMAIN
123	B	10"	REMAIN
124	B	8"	REMAIN
125	B	14"	REMAIN
126	B	12"	REMAIN
127	C	12"	REMAIN
128	CO	TW 14"	REMAIN
129	B	8"	REMAIN
130	B	12"	REMAIN
131	B	16"	REMAIN
132	CA	12"	REMAIN
133	B	12"	REMAIN
134	C	8"	REMAIN
135	B	14"	REMAIN
136	CA	10"	REMAIN
137	B	26"	REMAIN
138	B	8"	REMAIN
139	B	12"	REMAIN
140	B	16"	REMAIN
141	C	8"	REMAIN
142	C	8"	REMAIN
143	B	10"	REMAIN
144	CO	18"	REMAIN
145	B	8"	REMAIN
146	CO	16"	REMAIN
147	CO	40"	REMAIN
148	CO	18"	REMAIN
149	B	14"	REMAIN
150	CA	TW 8"	REMAIN
151	CA	8"	REMAIN
152	CA	8"	REMAIN
153	CA	10"	REMAIN
154	CA	TW 10"	PROTECT
155	CA	8"	PROTECT
156	CA	10"	REMAIN
157	CA	10"	REMAIN
158	CA	10"	REMAIN
159	CA	10"	REMAIN
160	B	8"	REMAIN
161	B	8"	REMAIN
162	B	12"	REMAIN
163	B	10"	REMAIN
164	B	TW 8"	REMAIN
165	C	8"	REMAIN
166	B	18"	REMAIN
167	B	16"	REMAIN
168	C	10"	REMAIN
169	B	MU 12"	REMAIN
170	O	8"	REMAIN
171	B	12"	REMAIN
172	CO	TW 18"	REMAIN
173	B	TR 12"	PROTECT
174	B	TW 16"	PROTECT
175	B	22"	REMAIN
176	C	10"	REMAIN
177	C	14"	REMAIN
178	C	14"	REMAIN
179	B	20"	REMAIN
180	C	TW 16"	REMAIN
181	B	12"	REMAIN
182	B	16"	REMAIN
183	C	18"	REMAIN
184	B	TR 18"	REMAIN
185	B	12"	PROTECT
186	B	10"	PROTECT
187	B	12"	PROTECT
188	B	12"	PROTECT
189	CO	14"	REMAIN
190	W	16"	PROTECT
191	B	12"	PROTECT
192	B	16"	REMAIN
193	CA	8"	REMAIN
194	B	8"	REMAIN
195	CA	TW 12"	REMAIN
196	C	16"	REMAIN
197	B	12"	REMAIN
198	B	10"	REMAIN
199	C	8"	REMAIN
200	C	10"	REMAIN
201	C	10"	REMAIN
202	B	10"	REMAIN
203	B	14"	REMAIN
204	B	12"	REMAIN
205	B	14"	REMAIN
206	B	14"	REMAIN
207	B	12"	REMAIN
208	CA	14"	REMAIN
209	CO	TW 12"	REMAIN
210	B	12"	REMAIN
211	B	12"	REMAIN
212	B	12"	REMAIN
213	B	16"	REMAIN
214	B	12"	PROTECT
215	B	10"	PROTECT
216	C	14"	REMAIN
217	B	12"	PROTECT
218	B	12"	PROTECT
219	B	14"	PROTECT
220	B	12"	PROTECT
221	M	TW 14"	REMOVE
222	B	12"	PROTECT
223	B	10"	PROTECT
224	B	8"	PROTECT
225	B	8"	PROTECT
226	B	10"	PROTECT
227	B	8"	PROTECT
228	B	8"	PROTECT
229	B	16"	PROTECT
230	B	8"	REMAIN
231	B	8"	PROTECT
232	B	14"	REMOVE
233	B	22"	PROTECT
234	B	TR 12"	PROTECT
235	B	TW 8"	PROTECT
236	B	20"	PROTECT
237	B	10"	REMAIN
238	B	12"	REMAIN
239	B	10"	REMAIN
240	B	8"	REMAIN
241	B	12"	REMAIN
242	B	8"	REMAIN
243	B	16"	REMAIN
244	B	8"	REMAIN
245	B	12"	REMAIN
246	B	10"	REMAIN
247	B	10"	PROTECT
248	B	10"	PROTECT
249	B	8"	PROTECT
250	B	12"	PROTECT
251	B	10"	PROTECT
252	B	10"	PROTECT
253	B	14"	PROTECT
254	B	14"	REMAIN
255	B	8"	REMAIN
256	B	8"	REMAIN
257	B	10"	REMAIN
258	B	8"	PROTECT
259	B	12"	REMAIN
260	B	8"	PROTECT
261	B	10"	PROTECT
262	B	8"	PROTECT
263	B	20"	REMOVE
264	B	8"	REMAIN
265	B	10"	PROTECT
266	B	10"	PROTECT
267	B	8"	PROTECT
268	B	8"	REMAIN
269	B	8"	REMAIN
270	B	8"	REMAIN
271	B	10"	PROTECT
272	B	10"	PROTECT
273	B	10"	REMAIN
274	B	10"	REMAIN
275	B	8"	REMAIN
276	B	8"	REMAIN
277	B	10"	REMAIN
278	B	8"	REMAIN
279	B	8"	REMAIN
280	B	12"	REMAIN
281	B	12"	REMAIN
282	B	12"	REMAIN
283	B	14"	REMAIN
284	B	8"	REMAIN
285	B	12"	REMAIN
286	C	12"	REMAIN
287	C	12"	REMAIN
288	B	10"	REMAIN
289	B	10"	REMAIN
290	B	10"	REMAIN
291	B	10"	REMAIN
292	B	8"	REMAIN
293	B	16"	PROTECT
294	B	8"	REMAIN
295	B	TR 8"	REMAIN
296	B	10"	REMAIN
297	B	TW 8"	REMAIN
298	B	8"	REMAIN
299	C	12"	REMAIN
300	B	12"	REMAIN
301	B	14"	REMAIN
302	B	12"	REMAIN
303	B	8"	REMAIN
304	B	10"	REMAIN
305	B	10"	REMAIN
306	B	10"	REMAIN
307	B	8"	REMAIN
308	B	10"	PROTECT
309	O	16"	REMAIN
310	B	8"	REMAIN
311	CA	10"	REMAIN
312	CA	10"	REMAIN
313	CA	14"	PROTECT
314	C	14"	REMAIN
315	CA	12"	REMAIN
316	B	10"	REMAIN
317	B	16"	REMAIN
318	B	12"	REMAIN
319	B	8"	REMAIN
320	B	14"	REMAIN
321	B	14"	REMAIN
322	B	12"	REMAIN
323	B	12"	REMAIN
324	B	8"	REMAIN
325	B	14"	REMAIN
326	B	14"	REMAIN
327	B	12"	REMAIN
328	B	TW 10"	REMAIN
329	B	TR 12"	REMAIN
330	B	8"	REMAIN
331	B	12"	REMAIN
332	O	8"	REMAIN
333	CA	16"	REMAIN
334	B	14"	REMAIN
335	B	8"	REMAIN
336	B	12"	REMAIN
337	B	12"	REMAIN
338	B	10"	REMAIN
339	B	10"	REMAIN
340	B	12"	REMAIN
341	C	12"	REMAIN
342	CA	TW 10"	REMAIN
343	CA	TW 10"	REMAIN
344	AL	10"	REMAIN
345	B	10"	REMAIN
346	B	10"	REMAIN
347	B	10"	PROTECT
348	B	8"	PROTECT
349	B	10"	PROTECT
350	B	26"	REMAIN
351	B	24"	PROTECT
352	B	12"	PROTECT
353	B	14"	PROTECT
354	B	14"	PROTECT
355	B	12"	PROTECT
356	CA	TW 10"	PROTECT
357	C	14"	SPECIMEN
358	B	14"	PROTECT
359	B	12"	PROTECT
360	B	TW 10"	PROTECT
361	CA	TW 10"	REMOVE
362	B	8"	REMOVE
363	B	8"	REMOVE
364	B	12"	REMOVE
365	B	12"	PROTECT
366	CA	TW 12"	PROTECT
367	B	TW 10"	REMAIN
368	B	10"	REMAIN
369	B	8"	PROTECT
370	B	16"	REMAIN
371	B	10"	REMAIN
372	B	12"	REMAIN
373	B	8"	REMAIN
374	B	12"	REMAIN
375	B	8"	REMAIN
376	B	10"	PROTECT
377	B	8"	REMAIN
378	B	10"	REMAIN
379	B	10"	REMAIN
380	B	8"	REMAIN
381	B	8"	REMAIN
382	B	8"	REMAIN
383	B	12"	PROTECT
384	B	TR 12"	SPECIMEN
385	B	14"	SPECIMEN
386	B	8"	REMAIN
387	B	18"	REMAIN
388	CA	MU 8"	REMAIN
389	C	10"	REMAIN
390	C	10"	REMAIN
391	B	14"	REMAIN
392	C	8"	REMAIN
393	C	10"	REMAIN
394	B	18"	REMAIN
395	B	10"	REMAIN
396	B	18"	REMAIN
397	CA	8"	REMAIN
398	AL	16"	REMOVE
399	B	8"	REMOVE
400	B	12"	PROTECT
401	B	8"	PROTECT
402	C	8"	PROTECT
403	B	8"	PROTECT
404	B	10"	PROTECT
405	B	12"	REMAIN
406	B	10"	REMAIN
407	B	10"	REMAIN
408	B	8"	REMAIN
409	B	12"	PROTECT
410	B	8"	PROTECT
411	B	10"	PROTECT
412	B	TW 12"	PROTECT
413	B	TR 14"	PROTECT
414	B	TW 12"	SPECIMEN
415	B	14"	REMOVE
416	O	14"	SPECIMEN
417	B	TR 16"	SPECIMEN
418	B	8"	PROTECT
419	B	8"	REMOVE
420	B	MU 12"	SPECIMEN
421	B	8"	REMAIN
422	B	TW 14"	REMAIN
423	B	8"	REMAIN
424	O	36"	SPECIMEN
425	B	TW 10"	SPECIMEN
426	AL	16"	PROTECT
427	AL	12"	PROTECT
428	AL	12"	REMOVE
429	B	TR 12"	REMOVE
430	B	14"	SPECIMEN
431	B	14"	SPECIMEN
432	AL	16"	PROTECT
433	B	12"	REMAIN
434	B	14"	REMAIN
435	B	12"	PROTECT
436	B	8"	REMOVE
437	B	TW 10"	REMOVE
438	B	TW 16"	REMOVE
439	B	12"	PROTECT
440	B	8"	PROTECT
441	O	16"	SPECIMEN
442	B	TW 10"	PROTECT
443	B	10"	PROTECT
444	B	10"	PROTECT
445	B	10"	PROTECT
446	B	8"	PROTECT
447	B	12"	PROTECT
448	B	TW 8"	PROTECT
449	B	12"	REMAIN
450	B	10"	REMAIN
451	B	12"	REMAIN
452	B	12"	REMAIN
453	O	18"	REMAIN
454	O	18"	REMAIN
455	B	TR 8"	PROTECT
456	CA	TR 12"	PROTECT
457	C	12"	PROTECT
458	CA	TW 8"	PROTECT
459	B	TR 10"	PROTECT
460	B	8"	REMOVE
461	B	10"	REMAIN
462	B	12"	REMAIN
463	B	12"	REMAIN
464	C	10"	REMAIN
465	B	10"	REMAIN
466	B	10"	REMAIN
467	B	12"	REMAIN
468	B	10"	REMAIN
469	B	10"	REMAIN
470	B	TW 14"	REMAIN
471	B	8"	REMAIN
472	C	10"	REMAIN
473	B	12"	REMAIN
474	C	8"	REMAIN
475	CA	10"	REMAIN
476	B	12"	REMAIN
477	CO	TR 8"	REMAIN
478	C	10"	REMAIN
479	CO	TW 12"	REMAIN
480	CA	TW 12"	PROTECT
481	B	18"	PROTECT
482	CA	10"	PROTECT
483	B	14"	PROTECT
484	B	10"	PROTECT
485	B	10"	PROTECT
486	CO	16"	PROTECT
487	CA	10"	REMAIN
488	B	16"	REMAIN
489	CO	12"	REMAIN
490	CO	10"	REMAIN
491	B	8"	REMAIN
492	B	14"	PROTECT
493	B	12"	REMAIN
494	AL	30"	PROTECT
495	CO	10"	REMAIN
496	B	10"	REMAIN
497	B	12"	REMAIN
498	B	12"	REMAIN
499	C	TR 8"	REMAIN
500	B	10"	REMAIN
501	B	12"	REMAIN
502	B	12"	REMAIN
503	B	8"	REMAIN
504	B	10"	REMAIN
505	B	12"	REMAIN
506	AL	12"	REMAIN
507	B	10"	REMAIN
508	CO	14"	REMAIN
509	CO	16"	REMAIN
510	B	10"	REMAIN
511	B	12"	REMAIN
512	B	10"	REMAIN
513	B	10"	REMAIN
514	B	10"	REMAIN
515	B	TR 10"	REMAIN
516	B	8"	REMAIN
517	B	8"	REMAIN
518	B	10"	REMAIN
519	B	8"	REMAIN
520	B	8"	REMAIN
521	B	8"	REMAIN
522	B	14"	REMAIN
523	B	TW 16"	REMAIN
524	B	12"	REMAIN
525	B	10"	REMAIN
526	B	TW 8"	REMAIN
527	B	TW 12"	REMAIN
528	B	8"	REMAIN
529	B	8"	REMAIN
530	B	10"	REMAIN
531	B	8"	REMAIN
532	B	8"	REMAIN
533	B	14"	REMAIN
534	B	10"	REMAIN
535	B	10"	REMAIN
536	O	10"	REMAIN
537	O	10"	REMAIN
538	B	8"	REMAIN
539	C	8"	REMAIN
540	CO	TW 22"	REMAIN
541	B	8"	REMAIN
542	B	10"	REMAIN
543	B	10"	REMAIN
544	B	10"	REMAIN
545	B	10"	REMAIN
546	CO	14"	PROTECT
547	B	TR 12"	PROTECT
548	B	18"	PROTECT
549	B	10"	REMOVE
550	B	TW 8"	PROTECT
551	B	TW 8"	REMAIN
552	B	12"	PROTECT
553	B	10"	PROTECT
554	B	12"	PROTECT
555	B	12"	REMAIN
556	B	16"	REMAIN
557	B	10"	REMAIN
558	B	TR 12"	REMAIN
559	B	10"	REMAIN
560	B	8"	REMAIN
561	B	10"	REMAIN
562	CO	TW 22"	REMAIN
563	B	10"	REMAIN
564	B	10"	REMAIN
565	B	8"	REMAIN
566	B	8"	REMAIN
567	B	14"	REMAIN
568	B	12"	REMAIN
569	B	8"	REMAIN
570	B	16"	REMAIN
571	B	8"	REMAIN
572	B	10"	REMAIN
573	B	14"	REMAIN
574	B	10"	REMAIN
575	C	8"	PROTECT
576	B	TW 8"	REMAIN
577	B	10"	REMAIN
578	B	TR 10"	REMAIN
579	C	10"	REMAIN
580	B	12"	REMAIN
581	B	16"	REMAIN
582	C	12"	REMAIN
583	B	8"	REMAIN
584	B	10"	REMAIN
585	B	10"	REMAIN
586	B	TW 10"	REMAIN
587	B	8"	PROTECT
588	B	10"	PROTECT
589	B	MU 12"	PROTECT
590	B	TR 12"	PROTECT
591	B	TW 14"	PROTECT
592	CA	MU 10"	PROTECT
593	C	10"	PROTECT
594	B	TW 16"	REMAIN
595	B	14"	PROTECT
596	B	8"	REMAIN
597	B	12"	REMAIN
598	B	10"	REMAIN
599	B	12"	REMAIN
600	B	18"	REMAIN
601	B	8"	PROTECT
602	CO	18"	PROTECT
603	B	8"	REMAIN
604	B	8"	REMOVE
605	B	16"	REMOVE
606	B	10"	REMOVE
607	B	22"	REMAIN
608	C	10"	REMAIN
609	C	10"	PROTECT
610	CA	MU 8"	REMAIN
611	B	10"	REMAIN
612	B	10"	PROTECT
613	CO	TW 14"	REMAIN
614	C	14"	REMAIN
615	CO	18"	REMAIN
616	B	12"	REMAIN
617	B	12"	PROTECT
618	B	10"	PROTECT
619	B	8"	PROTECT
620	B	14"	PROTECT
621	B	12"	PROTECT
622	B	12"	REMOVE
623	B	12"	PROTECT
624	B	10"	PROTECT
625	B	8"	REMAIN
626	B	10"	REMAIN
633	B	12"	REMAIN
634	B	10"	REMAIN
635	B	10"	REMAIN
636	B	TW 24"	REMAIN
637	CO	14"	REMAIN
638	B	18"	REMAIN
639	B	20"	REMAIN
640	B	8"	PROTECT
641	CA	8"	PROTECT
642	M	16"	PROTECT
643	B	12"	PROTECT
644	B	10"	PROTECT
645	C	8"	REMOVE
646	B	12"	REMAIN
647	B	8"	PROTECT
648	B	12"	REMAIN
649	B	12"	PROTECT
650	B	10"	PROTECT
651	C	10"	PROTECT
652	B	14"	REMOVE
653	CO	38"	SPECIMEN
654	B	8"	PROTECT
655	B	8"	PROTECT
656	B	10"	PROTECT
657	B	12"	PROTECT
658	B	8"	PROTECT
659	B	8"	PROTECT
660	B	8"	REMAIN
661	B	12"	REMAIN
662	B	14"	REMAIN
663	B	10"	REMAIN
664	B	TW 10"	REMAIN
665	CA	10"	PROTECT
666	B	14"	REMAIN
667	M	14"	REMAIN
668	B	8"	REMAIN
669	B	8"	PROTECT
670	B	10"	PROTECT
671	B	10"	REMOVE
672	B	22"	PROTECT
673	B	8"	PROTECT
674	B	8"	PROTECT
675	B	22"	SPECIMEN
676	CO	18"	REMOVE
677	CO	20"	REMOVE
678	B	10"	REMOVE
679	B	12"	REMOVE
680	B	TW 8"	REMOVE
681	B	10"	REMOVE
682	B	8"	PROTECT
683	C	8"	PROTECT
684	B	10"	PROTECT
685	YP	14"	PROTECT
686	B	10"	PROTECT
687	CO	TW 20"	PROTECT
688	B	8"	PROTECT
689	O	10"	REMAIN
690	B	8"	REMAIN
691	B	8"	REMAIN
692	B	12"	REMAIN
693	B	8"	REMAIN
694	CO	18"	PROTECT
695	B	10"	PROTECT
696	B	8"	PROTECT
697	B	12"	PROTECT
698	B	TW 8"	REMAIN
699	CO	20"	REMAIN
700	B	12"	REMAIN
701	B	8"	REMAIN
702	B	8"	REMAIN
703	M	24"	REMAIN
704	CO	32"	REMAIN
705	C	10"	REMAIN
706	B	12"	REMOVE
707	B	12"	REMOVE
708	B	14"	REMOVE
709	B	10"	REMAIN
710	B	10"	REMAIN
711	B	12"	REMAIN
712	B	12"	REMAIN
713	B	14"	REMAIN
714	B	16"	PROTECT
715	B	12"	PROTECT
716	B	12"	PROTECT
717	B	14"	PROTECT
718	B	TW 14"	PROTECT
719	CO	10"	PROTECT
720	B	10"	PROTECT
721	B	10"	REMOVE
722	B	10"	REMOVE
723	B	8"	REMOVE
724	B	8"	REMOVE
725	B	10"	REMOVE
726	CA	10"	PROTECT
727	B	14"	REMOVE
728	B	TW 12"	REMAIN
729	B	12"	REMAIN
730	B	14"	REMAIN
731	B	10"	REMAIN
732	B	8"	REMAIN
733	B	10"	REMAIN
734	B	10"	REMAIN
735	B	8"	REMAIN
736	B	10"	REMAIN
737	B	10"	REMAIN
738	B	8"	REMAIN
739	B	8"	REMAIN
740	B	8"	REMAIN
741	B	8"	REMAIN
742	B	12"	REMAIN
743	B	8"	REMAIN
744	B	10"	REMAIN
745	B	16"	REMAIN
746	B	8"	REMAIN
747	B	8"	REMAIN
748	B	10"	PROTECT
749	B	12"	REMAIN
750	C	10"	REMAIN
751	B	8"	REMAIN
752	B	12"	REMAIN
753	B	10"	REMAIN
754	B	10"	REMAIN
755	B	14"	REMAIN
756	B	22"	REMAIN
757	B	12"	REMOVE
758	B	12"	PROTECT
759	B	14"	REMAIN
760	CA	TW 8"	REMAIN
761	B	8"	REMAIN
762	B	8"	REMAIN
763	B	14"	REMAIN
764	B	8"	REMAIN
765	B	14"	REMAIN
766	B	TW 12"	REMAIN
767	B	8"	REMAIN
768	B	10"	REMAIN
769	B	12"	REMAIN
770	B	8"	REMAIN
771	B	8"	REMAIN
772	B	TW 8"	REMAIN
773	B	10"	REMAIN
774	B	12"	REMAIN
775	B	10"	REMAIN
776	B	10"	REMAIN
777	B	8"	REMAIN
778	B	10"	REMAIN
779	B	10"	REMAIN
780	B	8"	REMAIN
781	B	10"	REMAIN
782	B	8"	REMAIN
783	B	8"	REMAIN
784	B	10"	REMAIN
785	B	12"	REMOVE
786	CO	24"	REMOVE
787	B	8"	REMOVE
788	B	8"	REMOVE
789	B	8"	REMOVE
790	B	10"	REMOVE
791	B	12"	REMOVE
792	B	10"	REMOVE
793	B	8"	REMOVE
794	B	8"	REMOVE
795	B	8"	REMAIN
796	B	8"	REMAIN
797	B	8"	REMAIN
798	B	12"	REMAIN
799	B	8"	REMAIN
800	B	14"	REMAIN
801	CA	8"	REMOVE
802	B	12"	REMOVE
803	B	10"	REMOVE
804	B	10"	REMOVE
805	M	14"	REMOVE
806	B	14"	REMOVE
807	B	8"	REMOVE
808	B	8"	REMOVE
809	CO	14"	REMOVE
810	B	8"	REMOVE
811	B	8"	REMOVE
812	B	8"	REMOVE
813	B	8"	REMOVE
814	B	8"	REMOVE
815	B	8"	REMOVE
816	B	8"	REMOVE
817	B	8"	REMOVE
818	B	8"	REMOVE
819	B	8"	REMOVE
820	B	8"	REMOVE
821	B	8"	REMOVE
822	B	10"	REMOVE
823	B	8"	REMOVE
824	B	10"	REMOVE
825	B	8"	REMOVE
826	B	8"	REMOVE
827	B	8"	REMOVE
828	B	8"	REMOVE
829	B	TW 8"	REMOVE
830	B	8"	REMOVE
831	B	8"	REMOVE
832	B	TW 10"	REMOVE
833	B	8"	REMOVE
834	B	8"	REMOVE
835	B	8"	REMOVE
836	B	8"	REMOVE
837	B	10"	REMOVE
838	B	8"	REMOVE
839	B	10"	PROTECT
840	B	8"	PROTECT
841	B	12"	REMAIN
842	B	8"	REMAIN

TREE PROTECTION AND REMOVAL NOTES

1. SEE **SHEET L-001** FOR GENERAL NOTES AND ABBREVIATIONS.
2. SEE LANDSCAPE PROTECTION SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. NO DEMOLITION OR REMOVALS SHALL OCCUR PRIOR TO THE INSTALLATION OF TREE PROTECTION FENCING UNLESS NOTED OTHERWISE.
4. SEE **SHEET L-990** FOR TREE PROTECTION FENCING DETAILS AND REQUIREMENTS FOR ALL EXISTING TREES TO BE PROTECTED. STAKED LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE CLIENT'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
5. CONTRACTOR TO STAKE LOCATIONS OF PROPOSED SITE IMPROVEMENTS FOR APPROVAL PRIOR TO VEGETATION REMOVAL. CLIENT REPRESENTATIVE TO APPROVE THE EXTENT OF ALL TREE, SHRUB AND GROUNDCOVER REMOVALS PRIOR TO REMOVAL ACTIVITIES.
6. CONTRACTOR TO STAKE AND CLIENT REPRESENTATIVE TO APPROV

TREE NO	SPECIES	DBH	STATUS
843	B	8"	REMAIN
844	B	8"	REMAIN
845	B	10"	REMAIN
846	B	8"	REMAIN
847	B	10"	PROTECT
848	B	8"	PROTECT
849	B	8"	PROTECT
850	B	10"	REMOVE
851	B	TW 8"	PROTECT
852	B	10"	REMOVE
853	B	10"	REMOVE
854	B	16"	PROTECT
855	B	12"	REMOVE
856	B	14"	REMOVE
857	B	14"	REMOVE
858	W	18"	REMOVE
859	B	8"	REMOVE
860	B	8"	REMOVE
861	B	TW 8"	REMOVE
862	B	8"	REMOVE
863	B	14"	REMOVE
864	B	8"	REMOVE
865	B	TW 14"	PROTECT
866	B	12"	REMOVE
867	B	12"	REMOVE
868	B	12"	REMOVE
869	M	22"	SPECIMEN
870	B	8"	PROTECT
871	CA	MU 8"	PROTECT
872	B	8"	REMAIN
873	B	10"	REMAIN
874	B	12"	PROTECT
875	B	14"	REMAIN
876	B	8"	REMAIN
877	B	14"	REMAIN
878	CO	26"	REMAIN
879	B	14"	REMAIN
880	B	14"	REMAIN
881	B	8"	REMAIN
882	B	14"	REMAIN
883	B	8"	REMAIN
884	C	10"	REMAIN
885	C	16"	REMAIN
886	CA	TR 12"	REMAIN
887	B	14"	REMAIN
888	CO	26"	PROTECT
889	B	16"	PROTECT
890	CO	20"	PROTECT
891	CO	18"	PROTECT
892	B	12"	PROTECT
893	C	12"	REMAIN
894	B	12"	PROTECT
895	B	10"	PROTECT
896	C	12"	REMAIN
897	CO	10"	REMAIN
898	C	10"	REMAIN
899	B	10"	REMAIN
900	B	10"	REMAIN
901	B	10"	PROTECT
902	B	8"	PROTECT
903	B	8"	PROTECT
904	B	14"	PROTECT
905	B	14"	PROTECT
906	CO	30"	REMAIN
907	B	10"	REMAIN
908	B	8"	REMAIN
909	CO	8"	REMAIN
910	CO	18"	REMAIN
911	B	8"	REMAIN
912	B	10"	PROTECT
913	B	10"	REMAIN
914	B	12"	REMAIN
915	CO	18"	PROTECT
916	B	TW 14"	REMAIN
917	B	10"	REMAIN
918	B	10"	REMAIN
919	B	12"	REMAIN
920	B	8"	REMAIN
921	B	TW 12"	REMAIN
922	C	8"	REMAIN
923	B	10"	REMAIN
924	B	10"	REMAIN
925	CO	32"	SPECIMEN
926	CO	10"	REMAIN
927	CO	20"	PROTECT
928	B	10"	PROTECT
929	B	8"	PROTECT
930	B	10"	PROTECT
931	B	8"	PROTECT
932	B	14"	REMOVE
933	CO	24"	REMOVE
934	CO	18"	REMOVE
935	B	8"	PROTECT
936	B	8"	REMOVE
937	B	8"	PROTECT
938	B	10"	REMAIN
939	B	8"	REMAIN
940	B	10"	REMAIN
941	B	8"	REMAIN
942	B	10"	REMAIN
943	B	12"	REMOVE
944	B	8"	SPECIMEN
945	B	8"	SPECIMEN
946	B	8"	SPECIMEN
947	B	8"	SPECIMEN
948	B	8"	SPECIMEN
949	B	8"	SPECIMEN
950	B	10"	SPECIMEN
951	B	10"	SPECIMEN
952	B	8"	REMOVE
953	B	8"	REMOVE
954	B	8"	REMOVE
955	B	8"	REMOVE
956	B	8"	PROTECT
957	W	12"	SPECIMEN
958	CO	22"	PROTECT
959	B	8"	REMAIN
960	CO	28"	REMAIN
961	B	14"	REMAIN
962	B	8"	REMAIN
963	C	10"	REMAIN
964	B	12"	REMAIN
965	B	10"	REMOVE
966	CO	34"	SPECIMEN
967	B	10"	PROTECT
968	B	14"	REMAIN
969	O	14"	REMAIN
970	CO	26"	PROTECT
971	B	10"	REMAIN
972	M	12"	REMAIN
973	B	8"	PROTECT
974	B	8"	PROTECT
975	M	12"	REMAIN
976	B	14"	PROTECT
977	B	8"	PROTECT
978	B	10"	REMAIN
979	B	14"	PROTECT
980	B	12"	REMAIN
981	B	8"	REMAIN
982	C	TW 8"	REMAIN
983	B	12"	PROTECT
984	M	14"	PROTECT
985	B	TW 8"	REMAIN
986	M	10"	REMAIN
987	B	10"	REMAIN
988	B	12"	REMAIN
989	B	8"	REMAIN
990	B	10"	REMAIN
991	B	10"	REMAIN
992	B	8"	REMAIN
993	B	14"	REMAIN
994	B	12"	REMAIN
995	B	10"	REMAIN
996	B	8"	REMAIN
997	B	8"	REMAIN
998	C	8"	REMAIN
999	B	8"	REMAIN
1000	B	12"	REMAIN
1001	B	8"	REMAIN
1002	B	12"	REMAIN
1003	B	12"	REMAIN
1004	B	10"	REMAIN
1005	B	12"	REMAIN
1006	B	12"	REMAIN
1007	CA	8"	REMAIN
1008	B	10"	REMAIN
1009	B	8"	REMAIN
1010	B	10"	REMAIN
1011	B	16"	REMAIN
1012	B	12"	REMAIN
1013	B	10"	REMAIN
1014	B	8"	REMAIN
1015	CA	MU 12"	REMAIN
1016	BE	18"	REMAIN
1017	O	24"	REMAIN
1018	O	12"	REMAIN
1019	B	24"	REMAIN
1020	B	8"	PROTECT
1021	B	10"	PROTECT
1022	B	10"	PROTECT
1023	B	10"	PROTECT
1024	B	MU 24"	PROTECT
1025	B	10"	PROTECT
1026	B	8"	REMAIN
1027	B	10"	PROTECT
1028	B	10"	REMAIN
1029	B	10"	REMAIN
1030	B	TW 8"	REMAIN
1031	B	14"	REMAIN
1032	B	12"	REMAIN
1033	B	12"	REMAIN
1034	B	10"	REMAIN
1035	B	10"	REMAIN
1036	B	10"	REMAIN
1037	B	TW 8"	REMAIN
1038	B	18"	PROTECT
1039	B	8"	PROTECT
1040	B	12"	PROTECT
1041	B	8"	PROTECT
1042	B	12"	PROTECT
1043	B	14"	PROTECT
1044	B	8"	PROTECT
1045	B	10"	PROTECT
1046	B	TW 8"	PROTECT
1047	B	8"	PROTECT
1048	B	10"	PROTECT
1049	B	8"	REMOVE
1050	B	10"	REMOVE
1051	B	10"	REMOVE
1052	B	14"	REMOVE
1053	B	8"	REMOVE
1054	B	12"	REMOVE
1055	B	12"	REMOVE
1056	B	TR 14"	REMOVE
1057	C	12"	REMOVE
1058	B	8"	REMAIN
1059	B	TW 12"	REMAIN
1060	CO	20"	REMAIN
1061	B	TW 14"	REMAIN
1062	B	12"	REMAIN
1063	B	12"	REMAIN
1064	B	14"	REMAIN
1065	B	12"	REMAIN
1066	B	14"	REMAIN
1067	B	12"	PROTECT
1068	B	10"	PROTECT
1069	B	10"	PROTECT
1070	B	8"	PROTECT
1071	B	8"	PROTECT
1072	B	8"	PROTECT
1073	B	8"	REMAIN
1074	B	10"	REMAIN
1075	B	10"	PROTECT
1076	B	TR 8"	PROTECT
1077	B	TW 8"	PROTECT
1078	B	14"	REMOVE
1079	B	16"	PROTECT
1080	B	14"	PROTECT
1081	B	10"	PROTECT
1082	B	8"	PROTECT
1083	B	10"	PROTECT
1084	B	8"	PROTECT
1085	B	8"	PROTECT
1086	B	10"	PROTECT
1087	B	14"	REMAIN
1088	B	8"	REMAIN
1089	B	8"	REMAIN
1090	B	10"	REMAIN
1091	B	8"	REMAIN
1092	B	12"	REMAIN
1093	B	TW 12"	REMAIN
1094	CO	26"	REMAIN
1095	B	12"	REMAIN
1096	CA	8"	REMAIN
1097	B	10"	REMAIN
1098	B	10"	REMAIN
1099	B	8"	REMAIN
1100	CA	12"	REMAIN
1101	B	8"	REMAIN
1102	B	8"	REMAIN
1103	B	8"	REMAIN
1104	B	10"	PROTECT
1105	B	12"	REMOVE
1106	B	8"	REMOVE
1107	B	8"	REMOVE
1108	B	8"	REMOVE
1109	B	8"	REMOVE
1110	B	8"	PROTECT
1111	B	8"	REMAIN
1112	B	10"	REMAIN
1113	B	10"	REMAIN
1114	CA	TW 8"	REMAIN
1115	B	8"	REMAIN
1116	B	10"	REMAIN
1117	B	10"	REMAIN
1118	B	12"	REMAIN
1119	B	8"	REMAIN
1120	B	8"	REMAIN
1121	B	8"	REMAIN
1122	B	8"	REMAIN
1123	CO	22"	REMAIN
1124	B	8"	REMAIN
1125	B	8"	PROTECT
1126	B	10"	PROTECT
1127	B	8"	PROTECT
1128	B	12"	PROTECT
1129	B	10"	REMAIN
1130	B	8"	REMAIN
1131	B	8"	REMAIN
1132	B	8"	REMAIN
1133	B	8"	REMAIN
1134	B	12"	REMAIN
1135	B	10"	REMAIN
1136	B	10"	REMAIN
1137	B	12"	REMAIN
1138	B	10"	REMAIN
1139	C	10"	REMAIN
1140	B	12"	REMAIN
1141	B	12"	REMAIN
1142	B	12"	REMAIN
1143	B	TW 14"	REMAIN
1144	B	12"	REMAIN
1145	B	14"	REMAIN
1146	B	10"	REMAIN
1147	B	8"	REMAIN
1148	B	8"	REMAIN
1149	B	10"	REMAIN
1150	B	8"	REMAIN
1151	B	8"	REMAIN
1152	B	8"	REMAIN
1153	B	10"	REMAIN
1154	B	10"	REMAIN
1155	C	8"	REMAIN
1156	B	16"	REMAIN
1157	B	10"	REMOVE
1158	B	8"	REMOVE
1159	C	8"	PROTECT
1160	B	18"	PROTECT
1161	B	10"	REMOVE
1162	B	8"	PROTECT
1163	B	8"	PROTECT
1164	B	12"	REMOVE
1165	B	12"	REMOVE
1166	CA	TW 8"	PROTECT
1167	B	10"	PROTECT
1168	B	10"	REMAIN
1169	B	12"	REMAIN
1170	B	8"	REMAIN
1171	B	8"	REMAIN
1172	B	10"	REMAIN
1173	B	TR 10"	PROTECT
1174	B	12"	PROTECT
1175	B	20"	PROTECT
1176	B	16"	PROTECT
1177	B	12"	REMOVE
1178	B	TR 10"	REMOVE
1179	C	8"	PROTECT
1180	B	8"	PROTECT
1181	B	8"	PROTECT
1182	B	8"	PROTECT
1183	B	8"	PROTECT
1184	B	8"	PROTECT
1185	B	8"	PROTECT
1186	B	10"	PROTECT
1187	B	14"	PROTECT
1188	C	14"	PROTECT
1189	B	8"	PROTECT
1190	B	8"	PROTECT
1191	B	8"	PROTECT
1192	B	10"	PROTECT
1193	B	12"	PROTECT
1194	B	8"	PROTECT
1195	B	8"	PROTECT
1196	BE	8"	REMOVE
1197	B	10"	REMOVE
1198	B	10"	REMAIN
1199	B	8"	REMAIN
1200	B	14"	PROTECT
1201	CA	12"	REMAIN
1202	B	18"	REMAIN
1203	BE	24"	REMAIN
1204	B	8"	PROTECT
1205	B	8"	PROTECT
1206	B	10"	PROTECT
1207	B	12"	PROTECT
1208	B	10"	PROTECT
1209	B	8"	PROTECT
1210	B	12"	PROTECT
1211	B	8"	PROTECT
1212	B	10"	PROTECT
1213	B	8"	PROTECT
1214	B	14"	PROTECT
1215	B	10"	PROTECT
1216	B	8"	PROTECT
1217	B	TR 8"	PROTECT
1218	B	8"	PROTECT
1219	B	10"	PROTECT
1220	B	8"	PROTECT
1221	B	8"	REMAIN
1222	B	10"	REMAIN
1223	B	12"	REMAIN
1224	CO	8"	REMAIN
1225	CO	8"	REMAIN
1226	CO	8"	REMAIN
1227	CA	8"	REMAIN
1228	B	14"	REMAIN
1229	CO	10"	REMAIN
1230	CO	8"	REMAIN
1231	CO	12"	REMAIN
1232	B	12"	REMAIN
1233	CO	8"	REMAIN
1234	CO	12"	REMAIN
1235	B	16"	REMAIN
1236	B	8"	REMAIN
1237	B	12"	REMAIN
1238	B	8"	REMAIN
1239	B	8"	REMAIN
1240	B	TW 8"	REMAIN
1241	B	16"	REMAIN
1242	B	8"	REMAIN
1243	B	8"	REMAIN
1244	B	10"	REMAIN
1245	B	8"	REMAIN
1246	B	8"	REMAIN
1247	M	10"	REMAIN
1248	C	8"	REMAIN
1249	C	8"	REMAIN
1250	B	12"	REMAIN
1251	B	10"	REMAIN
1252	CO	8"	REMAIN
1253	B	14"	REMAIN
1254	B	12"	REMAIN
1255	B	12"	REMAIN
1256	B	12"	PROTECT
1257	B	8"	REMAIN
1258	O	10"	REMAIN
1259	B	16"	PROTECT
1260	B	12"	PROTECT
1261	B	10"	REMOVE
1262	BE	12"	REMOVE
1263	B	8"	PROTECT
1264	B	8"	PROTECT
1265	B	8"	REMAIN
1266	B	10"	REMAIN
1267	B	8"	REMAIN
1268	B	12"	REMAIN
1269	B	12"	REMAIN
1270	CO	24"	REMAIN
1271	CO	14"	REMAIN
1272	CO	14"	REMAIN
1273	B	10"	REMAIN
1274	B	10"	REMAIN
1275	CO	14"	REMAIN
1276	B	8"	REMAIN
1277	M	TW 26"	REMAIN
1278	B	12"	PROTECT
1279	CO	22"	PROTECT
1280	B	8"	PROTECT
1281	B	8"	PROTECT
1282	B	12"	PROTECT
1283	CO	22"	PROTECT
1284	B	8"	REMAIN
1285	B	10"	REMAIN
1286	B	10"	REMAIN
1287	B	8"	REMAIN
1288	B	8"	REMAIN
1289	B	8"	REMOVE
1290	B	12"	REMOVE
1291	B	10"	REMOVE
1292	B	10"	PROTECT
1293	B	8"	PROTECT
1294	B	8"	REMOVE
1295	B	8"	REMOVE
1296	B	10"	REMOVE
1297	B	16"	REMAIN
1298	B	14"	REMAIN
1299	B	10"	REMOVE
1300	B	10"	PROTECT
1301	B	10"	REMOVE
1302	B	12"	REMOVE
1303	B	12"	REMOVE
1304	B	12"	PROTECT
1305	B	12"	PROTECT
1306	B	14"	PROTECT
1307	B	8"	PROTECT
1308	B	10"	PROTECT
1309	B	8"	REMAIN
1310	B	8"	REMAIN
1311	B	TW 10"	PROTECT
1312	C	8"	PROTECT
1313	B	TW 14"	REMAIN
1314	B	10"	PROTECT
1315	B	12"	PROTECT
1316	C	12"	PROTECT
1317	B	TW 8"	REMOVE
1318	C	10"	SPECIMEN
1319	B	TW 18"	PROTECT
1320	B	8"	REMOVE
1321	B	10"	PROTECT
1322	B	12"	PROTECT
1323	B	14"	PROTECT
1324	B	12"	PROTECT
1325	B	8"	PROTECT
1326	B	8"	REMOVE
1327	B	8"	REMOVE
1328	B	10"	PROTECT
1329	B	10"	PROTECT
1330	B	16"	REMAIN
1331	B	10"	REMAIN
1332	B	16"	REMAIN
1333	B	8"	REMAIN
1334	B	10"	REMAIN
1335	B	12"	REMAIN
1336	B	10"	PROTECT
1337	B	10"	PROTECT
1338	B	8"	PROTECT
1339	B	8"	PROTECT
1340	B	16"	PROTECT
1341	B	14"	PROTECT
1342	C	16"	SPECIMEN
1343	B	12"	SPECIMEN
1344	C	8"	SPECIMEN
1345	B	10"	REMOVE
1346	B	12"	SPECIMEN
1347	B	8"	SPECIMEN
1348	C	10"	REMAIN
1349	B	TW 16"	REMAIN
1350	B	14"	REMAIN
1351	C	8"	REMAIN
1352	CO	20"	REMAIN
1353	B	12"	PROTECT
1354	B	TW 12"	PROTECT
1355	B	12"	PROTECT
1356	B	10"	PROTECT
1357	B	8"	PROTECT
1358	B	8"	PROTECT
1359	B	8"	PROTECT
1360	B	10"	PROTECT
1361	B	16"	PROTECT
1362	B	10"	PROTECT
1363	B	12"	PROTECT
1364	B	10"	PROTECT
1365	B	8"	PROTECT
1366	B	10"	REMOVE
1367	B	10"	PROTECT
1368	B	10"	REMOVE
1369	C	12"	SPECIMEN
1370	B	12"	REMAIN
1371	B	12"	REMAIN
1372	B	10"	REMAIN
1373	B	12"	REMAIN
1374	B	8"	REMAIN
1375	B	12"	REMAIN
1376	B	12"	REMAIN
1377	B	12"	REMAIN
1378	B	10"	REMAIN
1379	C	8"	REMAIN
1380	CO	20"	REMAIN
1381	B	12"	REMAIN
1382	B	12"	REMAIN
1383	B	12"	REMAIN
1384	B	12"	REMAIN
1385	B	12"	REMAIN
1386	B	14"	REMAIN
1387	B	12"	REMAIN
1388	B	8"	REMAIN
1389	B	8"	REMAIN
1390	CA	12"	REMAIN
1391	B	8"	REMAIN
1392	B	10"	REMAIN
1393	B	8"	PROTECT
1394	B	8"	REMAIN
1395	B	8"	REMAIN
1396	B	10"	REMAIN
1397	B	12"	REMAIN
1398	B	8"	REMAIN
1399	B	8"	PROTECT
1400	B	8"	REMOVE
1401	B	8"	REMOVE
1402	B	8"	REMOVE
1403	CO	28"	SPECIMEN
1404	B	18"	SPECIMEN
1405	B	8"	REMOVE
1406	B	8"	REMOVE
1407	B	12"	REMOVE
1408	B	12"	REMOVE
1409	B	12"	REMOVE
1410	B	8"	REMOVE
1411	B	8"	PROTECT
1412	CO	26"	SPECIMEN
1413	B	10"	REMOVE
1414	B	10"	REMOVE
1415	B	8"	REMOVE
1416	B	8"	REMOVE
1417	B	8"	PROTECT
1418	B	12"	PROTECT
1419	B	14"	PROTECT
1420	B	10"	PROTECT
1421	B	12"	PROTECT
1422	B	8"	REMAIN
1423	CA	8"	REMAIN
1424	CO	26"	REMAIN
1425	B	10"	REMAIN
1426	B	8"	REMAIN
1427	B	8"	PROTECT
1428	B	12"	PROTECT
1429	CO	TW 16"	PROTECT
1430	B	10"	PROTECT
1431	B	8"	REMAIN
1432	B	10"	REMAIN
1433	CO	24"	REMAIN
1434	CO	8"	REMAIN
1435	C	8"	REMAIN
1436	C	8"	REMAIN
1437	B	8"	REMAIN
1438	B	8"	REMAIN
1439	B	10"	PROTECT
1440	B	8"	PROTECT
1441	B	8"	PROTECT
1442	B	8"	REMAIN
1443	CO	16"	REMAIN
1444	B	8"	REMAIN
1445	B	8"	REMAIN
1446	B	10"	REMAIN
1447	B	8"	REMAIN
1448	B	8"	REMAIN
1449	B	8"	REMAIN
1450	B	10"	REMAIN
1451	C	14"	REMAIN
1452	B	10"	REMAIN
1453	B	10"	PROTECT
1454	B	10"	PROTECT
1455	B	8"	REMAIN
1456	O	14"	PROTECT
1457	O	16"	PROTECT
1458	B	8"	PROTECT
1459	B	8"	REMOVE
1460	B	8"	REMOVE
1461	B	20"	REMOVE
1462	O	12"	PROTECT
1463	B	12"	PROTECT
1464	B	22"	PROTECT
1465	B	12"	PROTECT
1466	B	10"	PROTECT
1467	B	12"	PROTECT
1468	B	8"	REMOVE
1469	B	8"	PROTECT
1470	B	8"	PROTECT
1471	CO	18"	PROTECT
1472	B	10"	PROTECT
1473	B	8"	PROTECT
1474	B	10"	PROTECT
1475	B	10"	PROTECT
1476	CA	8"	PROTECT
1477	B	10"	PROTECT
1478	B	10"	PROTECT
1479	B	16"	PROTECT
1480	O	22"	REMOVE
1481	B	8"	REMAIN
1482	CA	8"	REMOVE
1483	C	10"	REMOVE
1484	B	10"	REMOVE
1485	B	10"	PROTECT
1486	B	10"	PROTECT
1487	B	12"	REMOVE
1488	B	10"	PROTECT
1489	C	10"	REMAIN
1490	C	10"	REMAIN
1491	B	8"	REMOVE
1492	B	8"	PROTECT
1493	B	10"	REMAIN
1494	O	24"	REMAIN
1495	C	16"	REMAIN
1496	O	20"	REMAIN
1497	B	8"	REMAIN
1498	O	22"	REMAIN
1499	O	18"	REMAIN
1500	CO	TW 48"	REMAIN
1501	B	TW 12"	REMAIN
1502	B	14"	REMAIN
1503	B	8"	REMAIN
1504	CA	10"	REMAIN
1505	B	12"	REMAIN
1506	C	12"	SPECIMEN
1507	B	10"	REMAIN
1508	B	12"	REMAIN
1509	B	16"	REMAIN
1510	CA	8"	REMAIN
1511	C	TW 12"	REMAIN
1512	C	8"	REMAIN
1513	CA	8"	REMAIN
1514	C	18"	REMAIN
1515	B	10"	PROTECT
1516	CA	8"	PROTECT
1517	B	10"	PROTECT
1518	B	10"	PROTECT
1519	B	10"	PROTECT
1520	B	8"	REMAIN
1521	B	8"	PROTECT
1522	B	10"	REMAIN
1523	B	8"	REMAIN
1524	B	14"	REMAIN
1525	B	10"	PROTECT
1526	CA	MU 16"	PROTECT
1527	B	10"	PROTECT
1528	B	10"	PROTECT
1529	B	8"	PROTECT
1530	B	8"	REMAIN
1531	B	12"	REMAIN
1532	B	10"	REMAIN
1533	B	8"	SPECIMEN
1534	B	8"	SPECIMEN
1535	B	8"	SPECIMEN
1536	B	10"	SPECIMEN
1537	B	TW 10"	SPECIMEN
1538	B	8"	SPECIMEN
1539	B	8"	REMAIN
1540	B	16"	REMAIN
1541	B	14"	REMAIN
1542	B	8"	REMAIN
1543	B	10"	SPECIMEN
1544	B	8"	SPECIMEN
1545	B	12"	SPECIMEN
1546	B	8"	SPECIMEN
1547	B	8"	SPECIMEN
1548	B	8"	REMAIN
1549	B	10"	REMAIN
1550	B	14"	REMAIN
1551	C	8"	REMAIN
1552	C	8"	REMAIN
1553	B	TW 16"	REMAIN
1554	B	8"	REMAIN
1555	B	8"	REMAIN
1556	C	10"	REMAIN
1557	B	10"	REMAIN
1558	B	10"	REMOVE
1559	C	8"	REMOVE
1560	B	TW 8"	REMOVE
1561	C	14"	REMOVE
1562	C	8"	REMOVE
1563	CA	MU 14"	REMOVE
1564	CO	24"	PROTECT
1565	C	8"	REMOVE
1566	CA	TR 8"	REMOVE
1567	C	10"	REMOVE
1568	C	TW 14"	REMOVE
1569	B	8"	REMOVE
1570	C	8"	REMOVE
1571	B	8"	REMOVE
1572	CA	TW 8"	REMOVE
1573	C	10"	REMOVE
1574	CA	14"	REMOVE
1575	C	TW 8"	REMOVE
1576	C	14"	REMOVE
1577	CA	MU 8"	REMOVE
1578	B	8"	REMOVE
1579	CA	8"	REMOVE
1580	C	12"	REMOVE
1581	C	8"	REMOVE
1582	C	TW 8"	REMOVE
1583	C	8"	REMOVE
1584	CA	MU 8"	REMOVE
1585	B	8"	REMOVE
1586	CA	MU 8"	REMOVE
1587	B	10"	REMOVE
1588	C	8"	REMOVE
1589	M	TW 20"	REMOVE
1590	B	TW 14"	REMOVE
1591	B	8"	REMOVE
1592	B	8"	REMOVE
1593	B	10"	REMOVE
1594	B	10"	REMOVE
1595	B	8"	REMOVE
1596	B	12"	REMOVE
1597	B	12"	REMOVE
1598	B	10"	REMOVE
1599	C	8"	REMOVE
1600	B	10"	REMOVE
1601	B	10"	REMOVE
1602	C	10"	REMOVE
1603	B	10"	REMOVE
1604	CO	20"	REMOVE
1605	B	TR 14"	REMOVE
1606	B	14"	REMOVE
1607	B	8"	REMOVE
1608	B	10"	REMOVE
1609	B	8"	REMOVE
1610	B	10"	REMOVE
1611	B	12"	REMOVE
1612	B	10"	REMOVE
1613	CA	8"	REMOVE
1614	C	12"	REMOVE
1615	C	8"	REMOVE
1616	C	8"	REMOVE
1617	C	8"	REMOVE
1618	C	8"	REMOVE
1619	C	12"	REMOVE
1620	B	TW 8"	REMOVE
1621	B	10"	REMOVE
1622	B	10"	REMOVE
1623	B	8"	REMOVE
1624	B	10"	REMOVE
1625	B	12"	REMOVE
1626	B	8"	REMOVE
1627	B	8"	REMOVE
1628	B	8"	REMOVE
1629	C	12"	REMOVE
1630	B	10"	REMOVE
1631	B	8"	REMOVE
1632	B	10"	REMOVE
1633	B	8"	REMOVE
1634	B	8"	REMOVE
1635	B	8"	REMOVE
1636	B	10"	REMOVE
1637	B	8"	REMOVE
1638	B	12"	REMOVE
1639	B	8"	PROTECT
1639	B	12"	REMOVE
1640	B	14"	REMOVE
1641	C	10"	REMOVE
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1643	B	10"	REMOVE
1644	B	8"	REMOVE
1645	B	10"	REMOVE
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1648	B	10"	REMOVE
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1652	B	8"	REMOVE
1653	B	8"	REMOVE
1654	B	8"	REMOVE
1655	B	10"	REMOVE
1656	B	8"	REMOVE
1657	B	8"	REMOVE
1658	B	8"	REMOVE
1659	B	8"	REMOVE
1660	B	8"	REMOVE
1661	B	8"	REMAIN
1662	B	TW 8"	REMOVE
1663	B	10"	REMOVE
1664	B	TW 12"	REMOVE
1665	C	8"	REMOVE
1666	CA	TW 10"	REMOVE
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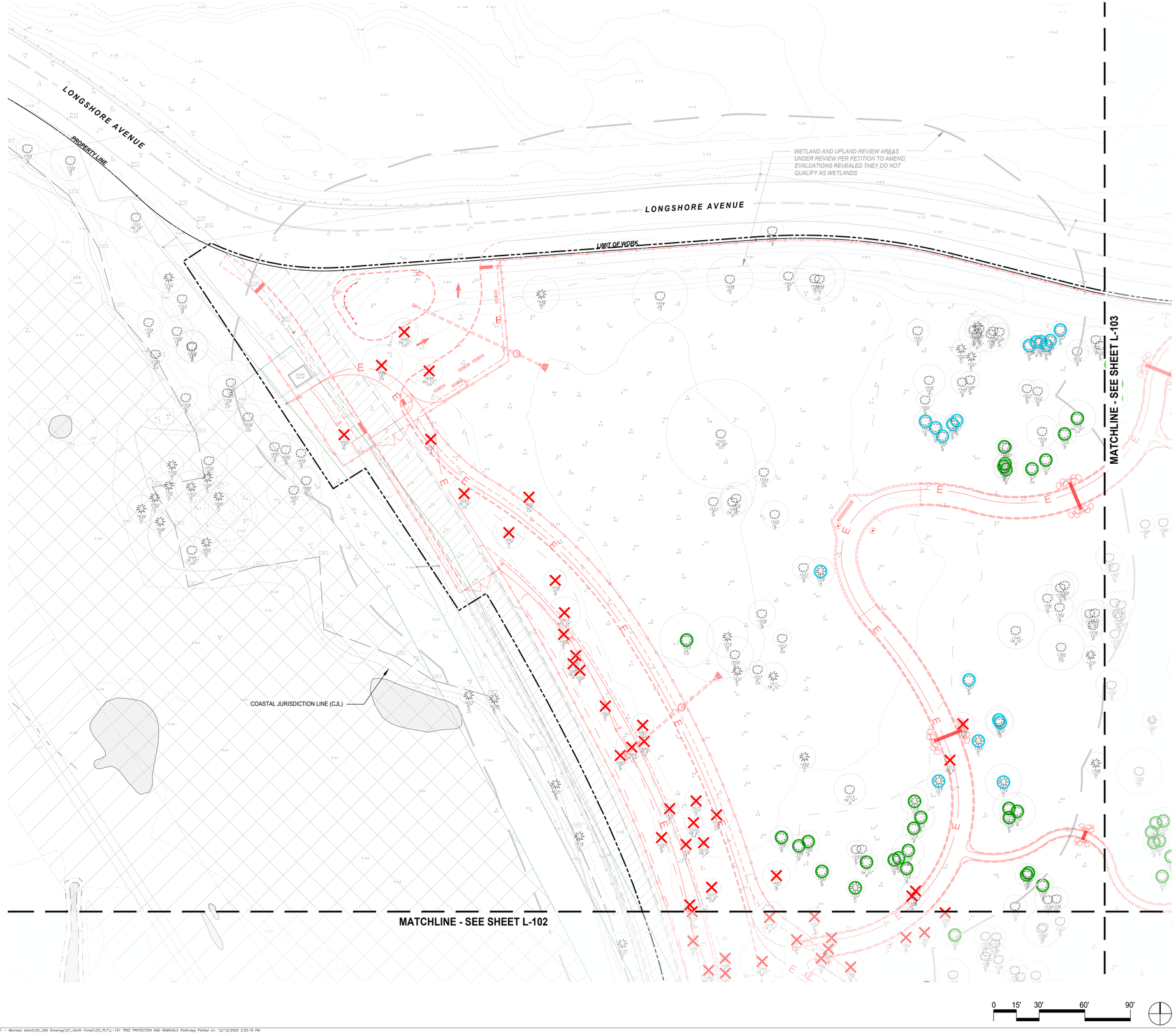
1668	B	12"	REMAIN
1669	B	10"	REMAIN
1670	C	10"	REMAIN
1671	C	12"	REMAIN
1672	C	8"	REMAIN
1673	C	8"	REMAIN
1674	C	8"	REMAIN
1675	C	8"	REMAIN



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TREE SPECIES ABBREVIATIONS

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TREE FORM ABBREVIATIONS

MU	MULTI
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SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

TREE PROTECTION AND REMOVALS PLAN

PROJECT NO	SHEET NO
2349.1	**L-101**
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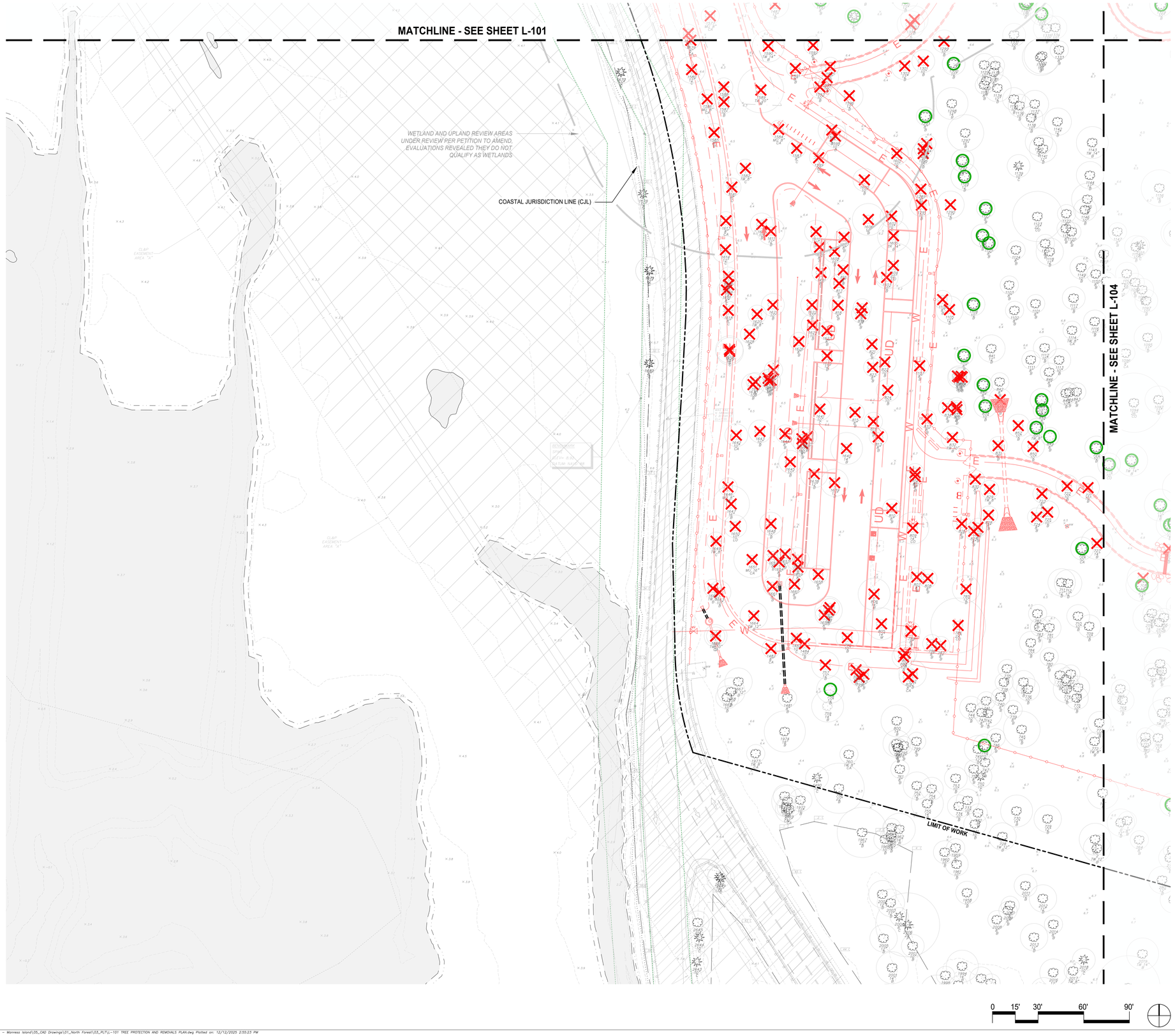

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TREE SPECIES ABBREVIATIONS

A	ASH	**F**	FIR
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DW	UNKNOWN		

TREE FORM ABBREVIATIONS

MU	MULTI
TR	TRIPLE
TW	TWIN

TREE PROTECTION AND REMOVAL NOTES

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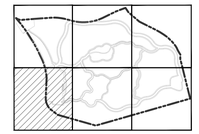
SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

TREE PROTECTION AND REMOVALS PLAN

PROJECT NO	SHEET NO
2349.1	**L-102**
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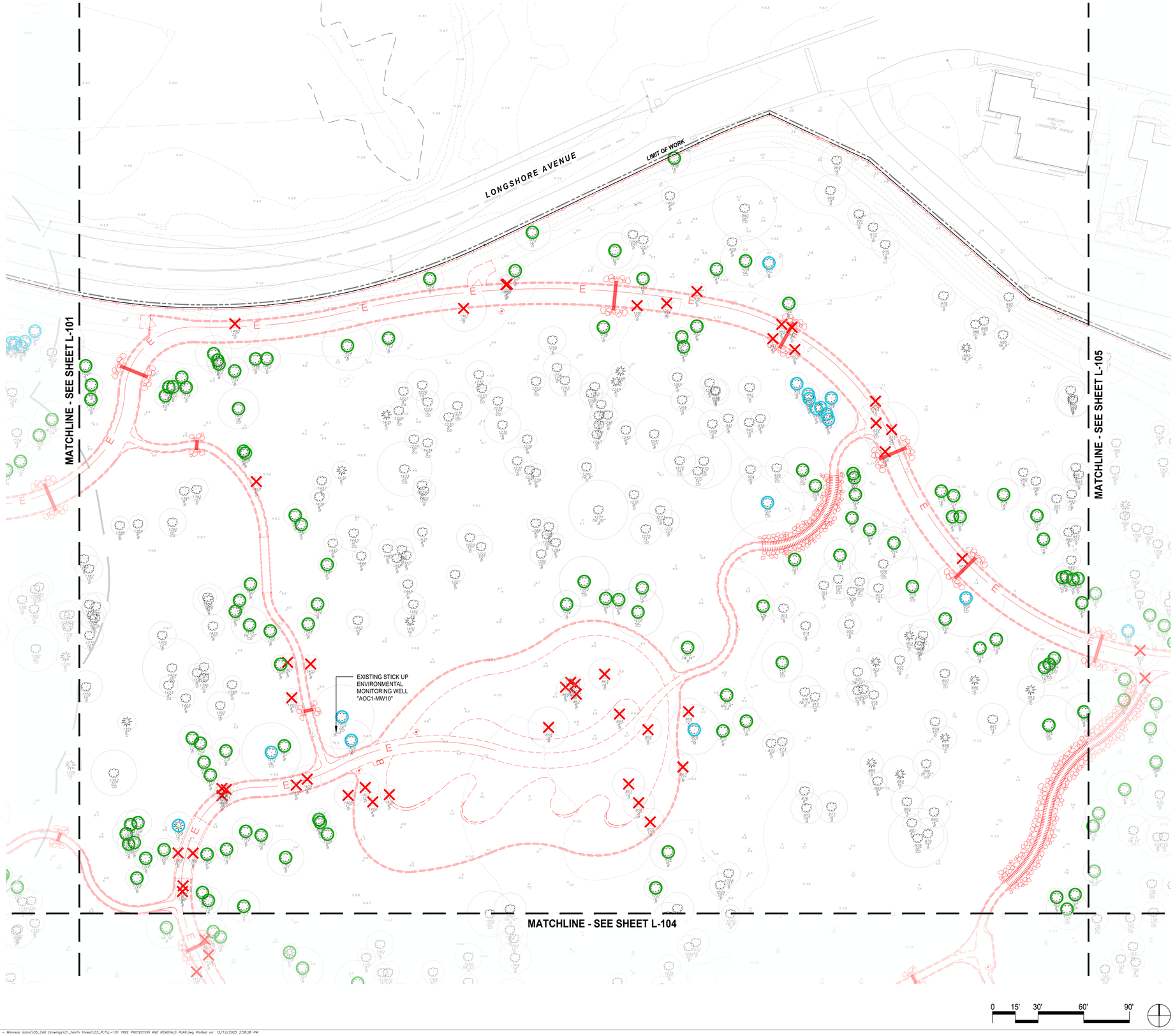

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TREE PROTECTION AND REMOVALS PLAN

PROJECT NO	2349.1
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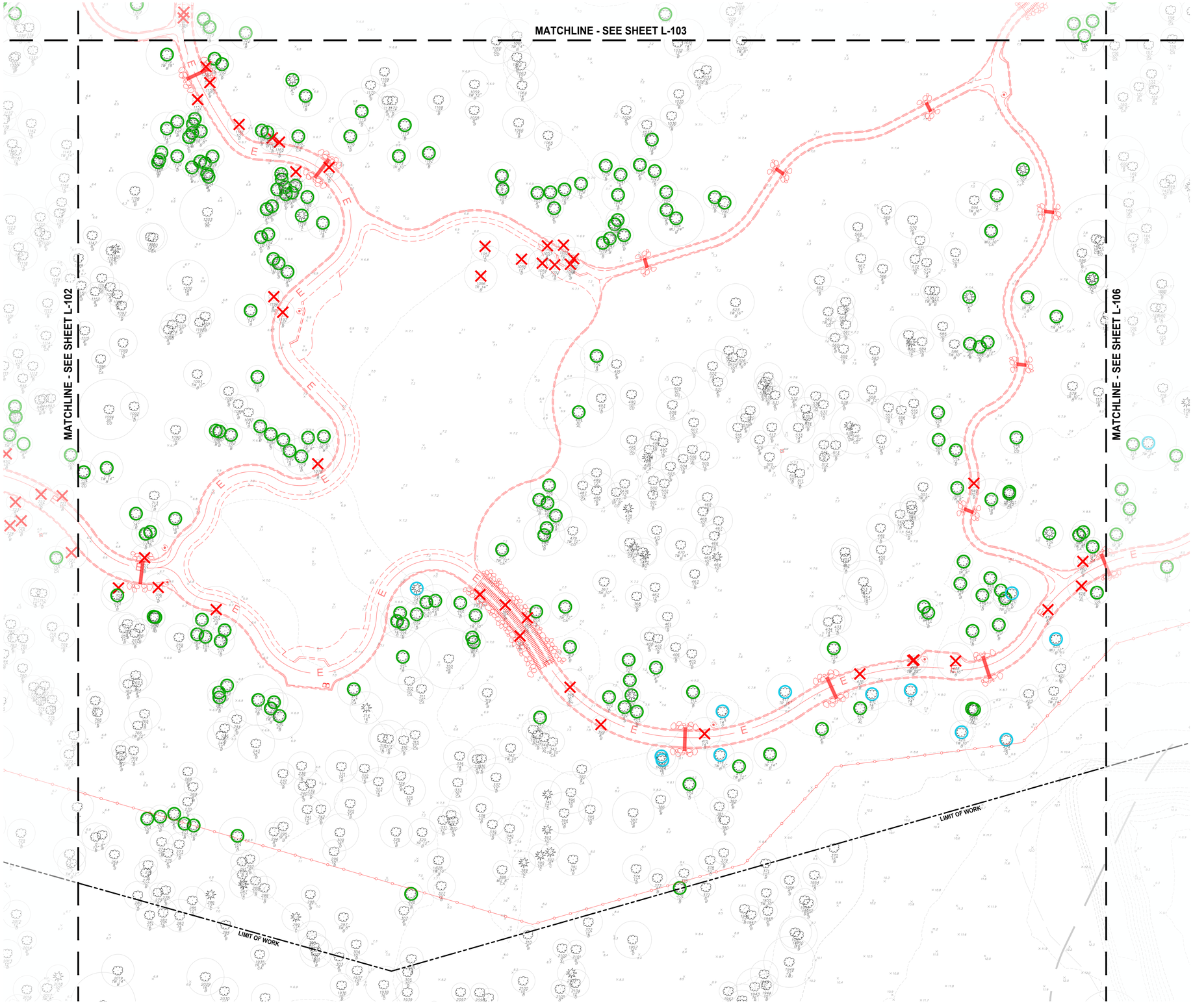

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L-104

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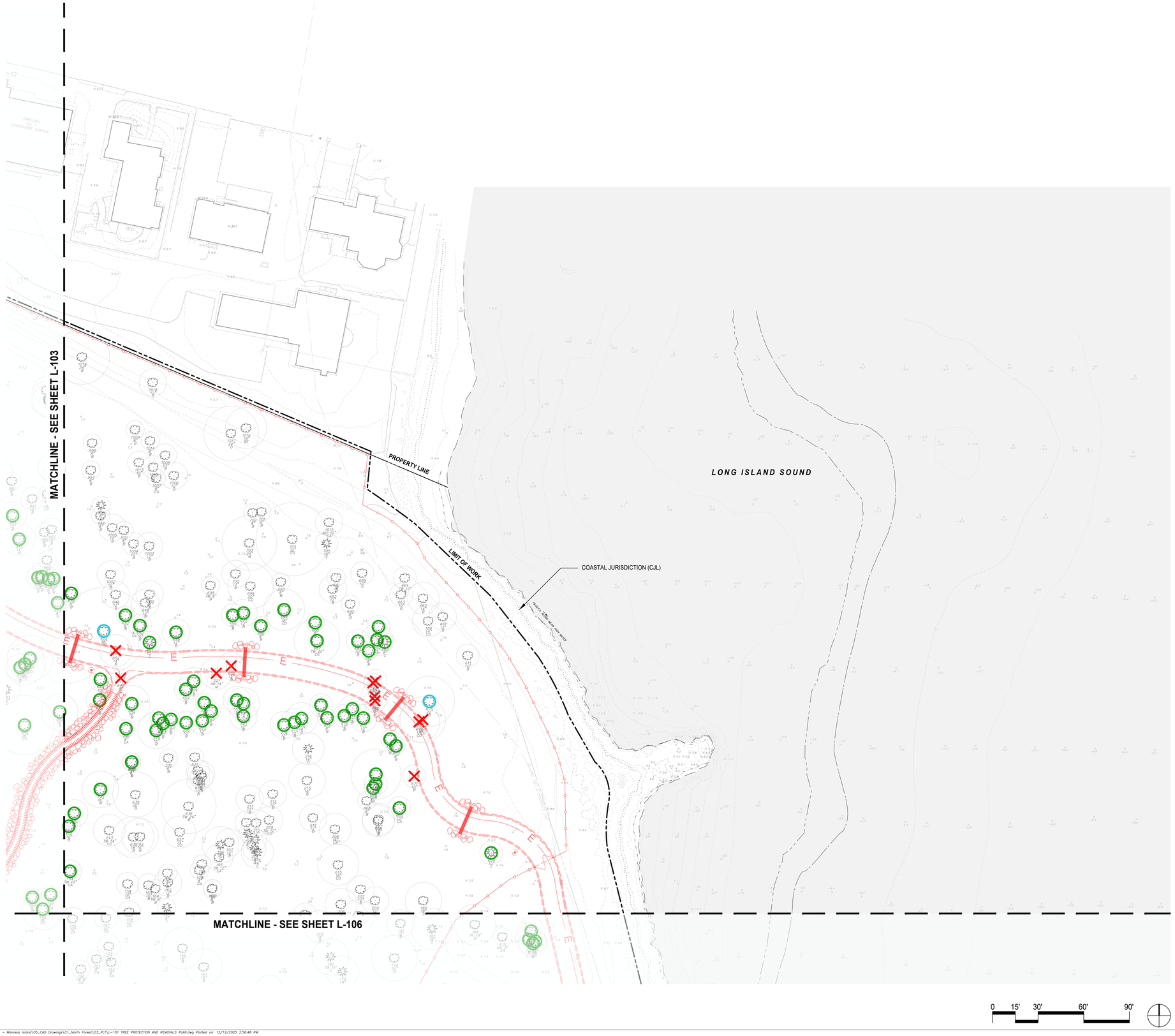


GENERAL LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- **COASTAL JURISDICTION LINE (CJL)** *ELEV: 5.4' NAVD 88 1983-2001 TIDAL EPOCH*
- **MEAN HIGHER HIGH WATER (MHHW)** *ELEV: 3.67' NAVD 88 1983-2001 TIDAL EPOCH*
- **MEAN HIGH WATER (MHW)** *LOCATED JULY 2014 ELEV: 3.33' NAVD 88 1983-2001 TIDAL EPOCH*
- **MEAN LOW LOW WATER (MLLW)** *LOCATED JULY 2014 ELEV: -4.02 NAVD 88 1983-2001 TIDAL EPOCH*
- **MEAN LOW WATER (MLW)** *LOCATED JULY 2014 ELEV: -3.76' NAVD 88 1983-2001 TIDAL EPOCH*
- LIMITS OF FLAGGED WETLANDS *GROUP "TWA"*
- LIMITS OF CONSERVATION EASEMENT *No. 1 AS DEPICTED ON MAP No. 11967 N.L.R.*
- LIMITS OF EXISTING EASEMENT *CL&P EASEMENT AREA "A"*
- EXISTING STORM DRAIN MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING MONITORING WELL
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE WITH STREET LIGHT
- EXISTING SIGN

TREE PROTECTIONS AND REMOVALS LEGEND

- PROPOSED SITE IMPROVEMENTS, SEE LANDSCAPE PLANS
- UNDISTURBED EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION ACTIVITIES
- EXISTING SPECIMEN TREE OF HIGH VALUE TO REMAIN AND BE PROTECTED + PRIORITIZED THROUGHOUT CONSTRUCTION ACTIVITIES
- CRITICAL ROOT ZONE (CRZ) DBH x 1.5

TREE SPECIES ABBREVIATIONS

A	ASH	**F**	FIR
B	BIRCH	**HL**	HONEYLOCUST
BA	BASSWOOD	**LO**	LOCUST
BE	BEECH	**M**	MAPLE
BW	BLACK WALNUT	**O**	OAK
C	CEDAR	**P**	PINE
CA	CRABAPPLE	**PR**	PEAR
CH	CHESTNUT	**SY**	SYCAMORE
CO	COTTONWOOD	**W**	WILLOW
DG	DOGWOOD	**YP**	YELLOW POPLAR
DW	UNKNOWN		

TREE FORM ABBREVIATIONS

MU	MULTI
TR	TRIPLE
TW	TWIN

TREE PROTECTION AND REMOVAL NOTES

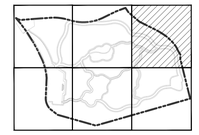
1. SEE **SHEET L-001** FOR GENERAL NOTES.
2. SEE **SHEET L-100A AND L-100B** FOR ADDITIONAL TREE PROTECTION AND REMOVALS NOTES AND COMPLETE TREE MATRIX.
3. SEE SHEET **L-990** FOR TREE PROTECTION FENCING DETAILS AND REQUIREMENTS FOR ALL EXISTING TREES TO BE PROTECTED.

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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SHELTON, CT 06484
T+ 203 712 1100

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ENVIRONMENTAL — **A K R F**
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LOCAL APPROVAL

SHEET NAME

TREE PROTECTION AND REMOVALS PLAN

PROJECT NO	2349.1
SCALE	1" = 30'-0"
DRAWN BY	SCAPE
CHECKED BY	SCAPE
DATE	12/15/2025

SHEET NO

L-105

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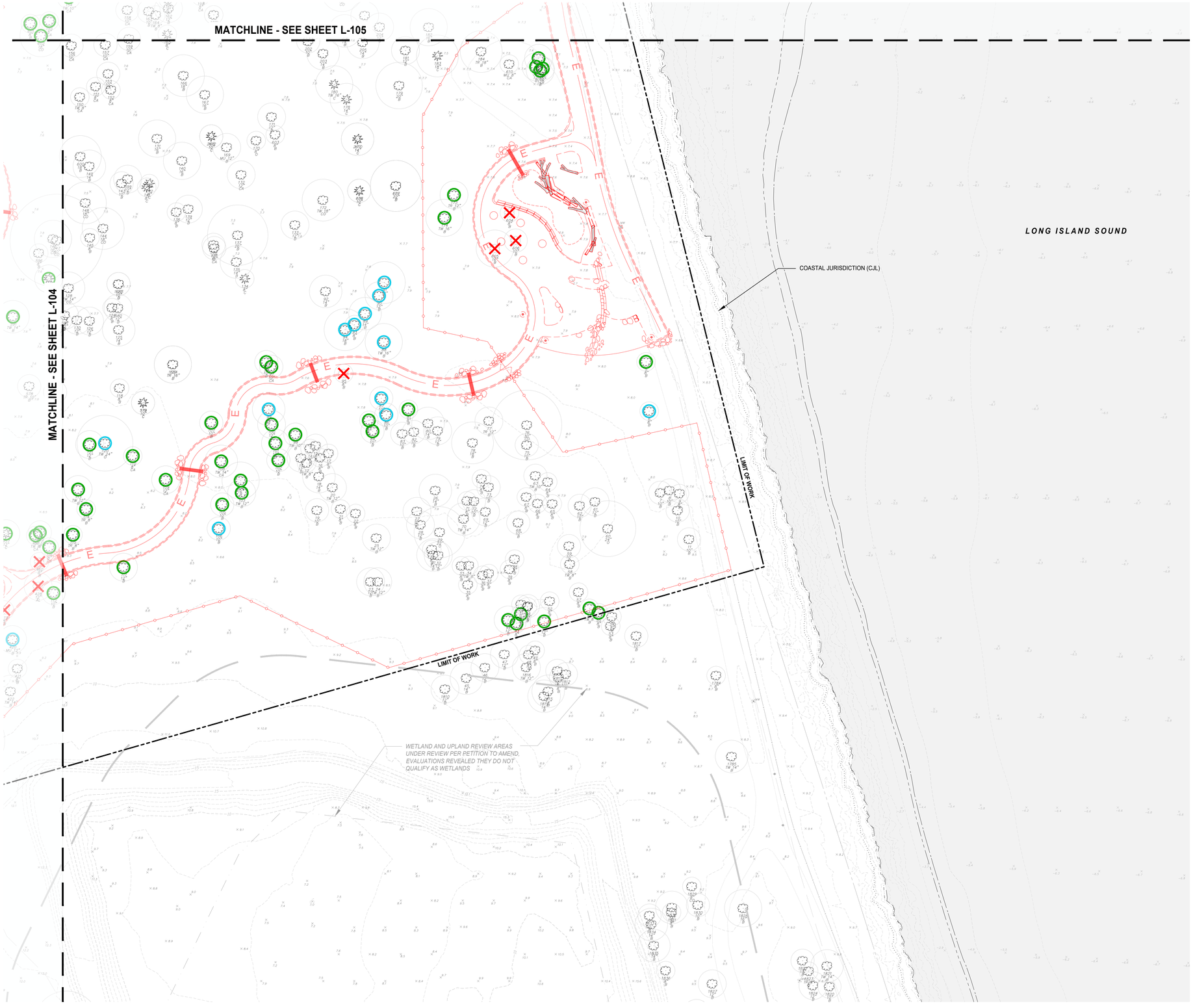

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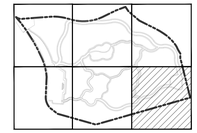
SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

TREE PROTECTION AND REMOVALS PLAN

PROJECT NO	SHEET NO
2349.1	**L-106**
SCALE	
1" = 30'-0"	
DRAWN BY	
SCAPE	
CHECKED BY	
SCAPE	
DATE	
12/15/2025	

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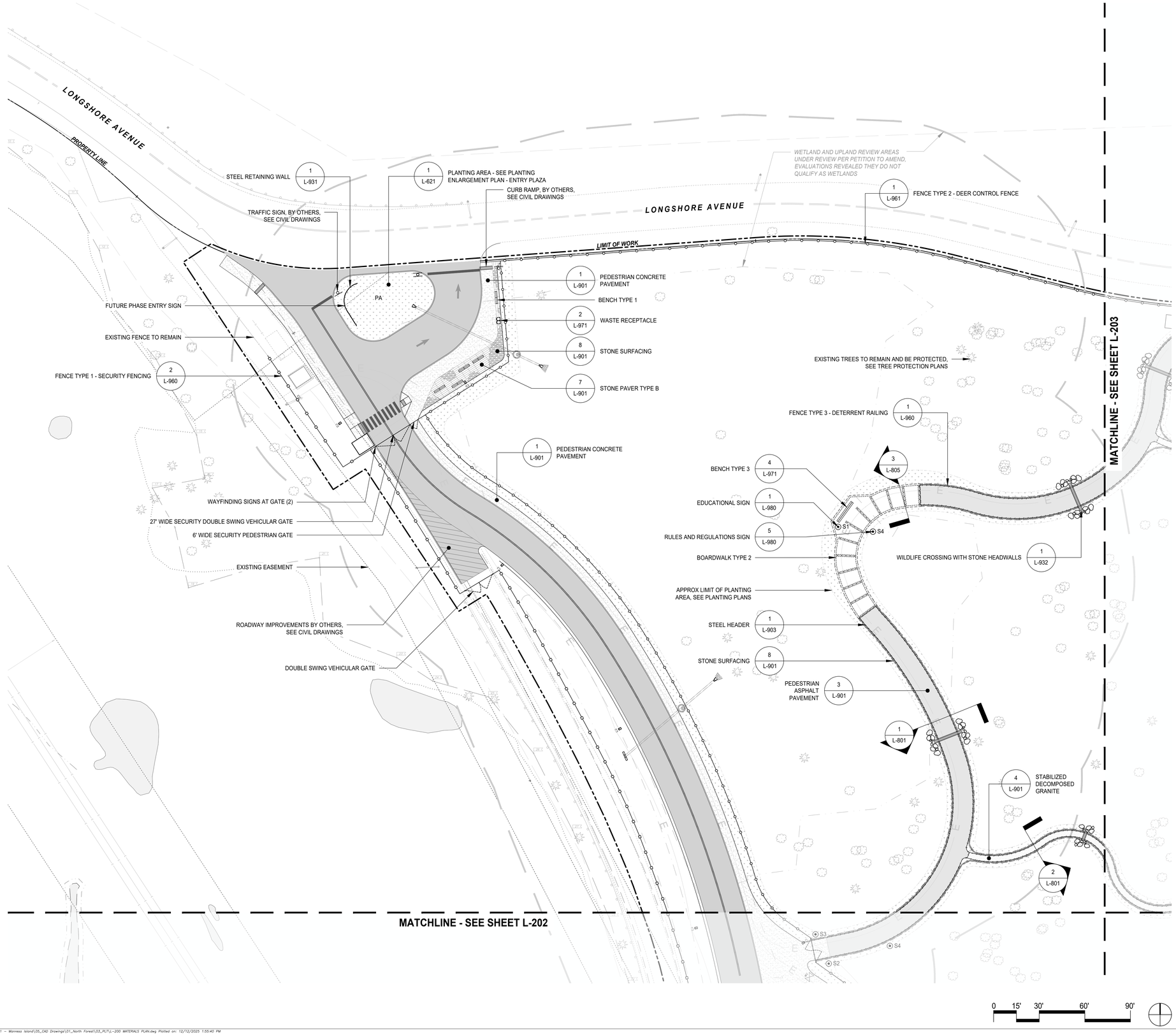


MATERIALS SCHEDULE

SITE ELEMENTS	
ID	DESCRIPTION
	VEHICULAR ASPHALT PAVEMENT, SEE CIVIL
	PEDESTRIAN ASPHALT PAVEMENT
	PEDESTRIAN CONCRETE PAVEMENT
	PRECAST CONCRETE PLANKS
	BOARDWALK TYPE 1
	BOARDWALK TYPE 2
	STABILIZED DECOMPOSED GRANITE
	STONE PAVER TYPE A
	STONE PAVER TYPE B
	WOOD BLOCK PAVEMENT
	STONE SURFACING
	STEEL HEADER
	STACKED STONE WALL
	STONE BLOCK WALL
	STONE STEPS
	BOULDER EMBANKMENT
	PLANTING AREA, SEE L-600 SERIES
	WILDLIFE CROSSING WITH STONE HEADWALLS
SITE FURNISHINGS	
	BIRD BLIND
	BENCH TYPE 1
	BENCH TYPE 2
	BENCH TYPE 3
	BENCH TYPE 4
	CUSTOM BENCH
	RECLAIMED LOGS
	PICNIC TABLES
	HAMMOCKS
	BIKE RACKS, LANDSCAPE FORMS BOLA OR SIMILAR
	DRINKING FOUNTAIN
	WASTE RECEPTACLES
S1	EDUCATIONAL SIGN
S2	TRAIL MARKER SIGN
S3	WAYFINDING SIGN
S4	RULES AND REGULATIONS SIGN
FENCES AND RAILING	
	FENCE TYPE 1, SECURITY FENCING
	FENCE TYPE 2, DEER FENCING, SEE L-960 SERIES
	FENCE TYPE 3, DETERRENT RAILING
	VEHICULAR SECURITY GATE
	PEDESTRIAN SECURITY GATE
	MAINTENANCE GATE

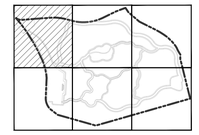
NOTES:

1. SEE **SHEET L-001** FOR GENERAL NOTES AND ABBREVIATIONS.

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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MATERIALS PLAN

PROJECT NO	SHEET NO
2349.1	L-201
SCALE	
1" = 30'-0"	
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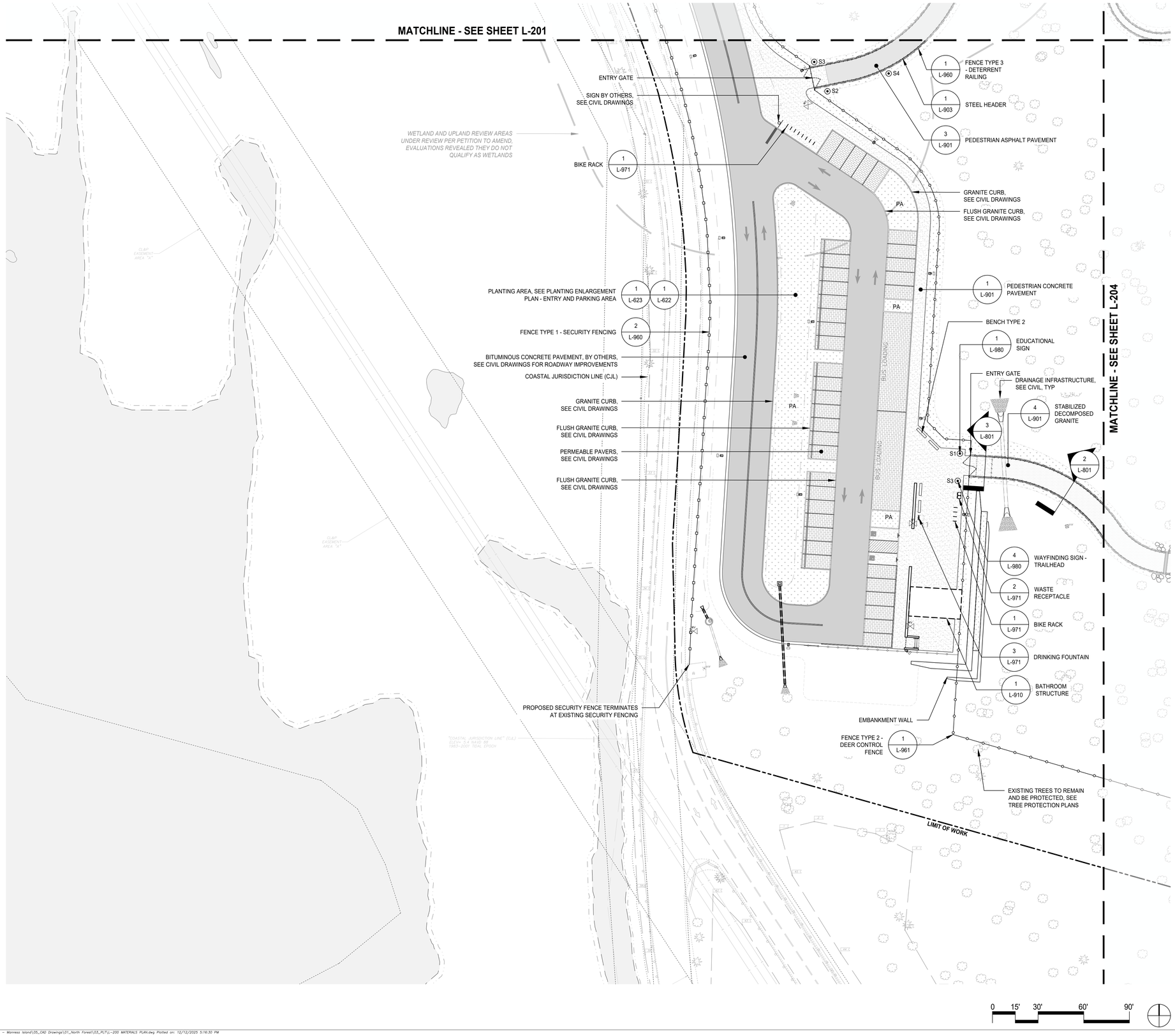

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S1	EDUCATIONAL SIGN
S2	TRAIL MARKER SIGN
S3	WAYFINDING SIGN
S4	RULES AND REGULATIONS SIGN
FENCES AND RAILING	
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SCAPE

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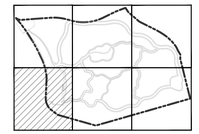
NORTH FOREST
NORWALK, CT

KEY PLAN



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MATERIALS PLAN

PROJECT NO	SHEET NO
2349.1	L-202
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SCAPE	
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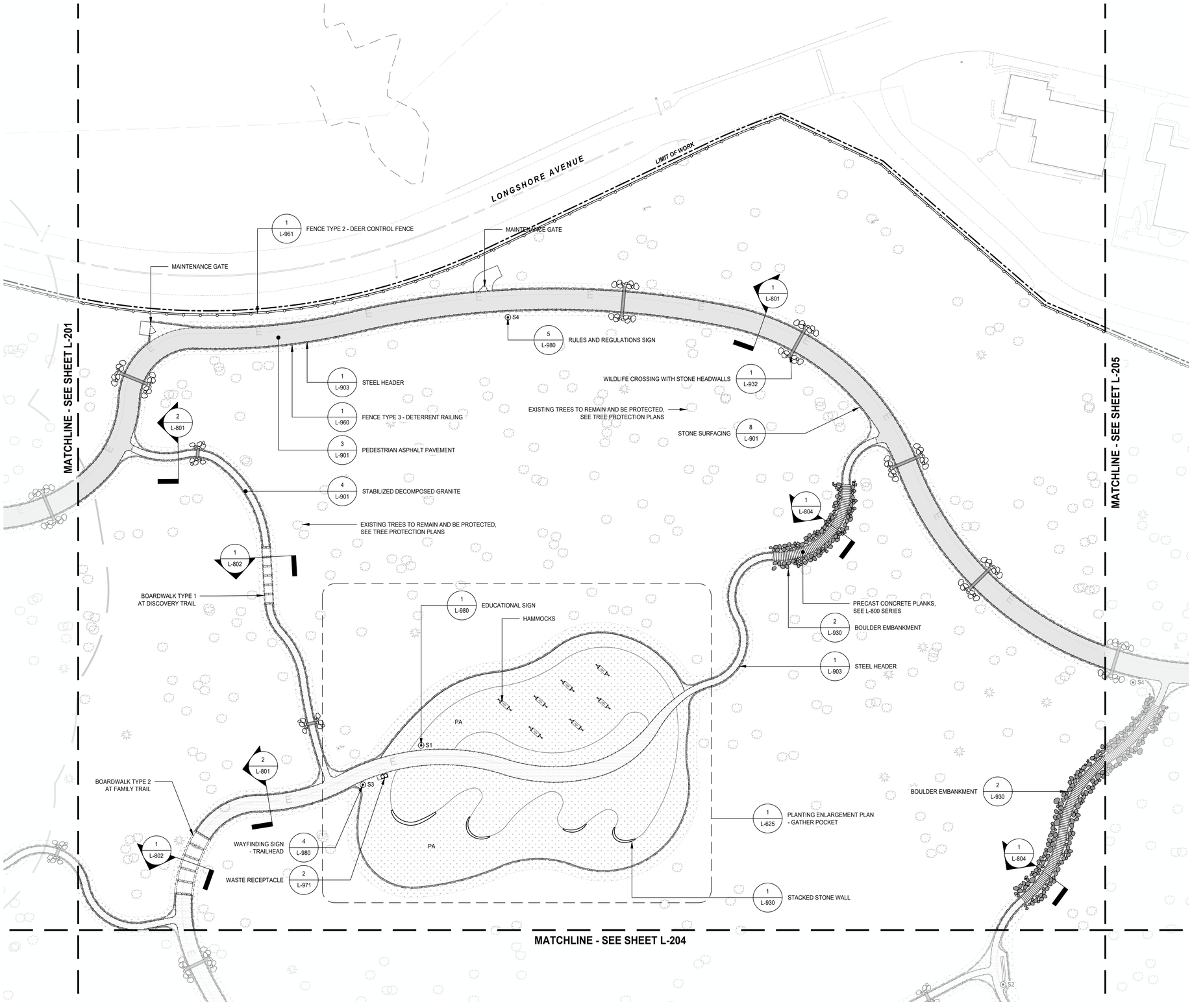

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	STONE STEPS
	BOULDER EMBANKMENT
	PLANTING AREA, SEE L-600 SERIES
	WILDLIFE CROSSING WITH STONE HEADWALLS
SITE FURNISHINGS	
	BIRD BLIND
	BENCH TYPE 1
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	BENCH TYPE 4
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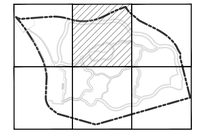

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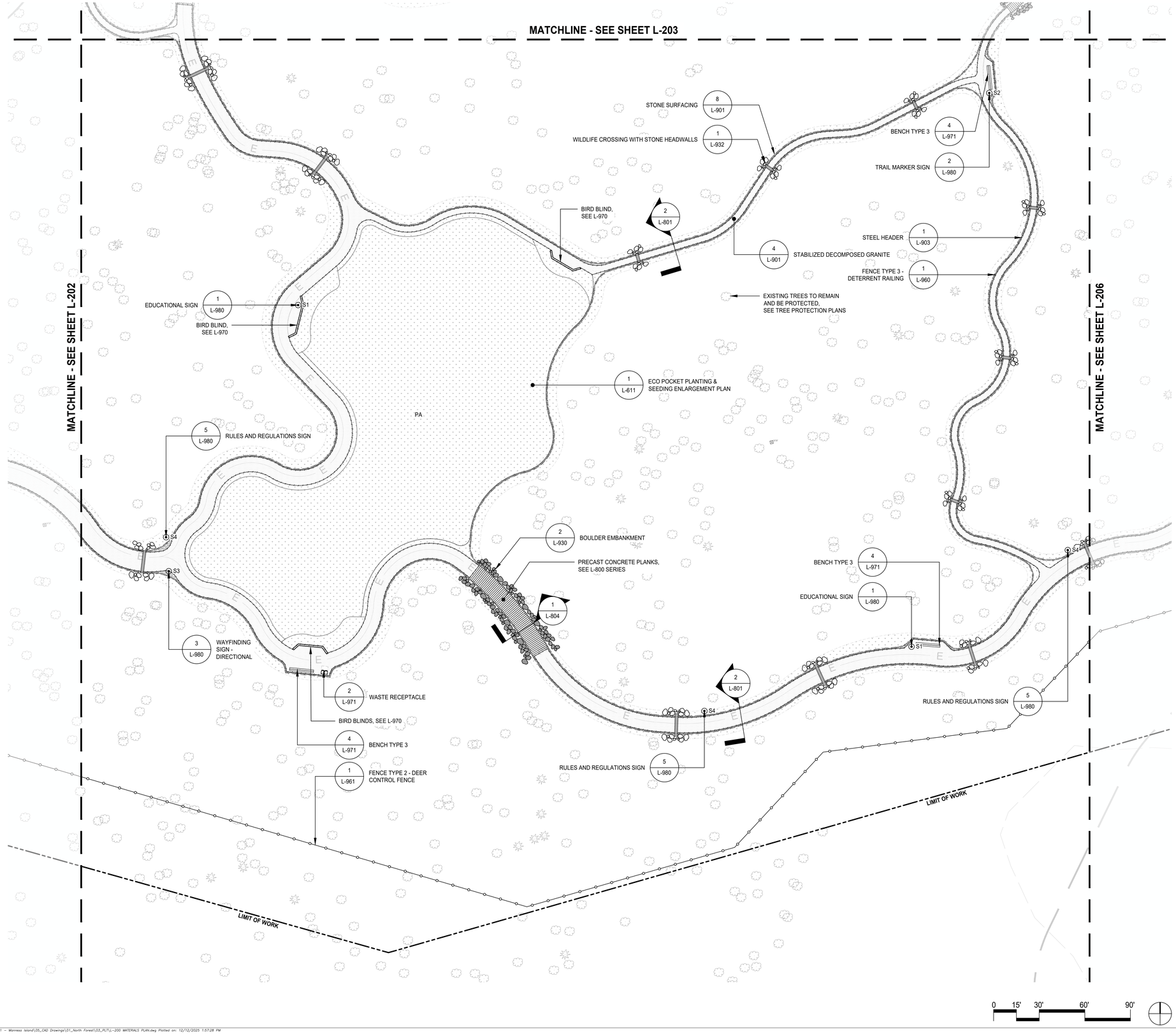

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SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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2349.1	
SCALE	
1" = 30'-0"	
DRAWN BY	
SCAPE	
CHECKED BY	
SCAPE	
DATE	
12/15/2025	

L-204

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MATERIALS SCHEDULE	
SITE ELEMENTS	
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	STONE PAVER TYPE A
	STONE PAVER TYPE B
	WOOD BLOCK PAVEMENT
	STONE SURFACING
	STEEL HEADER
	STACKED STONE WALL
	STONE BLOCK WALL
	STONE STEPS
	BOULDER EMBANKMENT
	PLANTING AREA, SEE L-600 SERIES
	WILDLIFE CROSSING WITH STONE HEADWALLS
SITE FURNISHINGS	
	BIRD BLIND
	BENCH TYPE 1
	BENCH TYPE 2
	BENCH TYPE 3
	BENCH TYPE 4
	CUSTOM BENCH
	RECLAIMED LOGS
	PICNIC TABLES
	HAMMOCKS
	BIKE RACKS, LANDSCAPE FORMS BOLA OR SIMILAR
	DRINKING FOUNTAIN
	WASTE RECEPTACLES
S1	EDUCATIONAL SIGN
S2	TRAIL MARKER SIGN
S3	WAYFINDING SIGN
S4	RULES AND REGULATIONS SIGN
FENCES AND RAILING	
	FENCE TYPE 1, SECURITY FENCING
	FENCE TYPE 2, DEER FENCING, SEE L-960 SERIES
	FENCE TYPE 3, DETERRENT RAILING
	VEHICULAR SECURITY GATE
	PEDESTRIAN SECURITY GATE
	MAINTENANCE GATE

0 15' 30' 60' 90'

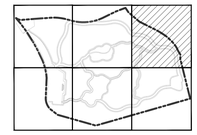
NOTES:
1. SEE **SHEET L-001** FOR GENERAL NOTES AND ABBREVIATIONS.

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

MATERIALS PLAN

PROJECT NO	SHEET NO
2349.1	
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1" = 30'-0"	
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SCAPE	
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SCAPE	
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L-205

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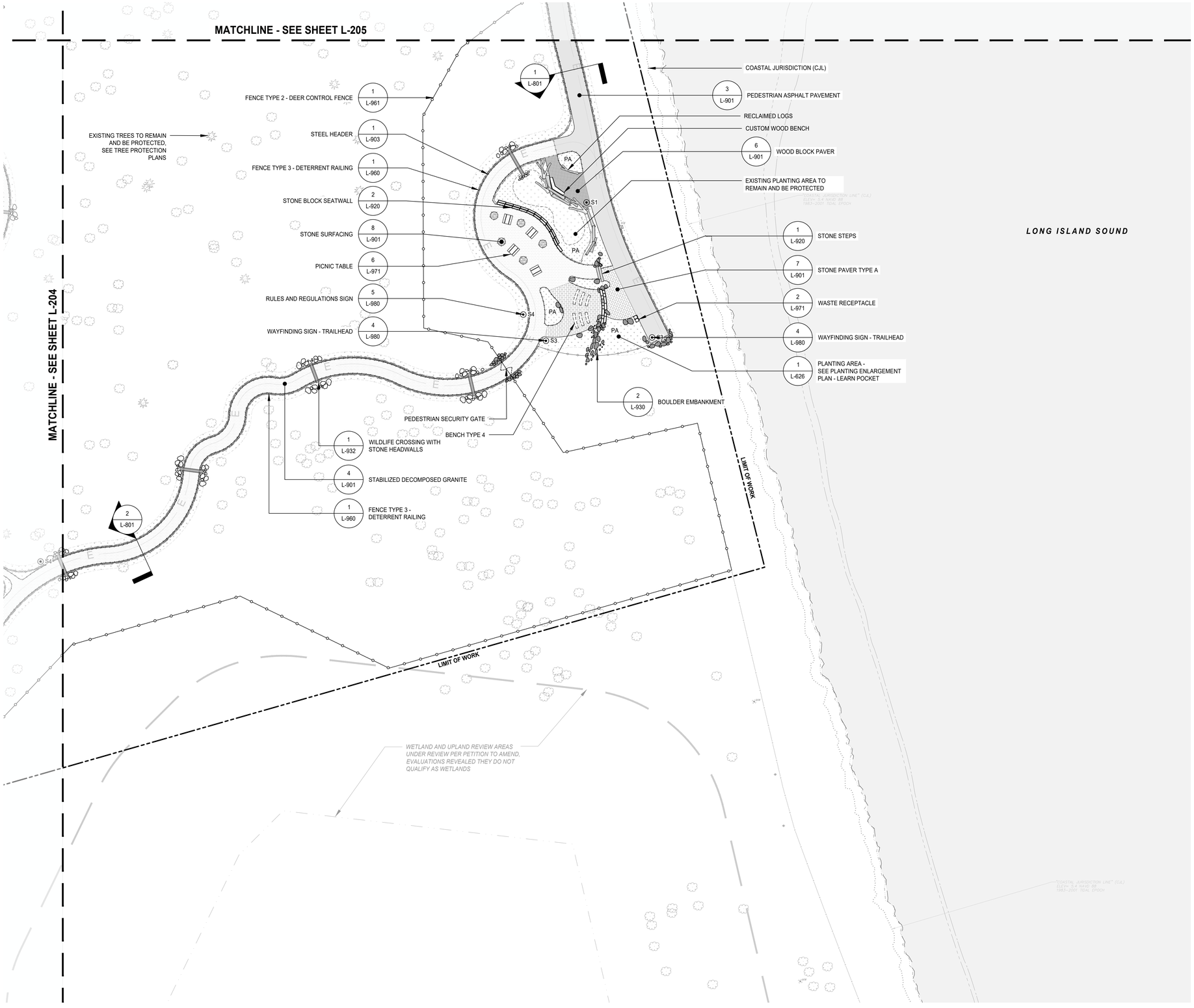

MATERIALS SCHEDULE

ID	DESCRIPTION
SITE ELEMENTS	
	VEHICULAR ASPHALT PAVEMENT, SEE CIVIL
	PEDESTRIAN ASPHALT PAVEMENT
	PEDESTRIAN CONCRETE PAVEMENT
	PRECAST CONCRETE PLANKS
	BOARDWALK TYPE 1
	BOARDWALK TYPE 2
	STABILIZED DECOMPOSED GRANITE
	STONE PAVER TYPE A
	STONE PAVER TYPE B
	WOOD BLOCK PAVEMENT
	STONE SURFACING
	STEEL HEADER
	STACKED STONE WALL
	STONE BLOCK WALL
	STONE STEPS
	BOULDER EMBANKMENT
	PLANTING AREA, SEE L-600 SERIES
	WILDLIFE CROSSING WITH STONE HEADWALLS
SITE FURNISHINGS	
	BIRD BLIND
	BENCH TYPE 1
	BENCH TYPE 2
	BENCH TYPE 3
	BENCH TYPE 4
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	FENCE TYPE 2, DEER FENCING, SEE L-960 SERIES
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SHEET NO **L-206**

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GENERAL LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- **COASTAL JURISDICTION LINE (CJL)** *ELEV: 5.4' NAVD 88 1983-2001 TIDAL EPOCH*
- **MEAN HIGHER HIGH WATER (MHHW)** *ELEV: 3.67' NAVD 88 1983-2001 TIDAL EPOCH*
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- LIMITS OF CONSERVATION EASEMENT *No. 1 AS DEPICTED ON MAP No. 11967 N.L.R.*
- LIMITS OF EXISTING EASEMENT *CL&P EASEMENT AREA "A"*
- EXISTING STORM DRAIN MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING MONITORING WELL
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE WITH STREET LIGHT
- EXISTING SIGN

LAYOUT LEGEND

- CENTERLINE
- ALIGN
- FLUSH
- N: 590670.03' E: 814800.74' COORDINATE POINT

LAYOUT NOTES

ON STRUCTURE + ON-GRADE

1. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO CONSTRUCTION OF PAVEMENTS, CURBS, WALKS, STEPS, WALLS, RAILINGS, FENCING, STRUCTURES, FOUNTAINS, LIGHTING, MANUFACTURED SOILS, PLANTING, AND OTHER ELEMENTS, DAILY CLEAN-UP, MAINTENANCE AND GUARANTEE.
2. NOTIFY THE LANDSCAPE ARCHITECT 72 HOURS PRIOR TO THE COMMENCEMENT OF WORK. PROVIDE THE LANDSCAPE ARCHITECT WITH A PROPOSED SCHEDULE PRIOR TO BEGINNING WORK. KEEP THE LANDSCAPE ARCHITECT INFORMED OF THE PROGRESS OF WORK AND REPORT IMMEDIATELY ANY DIFFICULTIES, DISCREPANCIES, OR PROBLEMS WITH THE INSTALLATION OF THE JOB.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK WITH THE WORK OF OTHER CONTRACTORS AND SUBCONTRACTORS ON SITE, SUCH AS STONE MASONS, IRRIGATION, ELECTRICIAN, CARPENTERS, PLUMBERS, AND SPECIALTY TRADES. COMPLY WITH REQUIREMENTS AND SCHEDULE OF GENERAL CONTRACTOR.
4. THE CONTRACTOR SHALL TAKE CARE DURING CONSTRUCTION TO AVOID DISTURBING OR DAMAGING ADJACENT STRUCTURES, EITHER SUB-GRADE OR ABOVE-GRADE. ANY DAMAGE TO EXISTING STRUCTURES RESULTING FROM CONSTRUCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
5. THE CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS, BOTH ABOVE AND BELOW THE SURFACE. ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THE DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT IN WRITING, PRIOR TO COMMENCEMENT OF WORK.
6. NO CHANGES SHALL BE MADE TO THE DESIGN OR LAYOUT WITHOUT THE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL LAYOUT THE WORK AS DIMENSIONED ON THE PLANS. WRITTEN DIMENSIONS SHALL GOVERN. DO NOT SCALE DISTANCES.
7. CONTRACTOR SHALL LAYOUT AND STAKE IN THE FIELD THE ALIGNMENT OF ALL CURBS, PAVEMENTS AND OTHER IMPROVEMENTS FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE INSTALLATION.
8. THE CONTRACTOR SHALL REPLACE ANY CURBS AND PAVEMENTS DAMAGED OR DISTURBED WHICH ARE NOTED TO REMAIN OR ARE OUTSIDE THE LIMIT OF WORK LINE. ANY REPLACEMENTS SHALL BE FLUSH AND FREE OF TRIPPING HAZARDS.
9. ALL WORK AND MATERIALS REJECTED BY THE LANDSCAPE ARCHITECT AS FAILING TO COMPLY WITH THE CONTRACT DOCUMENTS SHALL BE PROMPTLY REMOVED, REPLACED, AND/OR RE-EXECUTED BY THE CONTRACTOR TO BRING INTO COMPLIANCE WITH THE REQUIREMENTS. THIS SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR WITHOUT COST TO THE OWNER AND SHALL INCLUDE MAKING GOOD ALL WORK OF THE CONTRACTOR AND OTHER CONTRACTORS DESTROYED, DAMAGED, OR OTHERWISE IMPACTED BY SUCH REMOVAL OR REPLACEMENT.
10. KEEP THE SITE CLEAN AND NEAT; REGULARLY WATER DOWN WORK ROADS AND AREAS ADJACENT TO THE SITE TO KEEP THEM FREE OF DUST AND AIR-BORNE POLLUTANTS
11. SEE CIVIL DRAWINGS FOR LIGHTS.

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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SHEET NAME

LAYOUT PLAN

PROJECT NO	2349.1
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SHEET NO **L-301**

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MATCHLINE - SEE SHEET L-301

MATCHLINE - SEE SHEET L-304

WETLAND AND UPLAND REVIEW AREAS UNDER REVIEW PER PETITION TO AMEND, EVALUATIONS REVEALED THEY DO NOT QUALIFY AS WETLANDS

COASTAL JURISDICTION LINE (CJL)

CL&P EASEMENT AREA "A"

BENCHMARK SPIKE ELEV= 8.92 DATUM: NAVD 88

P.C. N: 590182.73' E: 817159.72'

S3

S4

S2

N: 590172.58' E: 817174.22'

N: 590164.39' E: 817175.90' P.I.

N: 590156.43' E: 817177.58'

N: 590114.72' E: 817178.67'

N: 590130.56' E: 817189.16'

N: 590117.37' E: 817232.61' P.C.

N: 590105.15' E: 817227.51'

R60'

N: 590088.64' E: 817216.57'

N: 590067.35' E: 817259.48' P.C.

N: 590065.15' E: 817226.29'

N: 590064.06' E: 817245.36'

P.C. N: 590019.41' E: 817108.84'

BUS LOADING

BUS LOADING

N: 589927.27' E: 817262.95'

N: 589926.20' E: 817280.46'

N: 589938.57' E: 817251.65'

138.52'

90.00°

N: 589909.59' E: 817279.44' P.I.

R44.5'

S1

S3

N: 589908.33' E: 817299.92' P.C.

P.C.

P.C. N: E:

R49.3'

N: 589868.15' E: 817371.46' P.C.

P.I. N: 589847.4 E: 817430.8

N: 589790.66' E: 817209.50'

N: 589789.49' E: 817228.46'

N: 589787.04' E: 817268.39'

102.75°

N: 589732.97' E: 817268.56'

LIMIT OF WORK

0 15' 30' 60' 90'

GENERAL LEGEND

- PROPERTY LINE
- LIMIT OF WORK
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- EXISTING UTILITY POLE WITH STREET LIGHT
- EXISTING SIGN

LAYOUT LEGEND

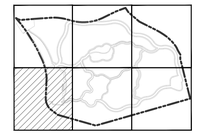
- CENTERLINE
- ALIGN
- FLUSH
- N: 590670.03' E: 814800.74' COORDINATE POINT

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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SHEET NO **L-302**

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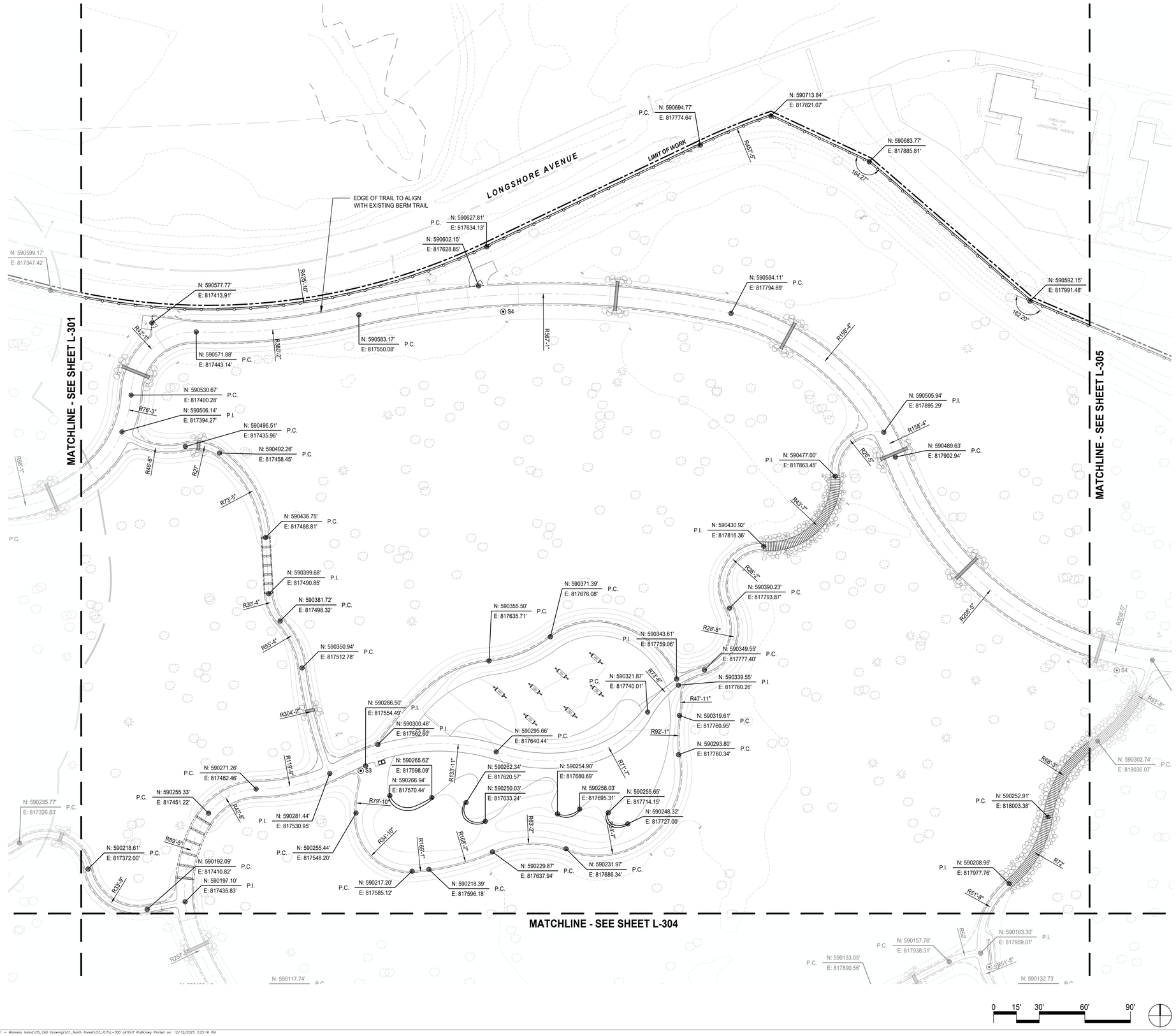

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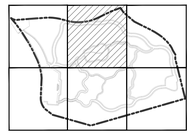

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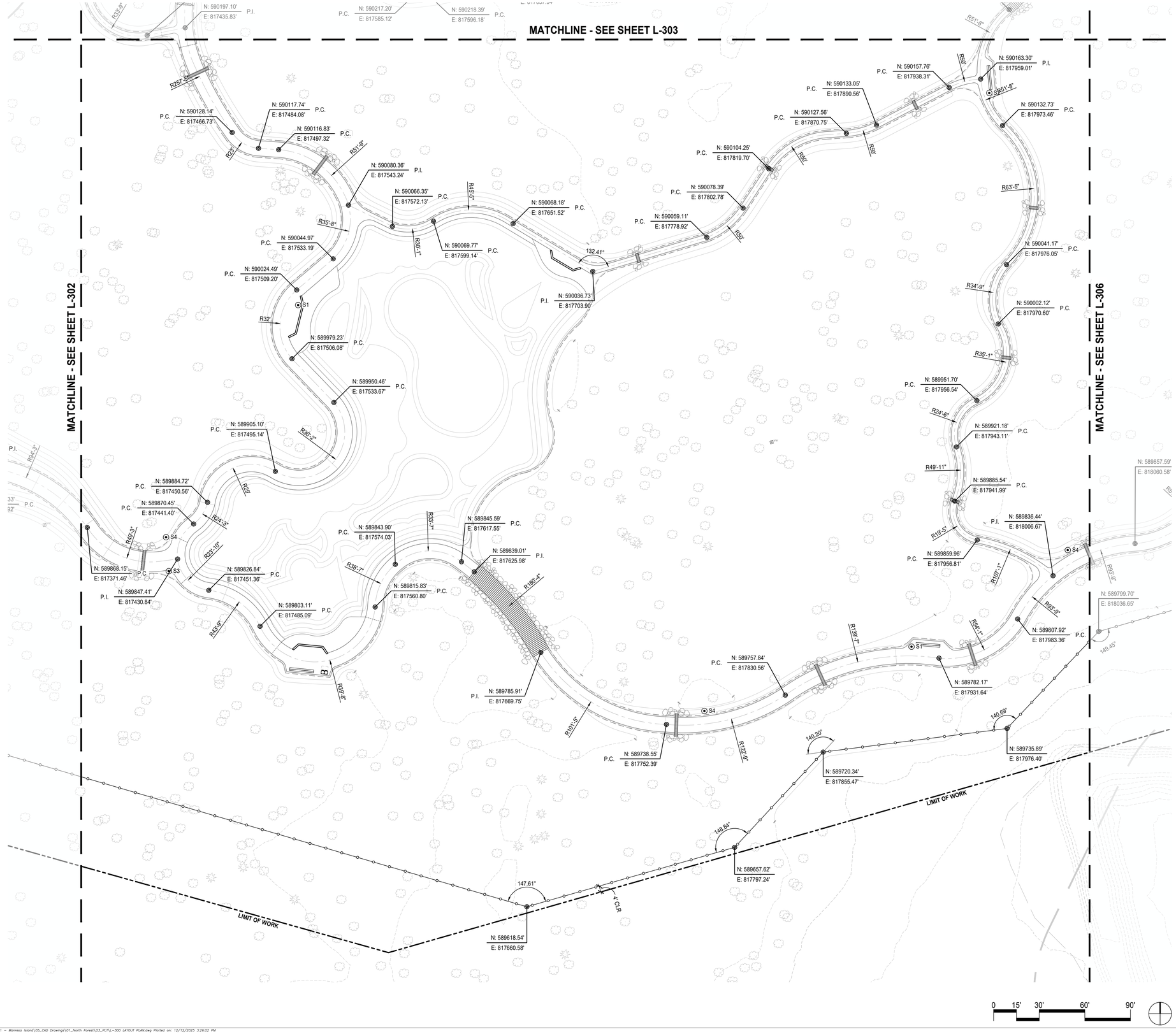

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KEY PLAN



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- EXISTING UTILITY POLE
- EXISTING UTILITY POLE WITH STREET LIGHT
- EXISTING SIGN

LAYOUT LEGEND

- CENTERLINE
- ALIGN
- FLUSH
- N: 590670.03' E: 814800.74' COORDINATE POINT

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



CLIENT

MANRESA ISLAND CORPORATION

LANDSCAPE ARCHITECT	**SCAPE LANDSCAPE ARCHITECTURE DPC** 277 BROADWAY 9th FLOOR NEW YORK, NY 10007 T+ 212 462 2628
CIVIL ENGINEER	**Tighe&Bond** 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	**eDESIGN DYNAMICS** 247 W. 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	**AKRF** 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

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SHEET NAME

LAYOUT PLAN

PROJECT NO	2349.1
SCALE	1" = 30'-0"
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SHEET NO **L-305**

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GENERAL LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- **COASTAL JURISDICTION LINE (CJL)** *ELEV: 5.4' NAVD 88 1983-2001 TIDAL EPOCH*
- **MEAN HIGHER HIGH WATER (MHHW)** *ELEV: 3.67' NAVD 88 1983-2001 TIDAL EPOCH*
- **MEAN HIGH WATER (MHW)** *LOCATED JULY 2014 ELEV: 3.33' NAVD 88 1983-2001 TIDAL EPOCH*
- **MEAN LOW LOW WATER (MLLW)** *LOCATED JULY 2014 ELEV: -4.02 NAVD 88 1983-2001 TIDAL EPOCH*
- **MEAN LOW WATER (MLW)** *LOCATED JULY 2014 ELEV: -3.76' NAVD 88 1983-2001 TIDAL EPOCH*
- LIMITS OF FLAGGED WETLANDS *GROUP "TWA"*
- LIMITS OF CONSERVATION EASEMENT *No. 1 AS DEPICTED ON MAP No. 11967 N.L.R.*
- LIMITS OF EXISTING EASEMENT *CL&P EASEMENT AREA "A"*
- EXISTING STORM DRAIN MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING MONITORING WELL
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE WITH STREET LIGHT
- EXISTING SIGN

LAYOUT LEGEND

- CENTERLINE
- ALIGN
- FLUSH
- N: 590670.03' E: 814800.74' COORDINATE POINT

SCAPE

MANRESA WILDS
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NORWALK, CT

KEY PLAN



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CIVIL ENGINEER	**Tighe&Bond** 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
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ENVIRONMENTAL	**A K R F** 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

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LOCAL APPROVAL

SHEET NAME

LAYOUT PLAN

PROJECT NO	2349.1
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SHEET NO **L-306**

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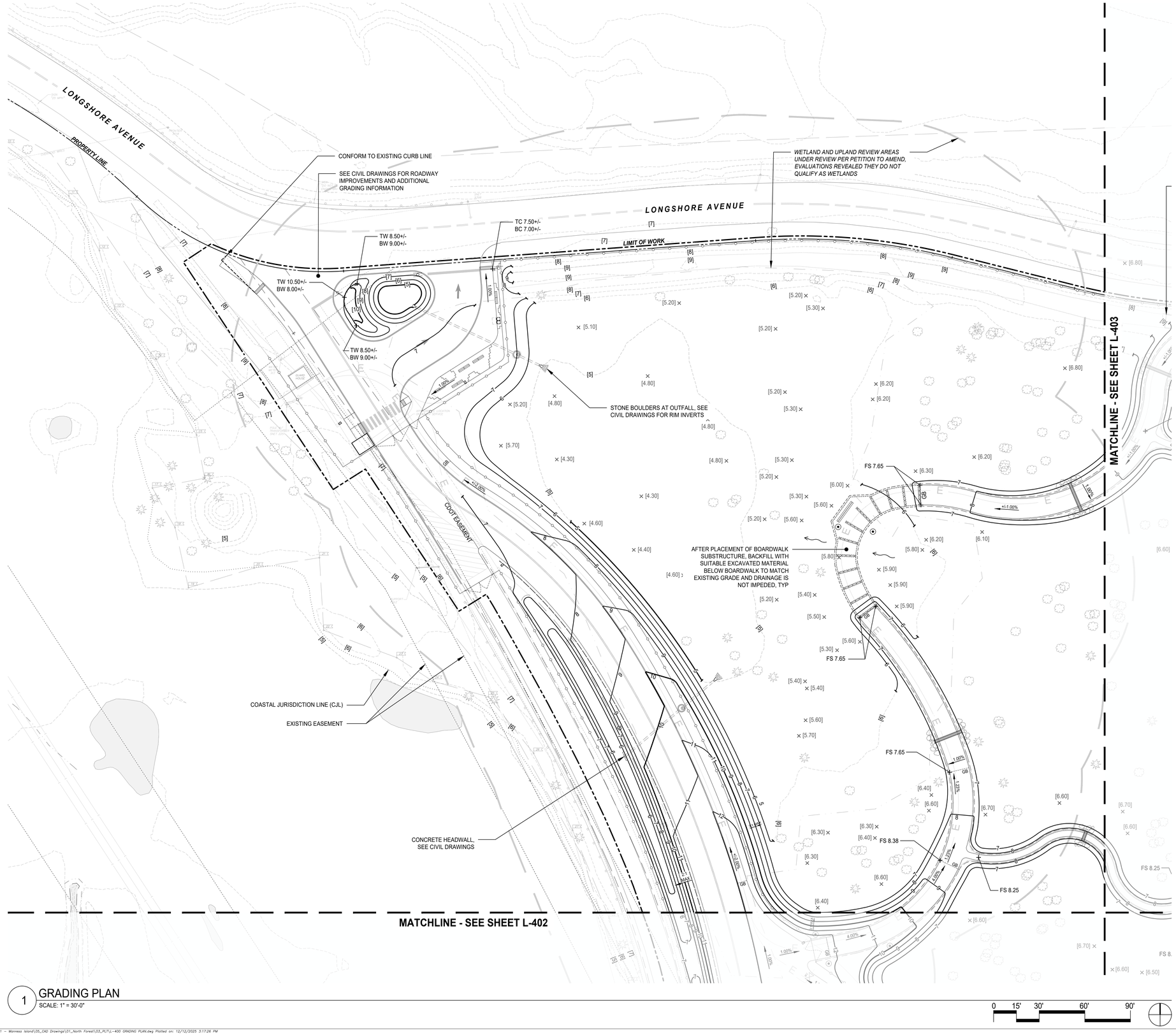

1 GRADING PLAN
SCALE: 1" = 30'-0"

0 15' 30' 60' 90'

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GENERAL LEGEND

- PROPERTY LINE
- LIMIT OF WORK
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- EXISTING STORM DRAIN MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING MONITORING WELL
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE WITH STREET LIGHT
- EXISTING SIGN

GRADING LEGEND

- [5] EXISTING MAJOR CONTOUR
- [4] EXISTING MINOR CONTOUR
- 5 PROPOSED MAJOR CONTOUR
- 4 PROPOSED MINOR CONTOUR
- × [00.00] EXISTING SPOT ELEVATION
- + 00.00 PROPOSED SPOT ELEVATION
- 0.00% SLOPE
- FLUSH
- STAIR MARKER

FS	FINISHED SURFACE	BS	BOTTOM OF STAIRS
FG	FINISHED GRADE	TW	TOP OF WALL
HP	HIGH POINT	BW	BOTTOM OF WALL
LP	LOW POINT	TF	TOP OF FOOTING
TR	TOP OF RAMP	BS	BOTTOM OF STAIRS
BR	BOTTOM OF RAMP	TB	TOP OF STONE BLOCK
TS	TOP OF STAIRS/STEP		

GRADING PLAN NOTES

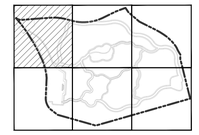
1. SEE **SHEET L-001** FOR ADDITIONAL ABBREVIATIONS AND GENERAL NOTES.

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

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GRADING PLAN

PROJECT NO	SHEET NO
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1 GRADING PLAN
SCALE: 1" = 30'-0"

0 15' 30' 60' 90'

GENERAL LEGEND

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GRADING LEGEND

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- [4] EXISTING MINOR CONTOUR
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- 4 PROPOSED MINOR CONTOUR
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- + 00.00 PROPOSED SPOT ELEVATION
- 0.00% SLOPE
- FLUSH
- STAIR MARKER

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HP	HIGH POINT	BW	BOTTOM OF WALL
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BR	BOTTOM OF RAMP	TB	TOP OF STONE BLOCK
TS	TOP OF STAIRS/STEP		

GRADING PLAN NOTES

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SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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SHEET NO **L-402**

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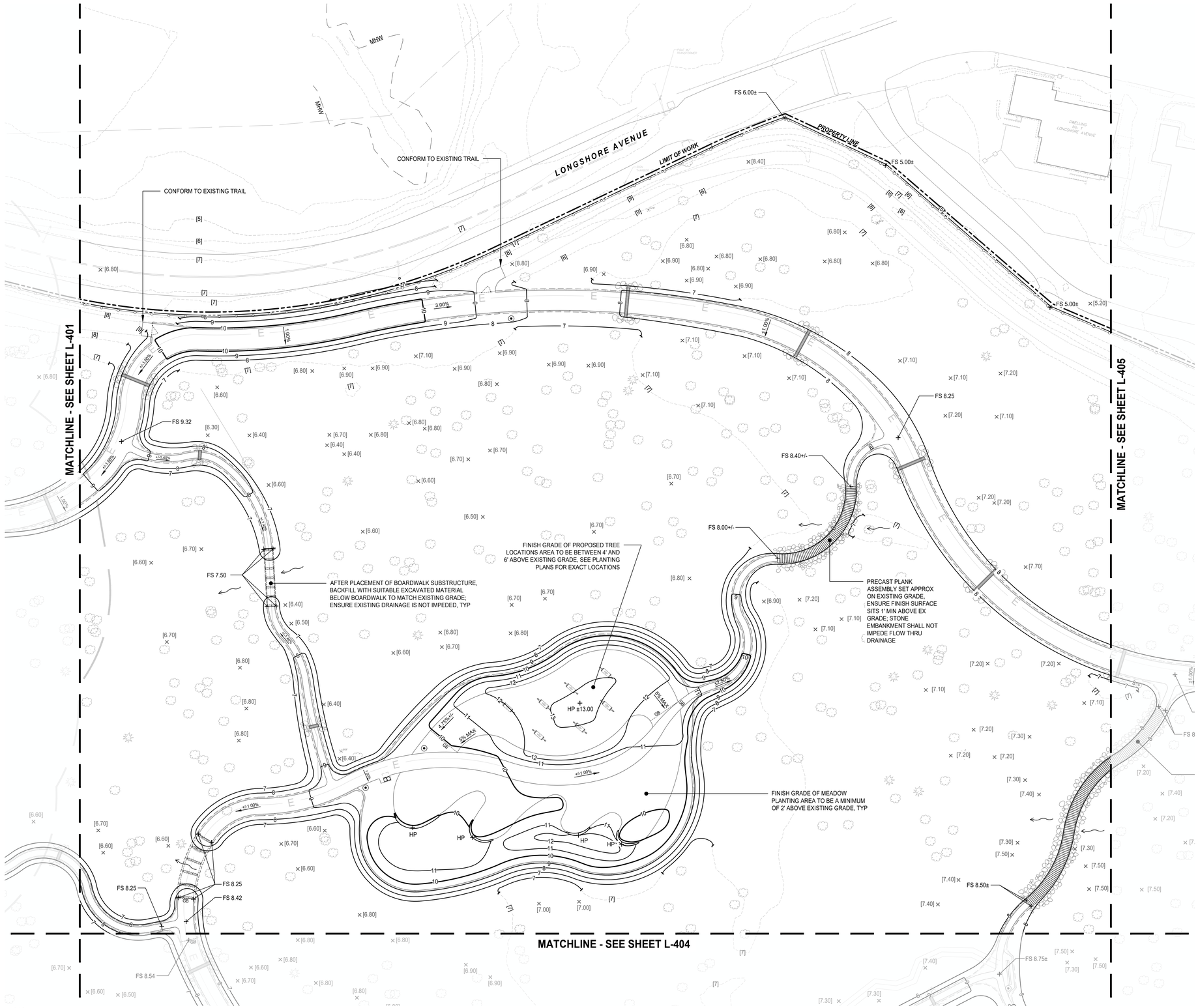

1 GRADING PLAN
SCALE: 1" = 30'-0"

0 15' 30' 60' 90'

GENERAL LEGEND

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- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE WITH STREET LIGHT
- EXISTING SIGN

GRADING LEGEND

- [5] EXISTING MAJOR CONTOUR
- [4] EXISTING MINOR CONTOUR
- 5 PROPOSED MAJOR CONTOUR
- 4 PROPOSED MINOR CONTOUR
- × [00.00] EXISTING SPOT ELEVATION
- + 00.00 PROPOSED SPOT ELEVATION
- 0.00% SLOPE
- FLUSH
- STAIR MARKER

FS	FINISHED SURFACE	BS	BOTTOM OF STAIRS
FG	FINISHED GRADE	TW	TOP OF WALL
HP	HIGH POINT	BW	BOTTOM OF WALL
LP	LOW POINT	TF	TOP OF FOOTING
TR	TOP OF RAMP	BS	BOTTOM OF STAIRS
BR	BOTTOM OF RAMP	TB	TOP OF STONE BLOCK
TS	TOP OF STAIRS/STEP		

GRADING PLAN NOTES

1. SEE **SHEET L-001** FOR ADDITIONAL ABBREVIATIONS AND GENERAL NOTES.

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

GRADING PLAN

PROJECT NO	SHEET NO
2349.1	L-403
SCALE	
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MATCHLINE - SEE SHEET L-403

MATCHLINE - SEE SHEET L-402

MATCHLINE - SEE SHEET L-406

SEE ECO-POCKET PLANTING ENLARGEMENT PLAN FOR ADDITIONAL INFORMATION; FINISH GRADE OF ALL ACCESSIBLE PLANTING AREAS TO BE A MINIMUM OF 2' ABOVE EXISTING GRADE

PRECAST PLANK ASSEMBLY SET APPROX ON EXISTING GRADE, ENSURE FINISH SURFACE SITS 1' MIN ABOVE EX GRADE; STONE EMBANKMENT SHALL NOT IMPEDE FLOW THRU DRAINAGE

LIMIT OF WORK

LIMIT OF WORK

E CIVIL DRAWINGS FOR RIM/INVERTS

1 GRADING PLAN
SCALE: 1" = 30'-0"

0 15' 30' 60' 90'

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GENERAL LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- COASTAL JURISDICTION LINE (CJL) *ELEV: 5.4' NAVD 88 1983-2001 TIDAL EPOCH*
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- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE WITH STREET LIGHT
- EXISTING SIGN

GRADING LEGEND

- [5] EXISTING MAJOR CONTOUR
- [4] EXISTING MINOR CONTOUR
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- 4 PROPOSED MINOR CONTOUR
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- FLUSH
- STAIR MARKER

FS	FINISHED SURFACE	BS	BOTTOM OF STAIRS
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TR	TOP OF RAMP	BS	BOTTOM OF STAIRS
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TS	TOP OF STAIRS/STEP		

GRADING PLAN NOTES

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SCAPE

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NORTH FOREST
NORWALK, CT

KEY PLAN



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PROJECT NO	SHEET NO
2349.1	
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SCAPE	
DATE	
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L-404

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1 GRADING PLAN
SCALE: 1" = 30'-0"

0 15' 30' 60' 90'

GENERAL LEGEND

- PROPERTY LINE
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- **COASTAL JURISDICTION LINE (CJL)** *ELEV: 5.4' NAVD 88 1983-2001 TIDAL EPOCH*
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GRADING LEGEND

- [5] EXISTING MAJOR CONTOUR
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GRADING PLAN NOTES

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SCAPE

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2349.1	L-405
SCALE	
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1 GRADING PLAN
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0 15' 30' 60' 90'

GENERAL LEGEND

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GRADING LEGEND

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SCAPE

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NORWALK, CT

KEY PLAN



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NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL



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LOCAL APPROVAL

SHEET NAME

GRADING PLAN

PROJECT NO	SHEET NO
2349.1	L-406
SCALE	
1" = 30'-0"	
DRAWN BY	
SCAPE	
CHECKED BY	
SCAPE	
DATE	
12/15/2025	

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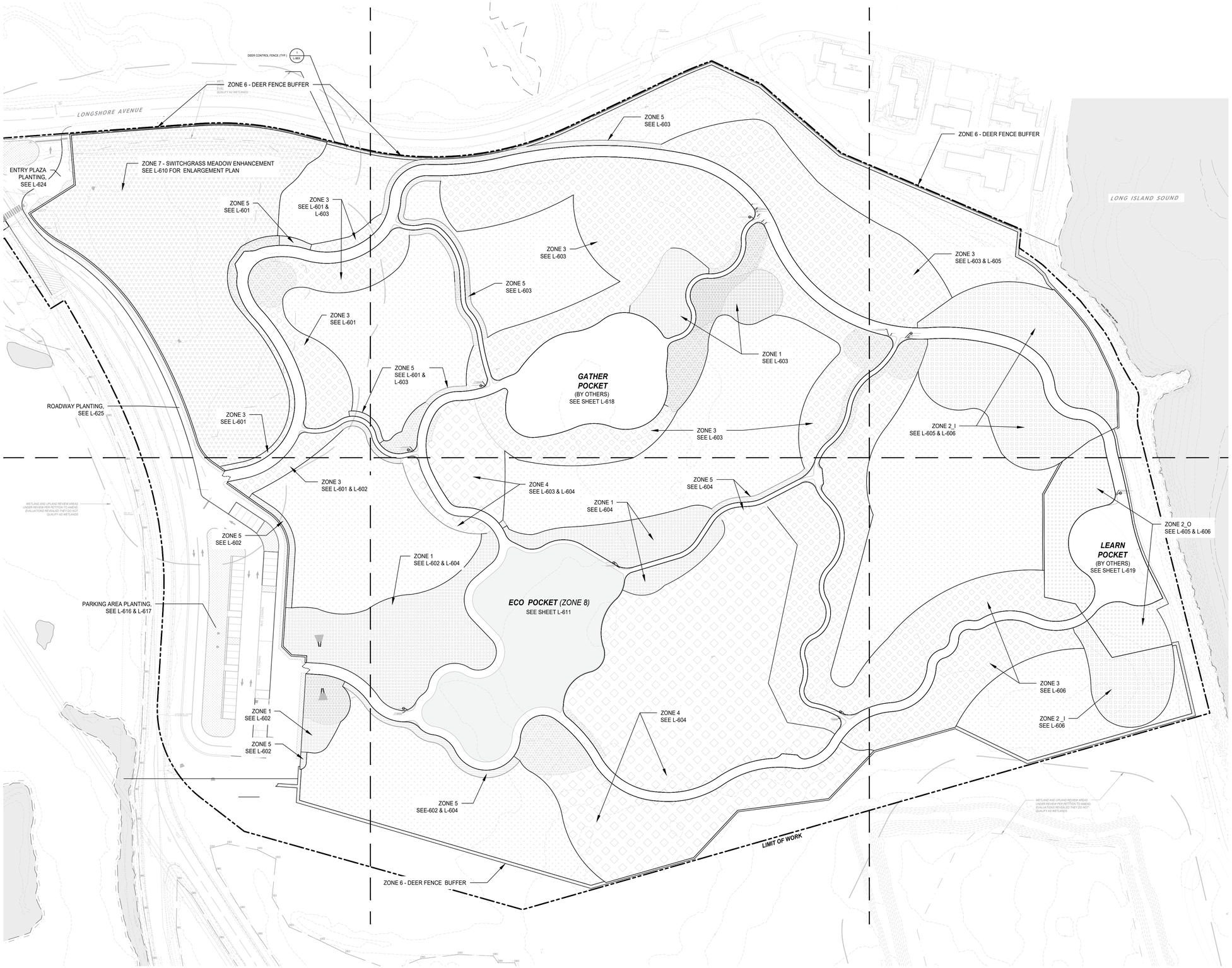
P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLT\L-400 GRADING PLAN.dwg Plotted on: 12/12/2025 3:18:56 PM



1 RESTORATION PLANTING PLAN
SCALE: 1" = 60'-0"

0 30' 60' 120' 180'

LEGEND

PLANTING ZONE BOUNDARY

PLANTING ZONE 1

ZONE 1
TOTAL SITE WIDE AREA: 55,455 SF

PLANTING ZONE 2

ZONE 2_I
INSIDE DEER CONTROL FENCE
TOTAL SITE WIDE AREA: 52,239 SF

ZONE 2_O
OUTSIDE DEER CONTROL FENCE
TOTAL SITE WIDE AREA: 18,852 SF

PLANTING ZONE 3

ZONE 3
TOTAL SITE WIDE AREA: 204,896 SF

PLANTING ZONE 4

ZONE 4
TOTAL SITE WIDE AREA: 120,952 SF

PLANTING ZONE 5

ZONE 5
TOTAL SITE WIDE AREA: 13,302 SF

PLANTING ZONE 6

ZONE 6 - DEER FENCE BUFFER
TOTAL SITE WIDE AREA: 12,135 SF

PLANTING ZONE 7

ZONE 7 - SWITCHGRASS MEADOW ENHANCEMENT
TOTAL SITE WIDE AREA: 88,158 SF

PLANTING ZONE 8

ZONE 8 - ECO POCKET
TOTAL SITE WIDE AREA: 39,619 SF

WET ADAPTIVE PLANTING

WET ADAPTIVE
TOTAL SITE WIDE AREA: 31,257 SF

FENCING & BARRIER

DEER CONTROL FENCE

DETERRENT FENCING

OTHER

LIMIT OF WORK

EX. CONTOUR

EXISTING PLANTING AREAS TO REMAIN

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING PLAN

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 60'-0"	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

L-600

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Z:\1PROJECTS\1EDD\Manresa North Forest_2025.08\06_Drawings And Maps\CAD\EDD\2025 12 05 - 50CD Permit Set\EDD 50% CD 12 05 2025 L-600s Restoration Plan.dwg Plotted on: 12/12/2025 5:05:38 PM

RESTORATION PLANTING NOTES:

1. FIELD DIRECTION

1.1. PLANTING ZONE LOCATIONS SHALL BE FIELD DIRECTED. THE PROJECT ECOLOGIST SHALL WALK THE PROPOSED PLANTING LOCATIONS WITH THE CONTRACTOR A MINIMUM OF 10 BUSINESS DAYS PRIOR TO COMMENCEMENT OF CONTRACTOR'S WORK. THIS FIELD DIRECTION WALK CAN BE SCHEDULED BY THE CONTRACTOR AND SHALL OCCUR EITHER CONCURRENTLY WITH THE PROJECT'S PRECONSTRUCTION MEETING OR SCHEDULED AS A SEPARATE MEETING.

1.2. SEE SHEET L-990 FOR TREE PROTECTION FENCING DETAILS AND REQUIREMENTS FOR ALL EXISTING TREES TO BE PROTECTED. STAKED LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE CLIENT'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.

1.3. CONTRACTOR TO STAKE LOCATIONS OF PROPOSED SITE IMPROVEMENTS FOR APPROVAL PRIOR TO VEGETATION REMOVAL. CLIENT REPRESENTATIVE TO APPROVE THE EXTENT OF ALL TREE, SHRUB AND GROUNDCOVER REMOVALS PRIOR TO REMOVAL ACTIVITIES.

1.4. ALL CLEARING, GRUBBING, GRADING, TRENCHING AND HARDSCAPE REMOVAL WITHIN TREE PROTECTION ZONES OR EXISTING PLANTING AREAS TO REMAIN SHALL BE PERFORMED IN ACCORDANCE WITH LANDSCAPE PROTECTION SPECIFICATIONS, EARTHWORK SPECIFICATION, EROSION CONTROL SPECIFICATION, AND ENVIRONMENTAL MANAGEMENT SPECIFICATION.

1.5. PROJECT ECOLOGIST, ARBORIST, OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT TO BE PRESENT DURING ALL TREE CANOPY PRUNING, ROOT PRUNING, TREE REMOVAL, AND GROUND DISTURBANCE WORK. ALL SUCH WORK MUST BE PRE-APPROVED BY THE OWNER PRIOR TO COMMENCEMENT.

1.6. SEE LANDSCAPE PROTECTION SPECIFICATIONS FOR MORE DETAIL AND ADDITIONAL REQUIREMENTS.

1.7. SEE EARTHWORK SPECIFICATION FOR MORE DETAIL AND ADDITIONAL REQUIREMENTS.

1.8. SEE ENVIRONMENTAL MANAGEMENT SPECIFICATION FOR MORE DETAIL AND ADDITIONAL REQUIREMENTS.

2. DEFINITIONS

2.1. CRITICAL ROOT ZONE (CRZ) AND TREE PROTECTION ZONE (TPZ): EITHER EXTENDS FROM TRUNK TO PERIMETER OF CANOPY DRIPLINE; OR EXTENDS TO A DISTANCE OF 1.5 FT PER INCH OF DIAMETER BREAST HEIGHT (DBH), WHICHEVER IS GREATER. CONFIRM CRITICAL ROOT ZONE AND TREE PROTECTION ZONE IN THE FIELD WITH THE PROJECT ECOLOGIST, ARBORIST, AND/OR LANDSCAPE ARCHITECT.

2.2. DIAMETER BREAST HEIGHT (DBH): DIAMETER OF TRUNK AT 4.5 FT ABOVE EXISTING GRADE.

2.3. ESTABLISHMENT: EARLY STAGE OF PLANT DEVELOPMENT FOLLOWING SEEDING OR PLANTING.

2.4. INVASIVE PLANT: A NON-NATIVE PLANT SPECIES THAT TYPICALLY SPREADS AGGRESSIVELY AND DISRUPTS LOCAL ECOSYSTEMS BY OUTCOMPETING NATIVE VEGETATION.

2.5. MICROSITE: A SMALL, LOCALIZED PLANTING AREA PREPARED WITHIN A LARGER INVASIVE PLANT REMOVAL ZONE WHERE NATIVE PLANTS AND SEED ARE INSTALLED TO PROMOTE ESTABLISHMENT OF NATIVE PLANTS AND SUPPRESS INVASIVE PLANT REGROWTH.

2.6. NATIVE PLANT: A PLANT SPECIES THAT OCCURS NATURALLY IN THE UNITED STATES, WITH PRIORITY FOR THIS PROJECT GIVEN TO SPECIES NATIVE TO THE NORTHEASTERN REGION AND CONNECTICUT.

3. PLANTING WINDOW

3.1. SPRING WINDOW: MAY 1 - MAY 31

3.2. FALL WINDOW: SEPTEMBER 15 - OCTOBER 31

3.3. PLANTING SHALL OCCUR DURING THESE WINDOWS UNLESS OTHERWISE SPECIFIED.

4. PLANTING METHODS

4.1. SEE PLANTING SPECIFICATIONS FOR MORE DETAIL AND ADDITIONAL REQUIREMENTS.

4.2. PLANTINGS SHALL BE INSTALLED USING ONE OF THE FOLLOWING METHODS: PRECISION PLANTING METHOD; EXCAVATION PLANTING METHOD; OR TYPICAL PLANTING METHOD.

4.2.1. SEE L-619 FOR A DIAGRAMMATIC OVERVIEW OF THE DIFFERENT PLANTING METHODS TO BE PERFORMED WITHIN DESIGNATED PLANTING ZONES FOR THE PROJECT SITE.

4.2.2. PRECISION PLANTING METHOD

4.2.2.1. THE PRECISION PLANTING METHOD IS DESIGNED TO GIVE NATIVE PLANTS A COMPETITIVE ADVANTAGE OVER INVASIVE PLANTS DURING ESTABLISHMENT. THIS METHOD INCLUDES THE REMOVAL OF INVASIVE PLANTS, FOLLOWED BY THE INSTALLATION OF NATIVE PLANTS WITH A LAYER OF IMPORTED SANDY PLANTING MEDIUM, AND THE APPLICATION OF A NATIVE SEED MIX AND COVER SEED MIX TO ESTABLISH A DENSE GROUNDCOVER.

4.2.2.2. CONTRACTOR TO PERFORM THE PRECISION PLANTING METHOD WITHIN THE FOLLOWING PLANTING ZONES:

1B_P	3B_P	WA_C1
1C	3C	WA_C2
2B_PI	4B_P	7A
2B_PO	5B_P	7B
2C_I	WA_B_P1	7C
2C_O	WA_B_P2	

4.2.2.3. PRIOR TO INVASIVE PLANT REMOVAL AND IMPLEMENTATION OF THE PRECISION PLANTING METHOD, THE PLANTING ZONE SHALL BE PREPARED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL NOTES AND THE TREE PROTECTION AND REMOVAL NOTES.

4.2.2.4. INVASIVE PLANT REMOVALS ARE ANTICIPATED WITHIN PLANTING ZONES DESIGNATED FOR THE PRECISION PLANTING METHOD. REFER TO THE INITIAL INVASIVE VEGETATION MANAGEMENT PROGRAM AND THE POST-INSTALLATION INVASIVE VEGETATION MANAGEMENT PROGRAM INCLUDED WITHIN THESE RESTORATION NOTES.

4.2.2.5. THE PRECISION PLANTING METHOD INCLUDES: INITIAL INVASIVE VEGETATION REMOVAL; PREPARATION OF SMALL PLANTING AREAS (TO BE REFERRED TO AS "MICROSITES"); INSTALLATION OF NATIVE PLANTS WITH IMPORTED SANDY PLANTING MEDIUM; AND SEEDING DURING THE SAME MOBILIZATION.

4.2.2.5.1. REMOVE INVASIVE VEGETATION IN ACCORDANCE WITH THE INITIAL INVASIVE VEGETATION MANAGEMENT PROGRAM (SEE NOTES ON THIS SHEET).

4.2.2.5.2. PREPARE MICROSITES ADJACENT TO INVASIVE REMOVAL ZONES:

4.2.2.5.2.1. POSITION MICROSITES APPROXIMATELY TWO FEET (2') FROM THE MAIN TRUNK AT GROUND LEVEL FOR SINGLE REMOVED INVASIVE PLANTS, OR TWO FEET (2') FROM THE OUTER EDGE OF TRUNK CLUSTERS WHEN THERE ARE DENSE INVASIVE PLANT CLUSTERS.

4.2.2.5.2.2. FOLLOW SPACING REQUIREMENTS FOR NATIVE PLANTS ACCORDING TO THE RESTORATION PLANS, PLANTING AND SEEDING SCHEDULES, AND PLANTING DETAILS TO THE MAXIMUM EXTENT PRACTICABLE. WHERE SPACING CONFLICTS OCCUR, PRIORITIZE LOCATING NEW PLANTINGS ADJACENT TO AREAS OF INVASIVE PLANT REMOVAL.

4.2.2.5.2.3. EXCAVATE PLANTING HOLES AND INSTALL IMPORTED SANDY PLANTING MEDIUM.

4.2.2.5.2.4. INSTALL NATIVE CONTAINERIZED PLANTS OR PLUGS.

4.2.2.5.2.5. APPLY SPECIFIED NATIVE SEED AND COVER SEED MIXES PER REQUIREMENTS SHOWN ON RESTORATION PLANS AND SEEDING SCHEDULES. INSTALL NATIVE SEED MIX AND COVER SEED MIX CONCURRENTLY IN A SINGLE APPLICATION PROCESS. MIXES SHALL BE COMBINED OR BROADCAST TOGETHER TO ENSURE UNIFORM DISTRIBUTION ACROSS THE MICROSITES. APPLICATION RATES FOR EACH MIX SHALL FOLLOW THE REQUIREMENTS SHOWN FOR THE DESIGNATED PLANTING ZONE PURSUANT TO THE RESTORATION PLANS AND SEEDING SCHEDULES.

4.2.2.5.2.6. CONDUCT POST-INSTALLATION INVASIVE MANAGEMENT FOR TWO (2) YEARS IN ACCORDANCE WITH THE POST-INSTALLATION INVASIVE MANAGEMENT PROGRAM (SEE NOTES ON THIS SHEET).

4.2.2.6. MICROSITE PREPARATION

4.2.2.6.1. MICROSITES SHALL BE PRIORITIZED ADJACENT TO INVASIVE VEGETATION REMOVAL LOCATIONS.

4.2.2.6.2. PREPARE MICROSITES AS FOLLOWS:

4.2.2.6.2.1. CONTAINERIZED PLANTS

4.2.2.6.2.1.1. CREATE A MINIMUM TWO-FOOT (2') DIAMETER PLANTING AREA WITH THE PLANTING HOLE CENTERED.

4.2.2.6.2.1.1. REMOVE EXISTING GROUNDCOVER WITHIN EACH MICROSITE TO EXPOSE SOIL FOR SEEDING.

4.2.2.6.2.1.2. PREPARE THE PLANTING HOLE TO ACCOMMODATE SIX INCHES (6") OF IMPORTED SANDY PLANTING MEDIUM ALONG THE BOTTOM AND SIDES OF THE PLANT ROOTBALL.

4.2.2.6.2.2. PLUG PLANTS

4.2.2.6.2.2.1. CREATE A MINIMUM SIX-INCH (6") DIAMETER PLANTING AREA WITH THE PLANTING HOLE CENTERED.

4.2.2.6.2.2.2. REMOVE EXISTING GROUNDCOVER WITHIN EACH MICROSITE TO EXPOSE SOIL FOR SEEDING.

4.2.2.6.2.2.3. PREPARE THE PLANTING HOLE TO ACCOMMODATE A MINIMUM OF TWO INCHES (2") OF IMPORTED PLANTING MEDIUM ALONG THE BOTTOM AND SIDES OF EACH PLUG.

4.2.3. EXCAVATION PLANTING METHOD

4.2.3.1. THE EXCAVATION PLANTING METHOD IS USED IN DESIGNATED PLANTING ZONES WHERE APPROXIMATELY ONE FOOT (1') OF EXISTING SOIL IS REMOVED AND REPLACED WITH ONE FOOT (1') OF IMPORTED SANDY PLANTING MEDIUM. CONFIRM THE FINAL DEPTH PER GRADING PLANS AND DETAILS.

4.2.3.2. THE EXCAVATION PLANTING METHOD IS TO BE PERFORMED IN THE FOLLOWING PLANTING ZONES:

1B_E	3B_E	WA_B_E1
2B_EI	4B_E	WA_B_E2
2B_EO	5B_E	

4.2.3.3. PRIOR TO IMPLEMENTING THE EXCAVATION PLANTING METHOD, THE PLANTING ZONE SHALL BE CLEARED AND THE SITE PREPARED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL NOTES AND THE TREE PROTECTION AND REMOVAL NOTES.

4.2.3.4. POST-INSTALLATION INVASIVE VEGETATION MANAGEMENT PROGRAM IS ANTICIPATED TO OCCUR WITHIN PLANTING ZONES DESIGNATED FOR THE EXCAVATION PLANTING METHOD. REFER TO THE POST-INSTALLATION INVASIVE VEGETATION MANAGEMENT PROGRAM INCLUDED WITHIN THESE RESTORATION NOTES.

4.2.3.5. THE EXCAVATION PLANTING METHOD INCLUDES: REMOVAL OF EXISTING SOIL TO SPECIFIED DEPTH; PLACEMENT OF IMPORTED SANDY PLANTING MEDIUM THROUGHOUT THE PLANTING ZONE; INSTALLATION OF NATIVE PLANTS; AND APPLICATION OF SPECIFIED SEED MIXES. SEQUENCE OF WORK:

4.2.3.5.1. REMOVE EXISTING SOIL TO A DEPTH OF ONE FOOT (1') WITHIN DESIGNATED PLANTING ZONES. CONFIRM FINAL DEPTH PER GRADING PLANS AND DETAILS.

4.2.3.5.2. PLACE IMPORTED SANDY PLANTING MEDIUM TO A DEPTH OF ONE FOOT (1') IN PREPARED AREAS. CONFIRM FINAL DEPTH PER GRADING PLANS AND DETAILS.

4.2.3.5.3. FOLLOW NATIVE PLANT SPACING REQUIREMENTS PER THE RESTORATION PLANS, PLANTING AND SEEDING SCHEDULES, AND PLANTING DETAILS.

4.2.3.5.4. PREPARE PLANTING HOLES IN ACCORDANCE WITH THE RESTORATION PLANS, PLANTING AND SEEDING SCHEDULES, AND PLANTING DETAILS.

4.2.3.5.5. INSTALL NATIVE CONTAINERIZED PLANTS OR PLUGS PER SPACING REQUIREMENTS SHOWN ON RESTORATION PLANS AND PLANTING SCHEDULES.

4.2.3.5.6. APPLY SPECIFIED NATIVE SEED AND COVER SEED MIXES PER REQUIREMENTS SHOWN ON RESTORATION PLANS AND SEEDING SCHEDULES.

4.2.3.5.7. CONDUCT POST-INSTALLATION INVASIVE MANAGEMENT FOR TWO (2) YEARS IN ACCORDANCE WITH THE POST-INSTALLATION INVASIVE MANAGEMENT PROGRAM INCLUDED WITHIN THESE RESTORATION NOTES.

4.2.4. TYPICAL PLANTING METHOD

4.2.4.1. CONTRACTOR TO PERFORM THE TYPICAL PLANTING METHOD IN PLANTING ZONES NOT DESIGNATED FOR THE PRECISION PLANTING METHOD OR THE EXCAVATION PLANTING METHOD. THE TYPICAL PLANTING METHOD IS TO BE PERFORMED IN THE FOLLOWING PLANTING ZONES:

1A	4A	6
2A_I	4C	7D
2A_O	5A	8 [ECO POCKETS]
3A	WA_A	TRAIL JUNCTIONS [1 - 11]

4.2.4.2. PRIOR TO IMPLEMENTATION, CLEAR AND PREPARE THE PLANTING AREA IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL NOTES AND THE TREE PROTECTION AND REMOVAL NOTES.

4.2.4.3. PERFORM INVASIVE VEGETATION REMOVAL, IF REQUIRED, IN ACCORDANCE WITH THE INITIAL INVASIVE VEGETATION MANAGEMENT PROGRAM AND POST-INSTALLATION INVASIVE VEGETATION MANAGEMENT PROGRAM INCLUDED IN THESE RESTORATION NOTES.

4.2.4.4. THE TYPICAL PLANTING METHOD INCLUDES SITE PREPARATION AND STABILIZATION, PLACEMENT OF IMPORTED SANDY PLANTING MEDIUM (WHERE INDICATED), PLANTING HOLE PREPARATION (WHERE PLANTING OCCURS), INSTALLATION OF NATIVE PLANTS (WHERE PLANTING OCCURS), AND APPLICATION OF SPECIFIED SEED MIXES IN ACCORDANCE WITH THE RESTORATION PLANS AND SEEDING SCHEDULES. IN SOME PLANTING ZONES, RESTORATION MAY CONSIST OF SEEDING ONLY, WITH NO INSTALLATION OF CONTAINERIZED PLANTS OR PLUGS AND NO PLANTING HOLE PREPARATION. SEQUENCE OF WORK:

4.2.4.4.1. PLACE IMPORTED SANDY PLANTING MEDIUM TO ACHIEVE THE ELEVATIONS DEPICTED ON THE GRADING PLANS AND DETAILS AND PURSUANT TO THE RESTORATION PLANS.

4.2.4.4.2. PREPARE THE SOIL SURFACE AND MICROSITES FOR SEEDING BY LOOSENING, RAKING, AND/OR SCARIFYING THE TOP LAYER AS NEEDED TO CREATE SUITABLE EXPOSED SOIL FOR SEED INSTALLATION, IN ACCORDANCE WITH THE RESTORATION PLANS AND SEEDING SCHEDULES.

4.2.4.4.3. FOLLOW NATIVE PLANT SPACING REQUIREMENTS PER THE RESTORATION PLANS, PLANTING AND SEEDING SCHEDULES, AND PLANTING DETAILS, WHERE PLANTING OCCURS.

4.2.4.4.4. PREPARE PLANTING HOLES IN ACCORDANCE WITH THE RESTORATION PLANS, PLANTING AND SEEDING SCHEDULES, AND PLANTING DETAILS, WHERE PLANTING OCCURS.

4.2.4.4.5. INSTALL NATIVE CONTAINERIZED PLANTS AND PLUGS PER SPACING REQUIREMENTS SHOWN ON RESTORATION PLANS AND PLANTING SCHEDULES, WHERE PLANTING OCCURS.

4.2.4.4.6. APPLY SPECIFIED NATIVE SEED MIXES PER REQUIREMENTS SHOWN ON RESTORATION PLANS AND SEEDING SCHEDULES.

4.2.4.4.7. CONDUCT POST-INSTALLATION INVASIVE MANAGEMENT FOR TWO (2) YEARS IN ACCORDANCE WITH THE POST-INSTALLATION INVASIVE MANAGEMENT PROGRAM INCLUDED WITHIN THESE RESTORATION NOTES.

5. INVASIVES MANAGEMENT PROGRAMS

5.1. INVASIVE VEGETATION CONTROL SHALL BE IMPLEMENTED THROUGH TWO COORDINATED PROGRAMS:

5.1.1. INITIAL INVASIVE VEGETATION MANAGEMENT PROGRAM

5.1.2. POST-INSTALLATION INVASIVE VEGETATION MANAGEMENT PROGRAM

5.2. REFER TO THE ENVIRONMENTAL MANAGEMENT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND MORE INFORMATION.

5.3. LIMITS OF WORK: PRIOR TO THE START OF EACH MANAGEMENT PROGRAM, THE CONTRACTOR MAY BE DIRECTED TO MARK THE LIMITS OF THE WORK WITH SURVEYOR'S FLAGGING TAPE OR OTHER SUITABLE MEANS. FINAL DETERMINATION OF THE LIMITS OF THE AREA TO BE MANAGED SHALL BE APPROVED BY THE PROJECT ECOLOGIST. WITHIN THE DESIGNATED MANAGEMENT AREA, THE PROJECT ECOLOGIST MAY DIRECT THE TARGETING OF PARTICULAR SPECIES, LEAVING NON-TARGET SPECIES INTACT.

5.4. HERBICIDE RESTRICTIONS:

5.4.1. THERE SHALL BE NO APPLICATIONS OF HERBICIDES, PESTICIDES, OR OTHER CHEMICALS TO OPEN WATERBODIES ON THE SITE TO AVOID INJURY TO AQUATIC WILDLIFE.

5.4.2. NO HERBICIDES, PESTICIDES, OR OTHER CHEMICALS SHALL BE APPLIED ON DAYS WHEN THE MAXIMUM WIND SPEED REACHES ABOVE 10 MPH.

5.4.3. NO HERBICIDES, PESTICIDES, OR OTHER CHEMICALS SHALL BE APPLIED WHEN RAIN IS PREDICTED WITHIN 12 HOURS OF THE DAILY TERMINATION. IF PRECIPITATION OCCURS BEFORE 12 HOURS HAVE PASSED AFTER APPLICATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REAPPLYING AT THE SOONEST AVAILABLE DATE, AND AT NO ADDITIONAL COST.

5.4.4. THE CONTRACTOR SHALL FOLLOW ALL RULES AND REGULATIONS FOR HERBICIDE AND PESTICIDE APPLICATION AS SPECIFIED BY THE CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION (CT DEEP) PESTICIDE MANAGEMENT PROGRAM. HERBICIDE APPLICATION MUST BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF A CERTIFIED APPLICATOR. CHEMICALS FOR USE IN THIS ITEM MUST BE REGISTERED WITH THE CT DEEP PESTICIDE PROGRAM IN ADDITION TO THE ENVIRONMENTAL PROTECTION AGENCY.

5.5. INVASIVE SPECIES HANDLING:

5.5.1. PRIOR TO ENTERING AND BEFORE LEAVING THE SITE, THE CONTRACTOR SHALL CLEAN MOWING, CUTTING, EXCAVATION, AND HAULING EQUIPMENT TO REMOVE INVASIVE PLANT FRAGMENTS, SEEDS, AND SOIL.

5.5.2. INVASIVE BIOMASS SHALL BE HANDLED TO PREVENT DISPERSAL DURING TRANSPORT.

5.5.3. ALL CUT INVASIVE PLANT MATERIAL, BOTH WOODY AND HERBACEOUS, SHALL BE PROPERLY DISPOSED OF. MATERIAL SHALL EITHER BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE REQUIREMENTS OR RELOCATED TO AN ON-SITE LOCATION AS DIRECTED BY THE PROJECT ECOLOGIST.

5.6. ANY PROPOSED CHANGES TO THE INVASIVE MANAGEMENT PROGRAM DUE TO TIME OR CONTRACT CONSTRAINTS SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ECOLOGIST WITHIN THE FIRST TWO WEEKS OF CONTRACT SIGNING. ANY AND ALL PROPOSED CHANGES TO THE INVASIVE MANAGEMENT PROGRAM SHALL BE SUBMITTED TO THE PROJECT ECOLOGIST IN WRITING FOR REVIEW.

5.7. INITIAL INVASIVE VEGETATION MANAGEMENT PROGRAM

5.7.1. GENERAL REQUIREMENTS

5.7.1.1. INITIAL INVASIVE PLANT REMOVALS ARE ANTICIPATED WITHIN PLANTING ZONES DESIGNATED FOR THE PRECISION PLANTING METHOD AND MAY ALSO BE REQUIRED WITHIN ZONES DESIGNATED FOR THE EXCAVATION PLANTING METHOD AND/OR TYPICAL PLANTING METHOD. MANAGEMENT LOCATIONS AND LIMITS SHALL BE FIELD DIRECTED.

5.7.1.2. THE PROJECT ECOLOGIST SHALL WALK THE PROPOSED INVASIVE MANAGEMENT LOCATIONS WITH THE CONTRACTOR A MINIMUM OF 10 BUSINESS DAYS PRIOR TO COMMENCEMENT OF CONTRACTOR'S WORK. THIS FIELD DIRECTION WALK SHALL BE SCHEDULED BY THE CONTRACTOR AND CAN OCCUR EITHER CONCURRENTLY WITH THE PROJECT'S PRECONSTRUCTION MEETING OR SCHEDULED AS A SEPARATE MEETING.

5.7.1.3. PRIOR TO IMPLEMENTATION OF THE INITIAL INVASIVE VEGETATION MANAGEMENT PROGRAM, INVASIVE MANAGEMENT LOCATIONS SHALL BE CLEARED AND THE SITE PREPARED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL NOTES AND THE TREE PROTECTION AND REMOVAL NOTES.

5.7.2. WOODY INVASIVE PLANTS

5.7.2.1. CUT STEMS TO A MAXIMUM 6-INCH STUMP HEIGHT, UNLESS OTHERWISE DIRECTED.

5.7.2.2. APPLY TARGETED CUT-STUMP HERBICIDE IMMEDIATELY AFTER CUTTING (ON THE SAME DAY).

5.7.2.3. REMOVE ALL ABOVEGROUND BIOMASS FOR PROPER DISPOSAL OFF-SITE, UNLESS RELOCATION TO A DESIGNATED ON-SITE LOCATION IS DIRECTED BY THE PROJECT ECOLOGIST.

5.7.2.4. DO NOT UPROOT PLANT MATERIAL; STUMPS AND ROOTS SHALL REMAIN IN PLACE.

5.7.3. HERBACEOUS INVASIVE PLANTS

5.7.3.1. CUT ALL HERBACEOUS INVASIVE VEGETATION TO GROUND LEVEL.

5.7.3.2. DO NOT UPROOT PLANT MATERIAL; STALKS AND ROOTS SHALL REMAIN IN PLACE.

5.7.3.3. REMOVE ALL ABOVEGROUND BIOMASS FOR PROPER DISPOSAL OFF-SITE, UNLESS RELOCATION TO A DESIGNATED ON-SITE LOCATION IS DIRECTED BY THE PROJECT ECOLOGIST.

5.7.4. INITIAL INVASIVE MANAGEMENT WILL OCCUR CONCURRENTLY WITH PLANTING ACTIVITIES AND DURING THE PLANTING WINDOWS SPECIFIED IN THESE RESTORATION NOTES. THIS WORK PREPARES MICROSITES AND PLANTING ZONES FOR INSTALLATION. FOLLOW-UP INVASIVE MANAGEMENT IS REQUIRED FOR TWO (2) YEARS TO SUPPORT ESTABLISHMENT; SEE THE POST-INSTALLATION INVASIVE VEGETATION MANAGEMENT PROGRAM WITHIN THESE RESTORATION NOTES.

5.8. POST-INSTALLATION INVASIVE VEGETATION MANAGEMENT PROGRAM

5.8.1. GENERAL REQUIREMENTS

5.8.1.1. A TWO-YEAR INVASIVE VEGETATION MANAGEMENT PROGRAM, COMBINING MECHANICAL AND CHEMICAL METHODS, IS REQUIRED FOLLOWING PLANTING INSTALLATION. THE PROGRAM SHALL BEGIN AFTER COMPLETION OF THE INITIAL INVASIVE VEGETATION MANAGEMENT PROGRAM.

5.8.1.2. THE CONTRACTOR SHALL MANAGE BOTH WOODY AND HERBACEOUS INVASIVE VEGETATION THROUGHOUT PLANTING ZONES IN ACCORDANCE WITH THE METHODS BELOW AND IN CONSULTATION WITH THE PROJECT ECOLOGIST.

5.8.1.3. THE CONTRACTOR SHALL PROVIDE THE PROJECT ECOLOGIST WITH A BRIEF TREATMENT LOG AFTER EACH INVASIVE MANAGEMENT EVENT, INCLUDING DATE, AREAS TREATED, TARGET SPECIES, METHODS USED, HERBICIDE PRODUCT/ACTIVE INGREDIENT (IF USED), APPLICATOR LICENSE NUMBER, AND WEATHER CONDITIONS.

5.8.1.4. ALL HERBICIDE APPLICATION SHALL COMPLY WITH CT DEEP PESTICIDE MANAGEMENT REQUIREMENTS AND SHALL BE PERFORMED BY OR UNDER THE SUPERVISION OF A CERTIFIED APPLICATOR.

5.8.1.5. ALL CUT INVASIVE PLANT MATERIAL SHALL BE PROPERLY DISPOSED OF AND SHALL EITHER BE REMOVED FROM THE SITE FOR DISPOSAL IN ACCORDANCE WITH APPLICABLE LOCAL/STATE REQUIREMENTS, OR RELOCATED TO AN ON-SITE LOCATION UNDER THE DIRECTION OF THE PROJECT ECOLOGIST.

5.8.2. WOODY INVASIVE PLANT MANAGEMENT

5.8.2.1. THE CONTRACTOR SHALL MANAGE WOODY INVASIVE VEGETATION, INCLUDING, BUT NOT LIMITED TO, AUTUMN OLIVE (*ELAEAGNUS UMBELLATA*) FOR A MINIMUM OF TWO YEARS FOLLOWING PLANTING INSTALLATION.

5.8.2.2. SEASONAL SCHEDULE (TYPICAL):

5.8.2.2.1. WOODY INVASIVE PLANT MANAGEMENT TO OCCUR TWO TIMES A YEAR: ONCE DURING THE SPRING, FROM MAY 1 - MAY 31 AND ONCE DURING THE FALL, FROM SEPTEMBER 15 - OCTOBER 31.

5.8.2.2.2. DURING PLANTING MOBILIZATION, COMPLETE THE INITIAL INVASIVE VEGETATION MANAGEMENT PROGRAM. THE POST-INSTALLATION INVASIVE VEGETATION MANAGEMENT PROGRAM FOR WOODY INVASIVE PLANTS SHALL BE CARRIED OUT DURING THE SUBSEQUENT SPRING OR FALL PERIOD.

5.8.2.3. MECHANICAL CUTTING SHALL PRIORITIZE: RESPROUTS FROM INITIAL TREATMENT; NEW SEEDLINGS/SUCKERS WITHIN PLANTING ZONES; AND INDIVIDUALS OVERTOPPING OR SHADING NEW PLANTINGS.

5.8.2.4. CUT STEMS TO A MAXIMUM 6-INCH STUMP HEIGHT.

5.8.2.5. APPLY TARGETED CUT-STUMP HERBICIDE IMMEDIATELY AFTER CUTTING (ON THE SAME DAY).

5.8.2.6. REMOVE ALL ABOVEGROUND BIOMASS FOR PROPER DISPOSAL OFF-SITE, UNLESS RELOCATION TO A DESIGNATED ON-SITE LOCATION IS DIRECTED BY THE PROJECT ECOLOGIST.

5.8.2.7. DO NOT UPROOT PLANT MATERIAL; STUMPS AND ROOTS SHALL REMAIN IN PLACE.

5.8.3. HERBACEOUS INVASIVE PLANT MANAGEMENT

5.8.3.1. THE CONTRACTOR SHALL MANAGE HERBACEOUS INVASIVE VEGETATION, INCLUDING, BUT NOT LIMITED TO, COMMON REED (*PHRAGMITES AUSTRALIS*), FOR A MINIMUM OF TWO YEARS FOLLOWING PLANTING INSTALLATION.

5.8.3.2. SEASONAL SCHEDULE (TYPICAL):

5.8.3.2.1. THE TIMING FOR THE POST-INSTALLATION HERBACEOUS INVASIVE PLANT MANAGEMENT PROGRAM IS DEPENDENT UPON WHEN THE PLANTING AND INITIAL VEGETATION MANAGEMENT PROGRAM OCCURS.

5.8.3.2.1.1. IF THE PLANTING AND INITIAL VEGETATION MANAGEMENT PROGRAM OCCURS DURING THE SPRING PLANTING WINDOW (MAY 1 - MAY 31) THEN:

5.8.3.2.1.1.1. CONTRACTOR SHALL MECHANICALLY CUT HERBACEOUS INVASIVE MATERIAL BETWEEN AUGUST 1 - SEPTEMBER 1 OF THE SAME YEAR AS THE PLANTING AND REPEAT MECHANICAL CUTTING DURING THIS SAME TIME PERIOD (AUG 1 - SEPT 1) IN EACH SUBSEQUENT YEAR FOR THE FULL TWO-YEAR MANAGEMENT PERIOD.

5.8.3.2.1.1.2. CONTRACTOR TO APPLY HERBICIDE TO HERBACEOUS MATERIAL BETWEEN OCTOBER 1 - OCTOBER 15 OF THE SAME YEAR AS THE PLANTING AND REPEAT HERBICIDE APPLICATION DURING THIS SAME TIME PERIOD (OCT 1 - OCT 15) IN EACH SUBSEQUENT YEAR FOR THE FULL TWO-YEAR MANAGEMENT PERIOD.

5.8.3.2.1.2. IF THE PLANTING OCCURS DURING THE FALL PLANTING WINDOW (SEPTEMBER 15 - OCTOBER 31) THEN:

5.8.3.2.1.2.1. CONTRACTOR SHALL MECHANICALLY CUT HERBACEOUS INVASIVE MATERIAL BETWEEN AUGUST 1 - SEPTEMBER 1 OF THE FOLLOWING YEAR OF THE PLANTING, AND REPEAT CUTTING DURING THIS SAME TIME PERIOD (AUG 1 - SEPT 1) IN EACH SUBSEQUENT YEAR FOR THE FULL TWO-YEAR MANAGEMENT PERIOD.

5.8.3.2.1.2.2. CONTRACTOR TO APPLY HERBICIDE TO HERBACEOUS MATERIAL BETWEEN OCTOBER 1 - OCTOBER 15 OF THE FOLLOWING YEAR OF THE PLANTING AND REPEAT HERBICIDE APPLICATION DURING THIS SAME TIME PERIOD (OCT 1 - OCT 15) IN EACH SUBSEQUENT YEAR FOR THE FULL TWO-YEAR MANAGEMENT PERIOD.

5.8.3.2.2. MECHANICAL CUTTING OF THE REGROWTH OF INVASIVE HERBACEOUS VEGETATION SHALL OCCUR AFTER THE INVASIVE VEGETATION HAS BEEN ALLOWED TO REGROW FOR AT LEAST THIRTY DAYS BEFORE THE DESIGNATED WINDOW OF THE HERBICIDE APPLICATION.

5.8.3.3. DEAD PLANT MATERIAL SHALL BE CUT DOWN NO LESS THAN TO A HEIGHT OF NO MORE THAN SIX (6") INCHES WITH ALL CUT MATERIAL MULCHED OR THATCHED TO A MAXIMUM PARTICLE LENGTH OF SIX (6") INCHES.

5.8.3.4. CONTRACTOR SHALL REMOVE ALL ABOVEGROUND BIOMASS FOR PROPER DISPOSAL OFF-SITE, UNLESS RELOCATION TO A DESIGNATED ON-SITE LOCATION IS DIRECTED BY THE PROJECT ECOLOGIST.

5.8.3.5. HERBICIDE SPRAY COVERAGE SHALL BE UNIFORM AND COMPLETE. IN AREAS LARGER THAN ONE-FOURTH (¼) ACRE, HERBICIDE SHALL BE APPLIED IN A CROSSING ROW PATTERN - ONE (1) ROW PERPENDICULAR TO THE OTHER ROW. IF NON-TARGET NATIVE SPECIES ARE PRESENT, GREAT CARE SHALL BE TAKEN TO NOT LET ANY HERBICIDE TOUCH NEW PLANTINGS.

6. CONTRACTOR GUARANTEE

6.1. CONTRACTOR SHALL PROVIDE A 2-YEAR WARRANTY FOR ALL INSTALLED PLANT MATERIAL. THE WARRANTY SHALL INCLUDE:

6.1.1. REPLACEMENT OF DEAD OR FAILING PLANTS.

6.1.2. EXECUTION OF THE POST-INSTALLATION INVASIVE VEGETATION MANAGEMENT PROGRAM.

7. PLANTING AND SEEDING NOTES

7.1. SEE L-619 FOR A DIAGRAMMATIC OVERVIEW OF THE DIFFERENT PLANTING METHODS TO BE PERFORMED WITHIN DESIGNATED PLANTING ZONES FOR THE PROJECT SITE.

7.2. REFER TO ADDITIONAL REQUIREMENTS WITHIN THE RESTORATION PLANS, DETAILS, PLANTING AND SEEDING SCHEDULES, AND PLANTING SPECIFICATIONS.

7.3. NATIVE TREE AND SHRUB PLANTINGS SHALL BE SPACED AS SPECIFIED FOR EACH PLANTING ZONE.

7.4. THE CONTRACTOR SHALL AVOID PLANTING NEW TREES ADJACENT TO EACH OTHER BY STAGGERING TREE AND SHRUB PLANTINGS WHEN POSSIBLE. NEW TREE PLANTINGS SHALL BE SPACED AT MINIMUM 10 FEET APART ON CENTER.

7.5. INSTALL PLUGS IN PLANT COMMUNITIES OF THE SAME SPECIES IN GROUPINGS OF 5 TO 15 PLUGS PER GROUPING. PLANT PLUGS APPROXIMATELY TWELVE (12) INCHES ON CENTER.

7.6. CUT TREE/SHRUB ROOTBALL AND MASSAGE ROOTS BEFORE PLANTING.

7.7. INSTALL THE PLANT SO THE STEM BASE IS AT OR SLIGHTLY ABOVE (MOUNDED) FINISH GRADE. TAMP EACH PLANT IN PLACE SO THAT IT IS FIRMLY SEATED IN THE PLANTING MEDIUM WITH NO AIR POCKETS.

7.8. INSTALL PLUGS TO THEIR FULL DEPTH. A "J-ROOT" INSTALLATION SHALL NOT BE ACCEPT

RESTORATION PLANTING NOTES CONTINUED:

8.3. NESTING BIRDS

8.3.1. NESTING BIRDS ADDRESSED BY THESE NOTES INCLUDE: BALD EAGLE, OSPREY, PEREGRINE FALCON, AND SHOREBIRDS (INCLUDING GREAT EGRET, SNOWY EGRET, LITTLE BLUE HERON, GLOSSY IBIS, AND YELLOW-CROWNED NIGHT-HERON).

8.3.2. PRE-CONSTRUCTION NEST SURVEYS

8.3.2.1. REQUIRED WITHIN REGULATORY BUFFER DISTANCES OF THE LIMIT OF WORK (LOW):

8.3.2.1.1. BALD EAGLE: 660 FT

8.3.2.1.2. SHOREBIRDS: 660 FT

8.3.2.1.3. PEREGRINE FALCON: 660 FT

8.3.2.1.4. OSPREY: 330 FT

8.3.2.2. SURVEYS SHALL BE CONDUCTED PRIOR TO APRIL 15 UNLESS OTHERWISE NOTED.

8.3.3. ACTIVE NEST RESTRICTIONS

8.3.3.1. IF AN ACTIVE NEST IS IDENTIFIED WITHIN THE REQUIRED BUFFER:

8.3.3.1.1. NO NEW WORK MAY BEGIN WITHIN THE BUFFER DURING THE NESTING SEASON (APRIL 15-AUGUST 31).

8.3.3.1.2. WORK OUTSIDE THE BUFFER MAY PROCEED WITH PROJECT ECOLOGIST OVERSIGHT.

8.3.3.1.3. INACTIVE NESTS MAY BE REMOVED ONLY WITH PROJECT ECOLOGIST APPROVAL AND OUTSIDE OF NESTING SEASON.

8.3.4. NOISE AND AIRCRAFT RESTRICTIONS

8.3.4.1. FROM FEBRUARY 1-AUGUST 1, NO BLASTING, PILE DRIVING, OR INTERMITTENT LOUD ACTIVITIES SHALL OCCUR WITHIN THE PROJECT AREA.

8.3.4.2. HELICOPTER, DRONE, OR LOW-ALTITUDE AIRCRAFT USE SHALL BE AVOIDED DURING ACTIVE NESTING SEASON (FEB 1-JULY 15).

8.4. BATS

8.4.1. ALL TREES WITHIN THE LOW THAT ARE DESIGNATED FOR REMOVAL SHALL BE CLEARED PRIOR TO APRIL 1. TREE REMOVALS ARE DISTINCT FROM REMOVAL OF INVASIVE WOODY VEGETATION; HOWEVER, CARE SHALL BE TAKEN TO AVOID UNNECESSARY DISTURBANCE TO SURROUNDING HABITAT WHEN PERFORMING INVASIVE PLANT MANAGEMENT.

8.4.2. FROM JUNE-JULY, MINIMIZE DISTURBANCE TO TREES AND FOREST EDGES TO AVOID IMPACTS DURING SENSITIVE MATERNITY SEASON.

8.5. NORTHERN DIAMONDBACK TERRAPIN

8.5.1. TURTLE PROTECTION PROTOCOL:

8.5.1.1. ALL CREWS SHALL BE TRAINED ON TERRAPIN IDENTIFICATION AND AVOIDANCE PROTOCOLS.

8.5.1.1.1. IF A TERRAPIN IS ENCOUNTERED, IT SHALL BE CAREFULLY MOVED OUT OF THE WORK AREA IN THE DIRECTION IT WAS TRAVELING. DO NOT REMOVE TERRAPINS FROM THE SITE.

8.5.1.1.2. CONDUCT DAILY TURTLE SWEEPS OF THE WORK AREA BEFORE OPERATING EQUIPMENT.

8.5.1.1.3. NO VEHICLES OR MACHINERY SHALL BE PARKED IN UNFENCED TURTLE HABITAT.

8.5.1.1.4. AVOID BLOCKING CHANNELS OR TRAVEL CORRIDORS; CONSTRUCTION SHALL NOT CREATE BARRIERS TO TURTLE MOVEMENT.

8.5.1.1.5. ANY TERRAPIN OBSERVATIONS SHALL BE REPORTED TO CT DEEP NDDB AT: DEEP.NDDBREQUEST@CT.GOV

9. MONITORING AND ADAPTIVE MANAGEMENT

9.1. MONITORING AND ADAPTIVE MANAGEMENT SHALL OCCUR THROUGHOUT THE 2-YEAR CONTRACTOR WARRANTY AND INVASIVE MANAGEMENT PROGRAM.

9.2. REFER TO THE SITEWIDE ECOLOGICAL MAINTENANCE, MONITORING, AND ADAPTIVE MANAGEMENT PLAN PROVIDED WITH CONSTRUCTION DOCUMENTATION.

10. SANDY PLANTING MEDIUM

10.1. THE SANDY PLANTING MEDIUM SHALL BE A SAND (98-100% SAND) AS CLASSIFIED BY THE US DEPARTMENT OF AGRICULTURE (USDA). THE SAND FRACTION ANALYSES SHOULD BE IN THE FOLLOWING PROPORTIONS: MEDIUM FRACTION SAND CONTENT SHOULD BE 40-45%, VERY COARSE AND VERY FINE FRACTIONS SHOULD BE 7-13% EACH, WITH THE REMAINDER COMPRISING THE COARSE AND FINE SAND FRACTIONS.

10.2. SANDY PLANTING MEDIUM SHALL BE FREE OF REFUSE, HARD CLODS, ROOTS, WEEDS AND WEED SEEDS, WOODY VEGETATION, STIFF CLAY, HARD PAN, SODS, PARTIALLY DISINTEGRATED STONE, LIME, CEMENT, ASHES, SLAG, CONCRETE, TAR RESIDUES, TARRED PAPER, BOARDS, CHIPS, STICKS, CONSTRUCTION DEBRIS (OF ANY KIND), BOULDERS, STONES LARGER THAN 0.5 INCHES, CHEMICALS, OR OTHER DELETERIOUS MATERIAL TOXIC TO ANY VEGETATION USED ON THIS PROJECT.

10.3. ONLY ENVIRONMENTALLY CLEAN MATERIAL SHALL BE USED AS SELECT FILL. MATERIAL SHALL NOT CONTAIN FOREIGN MATERIALS OF ANY KIND.

10.4. THE ORGANIC CONTENT OF SOILS SHALL BE 0-0.5% AS DETERMINED BY A LABORATORY USING THE LOSS OF IGNITION METHOD AS DESCRIBED IN THE SOIL TESTING PROCEDURES FOR THE NORTHEASTERN UNITED STATES, 2ND EDITION, NORTHEAST REGIONAL PUBLICATION, AGRICULTURAL EXPERIMENT STATION, UNIVERSITY OF DELAWARE, BULLETIN #493, 12/95. 7.

10.5. THE GRADATION OF THE SANDY PLANTING MEDIUM SHALL BE DETERMINED BY A LABORATORY USING THE METHODS OF THE USDA SOIL SURVEY LABORATORY METHODS MANUAL (NO. 42, NOVEMBER 2004). THE GRADATION OF THE SANDY PLANTING MEDIUM AS DETERMINED BY USDA CLASSIFICATIONS SHALL BE WITHIN THE FOLLOWING RANGES:

10.5.1. RANGES

0-2%	GRAVEL
98-100%	SAND
0-2%	SILT
0-2%	CLAY

10.5.2. CLASSIFICATION/SIEVE SIZE:

2" TO 2.0 MM	GRAVEL
2.0 MM TO 0.05 MM	SAND
0.05 MM TO 0.002 MM	SILT
<0.002 MM	CLAY

10.5.3. IN ADDITION TO THE ABOVE GRADATION THE CONTRACTOR SHALL PROVIDE THE PERCENTAGE OF PARTICLE SIZES CORRESPONDING TO USDA CLASSIFICATIONS:

VERY COARSE SAND (2.0 MM TO 1.0 MM)
COARSE SAND (1.0 TO .5 MM)
MEDIUM SAND (0.5 MM TO 0.25 MM)
FINE SAND (0.25 TO 0.1 MM)
VERY FINE SAND (0.1 TO 0.05 MM)
SILT (0.05 TO 0.002 MM)
CLAY (<0.002 MM)

10.6. SOIL NUTRIENT REQUIREMENTS:

10.6.1. The value for Kjeldahl nitrogen shall be as outlined below using the methodologies of the Soil Testing Procedures for the Northeastern United States, 2nd Edition, Northeastern Regional Publication No. 493

10.6.1.1. Kjeldahl N: acceptable range is 0.05% to 0.10% (with nitrate (NO3) form of nitrogen not to exceed 8 ppm).

10.6.2. The value for macro- (P, K) and micro-nutrients (Ca, Mg, K+Ca+Mg) shall be as outlined below using the procedures as described in the *Soil Testing Procedures for the Northeastern United States, 2nd Edition, Northeastern Regional Publication No. 493.*

NUTRIENT	RANGE [ppm]	
P	5	10
K	15	50
Ca	150	1000
Mg	100	150
K + Ca + Mg		1000

**TO ACCOUNT FOR SOIL VARIABILITY, SMALL DEVIATIONS WITHIN INDIVIDUAL POTASSIUM (K), CALCIUM (CA), AND MAGNESIUM (MG) LIMITS ARE PERMITTED PROVIDED THE TOTAL FOR THESE THREE NUTRIENTS DOES NOT EXCEED 1,000 PPM. A 15% EXCEEDANCE LIMIT OF UP TO 1,150 PPM OF THE TOTAL OF ALL 2,500 CY INTERVAL SOIL TESTS REQUIRED MAY BE PERMITTED. FOR EXAMPLE, IF A TOTAL OF 86 (2,500 CY INTERVAL) SOIL TESTS ARE REQUIRED, A MAXIMUM OF 13 (2,500 CY INTERVAL) COULD HAVE A TOTAL FOR K, CA, AND MG OF UP TO 1,150 PPM.*

10.7. THE PH VALUE OF THE SANDY PLANTING MEDIUM SHALL BE 6.4-7.5 AS DETERMINED BY AN APPROVED LABORATORY USING SOIL PH (WATER (1:1, V:V)) PROCEDURES AS DESCRIBED IN THE SOIL TESTING PROCEDURES FOR THE NORTHEASTERN UNITED STATES, 2ND EDITION, NORTHEAST REGIONAL PUBLICATION, AGRICULTURAL EXPERIMENT STATION, UNIVERSITY OF DELAWARE, BULLETIN #493, 12/95.

10.8. AN ACID-PRODUCING SOIL TEST IS REQUIRED TO DETERMINE THE POTENTIAL FOR DECREASES IN SOIL PH AFTER OXIDATION. THE PH VALUE OF THE SOLUTION SHALL BE GREATER THAN 4.5 AS DETERMINED BY AN APPROVED LABORATORY USING THE ACID-PRODUCING (IRON SULFIDE) TEST CONDUCTED IN ACCORDANCE WITH THE METHODOLOGIES UTILIZED BY THE NORTHEAST COORDINATING COMMITTEE ON SOIL TESTING, NEC-67.

10.9. THE CONSTITUENTS OF ANY SOIL SHALL CONFORM TO CLASS A STANDARDS FOR IN-WATER AND RIPARIAN MANAGEMENT OF SEDIMENT AND DREDGED MATERIAL AS DESCRIBED IN THE CT.GOV. CONNECTICUT GUIDELINES FOR SOIL EROSION & SEDIMENT CONTROL.

10.10. SAND FRACTION AND ANY SAND ADDITIVES SHALL CONSIST OF CLEAN, HARD, DURABLE, ANGULAR, UNCOATED PARTICLES, FREE FROM WEED SEEDS AND ALL DELETERIOUS SUBSTANCES. SAND SHALL BE FROM AN APPROVED SOURCE AND SHALL CONTAIN NO PULVERIZED CONCRETE FILL MATERIAL. SAND SHALL MEET THE REQUIREMENTS FOR FINE AGGREGATES AS SPECIFIED IN ASTM C33.

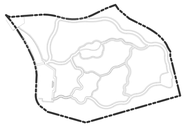
10.11. LABORATORY TESTING: THE CONTRACTOR SHALL FURNISH A CERTIFIED REPORT PERFORMED BY AN APPROVED LABORATORY SHOWING THE ANALYSIS OF REPRESENTATIVE SAMPLES OF THE SANDY PLANTING MEDIUM WHICH THEY PROPOSE TO USE. ALL SAMPLES ARE TO BE DELIVERED TO THE LABORATORY, AND THE PRICE BID SHALL INCLUDE INSPECTION AND LABORATORY CHARGES. SAMPLE RESULTS SHALL BE SUBMITTED 48 HOURS PRIOR TO THE DELIVERY OF SANDY PLANTING MEDIUM.

10.12. NO SOIL SHALL BE DELIVERED UNTIL THE APPROVAL OF SAMPLES, BUT SUCH APPROVAL SHALL NOT CONSTITUTE FINAL ACCEPTANCE. THE ECOLOGIST RESERVES THE RIGHT TO REJECT ON OR AFTER DELIVERY ANY MATERIAL THAT DOES NOT, IN THEIR OPINION, MEET THESE SPECIFICATIONS.

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING NOTES 2

PROJECT NO 2349.1
SCALE
DRAWN BY EDD
CHECKED BY EDD
DATE 12/15/2025

SHEET NO **L-600B**

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RESTORATION PLANTING ZONE TABLE

ZONE TITLE	SUBZONE	PLANTING METHOD	PRIORITY TARGET INVASIVES	PLANT SIZE AND SPACING	SEEDING DENSITY NOTES	SEED MIXES
ZONE 1 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 1A)	ZONE 1A	TYPICAL PLANTING METHOD	AUTUMN OLIVE *(ELAEAGNUS UMBELLATA)*	GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PINELANDS NURSERY - 92: LOW GROW SHADE TOLERANT UPLAND MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 1 TRAIL CORRIDOR FOREST EDGE (ZONE 1B)	ZONE 1B_E	EXCAVATION PLANTING METHOD	AUTUMN OLIVE *(ELAEAGNUS UMBELLATA)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
	ZONE 1B_P	PRECISION PLANTING METHOD	AUTUMN OLIVE *(ELAEAGNUS UMBELLATA)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 1 RESTORATION BUFFER (ZONE 1C)	ZONE 1C	PRECISION PLANTING METHOD	AUTUMN OLIVE *(ELAEAGNUS UMBELLATA)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C.	SEED MIX - 10 LB/AC EACH COVER SEED - 10 LB/AC EACH	PRAIRIE MOON - BATTLE THE BUCKTHORN - UNDERSTORY REVEGETATION SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - INSIDE DEER FENCE (ZONE 2A_I)	ZONE 2A_I	TYPICAL PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PINELANDS NURSERY - 92: LOW GROW SHADE TOLERANT UPLAND MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - OUTSIDE DEER FENCE (ZONE 2A_O)	ZONE 2A_O	EXCAVATION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC COVER SEED - 5 LB/AC EACH	ERNST CUSTOM MIX C - SHADED DEER RESISTANT
ZONE 2 TRAIL CORRIDOR FOREST EDGE - INSIDE DEER FENCE (ZONE 2B_I)	ZONE 2B_EI	EXCAVATION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
	ZONE 2B_PI	PRECISION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 2 TRAIL CORRIDOR FOREST EDGE - OUTSIDE DEER FENCE (ZONE 2B_O)	ZONE 2B_EO	EXCAVATION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	ERNST CUSTOM MIX C - SHADED DEER RESISTANT
	ZONE 2B_PO	PRECISION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 10 LB/AC COVER SEED - 5 LB/AC EACH	ERNST CUSTOM MIX C - SHADED DEER RESISTANT
ZONE 2 RESTORATION BUFFER - INSIDE DEER FENCE (ZONE 2C_I)	ZONE 2C_I	PRECISION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C.	SEED MIX - 10 LB/AC EACH COVER SEED - 10 LB/AC EACH	PRAIRIE MOON - BATTLE THE BUCKTHORN - UNDERSTORY REVEGETATION SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 2 RESTORATION BUFFER - OUTSIDE DEER FENCE (ZONE 2C_O)	ZONE 2C_O	PRECISION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C.	SEED MIX - 20 LB/AC COVER SEED - 10 LB/AC EACH	ERNST CUSTOM MIX C - SHADED DEER RESISTANT
ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A)	ZONE 3A	TYPICAL PLANTING METHOD	MIXED	GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PINELANDS NURSERY - 92: LOW GROW SHADE TOLERANT UPLAND MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B)	ZONE 3B_E	EXCAVATION PLANTING METHOD	MIXED	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
	ZONE 3B_P	PRECISION PLANTING METHOD	MIXED	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 3 RESTORATION BUFFER (ZONE 3C)	ZONE 3C	PRECISION PLANTING METHOD	MIXED	TREES - 2 GAL AT 15' O.C. SHRUBS - 1 GAL AT 15' O.C.	SEED MIX - 10 LB/AC EACH COVER SEED - 10 LB/AC EACH	PRAIRIE MOON - BATTLE THE BUCKTHORN - UNDERSTORY REVEGETATION SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 4 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 4A)	ZONE 4A	TYPICAL PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PINELANDS NURSERY - 92: LOW GROW SHADE TOLERANT UPLAND MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 4 TRAIL CORRIDOR FOREST EDGE (ZONE 4B)	ZONE 4B_E	EXCAVATION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
	ZONE 4B_P	PRECISION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 4 RESTORATION BUFFER (ZONE 4C)	ZONE 4C	PRECISION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	N/A	SEED MIX - 10 LB/AC EACH COVER SEED - 10 LB/AC EACH	PRAIRIE MOON - BATTLE THE BUCKTHORN - UNDERSTORY REVEGETATION SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A)	ZONE 5A	TYPICAL PLANTING METHOD	N/A	GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PINELANDS NURSERY - 92: LOW GROW SHADE TOLERANT UPLAND MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 5B)	ZONE 5B_E	EXCAVATION PLANTING METHOD	N/A	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
	ZONE 5B_P	PRECISION PLANTING METHOD	N/A	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX ERNST CUSTOM MIX B - SHADED UNDERSTORY
WET ADAPTIVE TRAIL CORRIDOR HERBACEOUS SLOPE (WA_A)	WA_A	TYPICAL PLANTING METHOD	N/A	GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137
WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE - SWALE (WA_B1)	WA_B_E1	EXCAVATION PLANTING METHOD	N/A	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137
	WA_B_P1	PRECISION PLANTING METHOD	N/A	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 10 LB/AC COVER SEED - 5 LB/AC EACH	SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137
WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE - SUMP (WA_B2)	WA_B_E2	EXCAVATION PLANTING METHOD	N/A	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137 OBL WETLAND MIX - ERNMX-131
	WA_B_P2	PRECISION PLANTING METHOD	N/A	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C. GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 5 LB/AC EACH COVER SEED - 5 LB/AC EACH	SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137 OBL WETLAND MIX - ERNMX-131
WET ADAPTIVE RESTORATION BUFFER - SWALE (WA_C1)	WA_C1	PRECISION PLANTING METHOD	N/A	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C.	SEED MIX - 20 LB/AC COVER SEED - 10 LB/AC EACH	SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137
WET ADAPTIVE RESTORATION BUFFER - SUMP (WA_C2)	WA_C2	PRECISION PLANTING METHOD	N/A	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C.	SEED MIX - 10 LB/AC EACH COVER SEED - 10 LB/AC EACH	SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137 OBL WETLAND MIX - ERNMX-131
ZONE 6 DEER FENCE BUFFER	ZONE 6	TYPICAL PLANTING METHOD	N/A	N/A	SEED MIX - 20 LB/AC COVER SEED - 10 LB/AC EACH	ERNST CUSTOM MIX C - SHADED DEER RESISTANT
ZONE 7 SWITCHGRASS MEADOW BERM EDGE (ZONE 7A)	ZONE 7A	PRECISION PLANTING METHOD	AUTUMN OLIVE *(ELAEAGNUS UMBELLATA)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C.	SEED MIX - 20 LB/AC COVER SEED - 10 LB/AC EACH	SHOWY NORTHEAST NATIVE WILDFLOWER & GRASS MIX - ERNMX-153
ZONE 7 SWITCHGRASS MEADOW (ZONE 7B)	ZONE 7B	PRECISION PLANTING METHOD	COMMON REED *(PHRAGMITES AUSTRALIS)*	GROUNDCOVER - 2" PLUG AT 12" O.C.	SEED MIX - 10 LB/AC COVER SEED - 5 LB/AC EACH	FLOODPLAIN MIX - ERNMX-154
ZONE 7 SWITCHGRASS MEADOW FOREST TRANSITION (ZONE 7C)	ZONE 7C	PRECISION PLANTING METHOD	AUTUMN OLIVE *(ELAEAGNUS UMBELLATA)*	TREES - 2 GAL AT 5' O.C. SHRUBS - 1 GAL AT 5' O.C.	SEED MIX - 20 LB/AC COVER SEED - 10 LB/AC EACH	ERNST CUSTOM MIX B - SHADED UNDERSTORY
ZONE 7 SWITCHGRASS MEADOW EROSION CONTROL SEEDING (ZONE 7D)	ZONE 7D	TYPICAL PLANTING METHOD	N/A	N/A	SEED MIX - 10 LB/AC COVER SEED - 5 LB/AC EACH	ERNST NATIVE HABITAT FOR STRIP MINES MIX - ERNMX-111
ZONE 8 ECO POCKET (ZONE 8)	ZONE 8	TYPICAL PLANTING METHOD	N/A	GROUNDCOVER - 2" PLUG AT 12" O.C. SHRUBS - SEE SHEET L-611	VARIES - SEE SHEET L-611A	SEE SHEET L-611A

SCAPE

MANRESA WILDS
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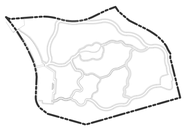
NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING NOTES 3

PROJECT NO 2349.1
SCALE
DRAWN BY EDD
CHECKED BY EDD
DATE 12/15/2025

SHEET NO **L-600C**

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ZONE 1 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 1A)

TOTAL AREA: 6,533 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
GROUNDCOVER						
	Actaea racemosa	black cohosh	144	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	604	2" PLUG	12" O.C.	
	Angelica venenosa	hairy angelica	76	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	220	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	283	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	76	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	115	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	182	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	604	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	786	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	144	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	680	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	144	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	38	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	76	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	144	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	522	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	15	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	38	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	680	2" PLUG	12" O.C.	
	Polygala senega	seneca snakeroot	57	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	76	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	598	2" PLUG	12" O.C.	
	Silene stellata	starry campion	95	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	38	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	38	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	283	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	76	2" PLUG	12" O.C.	
	Viola hirsutula	southern wood violet	76	2" PLUG	12" O.C.	
	Viola sororia	common violet	283	2" PLUG	12" O.C.	
	Zizia aptera	heart-leaf golden alexander	76	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	298	2" PLUG	12" O.C.	

ZONE 1 TRAIL CORRIDOR FOREST EDGE (ZONE 1B)

TOTAL AREA: 5,177 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	boxelder	2	2 GAL	5' O.C.	
	Acer pensylvanicum	striped maple	3	2 GAL	5' O.C.	
	Acer rubrum	red maple	5	2 GAL	5' O.C.	
	Acer saccharum	sugar maple	2	2 GAL	5' O.C.	
	Amelanchier canadensis	serviceberry	7	2 GAL	5' O.C.	
	Betula lenta	sweet birch	2	2 GAL	5' O.C.	
	Betula populifolia	gray birch	5	2 GAL	5' O.C.	
	Carpinus caroliniana	American hornbeam	2	2 GAL	5' O.C.	
	Carya glabra	pignut hickory	2	2 GAL	5' O.C.	
	Carya ovata	shagbark hickory	2	2 GAL	5' O.C.	
	Castanea dentata	American chestnut	3	2 GAL	5' O.C.	
	Celtis occidentalis	hackberry	5	2 GAL	5' O.C.	
	Cercis canadensis	eastern redbud	1	2 GAL	5' O.C.	
	Cornus alternifolia	pagoda dogwood	2	2 GAL	5' O.C.	
	Cornus florida	flowering dogwood	20	2 GAL	5' O.C.	
	Ilex opaca	American holly	10	2 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	2	2 GAL	5' O.C.	
	Liquidambar styraciflua	sweet gum	3	2 GAL	5' O.C.	
	Liriodendron tulipifera	tulip tree	3	2 GAL	5' O.C.	
	Magnolia virginiana	sweetbay magnolia	1	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	7	2 GAL	5' O.C.	
	Ostrya virginiana	hop hornbeam	3	2 GAL	5' O.C.	
	Pinus strobus	eastern white pine	2	2 GAL	5' O.C.	
	Platanus occidentalis	american sycamore	1	2 GAL	5' O.C.	
	Quercus palustris	pin oak	3	2 GAL	5' O.C.	
	Quercus phellos	willow oak	3	2 GAL	5' O.C.	
	Quercus rubra	northern red oak	6	2 GAL	5' O.C.	
	Sassafras albidum	sassafras	25	2 GAL	5' O.C.	
	Tsuga canadensis	eastern hemlock	2	2 GAL	5' O.C.	
SHRUBS						
	Clethra alnifolia	sweet pepperbush	5	1 GAL	5' O.C.	
	Cornus amomum	silky dogwood	12	1 GAL	5' O.C.	
	Cornus racemosa	gray dogwood	17	1 GAL	5' O.C.	
	Cornus sericea	red twig dogwood	4	1 GAL	5' O.C.	
	Corylus americana	American hazelnut	2	1 GAL	5' O.C.	
	Diervilla lonicera	bush honeysuckle	19	1 GAL	5' O.C.	
	Gaylussacia baccata	black huckleberry	5	1 GAL	5' O.C.	
	Hamamelis virginiana	American witch-hazel	6	1 GAL	5' O.C.	
	Ilex glabra	inkberry holly	3	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	7	1 GAL	5' O.C.	
	Itea virginica	Virginia sweetspire	2	1 GAL	5' O.C.	
	Kalmia latifolia	mountain laurel	3	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	22	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	3	1 GAL	5' O.C.	
	Rhododendron periclymenoides	pinxterbloom azalea	2	1 GAL	5' O.C.	
	Rhus copallina	winged sumac	1	1 GAL	5' O.C.	
	Vaccinium angustifolium	lowbush blueberry	4	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	2	1 GAL	5' O.C.	
	Viburnum acerfolium	mapleleaf viburnum	9	1 GAL	5' O.C.	
	Viburnum dentatum	arrowwood	11	1 GAL	5' O.C.	
	Viburnum lentago	nannyberry viburnum	2	1 GAL	5' O.C.	
	Viburnum nudum	possumhaw viburnum	3	1 GAL	5' O.C.	
	Viburnum prunifolium	smooth black-haw	12	1 GAL	5' O.C.	
GROUNDCOVER						
	Actaea racemosa	black cohosh	60	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	479	2" PLUG	12" O.C.	
	Angelica venenosa	hairy angelica	60	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	120	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	225	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	60	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	48	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	90	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	479	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	569	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	60	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	539	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	60	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	30	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	60	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	60	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	360	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	6	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	30	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	1,078	2" PLUG	12" O.C.	
	Polygala senega	seneca snakeroot	45	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	60	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	420	2" PLUG	12" O.C.	
	Silene stellata	starry campion	75	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	30	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	30	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	225	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	60	2" PLUG	12" O.C.	
	Viola hirsutula	southern wood violet	60	2" PLUG	12" O.C.	
	Viola sororia	common violet	225	2" PLUG	12" O.C.	
	Zizia aptera	heart-leaf golden alexander	60	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	231	2" PLUG	12" O.C.	

ZONE 1 RESTORATION BUFFER (ZONE 1C)

TOTAL AREA: 43,735 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	boxelder	10	2 GAL	5' O.C.	
	Acer pensylvanicum	striped maple	6	2 GAL	5' O.C.	
	Acer rubrum	red maple	57	2 GAL	5' O.C.	
	Acer saccharum	sugar maple	10	2 GAL	5' O.C.	
	Amelanchier canadensis	serviceberry	37	2 GAL	5' O.C.	
	Betula populifolia	gray birch	41	2 GAL	5' O.C.	
	Carpinus caroliniana	American hornbeam	31	2 GAL	5' O.C.	
	Carya glabra	pignut hickory	41	2 GAL	5' O.C.	
	Carya ovata	shagbark hickory	41	2 GAL	5' O.C.	
	Castanea dentata	American chestnut	5	2 GAL	5' O.C.	
	Celtis occidentalis	hackberry	36	2 GAL	5' O.C.	
	Cercis canadensis	eastern redbud	6	2 GAL	5' O.C.	
	Cornus alternifolia	pagoda dogwood	10	2 GAL	5' O.C.	
	Cornus florida	flowering dogwood	143	2 GAL	5' O.C.	
	Ilex opaca	American holly	57	2 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	11	2 GAL	5' O.C.	
	Liquidambar styraciflua	sweet gum	42	2 GAL	5' O.C.	
	Liriodendron tulipifera	tulip tree	57	2 GAL	5' O.C.	
	Magnolia virginiana	sweetbay magnolia	6	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	68	2 GAL	5' O.C.	
	Ostrya virginiana	hop hornbeam	42	2 GAL	5' O.C.	
	Pinus strobus	eastern white pine	43	2 GAL	5' O.C.	
	Platanus occidentalis	american sycamore	6	2 GAL	5' O.C.	
	Quercus alba	white oak	31	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	16	2 GAL	5' O.C.	
	Quercus palustris	pin oak	26	2 GAL	5' O.C.	
	Quercus phellos	willow oak	26	2 GAL	5' O.C.	
	Quercus rubra	northern red oak	67	2 GAL	5' O.C.	
	Quercus velutina	black oak	16	2 GAL	5' O.C.	
	Sassafras albidum	sassafras	181	2 GAL	5' O.C.	
	Tsuga canadensis	eastern hemlock	10	2 GAL	5' O.C.	
SHRUBS						
	Clethra alnifolia	sweet pepperbush	26	1 GAL	5' O.C.	
	Cornus amomum	silky dogwood	92	1 GAL	5' O.C.	
	Cornus racemosa	gray dogwood	112	1 GAL	5' O.C.	
	Cornus sericea	red twig dogwood	27	1 GAL	5' O.C.	
	Corylus americana	American hazelnut	10	1 GAL	5' O.C.	
	Diervilla lonicera	bush honeysuckle	132	1 GAL	5' O.C.	
	Gaylussacia baccata	black huckleberry	19	1 GAL	5' O.C.	
	Hamamelis virginiana	American witch-hazel	32	1 GAL	5' O.C.	
	Ilex glabra	inkberry holly	17	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	28	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	173	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	26	1 GAL	5' O.C.	
	Rhus copallina	winged sumac	3	1 GAL	5' O.C.	
	Vaccinium angustifolium	lowbush blueberry	32	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	12	1 GAL	5' O.C.	
	Viburnum acerfolium	mapleleaf viburnum	46	1 GAL	5' O.C.	
	Viburnum dentatum	arrowwood	67	1 GAL	5' O.C.	
	Viburnum lentago	nannyberry viburnum	10	1 GAL	5' O.C.	
	Viburnum nudum	possumhaw viburnum	16	1 GAL	5' O.C.	
	Viburnum prunifolium	smooth black-haw	28	1 GAL	5' O.C.	

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NORTH FOREST
NORWALK, CT

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SEAL

STATE OF CONNECTICUT
AMANDA M. BAYLEY
LICENSED LANDSCAPE ARCHITECT
NO. 1394

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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING SCHEDULE 1

PROJECT NO 2349.1
SHEET NO **L-600.1**
SCALE
DRAWN BY EDD
CHECKED BY EDD
DATE 12/15/2025

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Z:\1PROJECTS\1EDD\Manresa North Forest_2025.08\06_Drawings And Maps\CAD\EDD\2025 12 05 - SOCD Permit Set\EDD SOCD 2025 L-600s Restoration Planting And Seeding Schedule.dwg Plotted on: 12/12/2025 3:45:45 PM

ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - INSIDE DEER FENCE (ZONE 2A_I)

TOTAL AREA: 1,891 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
GROUNDCOVER						
	Actaea racemosa	black cohosh	20	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	88	2" PLUG	12" O.C.	
	Andropogon gerardii	big bluestem	99	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	42	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	50	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	22	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	16	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	31	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	88	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	119	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	20	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	209	2" PLUG	12" O.C.	
	Eutrochium dubium	coastal plain joe pye weed	99	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	20	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	11	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	22	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	20	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	86	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	2	2" PLUG	12" O.C.	
	Juncus tenuis	path rush	99	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	11	2" PLUG	12" O.C.	
	Lonicera sempervirens	coral honeysuckle	99	2" PLUG	12" O.C.	
	Panicum virgatum	switchgrass	99	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	209	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	22	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	108	2" PLUG	12" O.C.	
	Schizachyrium scoparium	little bluestem	99	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	11	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	11	2" PLUG	12" O.C.	
	Solidago sempervirens	seaside goldenrod	99	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	50	2" PLUG	12" O.C.	
	Thelypteris palustris	marsh fern	99	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	22	2" PLUG	12" O.C.	
	Viola sororia	common violet	50	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	52	2" PLUG	12" O.C.	

ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - OUTSIDE DEER FENCE (ZONE 2A_O)

TOTAL AREA: 2,762 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
GROUNDCOVER						
	Amauropelta noveboracensis	New York fern	160	2" PLUG	12" O.C.	
	Andropogon gerardii	big bluestem	288	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	152	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	160	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	312	2" PLUG	12" O.C.	
	Deschampsia caespitosa	tufted hairgrass	168	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	112	2" PLUG	12" O.C.	
	Juncus tenuis	path rush	288	2" PLUG	12" O.C.	
	Monarda fistulosa	wild bergamot	64	2" PLUG	12" O.C.	
	Panicum virgatum	switchgrass	455	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	288	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	248	2" PLUG	12" O.C.	
	Schizachyrium scoparium	little bluestem	288	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	160	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	24	2" PLUG	12" O.C.	

ZONE 2 TRAIL CORRIDOR FOREST EDGE - INSIDE DEER FENCE (ZONE 2B_I)

TOTAL AREA: 2,525 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	boxelder	1	2 GAL	5' O.C.	
	Acer pensylvanicum	striped maple	2	2 GAL	5' O.C.	
	Acer rubrum	red maple	3	2 GAL	5' O.C.	
	Acer saccharum	sugar maple	1	2 GAL	5' O.C.	
	Amelanchier canadensis	serviceberry	6	2 GAL	5' O.C.	
	Betula lenta	sweet birch	1	2 GAL	5' O.C.	
	Betula populifolia	gray birch	2	2 GAL	5' O.C.	
	Carpinus caroliniana	American hornbeam	2	2 GAL	5' O.C.	
	Carya glabra	pignut hickory	2	2 GAL	5' O.C.	
	Carya ovata	shagbark hickory	2	2 GAL	5' O.C.	
	Celtis occidentalis	hackberry	2	2 GAL	5' O.C.	
	Cercis canadensis	eastern redbud	1	2 GAL	5' O.C.	
	Cornus alternifolia	pagoda dogwood	1	2 GAL	5' O.C.	
	Cornus florida	flowering dogwood	6	2 GAL	5' O.C.	
	Ilex opaca	American holly	7	2 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	4	2 GAL	5' O.C.	
	Liquidambar styraciflua	sweet gum	2	2 GAL	5' O.C.	
	Liriodendron tulipifera	tulip tree	2	2 GAL	5' O.C.	
	Magnolia virginiana	sweetbay magnolia	1	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	7	2 GAL	5' O.C.	
	Ostrya virginiana	hop hornbeam	2	2 GAL	5' O.C.	
	Pinus strobus	eastern white pine	3	2 GAL	5' O.C.	
	Pinus virginiana	Virginia pine	3	2 GAL	5' O.C.	
	Platanus occidentalis	american sycamore	1	2 GAL	5' O.C.	
	Quercus alba	white oak	1	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	1	2 GAL	5' O.C.	
	Quercus palustris	pin oak	4	2 GAL	5' O.C.	
	Quercus phellos	willow oak	1	2 GAL	5' O.C.	
	Quercus rubra	northern red oak	6	2 GAL	5' O.C.	
	Quercus stellata	post oak	3	2 GAL	5' O.C.	
	Quercus velutina	black oak	4	2 GAL	5' O.C.	
	Sassafras albidum	sassafras	10	2 GAL	5' O.C.	
	Tsuga canadensis	eastern hemlock	1	2 GAL	5' O.C.	
SHRUBS						
	Baccharis halimifolia	groundsel bush	3	1 GAL	5' O.C.	
	Clethra alnifolia	sweet pepperbush	2	1 GAL	5' O.C.	
	Cornus amomum	silky dogwood	4	1 GAL	5' O.C.	
	Cornus racemosa	gray dogwood	6	1 GAL	5' O.C.	
	Cornus sericea	red twig dogwood	5	1 GAL	5' O.C.	
	Corylus americana	American hazelnut	1	1 GAL	5' O.C.	
	Diervilla lonicera	bush honeysuckle	6	1 GAL	5' O.C.	
	Gaylussacia baccata	black huckleberry	2	1 GAL	5' O.C.	
	Hamamelis virginiana	American witch-hazel	3	1 GAL	5' O.C.	
	Ilex glabra	inkberry holly	5	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	4	1 GAL	5' O.C.	
	Itea virginica	Virginia sweetspire	1	1 GAL	5' O.C.	
	Iva frutescens	marsh elder	3	1 GAL	5' O.C.	
	Kalmia latifolia	mountain laurel	1	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	9	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	4	1 GAL	5' O.C.	
	Prunus maritima	beach plum	3	1 GAL	5' O.C.	
	Rhododendron periclymenoides	pinxterbloom azalea	1	1 GAL	5' O.C.	
	Rhus aromatica	fragrant sumac	3	1 GAL	5' O.C.	
	Rhus copallina	winged sumac	1	1 GAL	5' O.C.	
	Rhus copallinum	shining sumac	3	1 GAL	5' O.C.	
	Vaccinium angustifolium	lowbush blueberry	2	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	5	1 GAL	5' O.C.	
	Viburnum acerfolium	mapleleaf viburnum	4	1 GAL	5' O.C.	
	Viburnum dentatum	arrowwood	4	1 GAL	5' O.C.	
	Viburnum lentago	nannyberry viburnum	1	1 GAL	5' O.C.	
	Viburnum nudum	possumhaw viburnum	2	1 GAL	5' O.C.	
	Viburnum prunifolium	smooth black-haw	1	1 GAL	5' O.C.	
GROUNDCOVER						
	Actaea racemosa	black cohosh	15	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	147	2" PLUG	12" O.C.	
	Andropogon gerardii	big bluestem	132	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	30	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	66	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	15	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	12	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	23	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	147	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	170	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	15	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	294	2" PLUG	12" O.C.	
	Eutrochium dubium	coastal plain joe pye weed	132	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	15	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	8	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	15	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	15	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	103	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	2	2" PLUG	12" O.C.	
	Juncus tenuis	path rush	132	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	8	2" PLUG	12" O.C.	
	Lonicera sempervirens	coral honeysuckle	132	2" PLUG	12" O.C.	
	Panicum virgatum	switchgrass	132	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	425	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	15	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	118	2" PLUG	12" O.C.	
	Schizachyrium scoparium	little bluestem	132	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	8	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	8	2" PLUG	12" O.C.	
	Solidago sempervirens	seaside goldenrod	132	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	66	2" PLUG	12" O.C.	
	Thelypteris palustris	marsh fern	132	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	15	2" PLUG	12" O.C.	
	Viola sororia	common violet	66	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	68	2" PLUG	12" O.C.	

ZONE 2 TRAIL CORRIDOR FOREST EDGE - OUTSIDE DEER FENCE (ZONE 2B_O)

TOTAL AREA: 1,589 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Ilex opaca	American holly	11	2 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	3	2 GAL	5' O.C.	
SHRUBS						
	Baccharis halimifolia	groundsel bush	5	1 GAL	5' O.C.	
	Diervilla lonicera	bush honeysuckle	8	1 GAL	5' O.C.	
	Ilex glabra	inkberry holly	9	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	6	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	8	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	8	1 GAL	5' O.C.	
	Rhus aromatica	fragrant sumac	11	1 GAL	5' O.C.	
	Rhus copallina	winged sumac	1	1 GAL	5' O.C.	
	Rhus copallinum	shining sumac	5	1 GAL	5' O.C.	
GROUNDCOVER						
	Amauropelta noveboracensis	New York fern	122	2" PLUG	12" O.C.	
	Andropogon gerardii	big bluestem	164	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	46	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	122	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	169	2" PLUG	12" O.C.	
	Deschampsia caespitosa	tufted hairgrass	96	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	23	2" PLUG	12" O.C.	
	Juncus tenuis	path rush	164	2" PLUG	12" O.C.	
	Monarda fistulosa	wild bergamot	37	2" PLUG	12" O.C.	
	Panicum virgatum	switchgrass	260	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	164	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	101	2" PLUG	12" O.C.	
	Schizachyrium scoparium	little bluestem	164	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	92	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	14	2" PLUG	12" O.C.	

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NORWALK, CT

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STATE OF CONNECTICUT
AMANDA M. BAILEY
LICENSED LANDSCAPE ARCHITECT
NO. 1394

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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING SCHEDULE 2

PROJECT NO	SHEET NO
2349.1	**L-600.2**
SCALE	
DRAWN BY: EDD	
CHECKED BY: EDD	
DATE: 12/15/2025	

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ZONE 2 RESTORATION BUFFER - INSIDE DEER FENCE (ZONE 2C_I)

TOTAL AREA: 47,823 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	boxelder	6	2 GAL	5' O.C.	
	Acer pensylvanicum	striped maple	4	2 GAL	5' O.C.	
	Acer rubrum	red maple	29	2 GAL	5' O.C.	
	Acer saccharum	sugar maple	6	2 GAL	5' O.C.	
	Amelanchier canadensis	serviceberry	79	2 GAL	5' O.C.	
	Betula populifolia	gray birch	23	2 GAL	5' O.C.	
	Carpinus caroliniana	American hornbeam	12	2 GAL	5' O.C.	
	Carya glabra	pignut hickory	18	2 GAL	5' O.C.	
	Carya ovata	shagbark hickory	18	2 GAL	5' O.C.	
	Celtis occidentalis	hackberry	23	2 GAL	5' O.C.	
	Cercis canadensis	eastern redbud	4	2 GAL	5' O.C.	
	Cornus alternifolia	pagoda dogwood	6	2 GAL	5' O.C.	
	Cornus florida	flowering dogwood	90	2 GAL	5' O.C.	
	Ilex opaca	American holly	96	2 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	57	2 GAL	5' O.C.	
	Liquidambar styraciflua	sweet gum	23	2 GAL	5' O.C.	
	Liriodendron tulipifera	tulip tree	29	2 GAL	5' O.C.	
	Magnolia virginiana	sweetbay magnolia	4	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	91	2 GAL	5' O.C.	
	Ostrya virginiana	hop hornbeam	23	2 GAL	5' O.C.	
	Pinus strobus	eastern white pine	20	2 GAL	5' O.C.	
	Pinus virginiana	Virginia pine	50	2 GAL	5' O.C.	
	Platanus occidentalis	american sycamore	4	2 GAL	5' O.C.	
	Quercus alba	white oak	12	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	6	2 GAL	5' O.C.	
	Quercus palustris	pin oak	67	2 GAL	5' O.C.	
	Quercus phellos	willow oak	17	2 GAL	5' O.C.	
	Quercus rubra	northern red oak	90	2 GAL	5' O.C.	
	Quercus stellata	post oak	50	2 GAL	5' O.C.	
	Quercus velutina	black oak	56	2 GAL	5' O.C.	
	Sassafras albidum	sassafras	159	2 GAL	5' O.C.	
	Tsuga canadensis	eastern hemlock	6	2 GAL	5' O.C.	
SHRUBS						
	Baccharis halimifolia	groundsel bush	50	1 GAL	5' O.C.	
	Clethra alnifolia	sweet pepperbush	17	1 GAL	5' O.C.	
	Cornus amomum	silky dogwood	57	1 GAL	5' O.C.	
	Cornus racemosa	gray dogwood	74	1 GAL	5' O.C.	
	Cornus sericea	red twig dogwood	77	1 GAL	5' O.C.	
	Corylus americana	American hazelnut	6	1 GAL	5' O.C.	
	Diervilla lonicera	bush honeysuckle	73	1 GAL	5' O.C.	
	Gaylussacia baccata	black huckleberry	12	1 GAL	5' O.C.	
	Hamamelis virginiana	American witch-hazel	21	1 GAL	5' O.C.	
	Ilex glabra	inkberry holly	66	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	23	1 GAL	5' O.C.	
	Iva frutescens	marsh elder	50	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	151	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	67	1 GAL	5' O.C.	
	Prunus maritima	beach plum	50	1 GAL	5' O.C.	
	Rhus aromatica	fragrant sumac	50	1 GAL	5' O.C.	
	Rhus copallina	winged sumac	3	1 GAL	5' O.C.	
	Rhus copallinum	shining sumac	50	1 GAL	5' O.C.	
	Vaccinium angustifolium	lowbush blueberry	21	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	58	1 GAL	5' O.C.	
	Viburnum acerfolium	mapleleaf viburnum	30	1 GAL	5' O.C.	
	Viburnum dentatum	arrowwood	57	1 GAL	5' O.C.	
	Viburnum lentago	nannyberry viburnum	6	1 GAL	5' O.C.	
	Viburnum nudum	possumhaw viburnum	10	1 GAL	5' O.C.	
	Viburnum prunifolium	smooth black-haw	12	1 GAL	5' O.C.	

ZONE 2 RESTORATION BUFFER - OUTSIDE DEER FENCE (ZONE 2C_O)

TOTAL AREA: 14,501 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Ilex opaca	American holly	76	2 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	21	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	4	2 GAL	5' O.C.	
SHRUBS						
	Baccharis halimifolia	groundsel bush	31	1 GAL	5' O.C.	
	Diervilla lonicera	bush honeysuckle	49	1 GAL	5' O.C.	
	Hamamelis virginiana	American witch-hazel	9	1 GAL	5' O.C.	
	Ilex glabra	inkberry holly	68	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	46	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	64	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	81	1 GAL	5' O.C.	
	Rhus aromatica	fragrant sumac	128	1 GAL	5' O.C.	
	Rhus copallina	winged sumac	7	1 GAL	5' O.C.	
	Rhus copallinum	shining sumac	61	1 GAL	5' O.C.	

ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A)

TOTAL AREA: 15,161 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
GROUNDCOVER						
	Actaea racemosa	black cohosh	508	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	526	2" PLUG	12" O.C.	
	Angelica venenosa	hairy angelica	526	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	946	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	394	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	438	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	407	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	727	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	526	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	1,253	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	508	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	964	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	508	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	219	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	438	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	508	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	1,034	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	51	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	219	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	702	2" PLUG	12" O.C.	
	Polygala senega	seneca snakeroot	394	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	438	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	1,472	2" PLUG	12" O.C.	
	Silene stellata	starry campion	657	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	219	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	219	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	394	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	438	2" PLUG	12" O.C.	
	Viola hirsutula	southern wood violet	526	2" PLUG	12" O.C.	
	Viola sororia	common violet	394	2" PLUG	12" O.C.	
	Zizia aptera	heart-leaf golden alexander	526	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	445	2" PLUG	12" O.C.	

ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B)

TOTAL AREA: 17,743 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	boxelder	7	2 GAL	5' O.C.	
	Acer pensylvanicum	striped maple	11	2 GAL	5' O.C.	
	Acer rubrum	red maple	12	2 GAL	5' O.C.	
	Acer saccharum	sugar maple	7	2 GAL	5' O.C.	
	Amelanchier canadensis	serviceberry	23	2 GAL	5' O.C.	
	Betula lenta	sweet birch	9	2 GAL	5' O.C.	
	Betula populifolia	gray birch	7	2 GAL	5' O.C.	
	Carpinus caroliniana	American hornbeam	18	2 GAL	5' O.C.	
	Carya glabra	pignut hickory	16	2 GAL	5' O.C.	
	Carya ovata	shagbark hickory	16	2 GAL	5' O.C.	
	Castanea dentata	American chestnut	17	2 GAL	5' O.C.	
	Celtis occidentalis	hackberry	14	2 GAL	5' O.C.	
	Cercis canadensis	eastern redbud	2	2 GAL	5' O.C.	
	Cornus alternifolia	pagoda dogwood	7	2 GAL	5' O.C.	
	Cornus florida	flowering dogwood	41	2 GAL	5' O.C.	
	Ilex opaca	American holly	36	2 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	3	2 GAL	5' O.C.	
	Liquidambar styraciflua	sweet gum	12	2 GAL	5' O.C.	
	Liriodendron tulipifera	tulip tree	16	2 GAL	5' O.C.	
	Magnolia virginiana	sweetbay magnolia	2	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	32	2 GAL	5' O.C.	
	Ostrya virginiana	hop hornbeam	12	2 GAL	5' O.C.	
	Pinus strobus	eastern white pine	15	2 GAL	5' O.C.	
	Platanus occidentalis	american sycamore	2	2 GAL	5' O.C.	
	Quercus alba	white oak	9	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	5	2 GAL	5' O.C.	
	Quercus palustris	pin oak	7	2 GAL	5' O.C.	
	Quercus phellos	willow oak	7	2 GAL	5' O.C.	
	Quercus rubra	northern red oak	18	2 GAL	5' O.C.	
	Quercus velutina	black oak	5	2 GAL	5' O.C.	
	Sassafras albidum	sassafras	46	2 GAL	5' O.C.	
	Tsuga canadensis	eastern hemlock	7	2 GAL	5' O.C.	
SHRUBS						
	Clethra alnifolia	sweet pepperbush	16	1 GAL	5' O.C.	
	Cornus amomum	silky dogwood	20	1 GAL	5' O.C.	
	Cornus racemosa	gray dogwood	42	1 GAL	5' O.C.	
	Cornus sericea	red twig dogwood	15	1 GAL	5' O.C.	
	Corylus americana	American hazelnut	7	1 GAL	5' O.C.	
	Diervilla lonicera	bush honeysuckle	35	1 GAL	5' O.C.	
	Gaylussacia baccata	black huckleberry	22	1 GAL	5' O.C.	
	Hamamelis virginiana	American witch-hazel	20	1 GAL	5' O.C.	
	Ilex glabra	inkberry holly	9	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	23	1 GAL	5' O.C.	
	Itea virginica	Virginia sweetspire	9	1 GAL	5' O.C.	
	Kalmia latifolia	mountain laurel	17	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	32	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	7	1 GAL	5' O.C.	
	Rhododendron periclymenoides	pinxterbloom azalea	9	1 GAL	5' O.C.	
	Rhus copallina	winged sumac	2	1 GAL	5' O.C.	
	Vaccinium angustifolium	lowbush blueberry	11	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	6	1 GAL	5' O.C.	
	Viburnum acerfolium	mapleleaf viburnum	25	1 GAL	5' O.C.	
	Viburnum dentatum	arrowwood	42	1 GAL	5' O.C.	
	Viburnum lentago	nannyberry viburnum	7	1 GAL	5' O.C.	
	Viburnum nudum	possumhaw viburnum	9	1 GAL	5' O.C.	
	Viburnum prunifolium	smooth black-haw	73	1 GAL	5' O.C.	
GROUNDCOVER						
	Actaea racemosa	black cohosh	308	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	1,025	2" PLUG	12" O.C.	
	Angelica venenosa	hairy angelica	410	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	718	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	462	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	410	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	246	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	513	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	1,025	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	1,538	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	308	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	1,435	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	308	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	205	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	410	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	308	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	923	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	31	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	205	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	4,099	2" PLUG	12" O.C.	
	Polygala senega	seneca snakeroot	308	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	410	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	1,333	2" PLUG	12" O.C.	
	Silene stellata	starry campion	513	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	205	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	205	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	462	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	410	2" PLUG	12" O.C.	
	Viola hirsutula	southern wood violet	410	2" PLUG	12" O.C.	
	Viola sororia	common violet	462	2" PLUG	12" O.C.	
	Zizia aptera	heart-leaf golden alexander	410	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	493	2" PLUG	12" O.C.	

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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING SCHEDULE 3

PROJECT NO 2349.1
SCALE
DRAWN BY EDD
CHECKED BY EDD
DATE 12/15/2025

SHEET NO **L-600.3**

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ZONE 3 RESTORATION BUFFER (ZONE 3C)

TOTAL AREA: 171,992 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	boxelder	9	2 GAL	15' O.C.	
	Acer pensylvanicum	striped maple	2	2 GAL	15' O.C.	
	Acer rubrum	red maple	18	2 GAL	15' O.C.	
	Acer saccharum	sugar maple	9	2 GAL	15' O.C.	
	Amelanchier canadensis	serviceberry	19	2 GAL	15' O.C.	
	Betula populifolia	gray birch	7	2 GAL	15' O.C.	
	Carpinus caroliniana	American hornbeam	22	2 GAL	15' O.C.	
	Carya glabra	pignut hickory	31	2 GAL	15' O.C.	
	Carya ovata	shagbark hickory	31	2 GAL	15' O.C.	
	Castanea dentata	American chestnut	2	2 GAL	15' O.C.	
	Celtis occidentalis	hackberry	16	2 GAL	15' O.C.	
	Cercis canadensis	eastern redbud	2	2 GAL	15' O.C.	
	Cornus alternifolia	pagoda dogwood	9	2 GAL	15' O.C.	
	Cornus florida	flowering dogwood	43	2 GAL	15' O.C.	
	Ilex opaca	American holly	39	2 GAL	15' O.C.	
	Juniperus virginiana	eastern red cedar	3	2 GAL	15' O.C.	
	Liquidambar styraciflua	sweet gum	18	2 GAL	15' O.C.	
	Liriodendron tulipifera	tulip tree	29	2 GAL	15' O.C.	
	Magnolia virginiana	sweetbay magnolia	2	2 GAL	15' O.C.	
	Nyssa sylvatica	black gum	41	2 GAL	15' O.C.	
	Ostrya virginiana	hop hornbeam	18	2 GAL	15' O.C.	
	Pinus strobus	eastern white pine	30	2 GAL	15' O.C.	
	Platanus occidentalis	american sycamore	2	2 GAL	15' O.C.	
	Quercus alba	white oak	22	2 GAL	15' O.C.	
	Quercus bicolor	swamp white oak	11	2 GAL	15' O.C.	
	Quercus palustris	pin oak	7	2 GAL	15' O.C.	
	Quercus phellos	willow oak	7	2 GAL	15' O.C.	
	Quercus rubra	northern red oak	25	2 GAL	15' O.C.	
	Quercus velutina	black oak	11	2 GAL	15' O.C.	
	Sassafras albidum	sassafras	47	2 GAL	15' O.C.	
	Tsuga canadensis	eastern hemlock	9	2 GAL	15' O.C.	
SHRUBS						
	Clethra alnifolia	sweet pepperbush	7	1 GAL	15' O.C.	
	Cornus amomum	silky dogwood	26	1 GAL	15' O.C.	
	Cornus racemosa	gray dogwood	46	1 GAL	15' O.C.	
	Cornus sericea	red twig dogwood	25	1 GAL	15' O.C.	
	Corylus americana	American hazelnut	9	1 GAL	15' O.C.	
	Diervilla lonicera	bush honeysuckle	29	1 GAL	15' O.C.	
	Gaylussacia baccata	black huckleberry	18	1 GAL	15' O.C.	
	Hamamelis virginiana	American witch-hazel	13	1 GAL	15' O.C.	
	Ilex glabra	inkberry holly	14	1 GAL	15' O.C.	
	Ilex verticillata	winterberry	21	1 GAL	15' O.C.	
	Lindera benzoin	spicebush	39	1 GAL	15' O.C.	
	Myrica pensylvanica	northern bayberry	7	1 GAL	15' O.C.	
	Rhus copallina	winged sumac	3	1 GAL	15' O.C.	
	Vaccinium angustifolium	lowbush blueberry	13	1 GAL	15' O.C.	
	Vaccinium corymbosum	highbush blueberry	8	1 GAL	15' O.C.	
	Viburnum acerfolium	mapleleaf viburnum	19	1 GAL	15' O.C.	
	Viburnum dentatum	arrowwood	50	1 GAL	15' O.C.	
	Viburnum lentago	nannyberry viburnum	9	1 GAL	15' O.C.	
	Viburnum nudum	possumhaw viburnum	11	1 GAL	15' O.C.	
	Viburnum prunifolium	smooth black-haw	20	1 GAL	15' O.C.	

ZONE 4 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 4A)

TOTAL AREA: 5,137 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
GROUNDCOVER						
	Actaea racemosa	black cohosh	173	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	178	2" PLUG	12" O.C.	
	Angelica venenosa	hairy angelica	178	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	322	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	134	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	149	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	138	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	248	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	178	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	426	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	173	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	327	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	173	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	75	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	149	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	173	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	351	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	18	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	75	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	238	2" PLUG	12" O.C.	
	Polygala senega	seneca snakeroot	134	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	149	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	500	2" PLUG	12" O.C.	
	Silene stellata	starry campion	223	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	75	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	75	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	134	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	149	2" PLUG	12" O.C.	
	Viola hirsutula	southern wood violet	178	2" PLUG	12" O.C.	
	Viola sororia	common violet	134	2" PLUG	12" O.C.	
	Zizia aptera	heart-leaf golden alexander	178	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	152	2" PLUG	12" O.C.	

ZONE 4 TRAIL CORRIDOR FOREST EDGE (ZONE 4B)

TOTAL AREA: 5,400 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	boxelder	2	2 GAL	5' O.C.	
	Acer pensylvanicum	striped maple	3	2 GAL	5' O.C.	
	Acer rubrum	red maple	4	2 GAL	5' O.C.	
	Acer saccharum	sugar maple	2	2 GAL	5' O.C.	
	Amelanchier canadensis	serviceberry	6	2 GAL	5' O.C.	
	Betula lenta	sweet birch	2	2 GAL	5' O.C.	
	Betula populifolia	gray birch	2	2 GAL	5' O.C.	
	Carpinus caroliniana	American hornbeam	6	2 GAL	5' O.C.	
	Carya glabra	pignut hickory	6	2 GAL	5' O.C.	
	Carya ovata	shagbark hickory	6	2 GAL	5' O.C.	
	Castanea dentata	American chestnut	5	2 GAL	5' O.C.	
	Celtis occidentalis	hackberry	4	2 GAL	5' O.C.	
	Cercis canadensis	eastern redbud	1	2 GAL	5' O.C.	
	Cornus alternifolia	pagoda dogwood	2	2 GAL	5' O.C.	
	Cornus florida	flowering dogwood	12	2 GAL	5' O.C.	
	Ilex opaca	American holly	10	2 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	1	2 GAL	5' O.C.	
	Liquidambar styraciflua	sweet gum	4	2 GAL	5' O.C.	
	Liriodendron tulipifera	tulip tree	6	2 GAL	5' O.C.	
	Magnolia virginiana	sweetbay magnolia	1	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	10	2 GAL	5' O.C.	
	Ostrya virginiana	hop hornbeam	4	2 GAL	5' O.C.	
	Pinus strobus	eastern white pine	7	2 GAL	5' O.C.	
	Platanus occidentalis	american sycamore	1	2 GAL	5' O.C.	
	Quercus alba	white oak	4	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	2	2 GAL	5' O.C.	
	Quercus palustris	pin oak	2	2 GAL	5' O.C.	
	Quercus phellos	willow oak	2	2 GAL	5' O.C.	
	Quercus rubra	northern red oak	6	2 GAL	5' O.C.	
	Quercus velutina	black oak	2	2 GAL	5' O.C.	
	Sassafras albidum	sassafras	14	2 GAL	5' O.C.	
	Tsuga canadensis	eastern hemlock	2	2 GAL	5' O.C.	
SHRUBS						
	Clethra alnifolia	sweet pepperbush	4	1 GAL	5' O.C.	
	Cornus amomum	silky dogwood	6	1 GAL	5' O.C.	
	Cornus racemosa	gray dogwood	12	1 GAL	5' O.C.	
	Cornus sericea	red twig dogwood	5	1 GAL	5' O.C.	
	Corylus americana	American hazelnut	2	1 GAL	5' O.C.	
	Diervilla lonicera	bush honeysuckle	10	1 GAL	5' O.C.	
	Gaylussacia baccata	black huckleberry	6	1 GAL	5' O.C.	
	Hamamelis virginiana	American witch-hazel	6	1 GAL	5' O.C.	
	Ilex glabra	inkberry holly	3	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	7	1 GAL	5' O.C.	
	Itea virginica	Virginia sweetspire	2	1 GAL	5' O.C.	
	Kalmia latifolia	mountain laurel	4	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	10	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	2	1 GAL	5' O.C.	
	Rhododendron periclymenoides	pinxterbloom azalea	2	1 GAL	5' O.C.	
	Rhus copallina	winged sumac	1	1 GAL	5' O.C.	
	Vaccinium angustifolium	lowbush blueberry	4	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	3	1 GAL	5' O.C.	
	Viburnum acerfolium	mapleleaf viburnum	7	1 GAL	5' O.C.	
	Viburnum dentatum	arrowwood	12	1 GAL	5' O.C.	
	Viburnum lentago	nannyberry viburnum	2	1 GAL	5' O.C.	
	Viburnum nudum	possumhaw viburnum	3	1 GAL	5' O.C.	
	Viburnum prunifolium	smooth black-haw	22	1 GAL	5' O.C.	
GROUNDCOVER						
	Actaea racemosa	black cohosh	94	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	376	2" PLUG	12" O.C.	
	Angelica venenosa	hairy angelica	125	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	188	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	141	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	94	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	75	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	141	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	376	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	517	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	94	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	470	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	94	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	47	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	94	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	94	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	282	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	10	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	47	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	1,312	2" PLUG	12" O.C.	
	Polygala senega	seneca snakeroot	94	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	94	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	376	2" PLUG	12" O.C.	
	Silene stellata	starry campion	156	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	47	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	47	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	141	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	94	2" PLUG	12" O.C.	
	Viola hirsutula	southern wood violet	125	2" PLUG	12" O.C.	
	Viola sororia	common violet	141	2" PLUG	12" O.C.	
	Zizia aptera	heart-leaf golden alexander	125	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	151	2" PLUG	12" O.C.	

ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A)

TOTAL AREA: 6,038 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
GROUNDCOVER						
	Actaea racemosa	black cohosh	210	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	140	2" PLUG	12" O.C.	
	Angelica venenosa	hairy angelica	210	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	413	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	157	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	203	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	168	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	312	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	140	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	452	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	210	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	343	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	210	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	102	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	203	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	210	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	420	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	21	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	102	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	210	2" PLUG	12" O.C.	
	Polygala senega	seneca snakeroot	157	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	203	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	623	2" PLUG	12" O.C.	
	Silene stellata	starry campion	262	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	102	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	102	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	157	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	203	2" PLUG	12" O.C.	
	Viola hirsutula	southern wood violet	210	2" PLUG	12" O.C.	
	Viola sororia	common violet	157	2" PLUG	12" O.C.	
	Zizia aptera	heart-leaf golden alexander	210	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	178	2" PLUG	12" O.C.	

SCAPE

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NORTH FOREST
NORWALK, CT

KEY PLAN

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01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT
AMANDA M. BAXLEY
LICENSED LANDSCAPE ARCHITECT
NO. 1394

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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING SCHEDULE 4

PROJECT NO 2349.1
SCALE
DRAWN BY EDD
CHECKED BY EDD
DATE 12/15/2025

SHEET NO **L-600.4**

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ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 5B)

TOTAL AREA: 7,264 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	boxelder	3	2 GAL	5' O.C.	
	Acer pensylvanicum	striped maple	4	2 GAL	5' O.C.	
	Acer rubrum	red maple	6	2 GAL	5' O.C.	
	Acer saccharum	sugar maple	3	2 GAL	5' O.C.	
	Amelanchier canadensis	serviceberry	9	2 GAL	5' O.C.	
	Betula lenta	sweet birch	3	2 GAL	5' O.C.	
	Betula populifolia	gray birch	2	2 GAL	5' O.C.	
	Carpinus caroliniana	American hornbeam	10	2 GAL	5' O.C.	
	Carya glabra	pignut hickory	10	2 GAL	5' O.C.	
	Carya ovata	shagbark hickory	10	2 GAL	5' O.C.	
	Castanea dentata	American chestnut	7	2 GAL	5' O.C.	
	Celtis occidentalis	hackberry	5	2 GAL	5' O.C.	
	Cercis canadensis	eastern redbud	1	2 GAL	5' O.C.	
	Cornus alternifolia	pagoda dogwood	3	2 GAL	5' O.C.	
	Cornus florida	flowering dogwood	15	2 GAL	5' O.C.	
	Ilex opaca	American holly	15	2 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	1	2 GAL	5' O.C.	
	Liquidambar styraciflua	sweet gum	6	2 GAL	5' O.C.	
	Liriodendron tulipifera	tulip tree	9	2 GAL	5' O.C.	
	Magnolia virginiana	sweetbay magnolia	1	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	16	2 GAL	5' O.C.	
	Ostrya virginiana	hop hornbeam	6	2 GAL	5' O.C.	
	Pinus strobus	eastern white pine	10	2 GAL	5' O.C.	
	Platanus occidentalis	american sycamore	1	2 GAL	5' O.C.	
	Quercus alba	white oak	7	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	4	2 GAL	5' O.C.	
	Quercus palustris	pin oak	2	2 GAL	5' O.C.	
	Quercus phellos	willow oak	2	2 GAL	5' O.C.	
	Quercus rubra	northern red oak	8	2 GAL	5' O.C.	
	Quercus velutina	black oak	4	2 GAL	5' O.C.	
	Sassafras albidum	sassafras	16	2 GAL	5' O.C.	
	Tsuga canadensis	eastern hemlock	3	2 GAL	5' O.C.	
SHRUBS						
	Clethra alnifolia	sweet pepperbush	5	1 GAL	5' O.C.	
	Cornus amomum	silky dogwood	8	1 GAL	5' O.C.	
	Cornus racemosa	gray dogwood	17	1 GAL	5' O.C.	
	Cornus sericea	red twig dogwood	8	1 GAL	5' O.C.	
	Corylus americana	American hazelnut	3	1 GAL	5' O.C.	
	Diervilla lonicera	bush honeysuckle	11	1 GAL	5' O.C.	
	Gaylussacia baccata	black huckleberry	8	1 GAL	5' O.C.	
	Hamamelis virginiana	American witch-hazel	7	1 GAL	5' O.C.	
	Ilex glabra	inkberry holly	5	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	10	1 GAL	5' O.C.	
	Itea virginica	Virginia sweetspire	3	1 GAL	5' O.C.	
	Kalmia latifolia	mountain laurel	5	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	11	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	2	1 GAL	5' O.C.	
	Rhododendron periclymenoides	pinxterbloom azalea	3	1 GAL	5' O.C.	
	Rhus copallina	winged sumac	1	1 GAL	5' O.C.	
	Vaccinium angustifolium	lowbush blueberry	4	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	3	1 GAL	5' O.C.	
	Viburnum acerfolium	mapleleaf viburnum	9	1 GAL	5' O.C.	
	Viburnum dentatum	arrowwood	18	1 GAL	5' O.C.	
	Viburnum lentago	nannyberry viburnum	3	1 GAL	5' O.C.	
	Viburnum nudum	possumhaw viburnum	4	1 GAL	5' O.C.	
	Viburnum prunifolium	smooth black-haw	31	1 GAL	5' O.C.	
GROUNDCOVER						
	Actaea racemosa	black cohosh	122	2" PLUG	12" O.C.	
	Amauropelta noveboracensis	New York fern	486	2" PLUG	12" O.C.	
	Angelica venenosa	hairy angelica	162	2" PLUG	12" O.C.	
	Aquilegia canadensis	wild columbine	244	2" PLUG	12" O.C.	
	Aralia nudicaulis	wild sarsaparilla	122	2" PLUG	12" O.C.	
	Aralia racemosa	American spikenard	122	2" PLUG	12" O.C.	
	Arctostaphylos uva-ursi	bearberry	98	2" PLUG	12" O.C.	
	Carex appalachica	Appalachian sedge	183	2" PLUG	12" O.C.	
	Carex blanda	common woodland sedge	486	2" PLUG	12" O.C.	
	Carex pensylvanica	Pennsylvania sedge	669	2" PLUG	12" O.C.	
	Dryopteris marginalis	marginal woodfern	122	2" PLUG	12" O.C.	
	Eurybia divaricata	white wood aster	608	2" PLUG	12" O.C.	
	Fragaria virginiana	Virginia strawberry	122	2" PLUG	12" O.C.	
	Gaultheria procumbens	wintergreen	61	2" PLUG	12" O.C.	
	Geranium maculatum	wild geranium	122	2" PLUG	12" O.C.	
	Helianthus decapetalus	thinleaf sunflower	122	2" PLUG	12" O.C.	
	Helianthus divaricatus	woodland sunflower	284	2" PLUG	12" O.C.	
	Impatiens capensis	jewelweed	13	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	61	2" PLUG	12" O.C.	
	Parthenocissus quinquefolia	Virginia creeper	2,104	2" PLUG	12" O.C.	
	Polygala senega	seneca snakeroot	122	2" PLUG	12" O.C.	
	Polygonatum biflorum	solomon's seal	122	2" PLUG	12" O.C.	
	Polystichum acrostichoides	Christmas fern	406	2" PLUG	12" O.C.	
	Silene stellata	starry campion	203	2" PLUG	12" O.C.	
	Smilacina racemosa	false solomon's seal	61	2" PLUG	12" O.C.	
	Solidago caesia	blue-stemmed goldenrod	61	2" PLUG	12" O.C.	
	Symphyotrichum cordifolium	blue wood aster	122	2" PLUG	12" O.C.	
	Tiarella cordifolia	foamflower	122	2" PLUG	12" O.C.	
	Viola hirsutula	southern wood violet	162	2" PLUG	12" O.C.	
	Viola sororia	common violet	122	2" PLUG	12" O.C.	
	Zizia aptera	heart-leaf golden alexander	162	2" PLUG	12" O.C.	
	Zizia aurea	golden alexander	135	2" PLUG	12" O.C.	

WET ADAPTIVE TRAIL CORRIDOR HERBACEOUS SLOPE (WA_A)

TOTAL AREA: 6,216 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
GROUNDCOVER						
	Asclepias incarnata	swamp milkweed	359	2" PLUG	12" O.C.	
	Carex grayi	gray's sedge	1,077	2" PLUG	12" O.C.	
	Eupatorium perfoliatum	common boneset	1,077	2" PLUG	12" O.C.	
	Juncus effusus	soft rush	359	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	1,077	2" PLUG	12" O.C.	
	Scirpus cyperinus	woolgrass	1,077	2" PLUG	12" O.C.	
	Thelypteris palustris	marsh fern	1,077	2" PLUG	12" O.C.	
	Verbena hastata	swamp verbena	1,077	2" PLUG	12" O.C.	

WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE - SWALE (WA_B1)

TOTAL AREA: 3,782 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Platanus occidentalis	American sycamore	21	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	21	2 GAL	5' O.C.	
	Quercus phellos	willow oak	10	2 GAL	5' O.C.	
SHRUBS						
	Cornus sericea	red-osier dogwood	21	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	21	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	21	1 GAL	5' O.C.	
	Physocarpus opulifolius	common ninebark	10	1 GAL	5' O.C.	
	Rhododendron viscosum	swamp azalea	21	1 GAL	5' O.C.	
	Salix discolor	pussy willow	21	1 GAL	5' O.C.	
	Sambucus canadensis	black elderberry	10	1 GAL	5' O.C.	
	Spiraea tomentosa	steeplebush	10	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	21	1 GAL	5' O.C.	
GROUNDCOVER						
	Asclepias incarnata	swamp milkweed	258	2" PLUG	12" O.C.	
	Carex grayi	gray's sedge	775	2" PLUG	12" O.C.	
	Eupatorium perfoliatum	common boneset	775	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	775	2" PLUG	12" O.C.	
	Scirpus cyperinus	woolgrass	775	2" PLUG	12" O.C.	
	Thelypteris palustris	marsh fern	775	2" PLUG	12" O.C.	
	Verbena hastata	swamp verbena	775	2" PLUG	12" O.C.	

WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE - SUMP (WA_B2)

TOTAL AREA: 2,458 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Platanus occidentalis	American sycamore	4	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	4	2 GAL	5' O.C.	
	Quercus phellos	willow oak	9	2 GAL	5' O.C.	
SHRUBS						
	Cephalanthus occidentalis	buttonbush	13	1 GAL	5' O.C.	
	Cornus sericea	red-osier dogwood	4	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	4	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	4	1 GAL	5' O.C.	
	Physocarpus opulifolius	common ninebark	4	1 GAL	5' O.C.	
	Rhododendron viscosum	swamp azalea	4	1 GAL	5' O.C.	
	Rosa palustris	swamp rose	9	1 GAL	5' O.C.	
	Salix discolor	pussy willow	4	1 GAL	5' O.C.	
	Sambucus canadensis	black elderberry	4	1 GAL	5' O.C.	
	Spiraea tomentosa	steeplebush	4	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	4	1 GAL	5' O.C.	
	Viburnum nudum	possumhaw viburnum	9	1 GAL	5' O.C.	
GROUNDCOVER						
	Asclepias incarnata	swamp milkweed	323	2" PLUG	12" O.C.	
	Carex crinita	fringed sedge	216	2" PLUG	12" O.C.	
	Carex lurida	lurid sedge	216	2" PLUG	12" O.C.	
	Carex stipata	awl sedge	216	2" PLUG	12" O.C.	
	Carex vulpinoidea	fox sedge	216	2" PLUG	12" O.C.	
	Eupatorium maculatum	spotted joe-pye weed	323	2" PLUG	12" O.C.	
	Juncus effusus	soft rush	323	2" PLUG	12" O.C.	
	Scirpus cyperinus	woolgrass	323	2" PLUG	12" O.C.	

WET ADAPTIVE RESTORATION BUFFER - SWALE (WA_C1)

TOTAL AREA: 2,960 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Platanus occidentalis	American sycamore	7	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	14	2 GAL	5' O.C.	
	Quercus phellos	willow oak	7	2 GAL	5' O.C.	
SHRUBS						
	Cornus sericea	red-osier dogwood	14	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	14	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	14	1 GAL	5' O.C.	
	Physocarpus opulifolius	common ninebark	7	1 GAL	5' O.C.	
	Rhododendron viscosum	swamp azalea	14	1 GAL	5' O.C.	
	Salix discolor	pussy willow	14	1 GAL	5' O.C.	
	Sambucus canadensis	black elderberry	7	1 GAL	5' O.C.	
	Spiraea tomentosa	steeplebush	14	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	14	1 GAL	5' O.C.	

WET ADAPTIVE RESTORATION BUFFER - SUMP (WA_C2)

TOTAL AREA: 15,841 sf

PLANT CODE	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Platanus occidentalis	American sycamore	37	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	37	2 GAL	5' O.C.	
	Quercus phellos	willow oak	73	2 GAL	5' O.C.	
SHRUBS						
	Cephalanthus occidentalis	buttonbush	73	1 GAL	5' O.C.	
	Cornus sericea	red-osier dogwood	37	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	37	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	37	1 GAL	5' O.C.	
	Physocarpus opulifolius	common ninebark	37	1 GAL	5' O.C.	
	Rhododendron viscosum	swamp azalea	37	1 GAL	5' O.C.	
	Rosa palustris	swamp rose	73	1 GAL	5' O.C.	
	Salix discolor	pussy willow	37	1 GAL	5' O.C.	
	Sambucus canadensis	black elderberry	37	1 GAL	5' O.C.	
	Spiraea tomentosa	steeplebush	37	1 GAL	5' O.C.	
	Vaccinium corymbosum	highbush blueberry	37	1 GAL	5' O.C.	
	Vibumum nudum	possumhaw viburnum	110	1 GAL	5' O.C.	

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NORTH FOREST
NORWALK, CT

KEY PLAN

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SEAL



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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING SCHEDULE 5

PROJECT NO	SHEET NO
2349.1	
SCALE	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

L-600.5

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Z:\1PROJECTS\1EDD\Manresa North Forest_2025.08\06_Drawings And Maps\CAD\EDD\2025 12 05 – SOCD Permit Set\EDD SOCD CD 2025 L-600s Restoration Planting And Seeding Schedule.dwg Plotted on: 12/12/2025 3:55:09 PM

ZONE 1 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 1A)

TOTAL AREA: 6,533 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PINELANDS NURSERY 92: LOW GROW SHADE TOLERANT UPLAND MIX OR APPROVED ALTERNATIVE	*Elymus virginicus*	Virginia wild-rye	20.00%
	Penstemon hirsutus	hairy beardtongue	10.00%
	Tridens flavus	purpletop	10.00%
	Symphyotrichum oblongfolium	aromatic aster	9.00%
	Tradescantia ohiensis	Ohio spiderwort	8.00%
	Chamaecrista fasciculata	partridge pea	7.00%
	Zizia aurea	golden alexander	7.00%
	Coreopsis lanceolata	lanceleaf tickseed	6.00%
	Monarda punctata	spotted horsemint	6.00%
	Chasmanthium latifolium	northern sea oats	3.00%
	Echinacea purpurea	purple coneflower	3.00%
	Rudbeckia fulgida	orange coneflower	3.00%
	Pycnanthemum incanum	hoary mountain mint	2.00%
	Pycnanthemum tenuifolium	slender mountain mint	2.00%
	Rudbeckia hirta	black-eyed susan	2.00%
	Solidago nemoralis	gray goldenrod	2.00%
ERNST CUSTOM MIX B - SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 1 TRAIL CORRIDOR FOREST EDGE (ZONE 1B)

TOTAL AREA: 5,177 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX OR APPROVED ALTERNATIVE	*Arisaema triphyllum*	Jack-in-the-Pulpit	4.69%
	Caulophyllum thalictroides	Blue Cohosh	3.75%
	Maianthemum racemosum	Solomon's Plume	3.75%
	Allium tricoccum	Wild Leek	3.37%
	Osmorhiza claytonii	Sweet Cicely	2.81%
	Thalictrum dioicum	Early Meadow Rue	2.81%
	Polemonium reptans	Jacob's Ladder	2.34%
	Polygonatum biflorum	Solomon's Seal	2.34%
	Triosteum perfoliatum	Late Horse Gentian	2.34%
	Aquilegia canadensis	Columbine	1.87%
	Campanula americana	Tall Bellflower	1.87%
	Desmodium glutinosum	Pointed-leaved Tick Trefoil	1.87%
	Geranium maculatum	Wild Geranium	1.41%
	Penstemon hirsutus	Hairy Beardtongue	1.41%
	Smilax lasioneura	Common Carrion Flower	1.41%
	Symphyotrichum shortii	Short's Aster	1.41%
	Taenidia integerrima	Yellow Pimpernel	1.41%
	Uvularia grandiflora	Bellwort	1.41%
	Actaea rubra	Red Baneberry	0.94%
	Agastache scrophulariifolia	Purple Giant Hyssop	0.94%
	Aralia racemosa	Spikenard	0.94%
	Cryptotaenia canadensis	Honewort	0.94%
	Hydrophyllum appendiculatum	Great Waterleaf	0.94%
	Hydrophyllum virginianum	Virginia Waterleaf	0.94%
	Osmorhiza longistylis	Aniseroot	0.94%
	Persicaria virginiana	Woodland Knotweed	0.94%
	Phryma leptostachya	Lopseed	0.94%
	Sanguinaria canadensis	Bloodroot	0.94%
	Scrophularia marilandica	Late Figwort	0.94%
	Hydrophyllum virginianum	Virginia Waterleaf	0.94%
	Osmorhiza longistylis	Aniseroot	0.94%
	Persicaria virginiana	Woodland Knotweed	0.94%
	Phryma leptostachya	Lopseed	0.94%
	Sanguinaria canadensis	Bloodroot	0.94%
	Scrophularia marilandica	Late Figwort	0.94%
	Symphyotrichum drummondii	Drummond's Aster	0.94%
	Symphyotrichum laeriflorum	Calico Aster	0.94%
	Blephilia hirsuta	Hairy Wood Mint	0.47%
	Dodecatheon meadia	Midland Shooting Star	0.47%
	Eurybia macrophylla	Big-leaved Aster	0.47%
	Eutrochium purpureum	Sweet Joe Pye Weed	0.47%
	Impatiens pallida	Yellow Jewelweed	0.47%
	Mitella diphylla	Bishop's Cap	0.47%
	Rudbeckia laciniata	Wild Golden Glow	0.47%
	Ageratina altissima	White Snakeroot	0.23%
	Dasistoma macrophylla	Mullein-foxglove	0.23%
	Dicentra cucullaria	Dutchman's Breeches	0.23%
	Lobelia inflata	Indian Tobacco	0.23%
	Solidago uliginosa	Bog Goldenrod	0.23%
	Solidago ulmifolia	Elm-leaved Goldenrod	0.23%
	Stylophorum diphyllum	Celandine Poppy	0.23%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 1 RESTORATION BUFFER (ZONE 1C)

TOTAL AREA: 43,735 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON - BATTLE THE BUCKTHORN - UNDERSTORY REVEGETATION SEED MIX OR APPROVED ALTERNATIVE	*Elymus canadensis*	Canada wild rye	34.74%
	Elymus virginicus	Virginia wild rye	34.74%
	Elymus hystrix	bottlebrush grass	5.21%
	Elymus villosus	silky wild rye	3.91%
	Rudbeckia hirta	black-eyed susan	3.47%
	Zizia aurea	golden alexanders	2.61%
	Echinacea purpurea	purple coneflower	1.74%
	Heliopsis helianthoides	early sunflower	1.74%
	Sphenopholis obtusata	prairie wedgegrass	1.74%
	Cryptotaenia canadensis	honewort	0.87%
	Monarda fistulosa	wild bergamot	0.87%
	Penstemon digitalis	foxglove beardtongue	0.87%
	Carex sprengelii	long-beaked sedge	0.87%
	Glyceria striata	fowl manna grass	0.87%
	Poa palustris	fowl bluegrass	0.87%
	Campanula americana	tall bellflower	0.65%
	Agastache scrophulariaefolia	purple giant hyssop	0.43%
	Aquilegia canadensis	columbine	0.43%
	Eutrochium purpureum	sweet joe pye weed	0.43%
	Lobelia siphilitica	great blue lobelia	0.43%
	Rudbeckia laciniata	wild golden glow	0.43%
	Teucrium canadense	germander	0.43%
	Thalictrum dasycarpum	purple meadow rue	0.43%
	Veronicastrum virginicum	culver's root	0.43%
	Rudbeckia triloba	brown-eyed susan	0.33%
	Scrophularia lanceolata	early figwort	0.22%
	Symphyotrichum laterifloru	calico aster	0.22%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - INSIDE DEER FENCE (ZONE 2A_I)

TOTAL AREA: 1,891 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PINELANDS NURSERY 92: LOW GROW SHADE TOLERANT UPLAND MIX OR APPROVED ALTERNATIVE	*Elymus virginicus*	Virginia wild-rye	20.00%
	Penstemon hirsutus	hairy beardtongue	10.00%
	Tridens flavus	purpletop	10.00%
	Symphyotrichum oblongfolium	aromatic aster	9.00%
	Tradescantia ohiensis	Ohio spiderwort	8.00%
	Chamaecrista fasciculata	partridge pea	7.00%
	Zizia aurea	golden alexander	7.00%
	Coreopsis lanceolata	lanceleaf tickseed	6.00%
	Monarda punctata	spotted horsemint	6.00%
	Chasmanthium latifolium	northern sea oats	3.00%
	Echinacea purpurea	purple coneflower	3.00%
	Rudbeckia fulgida	orange coneflower	3.00%
	Pycnanthemum incanum	hoary mountain mint	2.00%
	Pycnanthemum tenuifolium	slender mountain mint	2.00%
	Rudbeckia hirta	black-eyed susan	2.00%
	Solidago nemoralis	gray goldenrod	2.00%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - OUTSIDE DEER FENCE (ZONE 2A_O)

TOTAL AREA: 2,762 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
ERNST CUSTOM MIX C SHADED DEER RESISTANT OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	30.00%
	Carex pensylvanica	Pennsylvania sedge	30.00%
	Asarum canadense	wild ginger	15.0%
	Penstemon digitalis	foxglove beardtongue	5.00%
	Penstemon hirsutus	hairy beardtongue	5.00%
	Pycnanthemum virginianum	mountain mint	5.00%
	Tradescantia ohiensis	Ohio spiderwort	5.00%
	Bouteloua curtipendula	side-oats grama	2.50%
	Bouteloua gracilis	blue grama	2.50%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE.

ZONE 2 TRAIL CORRIDOR FOREST EDGE - INSIDE DEER FENCE (ZONE 2B_I)

TOTAL AREA: 2,525 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX OR APPROVED ALTERNATIVE	*Arisaema triphyllum*	Jack-in-the-Pulpit	4.69%
	Caulophyllum thalictroides	Blue Cohosh	3.75%
	Maianthemum racemosum	Solomon's Plume	3.75%
	Allium tricoccum	Wild Leek	3.37%
	Osmorhiza claytonii	Sweet Cicely	2.81%
	Thalictrum dioicum	Early Meadow Rue	2.81%
	Polemonium reptans	Jacob's Ladder	2.34%
	Polygonatum biflorum	Solomon's Seal	2.34%
	Triosteum perfoliatum	Late Horse Gentian	2.34%
	Aquilegia canadensis	Columbine	1.87%
	Campanula americana	Tall Bellflower	1.87%
	Desmodium glutinosum	Pointed-leaved Tick Trefoil	1.87%
	Geranium maculatum	Wild Geranium	1.41%
	Penstemon hirsutus	Hairy Beardtongue	1.41%
	Smilax lasioneura	Common Carrion Flower	1.41%
	Symphyotrichum shortii	Short's Aster	1.41%
	Taenidia integerrima	Yellow Pimpernel	1.41%
	Uvularia grandiflora	Bellwort	1.41%
	Actaea rubra	Red Baneberry	0.94%
	Agastache scrophulariifolia	Purple Giant Hyssop	0.94%
	Aralia racemosa	Spikenard	0.94%
	Cryptotaenia canadensis	Honewort	0.94%
	Hydrophyllum appendiculatum	Great Waterleaf	0.94%
	Hydrophyllum virginianum	Virginia Waterleaf	0.94%
	Osmorhiza longistylis	Aniseroot	0.94%
	Persicaria virginiana	Woodland Knotweed	0.94%
	Phryma leptostachya	Lopseed	0.94%
	Sanguinaria canadensis	Bloodroot	0.94%
	Scrophularia marilandica	Late Figwort	0.94%
	Symphyotrichum drummondii	Drummond's Aster	0.94%
	Symphyotrichum laeriflorum	Calico Aster	0.94%
	Blephilia hirsuta	Hairy Wood Mint	0.47%
	Dodecatheon meadia	Midland Shooting Star	0.47%
	Eurybia macrophylla	Big-leaved Aster	0.47%
	Eutrochium purpureum	Sweet Joe Pye Weed	0.47%
	Impatiens pallida	Yellow Jewelweed	0.47%
	Mitella diphylla	Bishop's Cap	0.47%
	Rudbeckia laciniata	Wild Golden Glow	0.47%
	Ageratina altissima	White Snakeroot	0.23%
	Dasistoma macrophylla	Mullein-foxglove	0.23%
	Dicentra cucullaria	Dutchman's Breeches	0.23%
	Lobelia inflata	Indian Tobacco	0.23%
	Solidago uliginosa	Bog Goldenrod	0.23%
	Solidago ulmifolia	Elm-leaved Goldenrod	0.23%
	Stylophorum diphyllum	Celandine Poppy	0.23%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 2 TRAIL CORRIDOR FOREST EDGE - OUTSIDE DEER FENCE (ZONE 2B_O)

TOTAL AREA: 1,589 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
ERNST CUSTOM MIX C - SHADED DEER RESISTANT OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	30.00%
	Carex pensylvanica	Pennsylvania sedge	30.00%
	Asarum canadense	wild ginger	15.0%
	Penstemon digitalis	foxglove beardtongue	5.00%
	Penstemon hirsutus	hairy beardtongue	5.00%
	Pycnanthemum virginianum	mountain mint	5.00%
	Tradescantia ohiensis	Ohio spiderwort	5.00%
	Bouteloua curtipendula	side-oats grama	2.50%
	Bouteloua gracilis	blue grama	2.50%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
MANRESA ISLAND CORPORATION

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NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT
AMANDA M. BAILEY
LICENSED LANDSCAPE ARCHITECT
NO. 1394

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LOCAL APPROVAL

SHEET NAME

RESTORATION SEEDING SCHEDULE 1

PROJECT NO
2349.1
SCALE

DRAWN BY
EDD
CHECKED BY
EDD
DATE
12/15/2025

SHEET NO
L-600.1A

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Z:\1PROJECTS\1EDD\Manresa North Forest_2025.08\06_Drawings And Maps\CAD\EDD\2025 12 05 – 50CD Permit Set\EDD 50% CD 2025 L-600s Restoration Planting And Seeding Schedule.dwg Plotted on: 12/12/2025 3:57:43 PM

ZONE 2 RESTORATION BUFFER - INSIDE DEER FENCE (ZONE 2C_I)

TOTAL AREA: 47,823 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON - BATTLE THE BUCKTHORN - UNDERSTORY REVEGETATION SEED MIX OR APPROVED ALTERNATIVE	*Elymus canadensis*	Canada wild rye	34.74%
	Elymus virginicus	Virginia wild rye	34.74%
	Elymus hystrix	bottlebrush grass	5.21%
	Elymus villosus	silky wild rye	3.91%
	Rudbeckia hirta	black-eyed susan	3.47%
	Zizia aurea	golden alexanders	2.61%
	Echinacea purpurea	purple coneflower	1.74%
	Heliopsis helianthoides	early sunflower	1.74%
	Sphenopholis obtusata	prairie wedgegrass	1.74%
	Cryptotaenia canadensis	honewort	0.87%
	Monarda fistulosa	wild bergamot	0.87%
	Penstemon digitalis	foxglove beardtongue	0.87%
	Carex sprengelii	long-beaked sedge	0.87%
	Glyceria striata	fowl manna grass	0.87%
	Poa palustris	fowl bluegrass	0.87%
	Campanula americana	tall bellflower	0.65%
	Agastache scrophulariaefolia	purple giant hyssop	0.43%
	Aquilegia canadensis	columbine	0.43%
	Eutrochium purpureum	sweet joe pye weed	0.43%
	Lobelia siphilitica	great blue lobelia	0.43%
	Rudbeckia laciniata	wild golden glow	0.43%
	Teucrium canadense	germander	0.43%
	Thalictrum dasycarpum	purple meadow rue	0.43%
	Veronicastrum virginicum	culver's root	0.43%
	Rudbeckia triloba	brown-eyed susan	0.33%
	Scrophularia lanceolata	early figwort	0.22%
	Symphyotrichum lateriflorum	calico aster	0.22%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

ZONE 2 RESTORATION BUFFER - OUTSIDE DEER FENCE (ZONE 2C_O)

TOTAL AREA: 14,501 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
ERNST CUSTOM MIX C SHADED DEER RESISTANT OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	30.00%
	Carex pensylvanica	Pennsylvania sedge	30.00%
	Asarum canadense	wild ginger	15.0%
	Penstemon digitalis	foxglove beardtongue	5.00%
	Penstemon hirsutus	hairy beardtongue	5.00%
	Pycnanthemum virginianum	mountain mint	5.00%
	Tradescantia ohiensis	Ohio spiderwort	5.00%
	Boutelloua curtipendula	side-oats grama	2.50%
	Boutelloua gracilis	blue grama	2.50%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 20 LBS/ACRE.

ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A)

TOTAL AREA: 15,161 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PINELANDS NURSERY 92: LOW GROW SHADE TOLERANT UPLAND MIX OR APPROVED ALTERNATIVE	*Elymus virginicus*	Virginia wild-rye	20.00%
	Penstemon hirsutus	hairy beardtongue	10.00%
	Tridens flavus	purpletop	10.00%
	Symphyotrichum oblongfolium	aromatic aster	9.00%
	Tradescantia ohiensis	Ohio spiderwort	8.00%
	Chamaecrista fasciculata	partridge pea	7.00%
	Zizia aurea	golden alexander	7.00%
	Coreopsis lanceolata	lanceleaf tickseed	6.00%
	Monarda punctata	spotted horsemint	6.00%
	Chasmanthium latifolium	northern sea oats	3.00%
	Echinacea purpurea	purple coneflower	3.00%
	Rudbeckia fulgida	orange coneflower	3.00%
	Pycnanthemum incanum	hoary mountain mint	2.00%
	Pycnanthemum tenuifolium	slender mountain mint	2.00%
	Rudbeckia hirta	black-eyed susan	2.00%
	Solidago nemoralis	gray goldenrod	2.00%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B)

TOTAL AREA: 17,743 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX OR APPROVED ALTERNATIVE	*Arisaema triphyllum*	Jack-in-the-Pulpit	4.69%
	Caulophyllum thalictroides	Blue Cohosh	3.75%
	Maianthemum racemosum	Solomon's Plume	3.75%
	Allium tricoccum	Wild Leek	3.37%
	Osmorhiza claytonii	Sweet Cicely	2.81%
	Thalictrum dioicum	Early Meadow Rue	2.81%
	Polemonium reptans	Jacob's Ladder	2.34%
	Polygonatum biflorum	Solomon's Seal	2.34%
	Triosteum perfoliatum	Late Horse Gentian	2.34%
	Aquilegia canadensis	Columbine	1.87%
	Campanula americana	Tall Bellflower	1.87%
	Desmodium glutinosum	Pointed-leaved Tick Trefoil	1.87%
	Geranium maculatum	Wild Geranium	1.41%
	Penstemon hirsutus	Hairy Beardtongue	1.41%
	Smilax lasioneura	Common Carrion Flower	1.41%
	Symphyotrichum shortii	Short's Aster	1.41%
	Taenidia integerrima	Yellow Pimpernel	1.41%
	Uvularia grandiflora	Bellwort	1.41%
	Actaea rubra	Red Baneberry	0.94%
	Agastache scrophulariifolia	Purple Giant Hyssop	0.94%
	Aralia racemosa	Spikenard	0.94%
	Cryptotaenia canadensis	Honewort	0.94%
	Hydrophyllum appendiculatum	Great Waterleaf	0.94%
	Hydrophyllum virginianum	Virginia Waterleaf	0.94%
	Osmorhiza longistylis	Aniseroot	0.94%
	Persicaria virginiana	Woodland Knotweed	0.94%
	Phryma leptostachya	Lopseed	0.94%
	Sanguinaria canadensis	Bloodroot	0.94%
	Scrophularia marilandica	Late Figwort	0.94%
	Symphyotrichum drummondii	Drummond's Aster	0.94%
	Symphyotrichum lateriflorum	Calico Aster	0.94%
	Blephilia hirsuta	Hairy Wood Mint	0.47%
	Dodecatheon meadia	Midland Shooting Star	0.47%
	Eurybia macrophylla	Big-leaved Aster	0.47%
	Eutrochium purpureum	Sweet Joe Pye Weed	0.47%
	Impatiens pallida	Yellow Jewelweed	0.47%
	Mitella diphylla	Bishop's Cap	0.47%
	Rudbeckia laciniata	Wild Golden Glow	0.47%
	Ageratina altissima	White Snakeroot	0.23%
	Dasistoma macrophylla	Mullein-foxglove	0.23%
	Dicentra cucullaria	Dutchman's Breeches	0.23%
	Lobelia inflata	Indian Tobacco	0.23%
	Solidago uliginosa	Bog Goldenrod	0.23%
	Solidago ulmifolia	Elm-leaved Goldenrod	0.23%
	Stylophorum diphyllum	Celandine Poppy	0.23%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 3 RESTORATION BUFFER (ZONE 3C)

TOTAL AREA: 171,992 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON - BATTLE THE BUCKTHORN - UNDERSTORY REVEGETATION SEED MIX OR APPROVED ALTERNATIVE	*Elymus canadensis*	Canada wild rye	34.74%
	Elymus virginicus	Virginia wild rye	34.74%
	Elymus hystrix	bottlebrush grass	5.21%
	Elymus villosus	silky wild rye	3.91%
	Rudbeckia hirta	black-eyed susan	3.47%
	Zizia aurea	golden alexanders	2.61%
	Echinacea purpurea	purple coneflower	1.74%
	Heliopsis helianthoides	early sunflower	1.74%
	Sphenopholis obtusata	prairie wedgegrass	1.74%
	Cryptotaenia canadensis	honewort	0.87%
	Monarda fistulosa	wild bergamot	0.87%
	Penstemon digitalis	foxglove beardtongue	0.87%
	Carex sprengelii	long-beaked sedge	0.87%
	Glyceria striata	fowl manna grass	0.87%
	Poa palustris	fowl bluegrass	0.87%
	Campanula americana	tall bellflower	0.65%
	Agastache scrophulariaefolia	purple giant hyssop	0.43%
	Aquilegia canadensis	columbine	0.43%
	Eutrochium purpureum	sweet joe pye weed	0.43%
	Lobelia siphilitica	great blue lobelia	0.43%
	Rudbeckia laciniata	wild golden glow	0.43%
	Teucrium canadense	germander	0.43%
	Thalictrum dasycarpum	purple meadow rue	0.43%
	Veronicastrum virginicum	culver's root	0.43%
	Rudbeckia triloba	brown-eyed susan	0.33%
	Scrophularia lanceolata	early figwort	0.22%
	Symphyotrichum lateriflorum	calico aster	0.22%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 4 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 4A)

TOTAL AREA: 5,137 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PINELANDS NURSERY 92: LOW GROW SHADE TOLERANT UPLAND MIX OR APPROVED ALTERNATIVE	*Elymus virginicus*	Virginia wild-rye	20.00%
	Penstemon hirsutus	hairy beardtongue	10.00%
	Tridens flavus	purpletop	10.00%
	Symphyotrichum oblongfolium	aromatic aster	9.00%
	Tradescantia ohiensis	Ohio spiderwort	8.00%
	Chamaecrista fasciculata	partridge pea	7.00%
	Zizia aurea	golden alexander	7.00%
	Coreopsis lanceolata	lanceleaf tickseed	6.00%
	Monarda punctata	spotted horsemint	6.00%
	Chasmanthium latifolium	northern sea oats	3.00%
	Echinacea purpurea	purple coneflower	3.00%
	Rudbeckia fulgida	orange coneflower	3.00%
	Pycnanthemum incanum	hoary mountain mint	2.00%
	Pycnanthemum tenuifolium	slender mountain mint	2.00%
	Rudbeckia hirta	black-eyed susan	2.00%
	Solidago nemoralis	gray goldenrod	2.00%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 4 TRAIL CORRIDOR FOREST EDGE (ZONE 4B)

TOTAL AREA: 5,400 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX OR APPROVED ALTERNATIVE	*Arisaema triphyllum*	Jack-in-the-Pulpit	4.69%
	Caulophyllum thalictroides	Blue Cohosh	3.75%
	Maianthemum racemosum	Solomon's Plume	3.75%
	Allium tricoccum	Wild Leek	3.37%
	Osmorhiza claytonii	Sweet Cicely	2.81%
	Thalictrum dioicum	Early Meadow Rue	2.81%
	Polemonium reptans	Jacob's Ladder	2.34%
	Polygonatum biflorum	Solomon's Seal	2.34%
	Triosteum perfoliatum	Late Horse Gentian	2.34%
	Aquilegia canadensis	Columbine	1.87%
	Campanula americana	Tall Bellflower	1.87%
	Desmodium glutinosum	Pointed-leaved Tick Trefoil	1.87%
	Geranium maculatum	Wild Geranium	1.41%
	Penstemon hirsutus	Hairy Beardtongue	1.41%
	Smilax lasioneura	Common Carrion Flower	1.41%
	Symphyotrichum shortii	Short's Aster	1.41%
	Taenidia integerrima	Yellow Pimpernel	1.41%
	Uvularia grandiflora	Bellwort	1.41%
	Actaea rubra	Red Baneberry	0.94%
	Agastache scrophulariifolia	Purple Giant Hyssop	0.94%
	Aralia racemosa	Spikenard	0.94%
	Cryptotaenia canadensis	Honewort	0.94%
	Hydrophyllum appendiculatum	Great Waterleaf	0.94%
	Hydrophyllum virginianum	Virginia Waterleaf	0.94%
	Osmorhiza longistylis	Aniseroot	0.94%
	Persicaria virginiana	Woodland Knotweed	0.94%
	Phryma leptostachya	Lopseed	0.94%
	Sanguinaria canadensis	Bloodroot	0.94%
	Scrophularia marilandica	Late Figwort	0.94%
	Symphyotrichum drummondii	Drummond's Aster	0.94%
	Symphyotrichum lateriflorum	Calico Aster	0.94%
	Blephilia hirsuta	Hairy Wood Mint	0.47%
	Dodecatheon meadia	Midland Shooting Star	0.47%
	Eurybia macrophylla	Big-leaved Aster	0.47%
	Eutrochium purpureum	Sweet Joe Pye Weed	0.47%
	Impatiens pallida	Yellow Jewelweed	0.47%
	Mitella diphylla	Bishop's Cap	0.47%
	Rudbeckia laciniata	Wild Golden Glow	0.47%
	Ageratina altissima	White Snakeroot	0.23%
	Dasistoma macrophylla	Mullein-foxglove	0.23%
	Dicentra cucullaria	Dutchman's Breeches	0.23%
	Lobelia inflata	Indian Tobacco	0.23%
	Solidago uliginosa	Bog Goldenrod	0.23%
	Solidago ulmifolia	Elm-leaved Goldenrod	0.23%
	Stylophorum diphyllum	Celandine Poppy	0.23%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 4 RESTORATION BUFFER (ZONE 4C)

TOTAL AREA: 110,415 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON - BATTLE THE BUCKTHORN - UNDERSTORY REVEGETATION SEED MIX OR APPROVED ALTERNATIVE	*Elymus canadensis*	Canada wild rye	34.74%
	Elymus virginicus	Virginia wild rye	34.74%
	Elymus hystrix	bottlebrush grass	5.21%
	Elymus villosus	silky wild rye	3.91%
	Rudbeckia hirta	black-eyed susan	3.47%
	Zizia aurea	golden alexanders	2.61%
	Echinacea purpurea	purple coneflower	1.74%
	Heliopsis helianthoides	early sunflower	1.74%
	Sphenopholis obtusata	prairie wedgegrass	1.74%
	Cryptotaenia canadensis	honewort	0.87%
	Monarda fistulosa	wild bergamot	0.87%
	Penstemon digitalis	foxglove beardtongue	0.87%
	Carex sprengelii	long-beaked sedge	0.87%
	Glyceria striata	fowl manna grass	0.87%
	Poa palustris	fowl bluegrass	0.87%
	Campanula americana	tall bellflower	0.65%
	Agastache scrophulariaefolia	purple giant hyssop	0.43%
	Aquilegia canadensis	columbine	0.43%
	Eutrochium purpureum	sweet joe pye weed	0.43%
	Lobelia siphilitica	great blue lobelia	0.43%
	Rudbeckia laciniata	wild golden glow	0.43%
	Teucrium canadense	germander	0.43%
	Thalictrum dasycarpum	purple meadow rue	0.43%
	Veronicastrum virginicum	culver's root	0.43%
	Rudbeckia triloba	brown-eyed susan	0.33%
	Scrophularia lanceolata	early figwort	0.22%
	Symphyotrichum lateriflorum	calico aster	0.22%
ERNST CUSTOM MIX B SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN

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MANRESA ISLAND CORPORATION

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NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL

STATE OF CONNECTICUT
AMANDA M. BAILEY
LICENSED LANDSCAPE ARCHITECT
NO. 1394

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH MAY NOT BE USED FOR OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR COMPLETION OF THIS PROJECT BY OTHERS.

LOCAL APPROVAL

SHEET NAME

RESTORATION SEEDING SCHEDULE 2

PROJECT NO	SHEET NO
2349.1	
SCALE	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

L-600.2A

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ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A)

TOTAL AREA: 6,038 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PINELANDS NURSERY - 92: LOW GROW SHADE TOLERANT UPLAND MIX OR APPROVED ALTERNATIVE	*Elymus virginicus*	Virginia wild-rye	20.00%
	Penstemon hirsutus	hairy beardtongue	10.00%
	Tridens flavus	purpletop	10.00%
	Symphyotrichum oblongfolium	aromatic aster	9.00%
	Tradescantia ohiensis	Ohio spiderwort	8.00%
	Chamaecrista fasciculata	partridge pea	7.00%
	Zizia aurea	golden alexander	7.00%
	Coreopsis lanceolata	lanceleaf tickseed	6.00%
	Monarda punctata	spotted horsemint	6.00%
	Chasmanthium latifolium	northern sea oats	3.00%
	Echinacea purpurea	purple coneflower	3.00%
	Rudbeckia fulgida	orange coneflower	3.00%
	Pycnanthemum incanum	hoary mountain mint	2.00%
	Pycnanthemum tenuifolium	slender mountain mint	2.00%
	Rudbeckia hirta	black-eyed susan	2.00%
	Solidago nemoralis	gray goldenrod	2.00%
ERNST CUSTOM MIX B - SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 5B)

TOTAL AREA: 7,264 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON NURSERY - SHADY WOODLAND SEED MIX OR APPROVED ALTERNATIVE	*Arisaema triphyllum*	Jack-in-the-Pulpit	4.69%
	Caulophyllum thalictroides	Blue Cohosh	3.75%
	Maianthemum racemosum	Solomon's Plume	3.75%
	Allium tricoccum	Wild Leek	3.37%
	Osmorhiza claytonii	Sweet Cicely	2.81%
	Thalictrum dioicum	Early Meadow Rue	2.81%
	Polemonium reptans	Jacob's Ladder	2.34%
	Polygonatum biflorum	Solomon's Seal	2.34%
	Triosteum perfoliatum	Late Horse Gentian	2.34%
	Aquilegia canadensis	Columbine	1.87%
	Campanula americana	Tall Bellflower	1.87%
	Desmodium glutinosum	Pointed-leaved Tick Trefoil	1.87%
	Geranium maculatum	Wild Geranium	1.41%
	Penstemon hirsutus	Hairy Beardtongue	1.41%
	Smilax lasioneura	Common Carrion Flower	1.41%
	Symphyotrichum shortii	Short's Aster	1.41%
	Taenidia integerrima	Yellow Pimpernel	1.41%
	Uvularia grandiflora	Bellwort	1.41%
	Actaea rubra	Red Baneberry	0.94%
	Agastache scrophulariifolia	Purple Giant Hyssop	0.94%
	Aralia racemosa	Spikenard	0.94%
	Cryptotaenia canadensis	Honewort	0.94%
	Hydrophyllum appendiculatum	Great Waterleaf	0.94%
	Hydrophyllum virginianum	Virginia Waterleaf	0.94%
	Osmorhiza longistylis	Aniseroot	0.94%
	Persicaria virginiana	Woodland Knotweed	0.94%
	Phryma leptostachya	Lopseed	0.94%
	Sanguinaria canadensis	Bloodroot	0.94%
	Scrophularia marilandica	Late Figwort	0.94%
	Symphyotrichum drummondii	Drummond's Aster	0.94%
	Symphyotrichum lateriflorum	Calico Aster	0.94%
	Blephilia hirsuta	Hairy Wood Mint	0.47%
	Dodecatheon meadia	Midland Shooting Star	0.47%
	Eurybia macrophylla	Big-leaved Aster	0.47%
	Eutrochium purpureum	Sweet Joe Pye Weed	0.47%
	Impatiens pallida	Yellow Jewelweed	0.47%
	Mitella diphylla	Bishop's Cap	0.47%
	Rudbeckia laciniata	Wild Golden Glow	0.47%
	Ageratina altissima	White Snakeroot	0.23%
	Dasistoma macrophylla	Mullein-foxglove	0.23%
	Dicentra cucullaria	Dutchman's Breeches	0.23%
	Lobelia inflata	Indian Tobacco	0.23%
	Solidago uliginosa	Bog Goldenrod	0.23%
	Solidago ulmifolia	Elm-leaved Goldenrod	0.23%
	Stylophorum diphyllum	Celandine Poppy	0.23%
ERNST CUSTOM MIX B - SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

WET ADAPTIVE TRAIL CORRIDOR HERBACEOUS SLOPE (WA_A)

TOTAL AREA: 6,216 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137 OR APPROVED EQUAL	*Carex vulpinoidea*	fox sedge	33.0%
	Carex lurida	lurid sedge	22.0%
	Elymus virginicus	Virginia wildrye	20.0%
	Carex scoparia	blunt broom sedge	15.7%
	Heliopsis helianthoides	oxeye sunflower	2.0%
	Carex intumescens	star sedge	1.6%
	Carex stipata	awl sedge	1.0%
	Juncus effusus	soft rush	1.0%
	Carex crinita	fringed sedge	0.8%
	Verbena urticifolia	white vervain	0.8%
	Solidago rugosa	wrinkleleaf goldenrod	0.7%
	Vernonia noveboracensis	New York ironweed	0.5%
	Juncus tenuis	path rush	0.3%
	Lobelia siphilitica	great blue lobelia	0.3%
	Scirpus cyperinus	woolgrass	0.3%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE.

WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE - SWALE (WA_B1)

TOTAL AREA: 3,782 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137 OR APPROVED EQUAL	*Carex vulpinoidea*	fox sedge	33.0%
	Carex lurida	lurid sedge	22.0%
	Elymus virginicus	Virginia wildrye	20.0%
	Carex scoparia	blunt broom sedge	15.7%
	Heliopsis helianthoides	oxeye sunflower	2.0%
	Carex intumescens	star sedge	1.6%
	Carex stipata	awl sedge	1.0%
	Juncus effusus	soft rush	1.0%
	Carex crinita	fringed sedge	0.8%
	Verbena urticifolia	white vervain	0.8%
	Solidago rugosa	wrinkleleaf goldenrod	0.7%
	Vernonia noveboracensis	New York ironweed	0.5%
	Juncus tenuis	path rush	0.3%
	Lobelia siphilitica	great blue lobelia	0.3%
	Scirpus cyperinus	woolgrass	0.3%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE - SUMP (WA_B2)

TOTAL AREA: 2,458 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137 OR APPROVED EQUAL	*Carex vulpinoidea*	fox sedge	33.0%
	Carex lurida	lurid sedge	22.0%
	Elymus virginicus	Virginia wildrye	20.0%
	Carex scoparia	blunt broom sedge	15.7%
	Heliopsis helianthoides	oxeye sunflower	2.0%
	Carex intumescens	star sedge	1.6%
	Carex stipata	awl sedge	1.0%
	Juncus effusus	soft rush	1.0%
	Carex crinita	fringed sedge	0.8%
	Verbena urticifolia	white vervain	0.8%
	Solidago rugosa	wrinkleleaf goldenrod	0.7%
	Vernonia noveboracensis	New York ironweed	0.5%
	Juncus tenuis	path rush	0.3%
	Lobelia siphilitica	great blue lobelia	0.3%
	Scirpus cyperinus	woolgrass	0.3%
OBL WETLAND MIX - ERNMX-131 OR APPROVED EQUAL	*Carex vulpinoidea*	fox sedge	25.0%
	Carex lurida	lurid sedge	20.6%
	Carex scoparia	blunt broom sedge	20.0%
	Carex grayi	gray's sedge	10.0%
	Elymus virginicus	Virginia wildrye	5.0%
	Verbena hastata	blue vervain	4.0%
	Juncus effusus Soft Rush	soft rush	3.0%
	Carex crinita	fringed sedge	2.5%
	Bidens cernua	nodding bur marigold	1.5%
	Asclepias incarnata	swamp milkweed	1.0%
	Eupatorium fistulosum	joe pye weed	0.8%
	Vernonia noveboracensis	New York ironweed	0.7%
	Aster lanceolatus	lance leaved aster	0.5%
	Aster novae-angliae	New England aster	0.5%
	Aster prenanthoides	zigzag aster	0.5%
	Aster puniceus	purplestem aster	0.5%
	Carex stipata	awl sedge	0.5%
	Eupatorium perfoliatum	boneset	0.5%
	Lycopus americanus	American water horehound	0.5%
	Scirpus atrovirens	green bulrush	0.5%
	Scirpus cyperinus	woolgrass	0.5%
	Solidago rugosa	wrinkleleaf goldenrod	0.5%
	Carex stricta	tussock sedge	0.3%
	Lobelia siphilitica	great blue lobelia	0.3%
	Mimulus ringens	square stemmed monkeyflower	0.3%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

WET ADAPTIVE RESTORATION BUFFER - SWALE (WA_C1)

TOTAL AREA: 2,960 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137 OR APPROVED EQUAL	*Carex vulpinoidea*	fox sedge	33.0%
	Carex lurida	lurid sedge	22.0%
	Elymus virginicus	Virginia wildrye	20.0%
	Carex scoparia	blunt broom sedge	15.7%
	Heliopsis helianthoides	oxeye sunflower	2.0%
	Carex intumescens	star sedge	1.6%
	Carex stipata	awl sedge	1.0%
	Juncus effusus	soft rush	1.0%
	Carex crinita	fringed sedge	0.8%
	Verbena urticifolia	white vervain	0.8%
	Solidago rugosa	wrinkleleaf goldenrod	0.7%
	Vernonia noveboracensis	New York ironweed	0.5%
	Juncus tenuis	path rush	0.3%
	Lobelia siphilitica	great blue lobelia	0.3%
	Scirpus cyperinus	woolgrass	0.3%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 20 LBS/ACRE.

WET ADAPTIVE RESTORATION BUFFER - SUMP (WA_C2)

TOTAL AREA: 15,841 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
SPECIALIZED WETLAND MIX FOR SHADED OBL-FACW AREAS - ERNMX-137 OR APPROVED EQUAL	*Carex vulpinoidea*	fox sedge	33.0%
	Carex lurida	lurid sedge	22.0%
	Elymus virginicus	Virginia wildrye	20.0%
	Carex scoparia	blunt broom sedge	15.7%
	Heliopsis helianthoides	oxeye sunflower	2.0%
	Carex intumescens	star sedge	1.6%
	Carex stipata	awl sedge	1.0%
	Juncus effusus	soft rush	1.0%
	Carex crinita	fringed sedge	0.8%
	Verbena urticifolia	white vervain	0.8%
	Solidago rugosa	wrinkleleaf goldenrod	0.7%
	Vernonia noveboracensis	New York ironweed	0.5%
	Juncus tenuis	path rush	0.3%
	Lobelia siphilitica	great blue lobelia	0.3%
	Scirpus cyperinus	woolgrass	0.3%
OBL WETLAND MIX - ERNMX-131 OR APPROVED EQUAL	*Carex vulpinoidea*	fox sedge	25.0%
	Carex lurida	lurid sedge	20.6%
	Carex scoparia	blunt broom sedge	20.0%
	Carex grayi	gray's sedge	10.0%
	Elymus virginicus	Virginia wildrye	5.0%
	Verbena hastata	blue vervain	4.0%
	Juncus effusus Soft Rush	soft rush	3.0%
	Carex crinita	fringed sedge	2.5%
	Bidens cernua	nodding bur marigold	1.5%
	Asclepias incarnata	swamp milkweed	1.0%
	Eupatorium fistulosum	joe pye weed	0.8%
	Vernonia noveboracensis	New York ironweed	0.7%
	Aster lanceolatus	lance leaved aster	0.5%
	Aster novae-angliae	New England aster	0.5%
	Aster prenanthoides	zigzag aster	0.5%
	Aster puniceus	purplestem aster	0.5%
	Carex stipata	awl sedge	0.5%
	Eupatorium perfoliatum	boneset	0.5%
	Lycopus americanus	American water horehound	0.5%
	Scirpus atrovirens	green bulrush	0.5%
	Scirpus cyperinus	woolgrass	0.5%
	Solidago rugosa	wrinkleleaf goldenrod	0.5%
	Carex stricta	tussock sedge	0.3%
	Lobelia siphilitica	great blue lobelia	0.3%
	Mimulus ringens	square stemmed monkeyflower	0.3%

NOTE: SEED MIXES SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

ZONE 6 DEER FENCE BUFFER

TOTAL AREA: 12,135 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
ERNST CUSTOM MIX C - SHADED DEER RESISTANT OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	30.00%
	Carex pensylvanica	Pennsylvania sedge	30.00%
	Asarum canadense	wild ginger	15.0%
	Penstemon digitalis	foxglove beardtongue	5.00%
	Penstemon hirsutus	hairy beardtongue	5.00%
	Pycnanthemum virginianum	mountain mint	5.00%
	Tradescantia ohiensis	Ohio spiderwort	5.00%
	Bouteloua curtipendula	side-oats grama	2.50%
	Bouteloua gracilis	blue grama	2.50%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 20 LBS/ACRE.

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SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN

CLIENT

MANRESA ISLAND CORPORATION

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NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL



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LOCAL APPROVAL

SHEET NAME

RESTORATION SEEDING SCHEDULE 3

PROJECT NO: 2349.1
SCALE:
DRAWN BY: EDD
CHECKED BY: EDD
DATE: 12/15/2025

SHEET NO: **L-600.3A**

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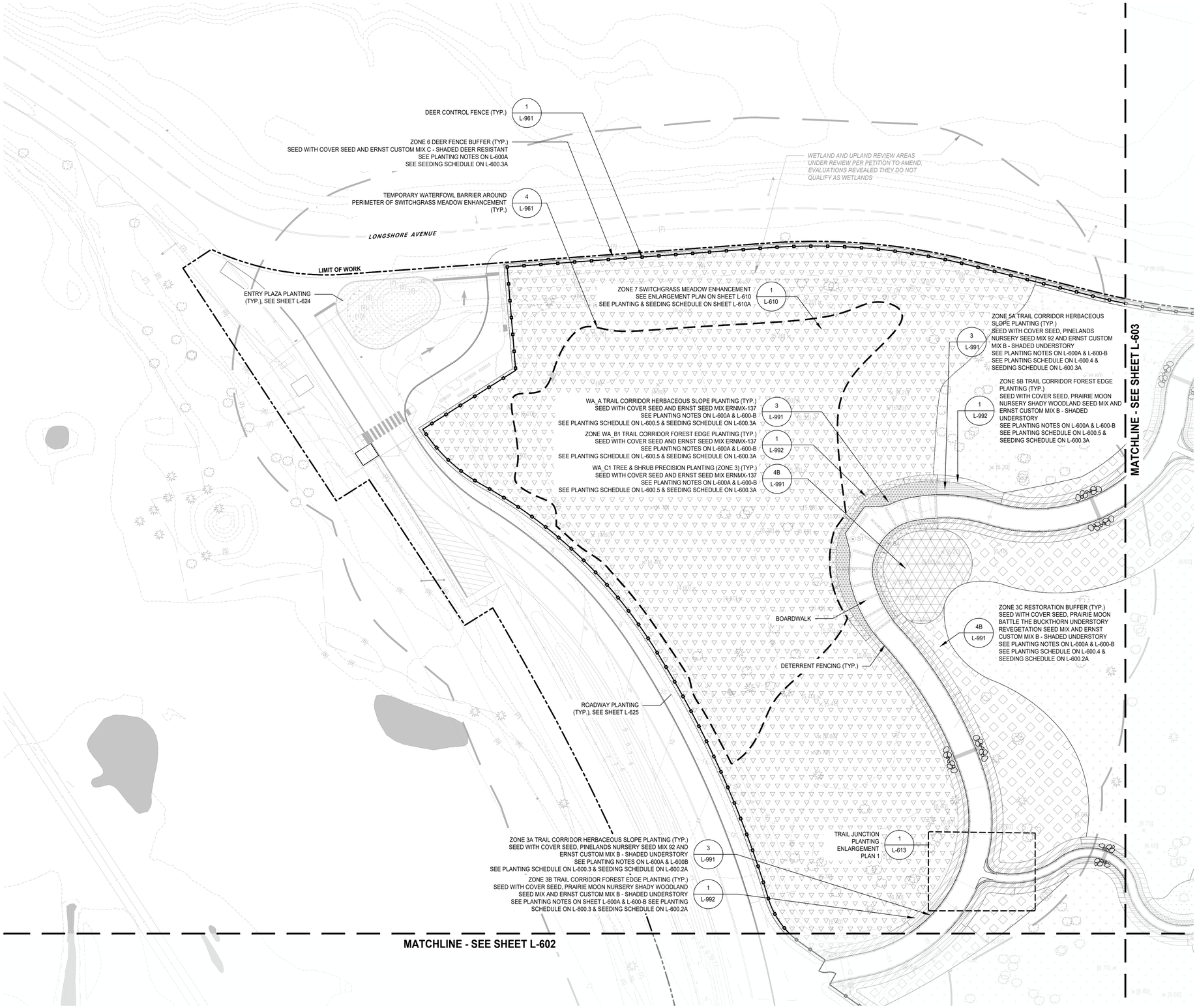

1 RESTORATION PLAN - ENLARGEMENT 1
SCALE: 1" = 30'-0"

LEGEND

PLANTING ZONE 3

- ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF
- ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF
- ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

PLANTING ZONE 5

- ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A) TOTAL SITE WIDE AREA: 6,038 SF
- ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 5B) TOTAL SITE WIDE AREA: 7,264 SF

WET ADAPTIVE PLANTING

- WET ADAPTIVE TRAIL CORRIDOR HERBABEOUS SLOPE (WA_A) TOTAL SITE WIDE AREA: 6,216 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B1) TOTAL SITE WIDE AREA: 3,782 SF
- WET ADAPTIVE RESTORATION BUFFER (WA_C1) TOTAL SITE WIDE AREA: 2,960 SF

PLANTING ZONE 6

- ZONE 6 DEER FENCE BUFFER (ZONE 6) TOTAL SITE WIDE AREA: 12,135 SF

PLANTING ZONE 7

- ZONE 7 SWITCHGRASS MEADOW ENHANCEMENT (ZONE 7) TOTAL SITE WIDE AREA: 88,156 SF

TRAIL JUNCTION PLANTING

- TRAIL JUNCTION PLANTING TOTAL SITE WIDE AREA: 764 SF

PLANTING METHOD

- EXCAVATED PLANTING
- PRECISION PLANTING

FENCING & BARRIERS

- DEER CONTROL FENCE
- WATERFOWL BARRIER EXTENTS
- DETERRENT FENCING

OTHER

- LIMIT OF WORK
- EX. CONTOUR
- EX. SPOT ELEVATION
- EXISTING TREES TO REMAIN
- EXISTING PLANTING AREAS TO REMAIN

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



CLIENT
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LOCAL APPROVAL

SHEET NAME

RESTORATION PLAN ENLARGEMENT 1

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 30'-0"	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

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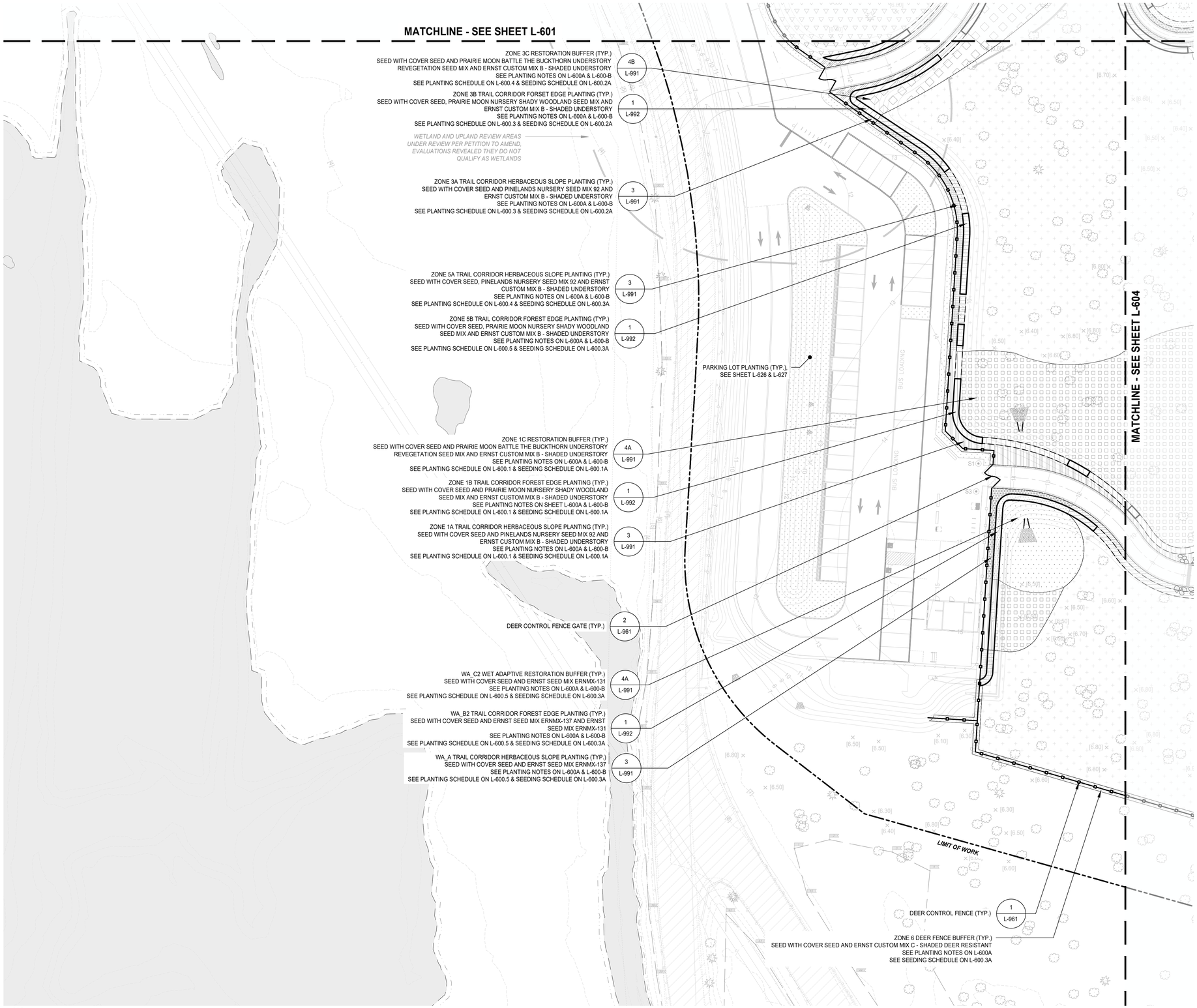


1 RESTORATION PLAN - ENLARGEMENT 2
SCALE: 1" = 30'-0"

LEGEND

PLANTING ZONE 1

- ZONE 1 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 1A) TOTAL SITE WIDE AREA: 6,533 SF
- ZONE 1 TRAIL CORRIDOR FOREST EDGE (ZONE 1B) TOTAL SITE WIDE AREA: 5,177 SF
- ZONE 1 RESTORATION BUFFER (ZONE 1C) TOTAL SITE WIDE AREA: 43,735 SF

PLANTING ZONE 3

- ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF
- ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF
- ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

PLANTING ZONE 5

- ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A) TOTAL SITE WIDE AREA: 6,038 SF
- ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 5B) TOTAL SITE WIDE AREA: 7,264 SF

WET ADAPTIVE PLANTING

- WET ADAPTIVE TRAIL CORRIDOR HERBABEOUS SLOPE (WA_A) TOTAL SITE WIDE AREA: 6,216 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B2) TOTAL SITE WIDE AREA: 2,458 SF
- WET ADAPTIVE RESTORATION BUFFER (WA_C2) TOTAL SITE WIDE AREA: 15,841 SF

PLANTING ZONE 6

- ZONE 6 DEER FENCE BUFFER (ZONE 6) TOTAL SITE WIDE AREA: 12,135 SF

PLANTING ZONE 7

- ZONE 7 SWITCHGRASS MEADOW ENHANCEMENT (ZONE 7) TOTAL SITE WIDE AREA: 88,156 SF

PLANTING APPROACH

- EXCAVATED PLANTING
- PRECISION PLANTING

FENCING & BARRIERS

- DEER CONTROL FENCE
- DETERRENT FENCING

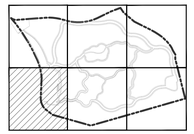
OTHER

- LIMIT OF WORK
- EX. CONTOUR
- EX. SPOT ELEVATION
- EXISTING TREES TO REMAIN
- EXISTING PLANTING AREAS TO REMAIN

SCAPE

MANRESA WILDS NORTH FOREST
NORWALK, CT

KEY PLAN



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MANRESA ISLAND CORPORATION

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CIVIL ENGINEER	**Tighe&Bond** 1000 BRIDGEPORT AVENUE #320 SHELTON, CT 06484 T+ 203 712 1100
ECOLOGICAL	**eDESIGN DYNAMICS** 247 W. 35TH STREET NEW YORK, NY 10001 T+ 646 688 3113
ENVIRONMENTAL	**A K R F** 440 PARK AVENUE SOUTH, 7TH FLR NEW YORK, NY 10016 T+ 212 696 0670

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SEAL



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LOCAL APPROVAL

SHEET NAME

RESTORATION PLAN ENLARGEMENT 2

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 30'-0"	
DRAWN BY	
EDO	
CHECKED BY	
EDO	
DATE	
12/15/2025	

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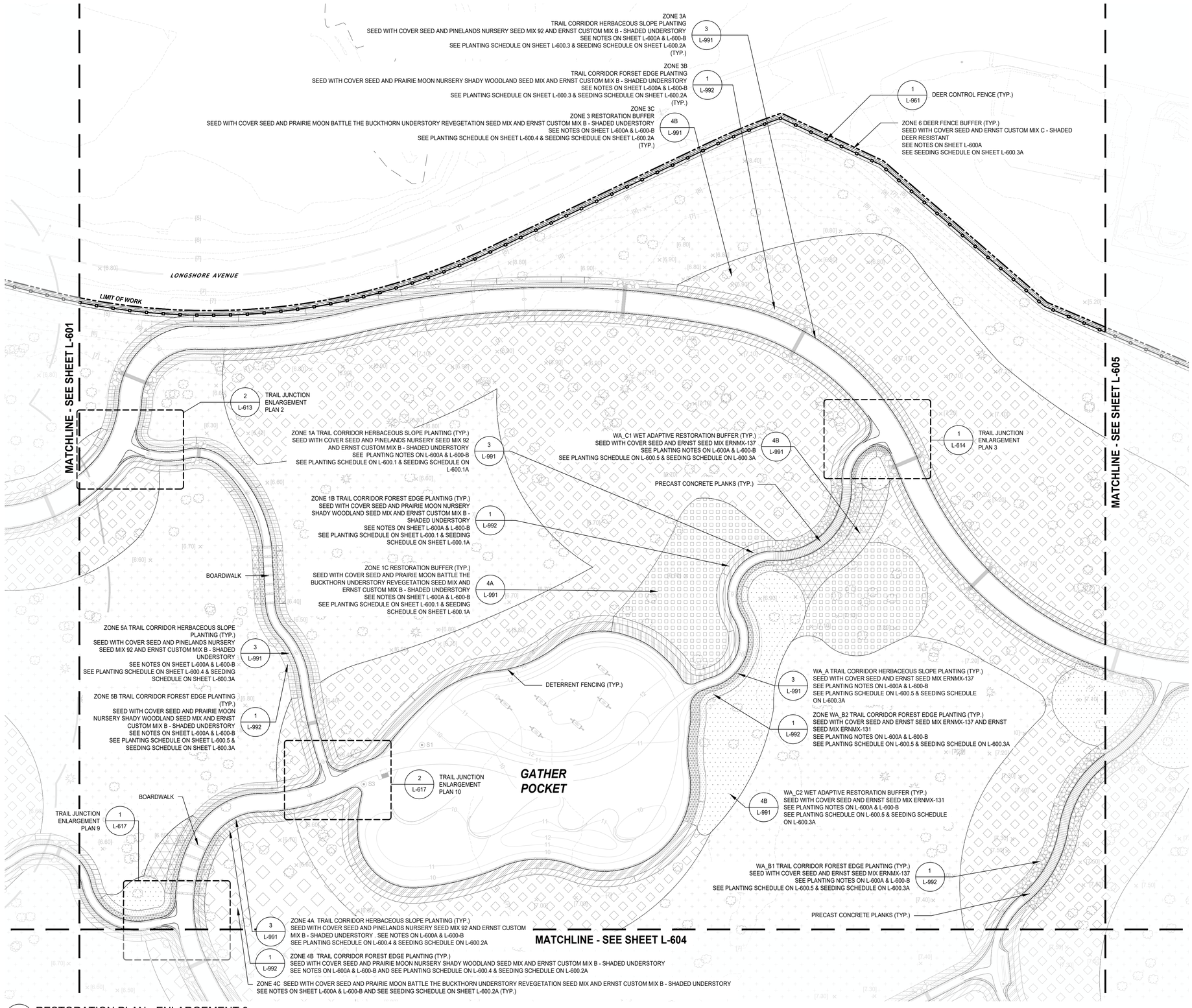

1 RESTORATION PLAN - ENLARGEMENT 3
SCALE: 1" = 30'-0"

LEGEND

PLANTING ZONE 1

- ZONE 1 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 1A) TOTAL SITE WIDE AREA: 6,533 SF
- ZONE 1 TRAIL CORRIDOR FOREST EDGE (ZONE 1B) TOTAL SITE WIDE AREA: 5,177 SF
- ZONE 1 RESTORATION BUFFER (ZONE 1C) TOTAL SITE WIDE AREA: 43,735 SF

PLANTING ZONE 3

- ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF
- ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF
- ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

PLANTING ZONE 4

- ZONE 4 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 4A) TOTAL SITE WIDE AREA: 5,137 SF
- ZONE 4 TRAIL CORRIDOR FOREST EDGE (ZONE 4B) TOTAL SITE WIDE AREA: 5,400 SF
- ZONE 4 RESTORATION BUFFER (ZONE 4C)TOTAL SITE WIDE AREA: 110,415 SF

PLANTING ZONE 5

- ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A) TOTAL SITE WIDE AREA: 6,038 SF
- ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 5B) TOTAL SITE WIDE AREA: 7,264 SF

WET ADAPTIVE PLANTING

- WET ADAPTIVE TRAIL CORRIDOR HERBABEOUS SLOPE (WA_A) TOTAL SITE WIDE AREA: 6,216 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B1) TOTAL SITE WIDE AREA: 3,782 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B2) TOTAL SITE WIDE AREA: 2,458 SF
- WET ADAPTIVE RESTORATION BUFFER (WA_C1) TOTAL SITE WIDE AREA: 2,960 SF
- WET ADAPTIVE RESTORATION BUFFER (WA_C2) TOTAL SITE WIDE AREA: 15,841 SF

PLANTING ZONE 6

- ZONE 6 DEER FENCE BUFFER (ZONE 6) TOTAL SITE WIDE AREA: 12,135 SF

TRAIL JUNCTION PLANTING

- TRAIL JUNCTION PLANTING TOTAL SITE WIDE AREA: 764 SF

PLANTING METHOD

- EXCAVATED PLANTING
- PRECISION PLANTING

FENCING & BARRIERS

- DEER CONTROL FENCE
- DETERRENT FENCING

OTHER

- LIMIT OF WORK
- EX. CONTOUR
- EX. SPOT ELEVATION
- EXISTING TREES TO REMAIN
- EXISTING PLANTING AREAS TO REMAIN

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



CLIENT
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LOCAL APPROVAL

SHEET NAME

RESTORATION PLAN ENLARGEMENT 3

PROJECT NO	2349.1
SCALE	1" = 30'-0"
DRAWN BY	EDD
CHECKED BY	EDD
DATE	12/15/2025

SHEET NO **L-603**

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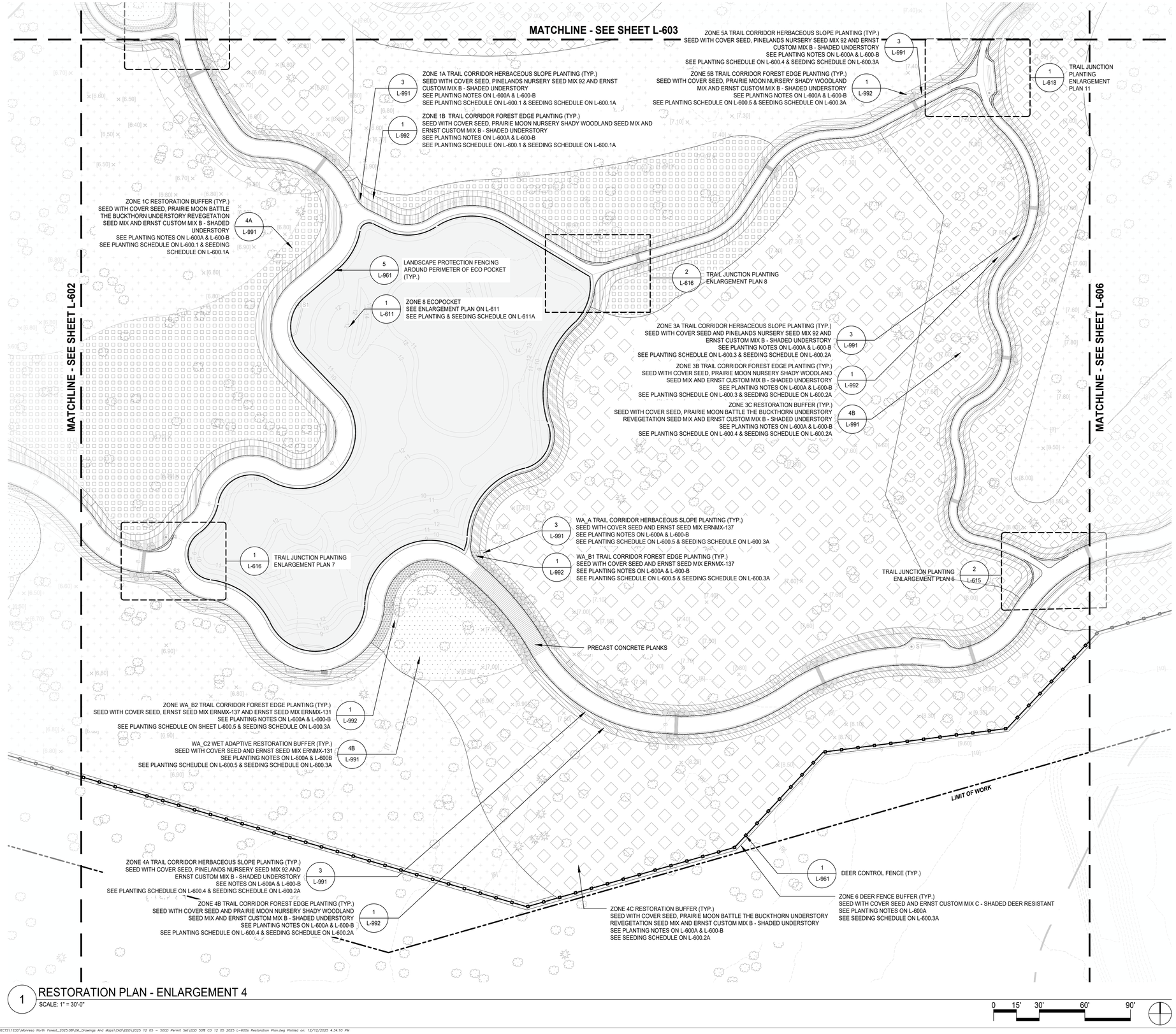

1 RESTORATION PLAN - ENLARGEMENT 4
SCALE: 1" = 30'-0"

LEGEND

PLANTING ZONE 1

- ZONE 1 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 1A) TOTAL SITE WIDE AREA: 6,533 SF
- ZONE 1 TRAIL CORRIDOR FOREST EDGE (ZONE 1B) TOTAL SITE WIDE AREA: 5,177 SF
- ZONE 1 RESTORATION BUFFER (ZONE 1C) TOTAL SITE WIDE AREA: 43,735 SF

PLANTING ZONE 3

- ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF
- ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF
- ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

PLANTING ZONE 4

- ZONE 4 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 4A) TOTAL SITE WIDE AREA: 5,137 SF
- ZONE 4 TRAIL CORRIDOR FOREST EDGE (ZONE 4B) TOTAL SITE WIDE AREA: 5,400 SF
- ZONE 4 RESTORATION BUFFER (ZONE 4C)TOTAL SITE WIDE AREA: 110,415 SF

PLANTING ZONE 5

- ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A) TOTAL SITE WIDE AREA: 6,038 SF
- ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 5B) TOTAL SITE WIDE AREA: 7,264 SF

WET ADAPTIVE PLANTING

- WET ADAPTIVE TRAIL CORRIDOR HERBABEOUS SLOPE (WA_A) TOTAL SITE WIDE AREA: 6,216 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B1) TOTAL SITE WIDE AREA: 3,782 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B2) TOTAL SITE WIDE AREA: 2,458 SF
- WET ADAPTIVE RESTORATION BUFFER (WA_C2) TOTAL SITE WIDE AREA: 15,841 SF

PLANTING ZONE 6

- ZONE 6 DEER FENCE BUFFER (ZONE 6) TOTAL SITE WIDE AREA: 12,135 SF

PLANTING ZONE 8

- ZONE 8 - ECO POCKET TOTAL SITE WIDE AREA: 39,619 SF

TRAIL JUNCTION PLANTING

- TRAIL JUNCTION PLANTING TOTAL SITE WIDE AREA: 764 SF

PLANTING METHOD

- EXCAVATED PLANTING
- PRECISION PLANTING

FENCING & BARRIERS

- DEER CONTROL FENCE
- DETERRENT FENCING
- LANDSCAPE PROTECTION FENCING

OTHER

- LIMIT OF WORK
- EX. CONTOUR
- EX. SPOT ELEVATION
- EXISTING TREES TO REMAIN
- EXISTING PLANTING AREAS TO REMAIN

SCAPE

MANRESA WILDS NORTH FOREST
NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

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SCAPE LANDSCAPE ARCHITECTURE DPC
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RESTORATION PLAN ENLARGEMENT 4

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 30'-0"	
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EDD	**L-604**
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EDD	
DATE	
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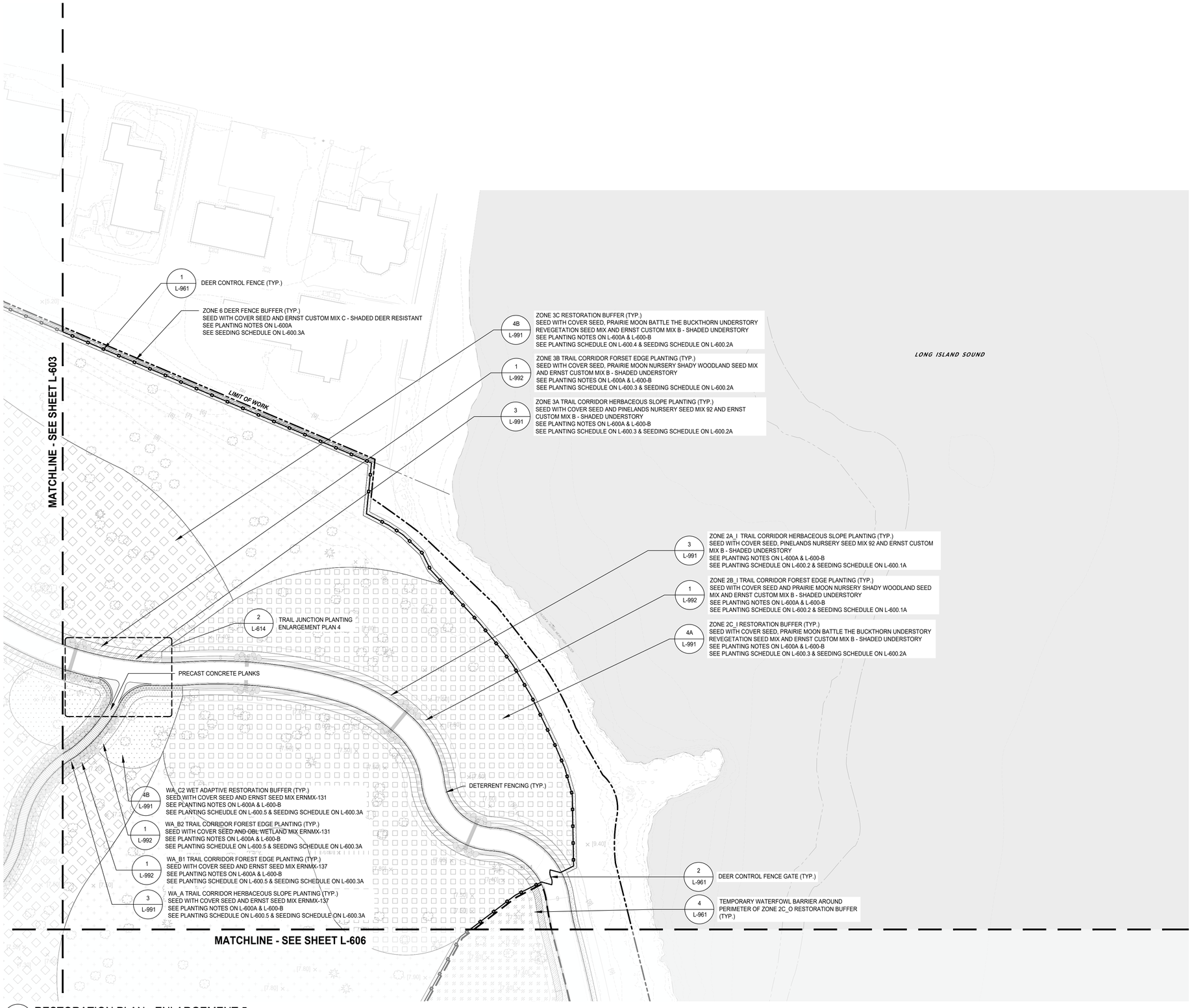

1 RESTORATION PLAN - ENLARGEMENT 5

SCALE: 1" = 30'-0"

0 15' 30' 60' 90'

LEGEND

PLANTING ZONE 2

- ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - INSIDE DEER FENCE (ZONE 2A_I) TOTAL SITE WIDE AREA: 1,891 SF
- ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - OUTSIDE DEER FENCE (ZONE 2A_O) TOTAL SITE WIDE AREA: 2,762 SF
- ZONE 2 TRAIL CORRIDOR FOREST EDGE - INSIDE DEER FENCE (ZONE 2B_I) TOTAL SITE WIDE AREA: 2,525 SF
- ZONE 2 TRAIL CORRIDOR FOREST EDGE - OUTSIDE DEER FENCE (ZONE 2B_O) TOTAL SITE WIDE AREA: 1,589 SF
- ZONE 2 RESTORATION BUFFER - INSIDE DEER FENCE (ZONE 2C_I) TOTAL SITE WIDE AREA: 47,823 SF
- ZONE 2 RESTORATION BUFFER - OUTSIDE DEER FENCE (ZONE 2C_O TOTAL SITE WIDE AREA: 14,501 SF

PLANTING ZONE 3

- ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF
- ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF
- ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

WET ADAPTIVE PLANTING

- WET ADAPTIVE TRAIL CORRIDOR HERBABEOUS SLOPE (WA_A) TOTAL SITE WIDE AREA: 6,216 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B1) TOTAL SITE WIDE AREA: 3,782 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B2) TOTAL SITE WIDE AREA: 2,458 SF
- WET ADAPTIVE RESTORATION BUFFER (WA_C1) TOTAL SITE WIDE AREA: 2,960 SF
- WET ADAPTIVE RESTORATION BUFFER (WA_C2) TOTAL SITE WIDE AREA: 15,841 SF

PLANTING ZONE 6

- ZONE 6 DEER FENCE BUFFER (ZONE 6) TOTAL SITE WIDE AREA: 12,135 SF

TRAIL JUNCTION PLANTING

- TRAIL JUNCTION PLANTING TOTAL SITE WIDE AREA: 764 SF

PLANTING METHOD

- EXCAVATED PLANTING
- PRECISION PLANTING

FENCING & BARRIERS

- DEER CONTROL FENCE
- WATERFOWL BARRIER EXTENTS
- DETERRENT FENCING

OTHER

- LIMIT OF WORK
- EX. CONTOUR
- EX. SPOT ELEVATION
- EXISTING TREES TO REMAIN
- EXISTING PLANTING AREAS TO REMAIN

SCAPE

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NORWALK, CT

KEY PLAN



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NEW YORK, NY 10016
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AMANDA M. BAYLEY
LICENSED LANDSCAPE ARCHITECT
NO. 1394

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LOCAL APPROVAL

SHEET NAME

RESTORATION PLAN ENLARGEMENT 5

PROJECT NO	SHEET NO
2349.1	L-605
SCALE	
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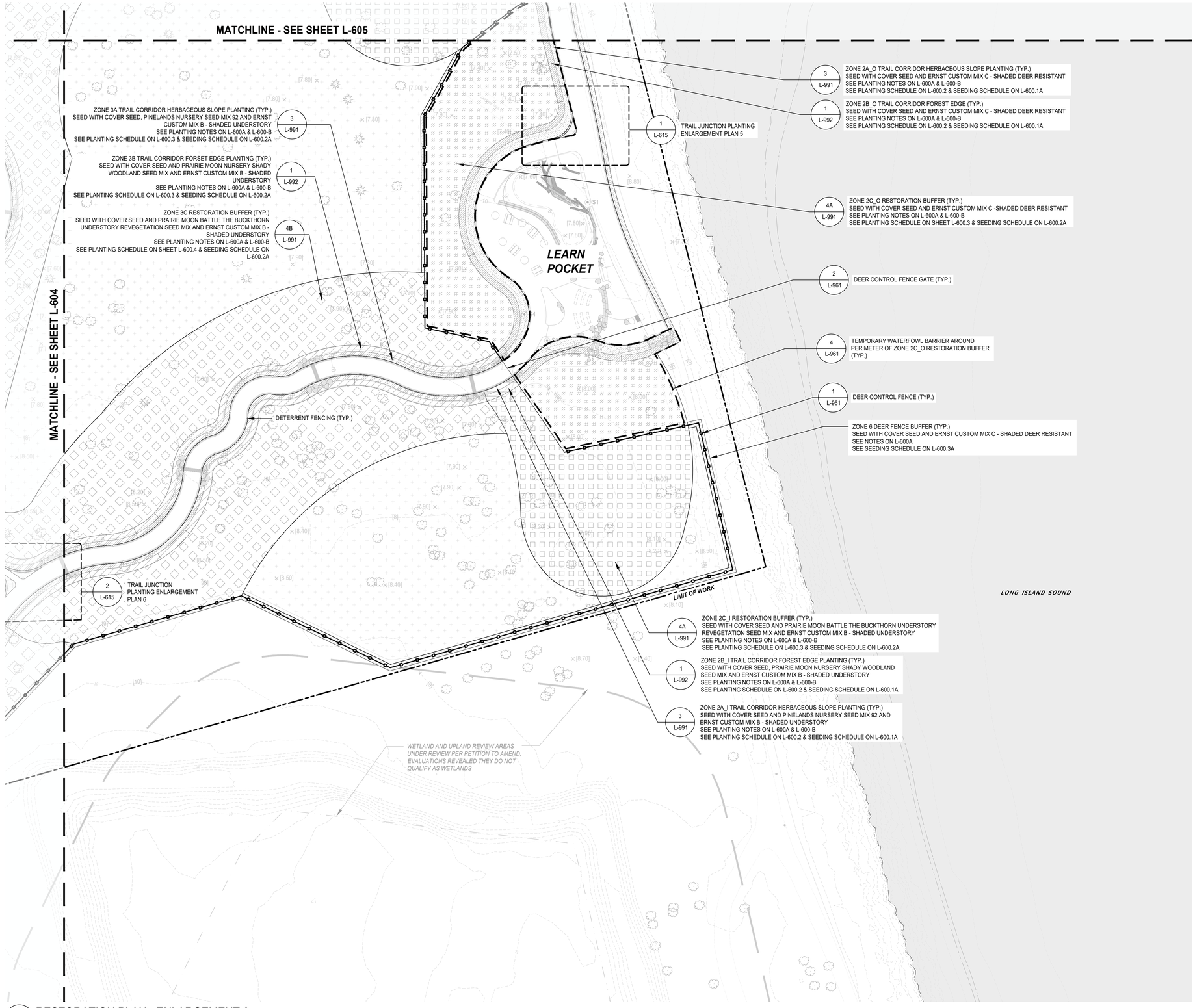

1 RESTORATION PLAN - ENLARGEMENT 6
SCALE: 1" = 30'-0"

0 15' 30' 60' 90'

LEGEND

PLANTING ZONE 2

- ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - INSIDE DEER FENCE (ZONE 2A_I) TOTAL SITE WIDE AREA: 1,891 SF
- ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - OUTSIDE DEER FENCE (ZONE 2A_O) TOTAL SITE WIDE AREA: 2,762 SF
- ZONE 2 TRAIL CORRIDOR FOREST EDGE - INSIDE DEER FENCE (ZONE 2B_I) TOTAL SITE WIDE AREA: 2,525 SF
- ZONE 2 TRAIL CORRIDOR FOREST EDGE - OUTSIDE DEER FENCE (ZONE 2B_O) TOTAL SITE WIDE AREA: 1,589 SF
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- ZONE 2 RESTORATION BUFFER - OUTSIDE DEER FENCE (ZONE 2C_O TOTAL SITE WIDE AREA: 14,501 SF

PLANTING ZONE 3

- ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF
- ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF
- ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

PLANTING ZONE 6

- ZONE 6 DEER FENCE BUFFER (ZONE 6) TOTAL SITE WIDE AREA: 12,135 SF

TRAIL JUNCTION PLANTING

- TRAIL JUNCTION PLANTING TOTAL SITE WIDE AREA: 764 SF

PLANTING METHOD

- EXCAVATED PLANTING
- PRECISION PLANTING

FENCING & BARRIERS

- DEER CONTROL FENCE
- WATERFOWL BARRIER EXTENTS
- DETERRENT FENCING

OTHER

- LIMIT OF WORK
- EX. CONTOUR
- EX. SPOT ELEVATION
- EXISTING TREES TO REMAIN
- EXISTING PLANTING AREAS TO REMAIN

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

RESTORATION PLAN ENLARGEMENT 6

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 30'-0"	
DRAWN BY	
EDD	
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EDD	
DATE	
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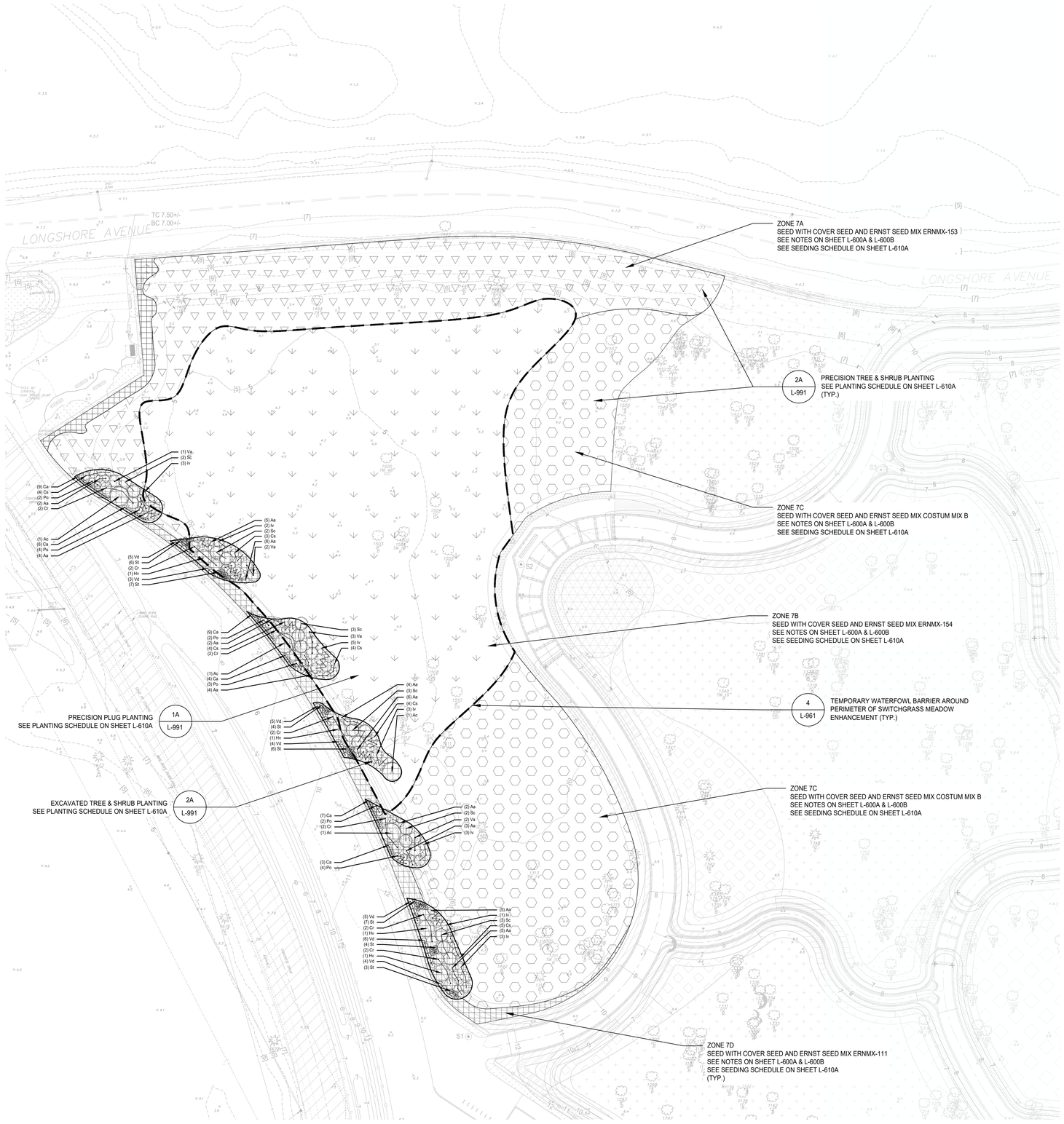


1 SWITCHGRASS MEADOW ENHANCEMENT ENLARGEMENT PLAN
SCALE: 1" = 30'-0"

0 15' 30' 60' 90'

Z:\1PROJECTS\1EDD\Manresa North Forest_2025.08\06_Drawings And Maps\CAD\EDD\2025 12 05 - 50CD Permit Set\EDD 50% CD 2025 L-610a Switchgrass Meadow Enlargement.dwg Plotted on: 12/11/2025 10:48:57 PM

LEGEND

ZONE 3 PLANTING

- ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A)
- ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B)
- ZONE 3 RESTORATION BUFFER (ZONE 3C)

ZONE 5 PLANTING

- ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A)
- ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 56)

WET ADAPTIVE PLANTING

- WET ADAPTIVE TRAIL CORRIDOR HERBABEOUS SLOPE (WA_A)
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B1)
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B2)
- WET ADAPTIVE RESTORATION BUFFER (WA_C1)
- WET ADAPTIVE RESTORATION BUFFER (WA_C2)

ZONE 6 PLANTING

- ZONE 6 DEER FENCE BUFFER (ZONE 6)

PLANTING APPROACH

- EXCAVATED PLANTING
- TARGETED PLANTING

FENCING & BARRIERS

- DEER CONTROL FENCE
- WATERFOWL BARRIER EXTENTS
- DETERRENT FENCING

OTHER

- LIMIT OF WORK
- EX. CONTOUR
- EX. SPOT ELEVATION
- EXISTING TREES TO REMAIN
- EXISTING PLANTING AREAS TO REMAIN
- JUNCTION PLANTING ZONE

SWITCHGRASS MEADOW PLANTING & SEEDING

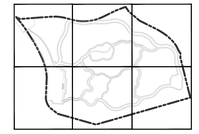
- BERM EDGE (ZONE 7A) - 16,349 SF
- SWITCHGRASS MEADOW (ZONE 7B) - 38,995 SF
- FOREST TRANSITION (ZONE 7C) - 25,129 SF
- EROSION CONTROL SEEDING (ZONE 7D) - 7,685 SF
- PROPOSED SHRUBS

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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NUMBER	DATE	ISSUE
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SEAL



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LOCAL APPROVAL

SHEET NAME

SWITCHGRASS MEADOW ENHANCEMENT ENLARGEMENT PLAN

PROJECT NO	SHEET NO
2349.1	L-610
SCALE	
1"=30'-0"	
DRAWN BY	
EDD	
CHECKED BY	
SCAPE	
EDD	

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PLANTING SCHEDULE

BERM EDGE (ZONE 7A)

TOTAL AREA: 16,349 sf

PLANT CODE	PLANT SCIENTIRC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	box elder	4	2 GAL	5' O.C.	
	Acer rubrum	red maple	4	2 GAL	5' O.C.	
	Amelanchier canadensis	Canadian serviceberry	16	2 GAL	5' O.C.	
	Betula lenta	sweet birch	12	2 GAL	5' O.C.	
	Betula populifolia	grey birch	12	2 GAL	5' O.C.	
	Celtis occidentalis	hackberry	20	2 GAL	5' O.C.	
	Cornus florida	flowering dogwood	16	2 GAL	5' O.C.	
	Ilex opaca	American holly	20	2 GAL	5' O.C.	
	Liquidambar styraciflua	sweet gum	16	2 GAL	5' O.C.	
	Liriodendron tulipifera	tulip tree	4	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	20	2 GAL	5' O.C.	
	Ostrya virginiana	hop hornbeam	12	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	20	2 GAL	5' O.C.	
	Quercus palustris	pin oak	20	2 GAL	5' O.C.	
	Ulmus rubra	slippery elm	4	2 GAL	5' O.C.	
SHRUBS						
	Clethra alnifolia	sweet pepperbush	21	1 GAL	5' O.C.	
	Cornus racemosa	gray dogwood	29	1 GAL	5' O.C.	
	Cornus sericea	red-osier dogwood	21	1 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	33	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	29	1 GAL	5' O.C.	
	Rhus copallinum	winged sumac	21	1 GAL	5' O.C.	
	Rhus typhina	staghorn sumac	33	1 GAL	5' O.C.	
	Viburnum dentatum	arrowwood	21	1 GAL	5' O.C.	

NOTE: THIS IS AN ENHANCEMENT PLANTING ZONE WHERE THE PRECISION PLANTING METHOD WILL BE USED. SEE NOTES ON SHEET L-600. PLANTING AREAS WILL BE FIELD-VERIFIED PRIOR TO INSTALLATION. RATHER THAN PLANTING THE ENTIRE ZONE, QUANTITIES ARE BASED ON INSTALLING PLANTS WITHIN APPROXIMATELY HALF OF THE TOTAL AREA.

SWITCHGRASS MEADOW (ZONE 7B)

TOTAL AREA: 38,995 sf

PLANT CODE	PLANT SCIENTIRC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
GROUND COVER						
	Andropogon gerardii	big bluestem	427	2" PLUG	12" O.C.	
	Asclepias syriaca	common milkweed	332	2" PLUG	12" O.C.	
	Asclepias tuberosa	butterflyweed	237	2" PLUG	12" O.C.	
	Baptisia australis	blue false indigo	48	2" PLUG	12" O.C.	
	Carex scoparia	pointed broom sedge	143	2" PLUG	12" O.C.	
	Echinacea purpurea	purple coneflower	237	2" PLUG	12" O.C.	
	Erigeron annuus	daisy fleabane	48	2" PLUG	12" O.C.	
	Eupatorium coelestinum	blue mistflower	143	2" PLUG	12" O.C.	
	Eutrochium maculatum	spotted joe-pye weed	143	2" PLUG	12" O.C.	
	Helenium autumnale	sneezeweed	48	2" PLUG	12" O.C.	
	Helianthus angustifolius	swamp sunflower	143	2" PLUG	12" O.C.	
	Juncus effusus	soft rush	143	2" PLUG	12" O.C.	
	Lobelia cardinalis	cardinal flower	143	2" PLUG	12" O.C.	
	Lobelia siphilitica	blue lobelia	143	2" PLUG	12" O.C.	
	Mimulus ringens	Allegheny monkey flower	48	2" PLUG	12" O.C.	
	Monarda fistulosa	wild bergamont	95	2" PLUG	12" O.C.	
	Panicum clandestinum	tioga deertongue	48	2" PLUG	12" O.C.	
	Panicum virgatum	switchgrass	48	2" PLUG	12" O.C.	
	Pycnanthemum virginianum	Virginia mountain mint	143	2" PLUG	12" O.C.	
	Rudbeckia hirta	black-eyed Susan	237	2" PLUG	12" O.C.	
	Rudbeckia laciniata	cutleaf coneflower	95	2" PLUG	12" O.C.	
	Schizachyrium scoparium	little bluestem	474	2" PLUG	12" O.C.	
	Solidago juncea	early goldenrod	143	2" PLUG	12" O.C.	
	Sorghastrum nutans	yellow grass	474	2" PLUG	12" O.C.	
	Symphyotrichum novae-angliae	New England aster	143	2" PLUG	12" O.C.	
	Symphyotrichum novi-belgii	New York aster	143	2" PLUG	12" O.C.	
	Tripsacum dactyloides	eastern gamagrass	95	2" PLUG	12" O.C.	
	Verbena hastata	blue vervain	48	2" PLUG	12" O.C.	
	Vernonia noveboracensis	New York ironweed	48	2" PLUG	12" O.C.	
	Zizia aurea	golden alexanders	95	2" PLUG	12" O.C.	

NOTE: THIS IS AN ENHANCEMENT PLANTING ZONE WHERE THE PRECISION PLANTING METHOD WILL BE USED. SEE NOTES ON SHEET L-600. PLANTING AREAS WILL BE FIELD-VERIFIED PRIOR TO INSTALLATION. RATHER THAN PLANTING THE ENTIRE ZONE, QUANTITIES ARE BASED ON INSTALLING PLANTS WITHIN APPROXIMATELY ONE-TENTH OF THE TOTAL AREA.

FOREST TRANSITION (ZONE 7C)

TOTAL AREA: 25,129 sf

PLANT CODE	PLANT SCIENTIRC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
TREES						
	Acer negundo	box elder	5	2 GAL	5' O.C.	
	Acer rubrum	red maple	5	2 GAL	5' O.C.	
	Amelanchier canadensis	Canadian serviceberry	21	2 GAL	5' O.C.	
	Betula papyrifera	paper birch	5	2 GAL	5' O.C.	
	Betula populifolia	grey birch	5	2 GAL	5' O.C.	
	Celtis occidentalis	hackberry	17	2 GAL	5' O.C.	
	Cornus florida	flowering dogwood	21	2 GAL	5' O.C.	
	Ilex opaca	American holly	21	2 GAL	5' O.C.	
	Nyssa sylvatica	black gum	21	2 GAL	5' O.C.	
	Ostrya virginiana	hop hornbeam	5	2 GAL	5' O.C.	
	Platanus occidentalis	American sycamore	13	2 GAL	5' O.C.	
	Quercus bicolor	swamp white oak	21	2 GAL	5' O.C.	
	Quercus palustris	pin oak	25	2 GAL	5' O.C.	
	Sassafras albidum	sassafras	25	2 GAL	5' O.C.	
	Ulmus rubra	slippery elm	5	2 GAL	5' O.C.	
SHRUBS						
	Clethra alnifolia	sweet pepperbush	61	1 GAL	5' O.C.	
	Cornus sericea	red-osier dogwood	61	1 GAL	5' O.C.	
	Hamamelis virginiana	witchhazel	61	1 GAL	5' O.C.	
	Ilex verticillata	winterberry	61	1 GAL	5' O.C.	
	Juniperus virginiana	eastern red cedar	97	1 GAL	5' O.C.	
	Lindera benzoin	spicebush	109	1 GAL	5' O.C.	
	Myrica pensylvanica	northern bayberry	97	1 GAL	5' O.C.	
	Viburnum dentatum	arrowwood	61	1 GAL	5' O.C.	

NOTE: THIS IS AN ENHANCEMENT PLANTING ZONE WHERE THE PRECISION PLANTING METHOD WILL BE USED. SEE NOTES ON SHEET L-600. PLANTING AREAS WILL BE FIELD-VERIFIED PRIOR TO INSTALLATION. RATHER THAN PLANTING THE ENTIRE ZONE, QUANTITIES ARE BASED ON INSTALLING PLANTS WITHIN APPROXIMATELY ONE-THIRD OF THE TOTAL AREA.

SHRUB POCKETS

PLANT CODE	PLANT SCIENTIRC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
SHRUBS						
Aa	*Aronia arbutifolia*	red chokeberry	50	1 GAL		
Ac	*Amelanchier canadensis*	serviceberry	4	1 GAL		
Ca	*Clethra alnifolia*	summersweet	38	1 GAL		
Cr	*Cornus racemosa*	gray dogwood	14	1 GAL		
Cs	*Cornus sericea*	red-osier dogwood	24	1 GAL		
Hv	*Hamamelis virginiana*	American witch-hazel	4	1 GAL		
Iv	*Ilex verticillata*	winterberry	20	1 GAL		
Po	*Physocarpus opulifolius*	common ninebark	17	1 GAL		
Sc	*Sambucus canadensis*	black elderberry	15	1 GAL		
St	*Spiraea tomentosa*	steeplebush	37	1 GAL		
Va	*Vaccinium corymbosum*	highbush blueberry	8	1 GAL		
Vd	*Viburnum dentatum 'Little Joe'*	arrowwood viburnum	32	1 GAL		

NOTE: THESE SHRUB PLANTING POCKETS WILL BE LAID OUT ACCORDING TO THE DRAWING ON SHEET L-610. SEE NOTES ON SHEET L-600. PLANTING AREAS WILL BE FIELD-VERIFIED PRIOR TO INSTALLATION.

SEEDING SCHEDULE

BERM EDGE (ZONE 7A)

TOTAL AREA: 16,349 sf

SEED MIX	PLANT SCIENTIRC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIRC NAME	PLANT COMMON NAME	PERCENT OF MIX
SHOWY NORTHEAST NATIVE WILDFLOWER & GRASS MIX - ERNMX-153 OR APPROVED EQUAL	*Elymus virginicus*	Virginia wildrye	20.0%
	Schizachyrium scoparium	little bluestem	20.0%
	Bouteloua curtipendula	sideoats grama	15.9%
	Echinacea purpurea	purple coneflower	10.0%
	Chamaecrista fasciculata	partridge pea	4.0%
	Coreopsis lanceolata	lanceleaf coreopsis	4.0%
	Rudbeckia hirta	blackeyed susan	4.0%
	Asclepias tuberosa	butterfly milkweed	2.7%
	Heliopsis helianthoides	oxeye sunflower	2.7%
	Zizia aurea	golden alexanders	2.1%
	Penstemon digitalis	tall white beardtongue	1.9%
	Liatris spicata	marsh blazing star	1.7%
	Eragrostis spectabilis	purple lovegrass	1.3%
	Rudbeckia triloba	browneyed susan	1.3%
	Lespedeza capitata	roundhead lespedeza	1.1%
	Baptisia australis	blue indigo	1.0%
	Pycnanthemum tenuifolium	narrowleaf mountainmint	0.9%
	Lespedeza virginica	slender lespedeza	0.8%
	Senna hebecarpa	wild senna	0.8%
	Aster laevis	smooth blue aster	0.5%
	Aster novae-angliae	New England aster	0.5%
	Aster oblongifolius	aromatic aster	0.5%
	Monarda fistulosa	wild bergamot	0.5%
	Aster pilosus	heath aster	0.3%
	Senna marilandica	maryland senna	0.3%
	Solidago bicolor	white goldenrod	0.3%
	Solidago nemoralis	gray goldenrod	0.3%
	Tradescantia ohiensis	ohio spiderwort	0.3%
	Oenothera fruticosa	var. fruticosa sundrops	0.1%
	Penstemon hirsutus	hairy beardtongue	0.1%
	Solidago odora	licorice scented goldenrod	0.1%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 20 LBS/ACRE.

SWITCHGRASS MEADOW (ZONE 7B)

TOTAL AREA: 38,995 sf

SEED MIX	PLANT SCIENTIRC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF EXISTING SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIRC NAME	PLANT COMMON NAME	PERCENT OF MIX
FLOODPLAIN MIX* - ERNMX-154	*Elymus virginicus*	Virginia wildrye	20.0%
	Sorghastrum nutans	yellow grass	15.0%
	Panicum clandestinum	tioga deertongue	14.6%
	Andropogon gerardii	big bluestem	14.0%
	Carex vulpinoidea	fox sedge	10.0%
	Carex lurida	lurid sedge	6.3%
	Carex scoparia	blunt broom sedge	6.3%
	Verbena hastata	blue vervain	3.0%
	Juncus effusus	soft rush	2.0%
	Zizia aurea	golden alexanders	2.0%
	Asclepias incarnata	swamp milkweed	1.9%
	Verbena urticifolia	white vervain	1.0%
	Eupatorium perfoliatum	boneset	0.6%
	Solidago rugosa	wrinkleleaf goldenrod	0.5%
	Aster novae-angliae	New England aster	0.4%
	Aster puniceus	purplestem aster	0.4%
	Monarda fistulosa	wild bergamot	0.4%
	Mimulus ringens	square stemmed monkeyflo	0.3%
	Scirpus atrovirens	green bulrush	0.3%
	Scirpus cyperinus	woolgrass	0.3%
	Aster lanceolatus	lance leaved aster	0.2%
	Lobelia siphilitica	great blue lobelia	0.2%
	Lycopus americanus	American water horehound	0.2%
	Euthamia graminifolia	grassleaf goldenrod	0.1%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

*A FLOODPLAIN SEED MIX IS INCLUDED IN THIS DESIGN, GIVEN THAT RUNOFF FROM THE NEWLY ALIGNED ADJACENT ROAD MAY FLOW INTO THE SWITCHGRASS MEADOW.

FOREST TRANSITION (ZONE 7C)

TOTAL AREA: 25,129 sf

SEED MIX	PLANT SCIENTIRC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIRC NAME	PLANT COMMON NAME	PERCENT OF MIX
ERNST CUSTOM MIX B - SHADED UNDERSTORY OR APPROVED EQUAL	*Carex appalachica*	Appalachian sedge	20.00%
	Carex pensylvanica	Pennsylvania sedge	20.00%
	Polemonium reptans	Jacob's ladder	8.00%
	Polygonatum biflorum	Solomon's seal	8.00%
	Arisaema triphyllum	jack-in-the-pulpit	6.00%
	Viola sororia	common violet	6.00%
	Aquilegia canadensis	wild columbine	5.00%
	Eurybia divaricata	white wood aster	5.00%
	Helianthus divaricatus	woodland sunflower	5.00%
	Symphyotrichum cordifolium	blue wood aster	5.00%
	Zizia aurea	golden alexander	5.00%
	Aralia nudicaulis	wild sarsaparilla	3.00%
	Ageratina altissima	white snakeroot	2.00%
	Fragaria virginiana	wild strawberry	2.00%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 20 LBS/ACRE.

EROSION CONTROL SEEDING (ZONE 7D)

TOTAL AREA: 7,685 sf

SEED MIX	PLANT SCIENTIRC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

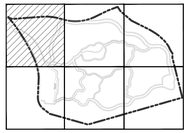
SEED MIX	PLANT SCIENTIRC NAME	PLANT COMMON NAME	PERCENT OF MIX
ERNST NATIVE HABITAT FOR STRIP MINES MIX - ERNMX-111 OR APPROVED EQUAL	*Andropogon gerardii*	big bluestem	20.3%
	Elymus virginicus	Virginia wildrye	20.0%
	Schizachyrium scoparium	little bluestem	18.9%
	Sorghastrum nutans	yellow grass	18.9%
	Panicum virgatum	switchgrass	13.0%
	Rudbeckia hirta	blackeyed susan	2.5%
	Heliopsis helianthoides	oxeye sunflower	2.0%
	Desmodium canadense	showy ticktrefoil	1.6%
	Chamaecrista fasciculata	partridge pea	1.5%
	Lespedeza capitata	roundhead lespedeza	0.5%
	Monarda fistulosa	wild bergamot	0.3%
	Asclepias syriaca	common milkweed	0.2%
	Aster pilosus	heath aster	0.1%
	Pycnanthemum tenuifolium	narrowleaf mountainmint	0.1%
	Solidago canadensis	Canada goldenrod	0.1%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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NUMBER	DATE	ISSUE
01	12/15/2025	ISSUED FOR LOCAL APPROVALS

SEAL



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LOCAL APPROVAL

SHEET NAME

SWITCHGRASS MEADOW ENHANCEMENT PLANTING & SEEDING SCHEDULE

PROJECT NO	SHEET NO
2349.1	
SCALE	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

L-610A

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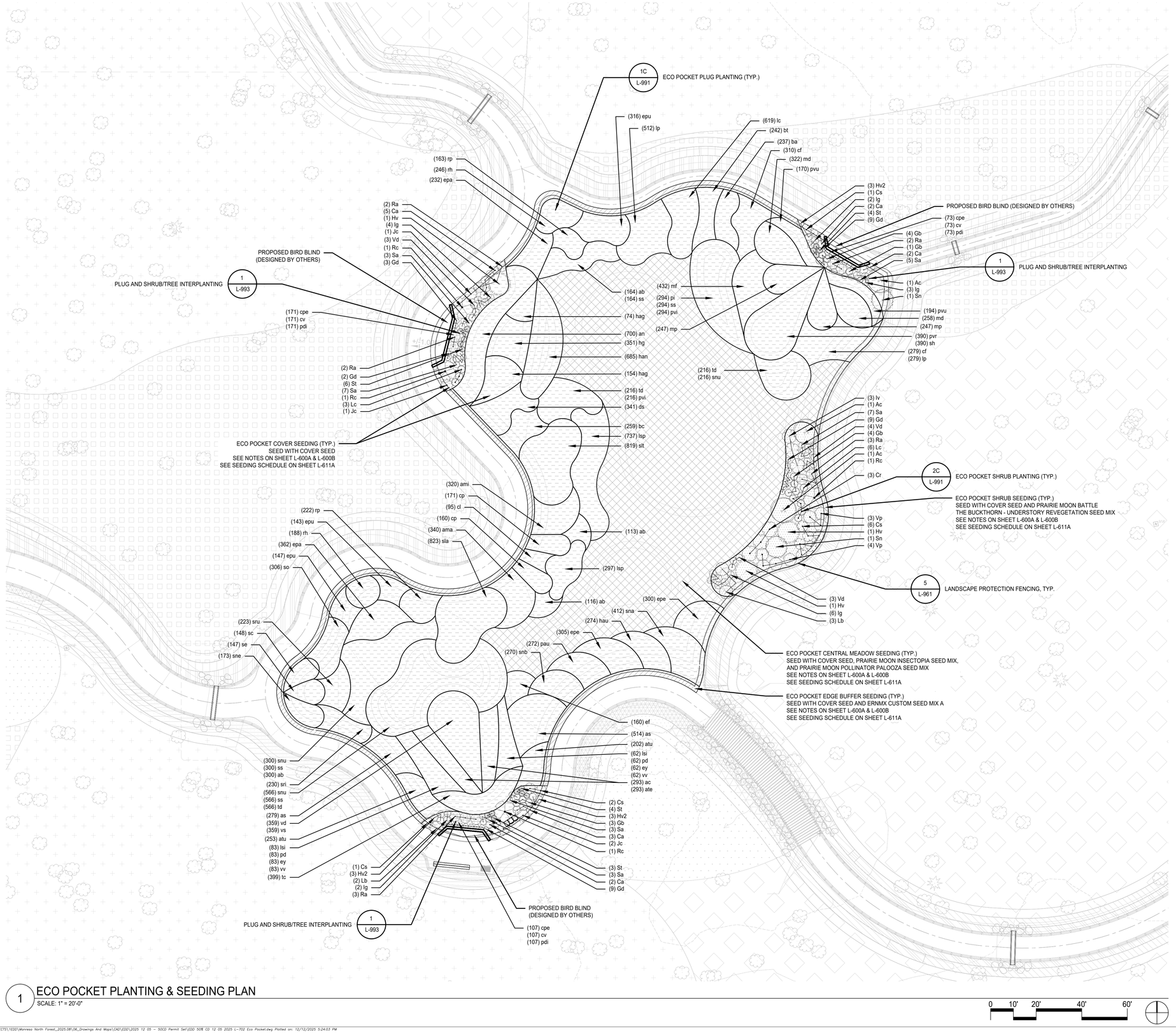

1 ECO POCKET PLANTING & SEEDING PLAN

SCALE: 1" = 20'-0"

0 10' 20' 40' 60'

LEGEND

ZONE 1 PLANTING

- HERBACEOUS SLOPE (ZONE 1A)
- FORESTED (ZONE 1B)
- RESTORATION BUFFER (ZONE 1C)

ZONE 4 PLANTING

- HERBACEOUS SLOPE (ZONE 4A)
- FORESTED (ZONE 4B)
- RESTORATION BUFFER (ZONE 4C)

ZONE 5 PLANTING

- HERBACEOUS SLOPE (ZONE 5A)
- FORESTED (ZONE 5B)

WET ADAPTIVE PLANTING

- HERBABEOUS SLOPE (WA_A)
- FORESTED (WA_B1)
- FORESTED (WA_B2)
- RESTORATION BUFFER (WA_C2)

FENCES

- DETERRENT FENCING
- LANDSCAPE PROTECTION FENCING

PLANTING APPROACH

- EXCAVATED PLANTING
- PRECISION PLANTING

OTHER

- EX. SPOT ELEVATION
- EX. CONTOUR
- EXISTING PLANTING AREAS TO REMAIN
- EX. TEES OVER 8" DBH
- JUNCTION PLANTING ZONE

ECO POCKET PLANTING

- PROPOSED SHRUBS
- PROPOSED PLUG PLANTING PATCH

ECO POCKET SEEDING

- PROPOSED SEEDING - ECO POCKET EDGE BUFFER SEEDING - 1,726 SF
- PROPOSED SEEDING - ECO POCKET CENTRAL MEADOW SEEDING - 12,674 SF
- PROPOSED SEEDING - ECO POCKET COVER SEEDING - 23,269 SF
- PROPOSED SEEDING - ECO POCKET SHRUB SEEDING - 1,588 SF

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



CLIENT

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LOCAL APPROVAL

SHEET NAME

ECO POCKET PLANTING & SEEDING PLAN

PROJECT NO	SHEET NO
2365.1	**L-611**
SCALE	
1" = 20'-0"	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

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PLANTING SCHEDULE

ECO POCKET

PLANT CODE	PLANT SCIENTIFC NAME	PLANT COMMON NAME	QUANTITY	CONTAINER SIZE	SPACING	COMMENTS
SHRUBS						
Ac	Amelanchier canadensis	Canadian serviceberry	3	2 GAL		
Ca	Ceanothus americanus	New Jersey tea	14	2 GAL		
Cr	Cornus racemosa	gray dogwood	3	2 GAL		
Cs	Cornus sericea	redosier dogwood	10	2 GAL		
Gb	Gaylussacia baccata	black huckleberry	12	2 GAL		
Gd	Gaylussacia dumosa	dwarf huckleberry	32	2 GAL		
Hv	Hamamelis virginiana	American witchhazel	3	2 GAL		
Hv2	Hamamelis virginiana 'Little Suzie'	American witchhazel (dwarf cultivar)	9	2 GAL		dwarf cultivar
Ig	Ilex glabra 'Compacta'	inkberry (dwarf cultivar)	17	2 GAL		dwarf cultivar
Iv	Ilex verticillata	winterberry	3	2 GAL		
Jc	Juniperus communis	common juniper	4	2 GAL		
Lb	Lindera benzoin	spicebush	5	2 GAL		
Lc	Lonicera canadensis	American fly honeysuckle	9	2 GAL		
Ra	Rhus aromatica 'Gro-Low'	fragrant sumac	12	2 GAL		dwarf cultivar
Rc	Rhus copallinum	winged sumac	4	2 GAL		
Sc (Sn)	Sambucus canadensis	American black elderberry	2	2 GAL		
Sa	Spiraea alba	white meadowsweet	28	2 GAL		
St	Spiraea tomentosa	steeplebush	17	2 GAL		
Vd	Viburnum dentatum 'Little Joe' (or similar dwarf cultivar)	arrowwood viburnum (dwarf cultivar)	10	2 GAL		dwarf cultivar
Vp	Viburnum prunifolium	blackhaw viburnum	7	2 GAL		
PLUGS						
ami	*Achillea millefolium*	common yarrow	320	2" PLUG	12" O.C.	
ate	*Agalinis tenuifolia*	slenderleaf false foxglove	293	2" PLUG	12" O.C.	
ama	*Anaphalis margaritacea*	pearly everlasting	340	2" PLUG	12" O.C.	
ab	*Andropogon gerardii*	big bluestem	693	2" PLUG	12" O.C.	
an	*Antennaria neglecta*	field pussytoes	700	2" PLUG	12" O.C.	
ac	*Aquilegia canadensis*	red columbine	293	2" PLUG	12" O.C.	
as	Asclepias syriaca	common milkweed	793	2" PLUG	12" O.C.	
atu	Asclepias tuberosa	butterfly milkweed	455	2" PLUG	12" O.C.	
ba	Baptisia australis	blue wild indigo	237	2" PLUG	12" O.C.	
bt	Baptisia tinctoria	yellow wild indigo	242	2" PLUG	12" O.C.	
bc	Bouteloua curtipendula	sideoats grama	259	2" PLUG	12" O.C.	
cpe	Carex pensylvanica	Pennsylvania sedge	189	2" PLUG	12" O.C.	
cf	Chamaecrista fasciculata	partridge pea	589	2" PLUG	12" O.C.	
cv	Chrysogonum virginianum	Green-and-gold	189	2" PLUG	12" O.C.	
cp	Cirsium pumilum	pasture thistle	331	2" PLUG	12" O.C.	
cl	Coreopsis lanceolata	lanceleaf coreopsis	95	2" PLUG	12" O.C.	
ds	Danthonia spicata	poverty oatgrass	341	2" PLUG	12" O.C.	
epa	Echinacea pallida	pale purple coneflower	594	2" PLUG	12" O.C.	
epu	Echinacea purpurea	purple coneflower	606	2" PLUG	12" O.C.	
ey	Eryngium yuccifolium	rattlesnake master	145	2" PLUG	12" O.C.	
epe	Eupatorium perfoliatum	common boneset	605	2" PLUG	12" O.C.	
ef	Eutrochium fistulosum	joe-pye weed	160	2" PLUG	12" O.C.	
hau	Helenium autumnale	common sneezeweed	274	2" PLUG	12" O.C.	
hag	Helianthus angustifolius	swamp sunflower	228	2" PLUG	12" O.C.	
han	Helianthus annuus	common sunflower	685	2" PLUG	12" O.C.	
hg	Helianthus giganteus	giant sunflower	351	2" PLUG	12" O.C.	
lc	Lespedeza capitata	roundhead lespedeza	619	2" PLUG	12" O.C.	
lsp	Liatris spicata	dense blazing star	1034	2" PLUG	12" O.C.	
lsi	Lobelia siphilitica	great blue lobelia	145	2" PLUG	12" O.C.	
lp	Lupinus perennis	sundial lupine	791	2" PLUG	12" O.C.	
md	Monarda didyma	scarlet beebalm	580	2" PLUG	12" O.C.	
mf	Monarda fistulosa	wild bergamot	432	2" PLUG	12" O.C.	
mp	Monarda punctata	spotted beebalm	494	2" PLUG	12" O.C.	
pau	Packera aurea	golden ragwort	272	2" PLUG	12" O.C.	
pvi	Panicum virgatum	switchgrass	510	2" PLUG	12" O.C.	
pd	Penstemon digitalis	smooth beardtongue	145	2" PLUG	12" O.C.	
pdi	Phlox divaricata	Wild Blue Phlox	189	2" PLUG	12" O.C.	
pvu	Prunella vulgaris	common selfheal	364	2" PLUG	12" O.C.	
pi	Pycnanthemum incanum	hoary mountainmint	294	2" PLUG	12" O.C.	
pvr	Pycnanthemum virginianum	Virginia mountain mint	390	2" PLUG	12" O.C.	
rp	Ratibida pinnata	gray-headed coneflower	385	2" PLUG	12" O.C.	
rh	Rudbeckia hirta	blackeyed susan	434	2" PLUG	12" O.C.	
ss	Schizachyrium scoparium	little bluestem	1323	2" PLUG	12" O.C.	
sh	Senna hebecarpa	American senna	390	2" PLUG	12" O.C.	
sc	Solidago caesia	wreath goldenrod	148	2" PLUG	12" O.C.	
se	Solidago erecta	showy goldenrod	147	2" PLUG	12" O.C.	
sne	Solidago nemoralis	gray goldenrod	173	2" PLUG	12" O.C.	
so	Solidago odora	anisescented goldenrod	306	2" PLUG	12" O.C.	
sri	Solidago rigida (Oligoneuron rigidum)	stiff goldenrod	230	2" PLUG	12" O.C.	
sru	Solidago rugosa	wrinkleleaf goldenrod	223	2" PLUG	12" O.C.	
snu	Sorghastrum nutans	yellow prarie grass	1082	2" PLUG	12" O.C.	
sla	Symphyotrichum laeve	smooth blue aster	823	2" PLUG	12" O.C.	
slt	Symphyotrichum lateriflorum	calico aster	819	2" PLUG	12" O.C.	
sna	Symphyotrichum novae-angliae	New England aster	412	2" PLUG	12" O.C.	
snb	Symphyotrichum novi-belgii	New York aster	270	2" PLUG	12" O.C.	
tc	Tiarella cordifolia	heartleaf foamflower	399	2" PLUG	12" O.C.	
td	Tripsacum dactyloides	eastern gamagrass	997	2" PLUG	12" O.C.	
vv	Veronicastrum virginicum	culver's root	145	2" PLUG	12" O.C.	
vd	Viola blanda	sweet white violet	359	2" PLUG	12" O.C.	
vs	Viola sororia	common blue violet	359	2" PLUG	12" O.C.	

SEEDING SCHEDULE

ECO POCKET CENTRAL MEADOW SEEDING

TOTAL AREA: 12,674 sf

SEED MIX	PLANT SCIENTIFC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRARIE MOON INSECTOPIA SEED MIX - MEDIUM - MEDIUM DRY, FULL - PARTIAL SUN, OR APPROVED EQUAL	*Agastache foeniculum*	anise hyssop	1.08%
	Symphyotrichum oblongifolium	aromatic aster	0.36%
	Rudbeckia hirta	black-eyed susan	2.16%
	Asclepias tuberosa	butterfly weed	1.08%
	Anemone canadensis	canada anemone	0.36%
	Elymus canadensis	Canada wild rye	11.51%
	Asclepias syriaca	common milkweed	0.90%
	Veronicastrum virginicum	culver's root	0.36%
	Apocynum cannabinum	dogbane	0.36%
	Scrophularia lanceolata	early figwort	0.72%
	Helianthus helianthoides	early sunflower	3.60%
	Zizia aurea	golden alexanders	4.31%
	Euthamia graminifolia	grass-leaved goldenrod	0.18%
	Lobelia siphilitica	great blue lobelia	0.58%
	Verbena stricta	hoary vervain	1.80%
	Koeleria macrantha	june grass	3.60%
	Coreopsis lanceolata	lance-leaf coreopsis	5.57%
	Schizachyrium scoparium	little bluestem	15.82%
	Pycnanthemum virginianum	mountain mint	1.08%
	Ceanothus americanus	New Jersey tea	0.72%
	Tradescantia ohiensis	ohio spiderwort	2.16%
	Chamaecrista fasciculata	partridge pea	11.51%
	Liatris pycnostachya	prairie blazing star	1.44%
	Drymocallis arguta	prairie cinquefoil	0.72%
	Coreopsis palmata	prairie coreopsis	0.36%
	Sporobolus heterolepis	prairie dropseed	1.44%
	Allium stellatum	prairie onion	1.44%
	Dalea purpurea	purple prairie clover	3.24%
	Eryngium yuccifolium	rattlesnake master	2.88%
	Oligoneuron riddellii	riddell's goldenrod	0.72%
	Asclepias incarnata	rose milkweed	1.08%
	Solidago speciosa	showy goldenrod	0.54%
	Helianthus pauciflorus	showy sunflower	0.36%
	Bouteloua curtipendula	side-oats grama	7.19%
	Symphyotrichum laeve	smooth blue aster	0.90%
	Monarda punctata	spotted bee balm	1.44%
	Dalea candida	white prairie clover	2.52%
	Asclepias verticillata	whorled milkweed	0.36%
	Monarda fistulosa	wild bergamot	0.72%
	Parthenium integrifolium	wild quinine	1.80%
	Achillea millefolium	yarrow	0.36%
	Ratibida pinnata	yellow coneflower	0.72%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON POLLINATOR PALOOZA SEED MIX - MEDIUM WET - MEDIUM DRY, FULL - PARTIAL SUN, OR APPROVED EQUAL	*Bouteloua curtipendula*	side-oats grama	15.30%
	Schizachyrium scoparium	little bluestem	15.30%
	Elymus canadensis	Canada wild rye	6.70%
	Rudbeckia hirta	black-eyed susan	5.74%
	Chamaecrista fasciculata	partridge pea	4.78%
	Coreopsis lanceolata	lance-leaf coreopsis	2.87%
	Dalea purpurea	purple prairie clover	2.87%
	Echinacea pallida	pale purple coneflower	2.87%
	Tradescantia ohiensis	Ohio spiderwort	2.87%
	Zizia aurea	golden alexanders	2.87%
	Sporobolus compositus	rough dropseed	2.87%
	Koeleria macrantha	june grass	2.39%
	Amsonia illustris	ozark bluestar	1.91%
	Asclepias verticillata	whorled milkweed	1.91%
	Echinacea purpurea	purple coneflower	1.91%
	Eryngium yuccifolium	rattlesnake master	1.91%
	Liatris ligulstylis	meadow blazing star	1.91%
	Liatris pycnostachya	prairie blazing star	1.91%
	Asclepias syriaca	common milkweed	1.43%
	Symphyotrichum laeve	smooth blue aster	1.43%
	Pycnanthemum virginianum	mountain mint	1.02%
	Senna hebecarpa	wild senna	1.02%
	Agastache foeniculum	anise hyssop	0.96%
	Allium stellatum	prairie onion	0.96%
	Asclepias tuberosa	butterfly weed	0.96%
	Lobelia siphilitica	great blue lobelia	0.96%
	Oligoneuron rigidum	stiff goldenrod	0.96%
	Penstemon digitalis	foxglove beardtongue	0.96%
	Verbena hastata	blue vervain	0.96%
	Amorpha canescens	lead plant	0.96%
	Hypericum prolificum	shrubby st. john's wort	0.96%
	Juncus tenuis	path rush	0.96%
	Sporobolus heterolepis	prairie dropseed	0.96%
	Scrophularia lanceolata	early figwort	0.60%
	Pycnanthemum verticillatum var. pilosum	hairy mountain mint	0.51%
	Baptisia alba	white wild indigo	0.48%
	Gaura biennis	biennial gaura	0.48%
	Lespedeza capitata	round-headed bush clover	0.48%
	Monarda fistulosa	wild bergamot	0.48%
	Ratibida pinnata	yellow coneflower	0.48%
	Solidago nemoralis	old field goldenrod	0.48%
	Solidago speciosa	showy goldenrod	0.48%
	Veronicastrum virginicum	culver's root	0.48%
	Helianthus pauciflorus	showy sunflower	0.24%
	Parthenium integrifolium	wild quinine	0.24%
	Rudbeckia triloba	black-eyed susan	0.24%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE.

ECO POCKET EDGE BUFFER SEEDING

TOTAL AREA: 1,726 sf

SEED MIX	PLANT SCIENTIFC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFC NAME	PLANT COMMON NAME	PERCENT OF MIX
ERNMX CUSTOM MIX A - LOW GROWING, FAC/FACU/UPL MIX - FULL SUN AND SOME SHADE, OR APPROVED EQUAL	*Carex pensylvanica*	Pennsylvania sedge	30.0%
	Sporobolus heterolepis	prairie dropseed	30.0%
	Juncus tenuis	path rush	25.0%
	Solidago nemoralis	gray goldenrod	10.0%
	Asclepias tuberosa	butterfly milkweed	5.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

ECO POCKET SHRUB SEEDING

TOTAL AREA: 1,588 sf

SEED MIX	PLANT SCIENTIFC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
PRAIRIE MOON BATTLE THE BUCKTHORN - UNDERSTORY REVEGETATION SEED MIX - MEDIUM WET - MEDIUM DRY, PARTIAL SUN, OR APPROVED EQUAL	*Elymus canadensis*	Canada wild rye	34.74%
	Elymus virginicus	Virginia wild rye	34.74%
	Elymus hystrix	bottlebrush grass	5.21%
	Elymus villosus	silky wild rye	3.91%
	Rudbeckia hirta	black-eyed susan	3.47%
	Zizia aurea	golden alexanders	2.61%
	Echinacea purpurea	purple coneflower	1.74%
	Heliopsis helianthoides	early sunflower	1.74%
	Sphenopholis obtusata	prairie wedgegrass	1.74%
	Cryptotaenia canadensis	honewort	0.87%
	Monarda fistulosa	wild bergamot	0.87%
	Penstemon digitalis	foxglove beardtongue	0.87%
	Carex sprengelii	long-beaked sedge	0.87%
	Glyceria striata	fowl manna grass	0.87%
	Poa palustris	fowl bluegrass	0.87%
	Campanula americana	tall bellflower	0.65%
	Agastache scrophulariaefolia	purple giant hyssop	0.43%
	Aquilegia canadensis	columbine	0.43%
	Eutrochium purpureum	sweet joe pye weed	0.43%
	Lobelia siphilitica	great blue lobelia	0.43%
	Rudbeckia laciniata	wild golden glow	0.43%
	Teucrium canadense	germander	0.43%
	Thalictrum dasycarpum	purple meadow rue	0.43%
	Veronicastrum virginicum	culver's root	0.43%
	Rudbeckia triloba	brown-eyed susan	0.33%
	Scrophularia lanceolata	early figwort	0.22%
	Symphyotrichum lateriflorum	calico aster	0.22%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

ECO POCKET COVER SEEDING

TOTAL AREA: 23,269 sf

SEED MIX	PLANT SCIENTIFIC NAME	PLANT COMMON NAME	PERCENT OF MIX
COVER SEED	*Avena sativa*	oats	50.0%
	Secale cereale	winter rye	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE EACH.

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

ECO POCKET PLANTING & SEEDING SCHEDULE

PROJECT NO	SHEET NO
2349.1	**L-611A**
SCALE	
DRAWN BY: EDD	
CHECKED BY: EDD	
DATE: 12/15/2025	

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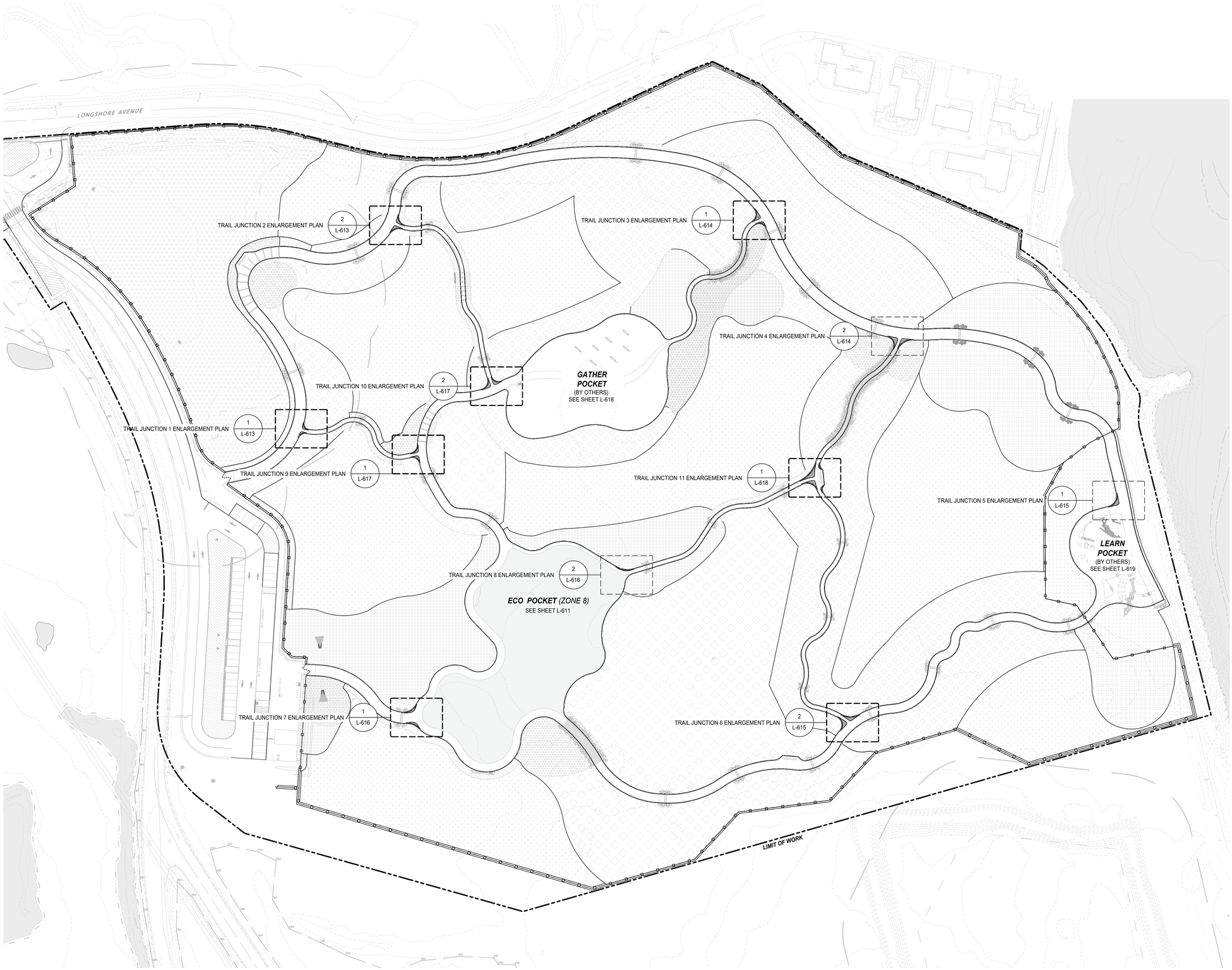


1 TRAIL JUNCTION PLANTING LAYOUT PLAN
SCALE: 1" = 60'-0"

LEGEND

PLANTING ZONE BOUNDARY

PLANTING ZONE 1

ZONE 1
TOTAL SITE WIDE AREA: 55,455 SF

PLANTING ZONE 2

ZONE 2_I
INSIDE DEER CONTROL FENCE
TOTAL SITE WIDE AREA: 52,239 SF

ZONE 2_O
OUTSIDE DEER CONTROL FENCE
TOTAL SITE WIDE AREA: 18,852 SF

PLANTING ZONE 3

ZONE
TOTAL SITE WIDE AREA: 204,896 SF

PLANTING ZONE 4

ZONE 4
TOTAL SITE WIDE AREA: 120,952 SF

PLANTING ZONE 5

ZONE 5
TOTAL SITE WIDE AREA: 13,302 SF

PLANTING ZONE 6

ZONE 6 - DEER FENCE BUFFER
TOTAL SITE WIDE AREA: 12,135 SF

PLANTING ZONE 7

ZONE 7 -
SWITCHGRASS MEADOW ENHANCEMENT
TOTAL SITE WIDE AREA: 88,158 SF

PLANTING ZONE 8

ZONE 8 - ECO POCKET
TOTAL SITE WIDE AREA: 39,619 SF

WET ADAPTIVE PLANTING

WET ADAPTIVE
TOTAL SITE WIDE AREA: 31,257 SF

TRAIL JUNCTION PLANTING

TRAIL JUNCTION PLANTING TOTAL
SITE WIDE AREA: 764 SF

FENCING & BARRIER

DEER CONTROL FENCE

DETERRENT FENCING

OTHER

LIMIT OF WORK

EX. CONTOUR

EXISTING PLANTING AREAS
TO REMAIN

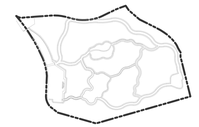
PLANTING BY OTHERS

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

TRAIL JUNCTION PLANTING LAYOUT PLAN

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 60'-0"	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

L-612

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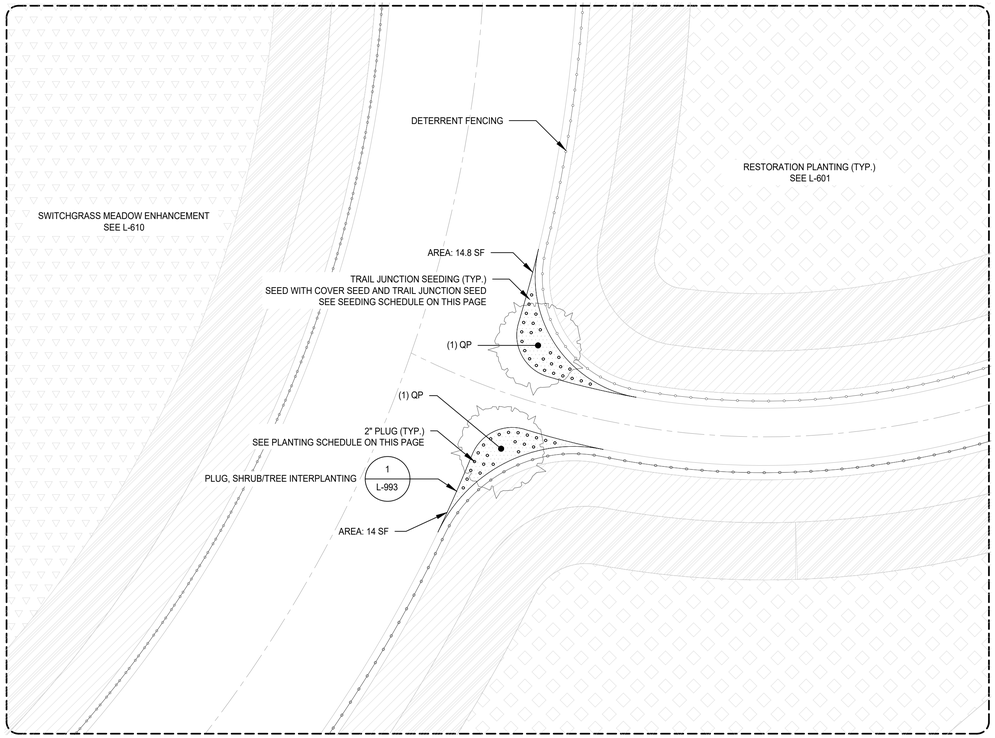

1 TRAIL JUNCTION PLANTING ENLARGEMENT PLAN 1

SCALE: 1" = 5'-0"

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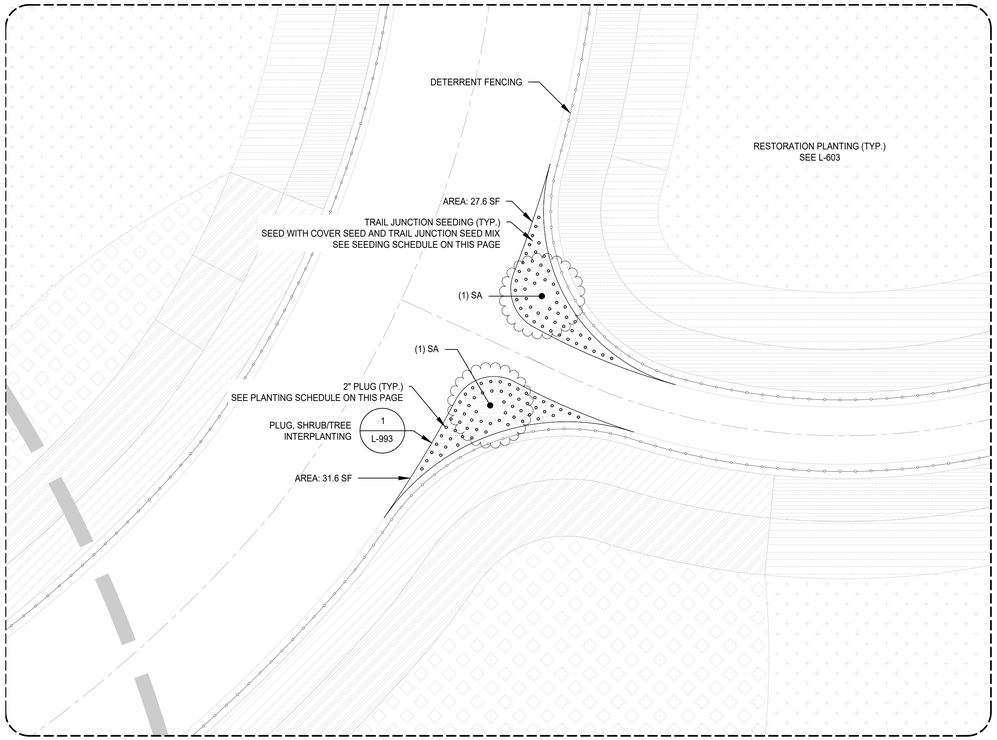


2 TRAIL JUNCTION PLANTING ENLARGEMENT PLAN 2

SCALE: 1" = 5'-0"

0 5' 10' 20'

TRAIL JUNCTION 1 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 1 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
2	QP	QUERCUS PALUSTRIS	PIN OAK	3 GAL.	3 GAL.		
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
47	Asc syr	ASCLEPIAS SYRIACA	COMMON MILKWEED	2" PLUG	PLUG	12" O.C.	

TRAIL JUNCTION 2 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 2 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
2	SA	SASSAFRAS ALBIDUM	SASSAFRAS	3 GAL.	3 GAL.		
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
37	Ger mac	GERANIUM MACULATUM	WILD GERANIUM	2" PLUG	PLUG	12" O.C.	
37	Ang ven	ANGELICA VENENOSA	WOODLAND ANGELICA	2" PLUG	PLUG	12" O.C.	
37	Pol sen	POLYGALA SENEGA	SENECA SNAKEROOT	2" PLUG	PLUG	12" O.C.	

LEGEND

PLANTING ZONE 3

- ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF
- ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF
- ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

PLANTING ZONE 5

- ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A) TOTAL SITE WIDE AREA: 6,038 SF
- ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 56) TOTAL SITE WIDE AREA: 7,264 SF

PLANTING ZONE 7

- ZONE 7 SWITCHGRASS MEADOW ENHANCEMENT (ZONE 7) TOTAL SITE WIDE AREA: 88,156 SF

FENCING & BARRIERS

- DETERRENT FENCING

OTHER

- EXISTING PLANTING AREAS TO REMAIN

TRAIL JUNCTION PLANTING

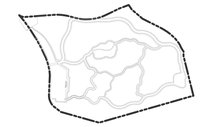
- TRAIL JUNCTION SEEDING SITE WIDE AREA: 764 SF
- 2" PLUG
- PROPOSED TREES

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 1 & 2

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 5'-0"	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

L-613

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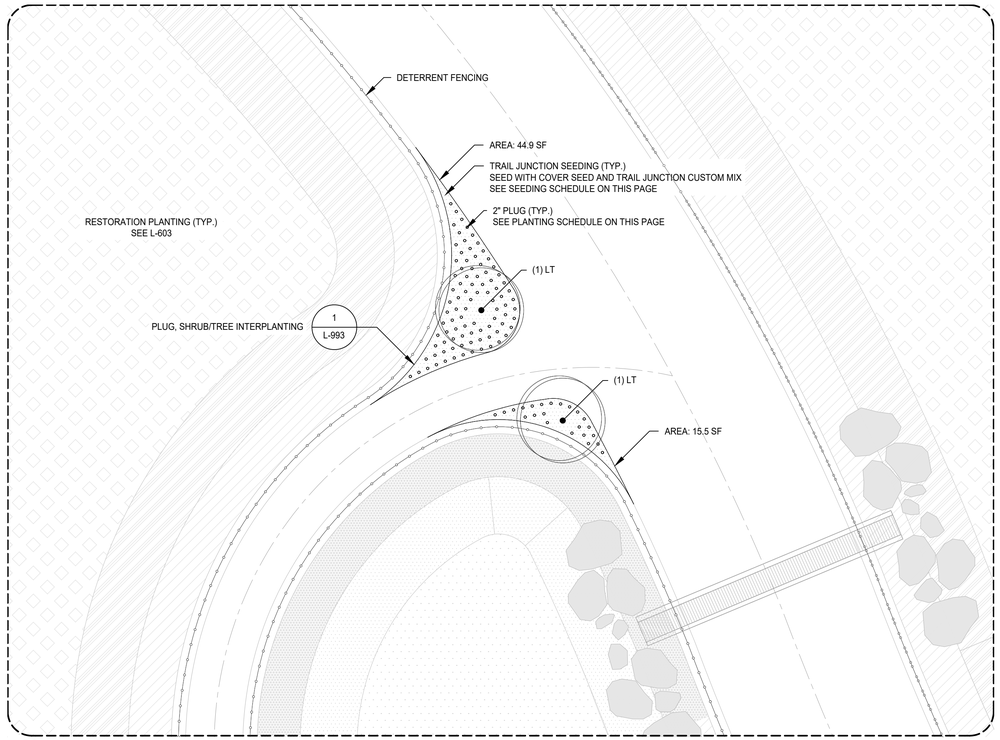

1 TRAIL JUNCTION PLANTING ENLARGEMENT PLAN 3

SCALE: 1" = 5'-0"

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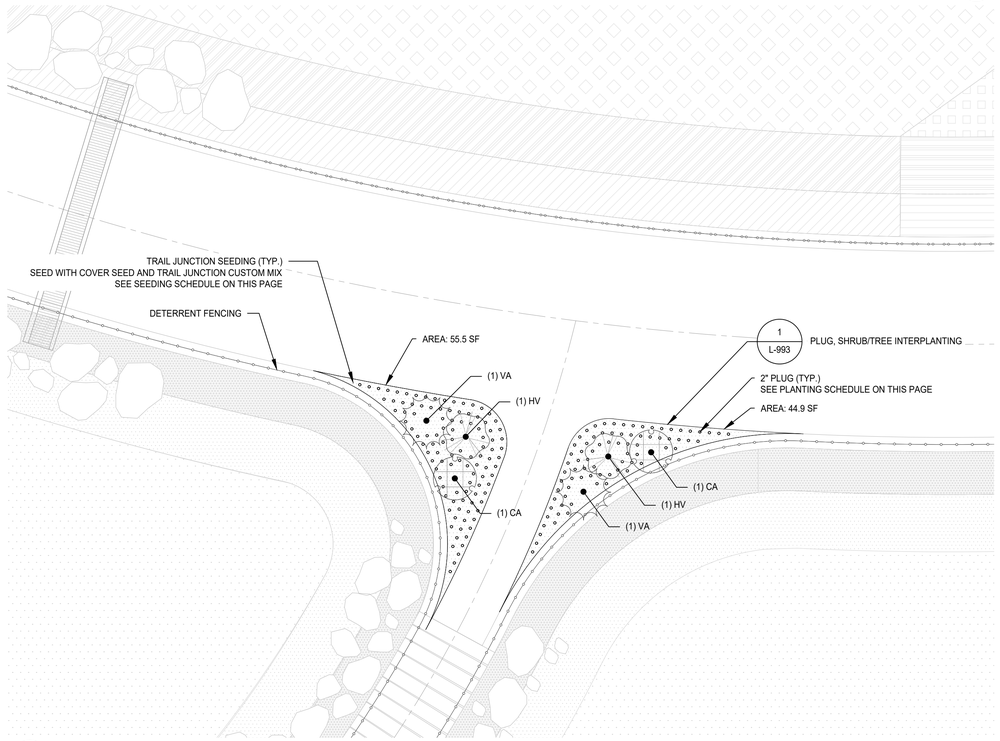


2 TRAIL JUNCTION PLANTING ENLARGEMENT PLAN 4

SCALE: 1" = 5'-0"

0 5' 10' 20'

TRAIL JUNCTION 3 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
TRAIL JUNCTION CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 3 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
2	LT	*LIRIODENDRON TULIPIFERA*	TULIP TREE	3 GAL.	3 GAL.		
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
23	Asc syr	EURYBIA DIVARICATA	WHIE WOOD ASTER	2" PLUG	PLUG	12" O.C.	
22	Sil ste	SILENE STELLATA	STARRY CAMPION	2" PLUG	PLUG	12" O.C.	
22	Mai can	MAIANTHEMUM CANADENSE	CANADA MAYFLOWER	2" PLUG	PLUG	12" O.C.	
22	Mit rep	MITCHELLA REPENS	PARTRIDGE BERRY	2" PLUG	PLUG	12" O.C.	
22	Dic cuc	DICENTRA CUCULLARIA	DUTCHMAN'S BREECHES	2" PLUG	PLUG	12" O.C.	

TRAIL JUNCTION 4 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
TRAIL JUNCTION CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 4 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
2	HV	HAMAMELIS VIRGINIANA	AMERICAN WITHC-HAZEL	3 GAL.	3 GAL.	3' O.C.	
2	VA	VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	3 GAL.	3 GAL.	3' O.C.	
2	CA	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	3 GAL.	3 GAL.	3' O.C.	
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
61	Ara nud	ARALIA NUDICAULIS	WILD SARSAPARILLA	2" PLUG	PLUG	12" O.C.	
61	The nov	THELYPTERIS NOVEBORACENSIS	NEW YORK FERN	2" PLUG	PLUG	12" O.C.	
62	Car app	CAREX APPALACHICA	APPALACHIAN SEDGE	2" PLUG	PLUG	12" O.C.	

LEGEND

PLANTING ZONE 2

ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - INSIDE DEER FENCE (ZONE 2A_I) TOTAL SITE WIDE AREA: 1,891 SF

ZONE 2 TRAIL CORRIDOR FOREST EDGE - INSIDE DEER FENCE (ZONE 2B_I) TOTAL SITE WIDE AREA: 2,525 SF

ZONE 2 RESTORATION BUFFER - INSIDE DEER FENCE (ZONE 2C_I) TOTAL SITE WIDE AREA: 47,823 SF

PLANTING ZONE 3

ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF

ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF

ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

WET ADAPTIVE PLANTING

WET ADAPTIVE TRAIL CORRIDOR HERBABEOUS SLOPE (WA_A) TOTAL SITE WIDE AREA: 6,216 SF

WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B2) TOTAL SITE WIDE AREA: 2,458 SF

WET ADAPTIVE RESTORATION BUFFER (WA_C2) TOTAL SITE WIDE AREA: 15,841 SF

FENCING & BARRIERS

DETERRENT FENCING

OTHER

EXISTING PLANTING AREAS TO REMAIN

TRAIL JUNCTION PLANTING

TRAIL JUNCTION SEEDING SITE WIDE AREA: 764 SF

2" PLUG

PROPOSED TREES

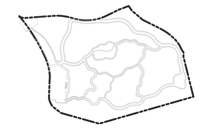
PROPOSED SHRUBS

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 3 & 4

PROJECT NO	SHEET NO
2345.1	
SCALE	**L-614**
1" = 5'-0"	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

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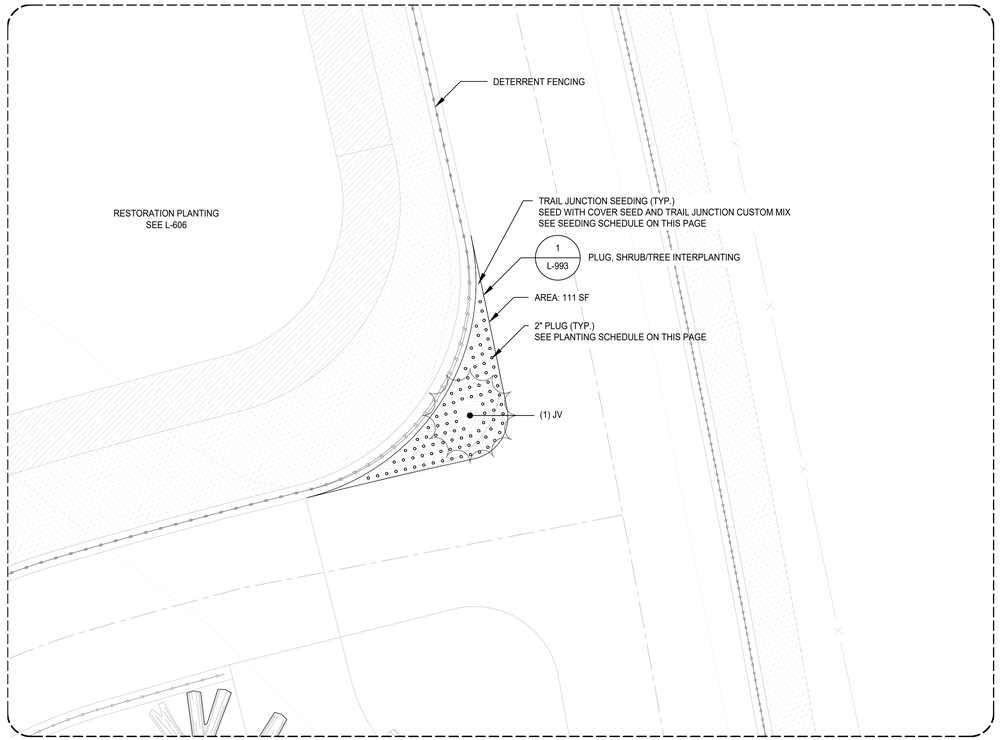

1 TRAIL JUNCTION PLANTING ENLARGEMENT PLAN 5

SCALE: 1" = 5'-0"

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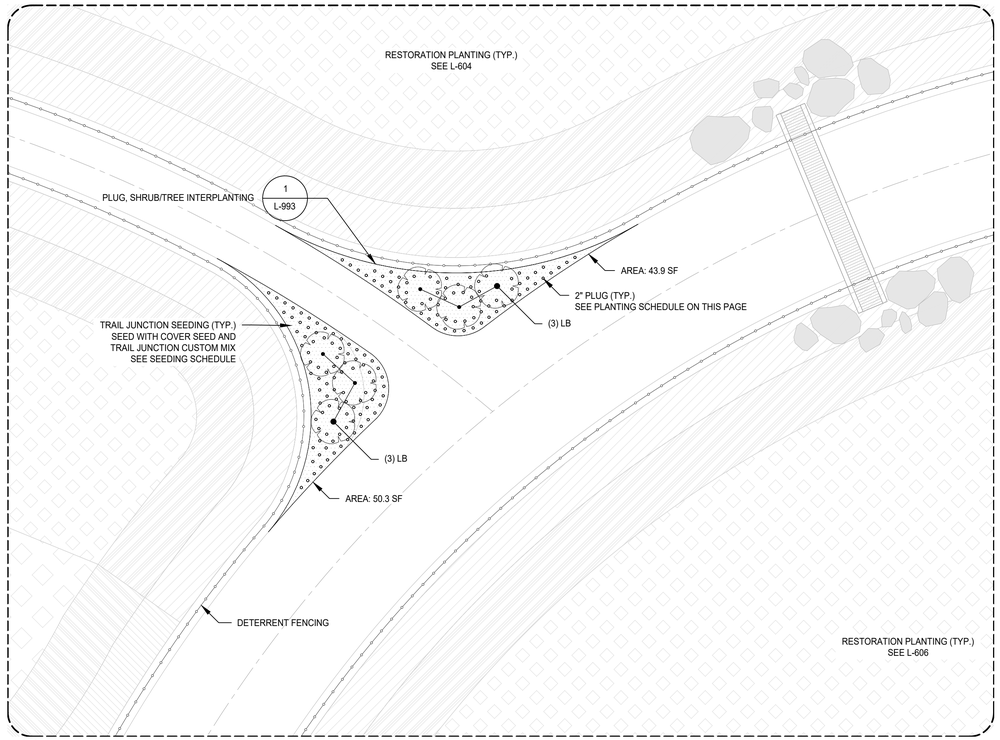


2 TRAIL JUNCTION PLANTING ENLARGEMENT PLAN 6

SCALE: 1" = 5'-0"

0 5' 10' 20'

TRAIL JUNCTION 5 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
TRAIL JUNCTION CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 5 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
1	JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	3 GAL.	3 GAL.		
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
42	Sch sco	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	2" PLUG	PLUG	12" O.C.	
42	Par qui	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	2" PLUG	PLUG	12" O.C.	

TRAIL JUNCTION 6 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
TRAIL JUNCTION CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 6 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
6	LB	LINDERA BENZOIN	SPICEBUSH	3 GAL.	3 GAL.	3' O.C.	
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
22	Sol cae	SOLIDAGO CAESIA	BLUE-STEMMED GOLDENROD	2" PLUG	PLUG	12" O.C.	
22	Ziz apt	ZIZIA APTERA	HEART-LEAF GOLDEN ALEXANDER	2" PLUG	PLUG	12" O.C.	
22	Vio sor	VIOLA SORORIA	COMMON VIOLET	2" PLUG	PLUG	12" O.C.	
23	Car app	CAREX APPALACHICA	APPALACHIAN SEDGE	2" PLUG	PLUG	12" O.C.	

LEGEND

PLANTING ZONE 2

ZONE 2 TRAIL CORRIDOR HERBACEOUS SLOPE - OUTSIDE DEER FENCE (ZONE 2A_I) TOTAL SITE WIDE AREA: 1,891 SF

ZONE 2 TRAIL CORRIDOR FOREST EDGE - OUTSIDE DEER FENCE (ZONE 2B_O) TOTAL SITE WIDE AREA: 1,589 SF

ZONE 2 RESTORATION BUFFER - OUTSIDE DEER FENCE (ZONE 2C_O TOTAL SITE WIDE AREA: 14,501 SF

PLANTING ZONE 3

ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF

ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF

ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

PLANTING ZONE 4

ZONE 4 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 4A) TOTAL SITE WIDE AREA: 5,137 SF

ZONE 4 TRAIL CORRIDOR FOREST EDGE (ZONE 4B) TOTAL SITE WIDE AREA: 5,400 SF

ZONE 4 RESTORATION BUFFER (ZONE 4C)TOTAL SITE WIDE AREA: 110,415 SF

FENCING & BARRIERS

DETERRENT FENCING

OTHER

EXISTING PLANTING AREAS TO REMAIN

TRAIL JUNCTION PLANTING

TRAIL JUNCTION SEEDING SITE WIDE AREA: 764 SF

2" PLUG

PROPOSED TREES

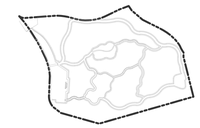
PROPOSED SHRUBS

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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2349.1	L-615
SCALE	
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DRAWN BY	
EDD	
CHECKED BY	
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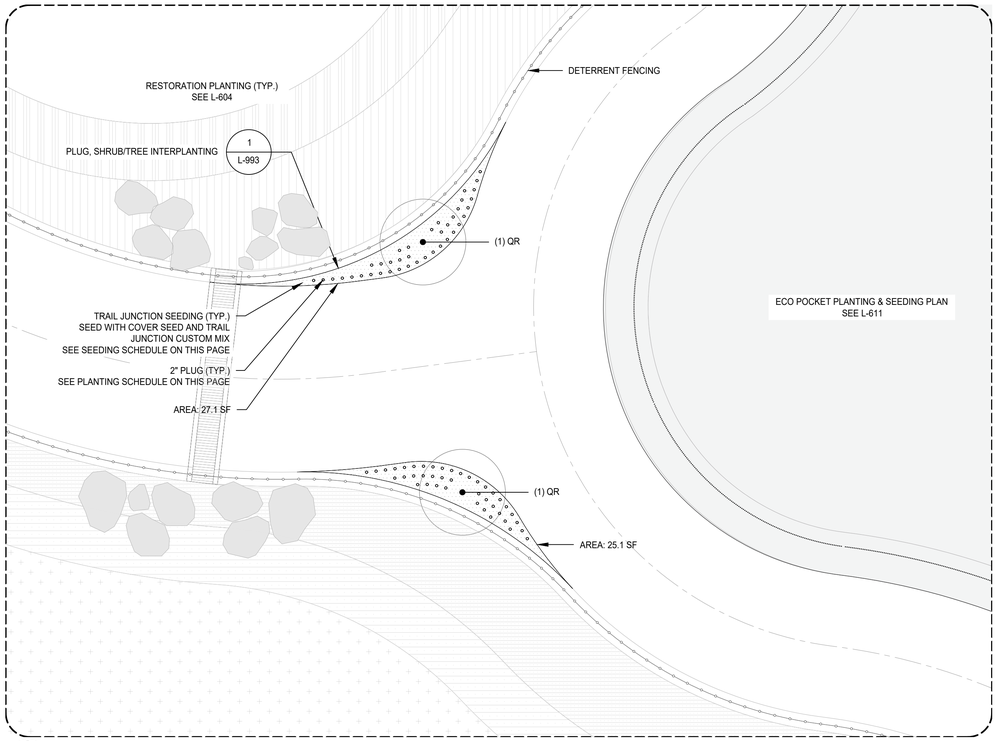
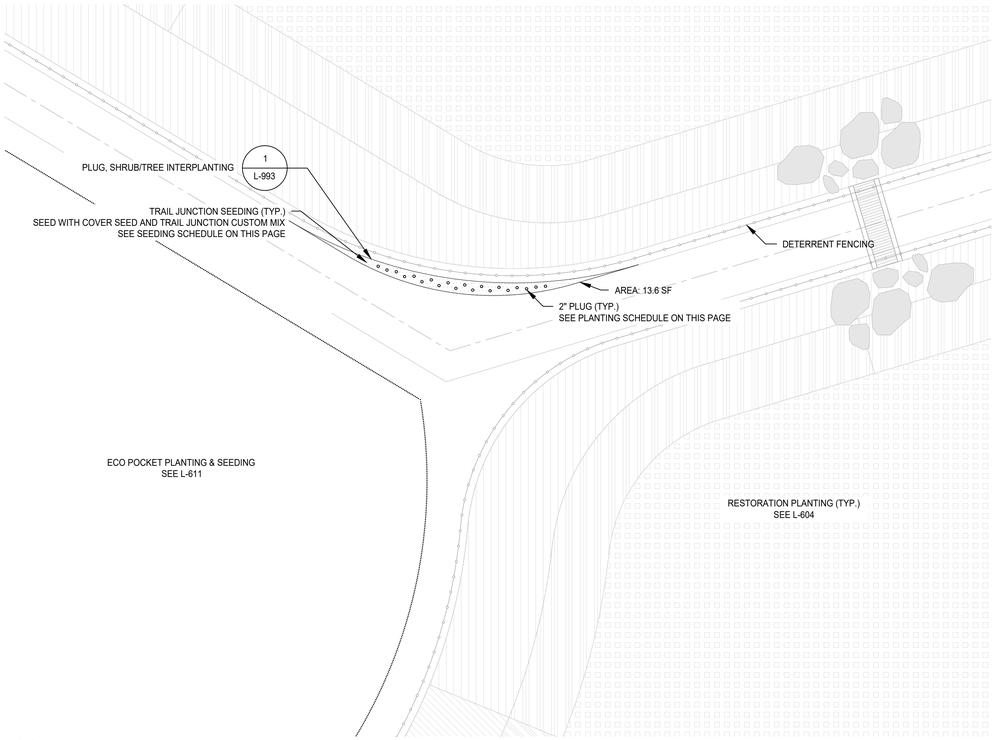


1 TRAIL JUNCTION PLANTING ENLARGEMENT PLAN 7

SCALE: 1" = 5'-0"

0 5' 10' 20'



2 TRAIL JUNCTION PLANTING ENLARGEMENT PLAN 8

SCALE: 1" = 5'-0"

0 5' 10' 20'

TRAIL JUNCTION 7 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
TRAIL JUNCTION CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 7 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
2	QR	QUERCUS RUBRA	NORTHERN RED OAK	3 GAL.	3 GAL.		
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
40	Sol nem	SOLIDAGO NEMORALIS	GRAY GOLDENROD	2" PLUG	PLUG	12" O.C.	
40	Par qui	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	2" PLUG	PLUG	12" O.C.	

TRAIL JUNCTION 8 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
TRAIL JUNCTION CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 8 PLANTING SCHEDULE

GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
5	Asc exa	ASCLEPIAS EXALTATA	POKE MILKWEED	2" PLUG	PLUG	12" O.C.	
5	Asc var	ASCLEPIAS VARIEGATA	REDRING MILKWEED	2" PLUG	PLUG	12" O.C.	
5	Asc pur	ASCLEPIAS PURPURASCENS	PURPLE MILKWEED	2" PLUG	PLUG	12" O.C.	
5	Asc ver	ASCLEPIAS VERTICILLATA	WHORLED MILKWEED	2" PLUG	PLUG	12" O.C.	

LEGEND

ZONE 1

ZONE 1 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 1A) TOTAL SITE WIDE AREA: 6,533 SF

ZONE 1 TRAIL CORRIDOR FOREST EDGE (ZONE 1B) TOTAL SITE WIDE AREA: 5,177 SF

ZONE 1 RESTORATION BUFFER (ZONE 1C) TOTAL SITE WIDE AREA: 43,735 SF

ZONE 5

ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A) TOTAL SITE WIDE AREA: 6,038 SF

ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 5B) TOTAL SITE WIDE AREA: 7,264 SF

FENCING & BARRIERS

DETERRENT FENCING

LANDSCAPE PROTECTION FENCING

OTHER

EXISTING PLANTING AREAS TO REMAIN

TRAIL JUNCTION PLANTING

TRAIL JUNCTION SEEDING SITE WIDE AREA: 764 SF

2" PLUG

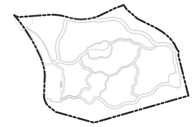
PROPOSED TREE

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 7 & 8

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 5'-0"	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

L-616

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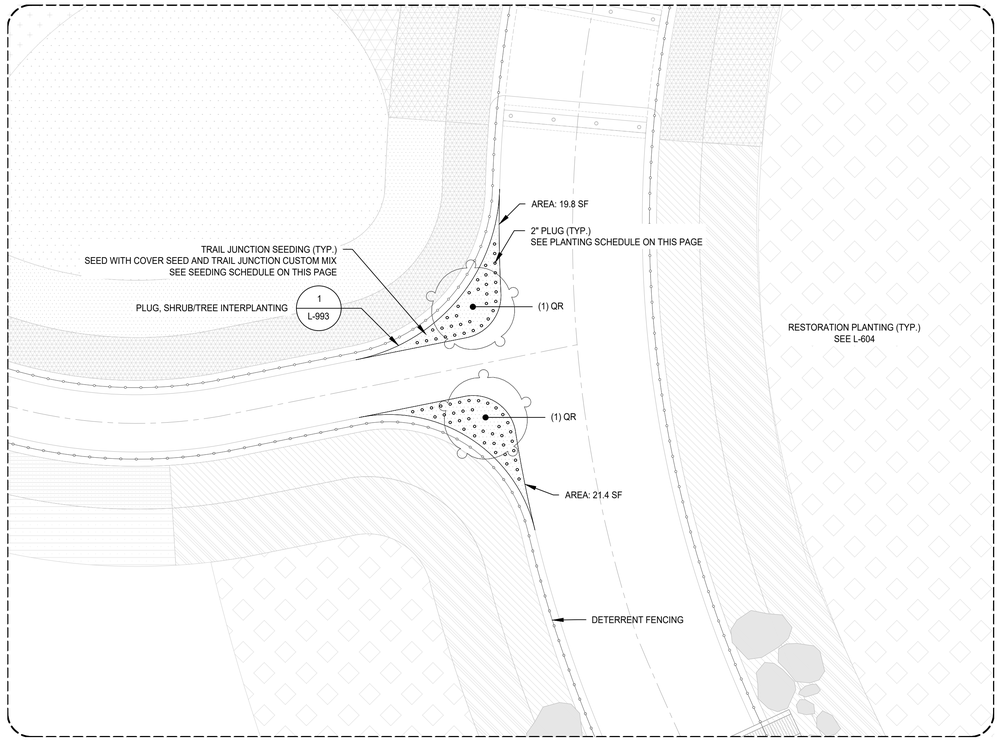
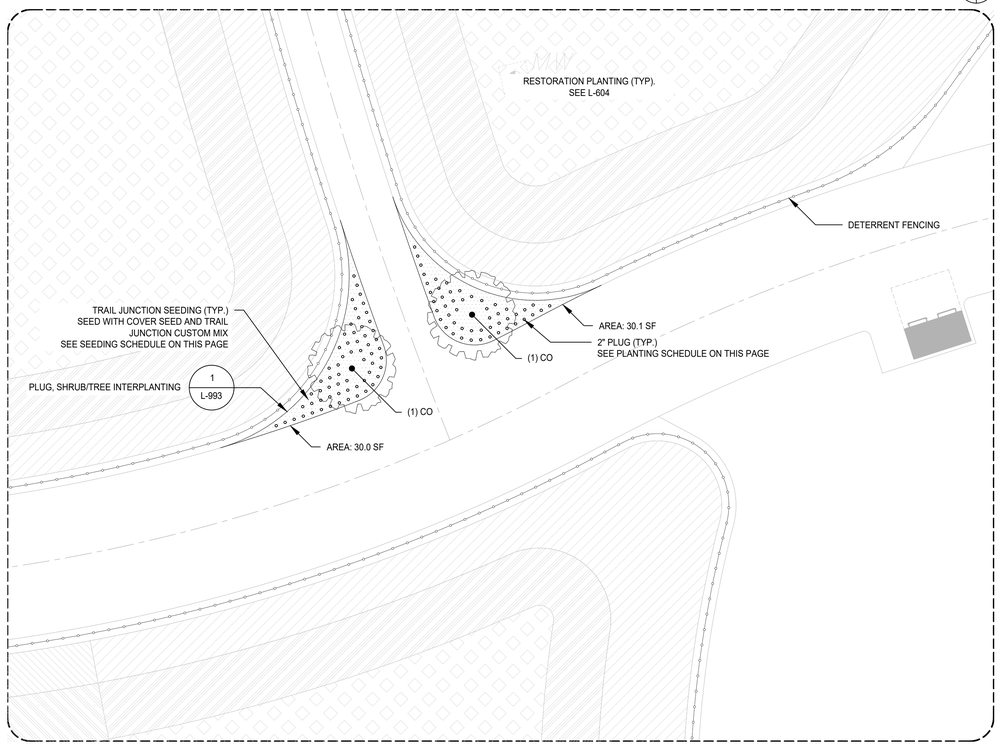


1 RESTORATION PLAN - JUNCTION 9

SCALE: 1" = 5'-0"

0 5' 10' 20'



2 RESTORATION PLAN - JUNCTION 10

SCALE: 1" = 5'-0"

0 5' 10' 20'

TRAIL JUNCTION 9 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
TRAIL JUNCTION CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 9 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
2	QB	QUERCUS BICOLOR	SWAMP WHITE OAK	3 GAL.	3 GAL.		
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
11	Ver has	VERBENA HASTATA	SWAMP VERBENA	2" PLUG	PLUG	12" O.C.	
11	Asc inc	ASCLEPIAS INCARNATA	SWAMP MILKWEED	2" PLUG	PLUG	12" O.C.	
11	Car gra	CAREX GRAYI	GRAY'S SEDGE	2" PLUG	PLUG	12" O.C.	

TRAIL JUNCTION 10 SEEDING SCHEDULE

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
COVER SEED	AVENA SATIVA	OATS	50.0%
	SECALE CEREALE	WINTER RYE	50.0%

NOTE: COVER SEED SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 5 LBS/ACRE EACH.

SEED MIX	BOTANICAL NAME	COMMON NAME	PERCENT OF MIX
TRAIL JUNCTION CUSTOM MIX	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	20.0%
	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	20.0%
	AQUILEGIA CANADENSIS	WILD COLUMBINE	20.0%
	POLEMONIUM REPTANS	JACOB'S LADDER	20.0%
	PACKERA AUREA	GOLDEN RAGWORT	20.0%

NOTE: SEED MIX SHALL BE HAND SPREAD AND RAKED TO INCORPORATE SEED INTO THE TOP HALF INCH OF SANDY PLANTING MEDIUM AT AN APPLICATION RATE OF 10 LBS/ACRE.

TRAIL JUNCTION 10 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
2	CO	CARYA OVATA	SHAGBARK HICKORY	3 GAL.	3 GAL.		
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
11	Hel div	HELIANTHUS DIVARICATUS	WOODLAND SUNFLOWER	2" PLUG	PLUG	12" O.C.	
11	Vio sor	VIOLA SORORIA	COMMON VIOLET	2" PLUG	PLUG	12" O.C.	
11	Par qui	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	2" PLUG	PLUG	12" O.C.	

LEGEND

PLANTING ZONE 3

- ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF
- ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF
- ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

PLANTING ZONE 4

- ZONE 4 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 4A) TOTAL SITE WIDE AREA: 5,137 SF
- ZONE 4 TRAIL CORRIDOR FOREST EDGE (ZONE 4B) TOTAL SITE WIDE AREA: 5,400 SF
- ZONE 4 RESTORATION BUFFER (ZONE 4C)TOTAL SITE WIDE AREA: 110,415 SF

PLANTING ZONE 5

- ZONE 5 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 5A) TOTAL SITE WIDE AREA: 6,038 SF
- ZONE 5 TRAIL CORRIDOR FOREST EDGE (ZONE 5B) TOTAL SITE WIDE AREA: 7,264 SF

WET ADAPTIVE PLANTING

- WET ADAPTIVE TRAIL CORRIDOR HERBABEOUS SLOPE (WA_A) TOTAL SITE WIDE AREA: 6,216 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B1) TOTAL SITE WIDE AREA: 3,782 SF
- WET ADAPTIVE TRAIL CORRIDOR FOREST EDGE (WA_B2) TOTAL SITE WIDE AREA: 2,458 SF
- WET ADAPTIVE RESTORATION BUFFER (WA_C2) TOTAL SITE WIDE AREA: 15,841 SF

FENCING & BARRIERS

- DETERRENT FENCING

OTHER

- EXISTING PLANTING AREAS TO REMAIN

TRAIL JUNCTION PLANTING

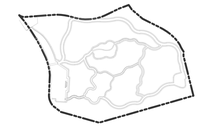
- TRAIL JUNCTION SEEDING SITE WIDE AREA: 764 SF
- 2" PLUG
- PROPOSED TREES

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

TRAIL JUNCTION PLANTING ENLARGEMENT PLANS 9 & 10

PROJECT NO	2365.1
SCALE	1" = 5'-0"
DRAWN BY	EDD
CHECKED BY	EDD
DATE	12/15/2025

SHEET NO

L-617

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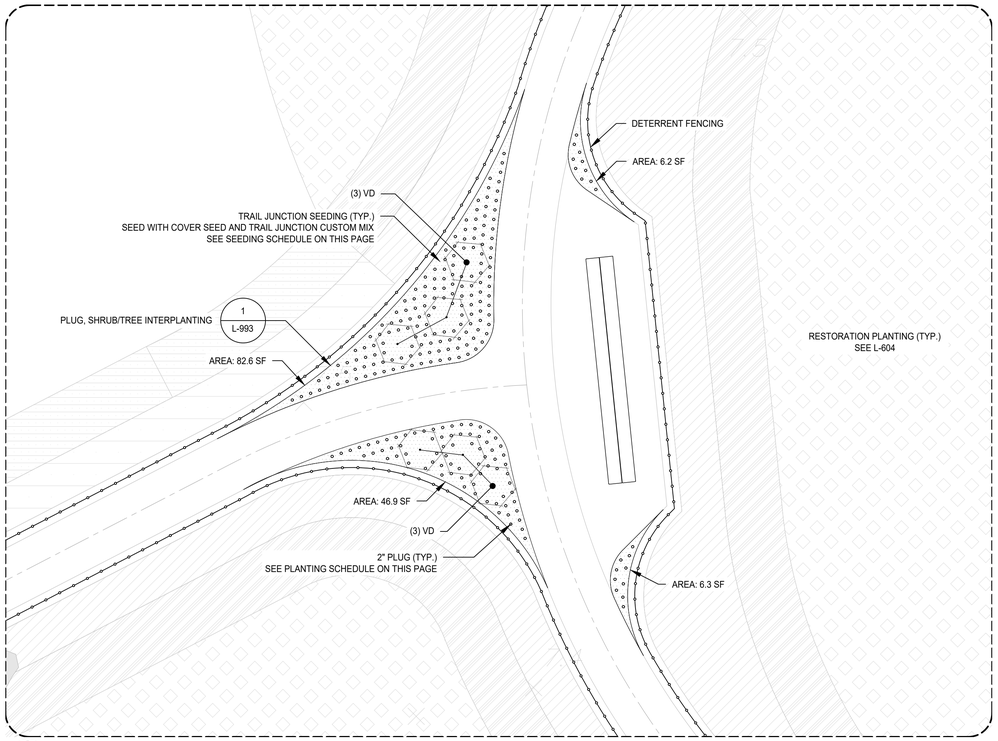


1 TRAIL JUNCTIONPLANTING ENLARGEMENT PLAN 11

SCALE: 1" = 5'-0"

0 5' 10' 20'

TRAIL JUNCTION 11 PLANTING SCHEDULE

TREES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
6	VD	VIBURNUM DENTATUM	ARROWWOOD	3 GAL.	3 GAL.	3' O.C.	
GROUNDCOVER MIXES							
QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
86	Car pen	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	2" PLUG	PLUG	12" O.C.	
85	Vio hir	VIOLA HIRSUTULA	SOUTHERN WOOD VIOLET	2" PLUG	PLUG	12" O.C.	
85	Sym cor	SYMPHYOTRICHUM CORDIFOLIUM	BLUE WOOD ASTER	2" PLUG	PLUG	12" O.C.	

LEGEND

ZONE 3

ZONE 3 TRAIL CORRIDOR HERBACEOUS SLOPE (ZONE 3A) TOTAL SITE WIDE AREA: 15,161 SF

ZONE 3 TRAIL CORRIDOR FOREST EDGE (ZONE 3B) TOTAL SITE WIDE AREA: 17,743 SF

ZONE 3 RESTORATION BUFFER (ZONE 3C) TOTAL SITE WIDE AREA: 171,992 SF

FENCING & BARRIERS

DETERRENT FENCING

LANDSCAPE PROTECTION FENCING

OTHER

EXISTING PLANTING AREAS TO REMAIN

TRAIL JUNCTION PLANTING

TRAIL JUNCTION SEEDING SITE WIDE AREA: 764 SF

2" PLUG

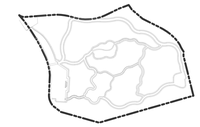
PROPOSED SHRUBS

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

TRAIL JUNCTION PLANTING ENLARGEMENT PLAN 11

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 5'-0"	
DRAWN BY	
EDD	**L-618**
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EDD	
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PLANTING SCHEDULE - ENTRY PLAZA, ENTRY ROAD, PARKING LOT, GATHER POCKET, AND LEARN POCKET (L-614 - L-619)

TREES

QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	ROOTBALL Ø	REMARKS
4	AR2	ACER RUBRUM	RED MAPLE	4" CAL.	B&B	42"	LIMBED UP 8' CLEAR
8	AR	ACER RUBRUM	RED MAPLE	5" CAL.	B&B	54"	
5	BP2	BETULA POPULIFOLIA	GRAY BIRCH	12-14` HT.	B&B	44"	MULTI-STEM
24	BP1	BETULA POPULIFOLIA	WHITESPIRE GRAY BIRCH	8-10` HT.	B&B	32"	MULTI-STEM
3	IO2	ILEX OPACA	AMERICAN HOLLY	10-12` HT.	B&B	38"	LOOSE, IRREGULAR FORM,
1	IO	ILEX OPACA	AMERICAN HOLLY	8-10` HT.	B&B	32"	LOOSE, IRREGULAR FORM
7	LT	LIRIODENDRON TULIPIFERA	TULIP TREE	5" CAL.	B&B	54"	
5	PV	PINUS VIRGINIANA	VIRGINIA PINE	5" CAL.	B&B	54"	
7	QV	QUERCUS VELUTINA	BLACK OAK	5" CAL.	B&B	54"	LIMBED UP 8' CLEAR
23	RT	RHUS TYPHINA	STAGHORN SUMAC	6-8` HT.	B&B	24"	
2	SA2	SASSAFRAS ALBIDUM	SASSAFRAS	2.5"-3" CAL.	B&B	32"	LOOSE, IRREGULAR FORM
4	SA	SASSAFRAS ALBIDUM	SASSAFRAS	2"-2.5" CAL.	B&B	28"	LOOSE, IRREGULAR FORM

SHRUB & GROUNDCOVER MIXES

QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	REMARKS
2203 SQ FT		**SWITCHGRASS ENTRY MIX**					
183	Ach mil2	ACHILLEA MILLEFOLIUM	COMMON YARROW	PLUG	PLUG	8% @ 12" o.c.	
183	Ana mar	ANAPHALIS MARGARITACEA	PEARLY EVERLASTING	1 GAL.	CONT.	8% @ 12" o.c.	
183	Asc tub	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	PLUG	PLUG	8% @ 12" o.c.	
229	Bou gra	BOUTELOUA GRACILIS	BLUE GRAMA GRASS	PLUG	PLUG	10% @ 12" o.c.	
20	Com per	COMPTONIA PEREGRINA	SWEET FERN	3 GAL.	CONT.	8% @ 36" o.c.	
20	Ile ver	ILEX VERTICILLATA	WINTERBERRY	3 GAL.	CONT.	8% @ 36" o.c.	
7	Jun eas	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	7 GAL.	CONT.	5% @ 48" o.c.	
114	Lia spi	LIATRIS SPICATA	BLAZING STAR	1 GAL.	CONT.	5% @ 12" o.c.	
570	Pan vir	PANICUM VIRGATUM	SWITCH GRASS	1 GAL.	CONT.	25% @ 12" o.c.	
342	Sch sco	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1 GAL.	CONT.	15% @ 12" o.c.	
375 SQ FT		**ENTRY BORDER MIX**					
5	Com per	COMPTONIA PEREGRINA	SWEET FERN	3 GAL.	CONT.	12% @ 36" o.c.	
6	Jun yrg	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL JUNIPER	3 GAL.	CONT.	13% @ 36" o.c.	
13	Mat str	MATTEUCCIA STRUTHIOPTERIS	OSTRICH FERN	1 GAL.	CONT.	13% @ 24" o.c.	
5	Myr pen	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	5 GAL.	CONT.	12% @ 36" o.c.	
47	Ono sen	ONOCLEA SENSIBILIS	SENSITIVE FERN	1 GAL.	CONT.	12% @ 12" o.c.	
6	Pru mar	PRUNUS MARITIMA	BEACH PLUM	3 GAL.	3 GAL.	13% @ 36" o.c.	
47	Sor nut	SORGHASTRUM NUTANS	INDIAN GRASS	1 GAL.	CONT.	12% @ 12" o.c.	
51	Xan yel	XANTHORHIZA SIMPLICISSIMA	YELLOWROOT	1 GAL.	CONT.	13% @ 12" o.c.	
2627 SQ FT		**SWITCHGRASS BORDER MIX**					
136	Asc tub	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	PLUG	PLUG	5% @ 12" o.c.	
219	Ech pur	ECHINACEA PURPUREA	CONEFLOWER	PLUG	PLUG	8% @ 12" o.c.	
136	Eri uus	ERIGERON ANNUUS	ANNUAL FLEABANE	PLUG	PLUG	5% @ 12" o.c.	
136	Eup coe	EUPATORIUM COELESTINUM	BLUE MISTFLOWER	PLUG	PLUG	5% @ 12" o.c.	
136	Hel aut	HELENIUM AUTUMNALE	SNEEZEWEED	PLUG	PLUG	5% @ 12" o.c.	
219	Mon ber	MONARDA FISTULOSA	BERGAMOT	PLUG	PLUG	8% @ 12" o.c.	
682	Pan vi2	PANICUM VIRGATUM	SWITCH GRASS	PLUG	PLUG	25% @ 12" o.c.	
219	Pyc vir	PYCNANTHEMUM VIRGINIANUM	MOUNTAIN MINT	PLUG	PLUG	8% @ 12" o.c.	
410	Sch sc2	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	PLUG	PLUG	15% @ 12" o.c.	
219	Sol ear	SOLIDAGO JUNCEA	EARLY GOLDENROD	PLUG	PLUG	8% @ 12" o.c.	
219	Sym no2	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	PLUG	PLUG	8% @ 12" o.c.	
17114 SQ FT		**ROAD SLOPE MIX**					
17786	Ana mar	ANAPHALIS MARGARITACEA	PEARLY EVERLASTING	1 GAL.	CONT.	12" o.c.	
889	Asc tub	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	PLUG	PLUG	5% @ 12" o.c.	
889	Ech pur	ECHINACEA PURPUREA	CONEFLOWER	PLUG	PLUG	5% @ 12" o.c.	
889	Eri uus	ERIGERON ANNUUS	ANNUAL FLEABANE	PLUG	PLUG	5% @ 12" o.c.	
889	Eup coe	EUPATORIUM COELESTINUM	BLUE MISTFLOWER	PLUG	PLUG	5% @ 12" o.c.	
889	Hel aut	HELENIUM AUTUMNALE	SNEEZEWEED	PLUG	PLUG	5% @ 12" o.c.	
33	Jun eas	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	7 GAL.	CONT.	3% @ 48" o.c.	
99	Myr pen	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	5 GAL.	CONT.	5% @ 36" o.c.	
4446	Pan vi2	PANICUM VIRGATUM	SWITCH GRASS	PLUG	PLUG	25% @ 12" o.c.	
1422	Pyc vir	PYCNANTHEMUM VIRGINIANUM	MOUNTAIN MINT	PLUG	PLUG	8% @ 12" o.c.	
59	Rhu cop	RHUS COPALLINUM	SHINING SUMAC	3 GAL.	CONT.	3% @ 36" o.c.	
2667	Sch sc2	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	PLUG	PLUG	15% @ 12" o.c.	
1422	Sol ear	SOLIDAGO JUNCEA	EARLY GOLDENROD	PLUG	PLUG	8% @ 12" o.c.	
1422	Sym no2	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	PLUG	PLUG	8% @ 12" o.c.	
9002 SQ FT		**BIOSWALE MIX**					
105	Aro mel	ARONIA MELANOCARPA	BLACK CHOKEBERRY	3 GAL.	CONT.	10% @ 36" o.c.	
937	Asc inc	ASCLEPIAS INCARNATA	SWAMP MILKWEED	1 GAL.	CONT.	10% @ 12" o.c.	
937	Car gra	CAREX GRAYI	GRAY'S SEDGE	1 GAL.	CONT.	10% @ 12" o.c.	
937	Car vul	CAREX VULPINOIDEA	FOX SEDGE	1 GAL.	CONT.	10% @ 12" o.c.	
105	Cep occ	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	3 GAL.	CONT.	10% @ 36" o.c.	
105	Die lon	DIERVILLA LONICERA	BUSH HONEYSUCKLE	3 GAL.	CONT.	10% @ 36" o.c.	
105	Ile ver	ILEX VERTICILLATA	WINTERBERRY	3 GAL.	CONT.	10% @ 36" o.c.	
939	Iri ver	IRIS VERSICOLOR	BLUE FLAG	1 GAL.	CONT.	10% @ 12" o.c.	
939	Lia spi	LIATRIS SPICATA	BLAZING STAR	1 GAL.	CONT.	10% @ 12" o.c.	
939	The pal	THELYPTERIS PALUSTRIS	EASTERN MARSH FERN	1 GAL.	CONT.	10% @ 12" o.c.	
4387 SQ FT		**FOREST BUFFER MIX**					
456	Car pyl	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	PLUG	PLUG	10% @ 12" o.c.	
228	Den pun	DENNSTAEDTIA PUNCTILOBULA	HAY-SCENTED FERN	1 GAL.	CONT.	5% @ 12" o.c.	
101	Die lon	DIERVILLA LONICERA	BUSH HONEYSUCKLE	3 GAL.	CONT.	20% @ 36" o.c.	
228	Hel ang	HELIANTHUS ANGUSTIFOLIUS	SWAMP SUNFLOWER	PLUG	PLUG	5% @ 12" o.c.	
228	Ono sen	ONOCLEA SENSIBILIS	SENSITIVE FERN	1 GAL.	CONT.	5% @ 12" o.c.	
1139	Pan vir	PANICUM VIRGATUM	SWITCH GRASS	1 GAL.	CONT.	25% @ 12" o.c.	
228	Rud tri	RUDBECKIA TRILOBA	BROWN EYED SUSAN	PLUG	PLUG	5% @ 12" o.c.	
455	Sor nut	SORGHASTRUM NUTANS	INDIAN GRASS	1 GAL.	CONT.	10% @ 12" o.c.	
455	Xan yel	XANTHORHIZA SIMPLICISSIMA	YELLOWROOT	1 GAL.	CONT.	10% @ 12" o.c.	
228	Ziz aur	ZIZIA AUREA	GOLDEN ALEXANDER	1 GAL.	CONT.	5% @ 12" o.c.	

12057 SQ FT		**ECO-LAWN SOD MIX**					
1809	Crx bla	CAREX BLANDA	WOODLAND SEDGE	SEED	ECO-SOD	15%	
1809	Crx bre	CAREX BREVIOR	OVAL SEDGE	SEED	ECO-SOD	15%	
1809	Crx jam	CAREX JAMESII	JAMES' SEDGE	SEED	ECO-SOD	15%	
1809	Crx pen	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	SEED	ECO-SOD	15%	
603	Chr vir	CHRYSOGONUM VIRGINIANUM	GREEN-AND-GOLD	SEED	ECO-SOD	5%	
1206	Fra vir	FRAGARIA VIRGINIANA	WILD STRAWBERRY	SEED	ECO-SOD	10%	
1206	Gla can	GLANDULARIA CANADENSIS	ROSE VERBENA	SEED	ECO-SOD	10%	
603	Tri rep	TRIFOLIUM REPENS	WHITE CLOVER	SEED	ECO-SOD	5%	
1206	Vio sor	VIOLA SORORIA	WOOLLY BLUE VIOLET	SEED	ECO-SOD	10%	
6788 SQ FT		**MOWABLE MEADOW MIX**					
706	Ach mil2	ACHILLEA MILLEFOLIUM	COMMON YARROW	PLUG	PLUG	10% @ 12" o.c.	
352	Asc tub	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	PLUG	PLUG	5% @ 12" o.c.	
1412	Bou gra	BOUTELOUA GRACILIS	BLUE GRAMA GRASS	PLUG	PLUG	20% @ 12" o.c.	
706	Car ovl	CAREX BREVIOR	OVAL SEDGE	PLUG	PLUG	10% @ 12" o.c.	
1058	Car pyl	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	PLUG	PLUG	15% @ 12" o.c.	
352	Jun ten	JUNCUS TENUIS	PATH RUSH	PLUG	PLUG	5% @ 12" o.c.	
352	Pen dig	PENSTEMON DIGITALIS	BEARDTONGUE	PLUG	PLUG	5% @ 12" o.c.	
352	Pen hai	PENSTEMON HIRSUTUS	HAIRY BEARDTONGUE	PLUG	PLUG	5% @ 12" o.c.	
352	Rud tri	RUDBECKIA TRILOBA	BROWN EYED SUSAN	PLUG	PLUG	5% @ 12" o.c.	
352	Sol nem	SOLIDAGO NEMORALIS	GRAY GOLDENROD	PLUG	PLUG	5% @ 12" o.c.	
1058	Spo het	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	PLUG	PLUG	15% @ 12" o.c.	
4747 SQ FT		**GATHER SHRUB BORDER MIX**					
9	Ara spi	ARALIA SPINOSA	DEVIL'S WALKINGSTICK	5 GAL.	CONT.	3% @ 48" o.c.	
66	Cep oc2	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	3 GAL.	CONT.	12% @ 36" o.c.	
15	Cor ame	CORYLUS AMERICANA	AMERICAN HAZELNUT	7 GAL.	CONT.	5% @ 48" o.c.	
83	Die lon	DIERVILLA LONICERA	BUSH HONEYSUCKLE	3 GAL.	CONT.	15% @ 36" o.c.	
66	Ile gla	ILEX GLABRA	INKBERRY HOLLY	3 GAL.	CONT.	12% @ 36" o.c.	
66	Ile ver	ILEX VERTICILLATA	WINTERBERRY	3 GAL.	CONT.	12% @ 36" o.c.	
24	Lin ben	LINDERA BENZOIN	SPICEBUSH	5 GAL.	CONT.	8% @ 48" o.c.	
28	Rhu cop	RHUS COPALLINUM	SHINING SUMAC	3 GAL.	CONT.	5% @ 36" o.c.	
83	Vib den	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	3 GAL.	CONT.	15% @ 36" o.c.	
24	Vib bla	VIBURNUM PRUNIFOLIUM	BLACKHAW VIBURNUM	7 GAL.	CONT.	8% @ 48" o.c.	
28	Vib am2	VIBURNUM TRILOBUM	AMERICAN CRANBERRYBUSH	3 GAL.	CONT.	5% @ 36" o.c.	
694 SQ FT		**MARITIME GRASS MIX**					
72	Ach mil	ACHILLEA MILLEFOLIUM	COMMON YARROW	1 GAL.	CONT.	10% @ 12" o.c.	
72	Ana mar	ANAPHALIS MARGARITACEA	PEARLY EVERLASTING	1 GAL.	CONT.	10% @ 12" o.c.	
217	Pan vir	PANICUM VIRGATUM	SWITCH GRASS	1 GAL.	CONT.	30% @ 12" o.c.	
179	Sch sco	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1 GAL.	CONT.	25% @ 12" o.c.	
72	Sor nut	SORGHASTRUM NUTANS	INDIAN GRASS	1 GAL.	CONT.	10% @ 12" o.c.	
34	Sym lat	SYMPHYOTRICHUM LATERIFLORUM	CALICO ASTER	1 GAL.	CONT.	5% @ 12" o.c.	
72	Sym nov	SYMPHYOTRICHUM NOVI-BELGII	NEW YORK ASTER	1 GAL.	CONT.	10% @ 12" o.c.	
1988 SQ FT		**MARITIME SHRUB MIX**					
14	Bac hal	BACCHARIS HALIMIFOLIA	GROUNDSEL BUSH	5 GAL.	CONT.	11% @ 48" o.c.	
27	Ile gla	ILEX GLABRA	INKBERRY HOLLY	3 GAL.	CONT.	12% @ 36" o.c.	
26	Myr pen	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	5 GAL.	CONT.	11% @ 36" o.c.	
228	Pan vir	PANICUM VIRGATUM	SWITCH GRASS	1 GAL.	CONT.	11% @ 12" o.c.	
26	Pru mar	PRUNUS MARITIMA	BEACH PLUM	3 GAL.	3 GAL.	11% @ 36" o.c.	
26	Rhu cop	RHUS COPALLINUM	SHINING SUMAC	3 GAL.	CONT.	11% @ 36" o.c.	
14	Sal dis	SALIX DISCOLOR	PUSSY WILLOW	5 GAL.	CONT.	11% @ 48" o.c.	
229	Sch sco	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1 GAL.	CONT.	11% @ 12" o.c.	
229	Sym lat	SYMPHYOTRICHUM LATERIFLORUM	CALICO ASTER	1 GAL.	CONT.	11% @ 12" o.c.	

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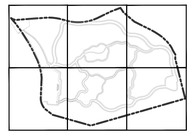
MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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PLANTING ENLARGEMENT SCHEDULES

PROJECT NO	SHEET NO
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SCALE	
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CHECKED BY	**L-620**
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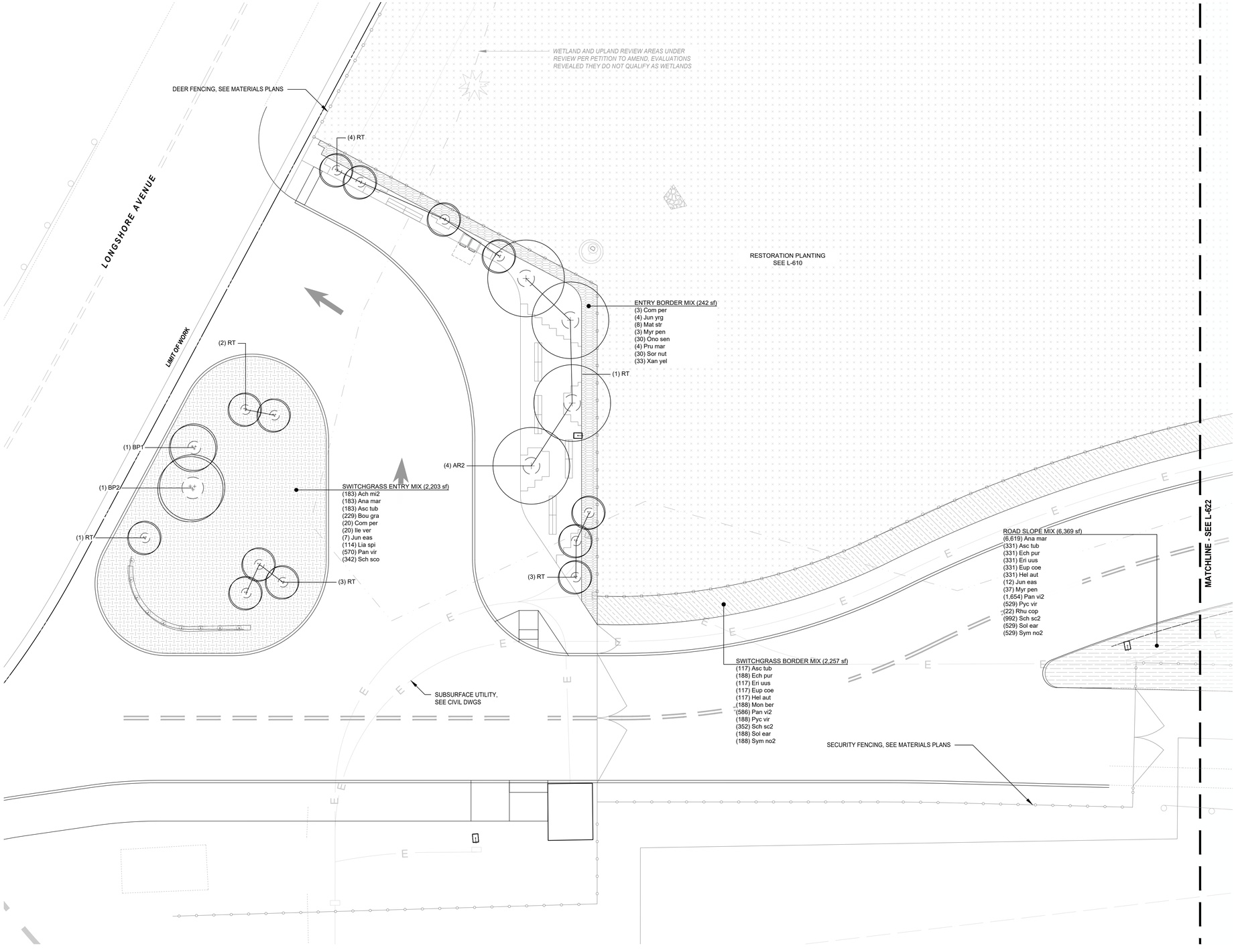

PLANTING LEGEND

TREES	
SYMBOL	DESCRIPTION
	DECIDUOUS CANOPY TREE
	MULTISTEM UNDERSTORY TREE
	CONIFEROUS CANOPY TREE
	CONIFEROUS UNDERSTORY TREE
SHRUB & UNDERSTORY MIXES	
	SWITCHGRASS ENTRY MIX
	ENTRY BORDER MIX
	SWITCHGRASS BORDER MIX
	ROAD SLOPE MIX
	BIOSWALE MIX
	FOREST BUFFER MIX
	ECO-LAWN MIX
	MOWABLE MEADOW MIX
	GATHER SHRUB BORDER MIX
	MARITIME GRASS MIX
	MARITIME SHRUB MIX
SITE FEATURES	
	RESTORATION PLANTING (SEE RESTORATION PLANS, L-600-611)
	EXISTING TREE TO REMAIN & TO BE PROTECTED IN PLACE, SEE TREE PROTECTION PLANS

1 PLANTING ENLARGEMENT PLAN - ENTRY PLAZA
SCALE: 1" = 10'

0 5' 10' 20' 30'

NOTES:
1. SEE **SHEET L-001** FOR GENERAL NOTES AND ABBREVIATIONS.
2. SEE **SHEET L-620** FOR FULL PLANTING SCHEDULE.
3. SEE SHEETS **L-600-618** FOR RESTORATION PLANTING AREAS.

P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLT\L-621 PLANTING ENLARGEMENT PLAN – ENTRY PLAZA.dwg Plotted on: 12/12/2025 2:34:27 PM

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MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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SHEET NAME

PLANTING ENLARGEMENT PLAN - ENTRY PLAZA

PROJECT NO	SHEET NO
2349.1	**L-621**
SCALE	
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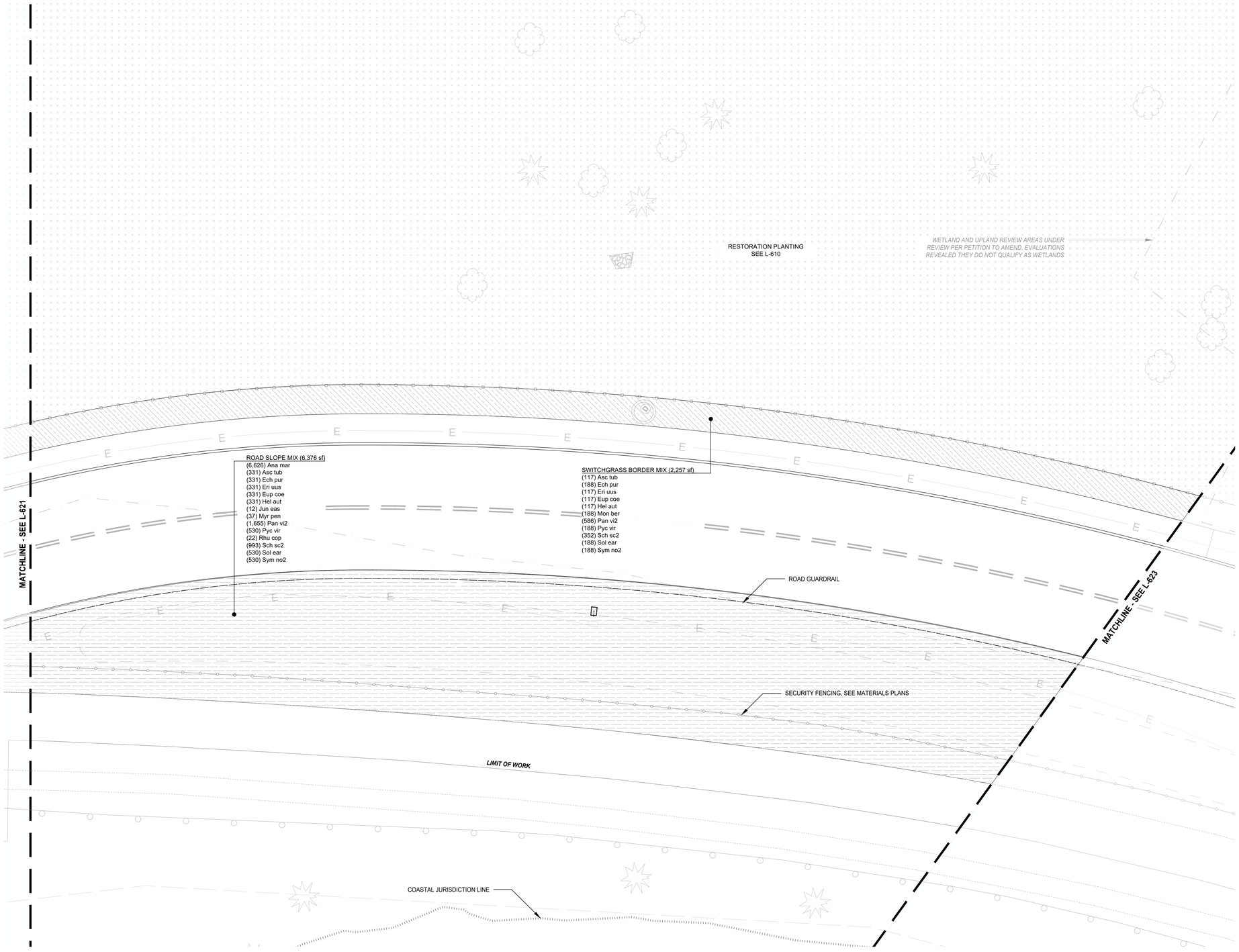

1 PLANTING ENLARGEMENT PLAN - ENTRY ROAD
SCALE: 1" = 120'_XREF

0 5' 10' 20' 30'

PLANTING LEGEND

TREES	
SYMBOL	DESCRIPTION
	DECIDOUS CANOPY TREE
	MULTISTEM UNDERSTORY TREE
	CONIFEROUS CANOPY TREE
	CONIFEROUS UNDERSTORY TREE
SHRUB & UNDERSTORY MIXES	
	SWITCHGRASS ENTRY MIX
	ENTRY BORDER MIX
	SWITCHGRASS BORDER MIX
	ROAD SLOPE MIX
	BIOSWALE MIX
	FOREST BUFFER MIX
	ECO-LAWN MIX
	MOWABLE MEADOW MIX
	GATHER SHRUB BORDER MIX
	MARITIME GRASS MIX
	MARITIME SHRUB MIX
SITE FEATURES	
	RESTORATION PLANTING (SEE RESTORATION PLANS, L-600-611)
	EXISTING TREE TO REMAIN & TO BE PROTECTED IN PLACE, SEE TREE PROTECTION PLANS

NOTES:
1. SEE **SHEET L-001** FOR GENERAL NOTES AND ABBREVIATIONS.
2. SEE **SHEET L-620** FOR FULL PLANTING SCHEDULE.
3. SEE SHEETS **L-600-618** FOR RESTORATION PLANTING AREAS.

P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLT\L-621 PLANTING ENLARGEMENT PLAN – ENTRY PLAZA.dwg Plotted on: 12/12/2025 2:34:58 PM

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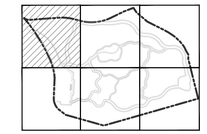
NORTH FOREST
NORWALK, CT

KEY PLAN



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SHEET NAME

PLANTING ENLARGEMENT PLAN - ENTRY ROAD

PROJECT NO	SHEET NO
2349.1	
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1" = 10'	
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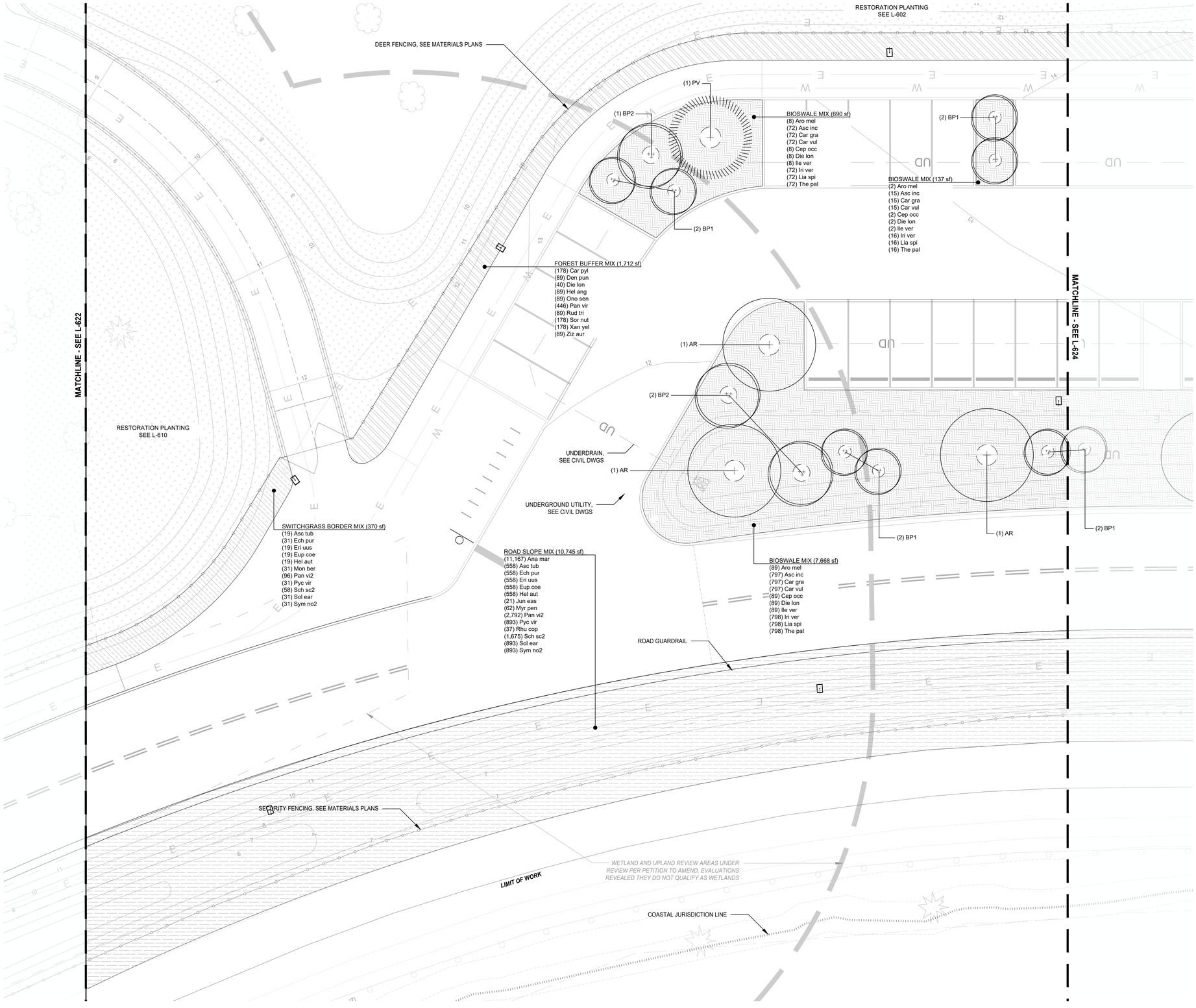


1 PLANTING ENLARGEMENT PLAN - ENTRY AND PARKING AREA
SCALE: 1" = 10'

0 5' 10' 20' 30'

NOTES:
1. SEE **SHEET L-001** FOR GENERAL NOTES AND ABBREVIATIONS.
2. SEE **SHEET L-620** FOR FULL PLANTING SCHEDULE.
3. SEE SHEETS **L-600-618** FOR RESTORATION PLANTING AREAS.

PLANTING LEGEND

TREES

SYMBOL	DESCRIPTION
	DECIDUOUS CANOPY TREE
	MULTISTEM UNDERSTORY TREE
	CONIFEROUS CANOPY TREE
	CONIFEROUS UNDERSTORY TREE

SHRUB & UNDERSTORY MIXES

	SWITCHGRASS ENTRY MIX
	ENTRY BORDER MIX
	SWITCHGRASS BORDER MIX
	ROAD SLOPE MIX
	BIOSWALE MIX
	FOREST BUFFER MIX
	ECO-LAWN MIX
	MOWABLE MEADOW MIX
	GATHER SHRUB BORDER MIX
	MARITIME GRASS MIX
	MARITIME SHRUB MIX

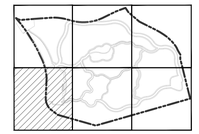
SITE FEATURES

	RESTORATION PLANTING (SEE RESTORATION PLANS, L-600-611)
	EXISTING TREE TO REMAIN & TO BE PROTECTED IN PLACE, SEE TREE PROTECTION PLANS

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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PLANTING ENLARGEMENT PLAN - ENTRY AND PARKING AREA

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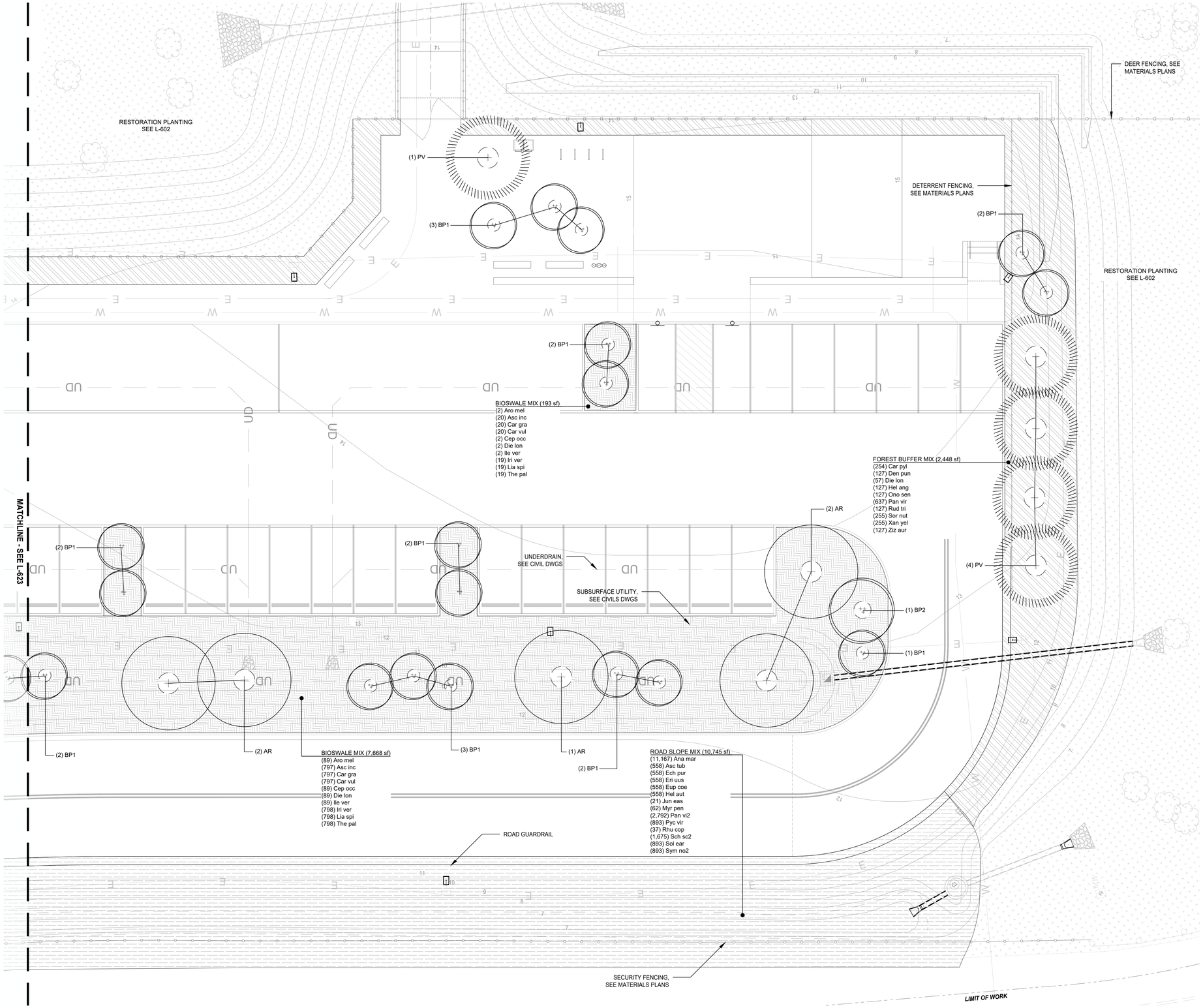

1 PLANTING ENLARGEMENT PLAN - ENTRY AND PARKING AREA

SCALE: 1" = 10'

0 5' 10' 20' 30'

NOTES:

1. SEE **SHEET L-001** FOR GENERAL NOTES AND ABBREVIATIONS.
2. SEE **SHEET L-620** FOR FULL PLANTING SCHEDULE.
3. SEE SHEETS **L-600-618** FOR RESTORATION PLANTING AREAS.

PLANTING LEGEND

TREES

SYMBOL	DESCRIPTION
	DECIDOUS CANOPY TREE
	MULTISTEM UNDERSTORY TREE
	CONIFEROUS CANOPY TREE
	CONIFEROUS UNDERSTORY TREE

SHRUB & UNDERSTORY MIXES

	SWITCHGRASS ENTRY MIX
	ENTRY BORDER MIX
	SWITCHGRASS BORDER MIX
	ROAD SLOPE MIX
	BIOSWALE MIX
	FOREST BUFFER MIX
	ECO-LAWN MIX
	MOWABLE MEADOW MIX
	GATHER SHRUB BORDER MIX
	MARITIME GRASS MIX
	MARITIME SHRUB MIX

SITE FEATURES

	RESTORATION PLANTING (SEE RESTORATION PLANS, L-600-611)
	EXISTING TREE TO REMAIN & TO BE PROTECTED IN PLACE, SEE L-100 SERIES

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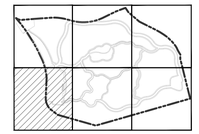
MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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STATE OF CONNECTICUT · JOHN DONNELLY · LICENSED LANDSCAPE ARCHITECT · NO. 1749

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LOCAL APPROVAL

SHEET NAME

PLANTING ENLARGEMENT PLAN - ENTRY AND PARKING AREA

PROJECT NO	2349.1
SCALE	1" = 10'-0"
DRAWN BY	SCAPE
CHECKED BY	SCAPE
DATE	12/15/2025

SHEET NO **L-624**

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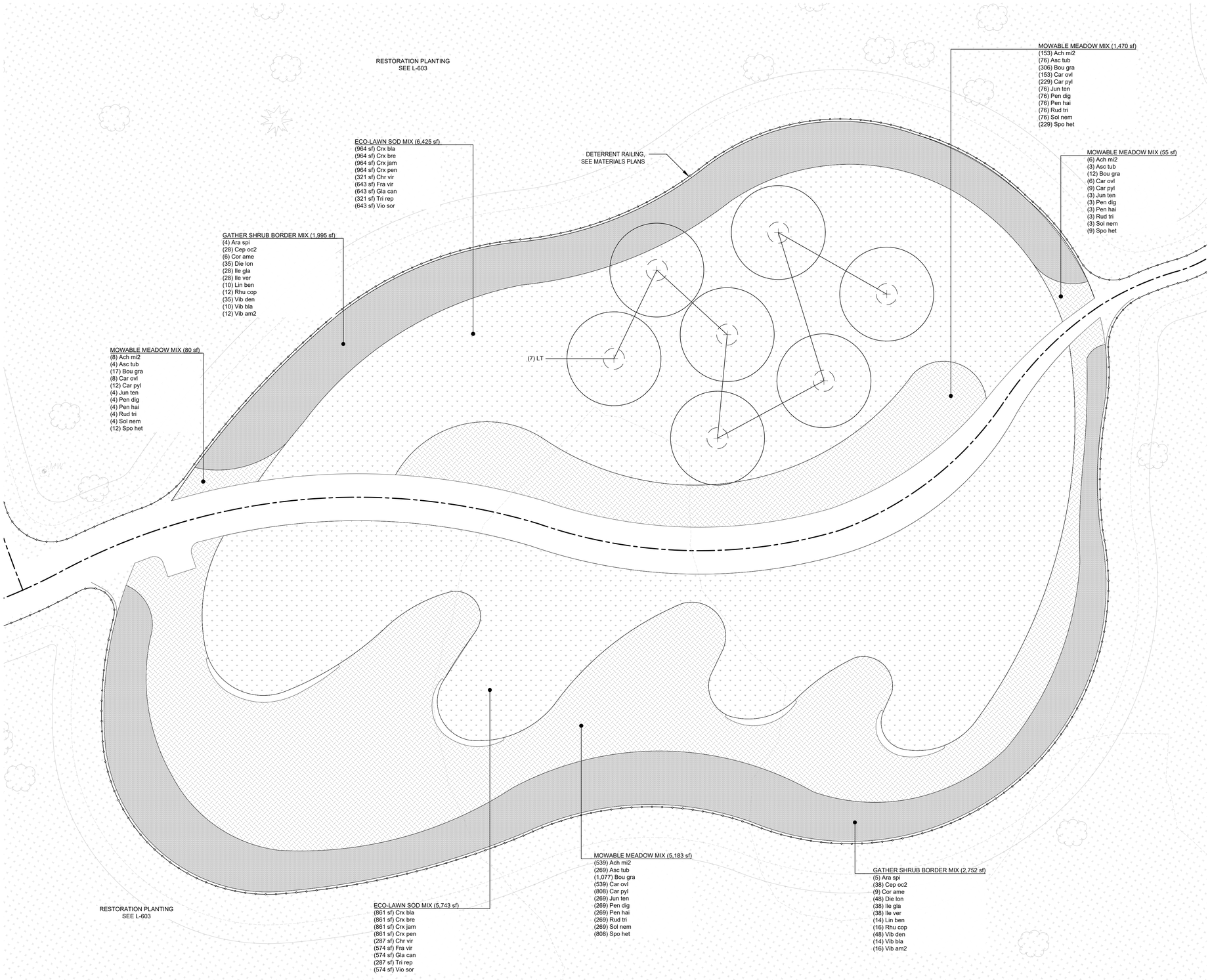

1 PLANTING ENLARGEMENT PLAN - GATHER POCKET

SCALE: 1" = 120'_XREF

0 5' 10' 20' 30'

PLANTING LEGEND

TREES

SYMBOL	DESCRIPTION
	DECIDUOUS CANOPY TREE
	MULTISTEM UNDERSTORY TREE
	CONIFEROUS CANOPY TREE
	CONIFEROUS UNDERSTORY TREE

SHRUB & UNDERSTORY MIXES

	SWITCHGRASS ENTRY MIX
	ENTRY BORDER MIX
	SWITCHGRASS BORDER MIX
	ROAD SLOPE MIX
	BIOSWALE MIX
	FOREST BUFFER MIX
	ECO-LAWN MIX
	MOWABLE MEADOW MIX
	GATHER SHRUB BORDER MIX
	MARITIME GRASS MIX
	MARITIME SHRUB MIX

SITE FEATURES

	RESTORATION PLANTING (SEE RESTORATION PLANS, L-600-611)
	EXISTING TREE TO REMAIN & TO BE PROTECTED IN PLACE, SEE TREE PROTECTION PLANS

NOTES:

1. SEE **SHEET L-001** FOR GENERAL NOTES AND ABBREVIATIONS.
2. SEE **SHEET L-620** FOR FULL PLANTING SCHEDULE.
3. SEE SHEETS **L-600-618** FOR RESTORATION PLANTING AREAS.

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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SHEET NAME

PLANTING ENLARGEMENT PLAN - GATHER POCKET

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 10'	
DRAWN BY	
SCAPE	
CHECKED BY	
SCAPE	
DATE	
12/15/2025	

L-625

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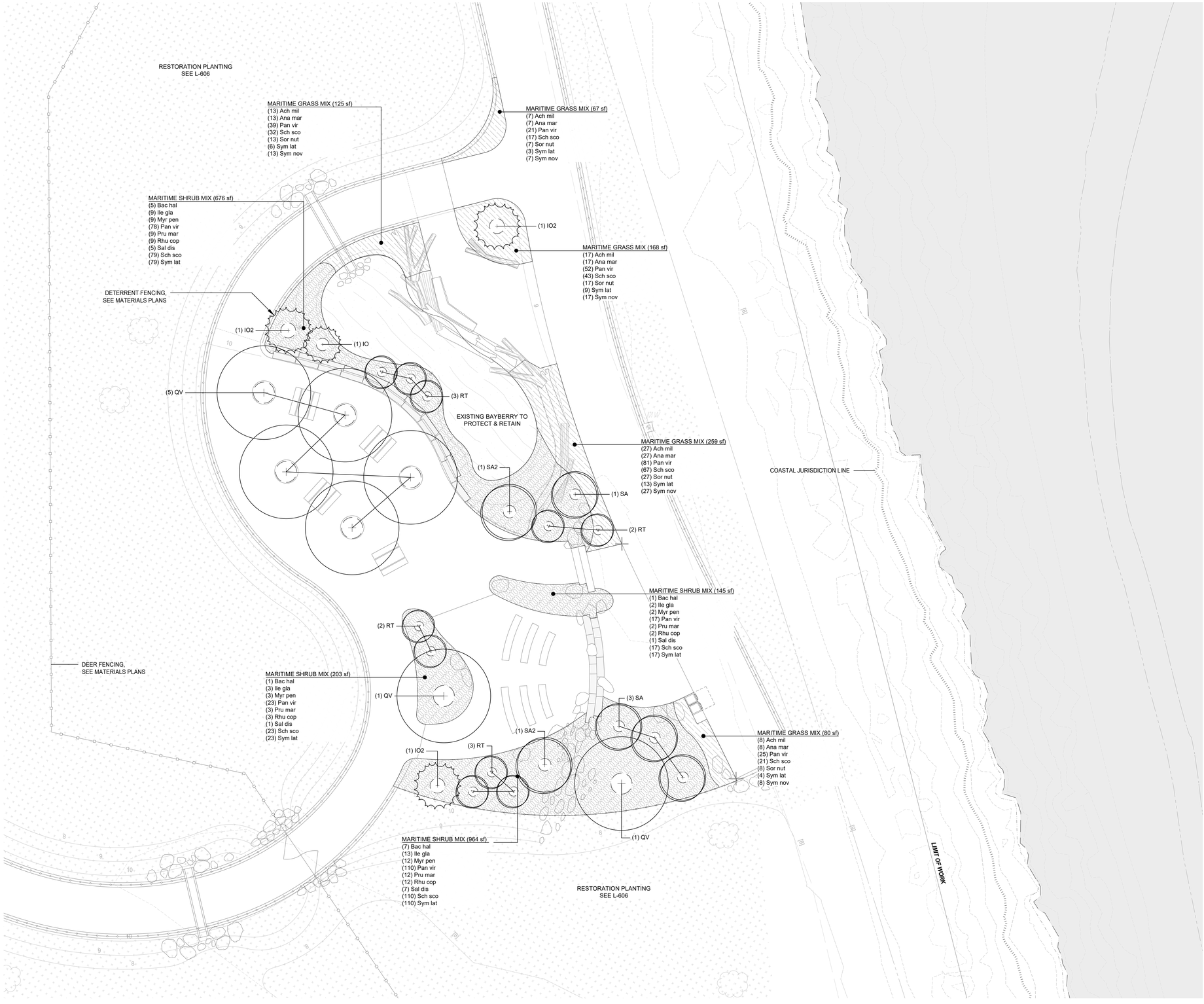
P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLT\L-625 PLANTING ENLARGEMENT PLAN – GATHER POCKET.dwg Plotted on: 12/12/2025 2:34:55 PM



PLANTING LEGEND

TREES	
SYMBOL	DESCRIPTION
	DECIDUOUS CANOPY TREE
	MULTISTEM UNDERSTORY TREE
	CONIFEROUS CANOPY TREE
	CONIFEROUS UNDERSTORY TREE
SHRUB & UNDERSTORY MIXES	
	SWITCHGRASS ENTRY MIX
	ENTRY BORDER MIX
	SWITCHGRASS BORDER MIX
	ROAD SLOPE MIX
	BIOSWALE MIX
	FOREST BUFFER MIX
	ECO-LAWN MIX
	MOWABLE MEADOW MIX
	GATHER SHRUB BORDER MIX
	MARITIME GRASS MIX
	MARITIME SHRUB MIX
SITE FEATURES	
	RESTORATION PLANTING (SEE RESTORATION PLANS, L-600-611)
	EXISTING TREE TO REMAIN & TO BE PROTECTED IN PLACE, SEE TREE PROTECTION PLANS

1 PLANTING ENLARGEMENT PLAN - LEARN POCKET
SCALE: 1" = 10'

0 5' 10' 20' 30'

NOTES:
1. SEE **SHEET L-001** FOR GENERAL NOTES AND ABBREVIATIONS.
2. SEE **SHEET L-620** FOR FULL PLANTING SCHEDULE.
3. SEE SHEETS **L-600-618** FOR RESTORATION PLANTING AREAS.

P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLT\L-626 PLANTING ENLARGEMENT PLAN – LEARN POCKET.dwg Plotted on: 12/12/2025 2:34:22 PM

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NORWALK, CT

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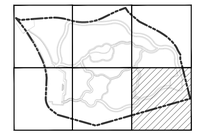

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PLANTING ENLARGEMENT PLAN - LEARN POCKET

PROJECT NO	SHEET NO
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SCAPE	
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1 TRAIL TYPOLOGY KEY PLAN
SCALE: 1" = 80'-0"

0 40' 80' 160' 240'

TRAIL PROFILE LEGEND

SHARED USE TRAIL
- 13'-0" WIDTH MIN
- 0.00 - 4.75% MAX SLOPE
- PEDESTRIAN ASPHALT PAVEMENT
- PEDESTRIAN CONCRETE PAVEMENT

FAMILY TRAIL
- 10'-0" WIDTH MIN
- 0.00 - 4.75% MAX SLOPE
- STABILIZED DECOMPOSED GRANITE
- PEDESTRIAN CONCRETE PAVEMENT

DISCOVERY TRAIL
- 4'-0" WIDTH MIN
- 0.00 - 4.75% MAX SLOPE
- STABILIZED DECOMPOSED GRANITE
- PEDESTRIAN ASPHALT PAVEMENT

BOARDWALK TRAIL
- 6'-0" WIDTH MIN - 15'-0" MAX WIDTH
- 0% - 2% MAX SLOPE

PRECAST CONCRETE PLANK TRAIL
- 6'-0" WIDTH MIN - 12'-0" MAX WIDTH
- 0% - 2% MAX SLOPE

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SHEET NAME

TRAIL PROFILE OVERALL KEY PLAN

PROJECT NO	SHEET NO
2349.1	
SCALE	
1" = 80'-0"	
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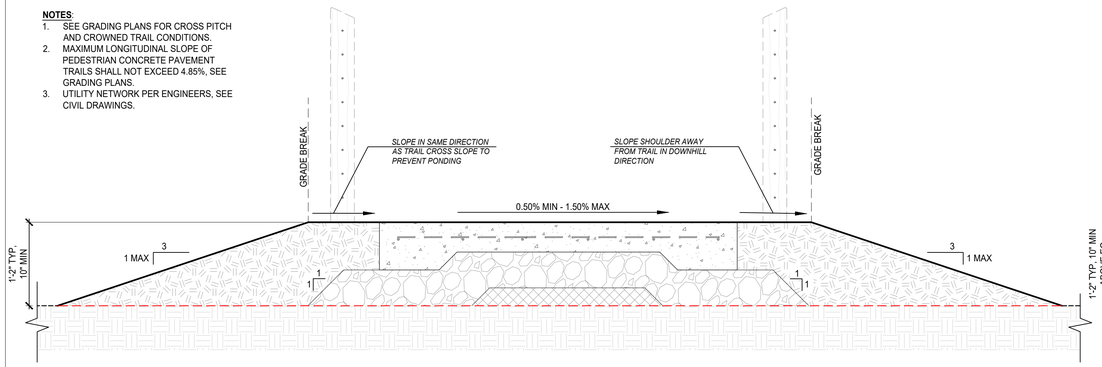
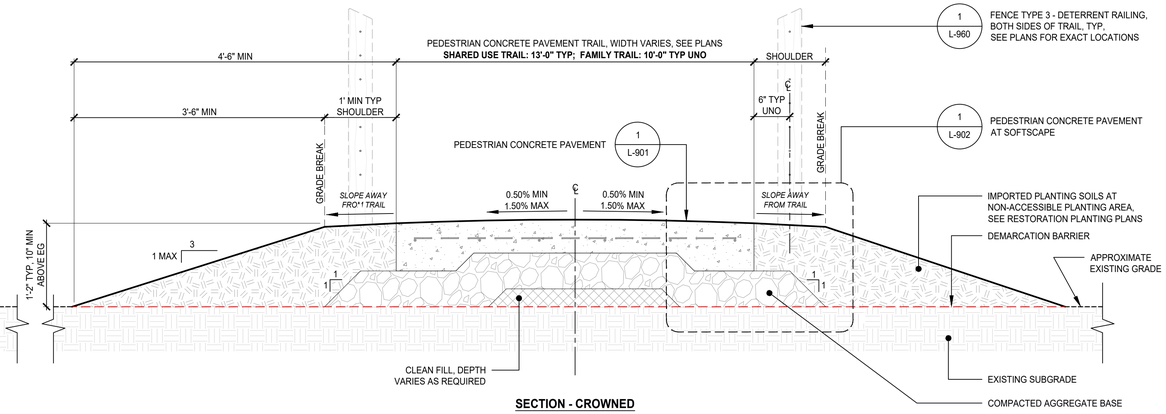
NOTES:
1. SEE GRADING PLANS FOR CROSS PITCH AND CROWNED TRAIL CONDITIONS.
2. MAXIMUM LONGITUDINAL SLOPE OF PEDESTRIAN CONCRETE PAVEMENT TRAILS SHALL NOT EXCEED 4.85%, SEE GRADING PLANS.
3. UTILITY NETWORK PER ENGINEERS, SEE CIVIL DRAWINGS.



SECTION - CROSS PITCH

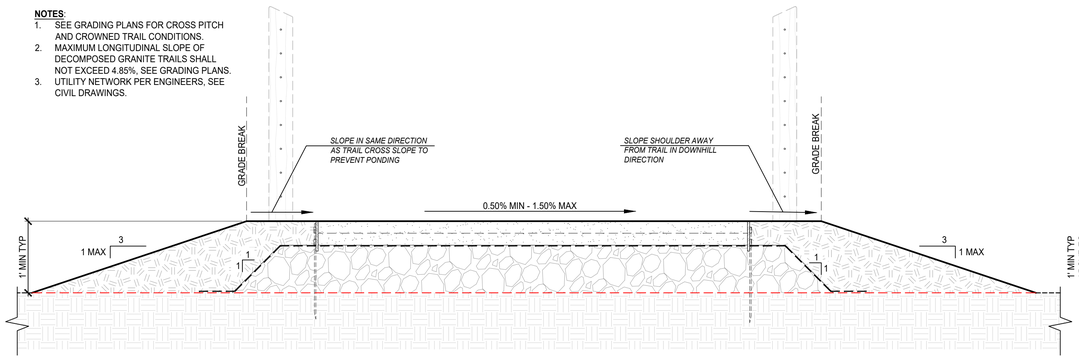


SECTION - CROWNED

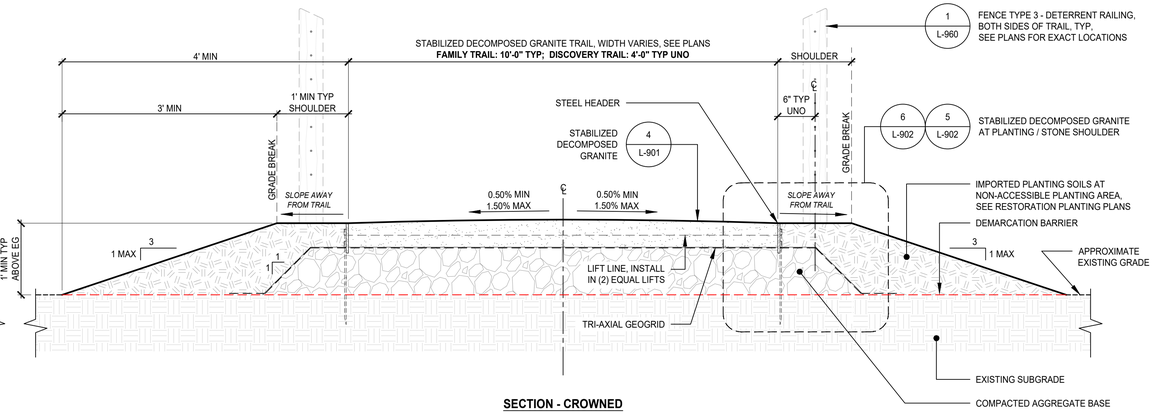
3 PEDESTRIAN CONCRETE PAVEMENT TRAIL - TYPICAL SECTION

SCALE: 1" = 1'-0"

NOTES:
1. SEE GRADING PLANS FOR CROSS PITCH AND CROWNED TRAIL CONDITIONS.
2. MAXIMUM LONGITUDINAL SLOPE OF DECOMPOSED GRANITE TRAILS SHALL NOT EXCEED 4.85%, SEE GRADING PLANS.
3. UTILITY NETWORK PER ENGINEERS, SEE CIVIL DRAWINGS.



SECTION - CROSS PITCH

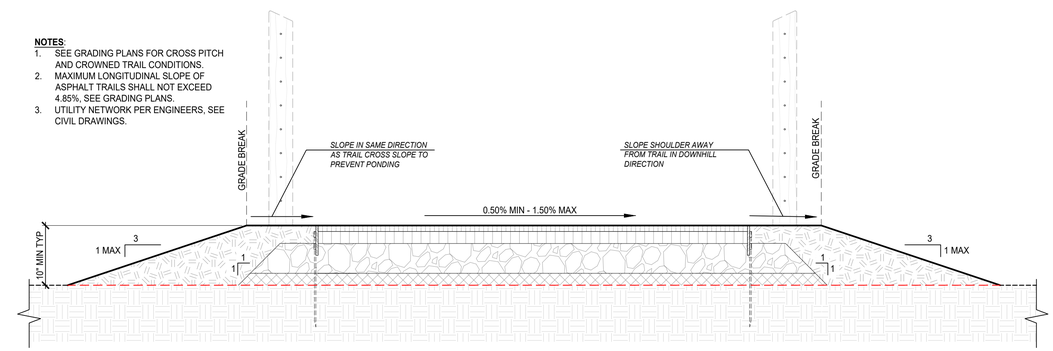


SECTION - CROWNED

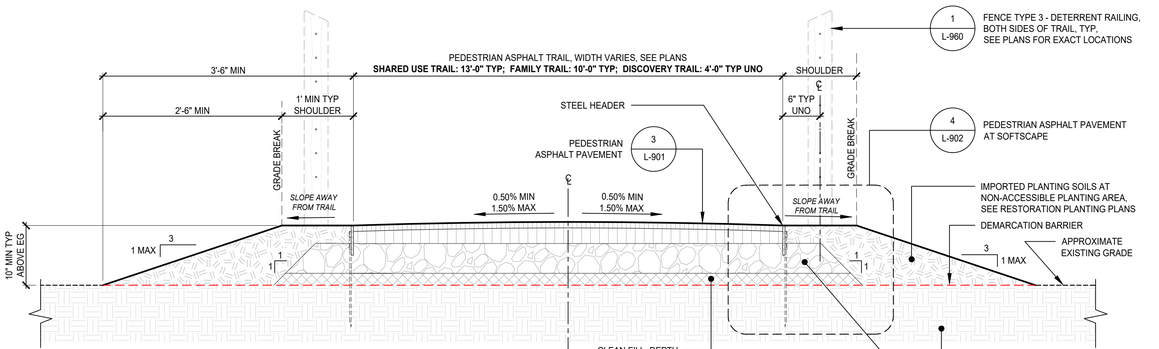
2 STABILIZED DECOMPOSED GRANITE TRAIL - TYPICAL CROSS SECTION

SCALE: 1" = 1'-0"

NOTES:
1. SEE GRADING PLANS FOR CROSS PITCH AND CROWNED TRAIL CONDITIONS.
2. MAXIMUM LONGITUDINAL SLOPE OF ASPHALT TRAILS SHALL NOT EXCEED 4.85%, SEE GRADING PLANS.
3. UTILITY NETWORK PER ENGINEERS, SEE CIVIL DRAWINGS.



SECTION - CROSS PITCH



SECTION - CROWNED

1 PEDESTRIAN ASPHALT PAVEMENT TRAIL - TYPICAL CROSS SECTION

SCALE: 1" = 1'-0"

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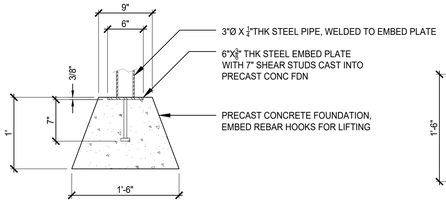
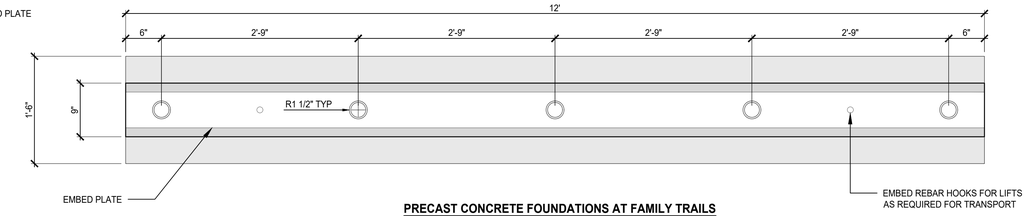
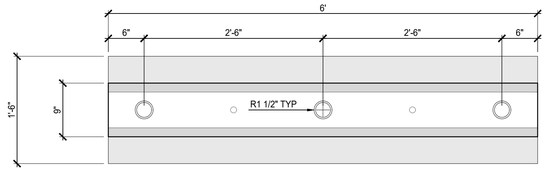


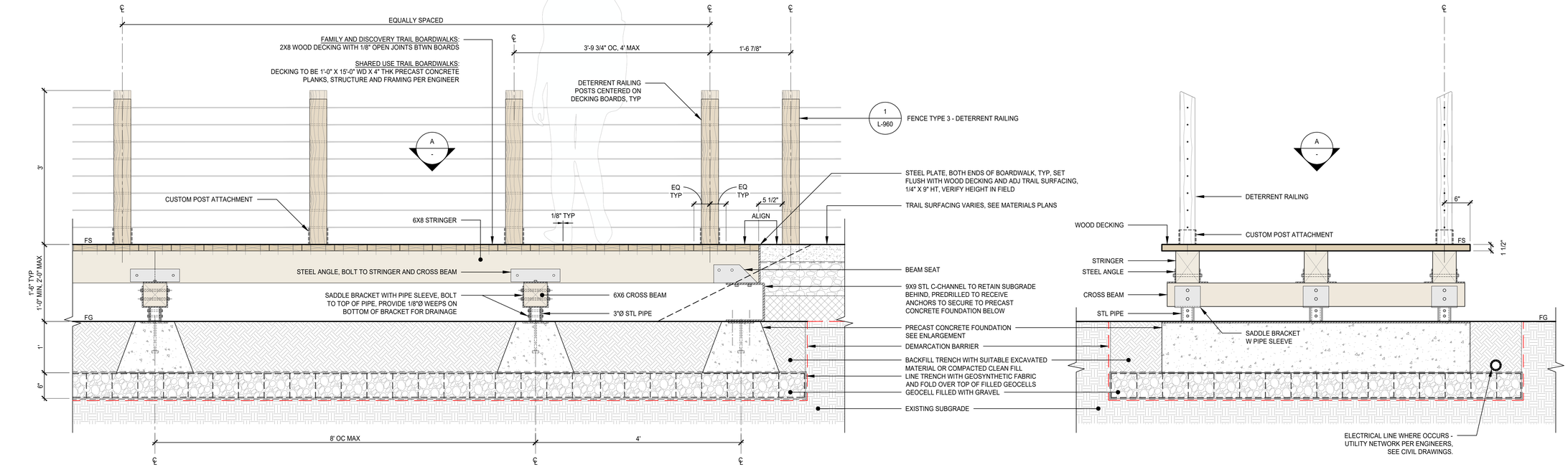
PRECAST CONCRETE FOUNDATION



PRECAST CONCRETE FOUNDATIONS AT FAMILY TRAILS

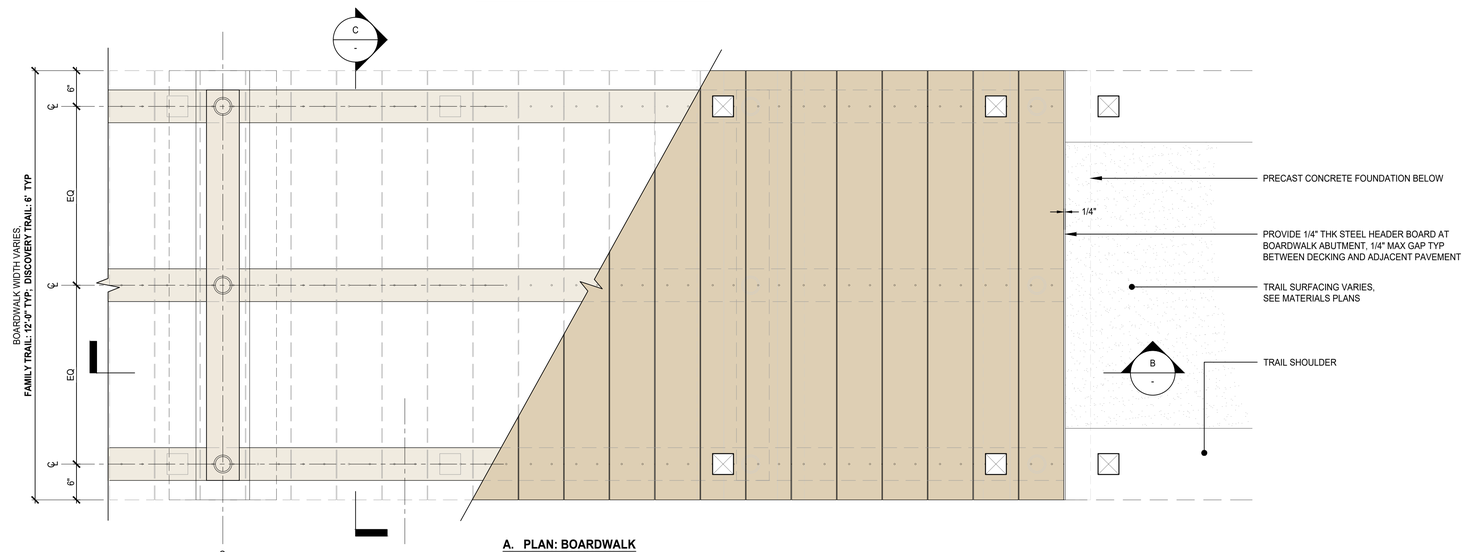


PRECAST CONCRETE FOUNDATION AT DISCOVER TRAILS



B. LONGITUDINAL SECTION: BOARDWALK

C. CROSS SECTION: BOARDWALK



A. PLAN: BOARDWALK

1 WOOD BOARDWALK - TYPICAL

SCALE: 1" = 1'-0"

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KEY PLAN



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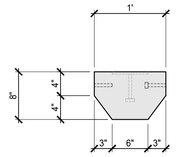
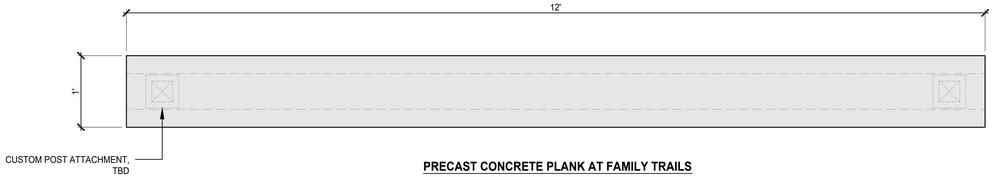
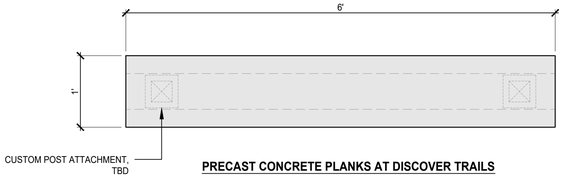


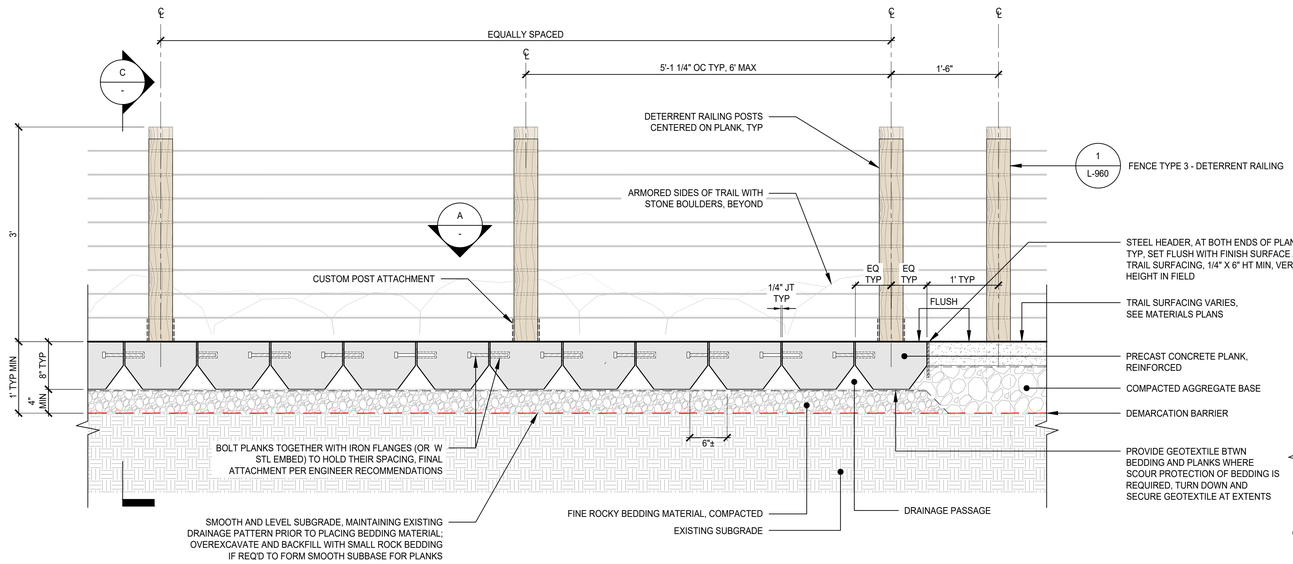
PRECAST PLANK



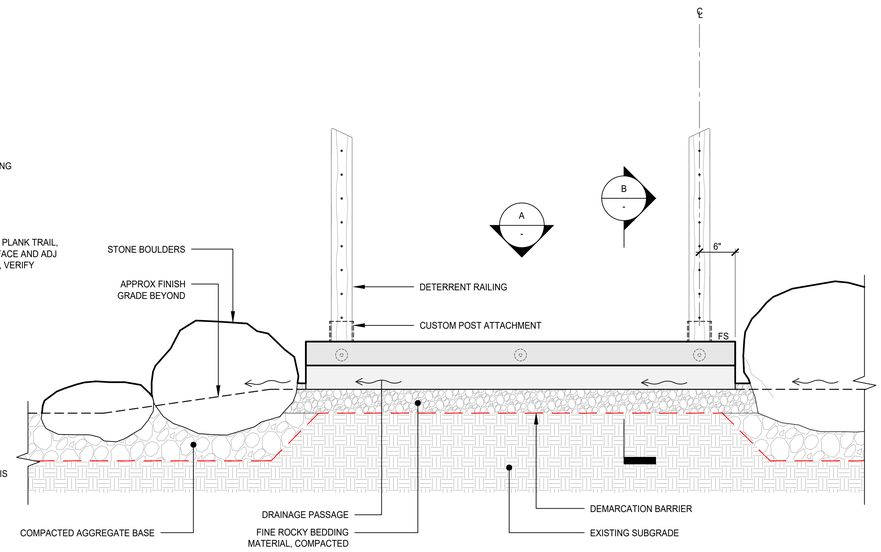
PRECAST CONCRETE PLANK AT FAMILY TRAILS



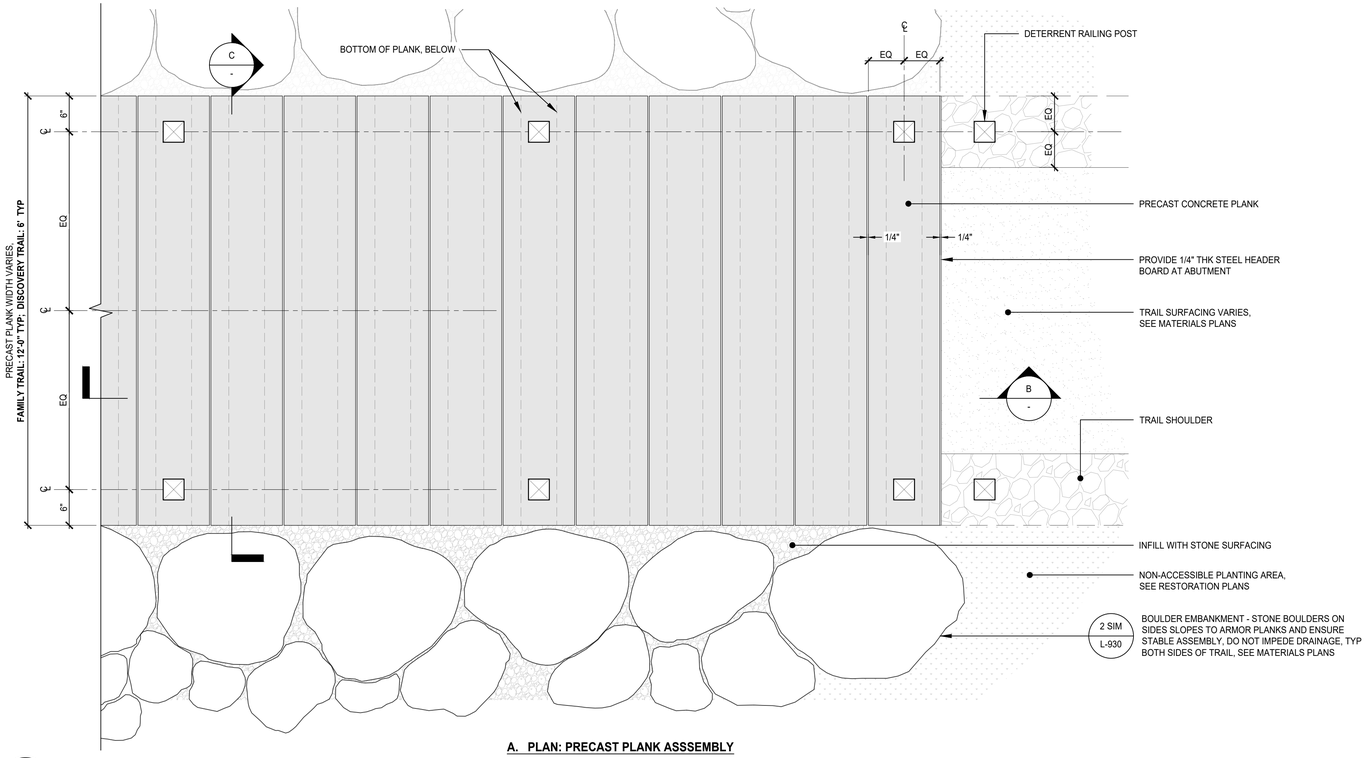
PRECAST CONCRETE PLANKS AT DISCOVER TRAILS



B. LONGITUDINAL SECTION: PRECAST PLANKS



C. CROSS SECTION: PRECAST PLANKS



A. PLAN: PRECAST PLANK ASSSEMBLY

1 PRECAST PLANK TRAIL - TYPICAL

SCALE: 1" = 1'-0"

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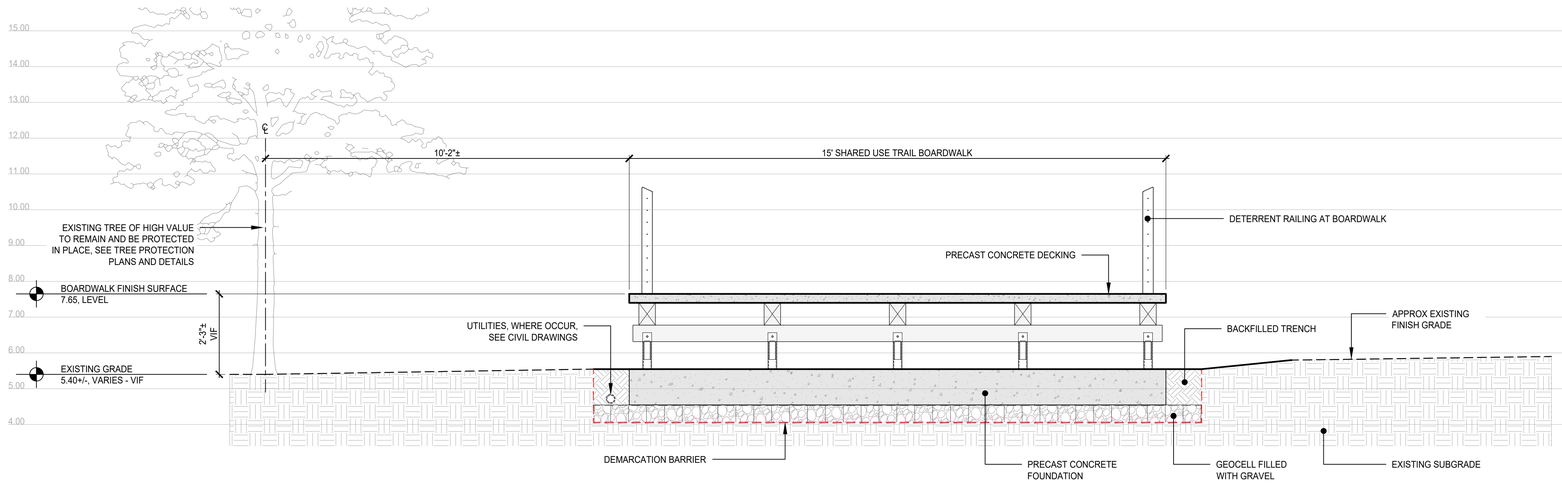
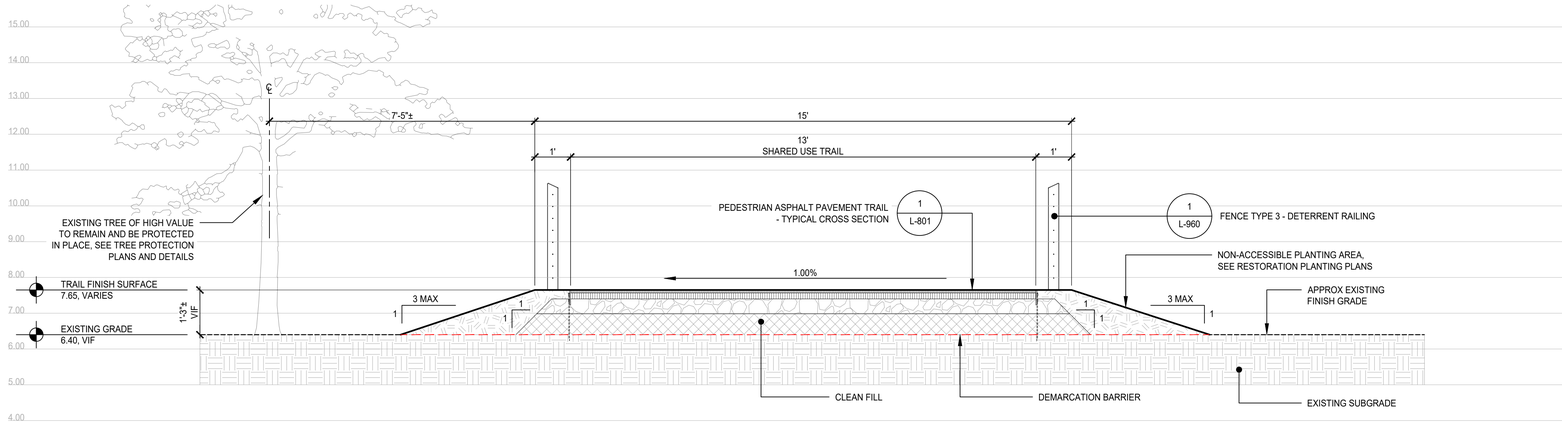


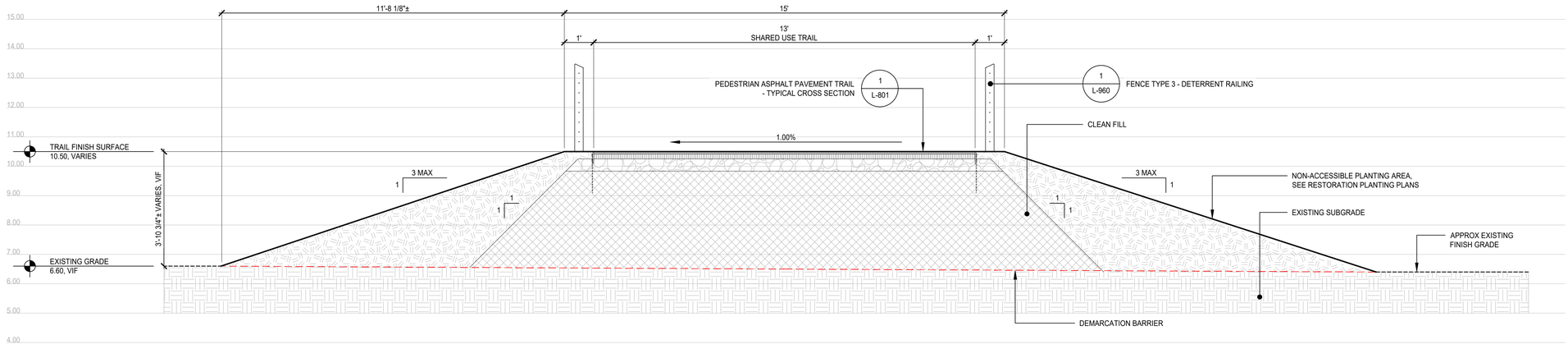
3 TRAIL PROFILE - SHARED USE TRAIL BOARDWALK AT SWITCHGRASS MEADOW

SCALE: 1/2" = 1'-0"



2 TRAIL PROFILE - SHARED USE TRAIL IN SENSITIVE AREA

SCALE: 1/2" = 1'-0"



1 TRAIL PROFILE - SHARED USE TRAIL AT ENTRY SEQUENCE

SCALE: 1/2" = 1'-0"

L800 - SECTION NOTES

1. SECTIONS ARE SHOWN TO DEPICT RELATIONSHIPS BETWEEN PROPOSED ELEMENTS. REFER TO ASSEMBLY AND DETAIL DRAWINGS FOR MORE INFORMATION. THE SECTIONS AND DETAILS ARE TO BE UTILIZED IN CONCERT TO FULLY INTERPRET THE DESIGN INTENT. THE CONTRACTOR SHALL SEEK CLARIFICATION FROM THE LANDSCAPE ARCHITECT IN THE EVENT OF ANY DISCREPANCIES BETWEEN THE SECTIONS AND DETAILS.
2. ALL SPOT ELEVATIONS AND SLOPES ARE PROVIDED FOR REFERENCE AND COORDINATION ONLY. SEE GRADING PLANS FOR ADDITIONAL INFORMATION

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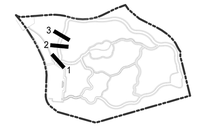
NORTH FOREST
NORWALK, CT

KEY PLAN



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DATE	12/15/2025

SHEET NO **L-805**

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L800 - SECTION NOTES

1. SECTIONS ARE SHOWN TO DEPICT RELATIONSHIPS BETWEEN PROPOSED ELEMENTS. REFER TO ASSEMBLY AND DETAIL DRAWINGS FOR MORE INFORMATION. THE SECTIONS AND DETAILS ARE TO BE UTILIZED IN CONCERT TO FULLY INTERPRET THE DESIGN INTENT. THE CONTRACTOR SHALL SEEK CLARIFICATION FROM THE LANDSCAPE ARCHITECT IN THE EVENT OF ANY DISCREPANCIES BETWEEN THE SECTIONS AND DETAILS.
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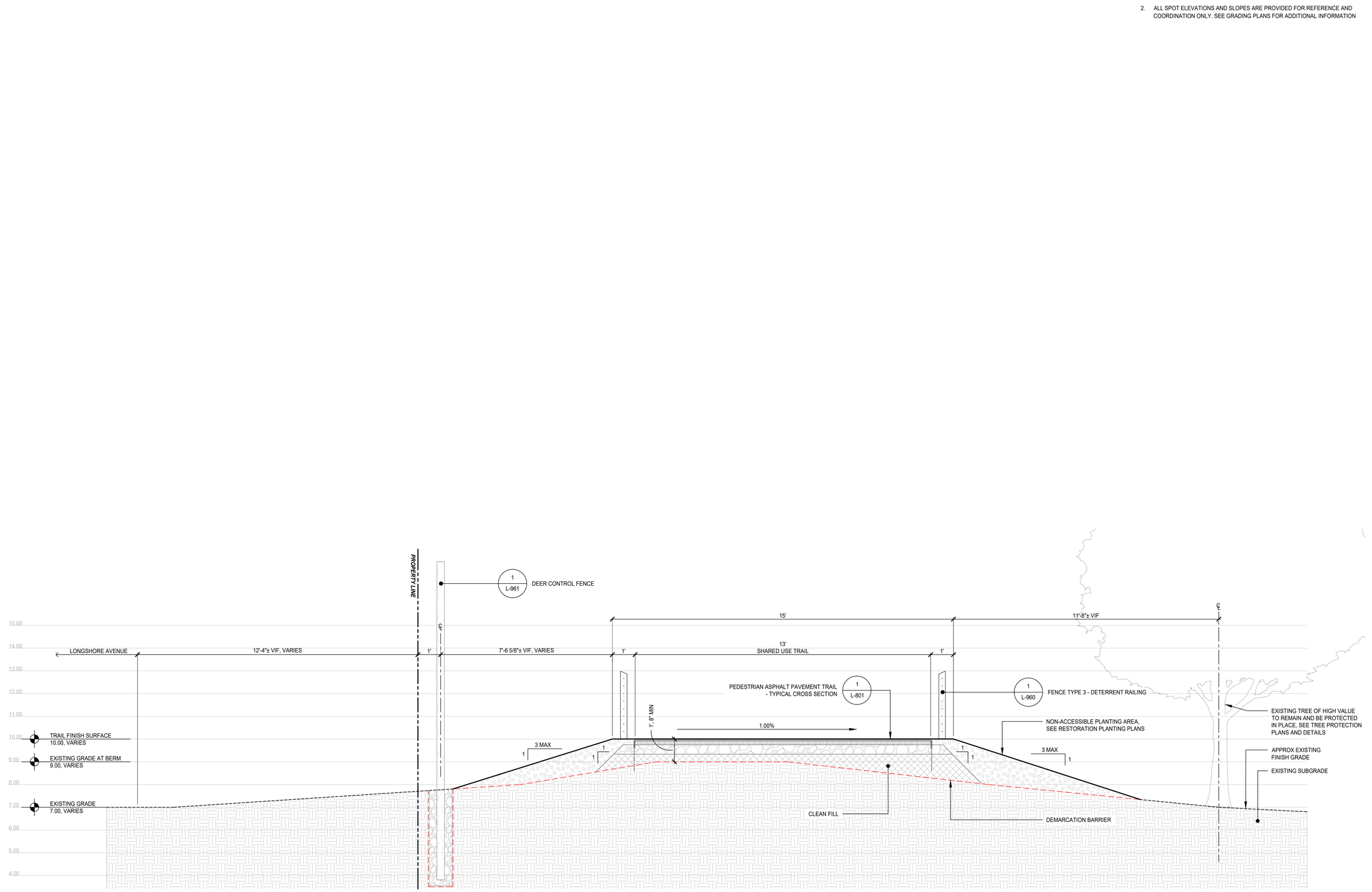


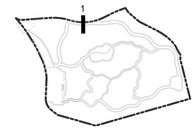
1 TRAIL PROFILE - SHARED USE TRAIL AT LONGSHORE AVENUE FENCE LINE
SCALE: 1/2" = 1'-0"

P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLT\L-806 TRAIL PROFILES.dwg Plotted on: 12/12/2025 12:22:02 PM

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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SHEET NO
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L800 - SECTION NOTES

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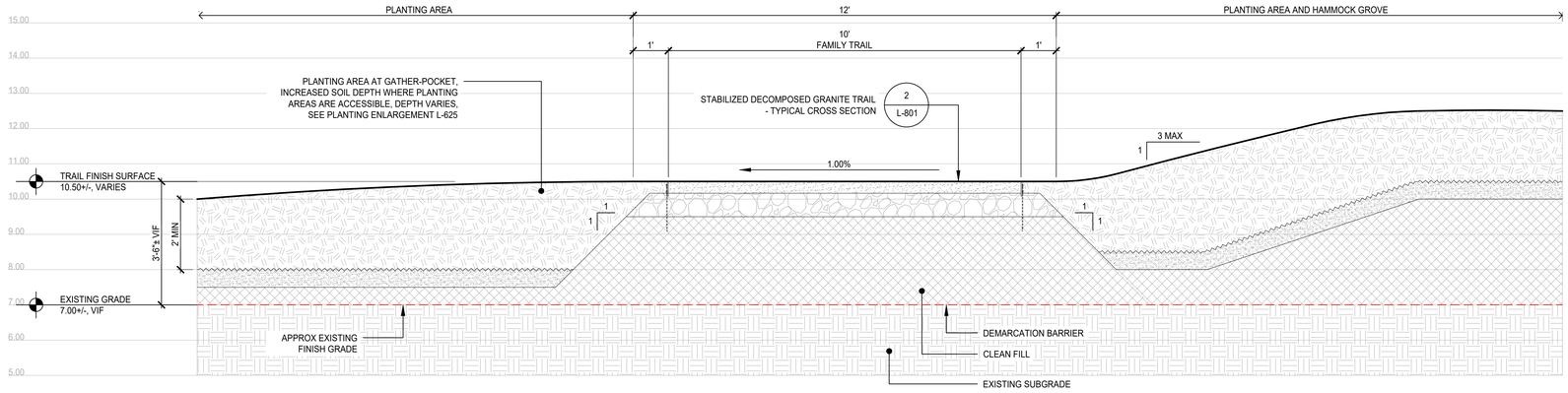
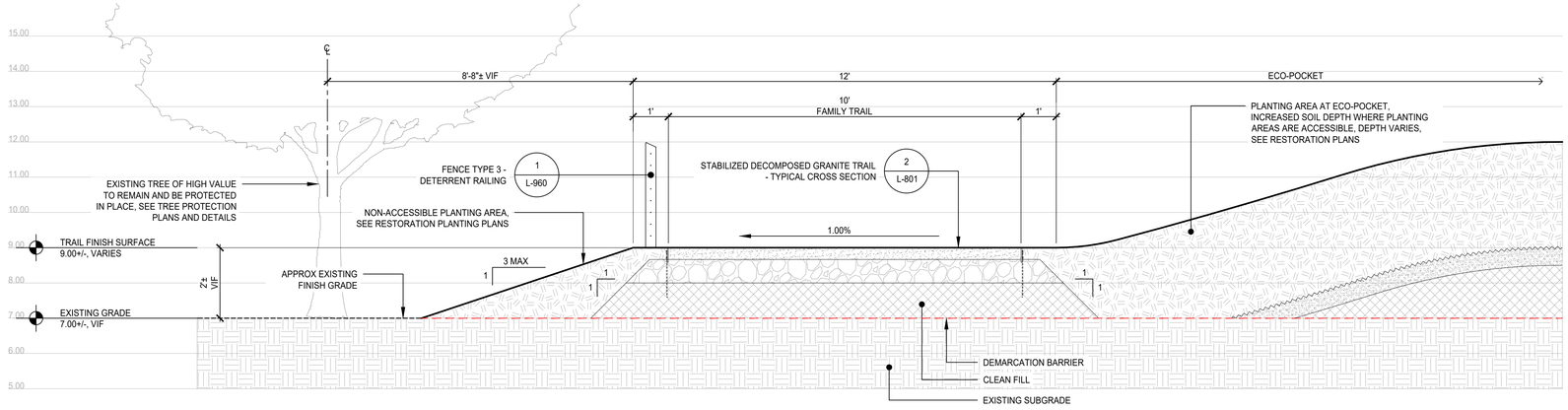


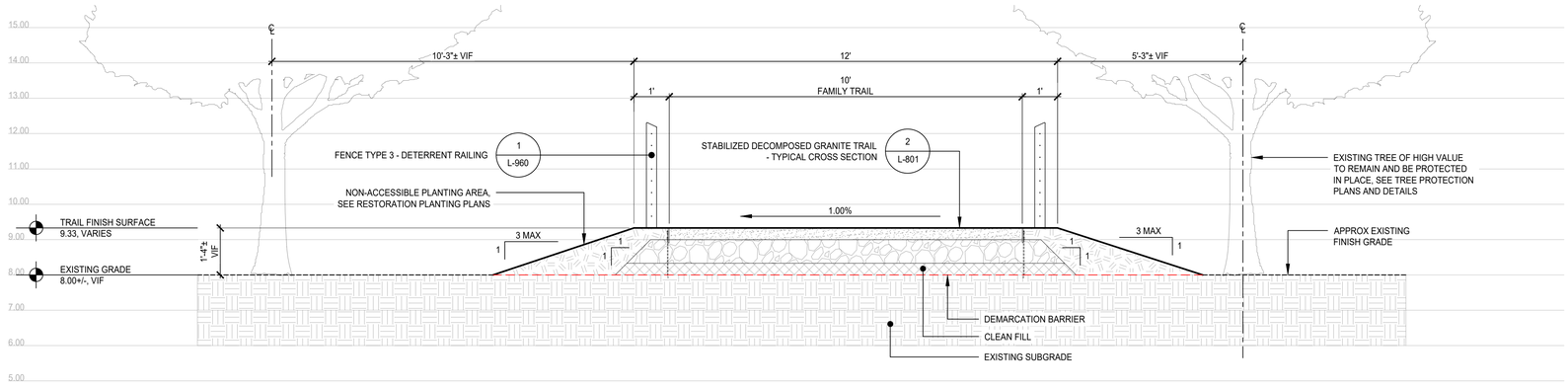
3 TRAIL PROFILE - FAMILY TRAIL AT GATHER POCKET

SCALE: 1/2" = 1'-0"



2 TRAIL PROFILE - FAMILY TRAIL AT ECO-POCKET

SCALE: 1/2" = 1'-0"



1 TRAIL PROFILE - FAMILY TRAIL IN SENSITIVE AREA

SCALE: 1/2" = 1'-0"

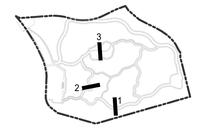
P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLT\L-807 TRAIL PROFILES.dwg Plotted on: 12/12/2025 3:34:04 PM

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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LICENSED LANDSCAPE ARCHITECT
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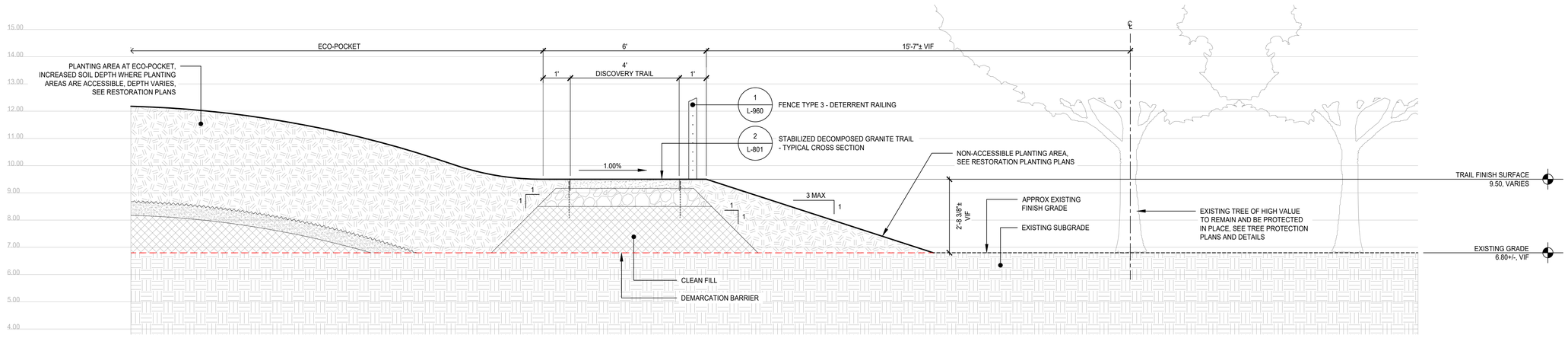
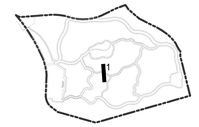


1 TRAIL PROFILE - DISCOVERY TRAIL AT ECO-POCKET
SCALE: 1/2" = 1'-0"

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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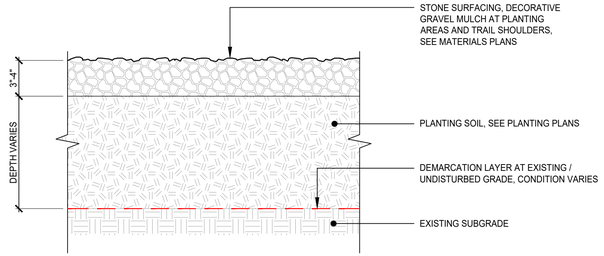
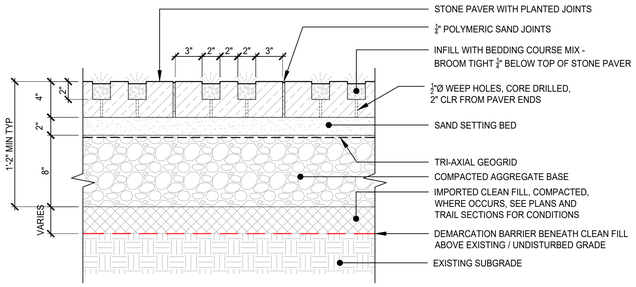
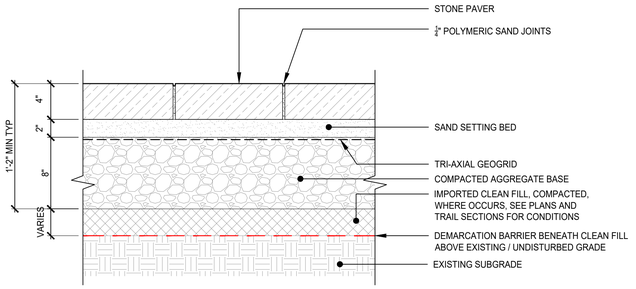


8 STONE SURFACING

SCALE: 1 1/2" = 1'-0"



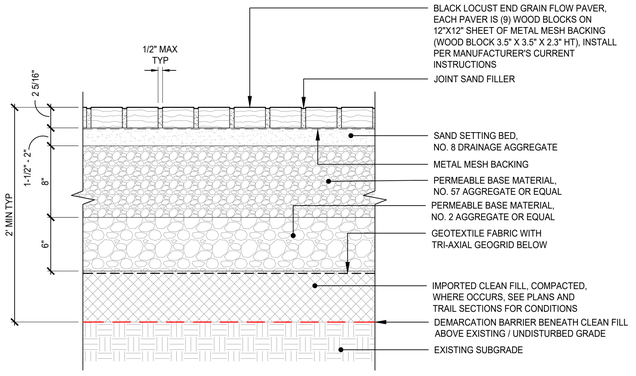
B. PAVER WITH PLANTED JOINTS



A. TYPICAL PAVER

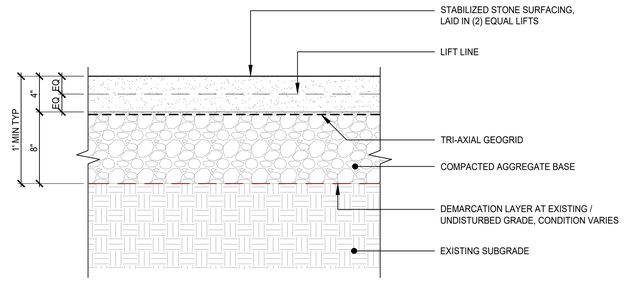
7 STONE PAVER

SCALE: 1 1/2" = 1'-0"



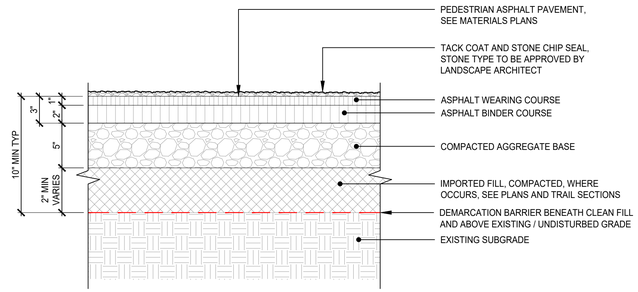
6 WOOD BLOCK PAVER

SCALE: 1 1/2" = 1'-0"



4 STABILIZED DECOMPOSED GRANITE

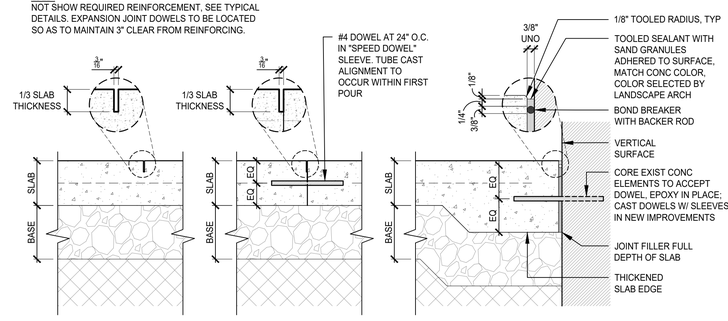
SCALE: 1 1/2" = 1'-0"



3 PEDESTRIAN ASPHALT PAVEMENT

SCALE: 1 1/2" = 1'-0"

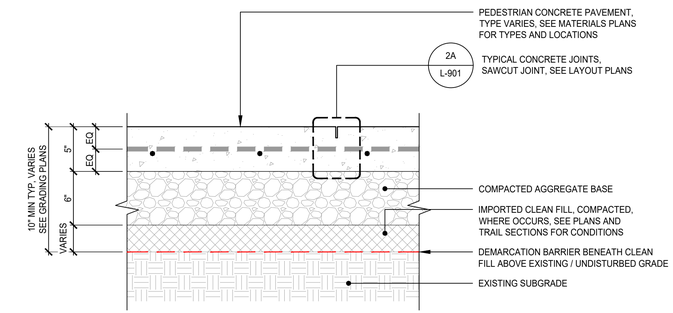
NOTE: FOR PURPOSED OF CLARITY THIS DETAIL DOES NOT SHOW REQUIRED REINFORCEMENT, SEE TYPICAL DETAILS. EXPANSION JOINT DOWELS TO BE LOCATED SO AS TO MAINTAIN 3" CLEAR FROM REINFORCING.



A. SAWCUT CONTROL JOINT **B. CONSTRUCTION JOINT** **C. EXPANSION JOINT**

2 TYPICAL CONCRETE JOINTS

SCALE: 1 1/2" = 1'-0"



1 PEDESTRIAN CONCRETE PAVEMENT

SCALE: 1 1/2" = 1'-0"

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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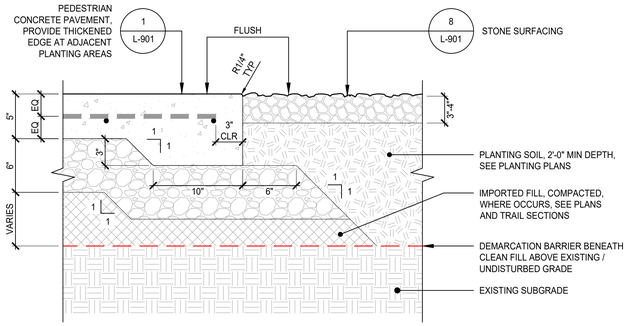
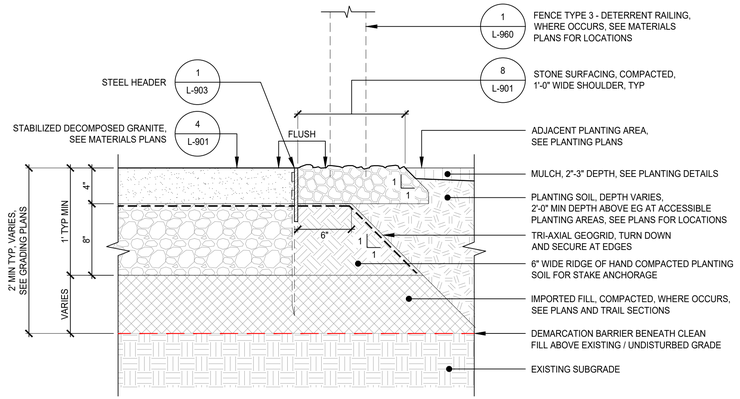
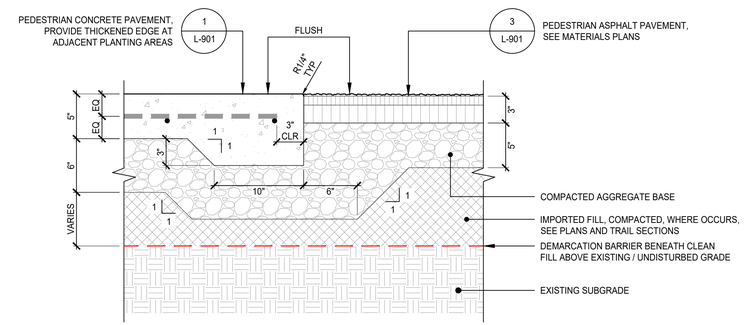


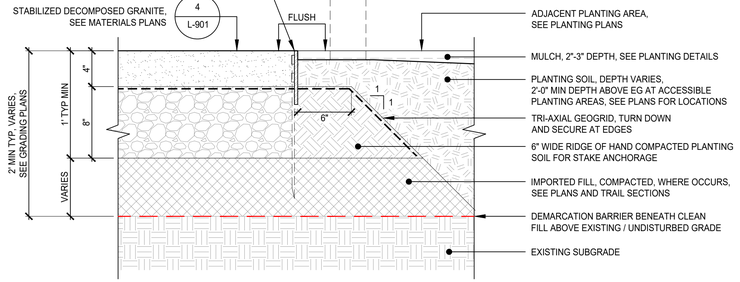
9 PEDESTRIAN CONCRETE PAVEMENT AT STONE SURFACING
SCALE: 1 1/2" = 1'-0"



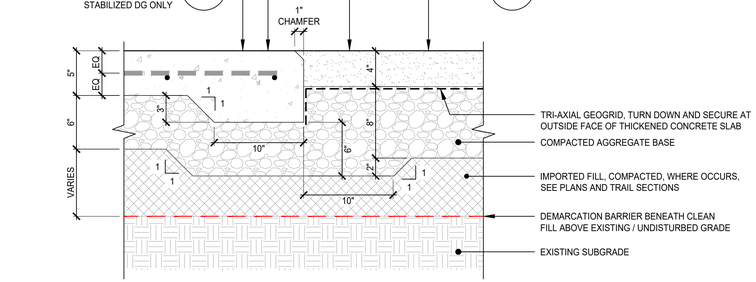
6 STABILIZED DECOMPOSED GRANITE AT STONE SHOULDER
SCALE: 1 1/2" = 1'-0"



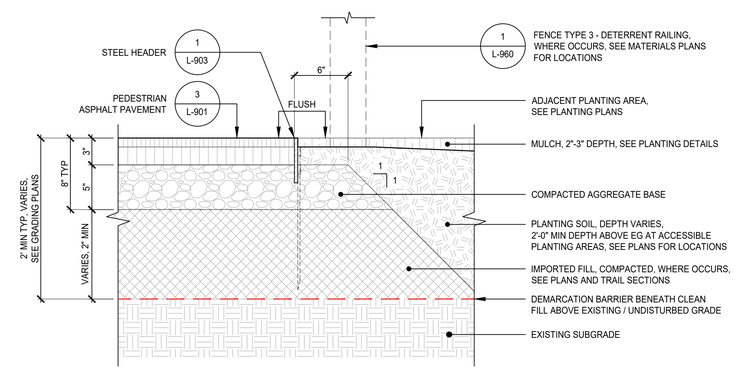
3 PEDESTRIAN CONCRETE PAVEMENT AT PEDESTRIAN ASPHALT PAVEMENT
SCALE: 1 1/2" = 1'-0"



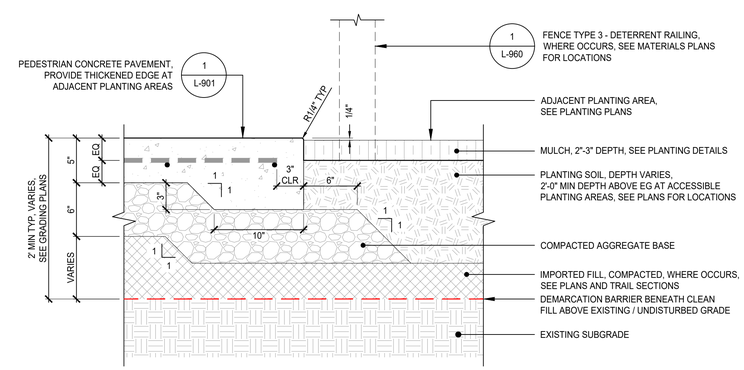
5 STABILIZED DECOMPOSED GRANITE AT PLANTING
SCALE: 1 1/2" = 1'-0"



2 PEDESTRIAN CONCRETE PAVEMENT AT STABILIZED DG
SCALE: 1 1/2" = 1'-0"



4 PEDESTRIAN ASPHALT PAVEMENT AT SOFTSCAPE
SCALE: 1 1/2" = 1'-0"



1 PEDESTRIAN CONCRETE PAVEMENT AT SOFTSCAPE
SCALE: 1 1/2" = 1'-0"

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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NO. 1748

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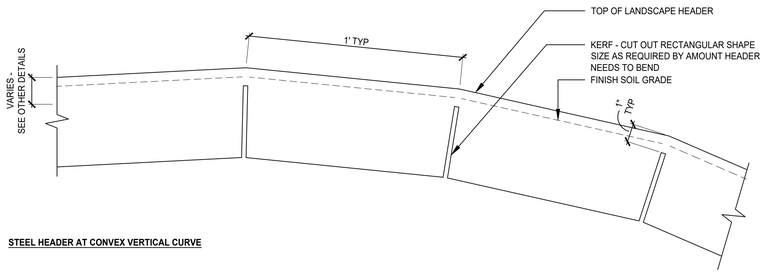
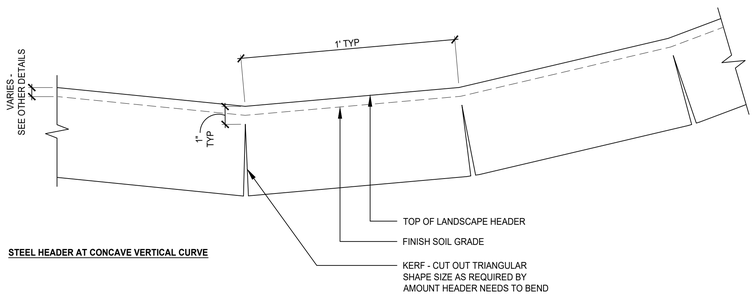


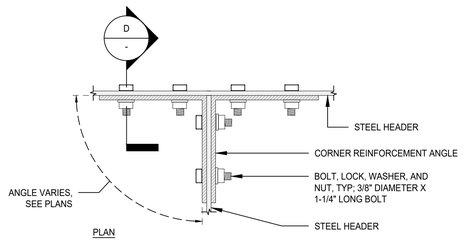
STEEL HEADER AT CONVEX VERTICAL CURVE



STEEL HEADER AT CONCAVE VERTICAL CURVE

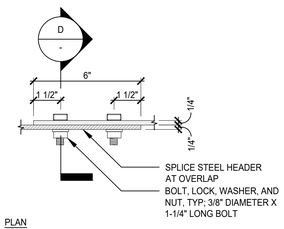
3 STEEL HEADER AT CURVES

SCALE: 3" = 1'-0"



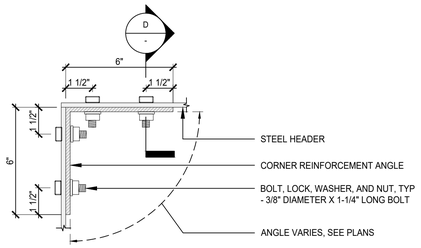
PLAN

A. STEEL HEADER TEE INTERSECTION



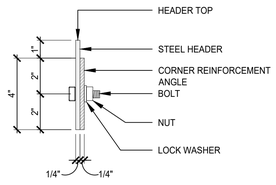
PLAN

B. STEEL HEADER SPLICE



PLAN

C. STEEL HEADER CORNER

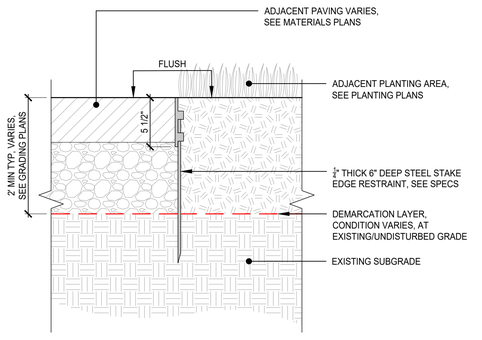


SECTION

D. STEEL HEADER CORNER REINFORCEMENT ANGLE

2 STEEL HEADER CONNECTIONS

SCALE: 3" = 1'-0"



1 STEEL HEADER

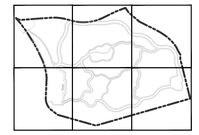
SCALE: 1 1/2" = 1'-0"

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN



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SHEET NAME

SITE DETAILS

PROJECT NO	2349.1
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SHEET NO **L-903**

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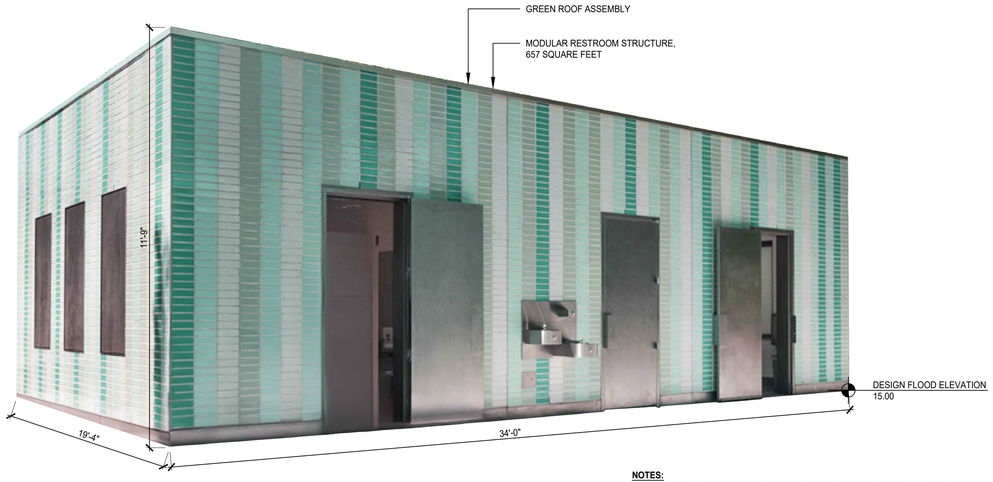

NOTES:

1. SEE SHEET L-302 FOR PRELIMINARY LAYOUT AND PLACEMENT OF STRUCTURE
2. MODULAR RESTROOM STRUCTURE TO INCLUDE UP TO 6 WET CLOSETS AND STORAGE FOR PARK OPERATIONS
3. SEE CIVIL SHEETS FOR FUTURE WATER HOOK-UPS
4. PREFABRICATED MODULAR STRUCTURE WILL BE PRE-PERMITTED PRIOR TO PLACEMENT ON SITE; INSPECTIONS REQUIRED FOR FINAL UTILITY HOOK-UPS

1 BATHROOM STRUCTURE

SCALE: N.T.S

SCAPE

MANRESA WILDS
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NORWALK, CT

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SCALE	
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SCAPE	
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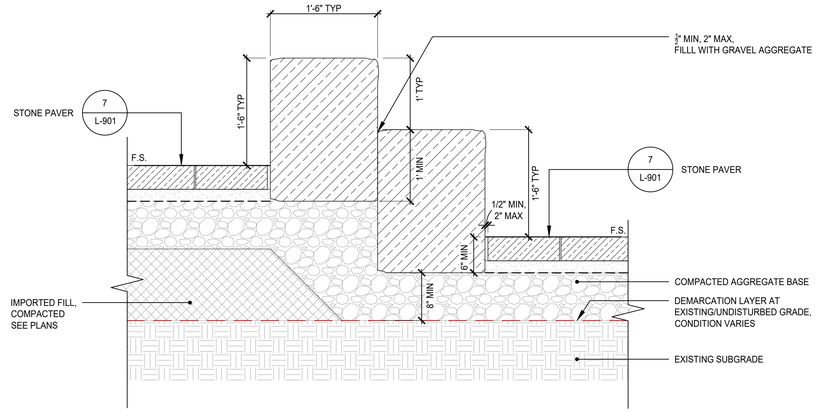
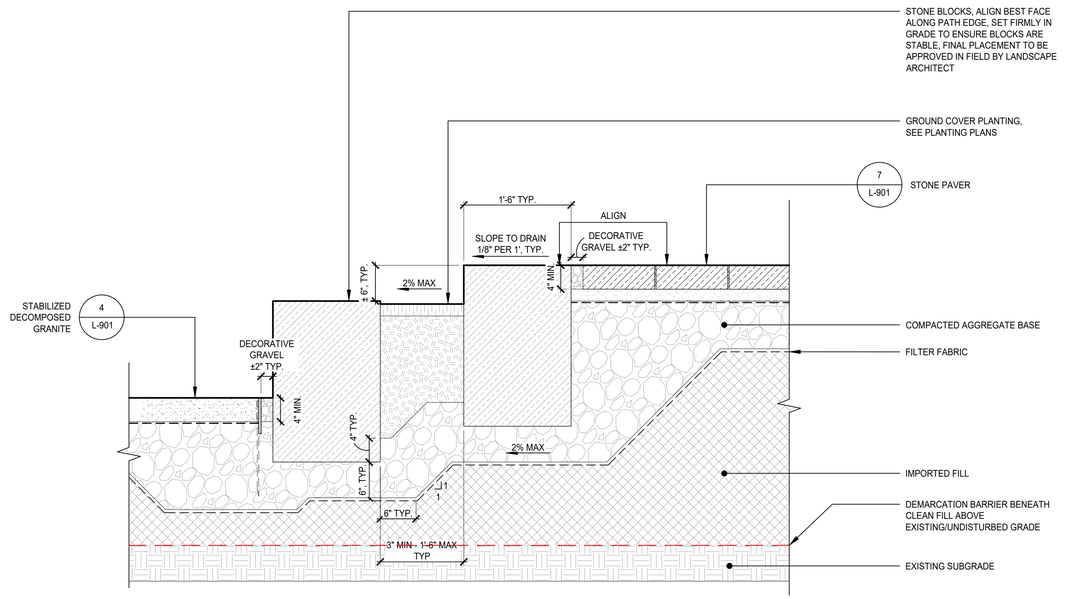


2 STONE BLOCK SEATWALL

SCALE: 1" = 1'-0"



1 STONE STEPS

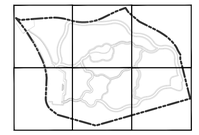
SCALE: 1" = 1'-0"

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN



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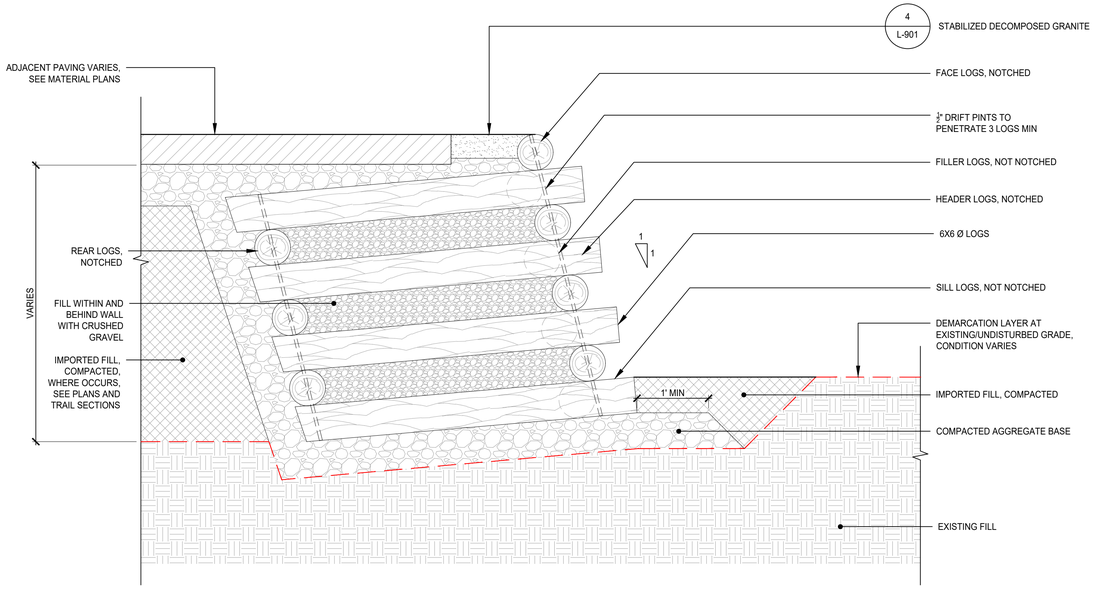
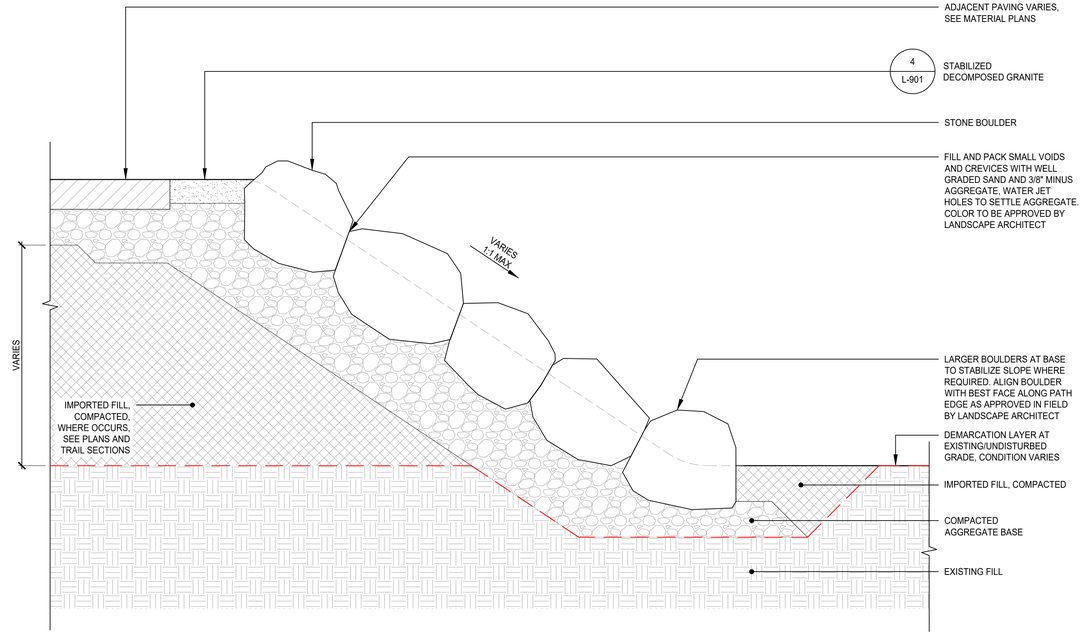


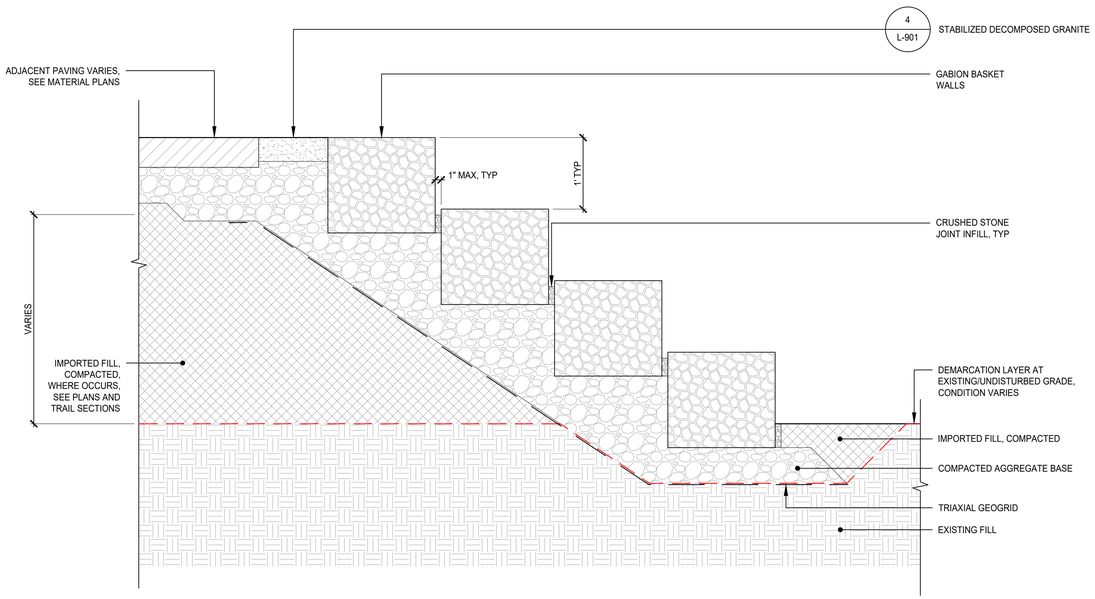
4 CRIB WALL

SCALE: 1" = 1'-0"



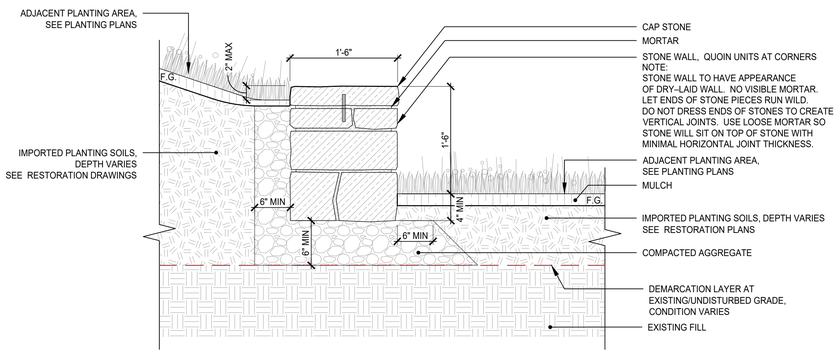
2 BOULDER EMBANKMENT

SCALE: 1" = 1'-0"



3 GABION WALL

SCALE: 1" = 1'-0"



1 STACKED STONE WALL

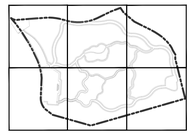
SCALE: 1" = 1'-0"

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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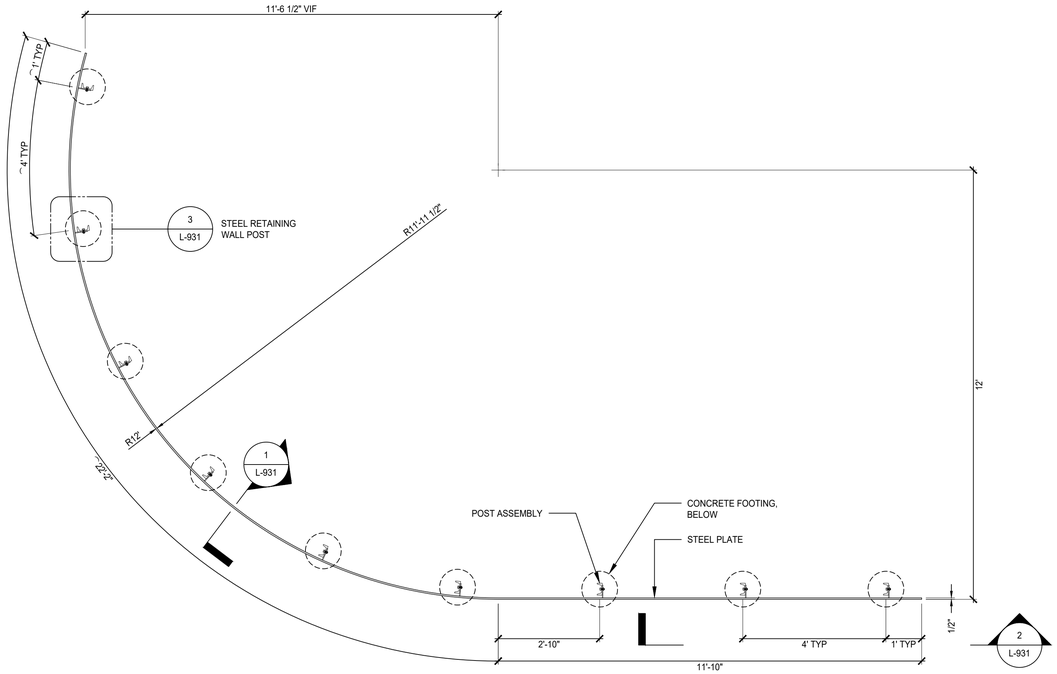
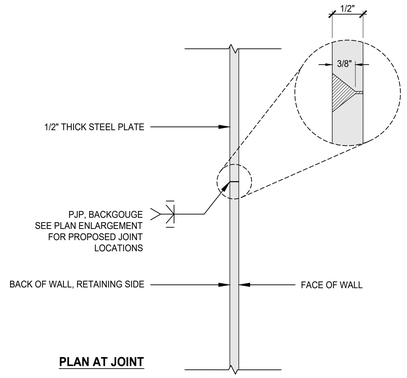
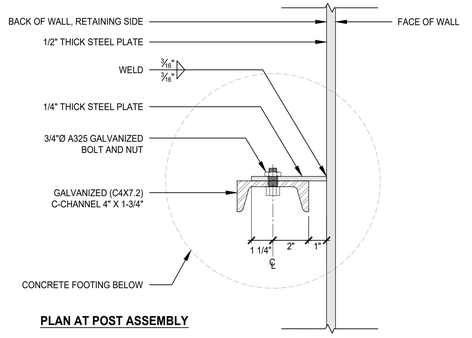


4 STEEL RETAINING WALL POST LAYOUT ENLARGEMENT

SCALE: 1/2" = 1'-0"



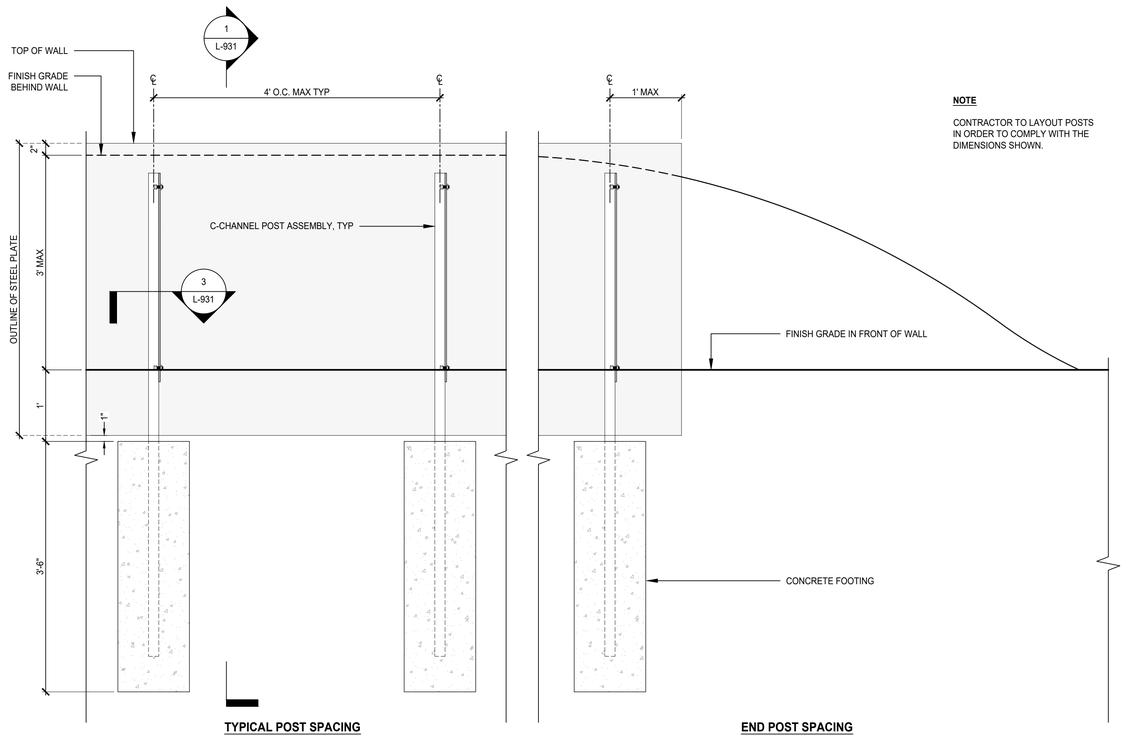
PLAN AT JOINT



PLAN AT POST ASSEMBLY

3 STEEL RETAINING WALL POST

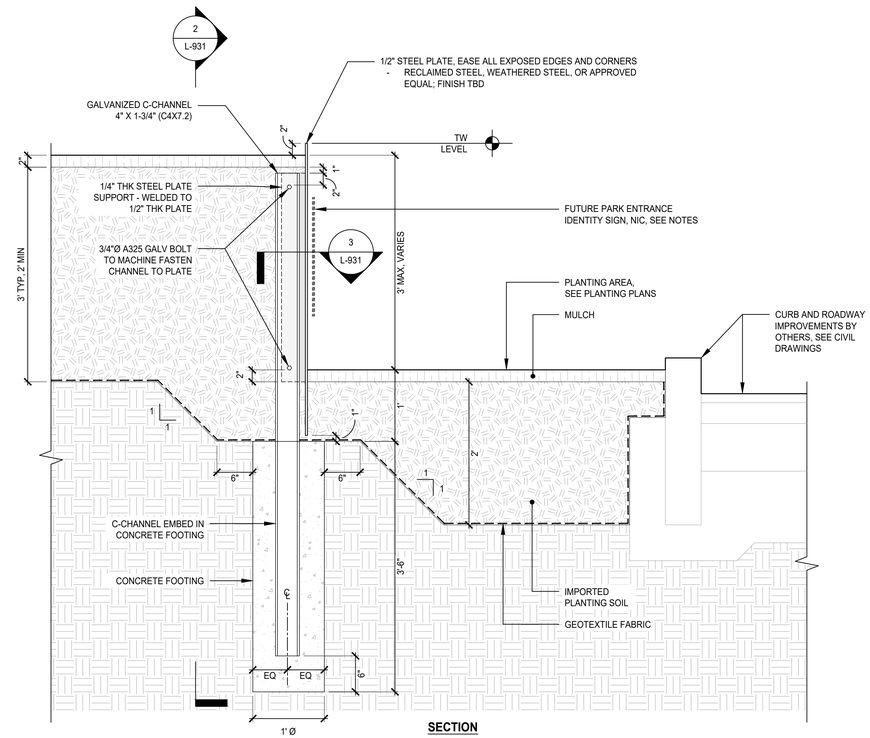
SCALE: 3" = 1'-0"



TYPICAL POST SPACING **END POST SPACING**

2 STEEL RETAINING WALL POST SPACING

SCALE: 1" = 1'-0"



SECTION

1 STEEL RETAINING WALL

SCALE: 1" = 1'-0"

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN

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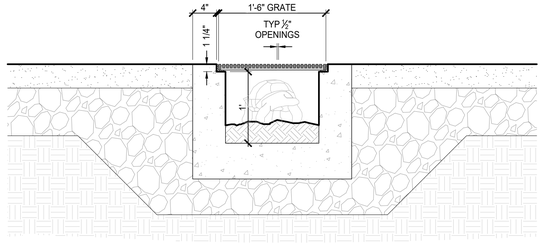
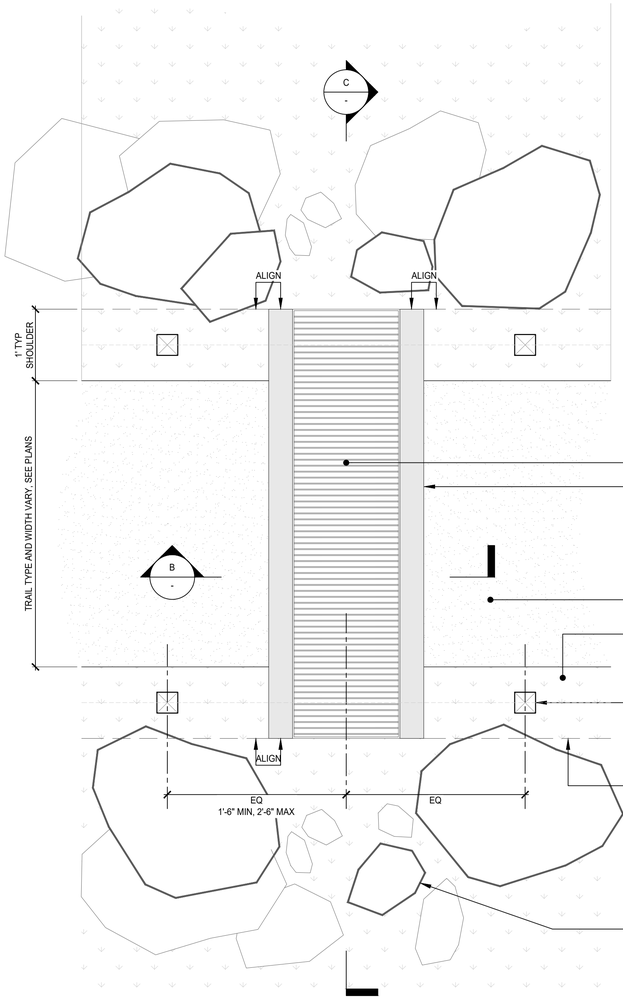
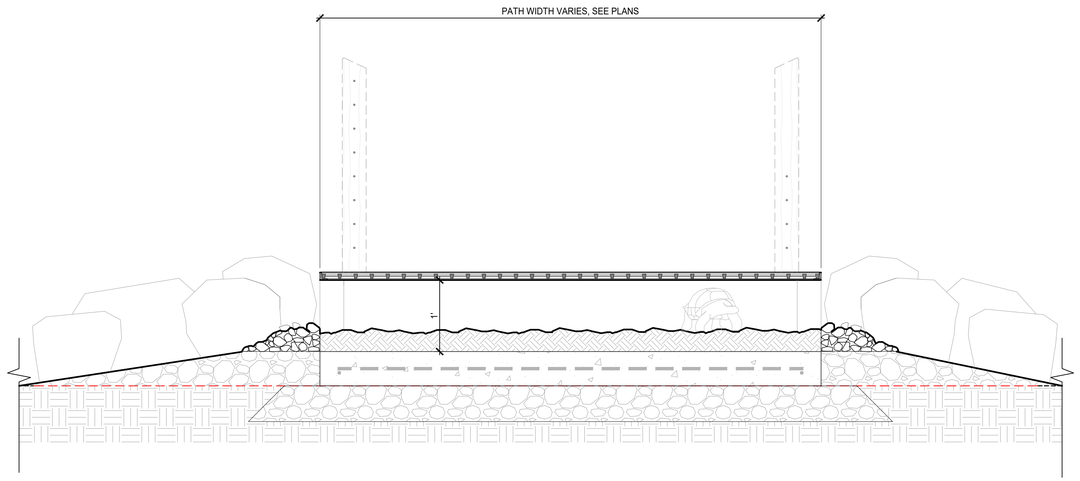


B. CROSS SECTION: WILDLIFE TRAIL CROSSING



A. PLAN: WILDLIFE TRAIL CROSSING



C. LONGITUDINAL SECTION - WILDLIFE TRAIL CROSSING

1 WILDLIFE CROSSING WITH STONE HEADWALLS

SCALE: 1" = 1'-0"

P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLT\L-932 SITE DETAILS.dwg Plotted on: 12/12/2025 1:33:33 PM

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN



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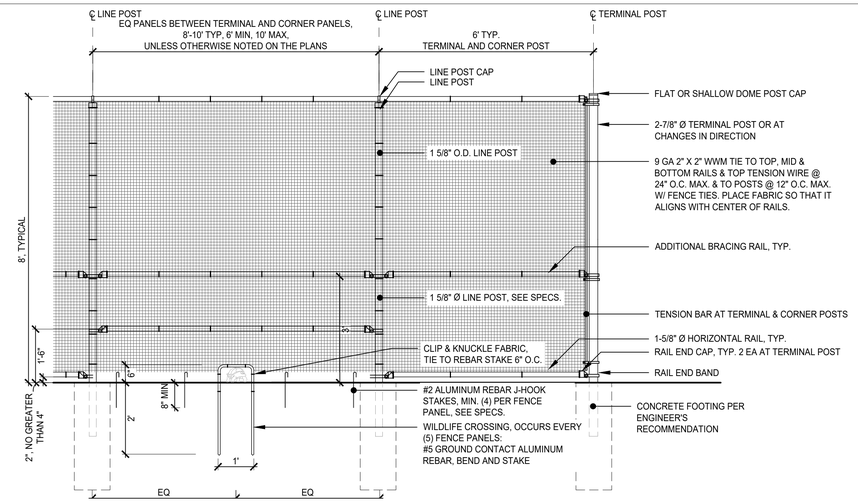
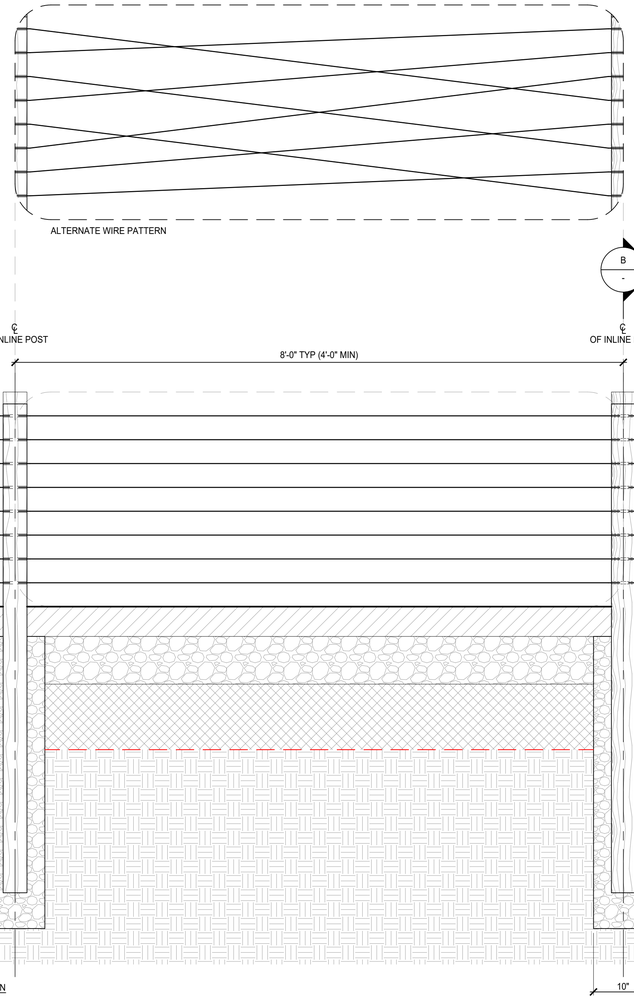


2 FENCE TYPE 1 - SECURITY FENCING

SCALE: 1/2" = 1'-0"



1 FENCE TYPE 3 - DETERRENT RAILING

SCALE: 1" = 1'-0"

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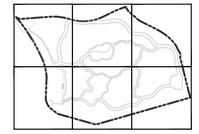
NORTH FOREST
NORWALK, CT

KEY PLAN



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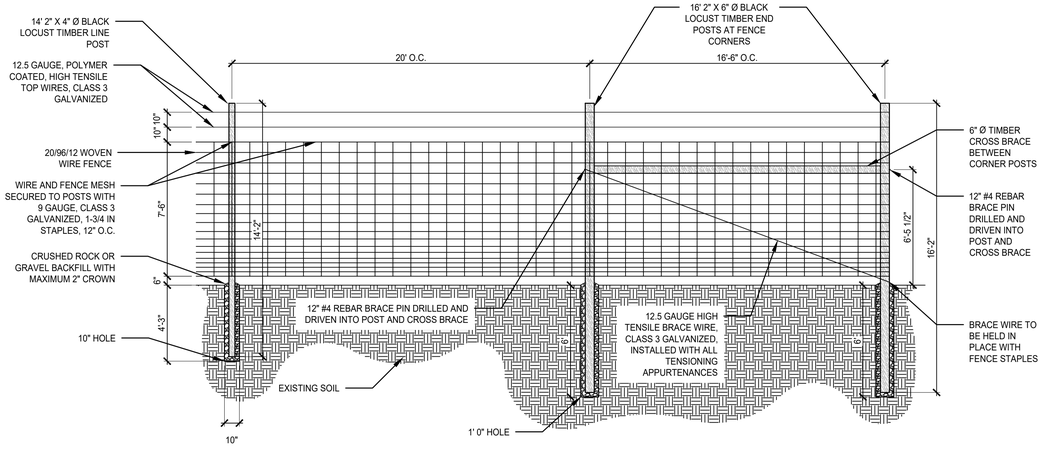
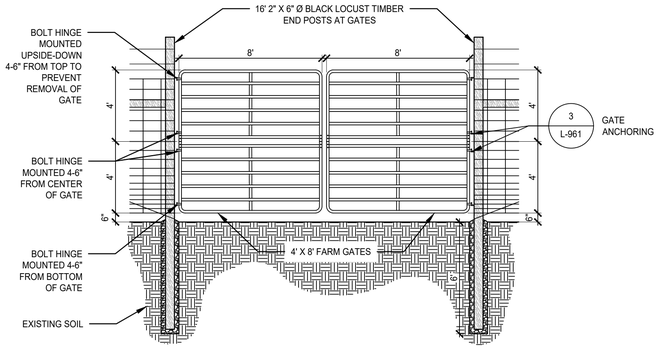


1 DEER CONTROL FENCE - SECTION

SCALE: 1/4" = 1'-0"

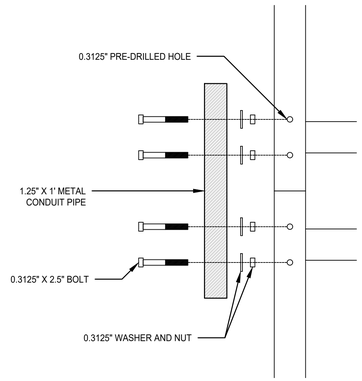
NOTE: ENSURE BOTTOM 6" CLEARANCE FOR WILDLIFE PASSAGE.



2 DEER CONTROL FENCE GATE - SECTION

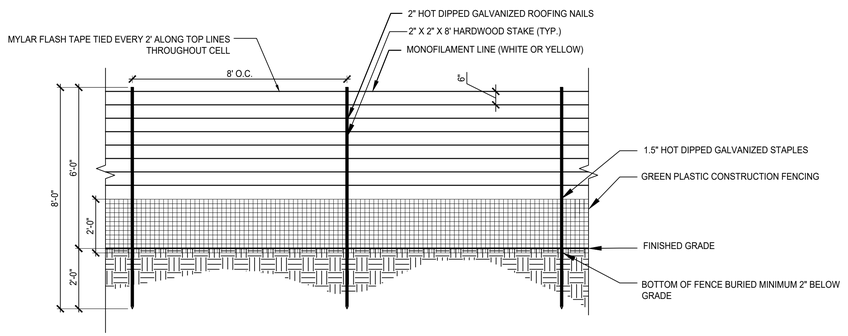
SCALE: 1/4" = 1'-0"

NOTE: ENSURE BOTTOM 6" CLEARANCE FOR WILDLIFE PASSAGE.



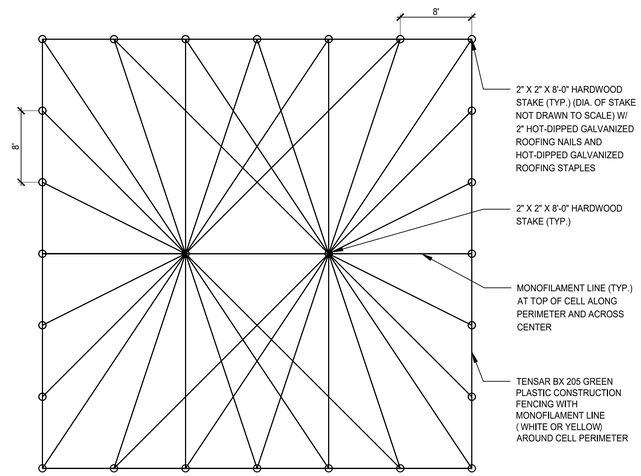
3 GATE ANCHORING

SCALE: 3" = 1'-0"



4A SECTION

SCALE: 3/8" = 1'-0"

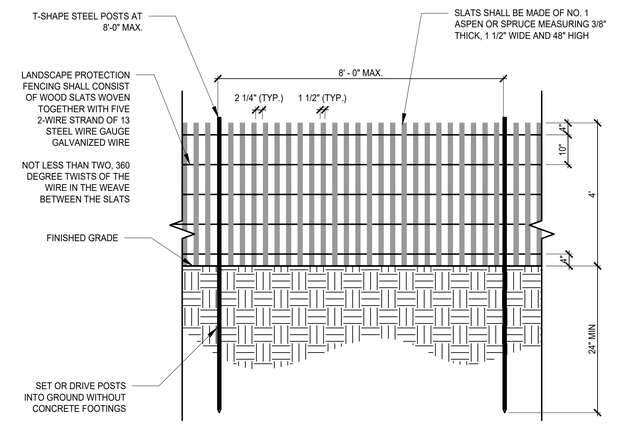


4B DIAGRAMMATIC PLAN

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

4 TEMPORARY WATERFOWL BARRIER

NOTE: SEE ENLARGEMENTS FOR THE LEARN POCKET ON SHEETS L-605 & L-606, AND ENLARGEMENT FOR THE SWITCHGRASS MEADOW ON SHEET L-601 & L-610.



5 LANDSCAPE PROTECTION FENCE

SCALE: 1" = 2'-0"

NOTE: SEE ENLARGEMENTS FOR THE ECO POCKET ON SHEETS L-604 & L-611.

SCAPE

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NORWALK, CT

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PROJECT NO	SHEET NO
2345.1	
SCALE	
AS NOTED	
DRAWN BY	
EDD	**L-961**
CHECKED BY	
EDD	
DATE	
12/15/2025	

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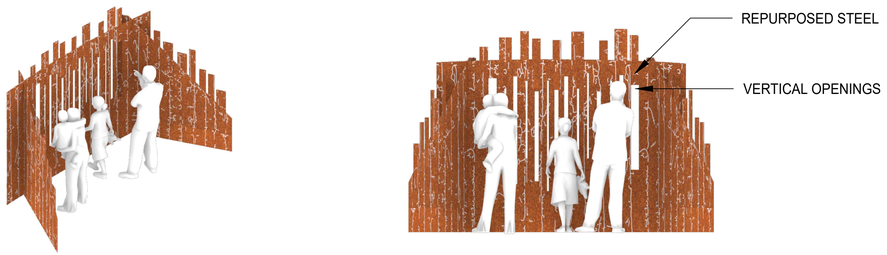
3 BIRD BLINDS - LIVING WILLOW
SCALE: NTS



2 BIRD BLINDS - BIRCH
SCALE: NTS



1 BIRD BLINDS - STEEL
SCALE: NTS

P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLTL-970 SITE DETAILS – BIRD BLINDS.dwg Plotted on: 12/12/2025 1:33:48 PM

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



CLIENT
MANRESA ISLAND CORPORATION

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SITE DETAILS - BIRD BLINDS

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2349.1	
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SCAPE	
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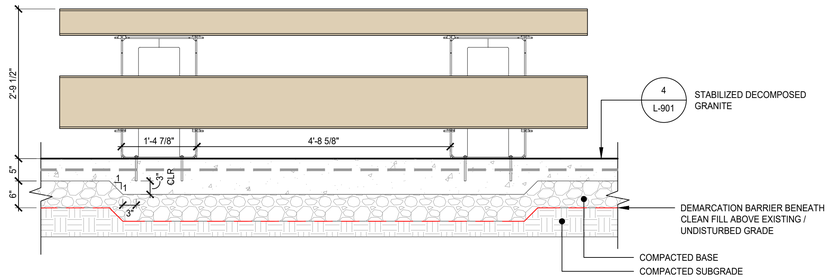
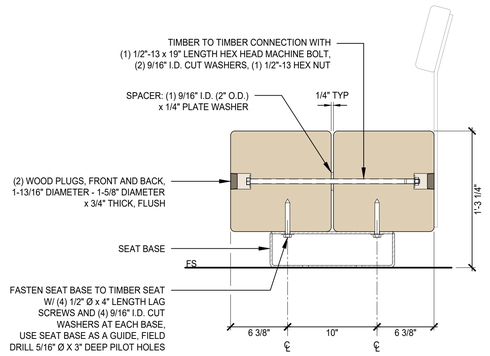
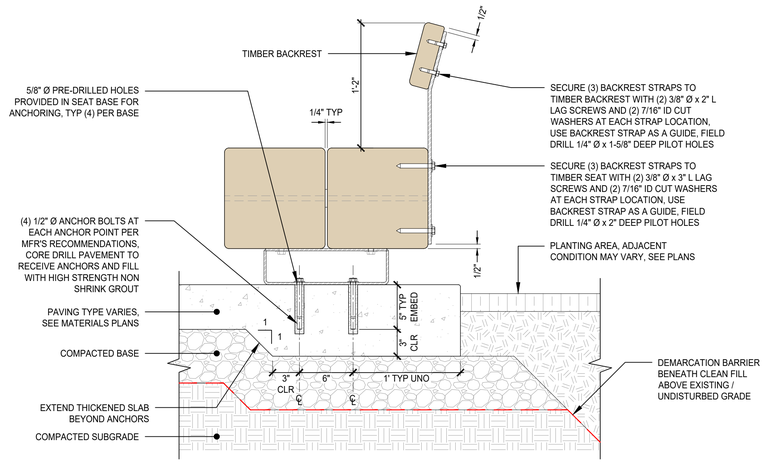


6 PICNIC TABLE

SCALE: 1:16



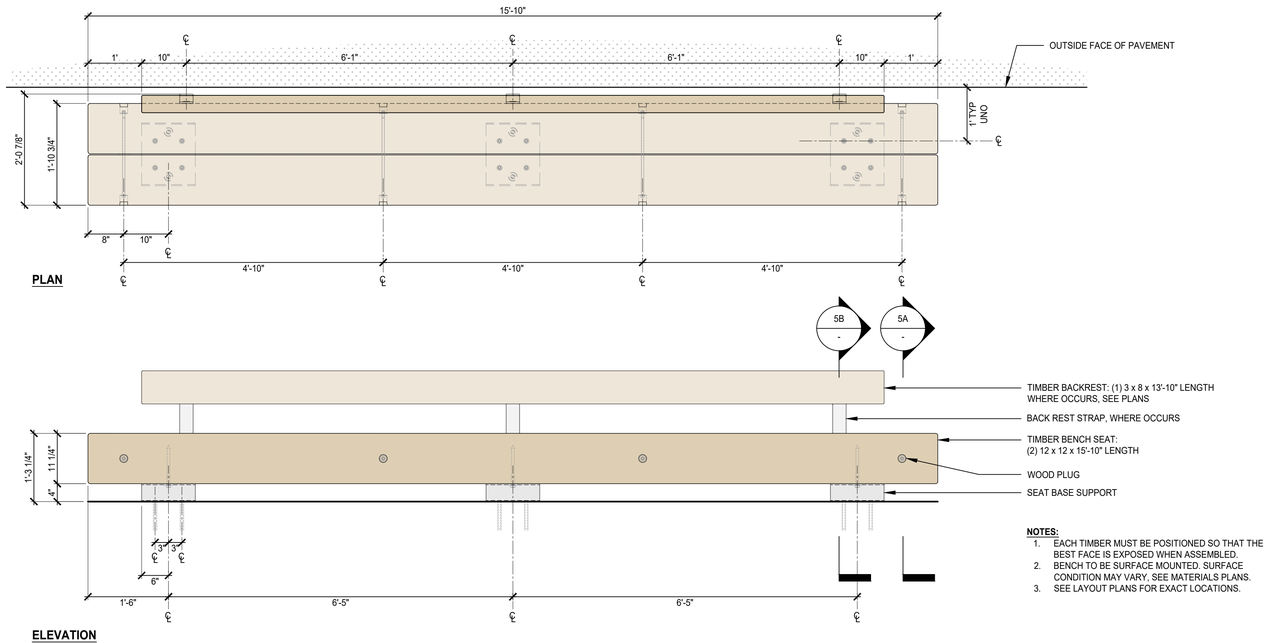
SECTION A



SECTION B

5 BENCH TYPE 3 - SECTION

SCALE: 1:8

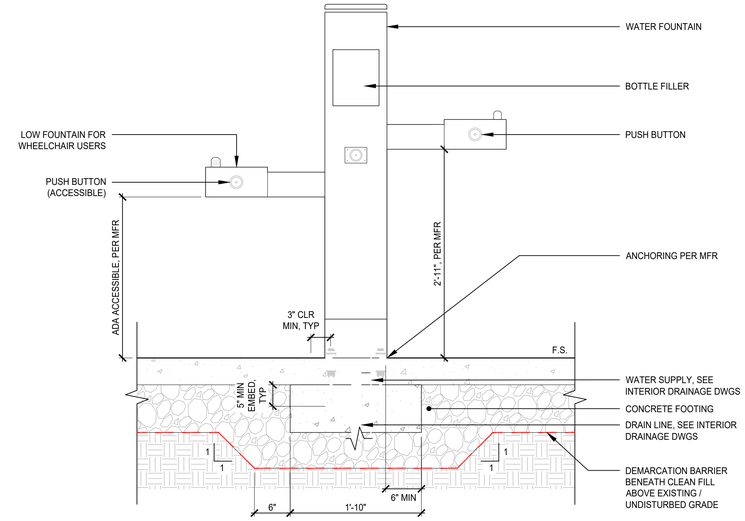


NOTES:

1. EACH TIMBER MUST BE POSITIONED SO THAT THE BEST FACE IS EXPOSED WHEN ASSEMBLED.
2. BENCH TO BE SURFACE MOUNTED. SURFACE CONDITION MAY VARY, SEE MATERIALS PLANS.
3. SEE LAYOUT PLANS FOR EXACT LOCATIONS.

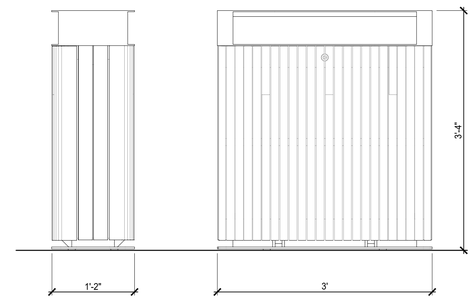
4 BENCH TYPE 3

SCALE: 1:16



3 DRINKING FOUNTAIN

SCALE: 1" = 1'-0"

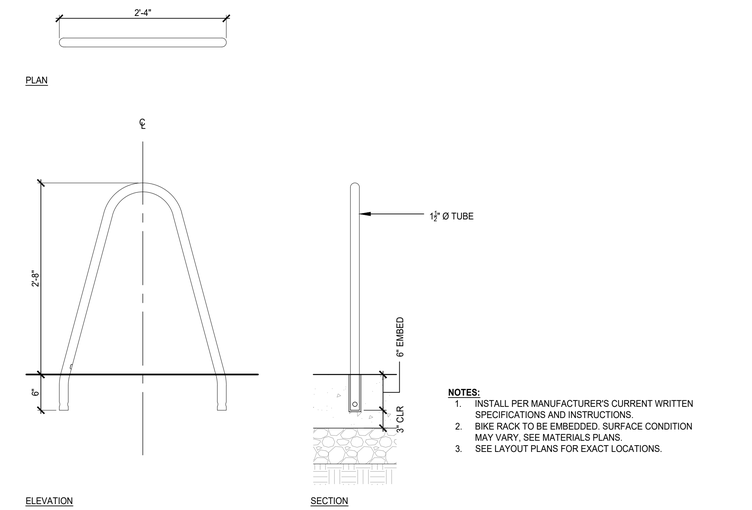


NOTES:

1. INSTALL PER MANUFACTURER'S CURRENT WRITTEN SPECIFICATIONS AND INSTRUCTIONS.
2. SURFACE CONDITION MAY VARY, SEE MATERIALS PLANS.
3. SEE LAYOUT PLANS FOR EXACT LOCATIONS.

2 WASTE RECEPTACLE

SCALE: 1" = 1'-0"



NOTES:

1. INSTALL PER MANUFACTURER'S CURRENT WRITTEN SPECIFICATIONS AND INSTRUCTIONS.
2. BIKE RACK TO BE EMBEDDED. SURFACE CONDITION MAY VARY, SEE MATERIALS PLANS.
3. SEE LAYOUT PLANS FOR EXACT LOCATIONS.

1 BIKE RACK

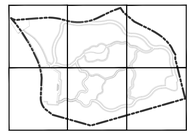
SCALE: 1" = 1'-0"

SCAPE

MANRESA WILDS
NORTH FOREST

NORWALK, CT

KEY PLAN



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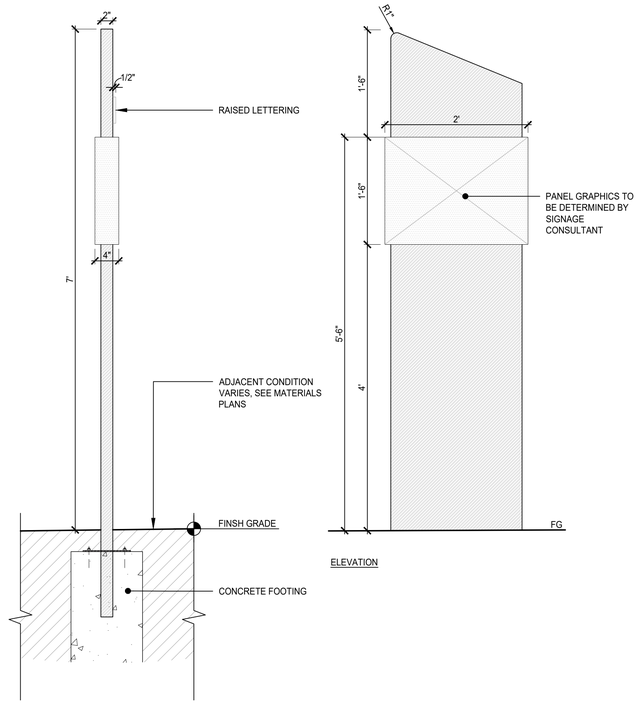
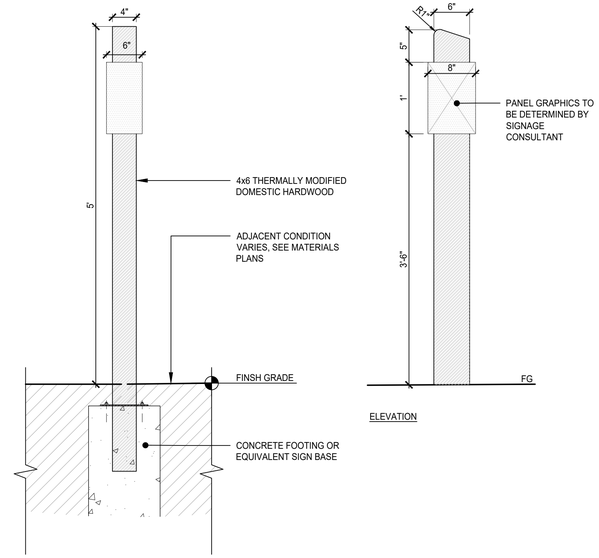


SECTION

ELEVATION

4 WAYFINDING SIGN - TRAILHEAD

SCALE: 1" = 1'-0"

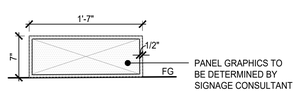


SECTION

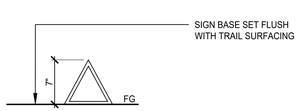
ELEVATION

2 TRAIL MARKER SIGN

SCALE: 1" = 1'-0"



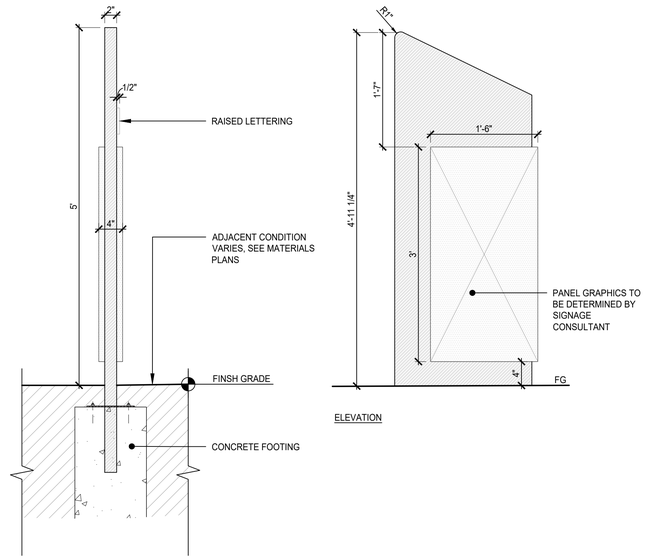
ELEVATION



SECTION

5 RULES AND REGULATIONS SIGN

SCALE: 1" = 1'-0"

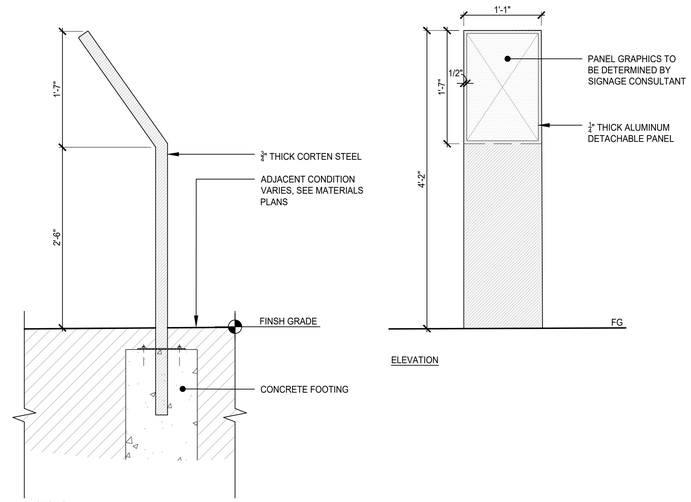


SECTION

ELEVATION

3 WAYFINDING SIGN - DIRECTIONAL

SCALE: 1" = 1'-0"



SECTION

ELEVATION

1 EDUCATIONAL SIGN

SCALE: 1" = 1'-0"

SCAPE

MANRESA WILDS NORTH FOREST

NORWALK, CT

KEY PLAN



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PROJECT NO	SHEET NO
2349.1	
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SCALE	
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SCAPE	**L-980**
CHECKED BY	
SCAPE	
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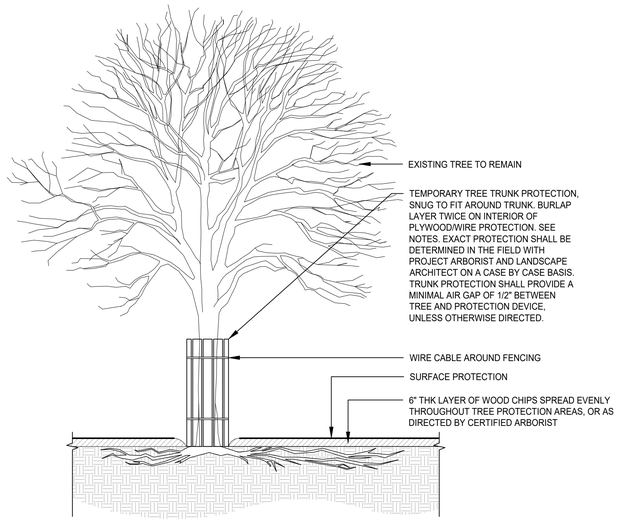
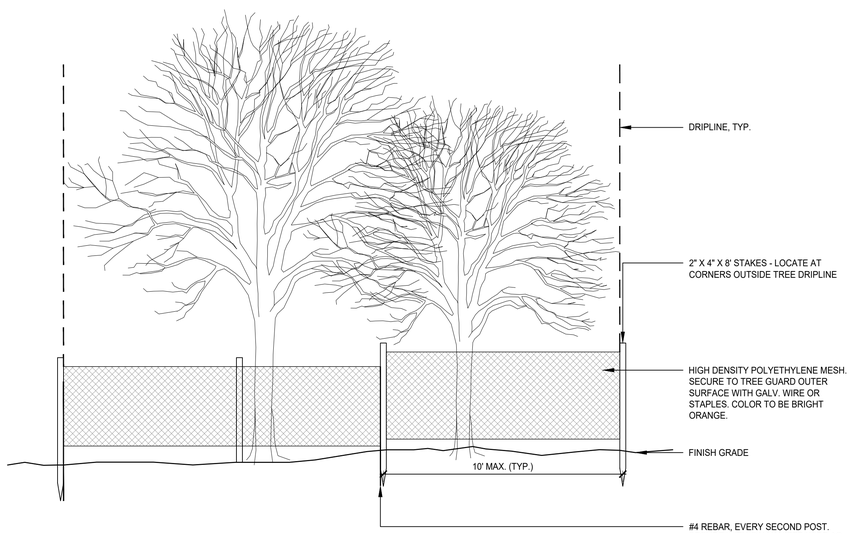


NOTE: ONLY USE TREE TRUNK PROTECTION DETAIL WHEN TRUNK IS WITHIN 6' OF EDGE OF CONSTRUCTION DISTURBANCE. FOR ALL OTHER INSTANCES, SEE TREE PROTECTION FENCING DETAIL. SEE L-100 SERIES FOR TREE LOCATIONS.

5 TREE TRUNK PROTECTION

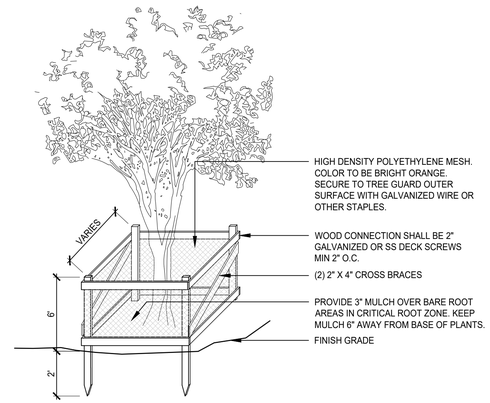
SCALE: 1/4" = 1'-0"



NOTE: PROTECT TREES IN GROUPS WHERE CRZ OVERLAPS OR WHERE LESS THAN 15' CLEARING IN BETWEEN TRUNKS. FENCING DOES NOT NEED TO FULLY ENCLOSE TREES SO LONG AS IT CREATES A SEPARATION BETWEEN TRUNKS AND CONSTRUCTION TO A MIN DIMENSION OF 15'. SEE L-100 SERIES FOR TREE LOCATIONS.

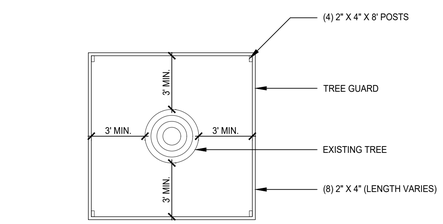
4 TREE PROTECTION FENCING - GROUPS OF TREES

SCALE: 1/4" = 1'-0"



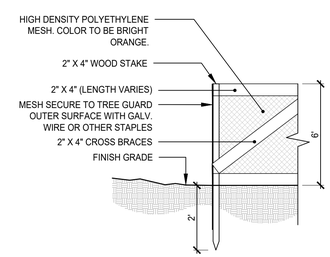
3 TREE PROTECTION FENCING - ISOMETRIC VIEW

SCALE: N.T.S



2 TREE PROTECTION FENCING - PLAN VIEW

SCALE: 1/4" = 1'-0"



1 TREE PROTECTION FENCING - STAKE

SCALE: 1/2" = 1'-0"

SCAPE

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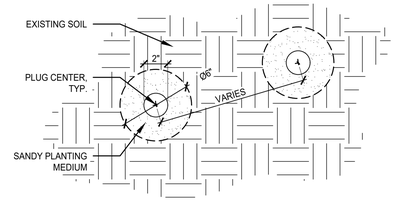
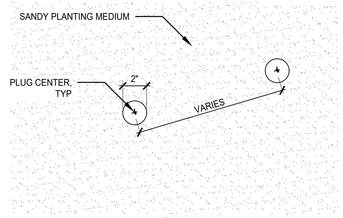


PLAN



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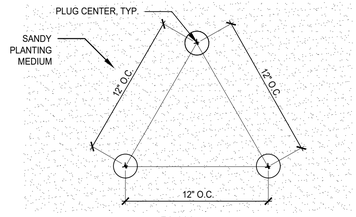

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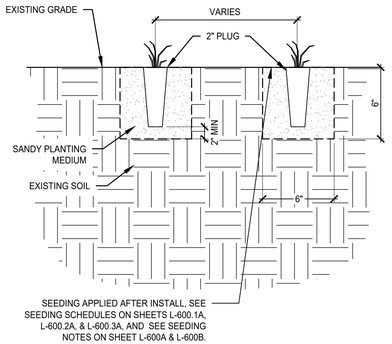

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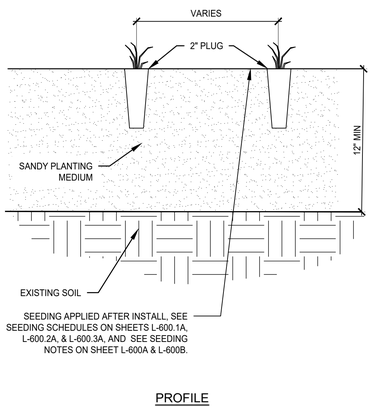

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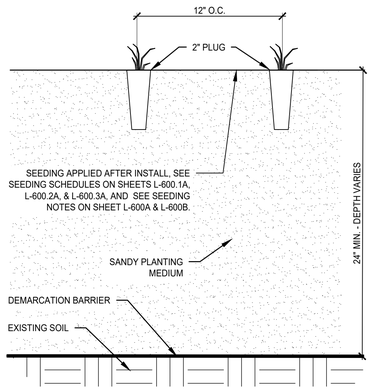


PROFILE

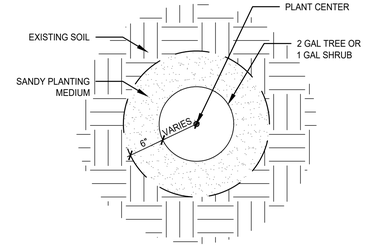
1A PRECISION PLUG PLANTING
SCALE: 2" = 1'-0"

1B EXCAVATED PLUG PLANTING
SCALE: 2" = 1'-0"

1C ECO POCKET PLUG PLANTING
SCALE: 2" = 1'-0"

1 PLUG PLANTING
SCALE: 2" = 1'-0"

NOTE: REFER TO RESTORATION NOTES 1 & 2, SHEET L-600A & L-600B FOR INFORMATION ON THE PRECISION PLANTING METHOD, EXCAVATION PLANTING METHOD, AND TYPICAL PLANTING METHOD. REFER TO RESTORATION NOTES 3, SHEET L-600C FOR INFORMATION ON THE PLANTING METHODS TO BE UTILIZED WITHIN EACH PLANTING ZONE.



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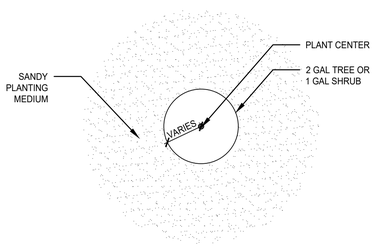

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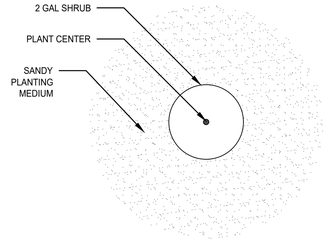

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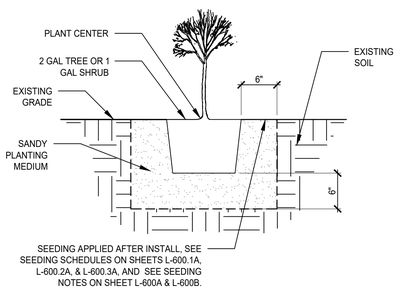

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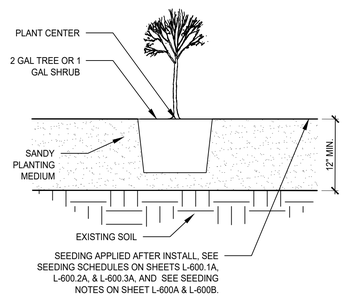

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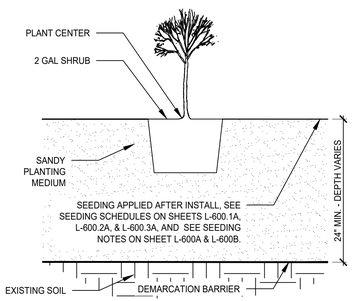


PROFILE

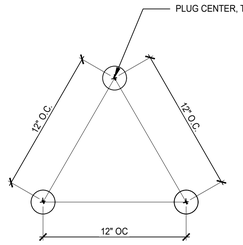
2A PRECISION TREE & SHRUB PLANTING
SCALE: 1" = 1'-0"

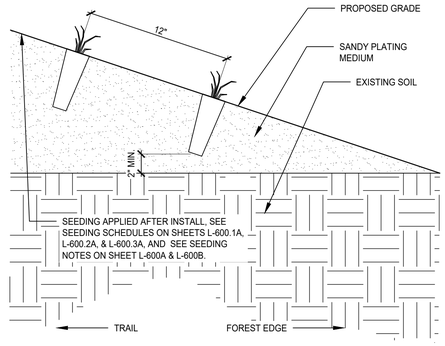
2B EXCAVATED TREE & SHRUB PLANTING
SCALE: 1" = 1'-0"

2C ECO POCKET SHRUB PLANTING
SCALE: 1" = 1'-0"

2 TREE AND SHRUB PLANTING
SCALE: 1" = 1'-0"

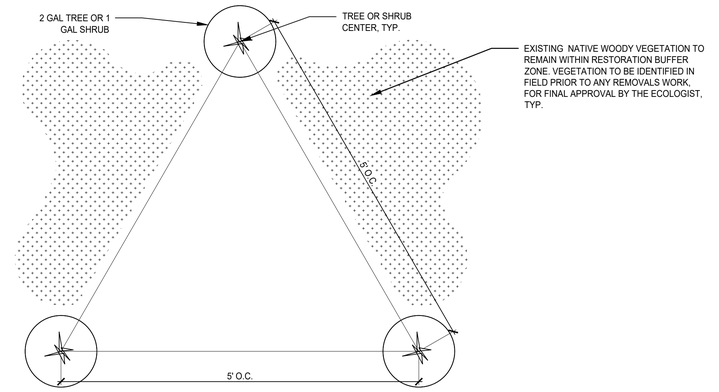
NOTE: REFER TO RESTORATION NOTES 1 & 2, SHEET L-600A & L-600B FOR INFORMATION ON THE PRECISION PLANTING METHOD, EXCAVATION PLANTING METHOD, AND TYPICAL PLANTING METHOD. REFER TO RESTORATION NOTES 3, SHEET L-600C FOR INFORMATION ON THE PLANTING METHODS TO BE UTILIZED WITHIN EACH PLANTING ZONE.



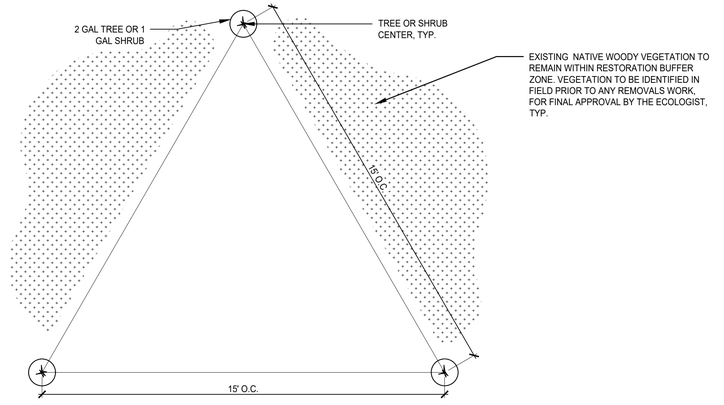


3 TRAIL CORRIDOR HERBACEOUS SLOPE PLUG PLANTING
SCALE: 2" = 1'-0"

NOTE: REFER TO PLANTING AND SEEDING NOTES INCLUDED ON SHEETS L-600A AND L-600B FOR RESTORATION PLANTING NOTES AND THE RESTORATION PLANTING ZONE TABLE.



4A ZONE 1, 2, & WET ADAPTIVE RESTORATION BUFFER
SCALE: 1" = 1'-0"



4B ZONE 3 RESTORATION BUFFER
SCALE: 3/8" = 1'-0"

4 RESTORATION BUFFER TREE & SHRUB PLANTING

SCAPE

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NORTH FOREST
NORWALK, CT

KEY PLAN

CLIENT
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ENVIRONMENTAL — **A K R F**
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STATE OF CONNECTICUT
AMANDA M. BAYLEY
LICENSED LANDSCAPE ARCHITECT
NO. 1394

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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING DETAILS 1

PROJECT NO	SHEET NO
2349.1	
SCALE	
AS NOTED	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

L-991

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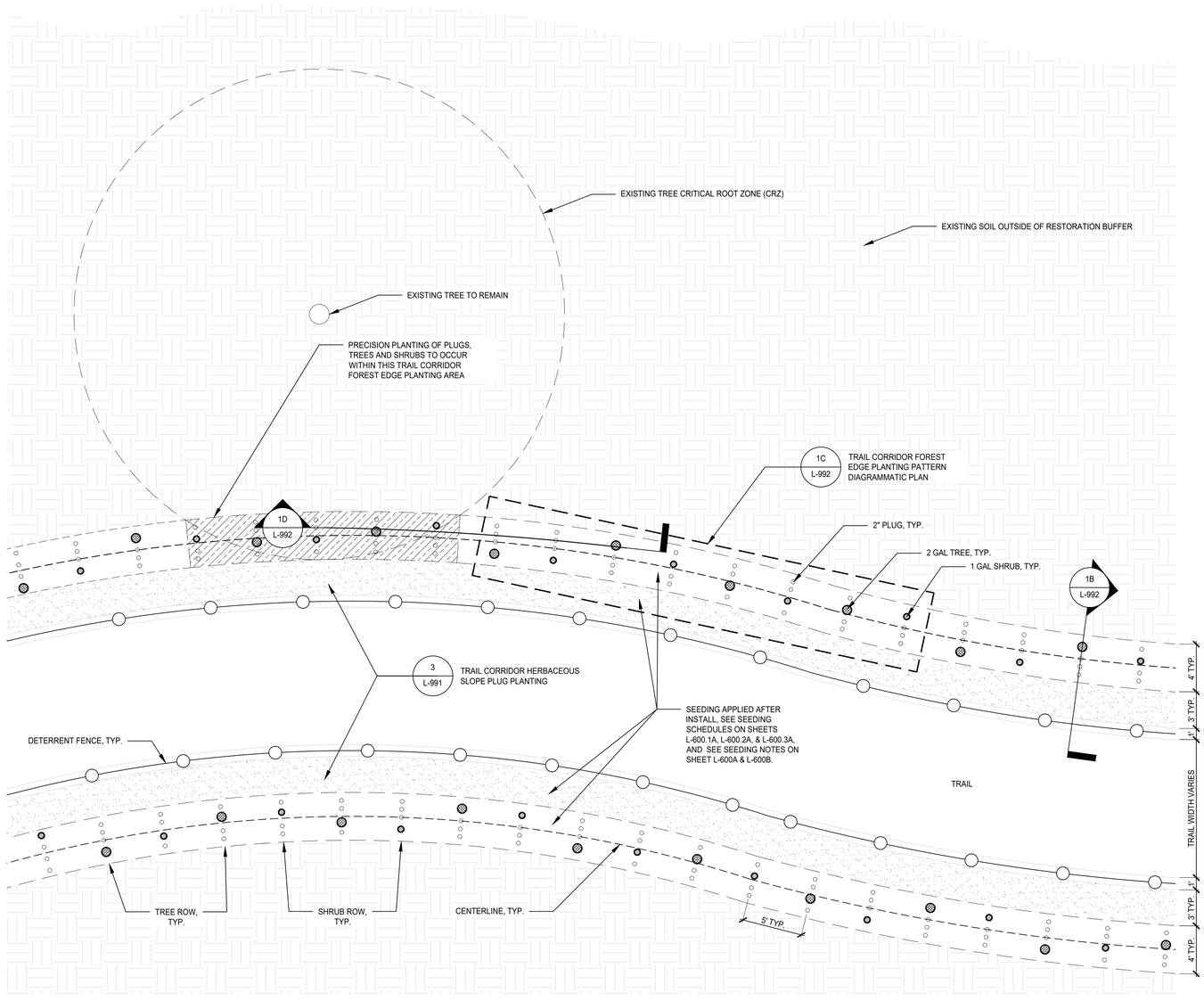
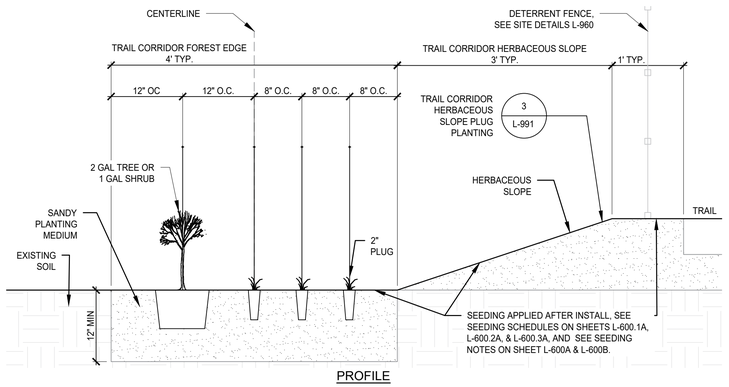


1A TRAIL CORRIDOR FOREST EDGE PLANTING DIAGRAMMATIC PLAN

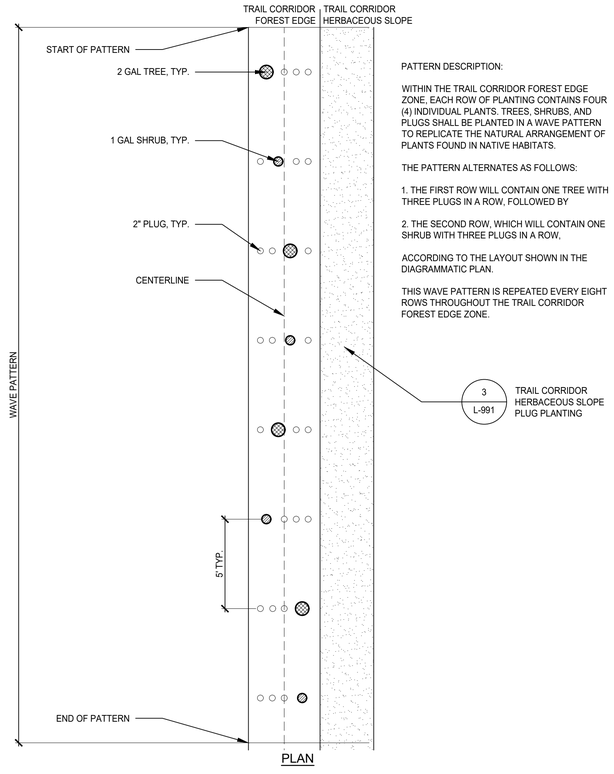
SCALE: 3/16" = 1'-0"



PROFILE

1B TRAIL CORRIDOR FOREST EDGE TREE/SHRUB POSITION

SCALE: 1" = 1'-0"



PATTERN DESCRIPTION:

WITHIN THE TRAIL CORRIDOR FOREST EDGE ZONE, EACH ROW OF PLANTING CONTAINS FOUR (4) INDIVIDUAL PLANTS. TREES, SHRUBS, AND PLUGS SHALL BE PLANTED IN A WAVE PATTERN TO REPLICATE THE NATURAL ARRANGEMENT OF PLANTS FOUND IN NATIVE HABITATS.

THE PATTERN ALTERNATES AS FOLLOWS:

1. THE FIRST ROW WILL CONTAIN ONE TREE WITH THREE PLUGS IN A ROW, FOLLOWED BY

2. THE SECOND ROW, WHICH WILL CONTAIN ONE SHRUB WITH THREE PLUGS IN A ROW,

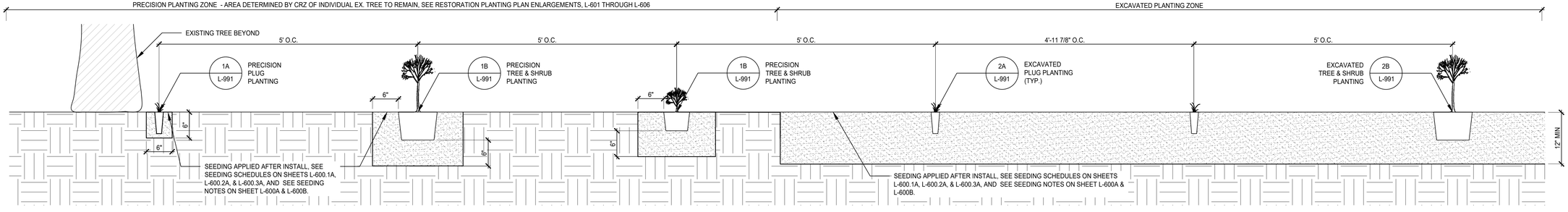
ACCORDING TO THE LAYOUT SHOWN IN THE DIAGRAMMATIC PLAN.

THIS WAVE PATTERN IS REPEATED EVERY EIGHT ROWS THROUGHOUT THE TRAIL CORRIDOR FOREST EDGE ZONE.

PLAN

1C TRAIL CORRIDOR FOREST EDGE PLANTING PATTERN DIAGRAMMATIC PLAN

SCALE: 1/4" = 1'-0"



1D TRAIL CORRIDOR FOREST EDGE PLANTING DIAGRAMMATIC SECTION

SCALE: 1" = 1'

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NORWALK, CT

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NO. 1394

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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING DETAILS 2

PROJECT NO	SHEET NO
2349.1	
SCALE	
AS NOTED	
DRAWN BY	
EDD	
CHECKED BY	
EDD	
DATE	
12/15/2025	

L-992

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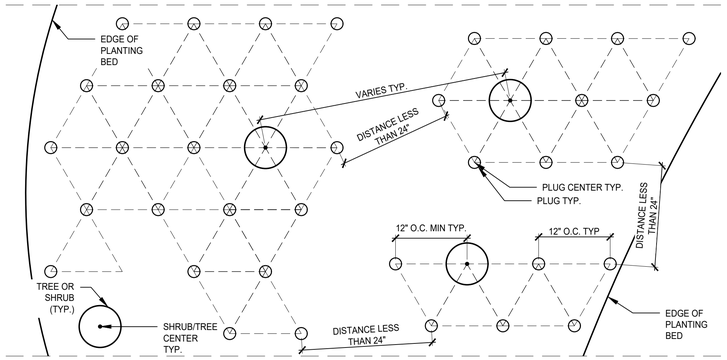
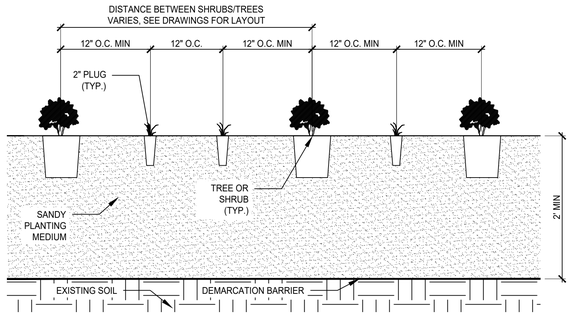


PLAN

1A PLUG SHRUB/TREE INTERPLANTING - DIAGRAMMATIC PLAN

SCALE: 1" = 1'-0"



PROFILE

1B PLUG SHRUB/TREE INTERPLANTING - DIAGRAMMATIC SECTION

SCALE: 1" = 1'-0"

1 PLUG & SHRUB/TREE INTERPLANTING

SCALE: 1" = 1'-0"

SHRUBS AND/OR TREES ARE TO BE PLANTED ACCORDING TO THE LAYOUT ON SHEET L-611 FOR THE ECO POCKET INTERPLANTINGS, AND THE LAYOUTS ON SHEETS L-613 THROUGH L-618 FOR THE TRAIL JUNCTION INTERPLANTINGS.

PLUGS ARE TO BE PLANTED THROUGHOUT THE ENTIRE SHRUB AND/OR TREE PLANTING BED FOLLOWING THE GUIDELINES BELOW:

1. START AT A SHRUB AND/OR TREE AND START PLANTING PLUGS AT 12" O.C. AWAY FROM THE SHRUB AND/OR TREE, AND 12" O.C. AWAY FROM EACH OTHER.
2. STOP PLANTING PLUGS WHEN A PLUG WOULD BE PLANTED LESS THAN 12" O.C. AWAY FROM A SHRUB AND/OR TREE OR ANOTHER PLUG.
3. PLUGS SHOULD ALWAYS BE PLANTED AT A MINIMUM OF 12" O.C. FROM ANY SHRUB OR TREE.
4. PLUGS SHOULD ALWAYS BE PLANTED 12" O.C. FROM ANOTHER PLUG. IF THERE IS NOT 24" BETWEEN TWO PLUGS, ANOTHER PLUG CANNOT BE PLANTED.

SCAPE

MANRESA WILDS
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NORWALK, CT

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LOCAL APPROVAL

SHEET NAME

RESTORATION PLANTING DETAILS 3

PROJECT NO	SHEET NO
2349.1	
SCALE	
AS NOTED	
DRAWN BY	
EDD	**L-993**
CHECKED BY	
EDD	
DATE	
12/15/2025	

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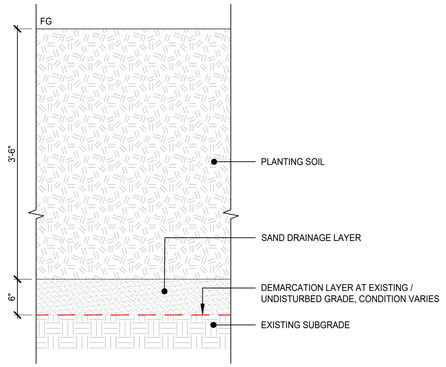
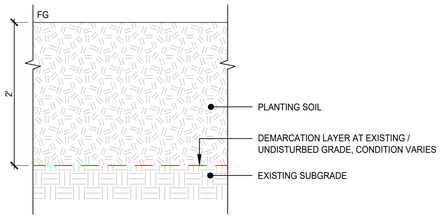
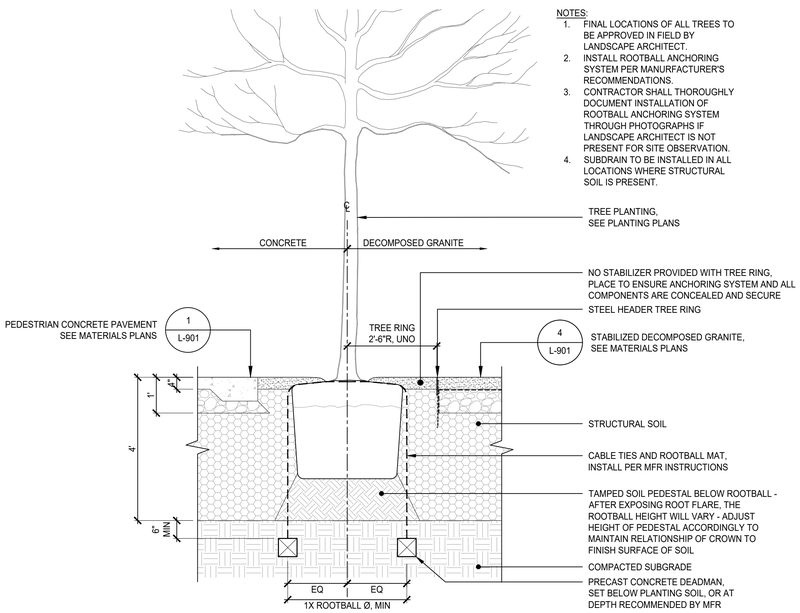


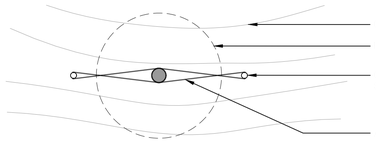
10 TREE PLANTING SOIL PROFILE
SCALE: 1" = 1'-0"



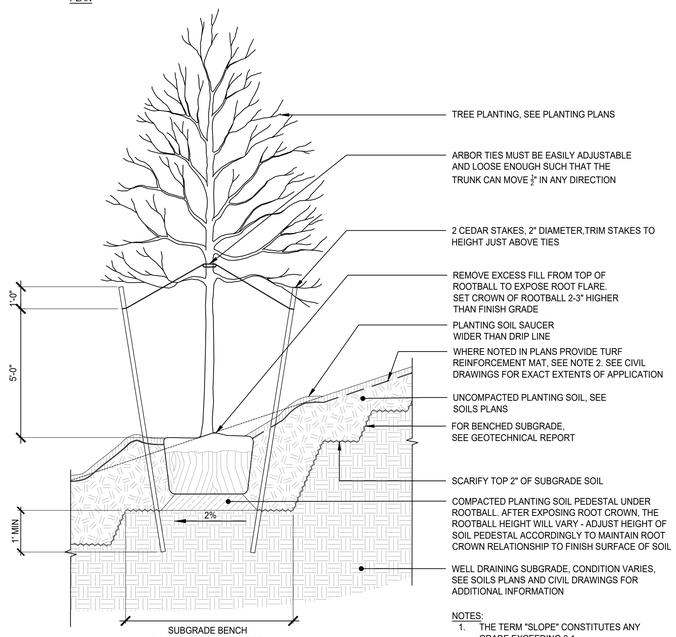
9 PLANTING SOIL PROFILE
SCALE: 1" = 1'-0"



8 TREE PLANTING IN STRUCTURAL SOIL
SCALE: 1/2" = 1'-0"



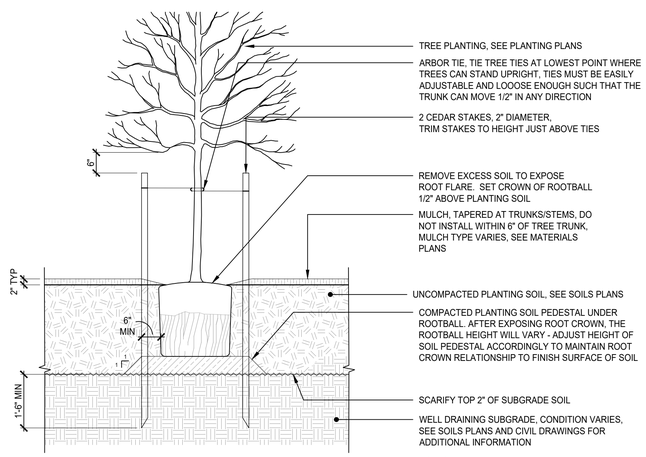
PLAN



NOTES:
1. THE TERM "SLOPE" CONSTITUTES ANY GRADE EXCEEDING 3:1
2. FINAL LOCATION OF ALL TREES TO BE APPROVED BY LANDSCAPE ARCHITECT

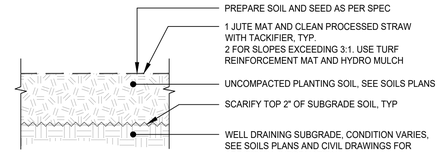
SECTION

7 TREE PLANTING ON SLOPE
SCALE: 1/2" = 1'-0"

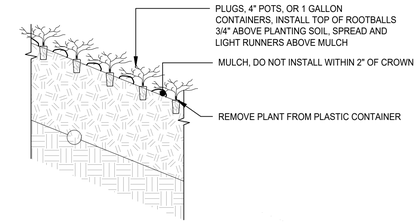


NOTES:
1. FINAL LOCATION OF ALL TREES TO BE APPROVED BY LANDSCAPE ARCHITECT

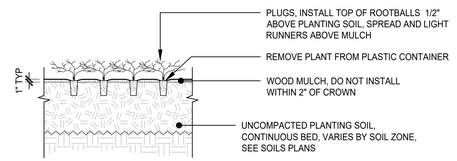
6 TREE PLANTING
SCALE: 1/2" = 1'-0"



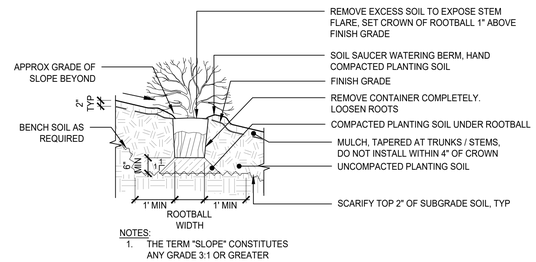
5 SEEDING
SCALE: 1/2" = 1'-0"



4 PLUG PLANTING ON SLOPE
SCALE: 1/2" = 1'-0"

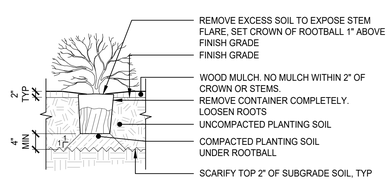


3 PLUG PLANTING
SCALE: 1/2" = 1'-0"



NOTES:
1. THE TERM "SLOPE" CONSTITUTES ANY GRADE 3:1 OR GREATER

2 SHRUB PLANTING ON SLOPE
SCALE: 1/2" = 1'-0"



1 SHRUB PLANTING
SCALE: 1/2" = 1'-0"

SCAPE

MANRESA WILDS
NORTH FOREST
NORWALK, CT

KEY PLAN



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LOCAL APPROVAL

SHEET NAME

SITE DETAILS - PLANTING

PROJECT NO	SHEET NO
2349.1	
SCALE	
SCALE	
DRAWN BY	
SCAPE	
CHECKED BY	
SCAPE	
DATE	
12/15/2025	

L-994

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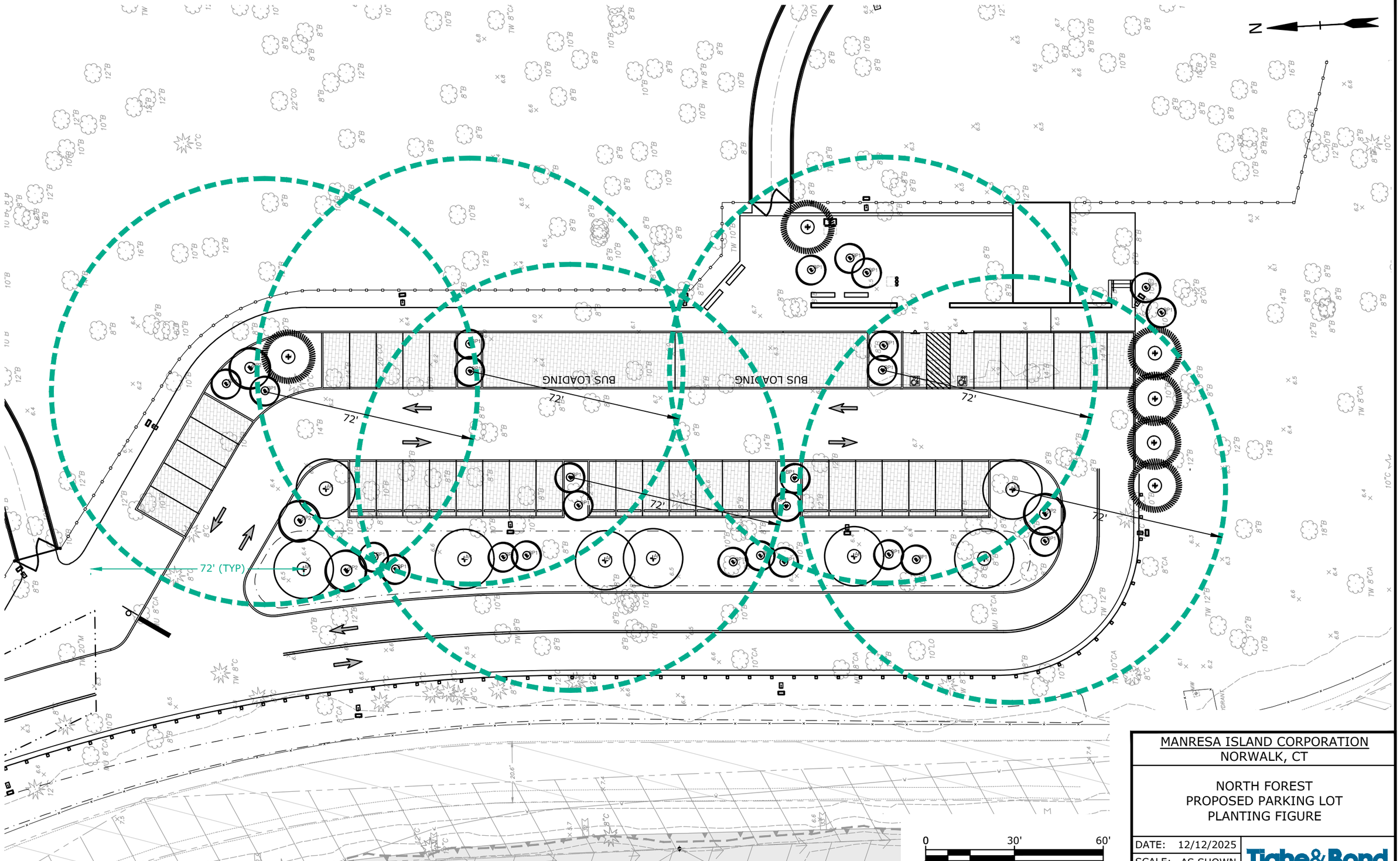
P:\2349.1 – Manresa Island\05_CAD Drawings\01_North Forest\03_PLTL\–994 SITE DETAILS – PLANTING.dwg Plotted on: 12/12/2025 1:34:22 PM



MANRESA ISLAND CORPORATION
NORWALK, CT

NORTH FOREST
PROPOSED PARKING LOT
PLANTING FIGURE

DATE:	12/12/2025
SCALE:	AS SHOWN
FIGURE:	8

Tighe&Bond

J:\M\M5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Drawings\AutoCAD\Figures\M5177-004-Parking-Lot-Tree-Planting.dwg



LEGEND

PROJECT AREA

IMPERVIOUS

COVERAGE AREAS		
IMPERVIOUS	12,393 SF±	0.28 AC±
PERVIOUS	1,210,837 SF±	27.80 AC±
TOTAL	1,223,230 SF±	28.08 AC±

MANRESA ISLAND CORPORATION
NORWALK, CT

NORTH FOREST
EXISTING IMPERVIOUS COVERAGE MAP

DATE: 12/5/2025
SCALE: AS SHOWN
FIGURE: 3 (EX-IMP)

Tighe&Bond

Plotted On:Dec 05, 2025-6:59am By: KMcCutchan
Tighe & Bond:J:\WM\5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Design\Stormwater\M5177-004-EX-IMPERVIOUS.dwg



LEGEND

PROJECT AREA

IMPERVIOUS

COVERAGE AREAS		
IMPERVIOUS	102,850 SF±	2.36 AC±
PERVIOUS	1,120,380 SF±	25.72 AC±
TOTAL	1,223,230 SF±	28.08 AC±

MANRESA ISLAND CORPORATION
NORWALK, CT

NORTH FOREST
PROPOSED IMPERVIOUS COVERAGE MAP

DATE: 12/5/2025
SCALE: AS SHOWN
FIGURE: 4 (PR-IMP)

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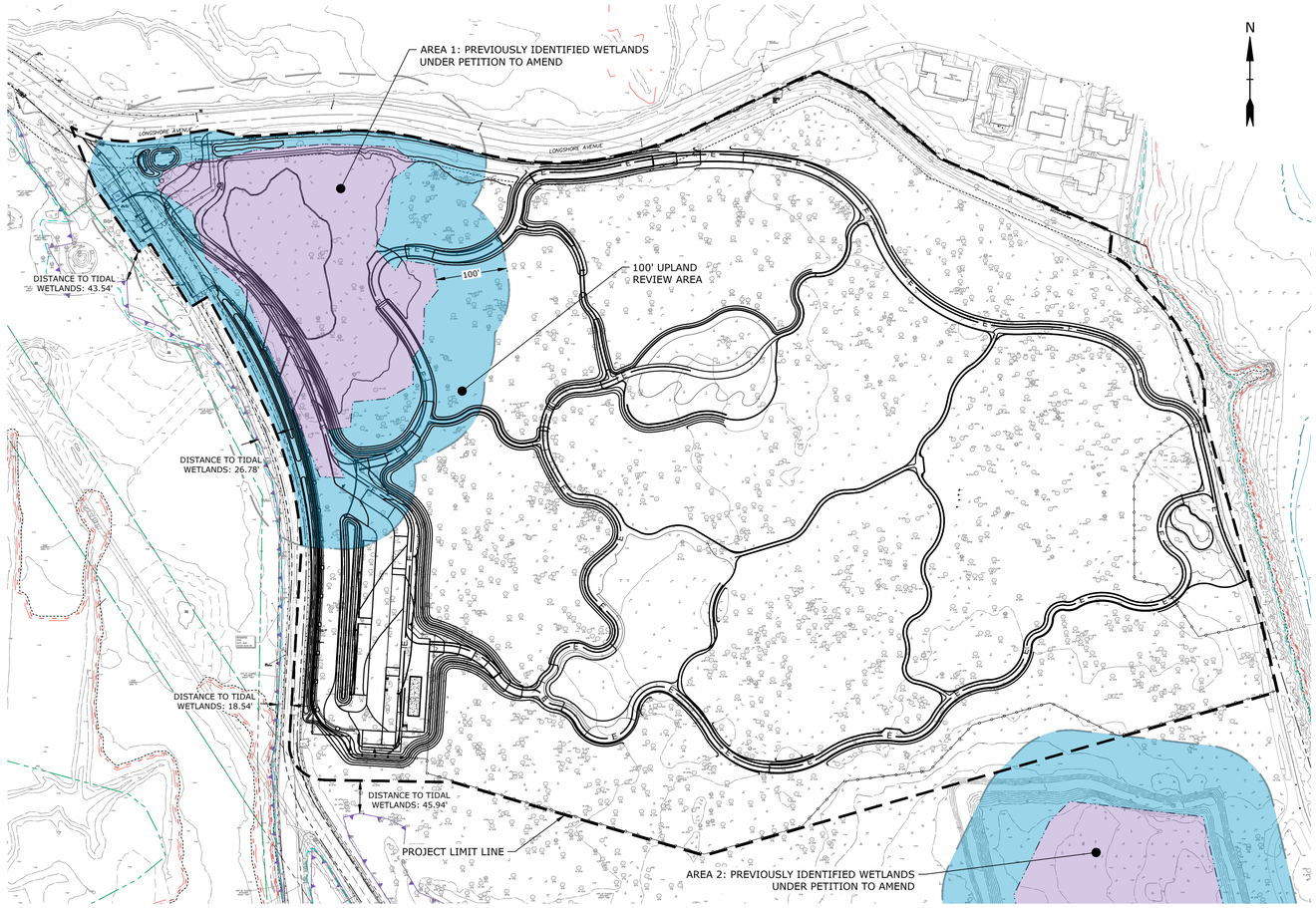


LEGEND

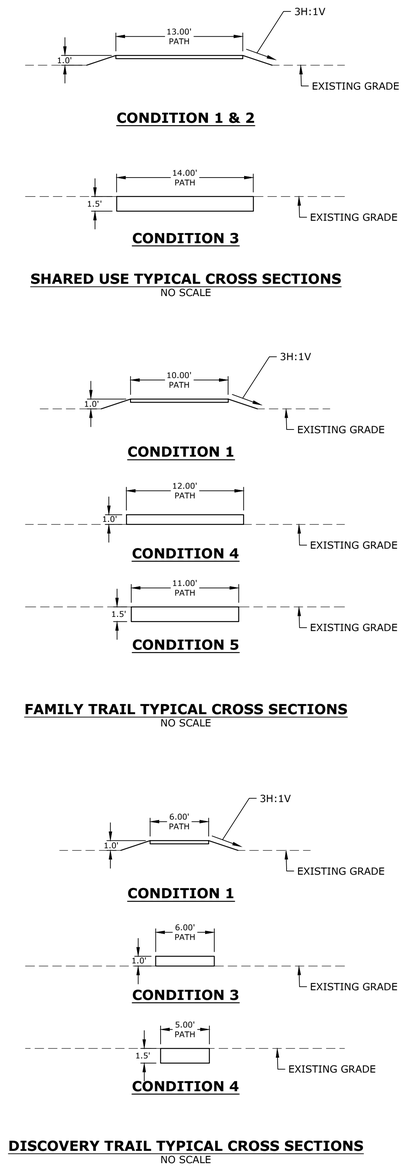
PROJECT LIMIT LINE

AREA PREVIOUSLY IDENTIFIED WETLANDS UNDER PETITION TO AMEND

100' UPLAND REVIEW AREA

0 100' 200'

SCALE: 1" = 100'



SHARED USE TYPICAL CROSS SECTIONS
NO SCALE

FAMILY TRAIL TYPICAL CROSS SECTIONS
NO SCALE

DISCOVERY TRAIL TYPICAL CROSS SECTIONS
NO SCALE

AREA 1 CUT/FILL ANALYSIS

	AREA OF DISTURBANCE (SF)	CUT (CY)	FILL (CY)	NET CUT/FILL (CY)
AREA 1	±30000	0	±2570	±2570 FILL
UPLAND REVIEW AREA - 1	±66000	±210	±3900	±3690 FILL
TOTAL	**±96000**	**±210**	**±6470**	**±6260 FILL**

OUTSIDE OF AREA 1 AND UPLAND REVIEW AREA

	AREA OF DISTURBANCE (SF)	CUT (CY)	FILL (CY)	NET CUT/FILL (CY)
SHARED USE	±40090	±60	±1125	±1065 FILL
FAMILY TRAIL	±30350	±30	±635	±605 FILL
DISCOVERY TRAIL	±22810	±15	±525	±510 FILL
GATHER POCKET	±32490	0	±3475	±3475 FILL
ECO POCKET	±53680	0	±3420	±3420 FILL
LEARN POCKET	±5490	0	±235	±235 FILL
PARKING LOT AREA	±66090	0	±12760	±12760 FILL
TOTAL	**±251000**	**±105**	**±22175**	**±22070 FILL**

TOTAL

TOTAL AREA OF DISTURBANCE: ±347,000 SF

TOTAL CUT/FILL: ±28,330 CY FILL

Tighe&Bond

MANRESA WILDS NORTH FOREST

Manresa Island Corporation

Norwalk, CT

MARK	DATE	DESCRIPTION

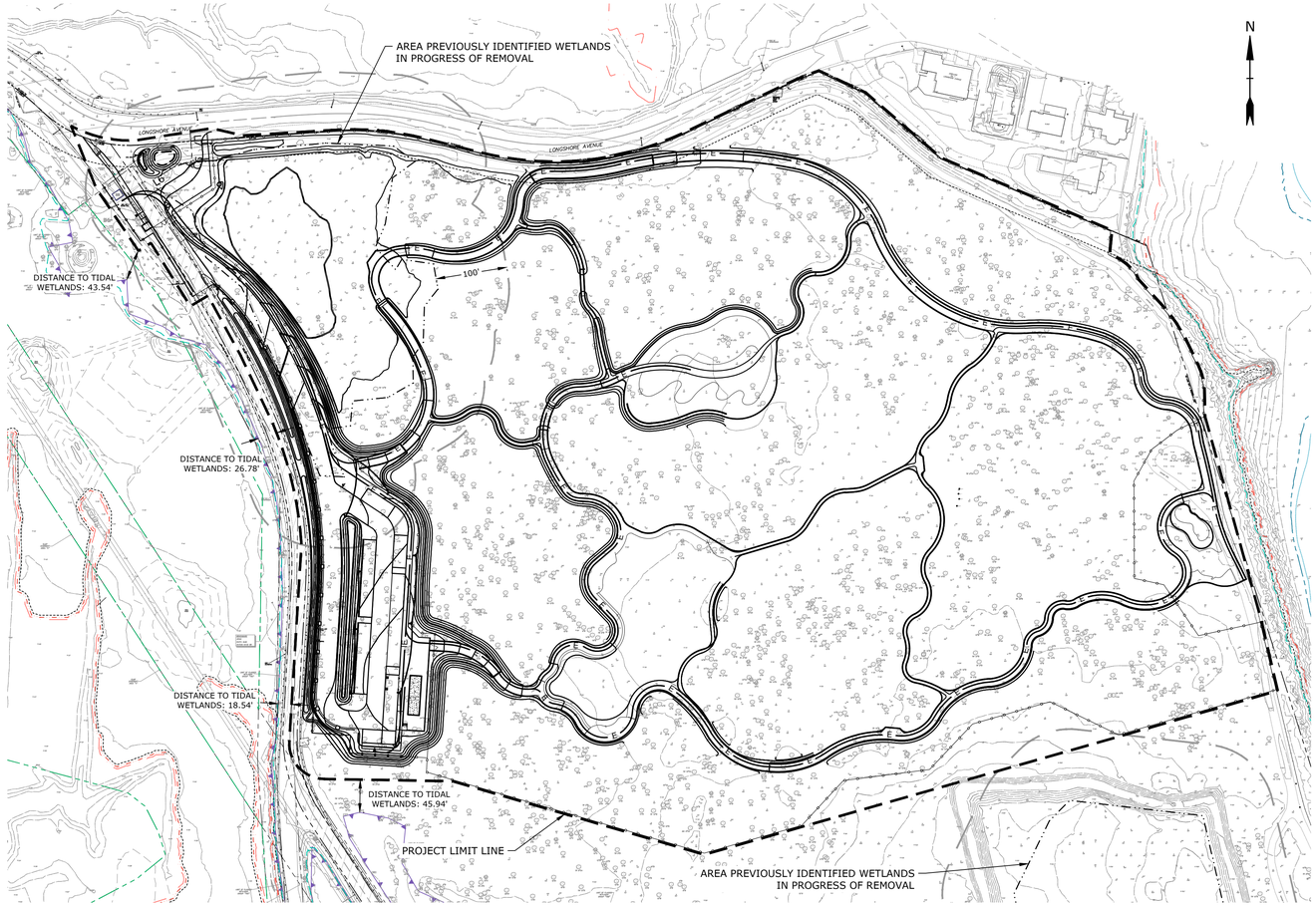
PROJECT NO:	M-5177-0004
DATE:	11/26/2025
FILE:	NF-CUT-FILL ANALYSIS.dwg
DRAWN BY:	EB
DESIGNED BY:	
CHECKED BY:	
APPROVED BY:	

CUT/FILL ANALYSIS

SCALE: AS SHOWN

FIG. 6

Last Saved: 12/5/2025
Plotted On:Dec 05, 2025-9:18am By: KMcCutchan
Tighe & Bond:J:\M\M5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Drawings\AutoCAD\Figures\NF-CUT-FILL ANALYSIS.dwg



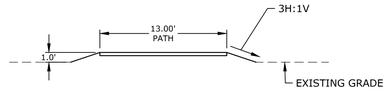
LEGEND

PROJECT LIMIT LINE

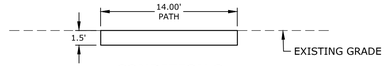
AREA PREVIOUSLY IDENTIFIED WETLANDS IN PROGRESS OF REMOVAL

0 100' 200'

SCALE: 1" = 100'

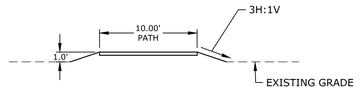


CONDITION 1 & 2

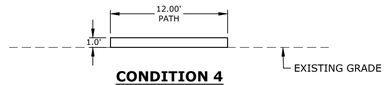


CONDITION 3

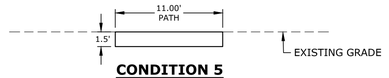
SHARED USE TYPICAL CROSS SECTIONS
NO SCALE



CONDITION 1

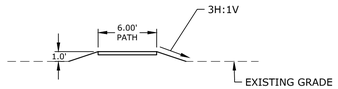


CONDITION 4

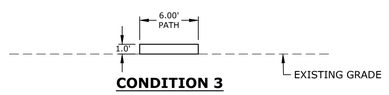


CONDITION 5

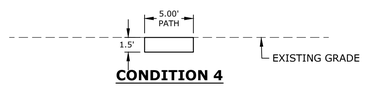
FAMILY TRAIL TYPICAL CROSS SECTIONS
NO SCALE



CONDITION 1



CONDITION 3



CONDITION 4

DISCOVERY TRAIL TYPICAL CROSS SECTIONS
NO SCALE

SITE CUT/FILL ANALYSIS				
	AREA OF DISTURBANCE (SF)	CUT (CY)	FILL (CY)	NET CUT/FILL (CY)
SHARED USE	±58000	±60	±2500	±2440 FILL
FAMILY TRAIL	±30350	±30	±635	±605 FILL
DISCOVERY TRAIL	±22810	±15	±525	±510 FILL
GATHER POCKET	±32490	0	±3475	±3475 FILL
ECO POCKET	±53680	0	±3420	±3420 FILL
LEARN POCKET	±5490	0	±235	±235 FILL
ACCESS DRIVE AND PARKING LOT AREA	±144180	±210	±17855	±17645 FILL
TOTAL	**±347000**	**±315**	**±28645**	**±28330 FILL**

TOTAL

TOTAL AREA OF DISTURBANCE: ±347,000 SF

TOTAL CUT/FILL: ±28,330 CY FILL

Tighe&Bond

MANRESA WILDS NORTH FOREST

Manresa Island Corporation

Norwalk, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	M-5177-0004
DATE:	11/26/2025
FILE:	NF-CUT-FILL ANALYSIS-Alt.dwg
DRAWN BY:	EB
DESIGNED BY:	
CHECKED BY:	
APPROVED BY:	

CUT/FILL ANALYSIS (WETLANDS REMOVED)

SCALE: AS SHOWN

FIG. 7

Last Saved: 12/5/2025
Plotted On:Dec 05, 2025-9:56am By: KMcCutchan
Data & Tools:\M\5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Drawings\AutoCAD\Figures\NF-CUT-FILL ANALYSIS-Alt.dwg

Coastal Resources Report

MANRESA ISLAND NORTH FOREST



Prepared By:
eDesign Dynamics, LLC
247 W 35th St, New York, NY 10001

Date: December 2025

EXECUTIVE SUMMARY

The Manresa Island North Forest project is the first phase to be constructed of the Manresa Island Masterplan, which will convert the former Manresa Power Plant peninsula into a resilient ecological preserve and publicly accessible waterfront park. Phase 1 covers a 28.6-acre upland area on the northern portion of Manresa Island within the former ash disposal area (see Figure 2 Phase 1 North Forest Concept Design). The proposed construction includes Remedial Action Plan (RAP)-required engineered control (EC) caps; paved and unpaved ADA-accessible loop trails; pile-supported boardwalks elevated over capped surfaces; small forest clearing pockets for passive gathering and education; a new internal access drive and small parking area; associated grading and landscaping; and interpretive signage, fencing, and wayfinding to delineate public access versus restricted remediation zones. Work is limited to surface preparation, cap installation, planting, and amenity construction.

Phase 1 provides environmental and public benefits by stabilizing and isolating legacy ash materials, improving site safety, and restoring habitat. Invasive species removal and installation of diverse native meadow, understory, and forest-edge plantings increase structural diversity and wildlife value. Vegetated caps promote infiltration, reduce runoff energy, and improve runoff quality before it reaches tidal systems. The trail network expands low-intensity public access and environmental education within a remediated coastal landscape and establishes an early gateway to future Masterplan phases.

Coastal resources present on or adjacent to the project area that were evaluated for consistency include Coastal Hazard Areas; Coastal Waters/Estuarine Embayments/Nearshore and Offshore Waters; Developed Shorefront; Islands; Intertidal Flats; Shellfish Concentration Areas; and Tidal Wetlands. The North Forest limit of work is located entirely upland and landward of the coastal jurisdiction line, with no inland or tidal wetlands within the project boundary. Adjacent tidal wetlands, intertidal flats, and shellfish areas occur along the western/southwestern shoreline and in nearby Norwalk Harbor and Long Island Sound, outside and downslope of Phase 1 activities. No direct impacts to tidal wetlands, intertidal flats, coastal waters, or aquatic habitats are anticipated. Minimal construction-phase disturbance to wildlife habitat is expected to occur. Best management practices and construction approach has been carefully coordinated with CT DEEP to provide maximum benefit to on-site and adjacent coastal resources.

The project approach emphasizes avoidance and minimization of adverse impacts and enhancement of existing resources through the use of targeted seasonal work windows based on presence of terrapin and shorebirds, buffers for protection of wetlands, and monitoring for sensitive/state-listed species; engineering controls; invasive species management and removal; restoration of native species; and soil stabilization. Stormwater and erosion/sediment controls have been designed in accordance with the CT Department of Energy and Environmental Protection (CT DEEP) 2023 Connecticut Stormwater Quality

Manual[1] and the 2024 Connecticut Guidelines for Soil Erosion and Sediment Control[2], including perimeter silt fence/straw wattle, inlet protection, stabilized access points, and prompt stabilization. These measures protect adjacent coastal resources and support long-term rehabilitation of Manresa Island.

[1] Connecticut Department of Energy & Environmental Protection (CTDEEP). (2023). Connecticut Stormwater Quality Manual. Retrieved from https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Stormwater/Stormwater-Manual.
[2] Connecticut Department of Energy & Environmental Protection. (2024). Connecticut Guidelines for Soil Erosion and Sediment Control. Retrieved from https://portal.ct.gov/deep/water/soil-erosion-and-sediment-control-guidelines/guidelines-for-soil-erosion-and-sediment-control

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LIST OF ATTACHMENTS

Attachment 01 - North Forest Drawing Set

Attachment 02 - 2025 Site Wetland Delineation Report

Attachment 03 - Remedial Action Plan

Attachment 04 - Coastal Resources Maps

Attachment 05 - FEMA Flood Insurance Rate Map Panel 566

Attachment 06 - CT Aquaculture Map

1 INTRODUCTION

This Coastal Site Plan Review application describes the first phase of the Manresa Island Masterplan, a long-term effort to convert the former Manresa Power Plant peninsula into a resilient ecological preserve and publicly accessible waterfront park. The Masterplan, developed by Manresa Osprey LLC with SCAPE Landscape Architecture, eDesign Dynamics, AKRF, Tighe & Bond, and in close coordination with the Connecticut Department of Energy & Environmental Protection (CT DEEP), establishes an integrated approach to habitat restoration, improved public access, and remediation of legacy industrial impacts across the approximately ±120-acre site.

This application focuses on work to be completed within the North Forest area, a 28.6-acre upland area representing the first phase of Masterplan implementation. Phase 1 will establish a low-impact public access framework that includes new walking trails and boardwalk segments, and small passive gathering/educational nodes. The work also includes construction and improvement of internal access drives and trailheads, a new parking area to support public entry, and associated circulation improvements needed for safe operations and maintenance access. The program is intended to improve ecological function, expand habitat for sensitive species, enhance coastal resilience, and create new opportunities for passive recreation and environmental education serving as an initial gateway to future Manresa Island Masterplan phases.

Manresa Island occupies a prominent position at the mouth of Norwalk Harbor, bordering the harbor to the east and northeast and connecting to Long Island Sound along its southern and southwestern shorelines. Power generation operations from the 1960s through 2013 substantially reshaped the northern peninsula through filling, grading, and placement of stabilized ash, altering natural elevations, hydrology, soils, and habitat structure. Today, the Coastal Resources identified on and adjacent to the site, as defined by the Connecticut Coastal Management Act (CCMA), include: Coastal Hazard Areas; Coastal Waters, Estuarine Embayments, Nearshore Waters, and Offshore Waters; Developed Shorefront; Islands; Intertidal Flats; Shellfish Concentration Areas; and Tidal Wetlands.

The North Forest is an upland buffer set back from the tidal wetland complex, and Phase 1 is designed to protect the marsh and adjacent coastal resources by stabilizing ash-influenced soils, reducing erosion and runoff, and improving vegetated filtration before flows reach adjacent tidal wetlands and waterbodies. This report evaluates the Phase 1 activities in relation to the identified coastal resources, describing how impacts are avoided and minimized, and how the project provides a long-term net benefit through restoration, improved management of legacy industrial conditions, and protection of coastal resource functions and values.

Public access elements will be integrated after the placement of engineered controls, restoration plantings, and site stabilization measures to ensure long-term protection of

underlying legacy materials and adjacent regulated resources. The goal of Phase 1 is to provide a public amenity for the community as early as possible, and to create a usable space as the rest of the site undergoes remediation. The intent is to complete North Forest construction and remediation activities during the 2026 construction season. Subsequent phases of the Masterplan are currently under development and are anticipated to be constructed staring in 2027, and continuing in subsequent years.

It is necessary to note that although inland wetlands appear in documents on file in the City of Norwalk Conservation office, the areas in question have been reanalyzed and determined to lack the necessary characteristics, and functions and values, to continue to be classified as wetlands. Accordingly, a petition to amend the wetland map has been submitted and is pending before the Conservation Commission. However, since that petition has not yet been acted upon, an application to the Conservation Commission is nonetheless required at this time. Should the petition to amend the wetlands map be approved, the application for activity will be withdrawn. Given this information, this report functions under the assumption that there are no inland wetlands within the North Forest project area.

This report has been completed in compliance with the CCMA (Connecticut General Statutes §§22a-90 through 22a-112, including §§22a-92, 22a-93, and the coastal site plan review provisions in §§22a-105 and 22a-106), the implementing Regulations of Connecticut State Agencies, and the City of Norwalk's Coastal Site Plan Review requirements under its Zoning Regulations. Consistency with applicable state and municipal coastal policies is addressed in the sections that follow.

2 EXISTING CONDITIONS

Manresa Island contains a mix of natural and heavily modified coastal landscapes shaped by decades of industrial activity. Power generation operations have altered soils, topography, and drainage patterns across the northern part of the peninsula through extensive filling and stabilized ash placement.

2.1 Coastal Resources

Today the island supports a mosaic of habitat types which fall under the CCMA Coastal Resources shown within Figure 1. The habitat communities within each of these Coastal Resource designations vary in condition. Some areas are relatively intact or naturally regenerating, while others reflect early-successional vegetation associated with disturbed soils and long periods without active management.

The Coastal Resources listed below and showing in Figure 1 were identified through review of CT ECO mapping, FEMA flood mapping, and field observations, supplemented with the 1979 Coastal Resources Map from the former Coastal Area Management (CAM) Program (Attachment 04) to provide historic context.

Since the 1979 CAM mapping was prepared, Manresa Island has undergone extensive filling and grading as a result of permitted powerplant disposal activities, and several tidal wetlands, mudflats, and intertidal flats previously mapped in this area are no longer present. *The Coastal Resources shown in Figure 1 have been updated to reflect observed existing conditions within the proposed North Forest limit of work. The Coastal Resources areas outside the proposed North Forest project limit of work reflects the original boundary as contained on the 1979 CAM mapping (see Attachment 04).*



Figure 1. CAM Coastal Resources Map of Manresa Island

The Coastal Resource Areas as defined by the Coastal Area Management Program, Connecticut Department of Environmental Protection that are found within and adjacent to the project limit of work are described in detail in the following sections.

2.1.1 Coastal Hazard Areas

This resources encompasses the North Forest project limit of work as well as the surrounding areas. Manresa Island lies within a mapped coastal hazard area, as shown on FEMA Flood Insurance Rate Map (FIRM) Panel 566 (Attachment 05). The majority of the North Forest is located in Zone AE, with base flood elevations ranging from approximately 11 to 13 feet NAVD88. Portions of the adjacent shoreline areas are within the Coastal AE flood zone, which is subject to wave action. No portion of the project area lies within an established V Zone.

2.1.2 Coastal Waters, Estuarine Embayments, Nearshore Waters, and Offshore Waters

This resource is located adjacent to the project limit of work. Coastal waters around Manresa Island form a tidally energetic estuarine reach at the mouth of Norwalk Harbor, grading from semi-sheltered embayments along the western shoreline into more exposed nearshore and offshore waters of Long Island Sound. These waters support active tidal exchange through culverts and channels that link Norwalk Harbor, the western embayment, and interior tidal wetlands on the island, creating a continuous saline corridor used by fish, shellfish, and wading birds. The shallow estuarine and nearshore zones provide foraging habitat and movement pathways for migratory species such as great egret, snowy egret, diamondback terrapin, and American oystercatcher, while deeper offshore waters of the Sound are used by additional migratory waterbirds and terns.

2.1.3 Developed Shorefront

This resource is located adjacent to the project limit of work. The developed shorefront of Manresa Island reflects its long industrial history and is characterized by hardened, engineered edges that modify the natural coastal interface. Along the southern and eastern perimeters, reinforced shorelines on steep grades, bulkheads, and remnants of former power-generation infrastructure create a predominantly armored waterfront that limits natural sediment exchange and tidal marsh migration. Portions of the shoreline surrounding the former cooling water intake and discharge structures exhibit heavy stone armoring and abrupt transitions from land to open water, with minimal intertidal habitat except where small pockets of rock and coarse substrate persist. These developed edges contrast sharply with the island's western embayment, where natural shoreline processes remain more intact. Collectively, the developed shorefront functions as a highly altered coastal condition, dominated by artificial structures, historical fill, and constrained ecological function, reflecting decades of industrial use and shaping the island's present-day coastal dynamics.

2.1.4 Islands

This resources encompasses the North Forest project limit of work as well as the surrounding areas. Within the broader coastal island system that includes the Norwalk Islands such as Sheffield, Chimon, Copps, Grassy, and Goose Islands, Manresa Island functions as both a habitat anchor and an ecological link, supporting biodiversity, coastal resilience, and wildlife movement across the estuarine and nearshore environment. This regional chain of coastal islands and peninsulas frames the mouth of Norwalk Harbor and Long Island Sound, collectively supporting an interconnected mosaic of tidal marshes, estuarine waters, rocky shorelines, and upland habitats that serve as critical stopover, nesting, and foraging areas for migratory shorebirds, wading birds, raptors, and documented state-listed species including great egret, snowy egret, yellow-crowned night heron, and diamondback terrapin. Within this network, Manresa Island contributes one of the largest remaining contiguous blocks of coastal forest and meadow habitat in Norwalk, directly adjacent to extensive tidal wetlands that are hydrologically connected to Long Island Sound through active tidal channels and culverts.

2.1.5 Intertidal Flats

This resource is located adjacent to the project limit of work. Intertidal flats in the vicinity of Manresa Island occur primarily along the western shoreline where the extensive estuarine embayment meets Long Island Sound, forming shallow, gently sloping zones that are exposed at low tide and inundated at high tide. As documented in the *2025 Site Wetland Delineation Report*, completed on April 28–30, 2025 by EcoMaps, LLC, these flats are composed of fine silts and organic sediments associated with Westbrook mucky peat and Pishagqua mucky silt loam, reflecting long-term tidal deposition and high biological productivity. The flats support dense invertebrate communities, including fiddler crabs and ribbed mussels, which in turn provide foraging opportunities for wading birds documented in the area. Intertidal flats also function as transitional habitat between tidal creeks, low marsh vegetation, and open water, contributing to nutrient cycling, shoreline stability, and the broader ecological connectivity of the Norwalk Harbor–Long Island Sound estuarine system.

2.1.6 Shellfish Concentration Areas

This resource is located adjacent to the project limit of work. Manresa Island lies adjacent to Norwalk Harbor and Long Island Sound, where natural shellfish beds occur within state and municipal jurisdiction. Shellfish bed areas immediately surrounding Manresa Island are mapped as inactive and designated “prohibited” for harvest, reflecting their proximity to historical industrial pollution sources and associated water quality concerns that render shellfish unsafe for human consumption. Although closed to commercial and recreational harvesting, the shallow estuarine and nearshore substrates along the eastern shoreline, western embayment, and southern shoreline still support scattered occurrences of eastern oyster, ribbed mussel, horseshoe crab, Asian shore crab, and other invertebrates, which continue to function as part of the local estuarine food web.

2.1.7 Tidal Wetlands

This resource is located adjacent to the North Forest project limit of work. As documented in the *2025 Site Wetland Delineation Report*, completed on April 28–30, 2025 by EcoMaps, LLC, no inland wetlands occur within the North Forest limit of work. All tidal wetlands remain outside the project boundary, primarily along the western shoreline and within the Tidal Wetlands W5–W6 complex, which are outside the current limit of work. The tidal wetlands within and adjacent to Manresa Island consist of the Western Salt Marsh Complex to the west and two tidal wetlands to the southwest; see Attachment 02, *2025 Site Wetland Delineation Report*, for exact boundaries. The Salt Marsh Complex (referred to as Tidal Wetland C or TWC in the *2025 Site Wetland Delineation Report*) is a large, continuous estuarine marsh fringing the island's western shoreline, opening to Long Island Sound at its southern end and extending north across Longshore Avenue, with broad expanses of low marsh dominated by smooth cordgrass (*Spartina alterniflora*) adjacent to the project area. This system exhibits high ecological integrity, with well-developed tidal creeks, stable low- and high-marsh zones, and documented use by diamondback terrapin, blue crab, Atlantic marsh fiddler crab, and various wading bird species. Tidal flushing is limited upstream of Longhshore Ave due to the existing culvert.

On Manresa Island, the two interior tidal wetlands are Tidal Wetland W6 (TWA) and Tidal Wetland W5 (TWB), both estuarine intertidal emergent marshes embedded within the former industrial landscape and connected to the Sound through tide gates and the western marsh. W6 is the larger of the two, approximately 8.8-acre triangular basin immediately south of the roadway split to the main facility, bordered by bermed paved roads and characterized by tidal hydrology, ponded sub-basins, and dense *Spartina alterniflora* that supports fiddler crab burrows and regular use by foraging waders. W5, approximately 5.6 acres, lies just east of W6, separated by an access road, and hydraulically linked but restricted beneath it; most of W5 functions as low marsh dominated by Spartina alterniflora, while its northern end grades into higher-elevation palustrine scrub-shrub and forested tidal transition that is periodically inundated during high tides and storm events. Both interior wetlands are in generally good tidal condition, providing core coastal wetland functions including production export, nutrient and sediment retention, shoreline and bank stabilization, fish and shellfish habitat, and wildlife foraging and refuge, although they occur within a historically filled and partially bermed setting that reflects the site's industrial past.

2.2 North Forest

The North Forest is currently inaccessible to the public and is characterized by successional upland forest and dense shrubland that has developed over disturbed soils associated with historic ash placement and grading activities. See the outlined boundary of the North Forest on Figure 1 and Attachment 01 Sheet C-010 for the Existing Conditions Plan of the North Forest project area. The Masterplan vision for Manresa Island seeks to

improve ecological continuity and overall performance across this varied landscape while expanding public access and coastal resilience.

The North Forest is characterized by a ruderal, early-successional upland woodland that has established on historically disturbed ground. The canopy is dominated by pioneer and disturbance-tolerant tree species, including grey birch *(Betula populifolia)* and eastern cottonwood *(Populus deltoides)*, with additional canopy and sub-dominant trees such as black cherry *(Prunus serotina)*, crabapple *(Malus sp.),* and red maple *(Acer rubrum)*. The subcanopy and shrub layers include native woody species such as northern bayberry *(Myrica pensylvanica)* and eastern red cedar *(Juniperus virginiana)* but are also heavily intermixed with non-native and invasive woody vegetation that forms dense thickets across much of the forest, notably autumn olive *(Elaeagnus umbellata)*. The ground layer is dominated by fast-spreading, disturbance-associated herbaceous species, including extensive patches of Japanese stiltgrass (*Microstegium vimineum*) and other opportunistic plants, with scattered ferns and limited native vegetation. Vines are common in the understory and extend into the lower canopy, reinforcing the dense, low-diversity structure typical of a degraded successional system shaped by past filling and long periods without active management.

Upland soils throughout Manresa Island consist largely of anthropogenic fill and support successional forest and shrubland species. In contrast, the tidal marshes and shoreline zones support characteristic low marsh, high marsh, and transitional plant communities. Surface soils within the North Forest consist of anthropogenic fill mapped as Udorthents, smoothed (i.e., human-placed, heavily disturbed soils that lack natural horizons and have been graded flat by past site work), reflecting historic filling and recontouring rather than naturally developed soil profiles. Consistent with the wetland delineation findings (see Attachment 02 for the 2025 Site Wetland Delineation Report) for filled portions of the site, the soil profile is largely composed of fly ash and other fill materials with low organic content, causing the soils to be less fertile and less able to hold water). These soils exhibit relict/redoximorphic features (i.e., stains, mottling, or color patterns formed under older wet conditions) that are inherited from historic tidal wetland settings, even though current hydrology no longer supports wetland function here. These altered, ash-influenced fill soils remain compacted, chemically modified, and limited in infiltration and typical pedogenic development (the slow natural process of forming layered, structured soils). Together, these conditions contribute to the ruderal, disturbance-tolerant vegetation character observed today. Hydrologically, the North Forest is outside tidal influence and functions as an upland habitat, while serving as a transitional buffer between Longshore Avenue and the adjacent tidal wetlands to the west and southwest.

Overall, the North Forest provides the structural characteristics of early-successional upland forest and shrubland communities but exhibits limited ecological complexity due to historical disturbance, soil degradation, and dominance of opportunistic vegetation.

3 PROPOSED ACTIVITIES

3.1 Overview

The proposed project is part of the broader Manresa Island Masterplan, a long-term initiative to transform the approximately 120-acre former power plant peninsula within the coastal area management zone into a resilient ecological preserve and publicly accessible waterfront park. The Masterplan envisions a connected system of restored coastal habitats, including salt marsh, upland meadow, freshwater wetlands, and forest, supported by low-impact public amenities such as trails, boardwalks, educational signage, and small gathering areas. These improvements are designed to restore ecological function, expand habitat for state-listed species, improve climate resilience, and offer the regional community new opportunities for passive recreation, environmental education, and shoreline access.

The North Forest project represents the first phase of the Masterplan to be constructed. See Attachment 01 Sheet G-003 for the North Forest Area Plan or Figure 2 below. The North Forest project area, approximately 28.6 acres in the northern portion of Manresa Island, is currently inaccessible and dominated by ruderal forest, early successional vegetation, and remnant ash fill from historic power-plant operations. The purpose of this phase is to:

1. Remediate and stabilize legacy ash materials through installation of an Engineered Control (EC);
2. Enhance ecological value by removing invasive vegetation, diversifying habitat structure, and promoting forest and meadow restoration; and
3. Provide safe, limited public access via a network of capped trails, raised boardwalks, and educational clearings while long-term site-wide remediation progresses.



Figure 2. Phase 1: North Forest Concept Design

3.2 Proposed Activities

Work within the North Forest will include ecological restoration actions, installation of engineered controls in accordance with the approved Remedial Action Plan (RAP), additional drive aisle, landscaping, restroom, parking area, site grading and other improvements. The RAP can be found under Attachment 03. As shown on the Drawing Set Area Plan (Attachment 01 Sheet G-003), proposed improvements include:

- *Trail Network:*
  A system of loop trails with both paved and unpaved ADA-accessible segments, including:
  - Primary north–south multimodal trail:
    Constructed with paved engineered control (EC) surfaces.
  - Secondary unpaved trails:
    Surfaced with clean fill, stabilized gravel, or decomposed granite, consistent with RAP EC requirements.
  - Connections to amenities:
    Spur trails connecting to designated forest clearing pockets and gathering areas. Surface treatment at spur trails will match the connecting trail type unless otherwise noted on the plan.

- *Boardwalks and Elevated Paths:*
  Pile-supported boardwalks elevated approximately 6 inches to 2 feet above grade will traverse lower-lying or sensitive areas. Boardwalks will be installed over the mandatory engineered control/cap system, allowing public access while avoiding disturbance of the engineered control and reducing soil compaction within root zones.

- *Forest Clearing Pockets:*
  Small, selectively cleared areas to displace existing dense thickets of invasives, that will serve as gathering and educational spaces. These pockets will retain healthy native canopy trees where feasible and will be replanted with diverse native meadow and understory species.

- *Parking and Access Improvements:*
  Controlled public access will be supported through:

  - New internal access road segments:
    Construction of a new road will require placement of approximately [XX CY] of clean fill to meet grade, stability, and engineered control requirements in accordance with the RAP.

  - Parking area:
    A small stabilized parking area will be constructed near the trailhead. Impervious additions will be limited to the new road surfaces and parking zone, resulting in an estimated <8% increase in impervious cover within the North Forest.

- *Vegetation Management and Habitat Restoration:*
  Removal of invasive species (e.g., *Microstegium vimineum*, *Elaeagnus umbellata*, *Celastrus orbiculatus*) and installation of native forest-edge, understory, and meadow species to strengthen ecological structure and improve habitat value for priority wildlife.

- *Engineered Control:*
  A Remedial Action Plan (RAP) has been developed for the North Forest limit of work in coordination with the CT DEEP Remediation Division. Phase 1 construction is being completed as an Interim Measure under this RAP to enable safe public access while isolating underlying remediation waste.

  No subsurface excavation of ash materials is proposed. All work is limited to surface grading, cap installation, planting, and amenity construction consistent with RAP requirements. All surface improvements within accessible areas are designed to function as the engineered control, as follows:

  - Paved caps (EC) (roads, parking lot):

        - 2.5 inches asphalt over 6 inches subbase, or
        - 4 inches reinforced concrete, as specified in the RAP.
    - Unpaved caps (EC) (trails, gathering pockets):
        - 12–24 inches of clean material with topsoil, gravel, or stabilized aggregate, depending on trail type and location.
    - Existing-soil (EC) / unmanaged zones:
        - In areas of the forest that will remain inaccessible, existing soils will remain in place as the engineered control, with access prevented through physical barriers and signage.

- *Site Delineation & Interpretation:*
  Fencing, interpretive signage, and wayfinding elements will be installed to distinguish accessible public areas from restricted remediation zones.

Overall impervious cover will increase by less than 8% of the North Forest area. Most surfaces remain pervious through vegetated caps, unpaved trails, and boardwalk systems.

3.3 Construction Timing, Phasing & Species-Protection Measures

Construction is anticipated to begin in spring of 2026 and occur over approximately 18 months, followed by an Interim Measure Construction Completion Report (IMCCR) within 120 days of EC installation. Construction will occur in four primary phases:

1. Phase 1 – Vegetation Management & Initial Grading
2. Phase 2 – EC Installation, Trails & Boardwalk Construction
3. Phase 3 – Invasive Species Removal & Native Planting
4. Phase 4 – Site Stabilization, Final Surfacing & Fencing

Through close coordination with the CT DEEP, sensitive species (terrapin, shorebirds, bats, shellfish) and habitats requiring protecting have been identified. Protection of state-listed and sensitive wildlife is integrated directly into the construction schedule. Construction will comply with the following time-of-year restrictions:

- Shorebirds (April–August):
  No work generating excessive noise or disturbance within 660 ft of potential nesting habitat. Wetland work will be avoided during this period unless BMPs ensure no disturbance.
- Northern Diamondback Terrapin (May–October):
  No new wetland-adjacent work during peak nesting and hatchling dispersal. Upland

work may proceed with BMPs (e.g., daily pre-work surveys, exclusion fencing, silt fencing installed flush to ground).

- Shellfish (May–September):
  No unconfined in-water work. Although not applicable to this upland project, BMPs ensure no sedimentation enters tidal wetlands.
- Bats (Year-round restrictions):
  No tree clearing to avoid roost disturbance. Minor pruning only. Structure bat-proofing permitted.
- General BMPs:
  Pre-construction wildlife surveys, daily perimeter checks for sensitive species, limited nighttime work, minimized lighting, and strict adherence to designated access routes.

4 PROPOSED BEST MANAGEMENT PRACTICES

4.1 Proposed Stormwater Best Management Practices

The stormwater management system proposed for this project has been designed to provide stormwater quality measures, minimize directly connected impervious areas, and maintain existing drainage patterns to extents practicable. The stormwater management system employs “Best Management Practices” for removal of greater than 90% of total suspended solids to meet Connecticut DEEP and Norwalk’s stormwater management requirements.

To achieve this, the stormwater management system utilizes a combination of grass lines swales, rain gardens, porous pavement, hydrodynamic separators, infiltration at an existing vegetated low point, as well as post-construction street sweeping. The volumes provided by the existing vegetated low point and the proposed rain garden exceed the volume of runoff generated by the first 1.3-inches of rainfall for their respective contributing watershed areas; and the proposed hydrodynamic separators are sized to provide treatment for the flow generated by the first 1.3-inches of rainfall for their respective contributing watershed areas. These features are sized per the water quality volume and flow calculations in the 2024 Connecticut Stormwater Quality Manual. Grass lined swales are utilized to convey flow to the water quality features, and post-construction street sweeping contributes to the removal of total suspended solids.

The stormwater management approach also includes disconnected impervious surfaces (as defined by CT DEEP) for all paved areas within the project, enabling natural infiltration and retention of stormwater runoff throughout the existing topography similar to the pre-construction condition. There is no increase in runoff peak flow or volume to downstream properties or right-of-ways; however, the proposed project does include some increase in

runoff peak flow and volume to the Long Island Sound. Section 1.4.3 of the 2017 City of Norwalk Drainage Manual allows for this exemption in coastal areas.

4.2 Proposed Erosion & Sediment Controls

Soil erosion and sediment control for this project will be implemented in accordance with the Erosion & Sediment Control Plan found on Sheet C-300 of the Drawing Set (Attachment 01). All measures will be designed, installed, and maintained consistent with the "2024 Connecticut Guidelines for Soil Erosion and Sediment Control," including any amendments or addenda published by CT DEEP. Land disturbance will be limited to the minimum necessary to complete construction, and erosion and sediment controls will be installed prior to initiating earthwork wherever practicable. Erosion and sediment control placement will be carefully coordinated with construction phasing, and additional measures will be installed as required by the Engineer or the Town.

Silt fence and straw wattle will be installed to surround the perimeter of the entire North Forest project area to intercept sediment and control runoff leaving the work zone. Haybale barriers and silt fencing will also be installed along the toe of critical cut and fill slopes as shown on the plans. All catch basins and drainage inlets will be protected with appropriate inlet controls (e.g., silt sacks, haybale rings, silt fence, or block-and-stone protection) until all disturbed areas are permanently stabilized. Paved roadways will be kept clean and swept as needed, including before forecasted storms. Unpaved surfaces will receive a minimum of 4 inches of topsoil prior to final stabilization. Dust control will be maintained on exposed soils using approved methods, and trucks transporting material will be covered before leaving the site.

All erosion and sediment control measures will be inspected at least weekly and after each rainfall event, with immediate repairs made as needed, and drainage structures cleaned to prevent silt accumulation. A stock of silt fence, haybales, straw wattle, and anti-tracking crushed stone will be maintained on-site for emergency repairs. Sediment removed from controls will be disposed of off-site. Temporary stabilization will be applied to any disturbed area left exposed for more than seven days using vegetative cover (perennial ryegrass) with soil amendments and mulch as needed to establish a uniform stand. Erosion and sediment controls will remain in place until all construction activity is complete and all disturbed areas are stabilized.

5 COASTAL RESOURCES - COASTAL USE POLICIES AND STANDARDS

The following table provides a list of coastal resources and policies and identifies which coastal resources are applicable to the North Forest project area:

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

Manresa Island is a coastal peninsula/island at the mouth of Norwalk Harbor, within the Norwalk Islands setting and directly bordered by Long Island Sound and Norwalk Harbor waters. The North Forest is located on the northern portion of the island within the former ash disposal area, entirely upland and outside tidal influence. The coastal resources within and adjacent to the North Forest project area were identified through site observations, CT ECO mapping, and Federal Emergency Management Agency (FEMA) flood maps. The 1979 Coastal Resources Map prepared by the former Coastal Area Management (CAM) Program (see Attachment 04) was referenced to understand historic site conditions. Manresa Island has undergone significant filling and grading since the CAM mapping was prepared, and several of the earlier-mapped tidal wetlands, mudflats, and intertidal flats are no longer present within the boundaries of the North Forest project.

As documented in the *2025 Site Wetland Delineation Report*, completed on April 28–30, 2025 by EcoMaps, LLC, no inland wetlands occur within the North Forest limit of work. All tidal wetlands remain outside the project boundary, primarily along the western shoreline and within the Tidal Wetlands W5–W6 complex, which are outside the current limit of work. The shoreline located to the east of the project limit is primarily characterized by a steep

graded rip-rap reinforced slope. Updated wetland boundaries and resource classifications are included within the 2025 Site Wetland Delineation Report (Attachment 02).

As indicated in the table above and geolocated on the Coastal Resources Map (Attachment 04), the coastal resources which occur on and around Manresa Island are:

- **General Coastal Resources (on-site)**: Encompassing all coastal resources within and adjacent to the North Forest and the larger Manresa Island.
- **Coastal Hazard Areas (on-site)**: FEMA-mapped coastal flood hazard areas extend across the island, including the North Forest (Attachment 05).
- **Coastal Waters / Estuarine Embayments / Nearshore & Offshore Waters (adjacent)**: Norwalk Harbor lies immediately east/northeast of the island and opens to Long Island Sound along the south and southwest shorelines.
- **Developed Shorefront (adjacent)**: The eastern/southern shorelines include armored or previously industrialized shoreline segments associated with the former power plant.
- **Intertidal Flats (adjacent)**: Intertidal flats occur along the island's nearshore edges and in the tidal flat separating the island from the mainland;
- **Shellfish Concentrations Areas (adjacent)**: Mapped/state-recognized shellfish concentration areas occur in Norwalk Harbor and Long Island Sound adjacent to the island (see Attachment 06).
- **Islands (adjacent):** Manresa Island is part of the Norwalk Islands coastal system (island resources) even though connected by causeway.
- **Tidal Wetlands (adjacent)**: Tidal marsh wetlands occur primarily along the western and southwestern shoreline, including the adjacent W5–W6 salt marsh complex, which is outside (west/southwest of) the North Forest limit of work.

The following sections describe relevant coastal resources, both those occurring on-site as well as those adjacent, and evaluate the project's consistency with Connecticut's Coastal Management Act (CCMA).

5.1 General Coastal Resources

Definition - CGS § 22a-93(7):

"Coastal resources" means the coastal waters of the state, their natural features, and associated natural, developed, or cultural features within the coastal boundary, including but not limited to tidal wetlands, beaches, dunes, intertidal flats, rocky shorefronts, bluffs, estuarine embayments, islands, nearshore waters, and coastal hazard areas.

Policy - CGS § 22a-92(a)(2):
To ensure that coastal resources are preserved and, where possible, restored and enhanced.

5.1.1 Consistency Evaluation

The North Forest project, which is located entirely upland and landward of the coastal jurisdiction line (CJL), focuses on ecological restoration, invasive species removal, native revegetation, hydrologic improvement, and installation of protective engineered caps for management of legacy contamination. These actions:

- Restore ecological function to a degraded upland buffer immediately landward of tidal resources;
- Improve stormwater quality before it enters adjacent coastal waters;
- Reduce erosion, sedimentation, and pollutant loading; and
- Enhance long-term climate resilience through increased vegetative cover.

The project ensures that coastal resources are preserved, restored, and enhanced and is consistent with the policy stated in CGS § 22a-92(a)(2).

5.2 Coastal Hazard Areas

Definition - CGS § 22a-93(7)(H):
"Coastal hazard areas" means those areas within the coastal boundary that are vulnerable to flooding, erosion, inundation, and other hazards associated with coastal storms, sea level rise, and shorefront processes.
Policies:

- *§ 22a-92(a)(2): Preserve and enhance coastal resources.*
- *§ 22a-92(a)(5): Ensure development proceeds in a manner that minimizes hazards to life and property.*
- *§ 22a-92(b)(2)(F): Promote nonstructural solutions to flood and erosion problems.*
- *§ 22a-92(b)(2)(J): Maintain natural landforms and minimize adverse impacts to erosion and sedimentation.*
- *§ 22a-92(c)(2)(B): Maintain natural patterns of tidal and freshwater flow.*

5.2.1 Consistency Evaluation

Under CGS § 22a-93(7)(H), the site lies within a mapped coastal hazard area- see FEMA Flood Insurance Rate Map (FIRM) Panel 566 (Attachment 05).

The proposed restoration work at the Manresa North Forest is fully consistent with, and in many respects exceeds, the statutory and policy framework of the Connecticut Coastal Management Act. The project provides benefit within the Coastal Hazard Area by:

- Enhancing native vegetative cover and soil stability, reducing flood- and erosion-related vulnerabilities;
- Implementing nonstructural resilience measures (restoration planting, soil stabilization, hydrologic improvements) consistent with §22a-92(b)(2)(F);
- Minimizing sediment migration consistent with §22a-92(b)(2)(J) by limiting grading to the smallest feasible footprint and applying E&S controls per the 2024 Connecticut Guidelines for Erosion and Sediment Control, such as perimeter silt fence or straw wattles, stabilized entrances, slope protection, inlet protection, and prompt stabilization, to intercept, detain, and filter runoff during construction;
- Improving infiltration and stormwater attenuation to reduce peak runoff and maintain natural flow patterns consistent with §22a-92(c)(2)(B) and the Connecticut Stormwater Quality Manual by maximizing pervious surface area and vegetated engineered controls, restoring native meadow/understory plantings that increase soil porosity and evapotranspiration;
- Locating the new internal access road and limited parking on engineered control surfaces required by the RAP, which isolates underlying remediation waste, provides a stable all-weather surface for emergency/maintenance access, and reduces erosion potential—thereby minimizing hazards to life and property consistent with §22a-92(a)(5); and
- By creating a subtle inland barrier within the engineered cap footprint, the road reduces storm surge also consistent with §22a-92(a)(5).

As described above, Phase 1 does not increase hazard exposure and improves site resilience, meeting §22a-92(a)(2), §22a-92(a)(5), §22a-92(b)(2)(F), §22a-92(b)(2)(J), and §22a-92(c)(2)(B).

5.3 Coastal Waters, Estuarine Embayments, Nearshore Waters & Offshore Waters

Definitions - CGS §§ 22a-93:

- *(5) "Coastal waters": tidal waters, estuaries, embayments, and the Sound.*
- *(7)(G) "Estuarine embayments": protected coastal water bodies with restricted exchange.*
- *(7)(K) "Nearshore waters": coastal waters extending seaward from the mean high water mark.*
- *(7)(L) "Offshore waters": deeper, open-water areas of Long Island Sound.*

Policies - CGS §§ 22a-92(a)(2), 22a-92(c)(2)(A):

Maintain and improve the chemical, physical, and biological integrity of coastal waters.

5.3.1 Consistency Evaluation

These resources occur directly adjacent to Manresa Island: Norwalk Harbor borders the island to the east/northeast and connects to Long Island Sound along the southern and

southwestern shorelines, which include nearshore and offshore waters. The North Forest is upland and set back from these tidal waters, functioning as a landward buffer; Phase 1 protects the marsh and adjacent waters by stabilizing ash-influenced soils, reducing erosion and runoff, and improving vegetated filtration before flows reach W5/W6, Norwalk Harbor, or Long Island Sound.

The project:

- Avoids direct impacts to coastal waters and tidal resources by keeping all Phase 1 work entirely upland with no dredging, filling, shoreline structures, or in-water disturbance;
- Protects coastal water quality by using stormwater BMPs consistent with the Connecticut Stormwater Quality Manual to retain, infiltrate, and treat runoff on-site before it reaches Norwalk Harbor or Long Island Sound;
- Mitigates chemical impacts by isolating underlying ash/legacy fill beneath engineered caps and replacing invasive cover with native vegetation to improve soil and runoff quality;
- Minimizes physical impacts by limiting impervious cover to the necessary access road and small parking area 8.4% increase while relying on pervious caps, unpaved trails, and boardwalks to reduce runoff and erosion;
- Supports biological integrity by restoring upland buffers and native plant communities that filter stormwater and protect adjacent salt marsh and aquatic habitats from sediment and pollutant loading; and
- Prevents construction-phase sedimentation by installing and maintaining E&S controls per the 2024 Connecticut Guidelines (e.g., silt fence/straw wattles, stabilized entrances, inlet protection, dust control, and prompt stabilization).

The project therefore supports § 22a-92(a)(2) and § 22a-92(c)(2)(A).

5.4 Developed Shorefront

Definition - CGS § 22a-93(7)(l):
"Developed shorefront" means waterfront areas that are predominantly built or altered.
Policy - CGS § 22a-92(b)(2)(G):
Encourage the reclamation and redevelopment of developed shorefronts for uses consistent with the character of the area and the capacity of coastal resources.

5.4.1 Consistency Evaluation

Developed shorefront occurs along the eastern and southern edges of Manresa Island, where historic power plant infrastructure and shoreline armoring altered natural shore conditions. The North Forest lies inland from this developed shorefront on the northern upland portion of the island. Phase 1 reclaims this previously industrialized upland setting through low-impact trails/boardwalks, interpretive features, invasive removal, and native planting.

The project repurposes a degraded industrial upland into a low-impact ecological landscape with:

- Elevated boardwalks (pile-supported, non-intrusive);
- Interpretive signage and public education; and
- Native plantings and restored habitat structure.

This approach redevelops an altered shorefront for environmentally beneficial, low-impact public use—fully consistent with § 22a-92(b)(2)(G).

5.5 Islands

Definition - CGS § 22a-93(7)(J):
"Islands" means naturally formed land surrounded by water.
Policy - CGS § 22a-92(b)(2)(H):
Conserve island resources and limit development intensity to maintain their ecological and scenic value.

5.5.1 Consistency Evaluation

Although connected to the mainland by a causeway, Manresa Island functions ecologically and visually as part of this island chain and is surrounded by coastal waters and intertidal environments. Phase 1 maintains the island's landform and vegetative cover, introduces only limited low-intensity public access, restores habitat connectivity, and avoids any expansion of shoreline infrastructure.

The project:

- Maintains natural landforms and vegetative cover;
- Adds only minimal, low-impact public access features;
- Restores habitat connectivity and ecological function; and
- Avoids any expansion of built infrastructure.

The project fully supports § 22a-92(b)(2)(H).

5.6 Intertidal Flats

Definition - CGS § 22a-93(7)(D):
"Intertidal flats" means gently sloping coastal areas exposed at low tide and supporting benthic communities.
Policies - CGS §§ 22a-92(b)(2)(D), 22a-92(c)(1)(K):
Protect intertidal flats by maintaining natural sedimentation processes, preventing erosion and sediment migration, and ensuring that development does not impair the ecological function, stability, or biological productivity of these coastal areas.

5.6.1 Consistency Evaluation

No intertidal flats occur within the North Forest limit of work; the nearest flats are along the shorelines and nearshore edges of Manresa Island and within the tidal flat separating the island from the mainland. Because the North Forest is upland and landward of these coastal resources, Phase 1 avoids any direct disturbance, filling, or alteration of intertidal substrates or tidal processes.

The project:

- Improves upland stability through engineered control caps, trail/road surfacing, and native restoration plantings that bind ash-influenced soils and reduce erosion, consistent with long-term stabilization goals of the Connecticut Stormwater Quality Manual;
- Reduces sediment migration by limiting the disturbance footprint, stabilizing travel surfaces, and applying construction-phase erosion and sediment controls per the 2024 Connecticut Guidelines for Soil Erosion and Sediment Control, while using infiltration/attenuation BMPs to slow and retain runoff before it reaches tidal edges; and
- Enhances vegetated buffers by replacing invasive-dominated thickets with diverse native understory, meadow, and forest-edge plantings that slow overland flow, filter fine sediments, and provide a more effective landward transition to tidal habitats.

Together, these measures maintain natural sedimentation patterns and prevent excess sediment delivery to adjacent intertidal flats, ensuring that ecological function, stability, and biological productivity are not impaired. The project therefore protects nearby intertidal flats along Long Island Sound and is consistent with § 22a-92(b)(2)(D) and § 22a-92(c)(1)(K).

5.7 Shellfish Concentration Areas

Definition - CGS § 22a-93(7)(N):
"Shellfish concentration areas" means water areas supporting commercial, recreational, or natural shellfish beds.
Policy - CGS § 22a-92(c)(1)(I):
Protect and maintain the biological productivity of shellfish beds.

5.7.1 Consistency Evaluation

See Attachment 06 for a map of North Forest adjacent natural shellfish communities provided by CT Aquaculture Mapping Atlas[3]. The shellfish bed areas immediately surrounding Manresa Island are inactive and designated as prohibited (near industrial waste and unsafe for harvesting).

The project enhances shellfish protection by:

[3] CT DEEP, Aquaculture Mapping Atlas, https://portal.ct.gov/DEEP/Aquaculture/CT-Aquaculture-Mapping-Atlas/CT-Aquaculture-Mapping-Atlas, accessed on 11/10/2025.

- Reducing nutrient and sediment inputs by stabilizing disturbed soils and limiting new impervious surfaces;
- Eliminating erosion from degraded uplands through engineered caps, trail/road stabilization, and restoration plantings;
- Enhancing natural filtration through native vegetation that slows runoff and promotes infiltration before discharge to coastal waters; and
- Avoiding dredging and shoreline disturbance that could directly affect shellfish beds.

The project is therefore fully consistent with § 22a-92(c)(1)(I) because it protects and maintains the biological productivity of adjacent shellfish concentration areas.

5.8 Tidal Wetlands

Definition - CGS § 22a-93(7)(E):
"Tidal wetlands" means those areas bordering or beneath tidal waters where salt-tolerant vegetation may grow.
Policies - CGS §§ 22a-92(a)(2), (b)(2)(E), (c)(1)(B):
Preserve, protect, and where possible rehabilitate tidal wetlands.

5.8.1 Consistency Evaluation

Tidal wetlands occur along the western and southwestern shoreline of Manresa Island, including the adjacent W5 and W6 tidal salt marsh complex. As documented in the *2025 Site Wetland Delineation Report*, no tidal wetlands are within the North Forest limit of work, and W5–W6 remain outside the project boundary.

The project supports wetland protection by:

- Improving upland filtration through native revegetation and pervious/vegetated cap and trail surfaces, consistent with the Connecticut Stormwater Quality Manual's emphasis on infiltration and water-quality treatment before discharge;
- Reducing sedimentation and pollutant loads by stabilizing ash-influenced soils, installing engineered controls, and using stormwater BMPs to slow, retain, and treat runoff on-site prior to reaching W5/W6;
- Removing invasive species from adjacent uplands to improve wetland edge habitat quality and reduce future invasive spread into marsh margins;
- Increasing groundwater infiltration and stabilizing soils to reduce flashy overland flow toward tidal areas; and
- Preserving unaltered hydrologic connections by avoiding new drainage outfalls, tidal restrictions, or shoreline grading, while applying construction-phase E&S controls per the 2024 Connecticut Guidelines for Soil Erosion and Sediment Control (perimeter silt fence/straw wattle, inlet protection, and prompt stabilization) to

prevent turbidity or sediment delivery during work.

Through the measures above, Phase 1 preserves existing tidal wetlands, protects their functions and values from indirect impacts, and supports long-term rehabilitation of the adjacent salt marsh system, supporting § 22a-92(a)(2), § 22a-92(b)(2)(E), and § 22a-92(c)(1)(B).

6 COASTAL USE AND ACTIVITY - COASTAL USE POLICIES AND STANDARDS

The following list identifies all the coastal policies and standards in or referenced by CGS § 22a-92 applicable to the North Forest project area:

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

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

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

6.1 General Development

Policies: CGS §§ 22a-92(a)(1), 22a-92(a)(2), 22a-92(a)(9)

- *CGS § 22a-92(a)(1): To ensure that the development, preservation or use of the land and water resources of the state within the coastal area proceeds in a manner consistent with the capability of the land and water resources to support development, preservation or use without significant disruption of either the natural environment or the sound economic growth of the state."*

- *CGS § 22a-92(a)(2): To preserve and enhance coastal resources in accordance with the policies established by this chapter.*
- *CGS § 22a-92(a)(9): To encourage the coordination of state, regional and local planning activities and to foster improved intergovernmental cooperation and coordination in order to enhance the consistency and predictability of governmental decisions affecting the coastal area.*

6.1.1 Consistency Evaluation

The North Forest project satisfies these policies in the following ways:

- The project restores ecological function within a previously industrial upland area and does not introduce uses that exceed the natural capacity of the land, consistent with § 22a-92(a)(1).
- Actions such as invasive vegetation removal, native revegetation, soil stabilization, and stormwater infiltration improvements directly preserve and enhance coastal resources in accordance with § 22a-92(a)(2).
- The project is being implemented through coordination with CT DEEP, The CT Natural Diversity Database (NDDB), the Stewardship Permit program, and the broader Manresa Island Masterplan planning team, consistent with § 22a-92(a)(9). This interagency and multidisciplinary process also aligns Phase 1 with regional and municipal Hazard Mitigation Plans and Plans of Conservation and Development (POCD) by advancing non-structural, nature-based resilience measures that reduce flood and erosion risk, avoid new shoreline hardening, and strengthen coastal buffers, while supporting POCD goals for adaptive reuse of industrial land, expanded passive public access, and restoration of ecological systems.
- The activities do not create adverse coastal impacts and prepare the site for long-term restoration and public benefit.

6.2 Water-Dependent Uses

Definition: CGS § 22a-93(16):
"Water-dependent uses" means those uses and facilities which require direct access to, or location in, marine or tidal waters, including but not limited to marinas, recreational and commercial fishing and boating facilities, navigation aids, basins and channels, water-based recreational uses, waterfront dock and port facilities, and uses which provide general public access to marine or tidal waters.
Policies: CGS §§ 22a-92(a)(3), 22a-92(b)(1)(A)

- *CGS § 22a-92(a)(3): To give high priority and preference to water-dependent uses in the coastal area.*
- *CGS § 22a-92(b)(1)(A): To give the highest priority and preference to water-dependent uses.*

6.2.1 Consistency Evaluation

Although the North Forest project does not itself involve new docks, marinas, or direct waterfront structures, by remediating upland soils, stabilizing slopes, and creating safe public circulation routes, the North Forest phase establishes the foundational environmental and access conditions necessary for these future water-dependent elements to be constructed safely and sustainably. The project supports and strengthens the policy objectives for water-dependent use in several ways:

- By improving upland ecological function, the project enhances water quality and habitat conditions that support marine fisheries and shellfish resources which are foundational to many water-dependent uses.
- Public access infrastructure within the North Forest, including raised paths, boardwalk connections, and interpretive signage, reconnects visitors to coastal landscapes and supports public understanding and stewardship of tidal environments.
- The work avoids any interference with tidal wetlands, shoreline processes, or in-water areas, consistent with § 22a-92(b)(1)(A), which requires that water-dependent uses be protected from displacement by non-water-dependent activities.
- The project maintains physical and ecological conditions necessary for future water-dependent amenities.

This project directly supports the broader Manresa Island Masterplan, which envisions future water-dependent public amenities such as a waterfront dock, kayak access, and coastal viewing platforms. The current project therefore advances the objectives of §§ 22a-92(a)(3) and 22a-92(b)(1)(A) by enabling the long-term provision of water-dependent recreational and educational opportunities for the public.

6.3 Coastal Recreation and Access

Policies: CGS §§ 22a-92(a)(6), 22a-92(c)(1)(J), 22a-92(c)(1)(K)

- *CGS § 22a-92(a)(6): To ensure public access to the waters of Long Island Sound and to the beaches, tidal wetlands and rocky shorefronts of the state.*
- *CGS § 22a-92(c)(1)(J): To require, where feasible, that public access to the water or across a tideland be provided in development projects.*
- *CGS § 22a-92(c)(1)(K): To require that development shall not unreasonably impair public rights to access the shoreline or the water.*

6.3.1 Consistency Evaluation

The North Forest project strongly advances these policies:

- The project opens a previously inaccessible area of Manresa Island to the public through new trails, boardwalks, and interpretive areas designed for passive recreation and environmental education.
- Elevated path systems and restored clearings create new opportunities for the public to view Long Island Sound, tidal wetlands, and migratory bird habitat without disturbing sensitive ecological features.
- No structures are proposed that would impair access to public trust lands or prevent movement toward the shoreline, consistent with § 22a-92(c)(1)(K).
- The project provides new public access opportunities while ensuring ecological protection and stabilization of remediated soils, in alignment with § 22a-92(a)(6) and § 22a-92(c)(1)(J).

7 MITIGATION OF POTENTIAL ADVERSE IMPACTS

The following table provides a list of potential adverse impacts on coastal resources as defined in CGS § 22a-93(17). The only potential adverse impact anticipated as a result of the North Forest project activities is possible degradation of wildlife habitat during construction.

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)	☑	☐

The North Forest Phase 1 project avoids, minimizes, and mitigates potential adverse impacts to coastal resources, as defined in CGS § 22a-93(17). While the work is entirely upland and designed to avoid direct impacts to tidal wetlands, intertidal flats, and coastal

waters, a temporary, construction-phase risk of wildlife habitat disturbance remains a potential adverse impact.

The measures below describe the project's avoidance of direct impacts and its minimization of indirect and long-term effects through seasonal work windows, engineered controls, restoration plantings, and species-specific BMPs.

7.1 Avoidance of Direct Impacts to Coastal Habitats and Wildlife

- No in-water or tidal wetland work: All proposed activities occur in upland areas outside of tidal wetlands and landward of the coastal jurisdiction line. No filling, dredging, or grading will occur within coastal waters or wetland systems. This spatial separation fully avoids direct impacts to finfish and shellfish habitats in Long Island Sound and adjacent tidal channels.
- Maintenance of natural hydrology and buffers: Restoration grading and capping will preserve existing surface flow paths and maintain vegetated buffers between uplands and tidal wetlands. The design integrates infiltration areas and vegetated meadows to filter runoff and sustain baseflows, avoiding hydrologic disruption to coastal habitats
- Construction timing and limits: Work will be phased to occur outside of sensitive nesting and migration periods for terrapin, bats, and shorebirds documented on-site. Seasonal work windows and erosion-control measures are included to prevent turbidity and disturbance during spring and summer wildlife activity periods.

7.2 Minimization of Indirect and Long-Term Impacts

- Invasive species management and habitat restoration: Native meadow and forest plantings will restore structural diversity, enhance nesting cover, and improve food resources for terrestrial and avian wildlife.
- Soil and vegetation stabilization: Stabilization with native groundcovers will prevent sediment migration into coastal waters, maintaining water quality necessary for shellfish and finfish habitat health.
- Wildlife protection measures: Potential presence of state-listed species has been confirmed and it will be required that all on-site work include protective buffers and monitoring to prevent disturbance to sensitive species. Erosion-control devices (silt fencing, straw bales, and vegetated filters) will protect adjacent habitats during active construction phases.
- Stormwater management and erosion/sediment control: Stormwater and E&S measures will minimize indirect and long-term impacts by reducing runoff, filtering pollutants, and preventing sediment transport to adjacent tidal wetlands and coastal waters. Post-construction BMPs will be designed per the Connecticut Stormwater Quality Manual to maximize infiltration and on-site treatment through

pervious surfaces, vegetated caps, and infiltration practices, while construction-phase controls will follow the 2024 Connecticut Guidelines for Soil Erosion and Sediment Control (perimeter silt fence/straw wattle, stabilized entrances, inlet protection, and prompt stabilization) to keep disturbed soils contained and stable.

7.3 Enhancement of Future Water-Dependent and Coastal Resource Uses

The project's ecological improvements directly support future water-dependent development opportunities by restoring the environmental conditions that make coastal access and stewardship possible:

- Restored upland buffers improve habitat connectivity for wildlife utilizing coastal and inland migration corridors.
- Public access features promote environmental education and passive recreation compatible with water-dependent objectives under § 22a-92(a)(3).

8 CONSISTENCY WITH CONNECTICUT COASTAL MANAGEMENT ACT

The North Forest project demonstrates consistency the Connecticut Coastal Management Act in the following way:

8.1 Habitat Restoration and Enhancement

The project replaces invasive vegetation with native forest and meadow communities, stabilizes soils, and isolates contaminated areas through engineered capping. These measures restore upland buffers that support tidal wetlands and coastal wildlife, aligning with CCMA objectives to preserve and enhance coastal habitat and biodiversity.

8.2 Minimizing Coastal Hazards & Maintaining Natural Processes

By using engineered caps, preserving vegetative cover, and limiting impervious surfaces, the project supports stability of shoreline and upland interfaces, reduces runoff and sedimentation, and protects the site's capacity to handle flooding or erosion. This is consistent with the goal of ensuring development is compatible with natural coastal processes and hazard risk.

8.3 Improving Access and Water-Dependent Use Potential

The plan includes features such as raised paths, interpretive signage and selective public access to portions of the site. Although the main emphasis is ecological restoration, the project retains and enhances the potential for water-dependent educational and recreational uses in the future. This supports the goal of promoting public access and water-dependent uses in the coastal zone.

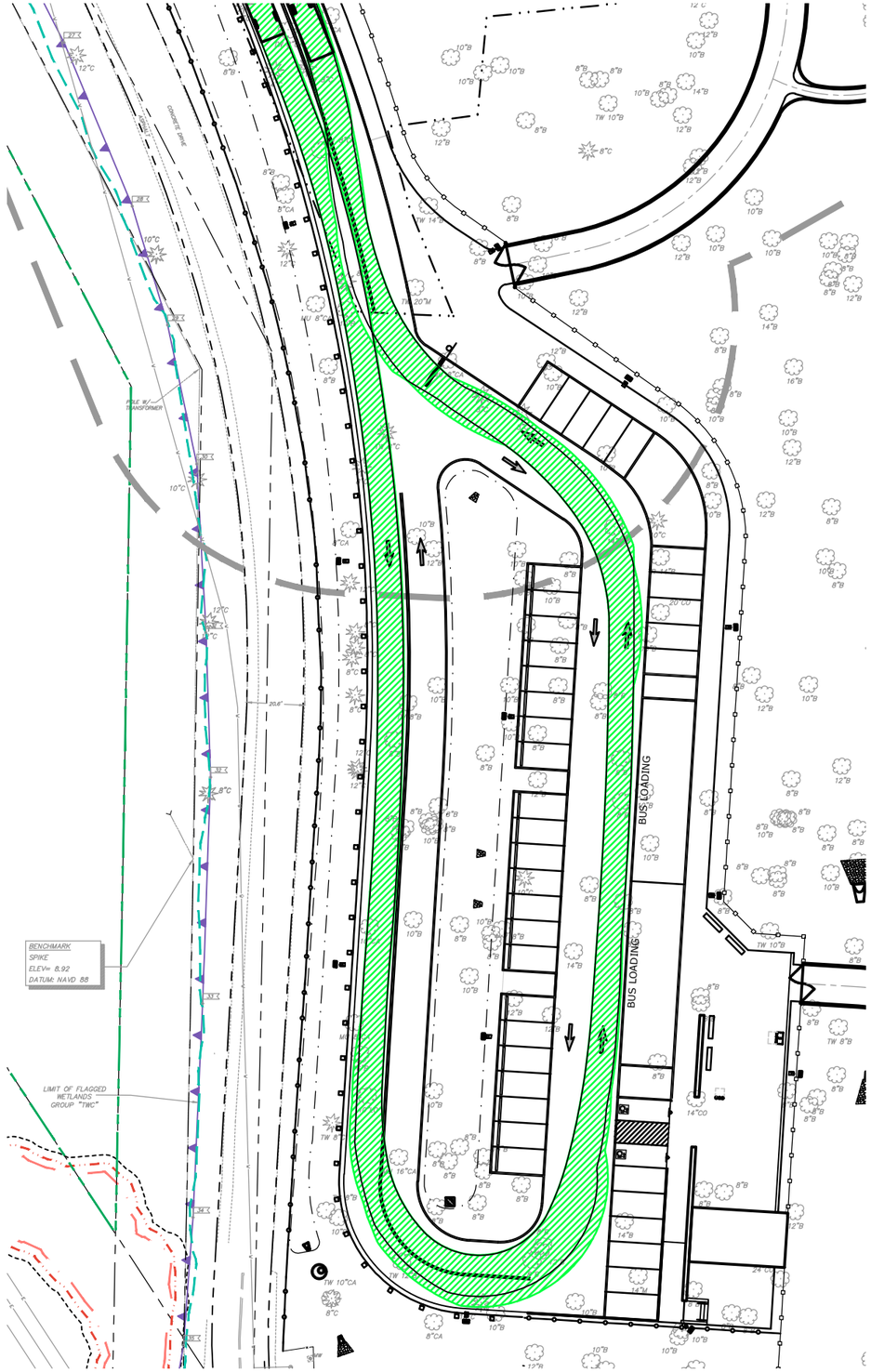
8.4 Avoidance of Direct Impacts to Coastal Waters and Wetlands

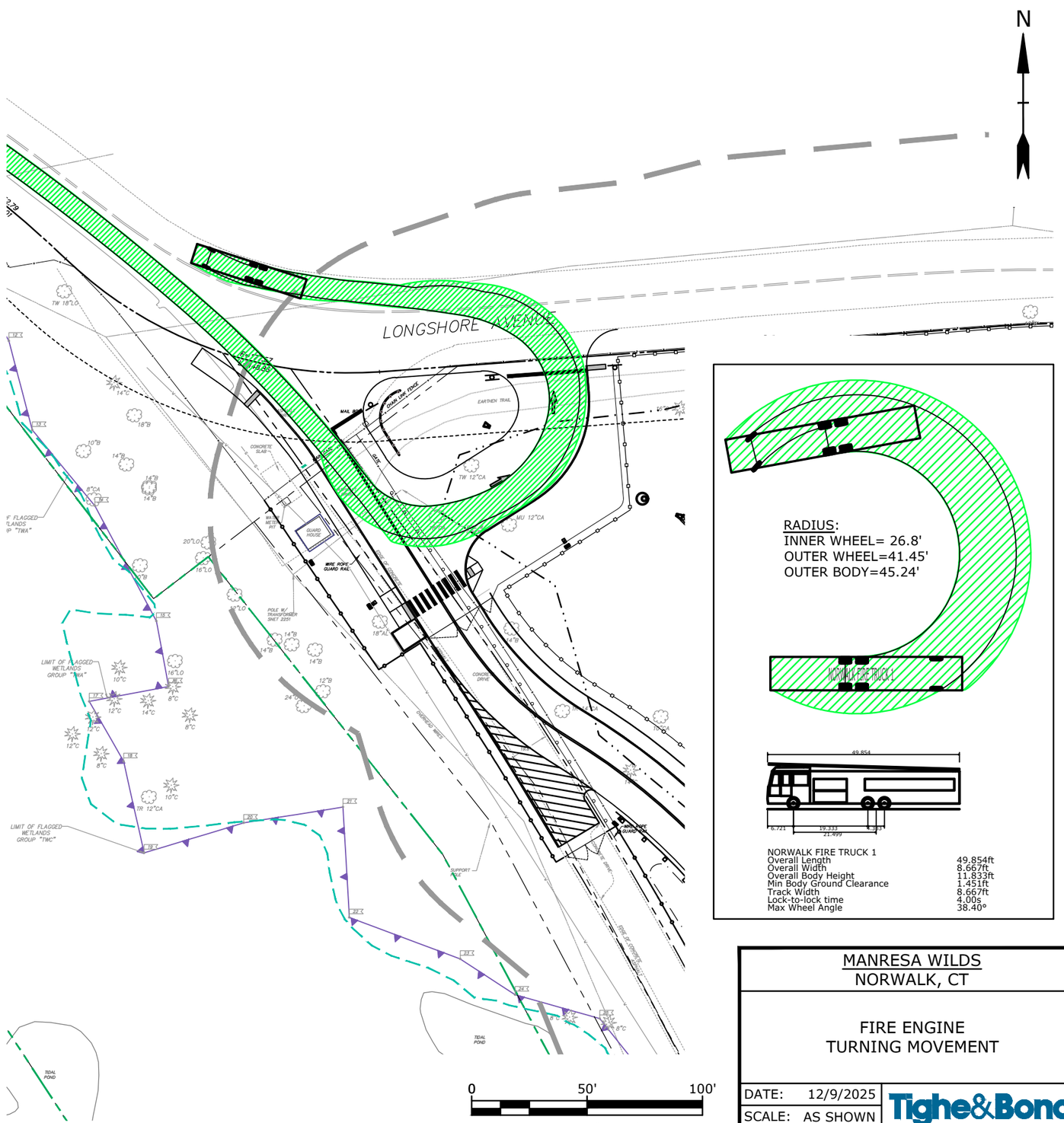
All proposed work is sited in upland areas, avoiding fill, dredging or disturbance of tidal wetlands or intertidal flats. The design also reduces pollutant and sediment loads to

adjacent coastal waters. These measures align with the CCMA's emphasis on protecting coastal waters, wetlands and related resources by avoiding or minimizing impacts.

8.5 Coordination and Consistent Regulatory Approach

The project follows DEEP and NDDB review processes and integrates site remediation with habitat restoration, exemplifying interagency coordination required under the CCMA § 22a-92(a)(9).





NORWALK FIRE TRUCK 1

Overall Length	49.854ft
Overall Width	8.667ft
Overall Body Height	11.833ft
Min Body Ground Clearance	1.451ft
Track Width	8.667ft
Lock-to-lock time	4.00s
Max Wheel Angle	38.40°

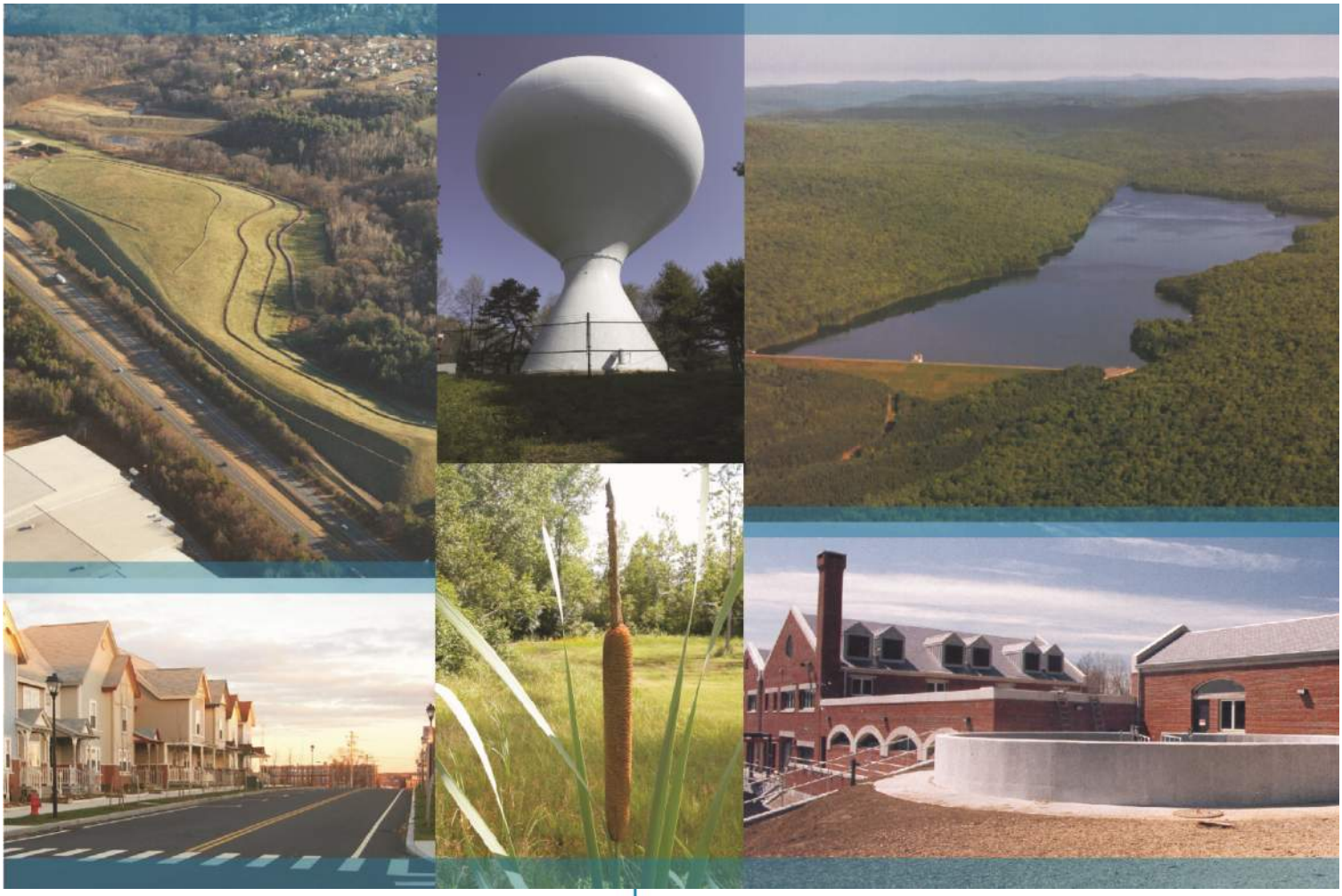
MANRESA WILDS
NORWALK, CT

FIRE ENGINE
TURNING MOVEMENT

DATE: 12/9/2025
SCALE: AS SHOWN
FIGURE: 5

Tighe&Bond

Dec 12, 2025-11:47am Plotted By: ZHattan
Tighe & Bond, Inc. J:\M\M5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Drawings\AutoCAD\Figures\Fire Engine Turning Movement.dwg





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12/12/2025

Tighe&Bond

Manresa Island Corporation
North Forest Access Drive and Parking
1 Manresa Island Road
Norwalk, CT

Drainage Memorandum

December 2025

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Tighe&Bond

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Section 1 Introduction and Site Conditions

Project Name: Manresa Island North Forest

Common Address of the Site: Longshore Avenue, Norwalk, CT

Phase 1 of this project consists of activities along the western side of the site in the 90-acre Northern Forest of Manresa Island. The project includes a proposed elevated entry drive from the intersection with Longshore Avenue and a parking lot with site lighting, full pavement section, striping, signage, drainage, and stormwater management. Refer to Figure 1, Site Location Map, in **Appendix A**.

The proposed improvements aim to address multiple objectives, including the addition of a parking lot and an entry drive, enhancing vehicle and pedestrian safety, upgrading circulation and lighting, and improving stormwater management on the western side of the site.

The drainage calculations and associated site drainage and utility plans have been prepared in accordance with the City of Norwalk Drainage Manual June 1, 2017, the Connecticut Department of Transportation Drainage Manual 2000, and the Connecticut Department of Energy and Environmental Protection 2024 Stormwater Quality Manual. **Appendix G**, "Checklist and Guidelines" from the City of Norwalk Drainage Manual has been completed and included in this report.

The parking area design incorporates landscaping enhancements to meet regulatory requirements and improve site aesthetics, as well as compliance with the Americans with Disabilities Act (ADA) parking standards. Additionally, the project will implement drainage improvements to manage stormwater effectively to maintain the existing drainage patterns.

The drainage calculations include a hydrologic and hydraulic analysis of the existing conditions and the proposed development. More specifically, the calculations include an analysis of the on-site drainage design and stormwater management measures and their performance in handling suspended solids removal rates. Lastly, the report includes the proposed soil erosion and sedimentation control measures incorporated during construction and operation and maintenance of the drainage and stormwater management systems.

This report details the existing site conditions, proposed improvements, and stormwater management strategies designed to achieve these goals.

1.1 Existing Conditions

The project site is located at Longshore Avenue, Norwalk, CT, with surrounding islands including Long Beach Island, Cedar Hammock Island, and Hoyt Island. The existing conditions of the Subject Area are described as wooded area and uninhabited land, with an existing entry drive called "Longshore Avenue". The Mean High Water is at an elevation of 3.33' and the Mean Low Water is -3.76'. The Coastal Jurisdiction Line is at an elevation of 5.4'.

The site property was formerly a farmland and, for 60 years, a power plant which supplied energy to the region but created environmental issues including air pollution

and coal ash deposits. The plant has been closed since 2013, and the island has been abandoned.

There are currently no drainage systems within the specific part of the site where activities are being designed. The site has experienced flooding in the past.

1.2 Proposed Conditions

The proposed improvements involve a new Manresa Island entry drive off the existing entry drive into the site, as well as reconstruction of a portion of the existing entry drive from the intersection with Longshore Ave south to where the new entry drive turns off towards the proposed parking area. The proposed access drive will be located east of the existing entry drive, generally running parallel to the existing road. The new entry drive alignment includes minor improvements at the intersection with Longshore Avenue to mitigate localized flooding along Longshore Ave at the property frontage. The new portion of the entry drive, sidewalks and parking lot surface elevations will be raised for resiliency against flooding.

The proposed entry road terminates at a proposed 40-space paved surface parking lot with site lighting, full pavement section, striping, signage and site drainage. These 40 total spaces include 38 standard parking spaces and two accessible parking spaces are provided with appropriate signage, striping and grading to meet regulatory requirements. In addition, there are two bus loading areas incorporated into the parking lot.

Drainage improvements are designed to manage stormwater runoff from increased impervious surface area and ensure compliance with local and state stormwater management regulations. Stormwater runoff from proposed areas of work will be collected by a series of drainage swales and natural low points. Runoff is treated for water quality through rain gardens or Hydrodynamic separators. Runoff is discharged into existing wetlands on site and follows existing spillways into the Long Island Sound.

The North Forest site will be served by water lines off of the existing on-site water service, and The electrical service will be provided by underground conduits, from the existing overhead power service to the property along the western edge of the existing entrance driveway, servicing street lights and walking path lights.

1.3 Site Soils

The U.S. Department of Agriculture's National Resource Conservation Service (NRCS) Web Soil Survey indicates the following soil types are present on the site:

Udorthents, Smoothed, 0 to 35 percent slopes: Human-transported material, gravelly sandy loam to loam.

Udorthents-urban land complex, 0 to 25 percent slopes: Well Drained Human-transported material. Very low to high permeability, very gravelly sand loam to loam.

Sulfaquents, 0 to 2 percent slopes: Very poorly drained Loamy estuarine deposits. Moderately low permeability, silty clay loam to mucky silt loam.

Scarboro muck, 0 to 3 percent slopes: Very poorly drained sandy glaciofluvial deposits. Moderately high to high permeability, gravelly sand to muck.

A copy of the NRCS Soil Resource Report is included in **Appendix A** of this report.

Section 2
Stormwater Management

2.1 Existing Site Hydrologic Analysis

The project site consists primarily of undeveloped wooded area with impervious roads running west to east and north to south. The site is relatively flat, with localized low points and gradual slopes to the south east of the island. There are no existing drainage structures in the proposed work area. Stormwater runoff primarily collects in natural low points and flows overland before discharging into the Long Island Sound. There is an existing conservation easement located East adjacent to the project site and high/low water elevations as mentioned in section 1 located West adjacent to the project site.

For the proposed project, four analysis design points were chosen to analyze runoff. Overland flow in the northern portion the site, EX WS-A, is directed to a lowpoint where runoff infiltrates into the ground, or spills south overland where it combines with runoff accumulated from the southern portion of the site, EX WS-B, and is directed to a culvert, Design Point 1, located at the southwest end of the site where it ultimately discharges west into the Long Island Sound. Runoff from the existing access road, EX WS-C, flows west off into Long Island Sound. The western boundary of the existing access road serves as Design Point 2. Runoff from Longshore Avenue flows, EX WS-D and EX WS-E, in two directions – north into the Long Island Sound, and East along Longshore where flow ultimately discharges in the Long Island Sound. These two points serve as Design Points 3 and 4, respectively. See "Existing Watershed Map" in **Appendix B** for the exact locations of the design points, and the corresponding watershed areas.

Impervious and pervious areas, weighted curve numbers, and times of concentration were calculated for each watershed and were entered into a hydrologic model to determine the existing condition's peak flow and volume as part of the comparative hydrology analysis.

The soil types were identified and classified using the USDA Natural Resource Conservation Service, Online Web Soil Survey. Using this data, Curve numbers, or CN values, were determined by evaluating land uses within the watershed, and then taking a weighted average. The calculated CN values are shown in **Appendix B**.

The time of concentration was determined for each watershed area using the method outlined in the Connecticut Department of Transportation Drainage Manual 2000, section 6.C. When determining the time of concentration, three hundred feet was the maximum length used for overland flow, beyond that it is assumed that the flow becomes channelized. The calculations for the time of concentrations are included in Appendix B, and the paths taken are shown on the watershed map.

The watersheds were modeled and analyzed using HydroCAD modeling system. The program was used to develop runoff hydrographs for individual drainage areas, routing the hydrographs within the watershed and combining them to calculate peak flows and volumetric runoff.

Precipitation depths were computed from NOAA's Atlas 14 Point Precipitation Frequency Estimates online utility. Precipitation depths are tabulated in **Table 2-1** below, while NOAA Atlas 14 Output appears in **Appendix A.**

Table 1: 24-hour Duration Precipitation Depths

	2-Year	10-Year	25-Year	50-Year	100-Year
Depth (in)	3.49	5.33	6.49	7.34	8.26

2.1.1 Floodplain Management

The Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM) for the City of Norwalk, effective July 8, 2013, shows that the site falls within Zone AE, as shown in **Appendix A.**

2.2 Proposed Site Hydrologic Analysis

The proposed Stormwater Management system will utilize a series of grass lines swales, rain gardens, and hydrodynamic separators. The Stormwater Management System will maintain existing drainage patterns to the greatest extent practical, while providing Low Impact Development and Best Management Practices for stormwater treatment. The same design points that were analyzed in the existing conditions analysis were maintained for the proposed design.

The proposed condition continues to analyze the same four design points. Overland flow in the northern portion the site, PR WS-A1, is directed to the same existing lowpoint where runoff infiltrates into the ground, or drains south via a culvert. The bus turn-around located near Longshore Avenue, PR WS-A3, drains to a swale in the central island and is directed into a hydrodynamic separator. The northern portion of the proposed driveway, PR WS-A2, also drains overland to a swale and is directed into a hydrodynamic separator. All of these areas drain to the existing lowpoint and drain south via the culvert, where it combines with runoff accumulated from the southern portion of the site, PR WS-B1. Additionally, the southern portion of the proposed driveway drains overland to a swale and is directed into a hydrodynamic separator. The proposed parking lot drains to a rain garden which treats runoff and outlets to the south. The combined flows from these six sub-watersheds contribute to the culvert, Design Point 1, located at the southwest end of the site where it ultimately discharges west into the Long Island Sound.

Runoff from the existing access road, PR WS-C, continues to drain west off into Long Island Sound. The western boundary of the existing access road serves as Design Point 2. Similar to existing conditions, runoff from the northern portion of Longshore Avenue, PR WS-D, flows north into the Long Island Sound, Design Point 3. Runoff from the southern portion of Longshore Avenue, PR WS-E, is ultimately collected by the swale in the central island, where it is combined and follows runoff from the aforementioned PR WS-A3, and ultimately contributes to Design Point 1. This eliminates runoff contributing to Design Point 4 in proposed conditions. See "Proposed Watershed Map" in **Appendix C** for the exact locations of the design points, and the corresponding watershed areas.

Stormwater infiltration was not proposed on this project in locations of disturbance due to impacted soils on site and the use of impermeable liners, except in the location of the existing lowpoint where there is no excavation is proposed. In the post-development

condition, this existing lowpoint will continue to function as it does currently, in pre-development conditions, where runoff is collected and infiltrates into the ground.

There is no increase in runoff peak flow or volume to downstream properties or right-of-ways; however, the proposed project does include some increase in runoff peak flow and volume to the Long Island Sound. Due to the aforementioned impacted soils on site and the use of impermeable liners, it was unfeasible to retain runoff to reduce peak flows and volumes to the same levels or less than existing conditions. The project site is within a coastal area, in immediate proximity to the Long Island Sound, and therefore any increase in flow or volumetric runoff would be negligible and will ultimately not have adverse effects on adjacent water bodies. Section 1.4.3 of the 2017 City of Norwalk Drainage Manual allows for this exemption in coastal areas.

Impervious and pervious areas, weighted curve numbers, and times of concentration were calculated for each watershed and were entered into a hydrologic model to determine the existing condition's peak flow and volume as part of the comparative hydrology analysis.

The soil types were identified and classified using the USDA Natural Resource Conservation Service, Online Web Soil Survey. Using this data, Curve numbers, or CN values, were determined by evaluating land uses within the watershed, and then taking a weighted average. The calculated CN values are shown in **Appendix C**.

The time of concentration was determined for each watershed area using the method outlined in the Connecticut Department of Transportation Drainage Manual 2000, section 6.C. When determining the time of concentration, three hundred feet was the maximum length used for overland flow, beyond that it is assumed that the flow becomes channelized. The calculations for the time of concentrations are included in Appendix B, and the paths taken are shown on the watershed map.

The watersheds were modeled and analyzed using HydroCAD modeling system. The program was used to develop runoff hydrographs for individual drainage areas, routing the hydrographs within the watershed and combining them to calculate peak flows and volumetric runoff. The stormwater management system has been analyzed for the 1, 2, 5, 10, 25, 50 and 100 year storm events.

A breakdown of the proposed volumetric hydrographs, and proposed watershed map, and calculations for the time of concentrations are included in **Appendix C** of this report.

2.2.1 Water Quality

The stormwater management plan for the proposed site has been designed to remove a high percentage of sediments in accordance with the Connecticut Department of Energy and Environmental Protection "Stormwater General Permit Criteria".

The stormwater management plan for this site uses "Best Management Practices" to meet the Connecticut DEEP's goal of 90% removal of total suspended solids and the City of Norwalk's stormwater management requirements.

1. Contech CDS units – are proposed to remove grit, contaminated sediment, metals, hydrocarbons and other floating fluids from surface runoff.

2. Infiltration Basin/Rain Garden – infiltration basin/rain gardens help filter out pollutants from surface runoff and promote groundwater recharge. They serve as a primary treatment practice utilizing the chemical, biological, and physical properties of plants, microbes, and soils for removal of pollutants from stormwater runoff.

The Contech CDS units proposed for the site are online systems designed to accommodate the water quality flow. **Table 3** provides a comparison of the water quality flow versus the treatment capacity for each system. The results of the water quality calculations appear in **Appendix E.**

Table 3
Contech CDS System Flow vs. Treatment Capacity

System Designation	Model Number	Water Quality Flow (cfs)	Treatment Capacity (cfs)
WQS-01 (WQA-A2)	CDS2015-4-C	0.153	0.7
WQS-02 (WQA-A3)	CDS2015-4-C	0.352	0.7
WQS-03 (WQA-B3)	CDS2015-4-C	0.273	0.7

Table 4
Required Water Quality Volume

System Designation	Model Number	Required WQV (cf)	Provided WQV (cf)
WQA-A1	Existing Infiltration Basin	11,531	71,232
WQA-B2	Proposed Rain Garden	2,419	2,990

2.2.2 Hydraulic Capacity and Outlet Velocity

The stormwater collection system was designed to convey the 25-year storm event as required by the Norwalk Drainage Manual. The system was designed by analyzing sub-areas that correspond to each drainage collection structure. The calculations were entered into the Hydraflow Express Extension for AutoCAD Civil 3D 2025 by Autodesk Inc., Version 10.4. The resultant Hydraulic Grade Line (HGL) greater than 1 foot below the top of manhole covers. Results of the hydraulic analysis can be found in **Appendix D**.

2.3 Method of Hydrology and Hydraulic Analysis

The following storm drainage design criteria were used:

1. Design storm rainfall data from NOAA Atlas 14 Point Precipitation Frequency Estimates
2. Minimum time of concentration = 5 minutes
3. Piped storm drainage system and the outlets are designed for a 25-year storm.
4. For SCS peak flow calculations, Curve Number were as follows:

a. Impervious (Pavement/Roof Areas) = 98

b. Wooded Areas (HSG B) = 55

c. Wooded Areas (HSG D) = 77

d. Landscape and Lawns (HSG B) = 69

e. Landscape and Lawns (HSG D) = 84

5. Minimum diameter pipes, excluding underdrains, = 12 inches.

6. Minimum pipe slope = 0.25 percent.

7. The Stormwater management Plan for the site is designed to treat the Water Quality Volume, remove Total Suspended Solids and promote groundwater recharge.

8. Watershed areas delineated using polylines in AutoCAD Civil 3D 2025.

9. Storm drainage system analyzed using AutoCAD Civil 3D 2025 Hydraflow Express software by Autodesk.

2.4 Low Impact Development and Best Management Practices

The Stormwater management plan for this site uses "Best Management Practices" (BMPs) to meet or exceed the goal of 90% removal of total suspended solids and reduction of other pollutants.

The BMPs include:

Infiltration Basin/Rain Garden: The infiltration basin and the rain garden provide controlled storage where runoff can slow down and allow sediment to settle out. The infiltration basin and rain garden traps accumulated sediment and prevents it from being re-entrained during future storms. The vegetated edges enhance settling and capture finer particles.

Street Sweeping: Street sweeping removes sediment, trash and other debris from the road before they can infiltrate the stormwater management system.

Hydrodynamic Separator: Hydrodynamic separators serve as pretreatment and prevent transport of oils and sediment further downstream. The proposed stormwater management system utilizes Contech CDS Hydrodynamic separator units prior to discharge into existing wetlands. The Contech CDS Hydrodynamic Separator units have been sized in accordance with the 2024 CTDEEP Stormwater Quality Manual. Sizing calculations for the Hydrodynamic Separators and Total Suspended Solids removal rate are included in **Appendix E**.

2.5 Stormwater Maintenance and Inspection Schedule

The Initial inspection will be made during an intense rainfall to check the adequacy of the drainage structures, Stormwater Ponds, Hydrodynamic Separators, Bio-Filtration Swales, Riprap Dissipators, and Pavement.

The following is a checklist of items that will be checked and maintained during scheduled maintenance operations.

Drainage Structures: The Owner will be responsible for cleaning the catch basins, manholes, piping, and outlet protection on their property. A Connecticut licensed hauler shall clean the sumps, and legally dispose of removed sand at an off-site location. The road sand may not be reused or stored on-site. As part of the hauling contract, the hauler shall notify the Owner in writing where the material is being disposed.

Each catch basin and manhole shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment. Maintain a log of inspections. Remove organic matter, sand, and debris from catch basins as necessary and dispose of legally. Inspections can be spaced further apart if initial observations show slow accumulation of debris.

Infiltration Basin/Rain Garden : The owner will be responsible for cleaning each basin/rain garden and outlet structure of sediment and debris every four months at a minimum. Inspections will need to observe and make note of sediment depths in the pond and remove sediment as it collects to ensure it is not reducing the effective storage area of the pond. The wet pond will be equipped with a capped underdrain to allow for draw down of the permanent pool in order to observe sediment depths and slope conditions. The ponds will need to be mowed and maintained to ensure vegetation does not become overgrown, phragmites and tree saplings shall be removed when observed. Slopes of the pond (both inside and out) will need to be inspected to ensure no rutting or erosion is occurring. If any is damage is noted, repairs need to be performed immediately.

Hydrodynamic Separators: Water quality structures shall be maintained in accordance with the manufacturer's instructions. Inspections shall be performed quarterly at first, with more frequent inspections in the winter months when sanding operations may lead to rapid sediment deposition. Inspections may be spaced further apart if initial observations show slow accumulation of sediment. The systems shall be cleaned when the inspection indicates that the sediment depth has accumulated to within six inches of the dry-weather water level. Oil and gasoline spills shall be cleaned out immediately. Where oil or gas accumulates in small amounts over time, it shall be removed when an appreciable layer has been captured. If the inspections indicate that the sediment depth requires cleaning, the unit may be cleaned using a vacuum truck. Cleanout should not occur within 6 hours of a rainfall event, so that the system can drain down. Where clamshells are used for solids removal, first absorbent pads or pillows shall be used in the oil chamber to remove floating contaminants.

Bio-Filtration Swale: The swale will be cleaned of all silt, debris and sediment, including the CB inlet structure. Check-dams will be observed to make sure they are intact and functioning properly.

Riprap Dissipators: Regular maintenance includes removing accumulated debris and sediment, checking for erosion, vegetative bare spots, and removing invasive plant species or tree saplings.

Pavement: Paved areas shall be swept periodically by the Owner to clean trash and other debris. The Owner will sweep paved areas on its property in the spring to remove winter accumulations of road sand. Perform a visual inspection of paved areas four times per year with one inspection after the last snowfall, but no later than April 1. Sweep accumulated sediment and debris from the paved areas. Clean paved areas as necessary during the remainder of the year.

A Maintenance and Inspection Plan, including forms and checklists, for the proposed project can be found in **Appendix F.**

Section 3
Soil Erosion and Sedimentation Control

3.1 Soil Erosion and Sedimentation Control Narrative

Manresa Island Corporation is proposing to construct a park consisting of trails and amenities in the North Forest portion of Manresa Island, located in Norwalk Connecticut, along with a parking area, access drive, and bus loading areas to facilitate visitors to the park. Proposed stormwater management features include infiltration basin/raingardens, hydrodynamic separators, bio-filtration swales, and permeable paving and pavers.

Anticipated responsible party for inspection of SESCs: Manresa Island Corporation

Soil erosion and sedimentation control measures shall conform to the standards outlined in the Connecticut Department of Environmental Protection (CTDEEP), "2024 Connecticut Guidelines for Soil Erosion and Sediment Control", latest revision.

Area of disturbance is approximately 8.25 acres.

Estimated:
Project Start: March 2026
Project Completion: December 2026

Upon completion of the project the project area will have a weighted CN of approximately 65, with the site ultimately discharging to the Long Island Sound. The side slopes of the proposed access drive will be monitored for stability and erosion until final stabilization is completed.

3.2 Soil Erosion and Sedimentation Control Notes

1. See drawing C-311 for additional soil erosion and sediment control details
2. All sedimentation and erosion control measures shall be constructed in accordance with the standards and specifications of the "2024 Connecticut Guidelines for Soil

Erosion and Sediment Control", and all amendments and addenda thereto as published by the Connecticut Department of Energy and Environmental Protection.

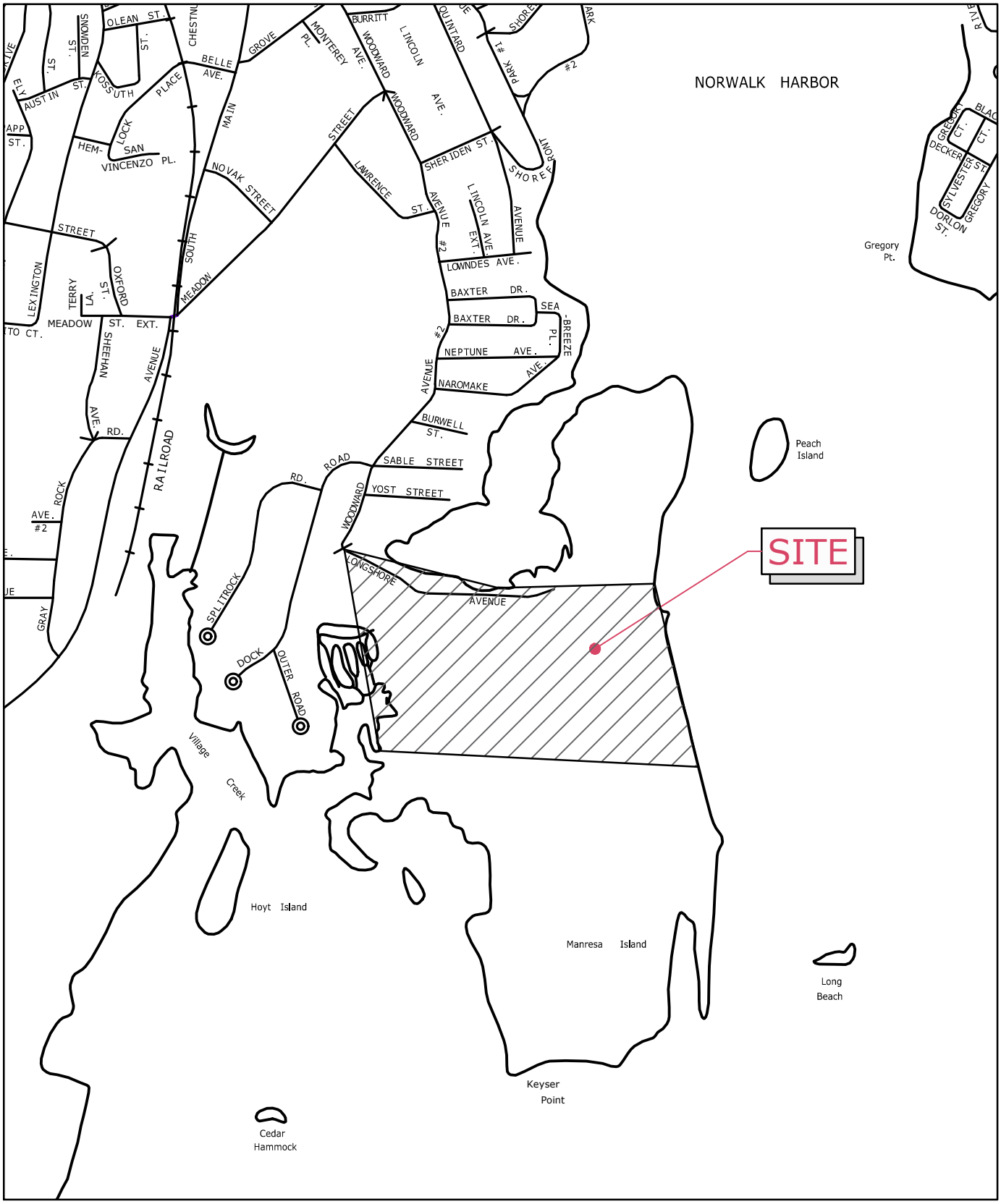
3. Land disturbance shall be kept to the minimum necessary for construction operations.
4. Install all erosion control measures as shown on the plan and elsewhere as ordered by the engineer or the town.
5. Protect all catch basins with a silt sacks, haybale ring, silt fence or block and stone inlet protection throughout the construction period and until all disturbed areas are thoroughly stabilized as noted on plans.
6. Whenever possible, install erosion and sediment control measures prior to construction. see "soil erosion and sedimentation control narrative".
7. Install additional control measures during the construction period as ordered by the engineer.
8. Maintain all sedimentation and erosion control measures in effective condition throughout the construction period.
9. Sediment removed shall be disposed of off-site in a manner as required by the owner's representative.
10. The construction contractor shall be responsible for construction and maintenance of all control measures throughout the construction period.
11. Protect all disturbed areas exposed for more than 7 days with a temporary vegetative cover. seed these areas with perennial ryegrass at the rate of 40 lbs. per acre (1 lb. per 1,000 sq. ft). Apply soil amendments and mulch as required to establish a uniform stand of vegetation over all disturbed areas.
12. The construction contractor shall utilize approved methods/materials for preventing the blowing and movement of dust from exposed soil surfaces onto adjacent properties and site areas.
13. The construction contractor shall maintain a supply of silt fence/haybales and anti-tracking crushed stone on site for emergency repairs.
14. The contractor shall inspect weekly at a minimum, all drainage structures and clean them as needed to prevent the build-up of silt.
15. The construction contractor shall carefully coordinate the placement of erosion control measures with the phasing of construction.
16. Keep all paved roadways clean. sweep before forecasted storms.
17. Treat all unpaved surface with 4" minimum of topsoil prior to final stabilization.
18. Install haybale barriers and silt fencing along the toe of critical cut and fill slopes.
19. The contractor shall notify the town environmental official prior to the installation of erosion controls, cutting of trees, or any excavation.

20. Cover all trucks containing materials before leaving the site.
21. Check all sedimentation and erosion controls weekly and/or after each rainfall event. make necessary repairs immediately.
22. Inspect and repair erosion and sediment controls prior to forecasted rain events.
23. Remove erosion controls when all disturbed areas have been stabilized and the town has provided authorization. disturbed areas shall be seeded and mulched.

3.3 Civil Roadway and Hardscape Construction Sequence

1. Flag the limits of construction.
2. Hold preconstruction meeting. (remember to call before you dig 1-800-922-4455).
3. Install perimeter erosion and sediment controls and tree protection devices in accordance with the soil erosion and sediment control plans.
4. Strip all topsoil within the project area and stockpile all topsoil on-site.
5. Strip and/or mill existing bituminous pavement as identified on the site demolition plans.
6. Perform the bulk grading to raise the access drive and parking area to subgrade.
7. Install below ground drainage improvements, site lighting conduits, foundations, handholes, and other utility and trenching operations.
8. Install subbase for access drives, parking areas, and walkways.
9. Complete rough grading activities.
10. Install curbing, and concrete walkways.
11. Install new bituminous pavement as shown on the site plans.
12. Complete the balance of site work and stabilization of all other disturbed areas.
13. Restore all landscaped areas in accordance with site plans and specifications.
14. After site is stabilized remove temporary erosion and sediment controls (e.g. geotextile silt fences and haybales).

APPENDIX A



MANERSA ISLAND NORTH FOREST
NORWALK, CONNECTICUT

SITE LOCATION MAP

NORTH

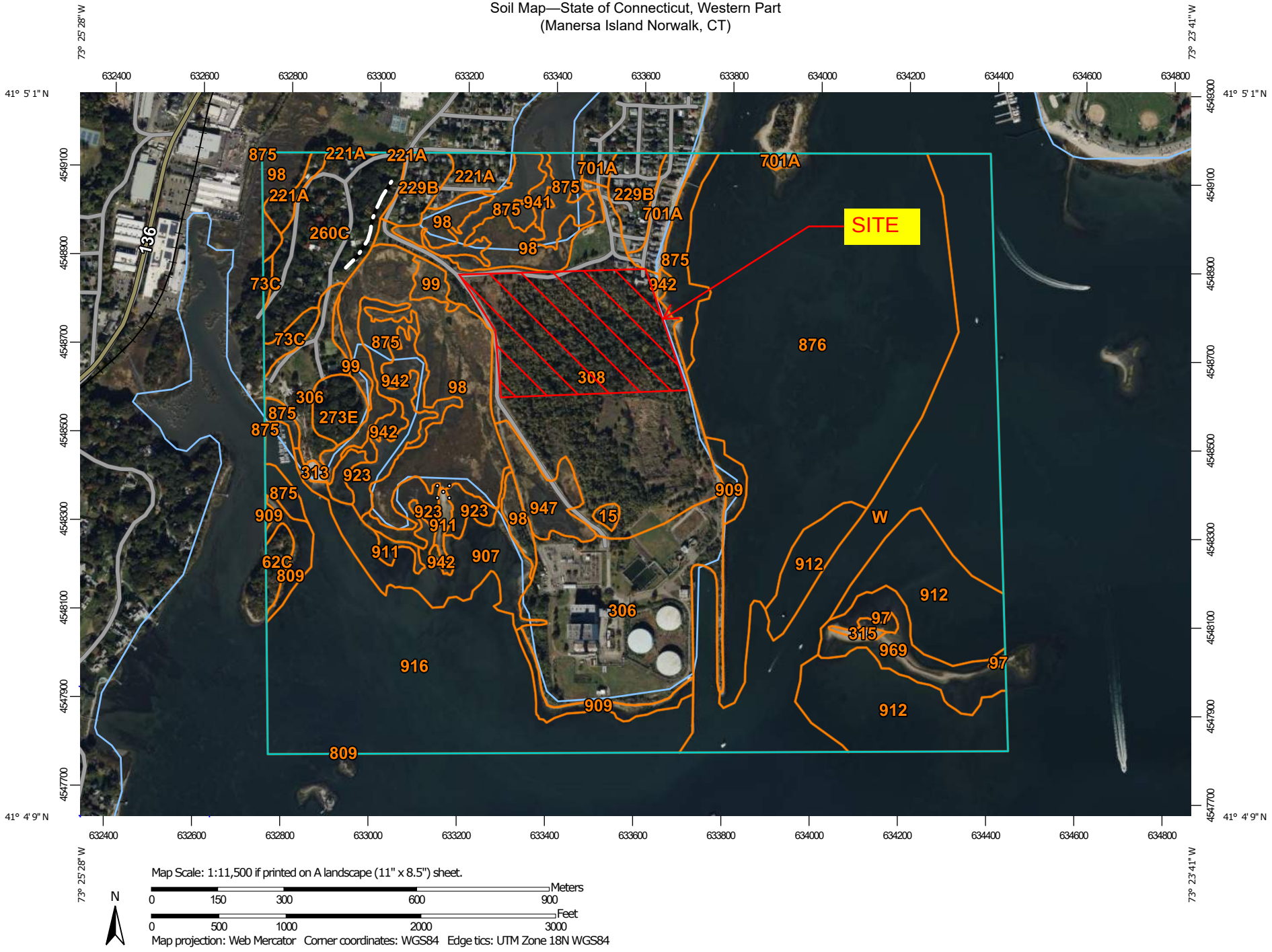
1:1000

FIGURE 1

Tighe&Bond

Nov 14, 2025-12:40pm Plotted By: KPekar
Tighe & Bond, Inc. \\tighebond.com\data\Data\Projects\M\M5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Reports\Stormwater-Management\Site-location-map.dwg

Soil Map—State of Connecticut, Western Part
(Manersa Island Norwalk, CT)



Map Scale: 1:11,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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 6, Sep 16, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
15	Scarboro muck, 0 to 3 percent slopes	0.6	0.1%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	1.9	0.3%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	2.2	0.4%
97	Pawcatuck mucky peat, 0 to 2 percent slopes, very frequently flooded	0.7	0.1%
98	Westbrook mucky peat, 0 to 2 percent slopes, very frequently flooded	41.8	7.5%
99	Westbrook mucky peat, 0 to 2 percent slopes, very frequently flooded, low halinity	2.8	0.5%
221A	Ninigret-Urban land complex, 0 to 5 percent slopes	5.5	1.0%
229B	Agawam-Urban land complex, 0 to 8 percent slopes	8.5	1.5%
260C	Charlton-Urban land complex, 8 to 15 percent slopes	17.7	3.2%
273E	Urban land-Charlton-Chatfield complex, rocky, 15 to 45 percent slopes	3.8	0.7%
306	Udorthents-Urban land complex	45.6	8.2%
308	Udorthents, smoothed	63.9	11.4%
313	Beaches, sand	0.4	0.1%
315	Beaches, cobble	0.5	0.1%
701A	Ninigret fine sandy loam, 0 to 3 percent slopes	5.6	1.0%
809	Napatree gravelly fine sandy loam, intertidal, very bouldery	2.8	0.5%
875	Pishagqua mucky silt loam, intertidal	24.0	4.3%
876	Pishagqua mucky silt loam, subtidal	113.2	20.2%
907	Fort Neck silt loam, intertidal	14.4	2.6%
909	Fort Neck silt loam, intertidal, bouldery	5.3	0.9%
911	Noank fine sand, intertidal	1.8	0.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
912	Noank fine sand, subtidal	40.8	7.3%
916	Hammock sandy loam, subtidal	67.8	12.1%
923	Quaimbog silt loam, intertidal	6.1	1.1%
941	Barn Island mucky peat, 0 to 2 percent slopes, very frequently flooded	1.2	0.2%
942	Quinnipiac mucky silt loam, 0 to 2 percent slopes, very frequently flooded	5.3	0.9%
947	Sulfaquents, 0 to 2 percent slopes, very frequently flooded	6.3	1.1%
969	Alewife Cove sand, intertidal	10.1	1.8%
W	Water	58.7	10.5%
Totals for Area of Interest		**559.2**	**100.0%**

NOAA Atlas 14, Volume 10, Version 3
Location name: Norwalk, Connecticut, USA*
Latitude: 41.0802°, Longitude: -73.4145°
Elevation: 7 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**4.38** (3.52-5.45)	**5.11** (4.09-6.36)	**6.30** (5.02-7.87)	**7.27** (5.77-9.13)	**8.62** (6.58-11.3)	**9.65** (7.18-12.9)	**10.7** (7.68-14.9)	**11.8** (8.06-17.0)	**13.4** (8.72-19.9)	**14.6** (9.26-22.2)
10-min	**3.11** (2.49-3.86)	**3.62** (2.90-4.50)	**4.45** (3.56-5.56)	**5.15** (4.09-6.47)	**6.10** (4.66-8.00)	**6.83** (5.09-9.16)	**7.58** (5.44-10.5)	**8.38** (5.70-12.0)	**9.49** (6.18-14.1)	**10.4** (6.56-15.8)
15-min	**2.44** (1.96-3.03)	**2.84** (2.28-3.53)	**3.49** (2.79-4.36)	**4.04** (3.20-5.07)	**4.79** (3.66-6.28)	**5.36** (3.99-7.18)	**5.94** (4.27-8.26)	**6.57** (4.47-9.42)	**7.44** (4.84-11.1)	**8.13** (5.15-12.4)
30-min	**1.69** (1.36-2.10)	**1.97** (1.58-2.46)	**2.43** (1.94-3.04)	**2.82** (2.23-3.54)	**3.34** (2.55-4.38)	**3.74** (2.78-5.00)	**4.15** (2.97-5.75)	**4.58** (3.11-6.55)	**5.15** (3.36-7.66)	**5.60** (3.55-8.52)
60-min	**1.08** (0.870-1.35)	**1.26** (1.01-1.57)	**1.56** (1.25-1.95)	**1.81** (1.43-2.27)	**2.14** (1.63-2.81)	**2.40** (1.78-3.21)	**2.66** (1.90-3.68)	**2.93** (2.00-4.20)	**3.29** (2.14-4.90)	**3.57** (2.26-5.42)
2-hr	**0.691** (0.558-0.853)	**0.819** (0.661-1.01)	**1.03** (0.828-1.28)	**1.20** (0.961-1.50)	**1.44** (1.11-1.88)	**1.63** (1.22-2.17)	**1.81** (1.31-2.51)	**2.02** (1.38-2.88)	**2.31** (1.51-3.42)	**2.55** (1.62-3.84)
3-hr	**0.528** (0.428-0.649)	**0.630** (0.510-0.776)	**0.798** (0.644-0.987)	**0.938** (0.751-1.17)	**1.13** (0.871-1.47)	**1.27** (0.959-1.70)	**1.42** (1.04-1.97)	**1.60** (1.09-2.26)	**1.84** (1.20-2.71)	**2.04** (1.30-3.07)
6-hr	**0.333** (0.272-0.407)	**0.400** (0.326-0.489)	**0.510** (0.414-0.626)	**0.601** (0.485-0.742)	**0.726** (0.564-0.941)	**0.820** (0.622-1.09)	**0.920** (0.674-1.27)	**1.03** (0.710-1.46)	**1.20** (0.788-1.76)	**1.34** (0.855-2.00)
12-hr	**0.205** (0.168-0.248)	**0.246** (0.202-0.299)	**0.314** (0.257-0.383)	**0.370** (0.301-0.454)	**0.448** (0.350-0.577)	**0.506** (0.386-0.667)	**0.568** (0.418-0.779)	**0.639** (0.440-0.895)	**0.745** (0.490-1.08)	**0.833** (0.533-1.24)
24-hr	**0.119** (0.099-0.144)	**0.145** (0.120-0.175)	**0.187** (0.154-0.226)	**0.222** (0.181-0.270)	**0.270** (0.212-0.345)	**0.305** (0.234-0.401)	**0.344** (0.255-0.470)	**0.389** (0.269-0.541)	**0.456** (0.301-0.659)	**0.513** (0.329-0.756)
2-day	**0.065** (0.054-0.078)	**0.081** (0.067-0.097)	**0.106** (0.088-0.128)	**0.127** (0.105-0.154)	**0.157** (0.124-0.200)	**0.179** (0.138-0.233)	**0.202** (0.151-0.276)	**0.230** (0.160-0.319)	**0.273** (0.181-0.392)	**0.310** (0.200-0.454)
3-day	**0.046** (0.038-0.055)	**0.057** (0.048-0.069)	**0.076** (0.063-0.091)	**0.092** (0.076-0.111)	**0.113** (0.090-0.144)	**0.129** (0.100-0.168)	**0.146** (0.110-0.199)	**0.167** (0.116-0.230)	**0.199** (0.132-0.284)	**0.226** (0.145-0.329)
4-day	**0.037** (0.031-0.044)	**0.046** (0.038-0.054)	**0.060** (0.050-0.072)	**0.073** (0.060-0.087)	**0.090** (0.071-0.114)	**0.102** (0.079-0.133)	**0.116** (0.087-0.157)	**0.132** (0.092-0.181)	**0.157** (0.104-0.224)	**0.178** (0.115-0.259)
7-day	**0.025** (0.021-0.029)	**0.030** (0.025-0.036)	**0.039** (0.033-0.047)	**0.047** (0.039-0.056)	**0.057** (0.046-0.072)	**0.065** (0.051-0.084)	**0.073** (0.055-0.099)	**0.083** (0.058-0.114)	**0.098** (0.065-0.139)	**0.110** (0.071-0.159)
10-day	**0.020** (0.017-0.023)	**0.024** (0.020-0.028)	**0.030** (0.026-0.036)	**0.036** (0.030-0.043)	**0.044** (0.035-0.055)	**0.049** (0.038-0.063)	**0.055** (0.042-0.074)	**0.062** (0.044-0.085)	**0.073** (0.048-0.103)	**0.081** (0.052-0.117)
20-day	**0.014** (0.012-0.016)	**0.016** (0.014-0.019)	**0.020** (0.017-0.023)	**0.023** (0.019-0.027)	**0.027** (0.022-0.034)	**0.030** (0.024-0.038)	**0.034** (0.025-0.044)	**0.037** (0.026-0.050)	**0.042** (0.028-0.059)	**0.046** (0.030-0.066)
30-day	**0.011** (0.010-0.013)	**0.013** (0.011-0.015)	**0.016** (0.013-0.018)	**0.018** (0.015-0.021)	**0.021** (0.017-0.026)	**0.023** (0.018-0.029)	**0.026** (0.019-0.033)	**0.028** (0.020-0.038)	**0.031** (0.021-0.044)	**0.034** (0.022-0.048)
45-day	**0.009** (0.008-0.011)	**0.010** (0.009-0.012)	**0.012** (0.011-0.015)	**0.014** (0.012-0.016)	**0.016** (0.013-0.020)	**0.018** (0.014-0.022)	**0.020** (0.015-0.025)	**0.021** (0.015-0.029)	**0.023** (0.016-0.033)	**0.025** (0.016-0.036)
60-day	**0.008** (0.007-0.009)	**0.009** (0.008-0.010)	**0.011** (0.009-0.012)	**0.012** (0.010-0.014)	**0.014** (0.011-0.017)	**0.015** (0.012-0.019)	**0.016** (0.012-0.021)	**0.018** (0.012-0.023)	**0.019** (0.013-0.027)	**0.020** (0.013-0.029)

[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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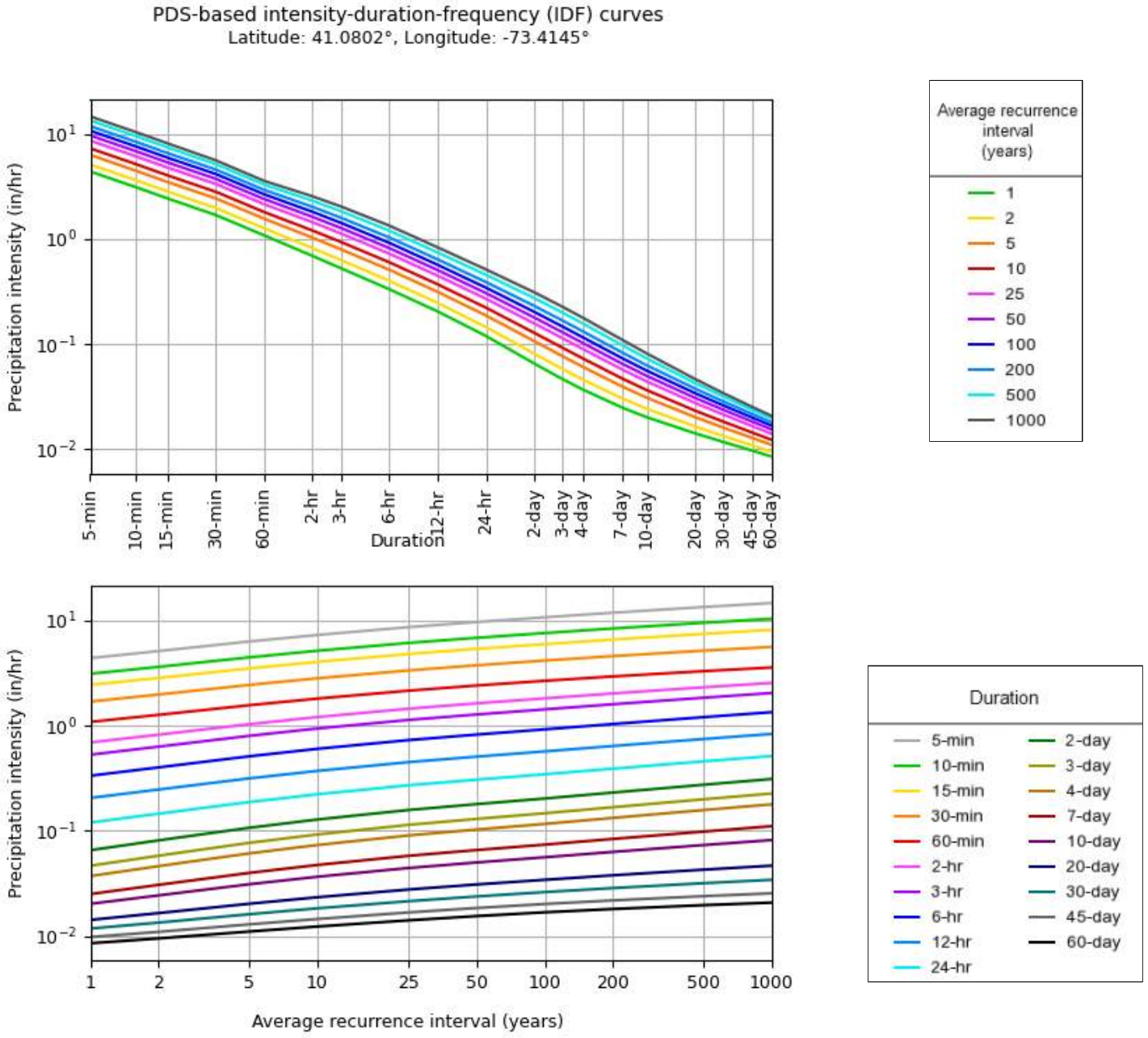
PF graphical



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Wed Sep 10 19:17:38 2025

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Maps & aerials

Small scale terrain

NOAA Atlas 14, Volume 10, Version 3
Location name: Norwalk, Connecticut, USA*
Latitude: 41.0802°, Longitude: -73.4145°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.365** (0.293-0.454)	**0.426** (0.341-0.530)	**0.525** (0.418-0.656)	**0.606** (0.481-0.761)	**0.718** (0.548-0.942)	**0.804** (0.598-1.08)	**0.892** (0.640-1.24)	**0.986** (0.672-1.41)	**1.12** (0.727-1.66)	**1.22** (0.772-1.85)
10-min	**0.518** (0.415-0.643)	**0.603** (0.483-0.750)	**0.742** (0.593-0.927)	**0.858** (0.681-1.08)	**1.02** (0.777-1.33)	**1.14** (0.848-1.53)	**1.26** (0.907-1.75)	**1.40** (0.950-2.00)	**1.58** (1.03-2.35)	**1.73** (1.09-2.63)
15-min	**0.609** (0.489-0.757)	**0.709** (0.569-0.883)	**0.873** (0.697-1.09)	**1.01** (0.800-1.27)	**1.20** (0.914-1.57)	**1.34** (0.998-1.80)	**1.49** (1.07-2.06)	**1.64** (1.12-2.35)	**1.86** (1.21-2.77)	**2.03** (1.29-3.09)
30-min	**0.846** (0.679-1.05)	**0.987** (0.791-1.23)	**1.22** (0.972-1.52)	**1.41** (1.12-1.77)	**1.67** (1.27-2.19)	**1.87** (1.39-2.50)	**2.08** (1.49-2.87)	**2.29** (1.56-3.28)	**2.58** (1.68-3.83)	**2.80** (1.77-4.26)
60-min	**1.08** (0.870-1.35)	**1.26** (1.01-1.57)	**1.56** (1.25-1.95)	**1.81** (1.43-2.27)	**2.14** (1.63-2.81)	**2.40** (1.78-3.21)	**2.66** (1.90-3.68)	**2.93** (2.00-4.20)	**3.29** (2.14-4.90)	**3.57** (2.26-5.42)
2-hr	**1.38** (1.12-1.71)	**1.64** (1.32-2.03)	**2.06** (1.66-2.56)	**2.41** (1.92-3.01)	**2.89** (2.22-3.77)	**3.25** (2.44-4.34)	**3.63** (2.62-5.02)	**4.04** (2.76-5.76)	**4.62** (3.02-6.83)	**5.09** (3.23-7.69)
3-hr	**1.59** (1.29-1.95)	**1.89** (1.53-2.33)	**2.40** (1.94-2.96)	**2.82** (2.26-3.50)	**3.39** (2.62-4.42)	**3.83** (2.88-5.10)	**4.28** (3.11-5.93)	**4.79** (3.28-6.80)	**5.53** (3.61-8.14)	**6.13** (3.90-9.22)
6-hr	**2.00** (1.63-2.44)	**2.40** (1.96-2.93)	**3.06** (2.48-3.75)	**3.60** (2.90-4.45)	**4.35** (3.38-5.64)	**4.91** (3.72-6.52)	**5.51** (4.04-7.60)	**6.20** (4.25-8.74)	**7.20** (4.72-10.5)	**8.03** (5.12-12.0)
12-hr	**2.47** (2.03-3.00)	**2.97** (2.44-3.61)	**3.79** (3.10-4.62)	**4.47** (3.63-5.48)	**5.40** (4.22-6.96)	**6.10** (4.65-8.04)	**6.84** (5.04-9.40)	**7.71** (5.31-10.8)	**8.98** (5.91-13.0)	**10.0** (6.42-14.9)
24-hr	**2.87** (2.38-3.46)	**3.49** (2.88-4.21)	**4.50** (3.70-5.44)	**5.33** (4.36-6.50)	**6.49** (5.10-8.30)	**7.34** (5.64-9.63)	**8.26** (6.13-11.3)	**9.34** (6.46-13.0)	**11.0** (7.23-15.8)	**12.3** (7.91-18.2)
2-day	**3.14** (2.61-3.75)	**3.89** (3.24-4.66)	**5.12** (4.24-6.16)	**6.14** (5.06-7.43)	**7.55** (5.98-9.62)	**8.59** (6.64-11.2)	**9.72** (7.27-13.3)	**11.1** (7.69-15.3)	**13.1** (8.70-18.9)	**14.9** (9.60-21.8)
3-day	**3.34** (2.80-3.99)	**4.17** (3.48-4.98)	**5.52** (4.59-6.61)	**6.64** (5.48-8.00)	**8.18** (6.50-10.4)	**9.32** (7.23-12.1)	**10.6** (7.93-14.4)	**12.1** (8.38-16.6)	**14.3** (9.51-20.5)	**16.3** (10.5-23.7)
4-day	**3.56** (2.98-4.23)	**4.43** (3.71-5.27)	**5.85** (4.88-6.98)	**7.03** (5.82-8.44)	**8.65** (6.89-10.9)	**9.85** (7.66-12.8)	**11.2** (8.38-15.1)	**12.7** (8.86-17.5)	**15.1** (10.0-21.5)	**17.1** (11.1-24.9)
7-day	**4.20** (3.54-4.96)	**5.14** (4.33-6.08)	**6.67** (5.60-7.92)	**7.95** (6.62-9.49)	**9.70** (7.75-12.2)	**11.0** (8.58-14.2)	**12.4** (9.33-16.6)	**14.0** (9.82-19.2)	**16.5** (11.0-23.4)	**18.6** (12.0-26.8)
10-day	**4.85** (4.10-5.71)	**5.83** (4.93-6.87)	**7.44** (6.26-8.80)	**8.77** (7.33-10.4)	**10.6** (8.50-13.2)	**12.0** (9.35-15.3)	**13.4** (10.1-17.9)	**15.1** (10.6-20.5)	**17.5** (11.7-24.7)	**19.6** (12.7-28.2)
20-day	**6.82** (5.81-7.97)	**7.91** (6.74-9.26)	**9.71** (8.23-11.4)	**11.2** (9.42-13.2)	**13.2** (10.7-16.3)	**14.8** (11.6-18.6)	**16.4** (12.3-21.4)	**18.1** (12.8-24.4)	**20.5** (13.8-28.6)	**22.4** (14.5-32.0)
30-day	**8.47** (7.25-9.86)	**9.65** (8.25-11.2)	**11.6** (9.86-13.6)	**13.2** (11.1-15.5)	**15.4** (12.4-18.9)	**17.1** (13.4-21.4)	**18.8** (14.1-24.3)	**20.5** (14.6-27.5)	**22.9** (15.4-31.8)	**24.6** (16.0-35.1)
45-day	**10.5** (9.05-12.2)	**11.8** (10.1-13.7)	**13.9** (11.9-16.2)	**15.6** (13.3-18.3)	**18.0** (14.6-21.9)	**19.9** (15.6-24.7)	**21.7** (16.3-27.8)	**23.5** (16.7-31.4)	**25.8** (17.4-35.7)	**27.5** (17.9-39.0)
60-day	**12.3** (10.6-14.2)	**13.6** (11.7-15.8)	**15.8** (13.6-18.4)	**17.7** (15.0-20.7)	**20.2** (16.4-24.5)	**22.2** (17.5-27.5)	**24.1** (18.1-30.8)	**26.0** (18.5-34.5)	**28.2** (19.1-39.0)	**29.9** (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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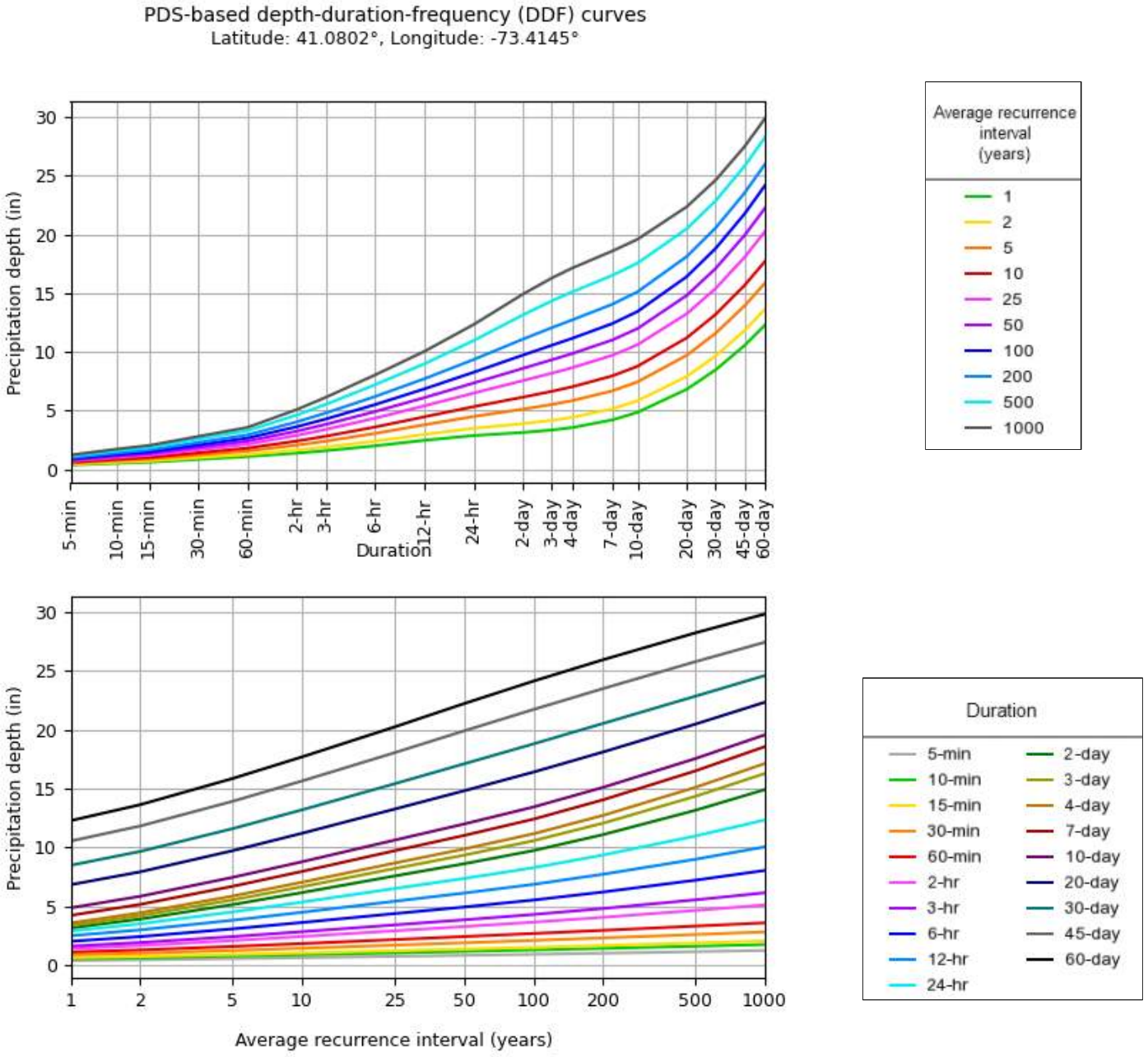
PF graphical



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Wed Sep 10 19:17:08 2025

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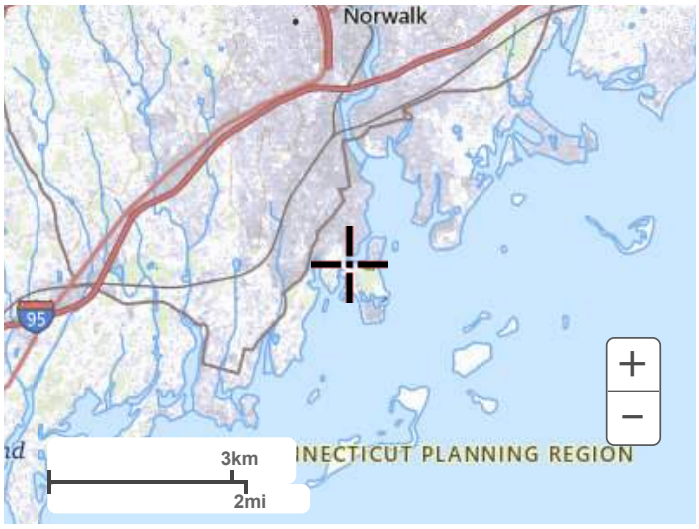
Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

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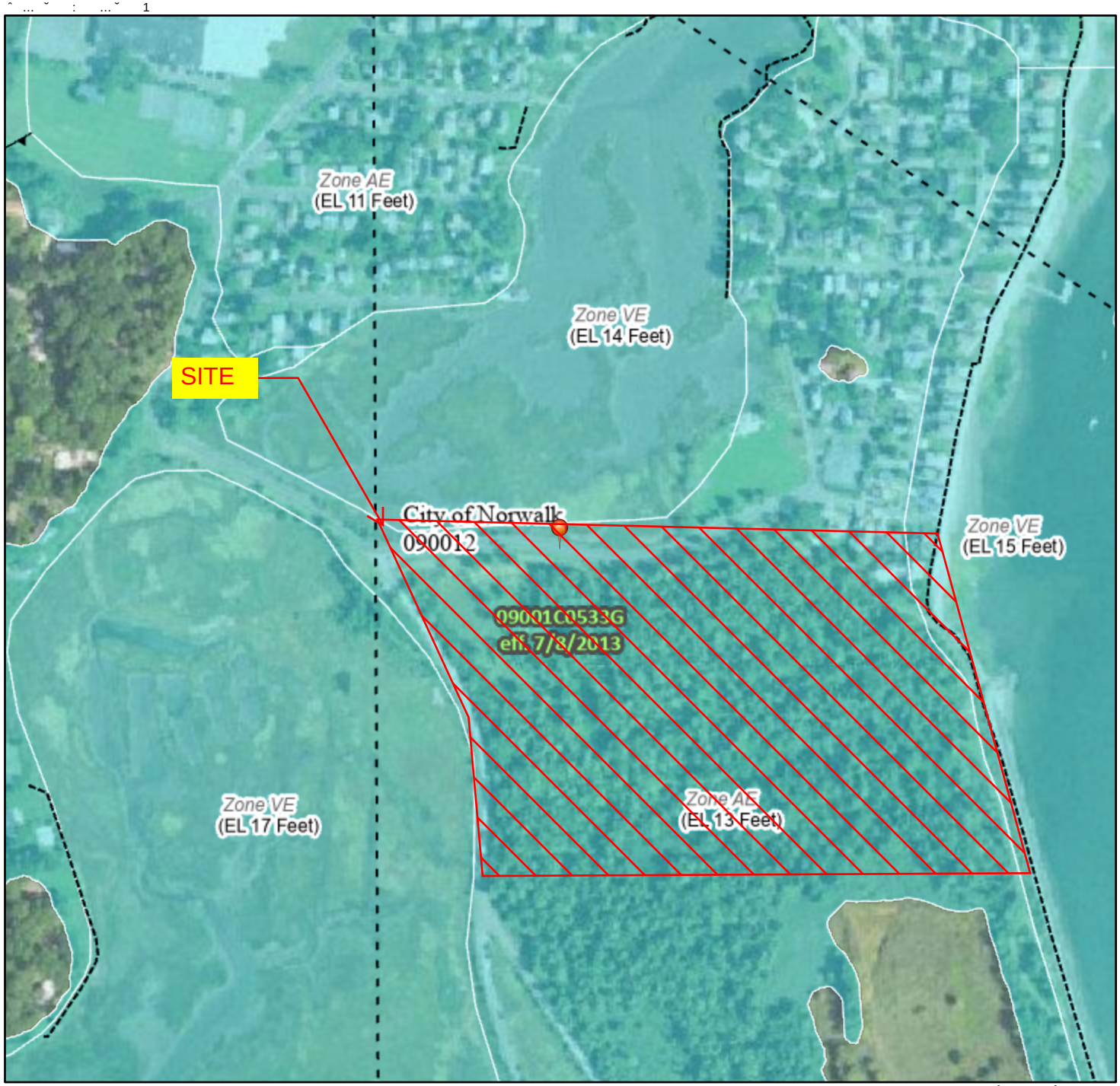

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GHSWK OHVV WKDQ RQH
DUHDV RI OHVV WKDQ RQ

)XWXUH &RQGLWLRQV
&KDQFH)ORRG +D]DUG
$UHD ZLWK 5HGXFHG)OR
/HYHH 6HH 1RWHV
$UHD ZLWK)ORRG 5LVN

$UHD RI 0LQLPDO)ORRG
(IIHFWLYH /205V
$UHD RI 8QGHWHUPLQHG

&KDQQHO &XOYHUW RU
/HYHH 'LNH RU)ORRGZD

&URVV 6HFWLRQV ZLWK
:DWHU 6XUIDFH (OHYDWL
&RDVWDO 7UDQVHFW
%DVH)ORRG (OHYDWLRQ
/LPLW RI 6WXG\
-XULVGLFWLRQ %RXQGDU
&RDVWDO 7UDQVHFW %D
3URILOH %DVHOLQH
+\GURJUDSKLF)HDWXUH

'LJLWDO 'DWD $YDLODEO
1R 'LJLWDO 'DWD $YDLOD
8QPDSSHG

7KH SLQ GLVSOD\HG RQ WKH
SRLQW VHOHFWHG E\ WKH XV
DQ DXWKRULWDWLYH SURSHU

7KLV PDS FRPSOLHV ZLWK)(0$ V VWDQ
GLJLWDO IORRG PDSV LI LW LV QRW YR
7KH EDVHPDS VKRZQ FRPSOLHV ZLWK)(
DFFXUDF\ VWDQGDUGV

7KH IORRG KD]DUG LQIRUPDWLRQ LV GH
DXWKRULWDWLYH 1)+/ ZHE VHUYLFHV S
ZDV H[SRUWHG RQDW ^, ^DQG GRHV QRW
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EHFRPH VXSHUVHGHG E\ QHZ GDWD RYH

7KLV PDS LPDJH LV YRLG LI WKH RQH R
HOHPHQWV GR QRW DSSHDU, EDVHPDS
OHJHQG VFDOH EDU PDS FUHDWLRQ G
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UHJXODWRU\ SXUSRVHV

)HHW

%DVHPDS ,PDJHU\ 6RXUFH, 86*6 1DWLRQDO 0DS

APPENDIX B

EX WS-C

DESIGN POINT 3

EX WS-D

EX WS-E

DESIGN POINT 4

DESIGN POINT 2

EX WS-A

EX WS-B

DESIGN POINT 1

N

LEGEND

WATERSHED BOUNDARY

TIME OF CONCENTRATION

GRASS

WOODS

IMPERVIOUS

0 250' 500'

SCALE: 1" = 250'

MANRESA ISLAND CORPORATION
NORWALK, CT

NORTH FOREST
EXISTING WATERSHED MAP

DATE: 11/17/2025
SCALE: AS SHOWN
FIGURE: EX-WS

Tighe&Bond

Plotted On:Nov 18, 2025-2:04pm By: EBeattie
Tighe & Bond:J:\WM\5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Design\Stormwater\M5177-004-EX-WS.dwg

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **ZNH** Date: **September 9, 2025**

Designation: **EX WS-A**

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.000
Wooded (B)	21.951	55	1207.322
Wooded (D)	0.000	77	0.000
Grass (B)	4.100	69	282.871
Grass (D)	0.000	84	0.000
	26.051		1490.193

Weighted CN: **57**

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	17	0.060	2.2
Segment B - C	0.4	283	0.012	59.6

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment C - D	unpaved	0.002	0.72	735	17.0
Segment D - E	unpaved	0.007	1.35	132	1.6

Total Tc = **80.4**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **ZNH** Date: **September 9, 2025**

Designation: **EX WS-B**

Cover Type	Area, ac	CN	A x CN
Impervious	0.32	98	31.459
Wooded (B)	10.07	55	553.753
Wooded (D)	0.00	77	0.000
Grass (B)	4.26	69	293.998
Grass (D)	1.01	84	85.163
	15.66		964.372

Weighted CN: **62**

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	55	0.045	9.2
Segment B - C	0.24	181	0.011	27.8
Segment C - D	0.4	64	0.023	13.6

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment D - E	unpaved	0.0035	0.60	771	21.5
Segment E - F	unpaved	0.002	0.45	647	23.8

Total Tc = **95.9**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **ZNH** Date: **September 9, 2025**

Designation: **EX WS-C**

Cover Type	Area, ac	CN	A x CN
Impervious	0.49	98	47.576
Wooded (B)	0.00	55	0.000
Wooded (D)	0.00	77	0.000
Grass (B)	0.01	69	1.020
Grass (D)	0.00	84	0.000
	0.50		48.596

Weighted CN: **97**

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	19	0.074	2.1
Segment B - C	0.015	67	0.020	1.1

Total Tc = **3.2**
USE 5.0 MIN (MINIMUM)

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **ZNH** Date: **September 9, 2025**

Designation: **EX WS-D**

Cover Type	Area, ac	CN	A x CN
Impervious	0.06	98	5.543
Wooded (B)	0.00	55	0.000
Wooded (D)	0.00	77	0.000
Grass (B)	0.00	69	0.000
Grass (D)	0.00	84	0.000
	0.06		5.543

Weighted CN: **98**

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	12	0.020	0.3

Total Tc = **0.3**
USE 5.0 MIN (MINIMUM)

Designation: **EX WS-E**

Cover Type	Area, ac	CN	A x CN
Impervious	0.07	98	6.983
Wooded (B)	0.00	55	0.000
Wooded (D)	0.00	77	0.000
Grass (B)	0.06	69	4.142
Grass (D)	0.00	84	0.000
	0.13		11.126

Weighted CN: **85**

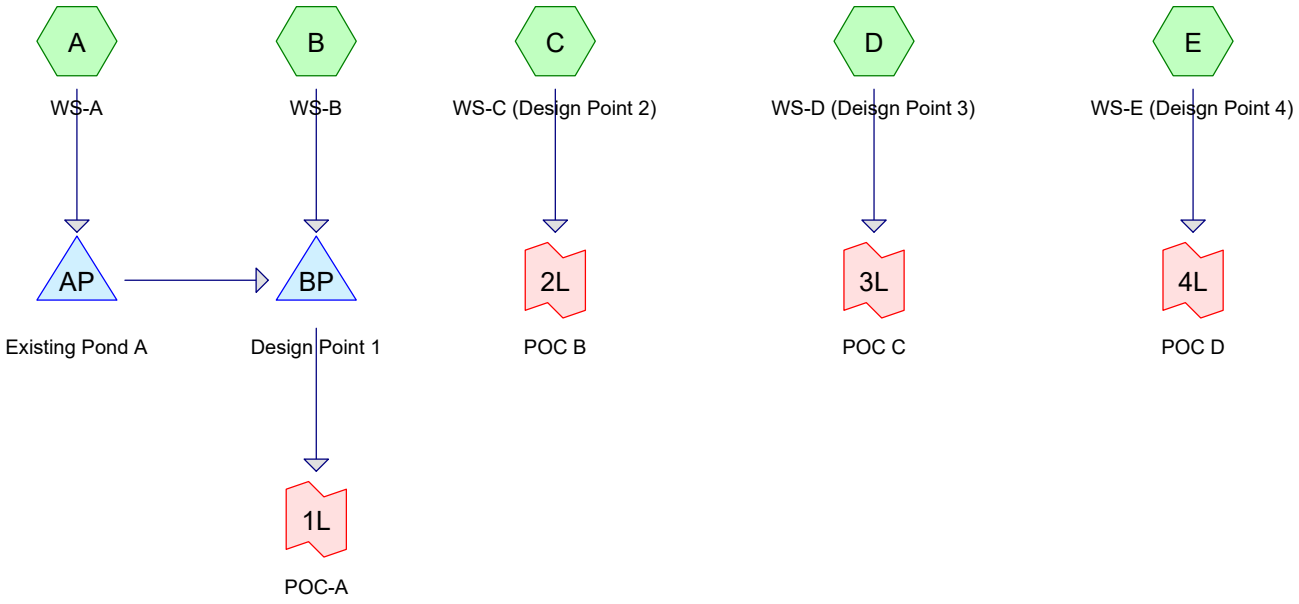
Time of Concentration

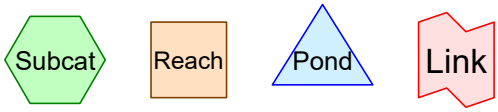
(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	35	0.048	4.1

Total Tc = **4.1**
USE 5.0 MIN (MINIMUM)

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation





Routing Diagram for EX-WS
Prepared by Tighe & Bond, Printed 11/18/2025
HydroCAD® 10.20-4c s/n 01453 © 2024 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type III 24-hr		Default	24.00	1	2.87	2
2	2-yr	Type III 24-hr		Default	24.00	1	3.49	2
3	5-yr	Type III 24-hr		Default	24.00	1	4.50	2
4	10-yr	Type III 24-hr		Default	24.00	1	5.33	2
5	25-yr	Type III 24-hr		Default	24.00	1	6.49	2
6	50-yr	Type III 24-hr		Default	24.00	1	7.34	2
7	100-yr	Type III 24-hr		Default	24.00	1	8.26	2

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA: WS-A Runoff Area=26.051 ac 0.00% Impervious Runoff Depth>0.16"
Tc=80.4 min CN=57 Runoff=0.99 cfs 15,295 cf

SubcatchmentB: WS-B Runoff Area=15.660 ac 2.04% Impervious Runoff Depth>0.28"
Tc=95.9 min CN=62 Runoff=1.22 cfs 15,974 cf

SubcatchmentC: WS-C (Design Point 2) Runoff Area=0.500 ac 98.00% Impervious Runoff Depth>2.38"
Tc=5.0 min CN=97 Runoff=1.37 cfs 4,324 cf

SubcatchmentD: WS-D (Deisgn Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>2.47"
Tc=5.0 min CN=98 Runoff=0.17 cfs 538 cf

SubcatchmentE: WS-E (Deisgn Point 4) Runoff Area=0.130 ac 53.85% Impervious Runoff Depth>1.38"
Tc=5.0 min CN=85 Runoff=0.23 cfs 649 cf

Pond AP: Existing Pond A Peak Elev=5.07' Storage=9,211 cf Inflow=0.99 cfs 15,295 cf
Discarded=0.29 cfs 6,084 cf Primary=0.00 cfs 0 cf Outflow=0.29 cfs 6,084 cf

Pond BP: Design Point 1 Peak Elev=3.81' Storage=3,373 cf Inflow=1.22 cfs 15,974 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=0.86 cfs 14,579 cf

Link 1L: POC-A Inflow=0.86 cfs 14,579 cf
Primary=0.86 cfs 14,579 cf

Link 2L: POC B Inflow=1.37 cfs 4,324 cf
Primary=1.37 cfs 4,324 cf

Link 3L: POC C Inflow=0.17 cfs 538 cf
Primary=0.17 cfs 538 cf

Link 4L: POC D Inflow=0.23 cfs 649 cf
Primary=0.23 cfs 649 cf

Total Runoff Area = 1,846,988 sf Runoff Volume = 36,781 cf Average Runoff Depth = 0.24"
97.78% Pervious = 1,806,041 sf 2.22% Impervious = 40,946 sf

Summary for Subcatchment A: WS-A

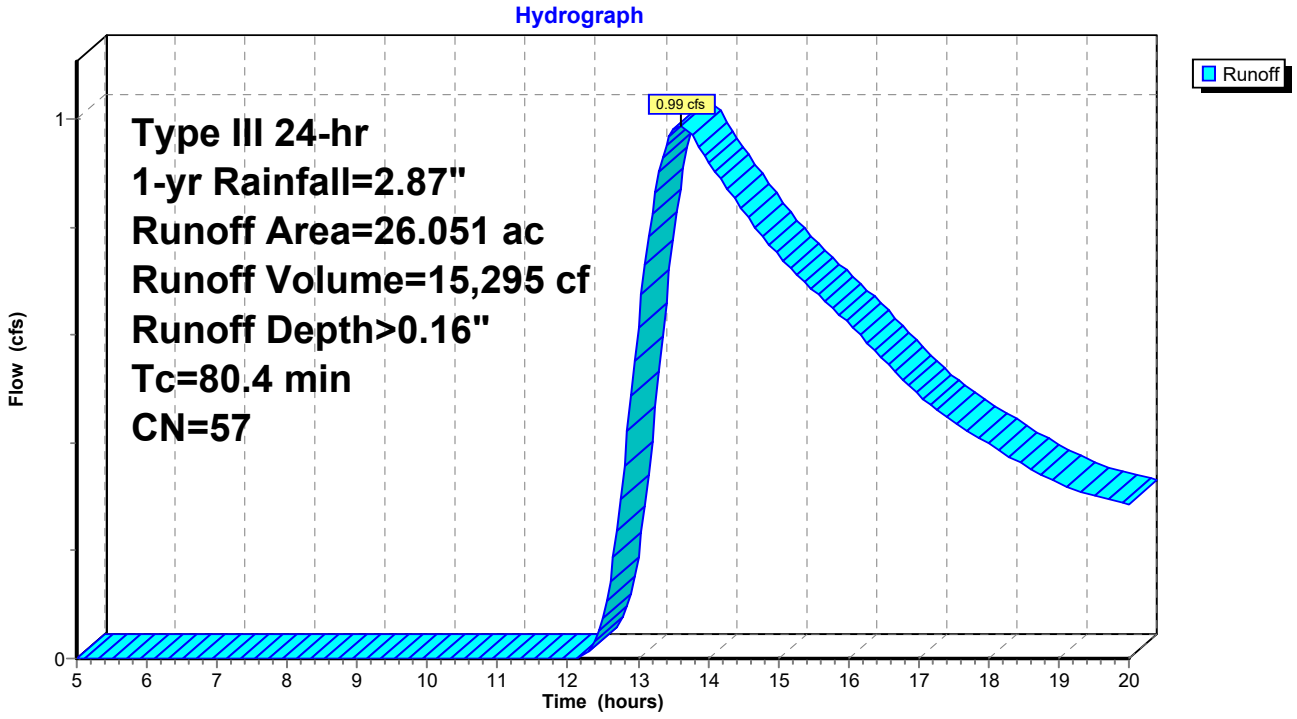
Runoff = 0.99 cfs @ 13.61 hrs, Volume= 15,295 cf, Depth> 0.16"
Routed to Pond AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	21.951	55	Wooded B
*	4.100	69	Grass B
	26.051	57	Weighted Average
	26.051		100.00% Pervious Area

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

Subcatchment A: WS-A



Summary for Subcatchment B: WS-B

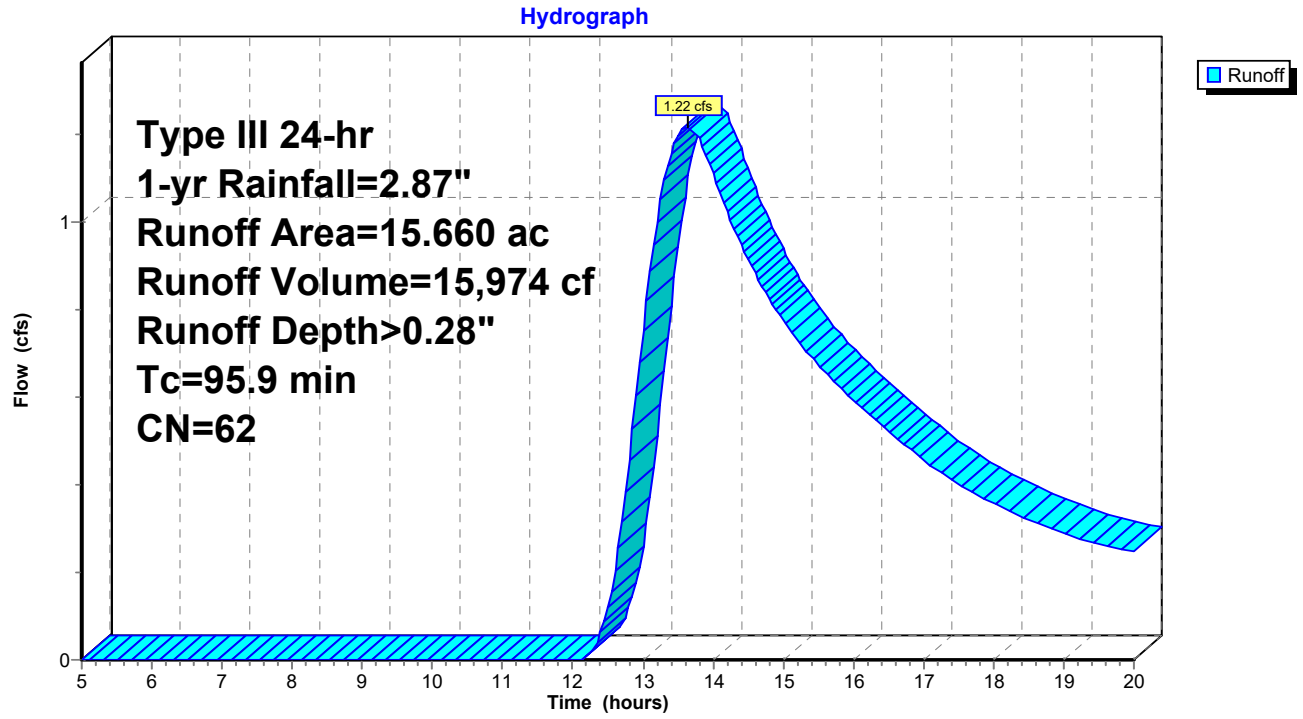
Runoff = 1.22 cfs @ 13.64 hrs, Volume= 15,974 cf, Depth> 0.28"
Routed to Pond BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.320	98	Impervious
*	10.070	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	15.660	62	Weighted Average
	15.340		97.96% Pervious Area
	0.320		2.04% Impervious Area

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

Subcatchment B: WS-B



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

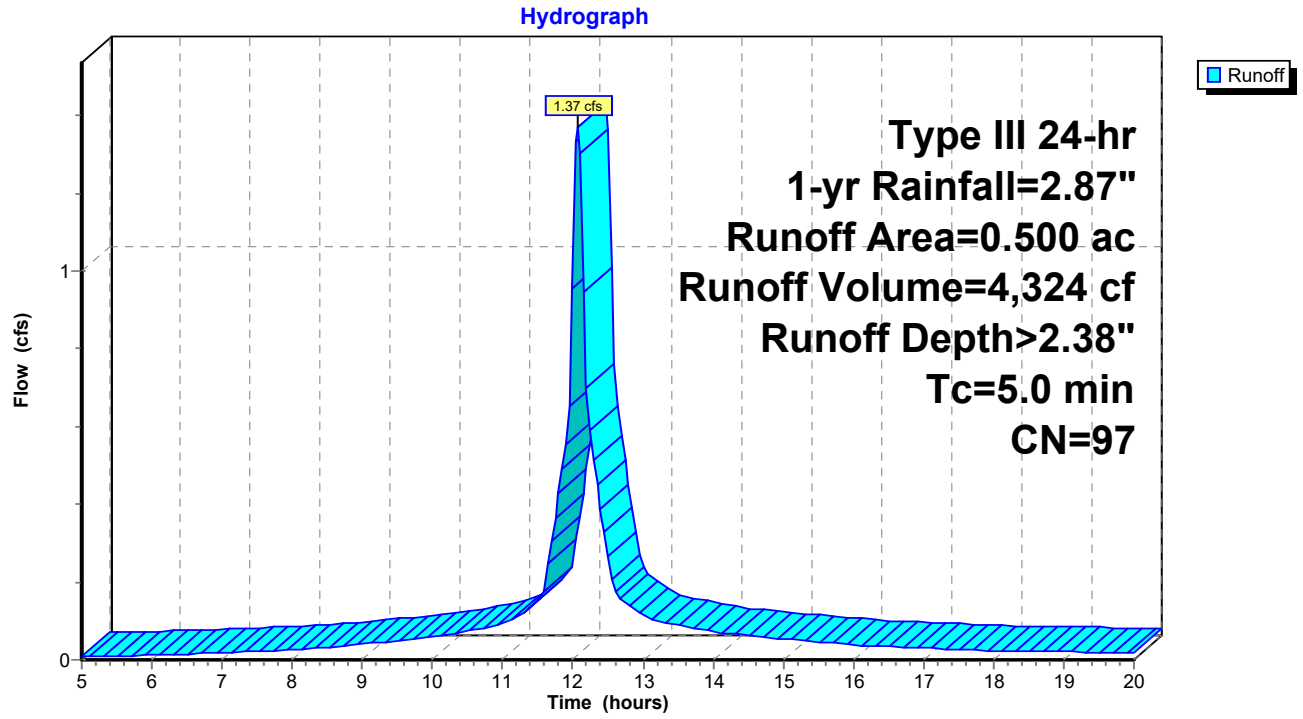
Runoff = 1.37 cfs @ 12.07 hrs, Volume= 4,324 cf, Depth> 2.38"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.490	98	Impervious
*	0.010	69	Grass B
	0.500	97	Weighted Average
	0.010		2.00% Pervious Area
	0.490		98.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Deisgn Point 3)

[49] Hint: Tc<2dt may require smaller dt

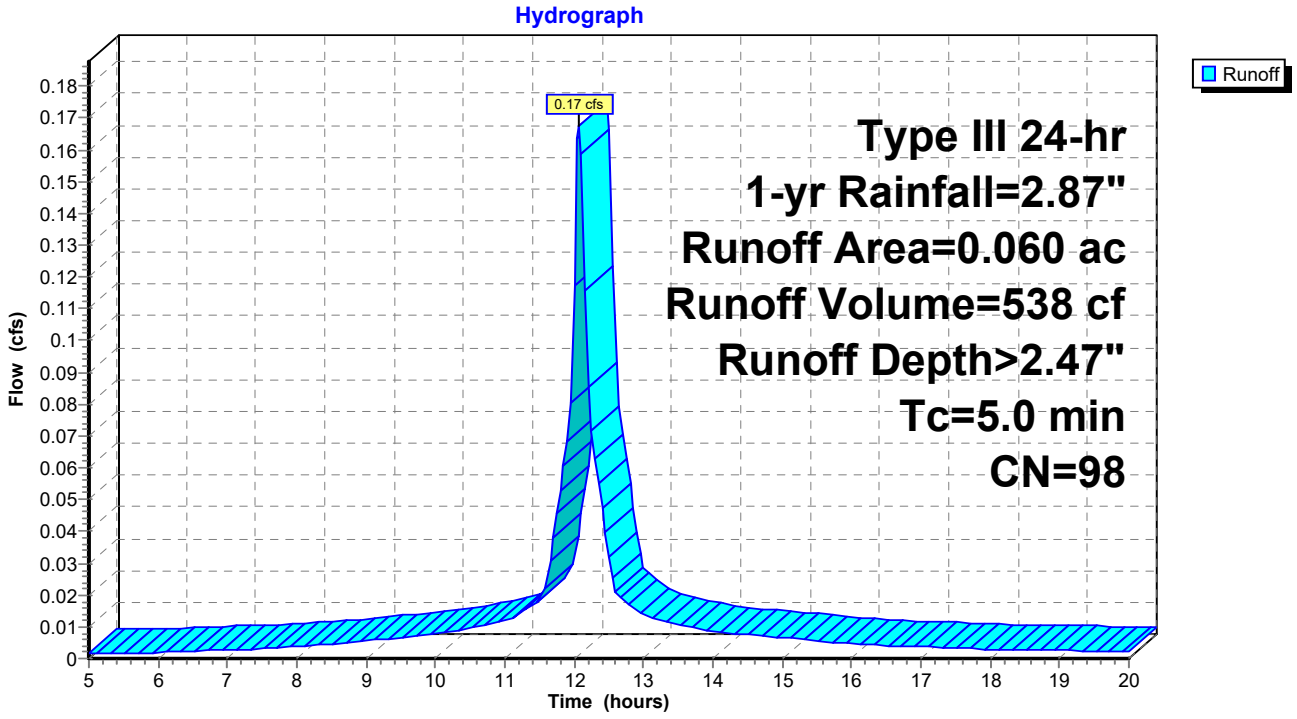
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 538 cf, Depth> 2.47"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Deisgn Point 3)



Summary for Subcatchment E: WS-E (Deisgn Point 4)

[49] Hint: Tc<2dt may require smaller dt

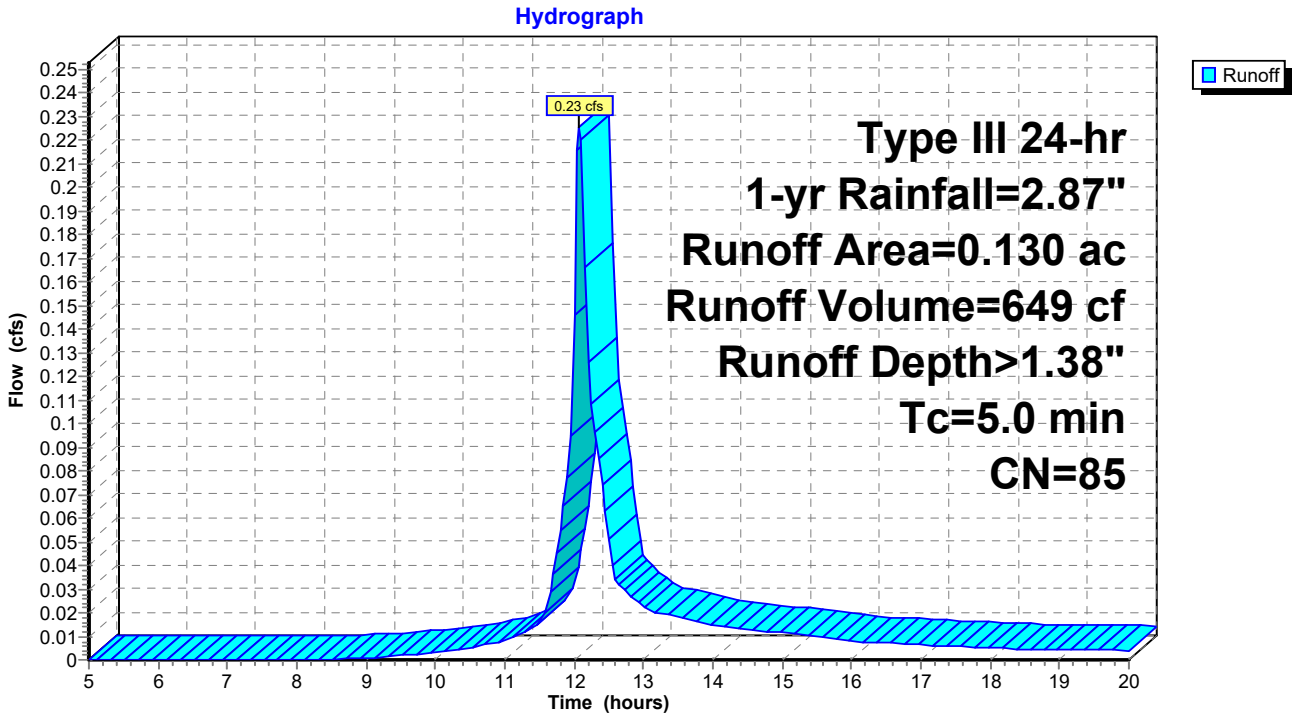
Runoff = 0.23 cfs @ 12.08 hrs, Volume= 649 cf, Depth> 1.38"
Routed to Link 4L : POC D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.070	98	Impervious
*	0.060	69	Grass B
	0.130	85	Weighted Average
	0.060		46.15% Pervious Area
	0.070		53.85% Impervious Area

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

Subcatchment E: WS-E (Deisgn Point 4)



Summary for Pond AP: Existing Pond A

Inflow Area = 1,134,782 sf, 0.00% Impervious, Inflow Depth > 0.16" for 1-yr event
Inflow = 0.99 cfs @ 13.61 hrs, Volume= 15,295 cf
Outflow = 0.29 cfs @ 19.77 hrs, Volume= 6,084 cf, Atten= 70%, Lag= 369.1 min
Discarded = 0.29 cfs @ 19.77 hrs, Volume= 6,084 cf
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf
Routed to Pond BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 5.07' @ 19.77 hrs Surf.Area= 25,379 sf Storage= 9,211 cf

Plug-Flow detention time= 193.1 min calculated for 6,063 cf (40% of inflow)
Center-of-Mass det. time= 79.9 min (1,019.1 - 939.2)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	283,474 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

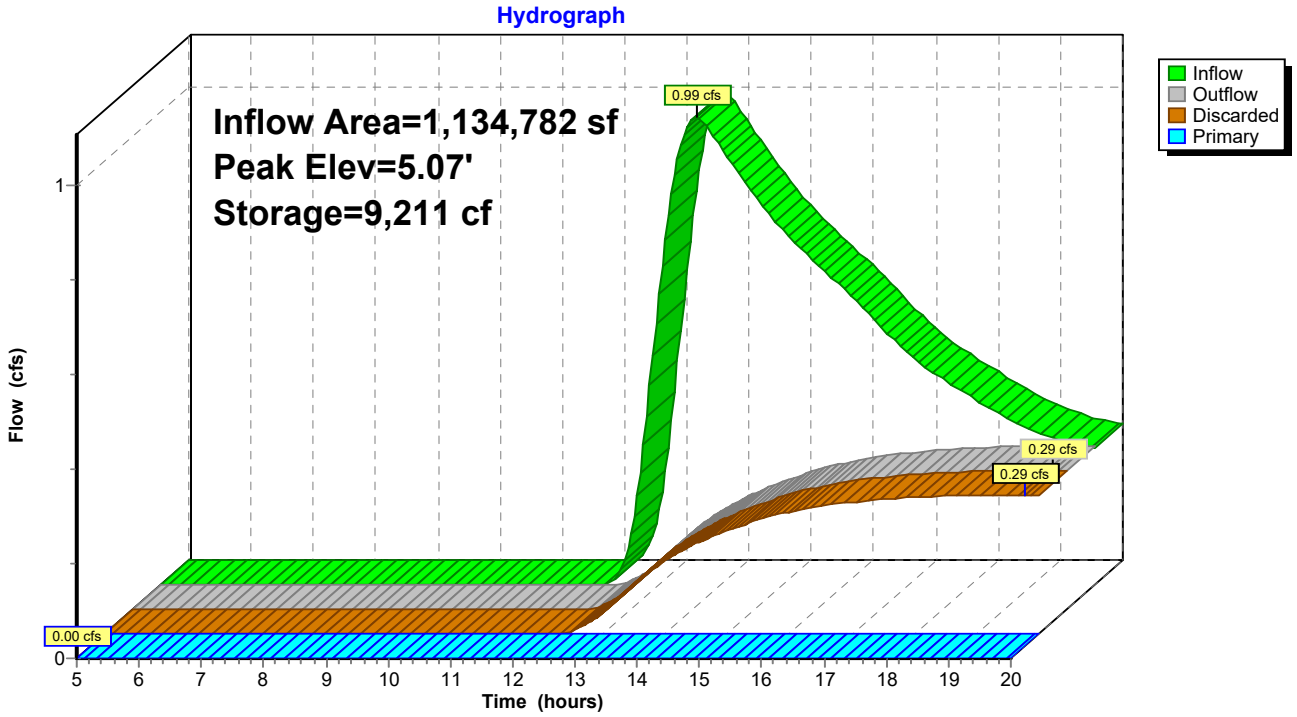
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	22,712	7,571	7,571	22,714
6.00	76,594	47,005	54,576	76,601
7.00	428,860	228,898	283,474	428,871

Device	Routing	Invert	Outlet Devices
#1	Primary	6.20'	**30.0' long x 233.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.29 cfs @ 19.77 hrs HW=5.07' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.29 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=4.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond AP: Existing Pond A



Summary for Pond BP: Design Point 1

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 0.11" for 1-yr event
Inflow = 1.22 cfs @ 13.64 hrs, Volume= 15,974 cf
Outflow = 0.86 cfs @ 14.68 hrs, Volume= 14,579 cf, Atten= 29%, Lag= 62.1 min
Primary = 0.86 cfs @ 14.68 hrs, Volume= 14,579 cf
Routed to Link 1L : POC-A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 3.81' @ 14.68 hrs Surf.Area= 13,272 sf Storage= 3,373 cf

Plug-Flow detention time= 64.9 min calculated for 14,579 cf (91% of inflow)
Center-of-Mass det. time= 42.7 min (967.5 - 924.8)

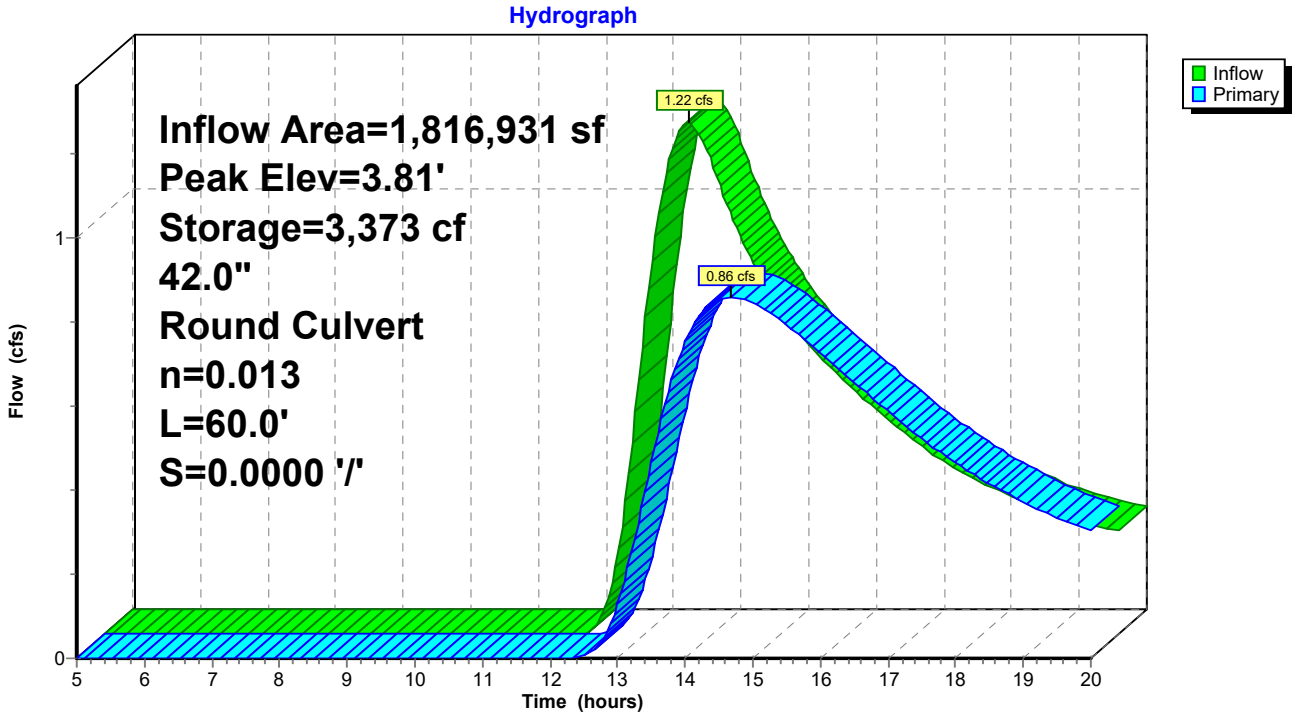
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,384	37,726	37,726
6.00	120,171	82,278	120,004

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=0.86 cfs @ 14.68 hrs HW=3.81' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.86 cfs @ 1.51 fps)

Pond BP: Design Point 1

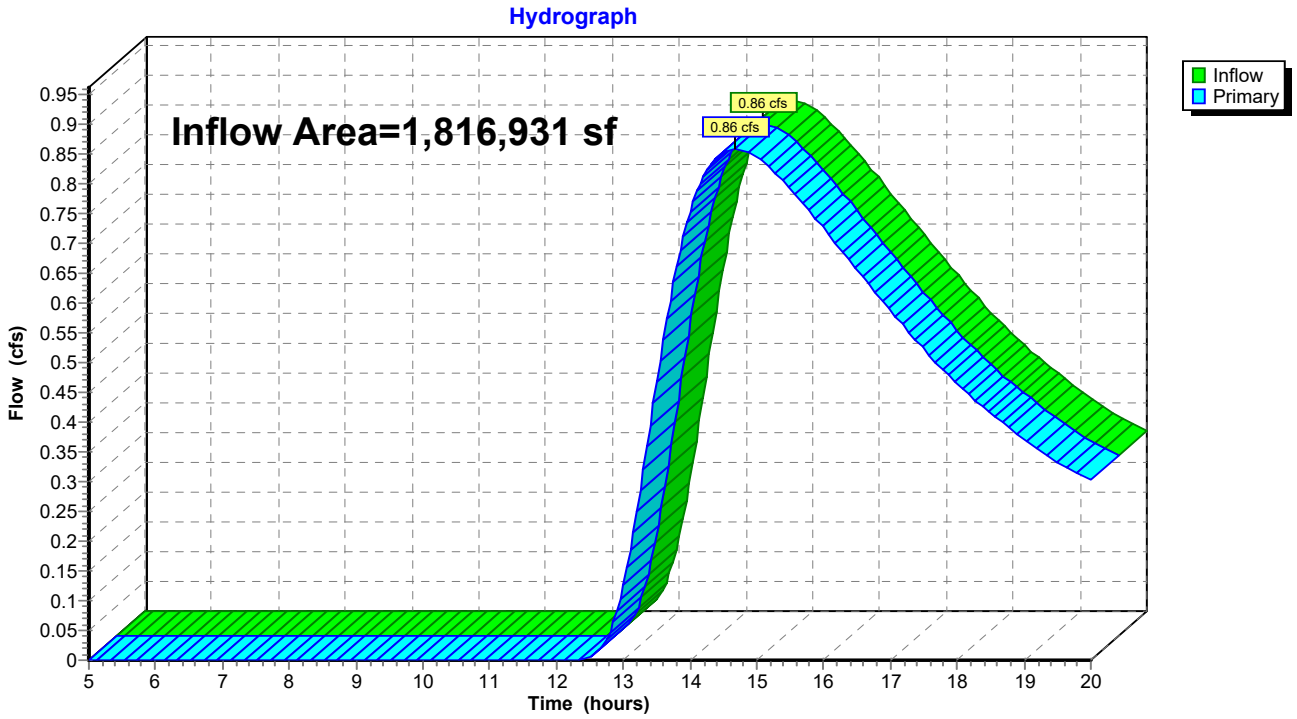


Summary for Link 1L: POC-A

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 0.10" for 1-yr event
Inflow = 0.86 cfs @ 14.68 hrs, Volume= 14,579 cf
Primary = 0.86 cfs @ 14.68 hrs, Volume= 14,579 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC-A

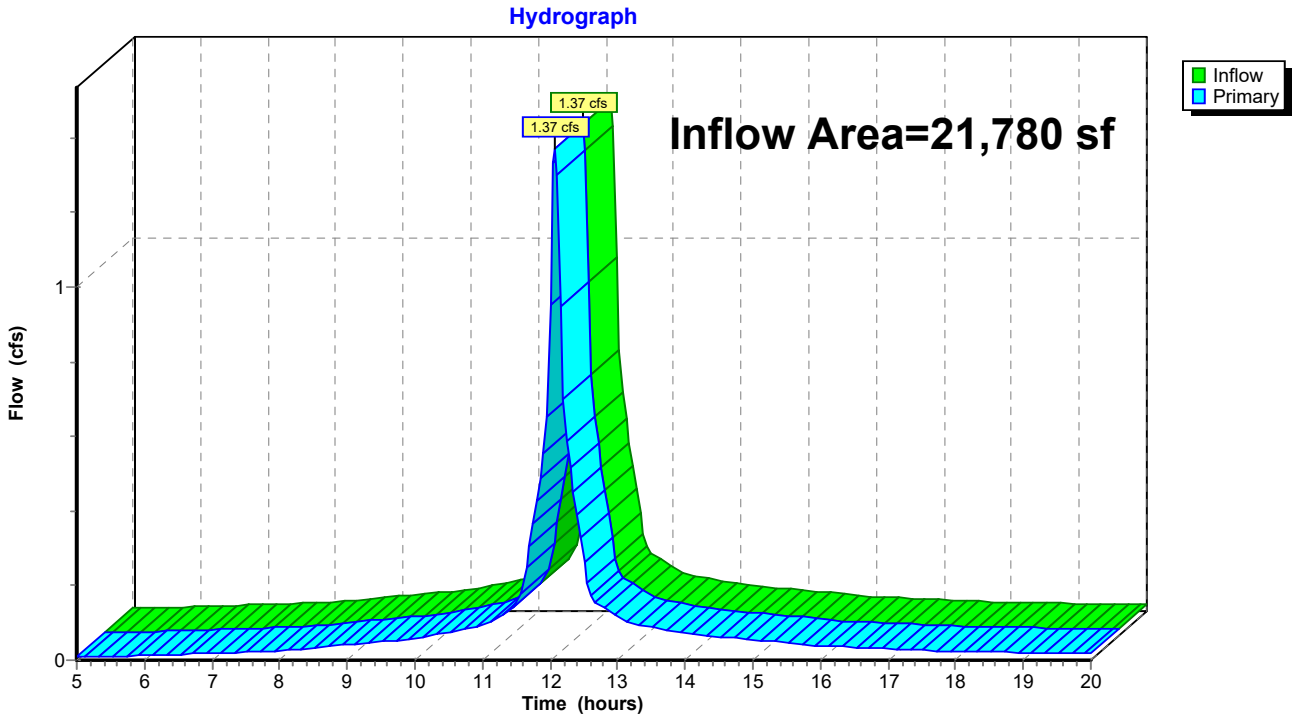


Summary for Link 2L: POC B

Inflow Area = 21,780 sf, 98.00% Impervious, Inflow Depth > 2.38" for 1-yr event
Inflow = 1.37 cfs @ 12.07 hrs, Volume= 4,324 cf
Primary = 1.37 cfs @ 12.07 hrs, Volume= 4,324 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

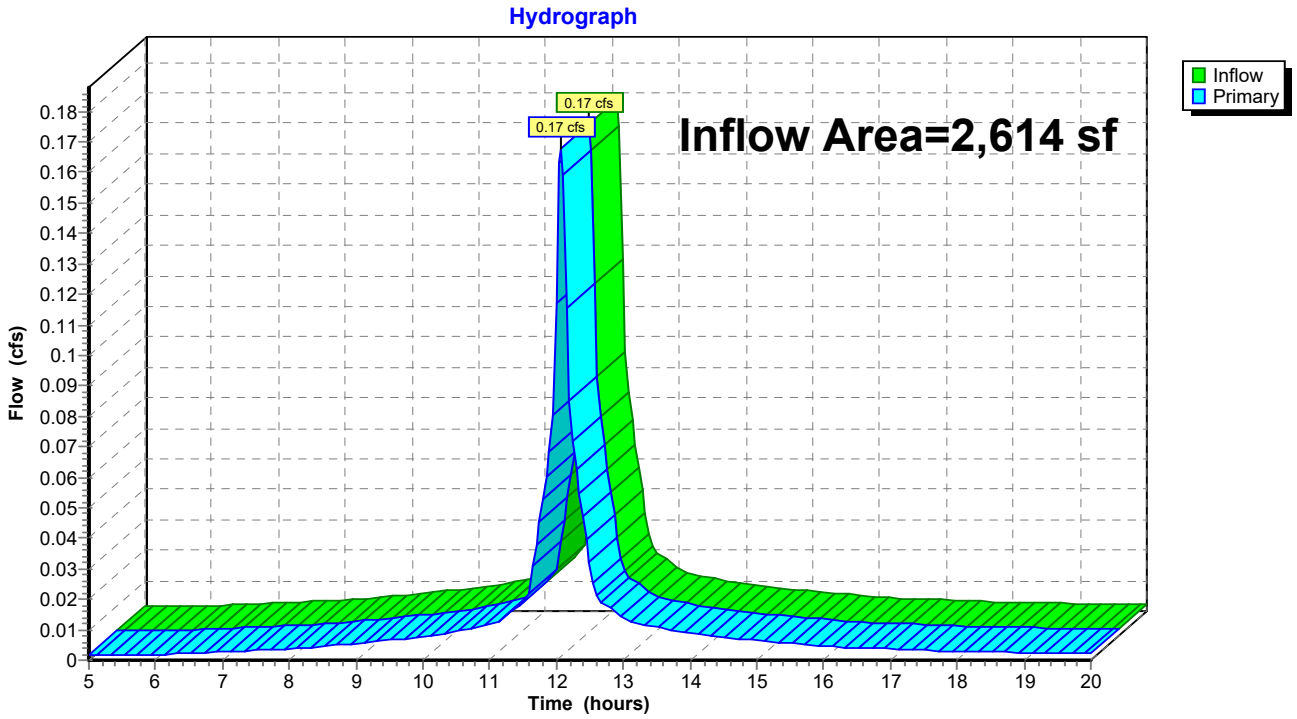


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 2.47" for 1-yr event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 538 cf
Primary = 0.17 cfs @ 12.07 hrs, Volume= 538 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C

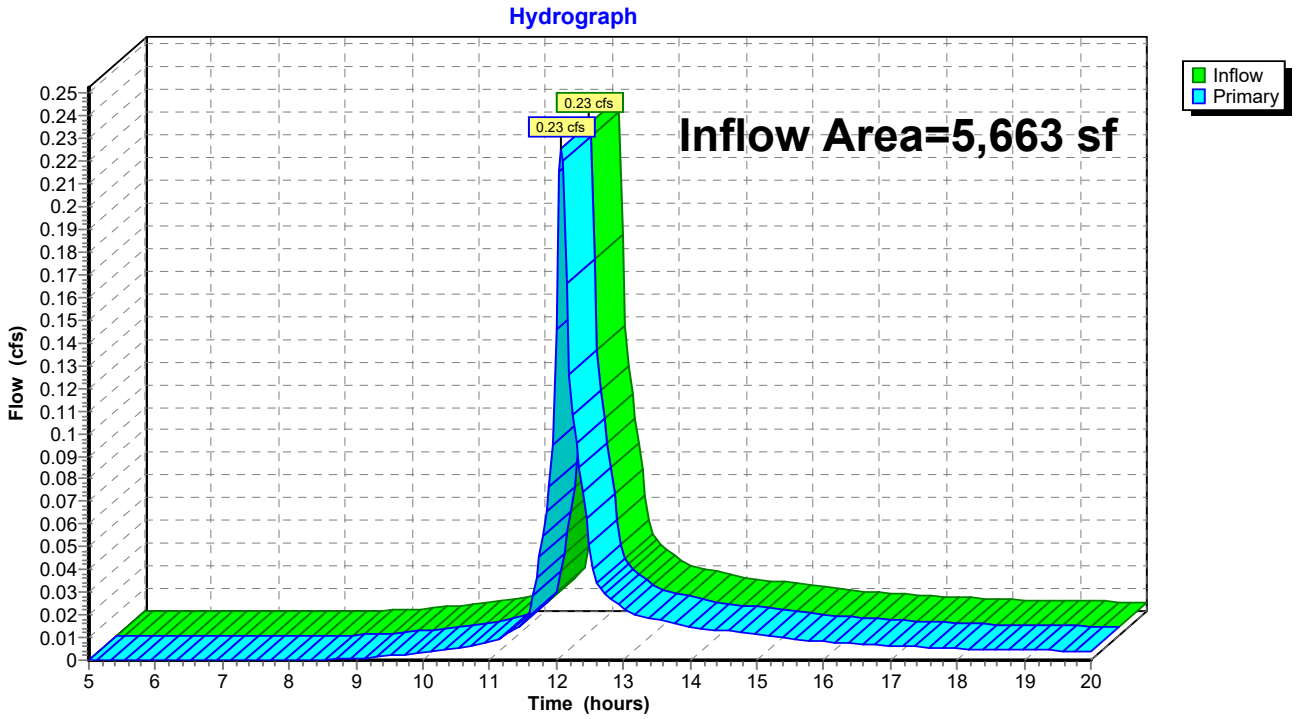


Summary for Link 4L: POC D

Inflow Area = 5,663 sf, 53.85% Impervious, Inflow Depth > 1.38" for 1-yr event
Inflow = 0.23 cfs @ 12.08 hrs, Volume= 649 cf
Primary = 0.23 cfs @ 12.08 hrs, Volume= 649 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: POC D



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA: WS-A Runoff Area=26.051 ac 0.00% Impervious Runoff Depth>0.34"
Tc=80.4 min CN=57 Runoff=2.63 cfs 31,842 cf

SubcatchmentB: WS-B Runoff Area=15.660 ac 2.04% Impervious Runoff Depth>0.51"
Tc=95.9 min CN=62 Runoff=2.52 cfs 28,973 cf

SubcatchmentC: WS-C (Design Point 2) Runoff Area=0.500 ac 98.00% Impervious Runoff Depth>2.95"
Tc=5.0 min CN=97 Runoff=1.69 cfs 5,362 cf

SubcatchmentD: WS-D (Deisgn Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>3.04"
Tc=5.0 min CN=98 Runoff=0.20 cfs 662 cf

SubcatchmentE: WS-E (Deisgn Point 4) Runoff Area=0.130 ac 53.85% Impervious Runoff Depth>1.88"
Tc=5.0 min CN=85 Runoff=0.31 cfs 885 cf

Pond AP: Existing Pond A Peak Elev=5.43' Storage=21,270 cf Inflow=2.63 cfs 31,842 cf
Discarded=0.49 cfs 10,574 cf Primary=0.00 cfs 0 cf Outflow=0.49 cfs 10,574 cf

Pond BP: Design Point 1 Peak Elev=4.00' Storage=6,311 cf Inflow=2.52 cfs 28,973 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=1.75 cfs 26,985 cf

Link 1L: POC-A Inflow=1.75 cfs 26,985 cf
Primary=1.75 cfs 26,985 cf

Link 2L: POC B Inflow=1.69 cfs 5,362 cf
Primary=1.69 cfs 5,362 cf

Link 3L: POC C Inflow=0.20 cfs 662 cf
Primary=0.20 cfs 662 cf

Link 4L: POC D Inflow=0.31 cfs 885 cf
Primary=0.31 cfs 885 cf

Total Runoff Area = 1,846,988 sf Runoff Volume = 67,724 cf Average Runoff Depth = 0.44"
97.78% Pervious = 1,806,041 sf 2.22% Impervious = 40,946 sf

Summary for Subcatchment A: WS-A

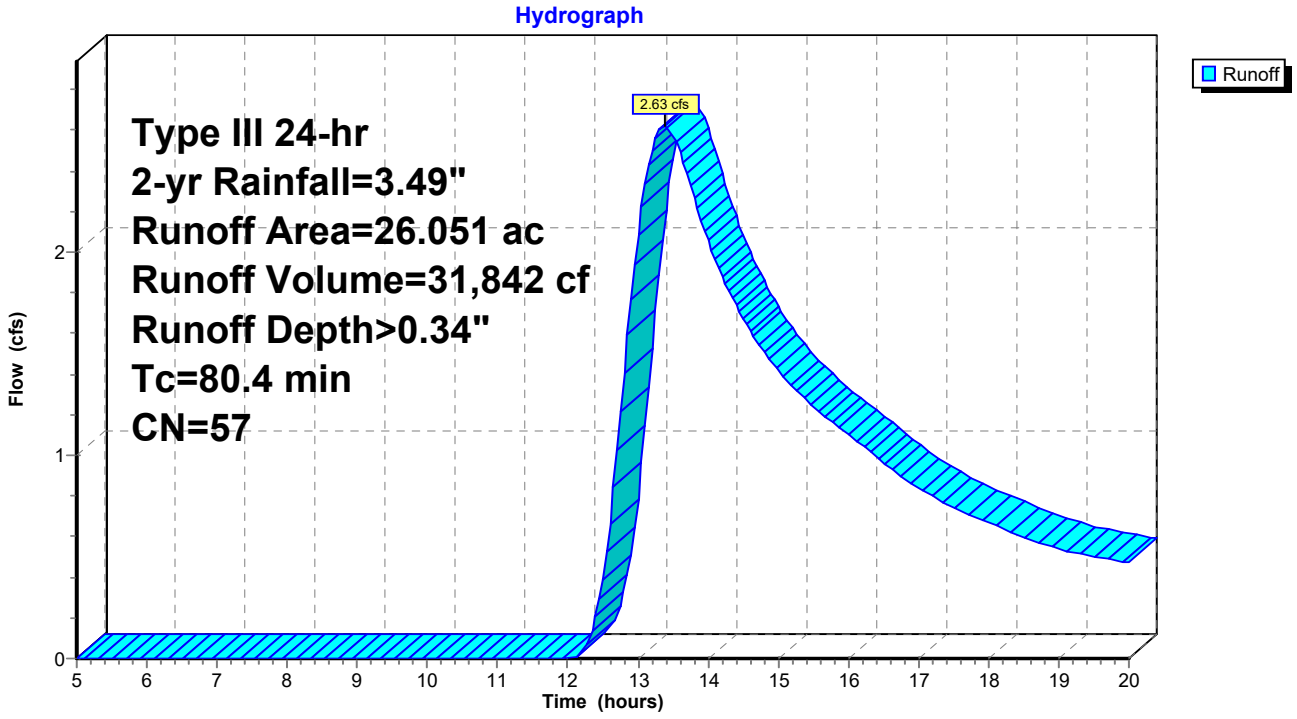
Runoff = 2.63 cfs @ 13.39 hrs, Volume= 31,842 cf, Depth> 0.34"
Routed to Pond AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	21.951	55	Wooded B
*	4.100	69	Grass B
	26.051	57	Weighted Average
	26.051		100.00% Pervious Area

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

Subcatchment A: WS-A



Summary for Subcatchment B: WS-B

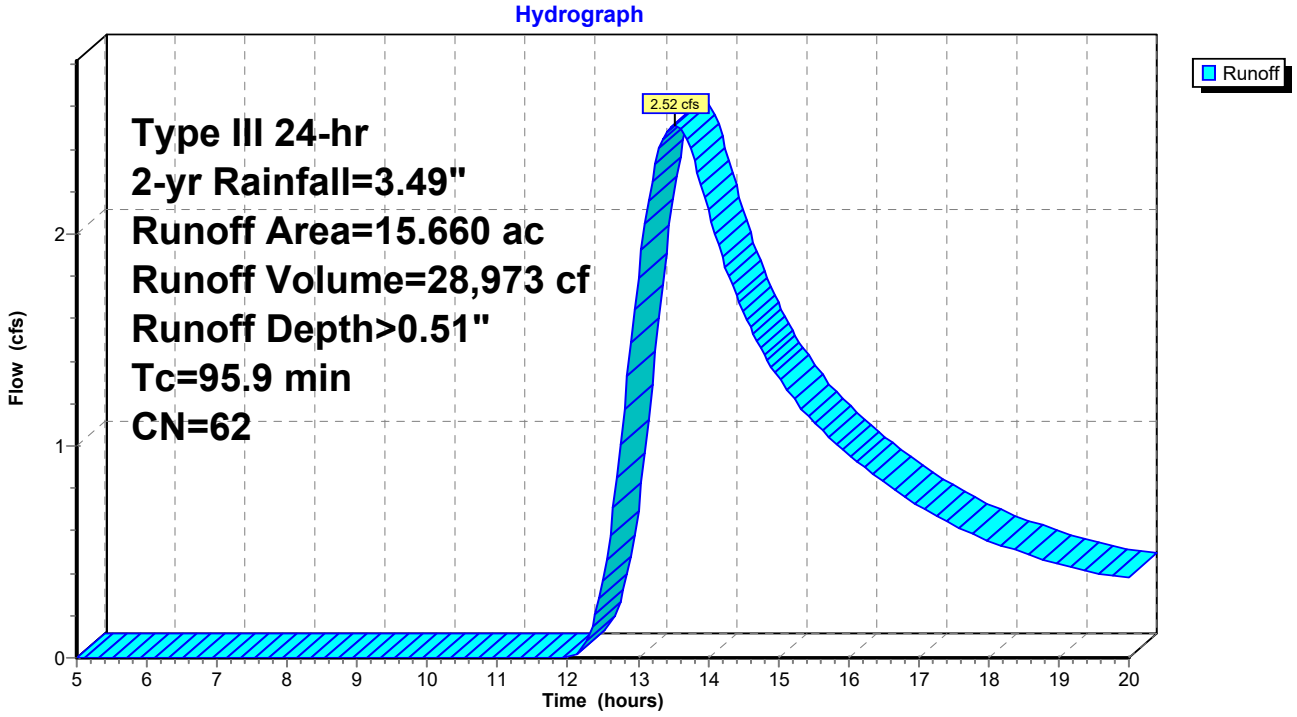
Runoff = 2.52 cfs @ 13.53 hrs, Volume= 28,973 cf, Depth> 0.51"
Routed to Pond BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.320	98	Impervious
*	10.070	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	15.660	62	Weighted Average
	15.340		97.96% Pervious Area
	0.320		2.04% Impervious Area

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

Subcatchment B: WS-B



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

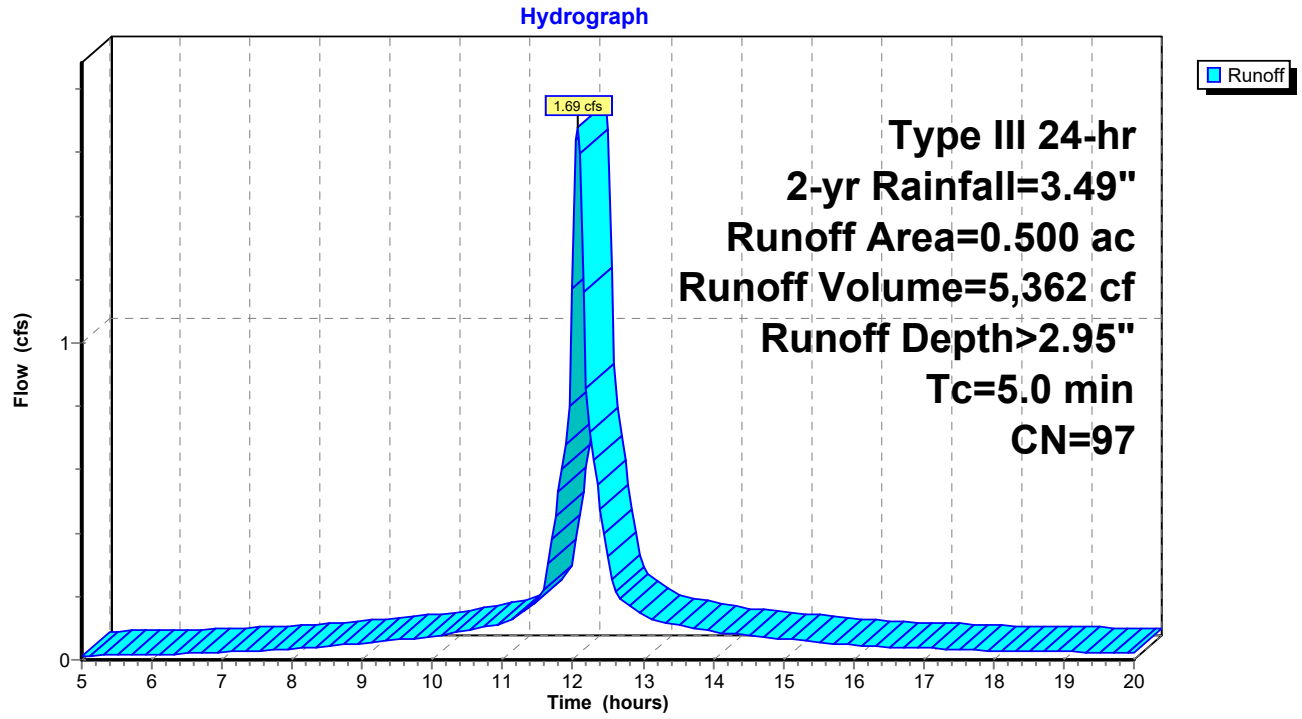
Runoff = 1.69 cfs @ 12.07 hrs, Volume= 5,362 cf, Depth> 2.95"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.490	98	Impervious
*	0.010	69	Grass B
	0.500	97	Weighted Average
	0.010		2.00% Pervious Area
	0.490		98.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Deisgn Point 3)

[49] Hint: Tc<2dt may require smaller dt

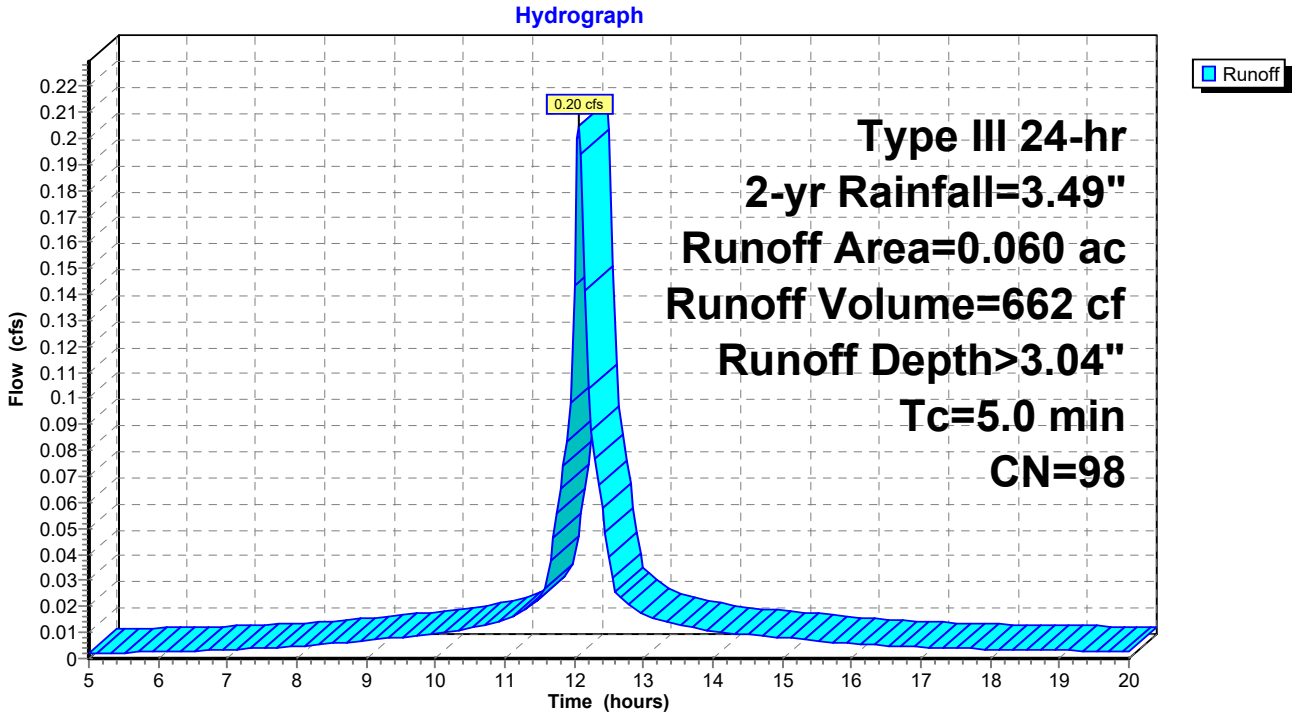
Runoff = 0.20 cfs @ 12.07 hrs, Volume= 662 cf, Depth> 3.04"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Deisgn Point 3)



Summary for Subcatchment E: WS-E (Deisgn Point 4)

[49] Hint: Tc<2dt may require smaller dt

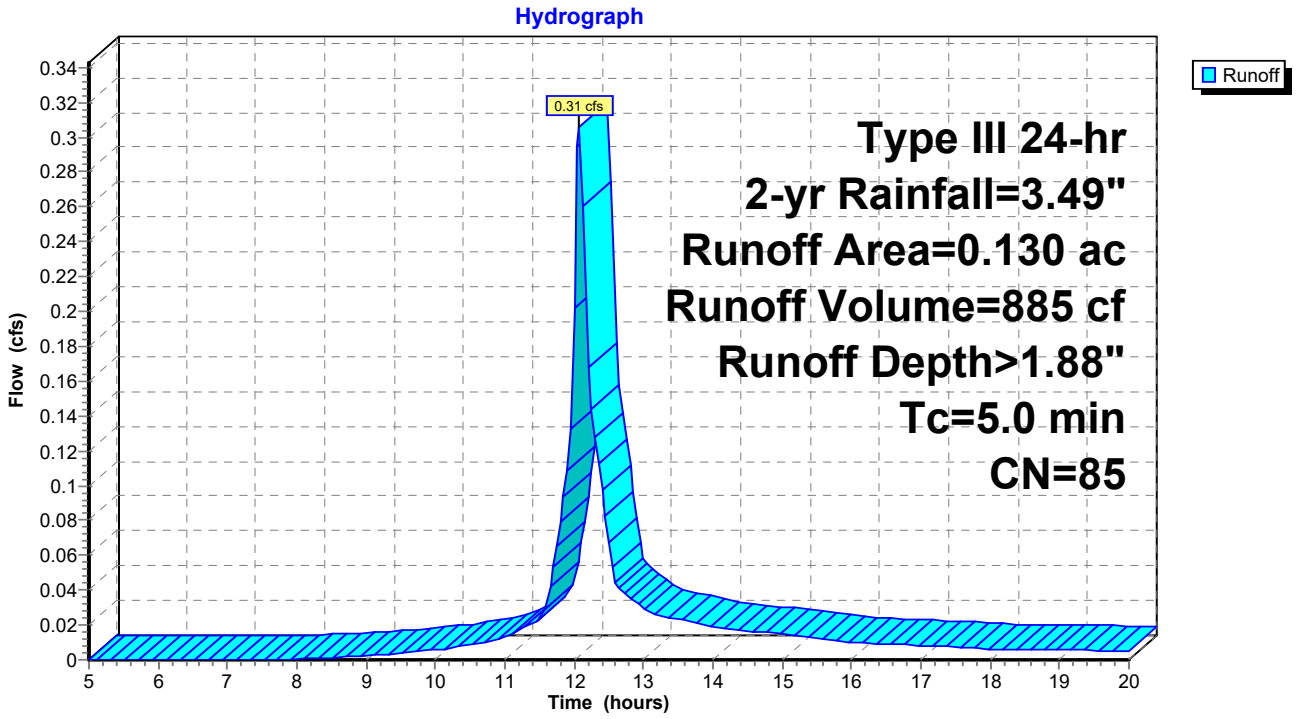
Runoff = 0.31 cfs @ 12.08 hrs, Volume= 885 cf, Depth> 1.88"
Routed to Link 4L : POC D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.070	98	Impervious
*	0.060	69	Grass B
	0.130	85	Weighted Average
	0.060		46.15% Pervious Area
	0.070		53.85% Impervious Area

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

Subcatchment E: WS-E (Deisgn Point 4)



Summary for Pond AP: Existing Pond A

Inflow Area = 1,134,782 sf, 0.00% Impervious, Inflow Depth > 0.34" for 2-yr event
Inflow = 2.63 cfs @ 13.39 hrs, Volume= 31,842 cf
Outflow = 0.49 cfs @ 19.76 hrs, Volume= 10,574 cf, Atten= 81%, Lag= 382.3 min
Discarded = 0.49 cfs @ 19.76 hrs, Volume= 10,574 cf
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf
Routed to Pond BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 5.43' @ 19.76 hrs Surf.Area= 41,986 sf Storage= 21,270 cf

Plug-Flow detention time= 212.5 min calculated for 10,574 cf (33% of inflow)
Center-of-Mass det. time= 95.5 min (1,011.1 - 915.6)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	283,474 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

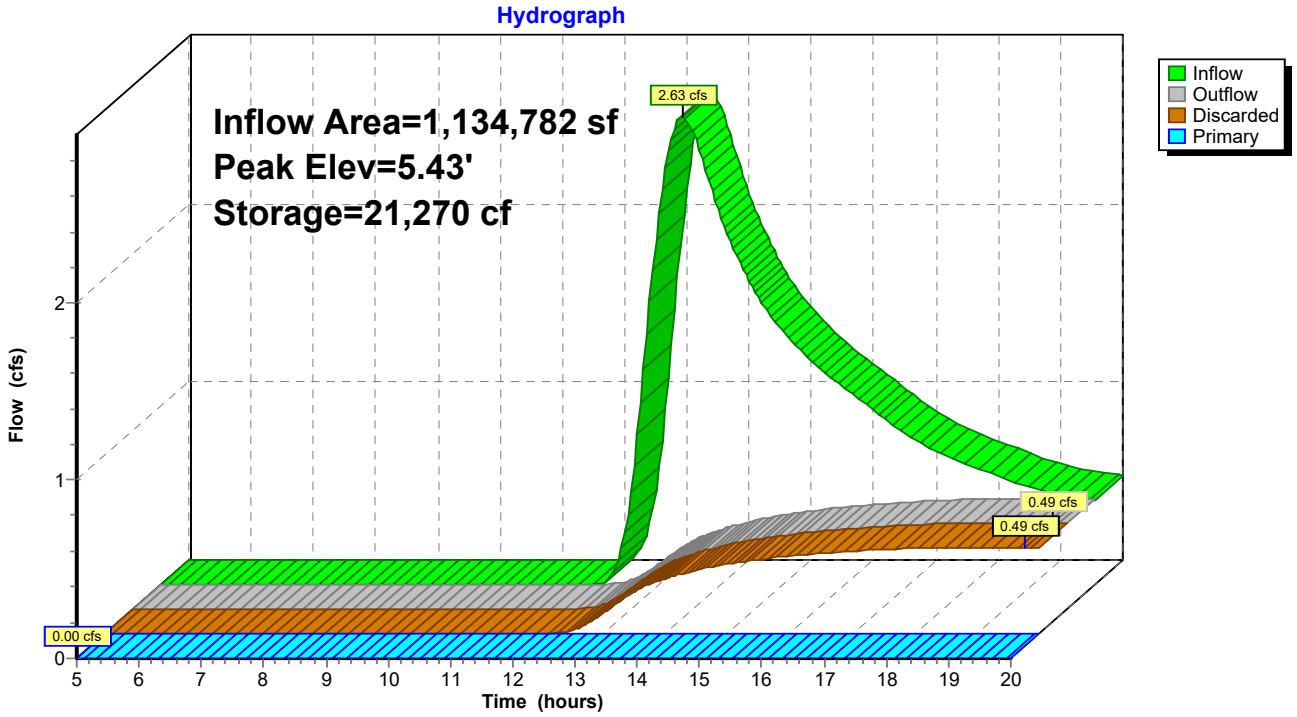
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	22,712	7,571	7,571	22,714
6.00	76,594	47,005	54,576	76,601
7.00	428,860	228,898	283,474	428,871

Device	Routing	Invert	Outlet Devices
#1	Primary	6.20'	**30.0' long x 233.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.49 cfs @ 19.76 hrs HW=5.43' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.49 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=4.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond AP: Existing Pond A



Summary for Pond BP: Design Point 1

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 0.19" for 2-yr event
Inflow = 2.52 cfs @ 13.53 hrs, Volume= 28,973 cf
Outflow = 1.75 cfs @ 14.36 hrs, Volume= 26,985 cf, Atten= 30%, Lag= 49.7 min
Primary = 1.75 cfs @ 14.36 hrs, Volume= 26,985 cf
Routed to Link 1L : POC-A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 4.00' @ 14.36 hrs Surf.Area= 18,154 sf Storage= 6,311 cf

Plug-Flow detention time= 60.5 min calculated for 26,895 cf (93% of inflow)
Center-of-Mass det. time= 42.1 min (951.7 - 909.6)

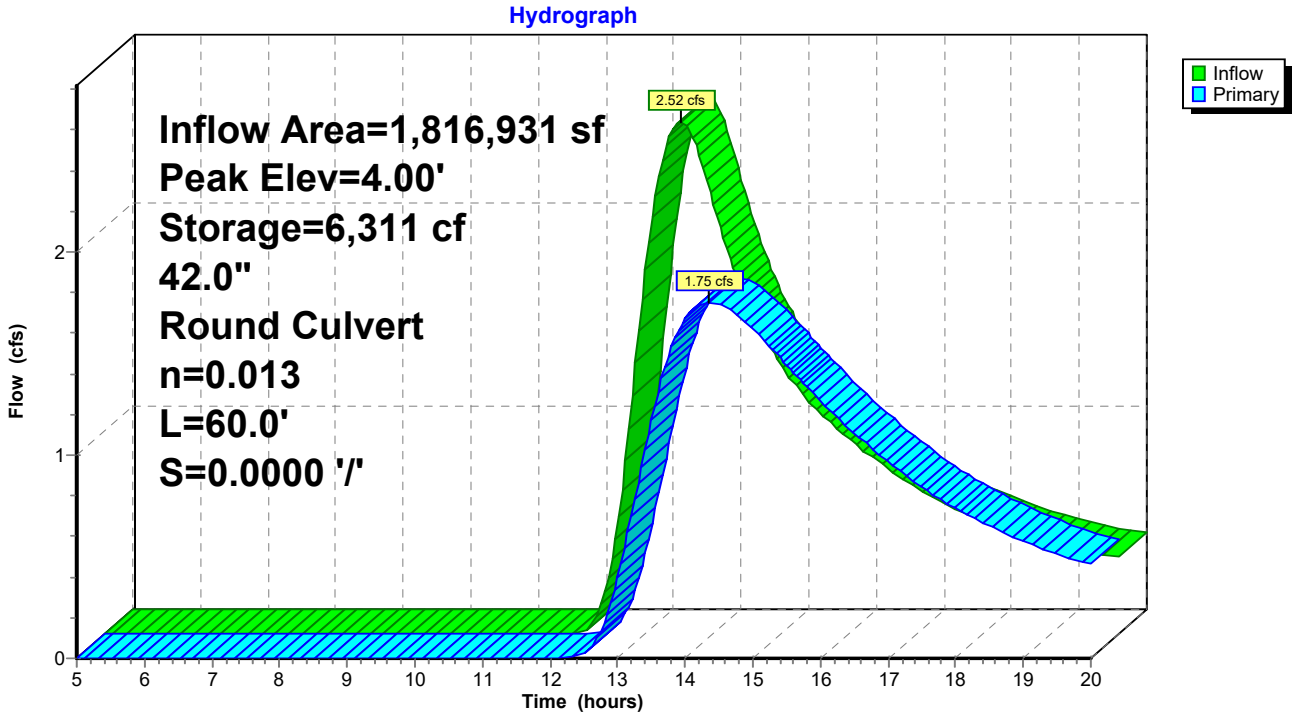
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,384	37,726	37,726
6.00	120,171	82,278	120,004

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=1.75 cfs @ 14.36 hrs HW=4.00' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.75 cfs @ 1.95 fps)

Pond BP: Design Point 1

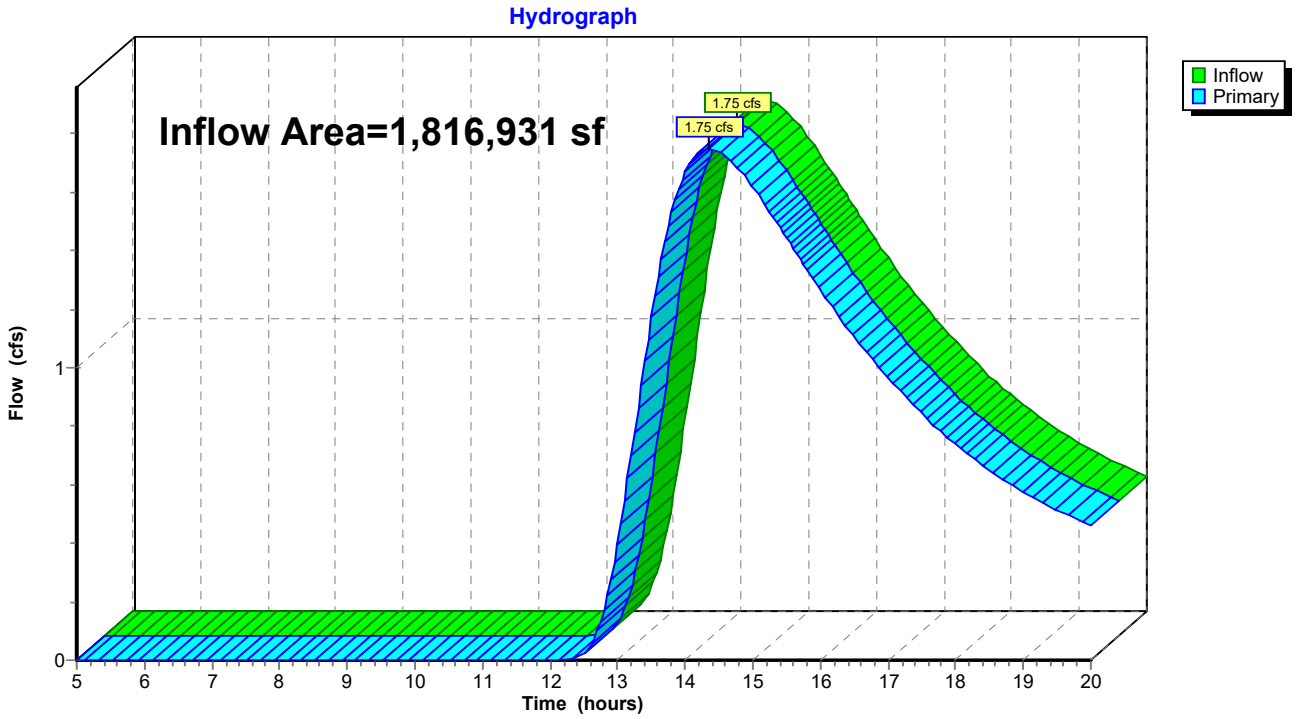


Summary for Link 1L: POC-A

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 0.18" for 2-yr event
Inflow = 1.75 cfs @ 14.36 hrs, Volume= 26,985 cf
Primary = 1.75 cfs @ 14.36 hrs, Volume= 26,985 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC-A

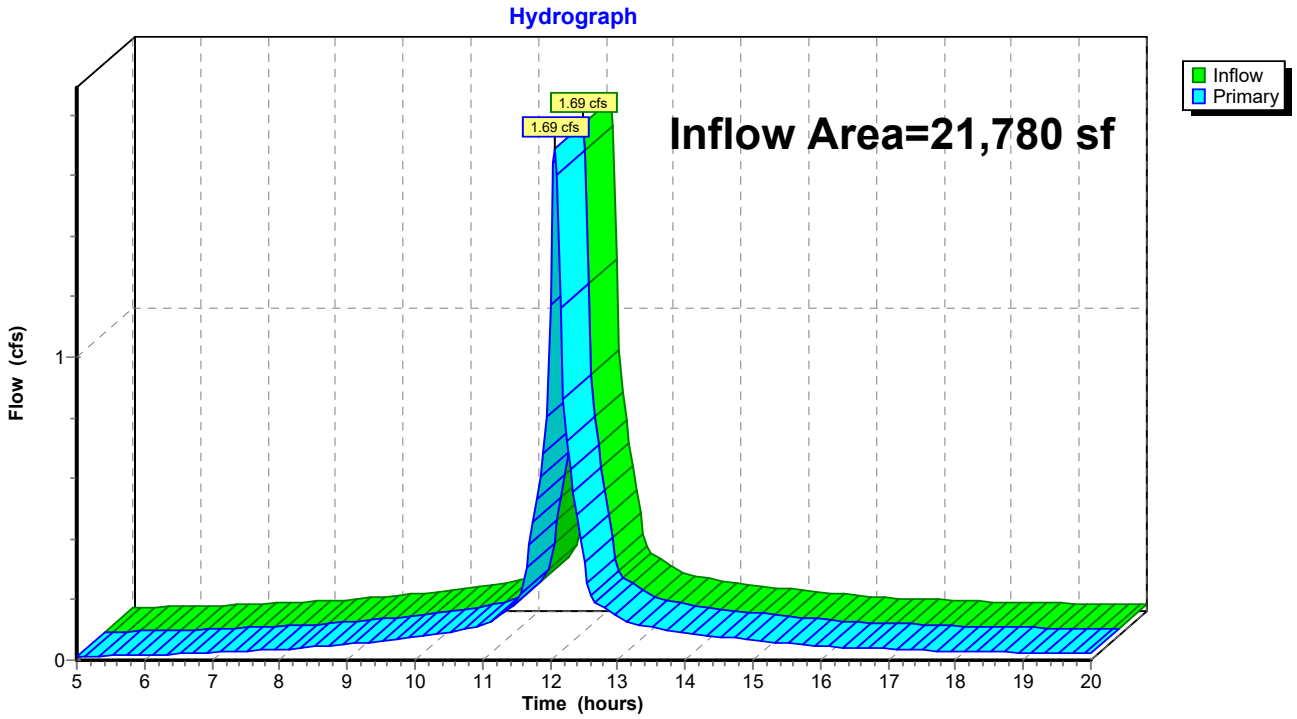


Summary for Link 2L: POC B

Inflow Area = 21,780 sf, 98.00% Impervious, Inflow Depth > 2.95" for 2-yr event
Inflow = 1.69 cfs @ 12.07 hrs, Volume= 5,362 cf
Primary = 1.69 cfs @ 12.07 hrs, Volume= 5,362 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

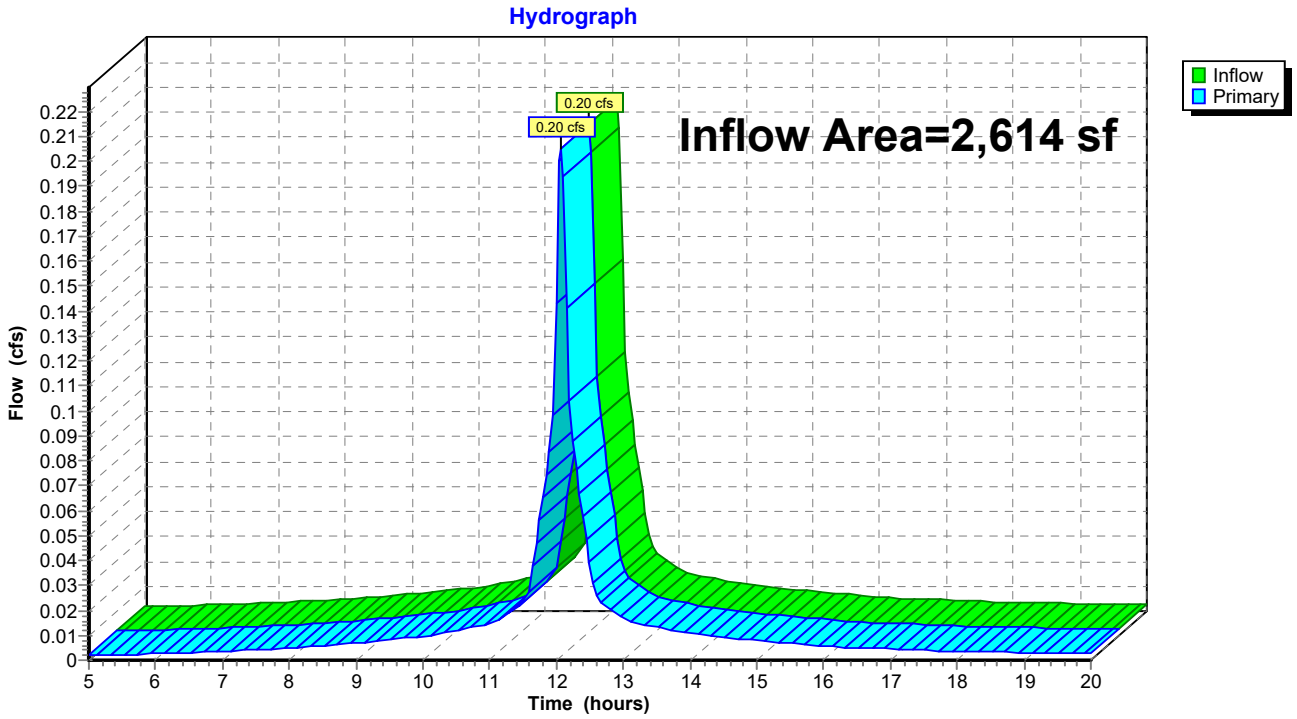


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 3.04" for 2-yr event
Inflow = 0.20 cfs @ 12.07 hrs, Volume= 662 cf
Primary = 0.20 cfs @ 12.07 hrs, Volume= 662 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C

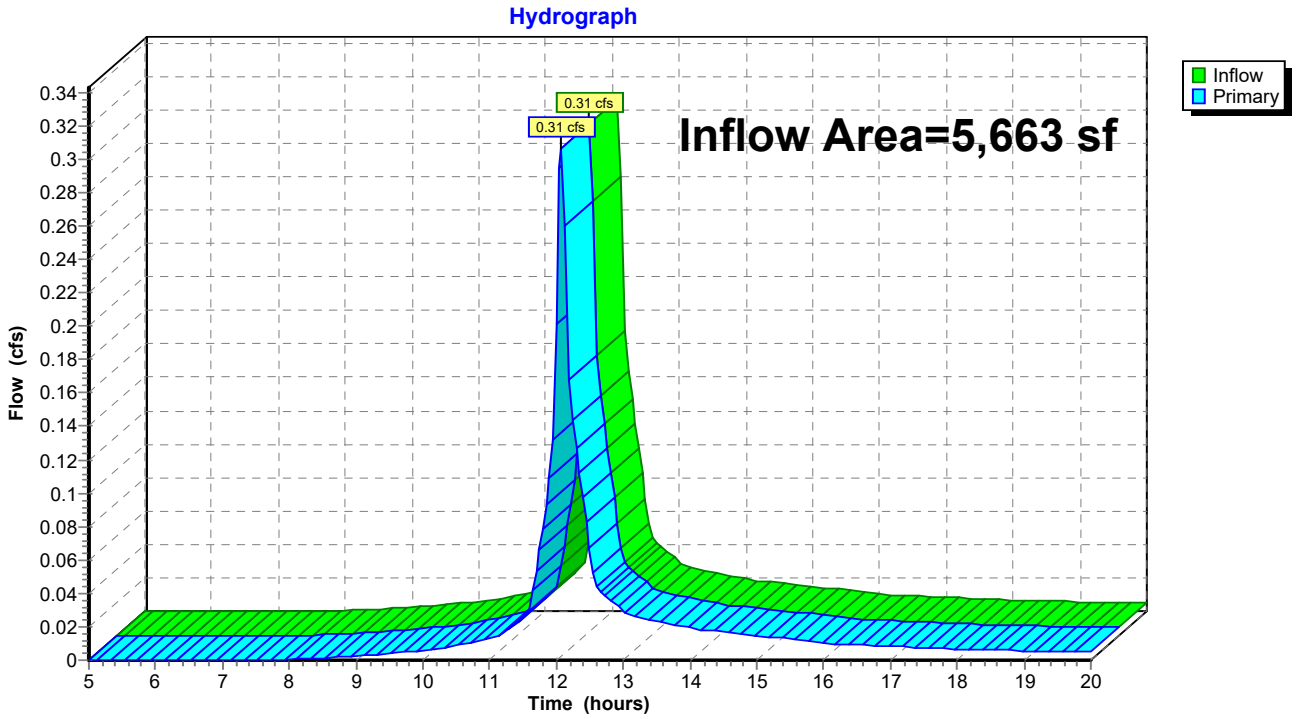


Summary for Link 4L: POC D

Inflow Area = 5,663 sf, 53.85% Impervious, Inflow Depth > 1.88" for 2-yr event
Inflow = 0.31 cfs @ 12.08 hrs, Volume= 885 cf
Primary = 0.31 cfs @ 12.08 hrs, Volume= 885 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: POC D



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA: WS-A Runoff Area=26.051 ac 0.00% Impervious Runoff Depth>0.72"
Tc=80.4 min CN=57 Runoff=6.72 cfs 68,170 cf

SubcatchmentB: WS-B Runoff Area=15.660 ac 2.04% Impervious Runoff Depth>0.98"
Tc=95.9 min CN=62 Runoff=5.33 cfs 55,598 cf

SubcatchmentC: WS-C (Design Point 2) Runoff Area=0.500 ac 98.00% Impervious Runoff Depth>3.88"
Tc=5.0 min CN=97 Runoff=2.19 cfs 7,047 cf

SubcatchmentD: WS-D (Deisgn Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>3.96"
Tc=5.0 min CN=98 Runoff=0.27 cfs 863 cf

SubcatchmentE: WS-E (Deisgn Point 4) Runoff Area=0.130 ac 53.85% Impervious Runoff Depth>2.73"
Tc=5.0 min CN=85 Runoff=0.44 cfs 1,289 cf

Pond AP: Existing Pond A Peak Elev=5.93' Storage=49,522 cf Inflow=6.72 cfs 68,170 cf
Discarded=0.83 cfs 18,647 cf Primary=0.00 cfs 0 cf Outflow=0.83 cfs 18,647 cf

Pond BP: Design Point 1 Peak Elev=4.28' Storage=12,590 cf Inflow=5.33 cfs 55,598 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=3.72 cfs 52,609 cf

Link 1L: POC-A Inflow=3.72 cfs 52,609 cf
Primary=3.72 cfs 52,609 cf

Link 2L: POC B Inflow=2.19 cfs 7,047 cf
Primary=2.19 cfs 7,047 cf

Link 3L: POC C Inflow=0.27 cfs 863 cf
Primary=0.27 cfs 863 cf

Link 4L: POC D Inflow=0.44 cfs 1,289 cf
Primary=0.44 cfs 1,289 cf

Total Runoff Area = 1,846,988 sf Runoff Volume = 132,967 cf Average Runoff Depth = 0.86"
97.78% Pervious = 1,806,041 sf 2.22% Impervious = 40,946 sf

Summary for Subcatchment A: WS-A

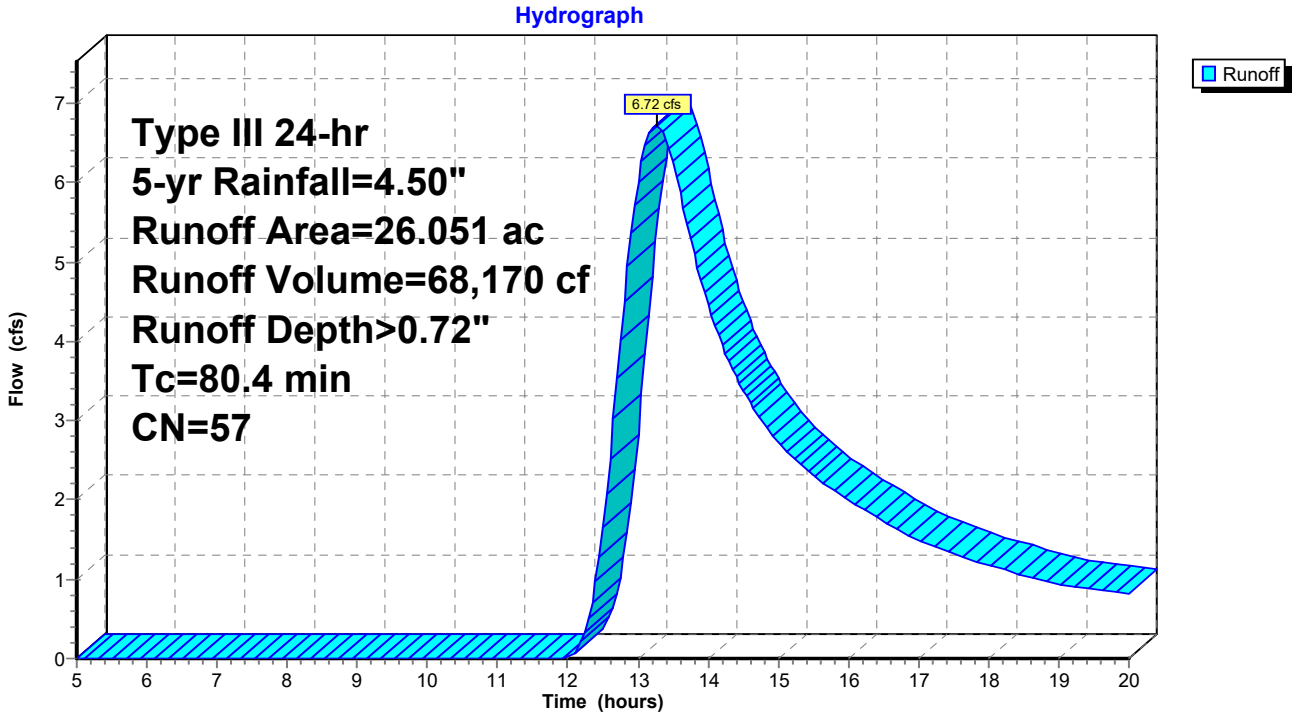
Runoff = 6.72 cfs @ 13.28 hrs, Volume= 68,170 cf, Depth> 0.72"
Routed to Pond AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	21.951	55	Wooded B
*	4.100	69	Grass B
	26.051	57	Weighted Average
	26.051		100.00% Pervious Area

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

Subcatchment A: WS-A



Summary for Subcatchment B: WS-B

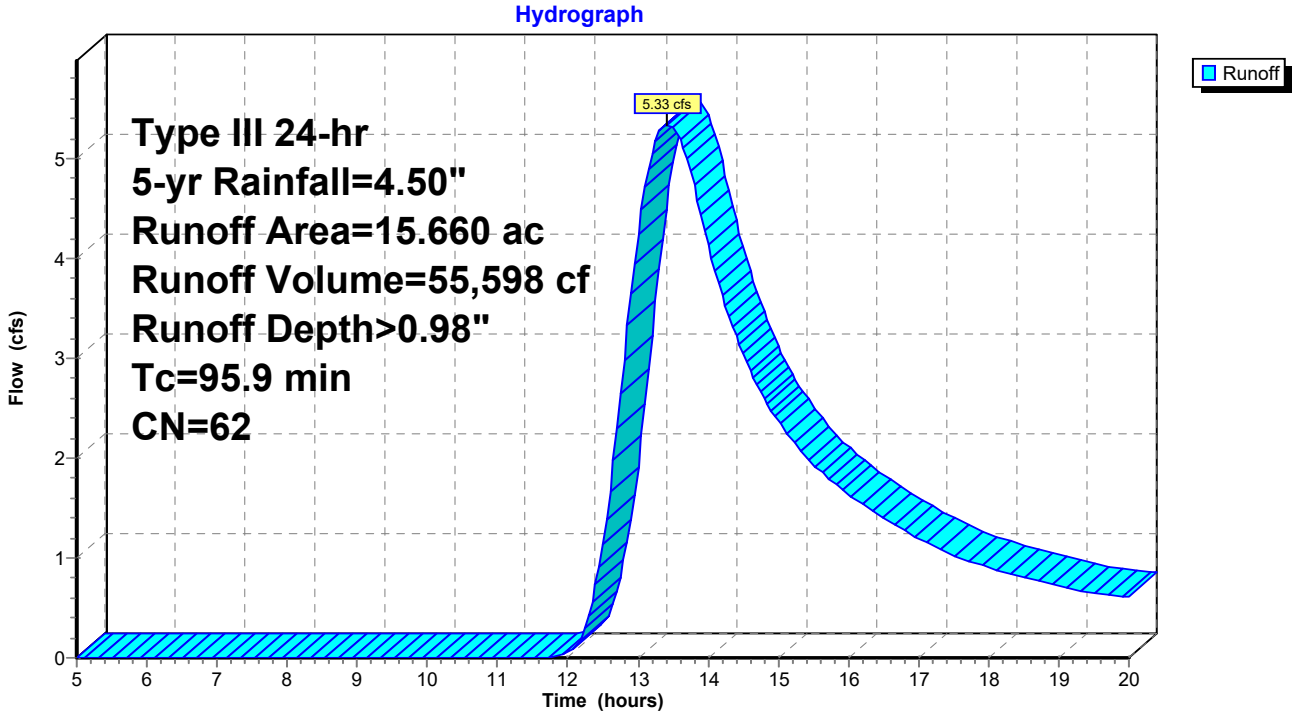
Runoff = 5.33 cfs @ 13.42 hrs, Volume= 55,598 cf, Depth> 0.98"
Routed to Pond BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.320	98	Impervious
*	10.070	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	15.660	62	Weighted Average
	15.340		97.96% Pervious Area
	0.320		2.04% Impervious Area

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

Subcatchment B: WS-B



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

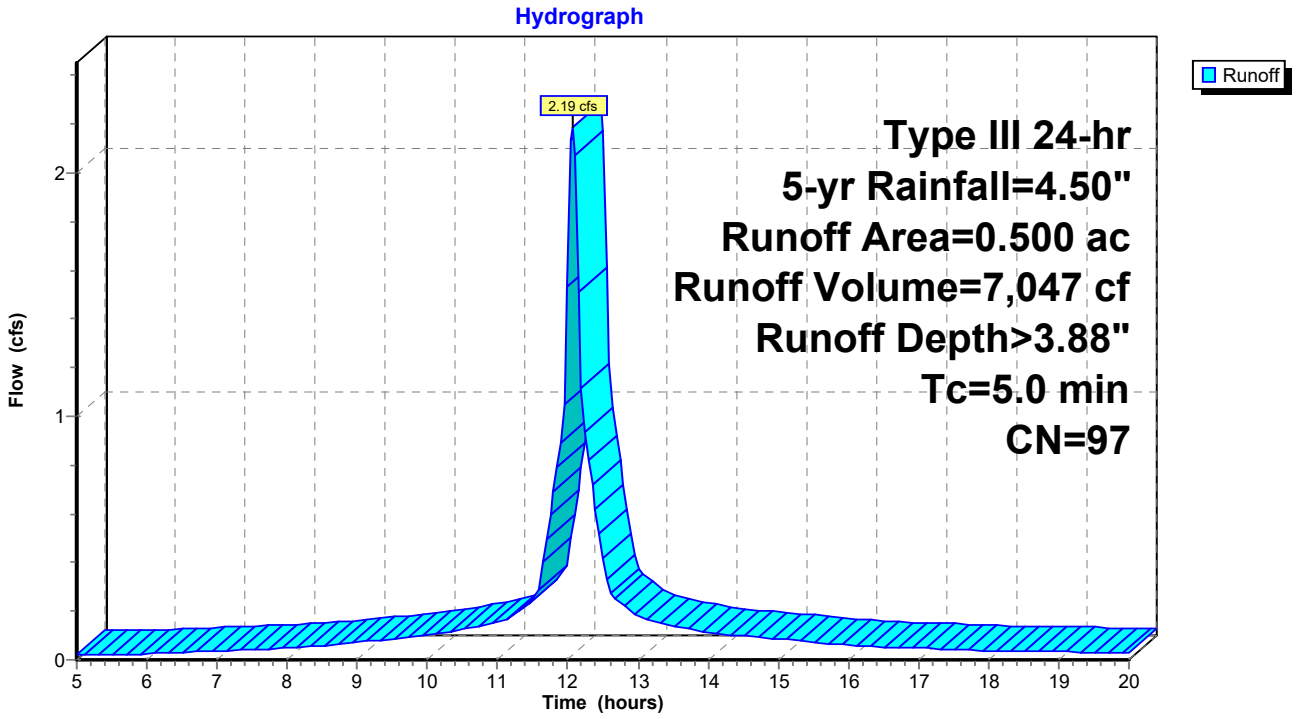
Runoff = 2.19 cfs @ 12.07 hrs, Volume= 7,047 cf, Depth> 3.88"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.490	98	Impervious
*	0.010	69	Grass B
	0.500	97	Weighted Average
	0.010		2.00% Pervious Area
	0.490		98.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Deisgn Point 3)

[49] Hint: Tc<2dt may require smaller dt

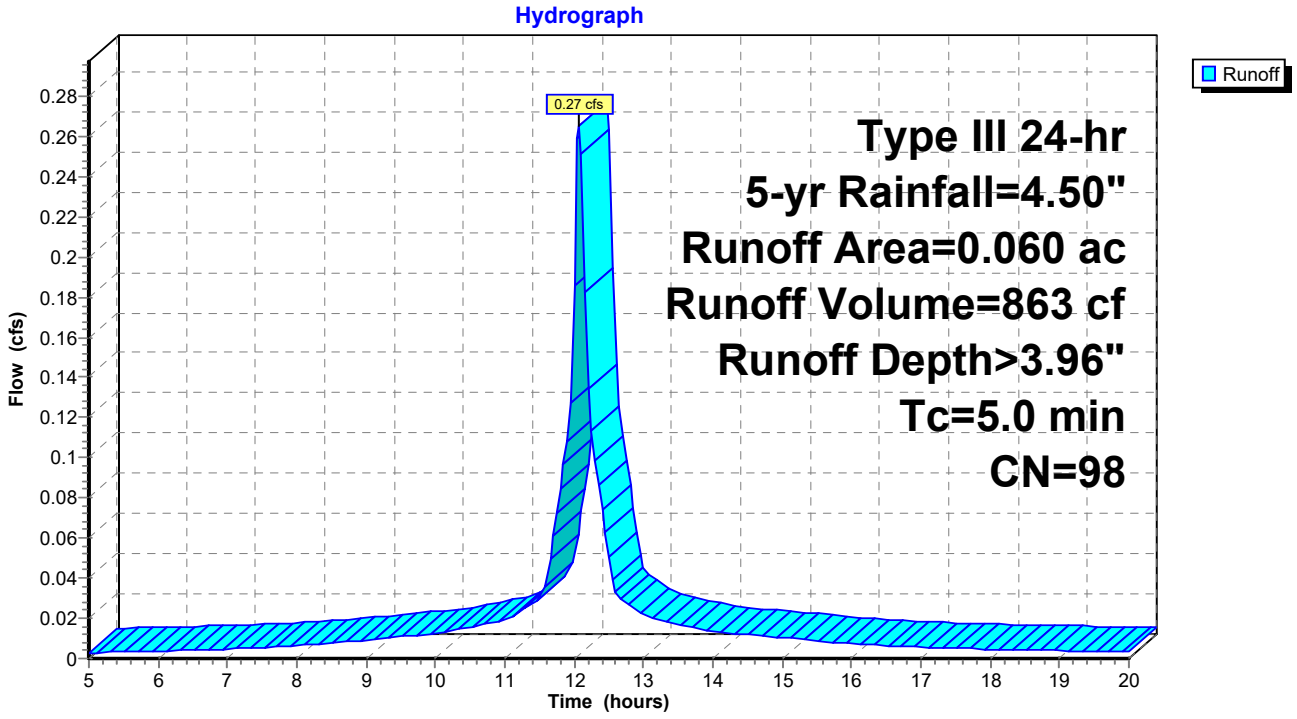
Runoff = 0.27 cfs @ 12.07 hrs, Volume= 863 cf, Depth> 3.96"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Deisgn Point 3)



Summary for Subcatchment E: WS-E (Deisgn Point 4)

[49] Hint: Tc<2dt may require smaller dt

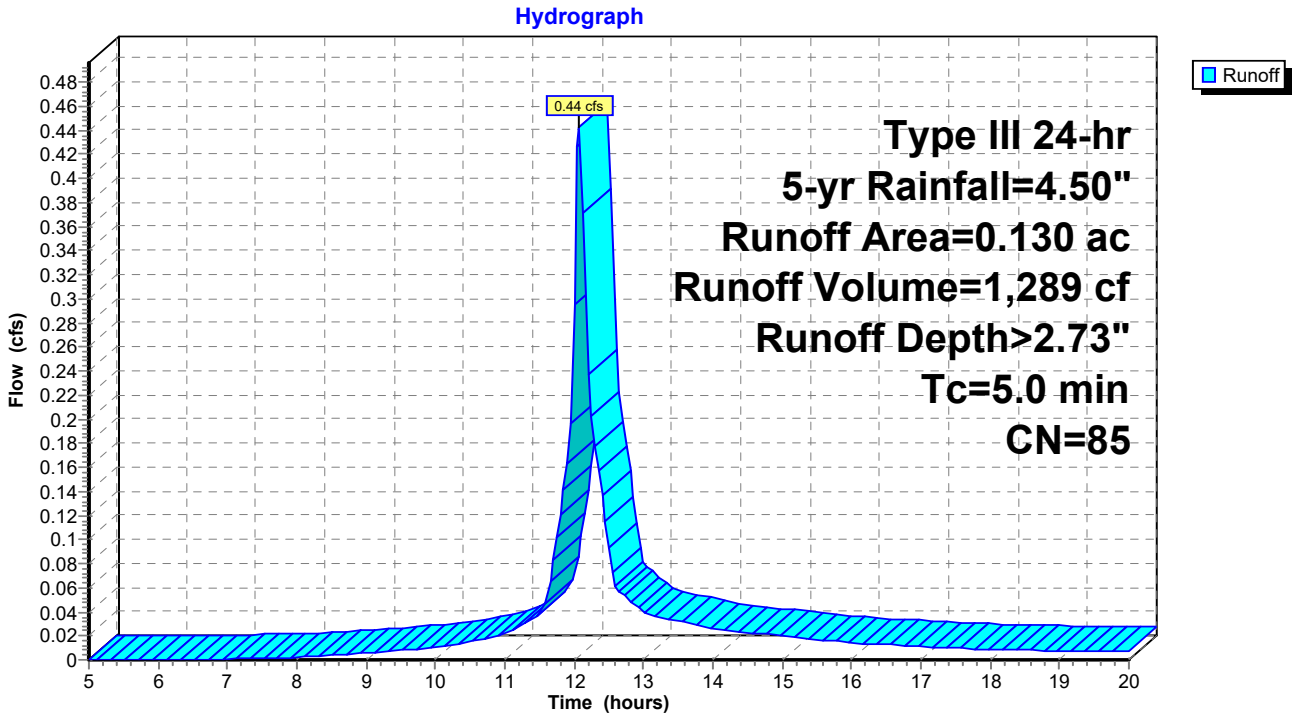
Runoff = 0.44 cfs @ 12.07 hrs, Volume= 1,289 cf, Depth> 2.73"
Routed to Link 4L : POC D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.070	98	Impervious
*	0.060	69	Grass B
	0.130	85	Weighted Average
	0.060		46.15% Pervious Area
	0.070		53.85% Impervious Area

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

Subcatchment E: WS-E (Deisgn Point 4)



Summary for Pond AP: Existing Pond A

Inflow Area = 1,134,782 sf, 0.00% Impervious, Inflow Depth > 0.72" for 5-yr event
Inflow = 6.72 cfs @ 13.28 hrs, Volume= 68,170 cf
Outflow = 0.83 cfs @ 19.83 hrs, Volume= 18,647 cf, Atten= 88%, Lag= 393.1 min
Discarded = 0.83 cfs @ 19.83 hrs, Volume= 18,647 cf
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf
Routed to Pond BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 5.93' @ 19.83 hrs Surf.Area= 71,918 sf Storage= 49,522 cf

Plug-Flow detention time= 225.1 min calculated for 18,647 cf (27% of inflow)
Center-of-Mass det. time= 110.7 min (1,006.5 - 895.8)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	283,474 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

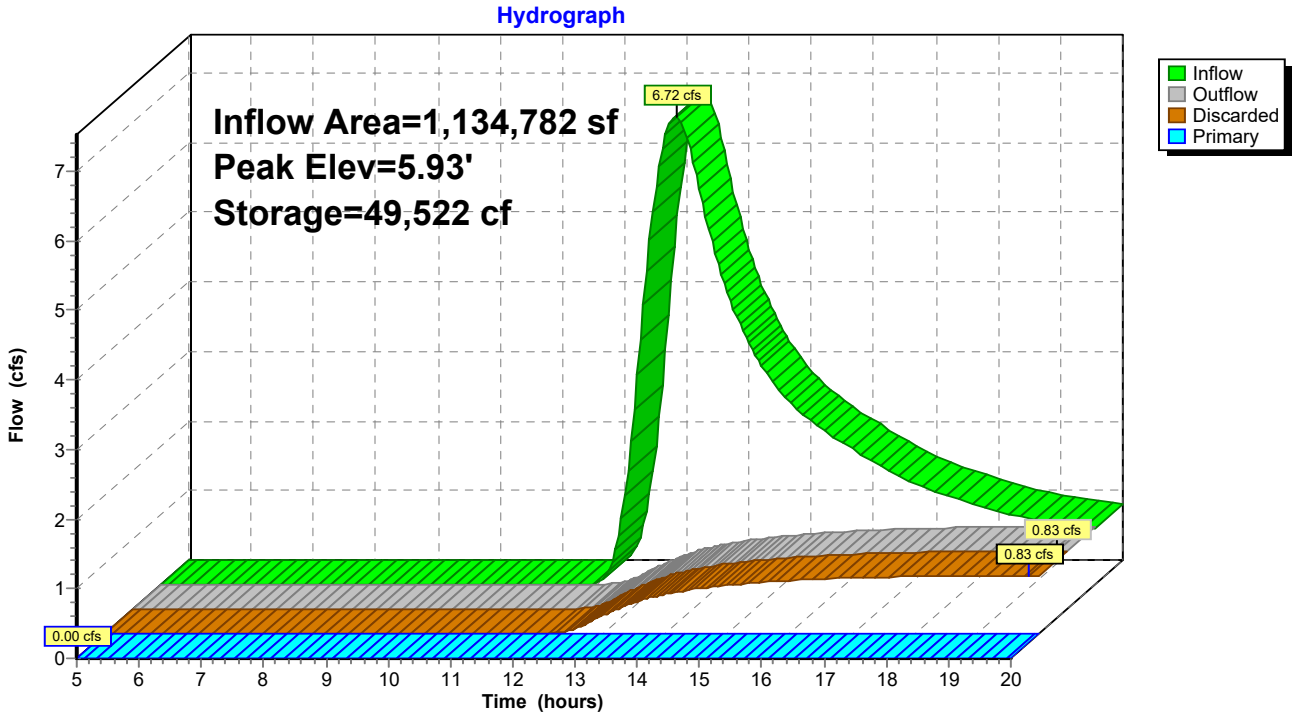
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	22,712	7,571	7,571	22,714
6.00	76,594	47,005	54,576	76,601
7.00	428,860	228,898	283,474	428,871

Device	Routing	Invert	Outlet Devices
#1	Primary	6.20'	**30.0' long x 233.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.83 cfs @ 19.83 hrs HW=5.93' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.83 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=4.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond AP: Existing Pond A



Summary for Pond BP: Design Point 1

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 0.37" for 5-yr event
Inflow = 5.33 cfs @ 13.42 hrs, Volume= 55,598 cf
Outflow = 3.72 cfs @ 14.16 hrs, Volume= 52,609 cf, Atten= 30%, Lag= 44.7 min
Primary = 3.72 cfs @ 14.16 hrs, Volume= 52,609 cf
Routed to Link 1L : POC-A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 4.28' @ 14.16 hrs Surf.Area= 25,640 sf Storage= 12,590 cf

Plug-Flow detention time= 57.0 min calculated for 52,609 cf (95% of inflow)
Center-of-Mass det. time= 41.8 min (937.2 - 895.4)

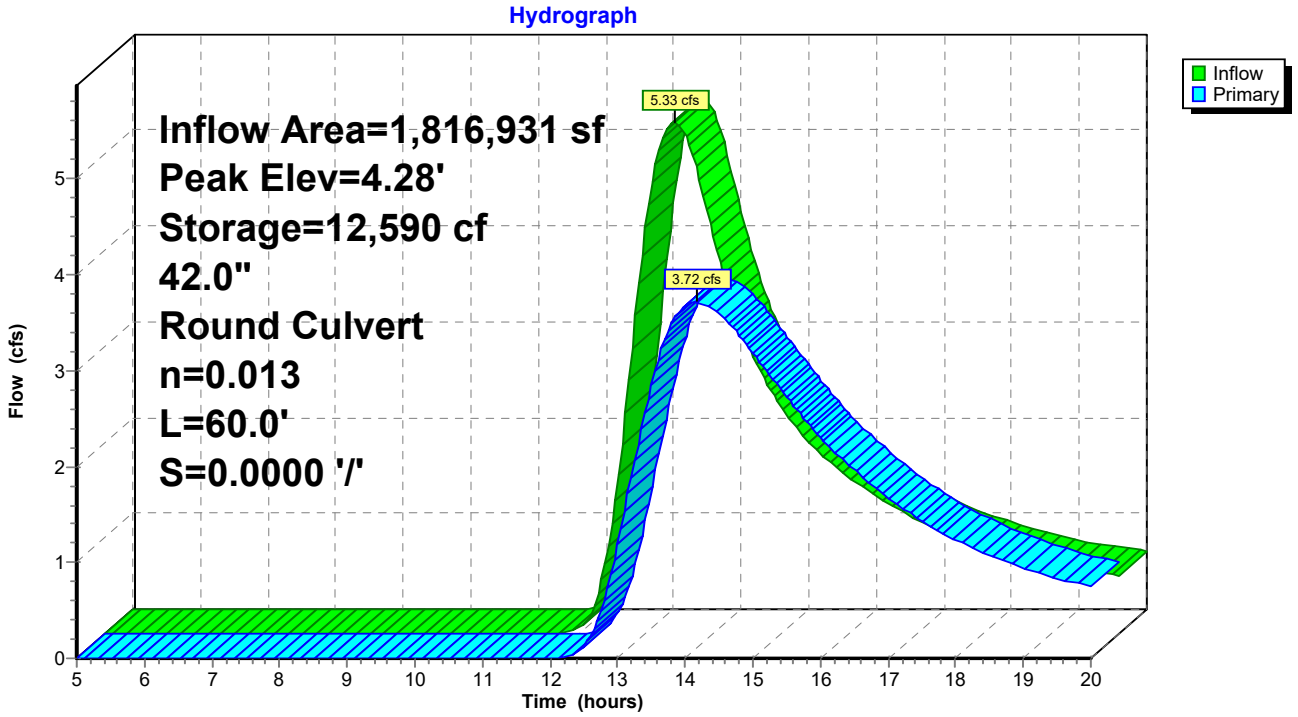
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,384	37,726	37,726
6.00	120,171	82,278	120,004

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=3.72 cfs @ 14.16 hrs HW=4.28' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 3.72 cfs @ 2.52 fps)

Pond BP: Design Point 1

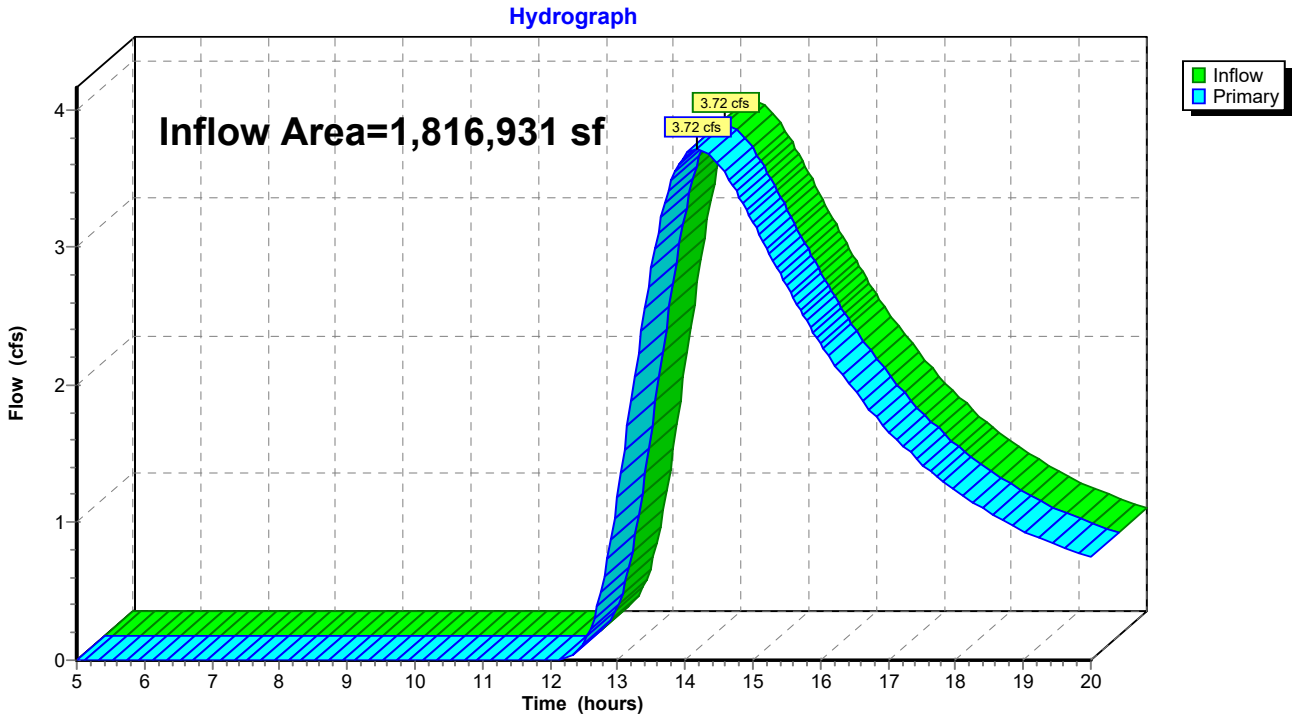


Summary for Link 1L: POC-A

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 0.35" for 5-yr event
Inflow = 3.72 cfs @ 14.16 hrs, Volume= 52,609 cf
Primary = 3.72 cfs @ 14.16 hrs, Volume= 52,609 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC-A

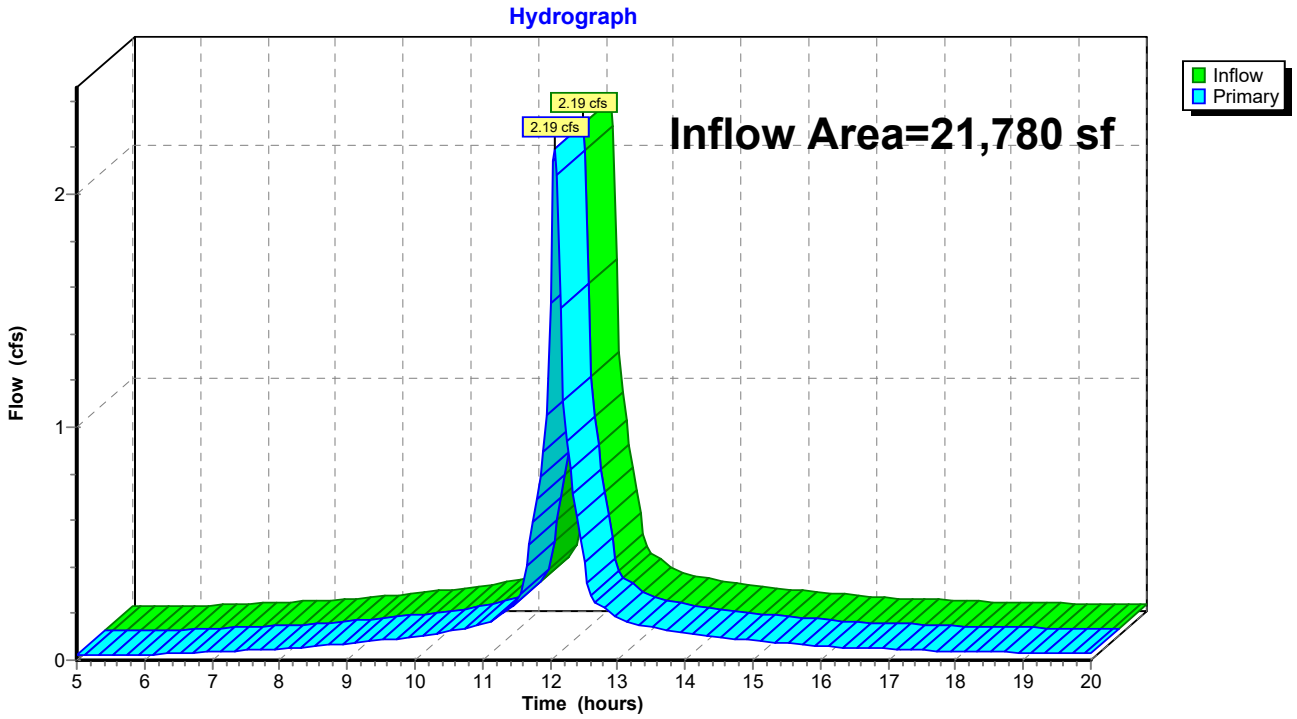


Summary for Link 2L: POC B

Inflow Area = 21,780 sf, 98.00% Impervious, Inflow Depth > 3.88" for 5-yr event
Inflow = 2.19 cfs @ 12.07 hrs, Volume= 7,047 cf
Primary = 2.19 cfs @ 12.07 hrs, Volume= 7,047 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

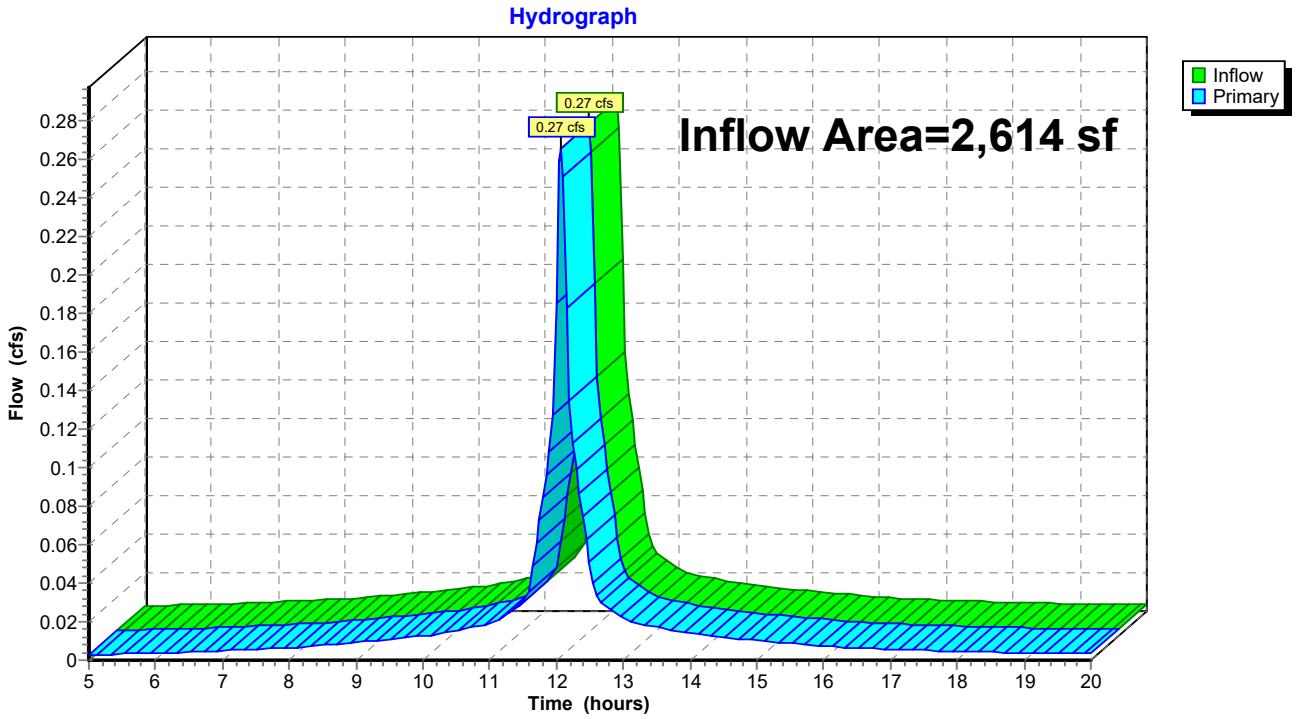


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 3.96" for 5-yr event
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 863 cf
Primary = 0.27 cfs @ 12.07 hrs, Volume= 863 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C

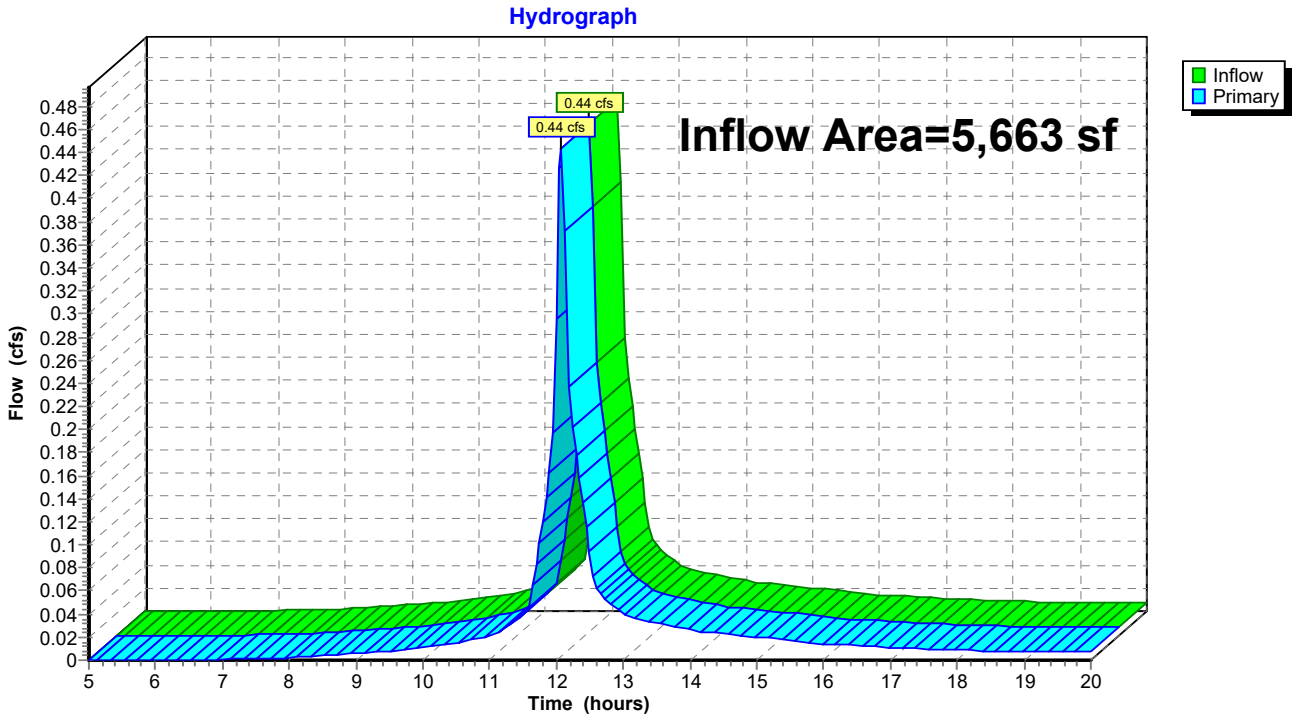


Summary for Link 4L: POC D

Inflow Area = 5,663 sf, 53.85% Impervious, Inflow Depth > 2.73" for 5-yr event
Inflow = 0.44 cfs @ 12.07 hrs, Volume= 1,289 cf
Primary = 0.44 cfs @ 12.07 hrs, Volume= 1,289 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: POC D



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A: WS-A Runoff Area=26.051 ac 0.00% Impervious Runoff Depth>1.11"
Tc=80.4 min CN=57 Runoff=11.09 cfs 104,896 cf

Subcatchment B: WS-B Runoff Area=15.660 ac 2.04% Impervious Runoff Depth>1.43"
Tc=95.9 min CN=62 Runoff=8.13 cfs 81,355 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.500 ac 98.00% Impervious Runoff Depth>4.64"
Tc=5.0 min CN=97 Runoff=2.61 cfs 8,429 cf

Subcatchment D: WS-D (Deisgn Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>4.72"
Tc=5.0 min CN=98 Runoff=0.32 cfs 1,028 cf

Subcatchment E: WS-E (Deisgn Point 4) Runoff Area=0.130 ac 53.85% Impervious Runoff Depth>3.46"
Tc=5.0 min CN=85 Runoff=0.56 cfs 1,632 cf

Pond AP: Existing Pond A Peak Elev=6.20' Storage=74,787 cf Inflow=11.09 cfs 104,896 cf
Discarded=1.45 cfs 31,051 cf Primary=0.03 cfs 105 cf Outflow=1.48 cfs 31,157 cf

Pond BP: Design Point 1 Peak Elev=4.50' Storage=18,803 cf Inflow=8.13 cfs 81,460 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=5.68 cfs 77,610 cf

Link 1L: POC-A Inflow=5.68 cfs 77,610 cf
Primary=5.68 cfs 77,610 cf

Link 2L: POC B Inflow=2.61 cfs 8,429 cf
Primary=2.61 cfs 8,429 cf

Link 3L: POC C Inflow=0.32 cfs 1,028 cf
Primary=0.32 cfs 1,028 cf

Link 4L: POC D Inflow=0.56 cfs 1,632 cf
Primary=0.56 cfs 1,632 cf

Total Runoff Area = 1,846,988 sf Runoff Volume = 197,340 cf Average Runoff Depth = 1.28"
97.78% Pervious = 1,806,041 sf 2.22% Impervious = 40,946 sf

Summary for Subcatchment A: WS-A

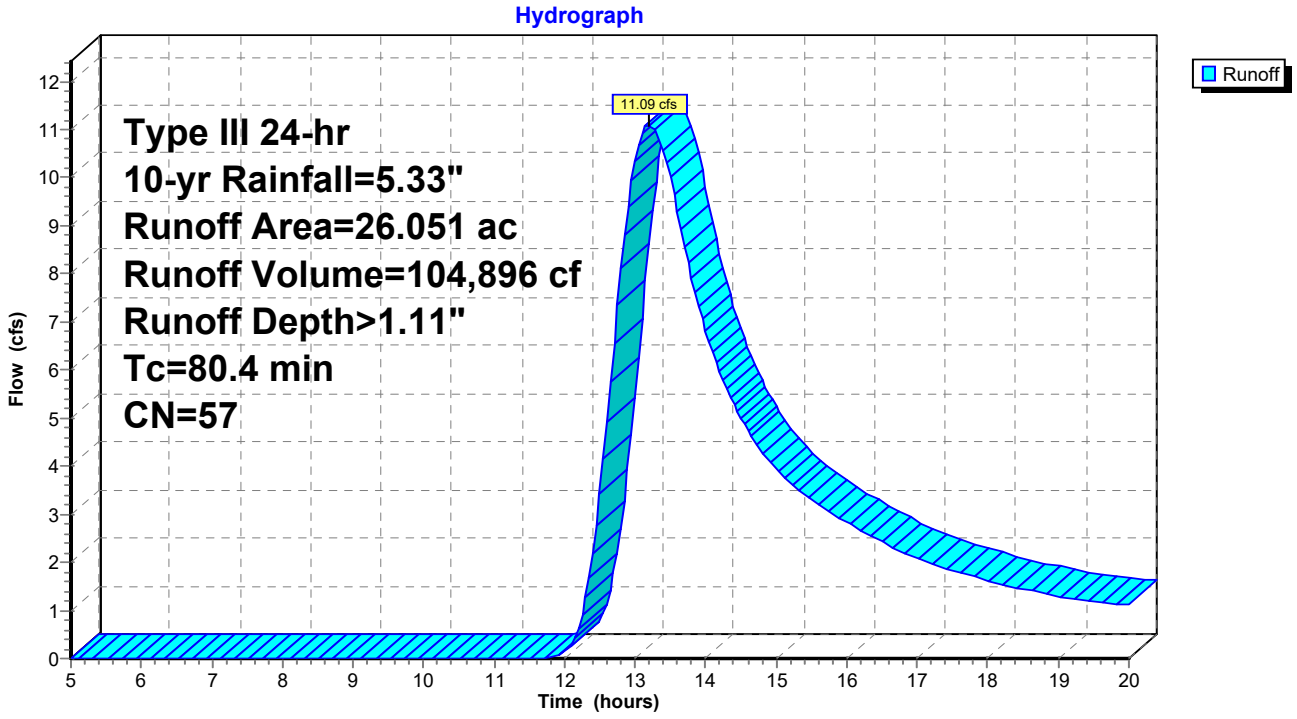
Runoff = 11.09 cfs @ 13.20 hrs, Volume= 104,896 cf, Depth> 1.11"
Routed to Pond AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	21.951	55	Wooded B
*	4.100	69	Grass B
	26.051	57	Weighted Average
	26.051		100.00% Pervious Area

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

Subcatchment A: WS-A



Summary for Subcatchment B: WS-B

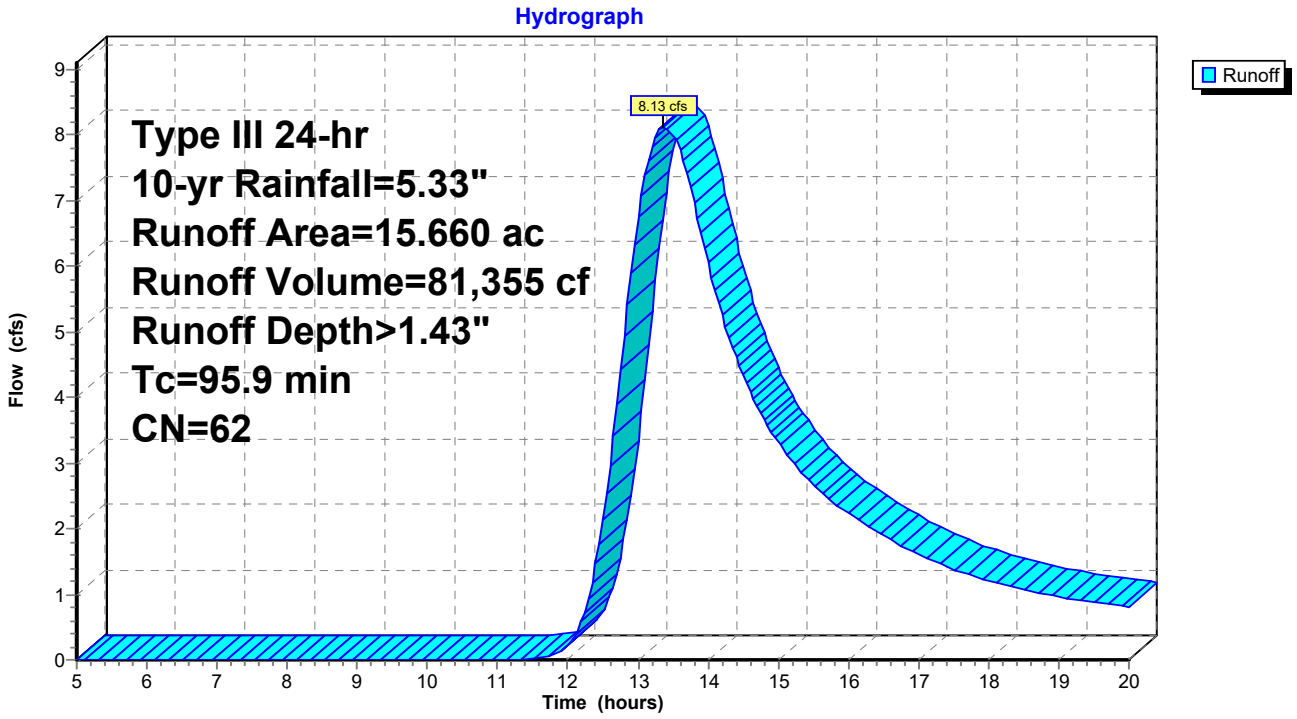
Runoff = 8.13 cfs @ 13.36 hrs, Volume= 81,355 cf, Depth> 1.43"
Routed to Pond BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.320	98	Impervious
*	10.070	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	15.660	62	Weighted Average
	15.340		97.96% Pervious Area
	0.320		2.04% Impervious Area

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

Subcatchment B: WS-B



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

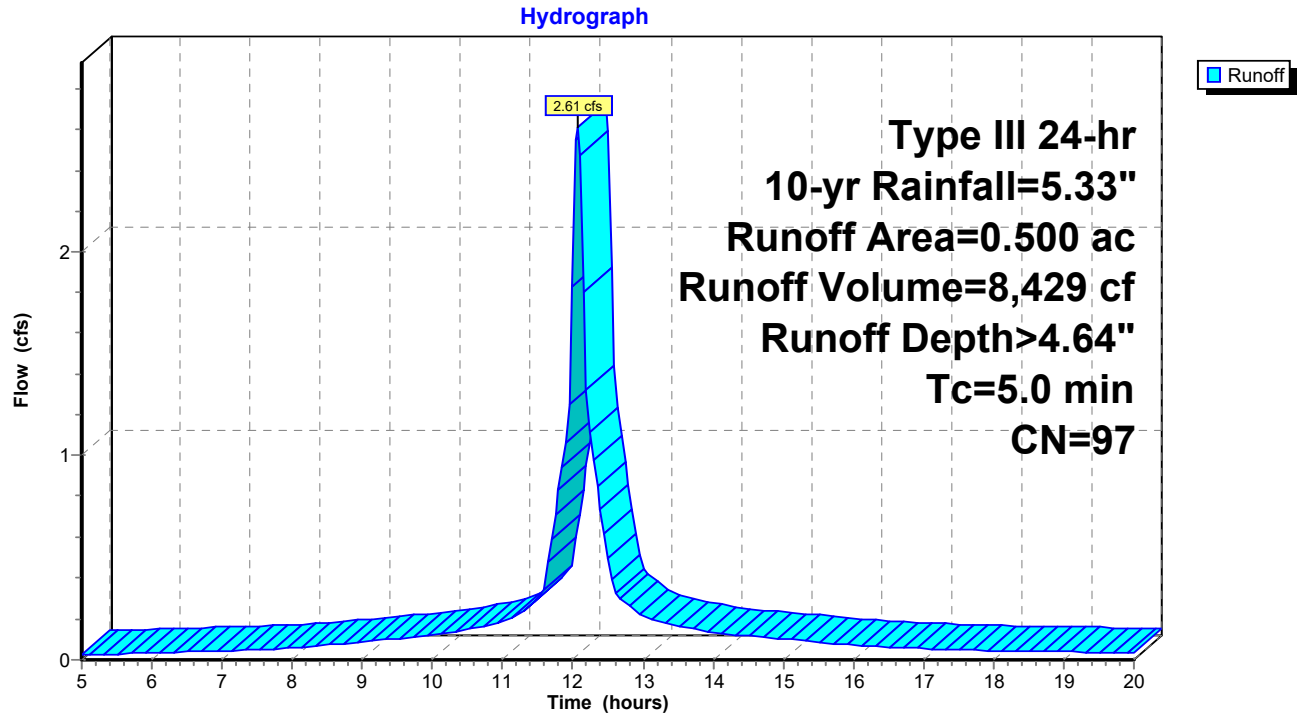
Runoff = 2.61 cfs @ 12.07 hrs, Volume= 8,429 cf, Depth> 4.64"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.490	98	Impervious
*	0.010	69	Grass B
	0.500	97	Weighted Average
	0.010		2.00% Pervious Area
	0.490		98.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Deisgn Point 3)

[49] Hint: Tc<2dt may require smaller dt

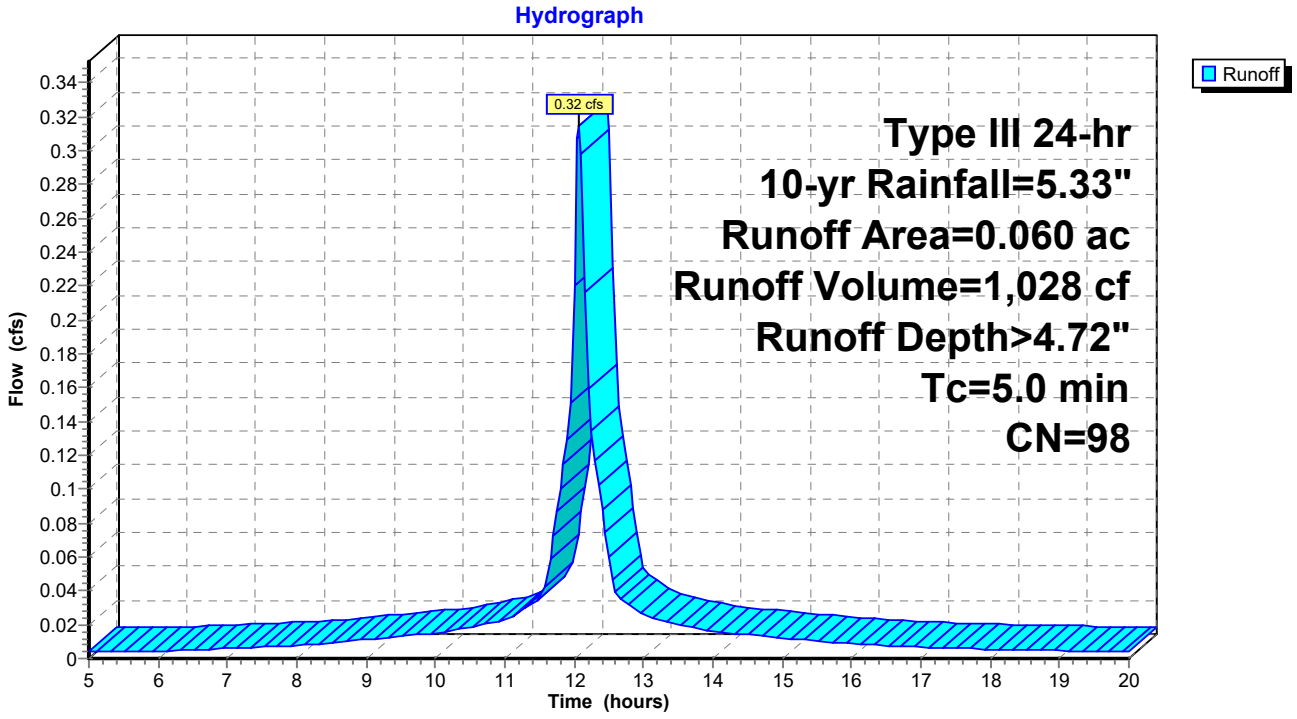
Runoff = 0.32 cfs @ 12.07 hrs, Volume= 1,028 cf, Depth> 4.72"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Deisgn Point 3)



Summary for Subcatchment E: WS-E (Deisgn Point 4)

[49] Hint: Tc<2dt may require smaller dt

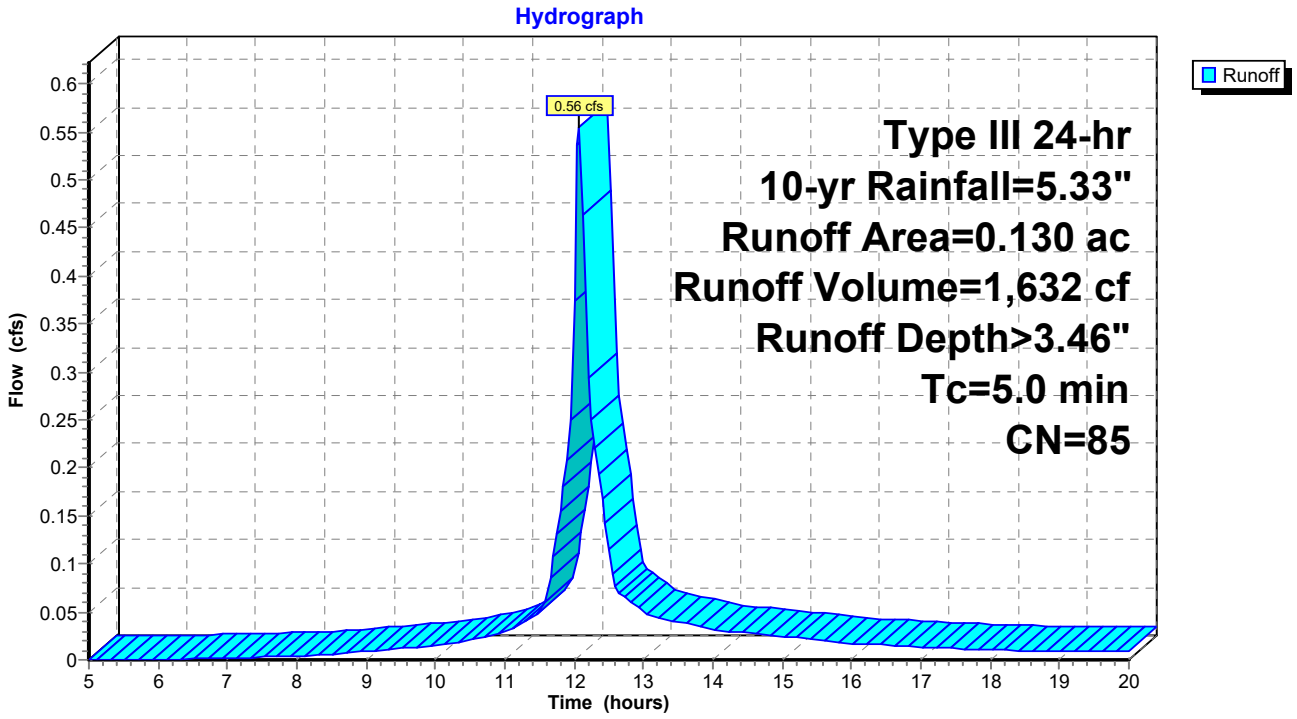
Runoff = 0.56 cfs @ 12.07 hrs, Volume= 1,632 cf, Depth> 3.46"
Routed to Link 4L : POC D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.070	98	Impervious
*	0.060	69	Grass B
	0.130	85	Weighted Average
	0.060		46.15% Pervious Area
	0.070		53.85% Impervious Area

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

Subcatchment E: WS-E (Deisgn Point 4)



Summary for Pond AP: Existing Pond A

Inflow Area = 1,134,782 sf, 0.00% Impervious, Inflow Depth > 1.11" for 10-yr event
Inflow = 11.09 cfs @ 13.20 hrs, Volume= 104,896 cf
Outflow = 1.48 cfs @ 18.42 hrs, Volume= 31,157 cf, Atten= 87%, Lag= 313.3 min
Discarded = 1.45 cfs @ 18.42 hrs, Volume= 31,051 cf
Primary = 0.03 cfs @ 18.42 hrs, Volume= 105 cf
Routed to Pond BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 6.20' @ 18.42 hrs Surf.Area= 124,869 sf Storage= 74,787 cf

Plug-Flow detention time= 234.9 min calculated for 31,157 cf (30% of inflow)
Center-of-Mass det. time= 127.3 min (1,013.3 - 886.1)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	283,474 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

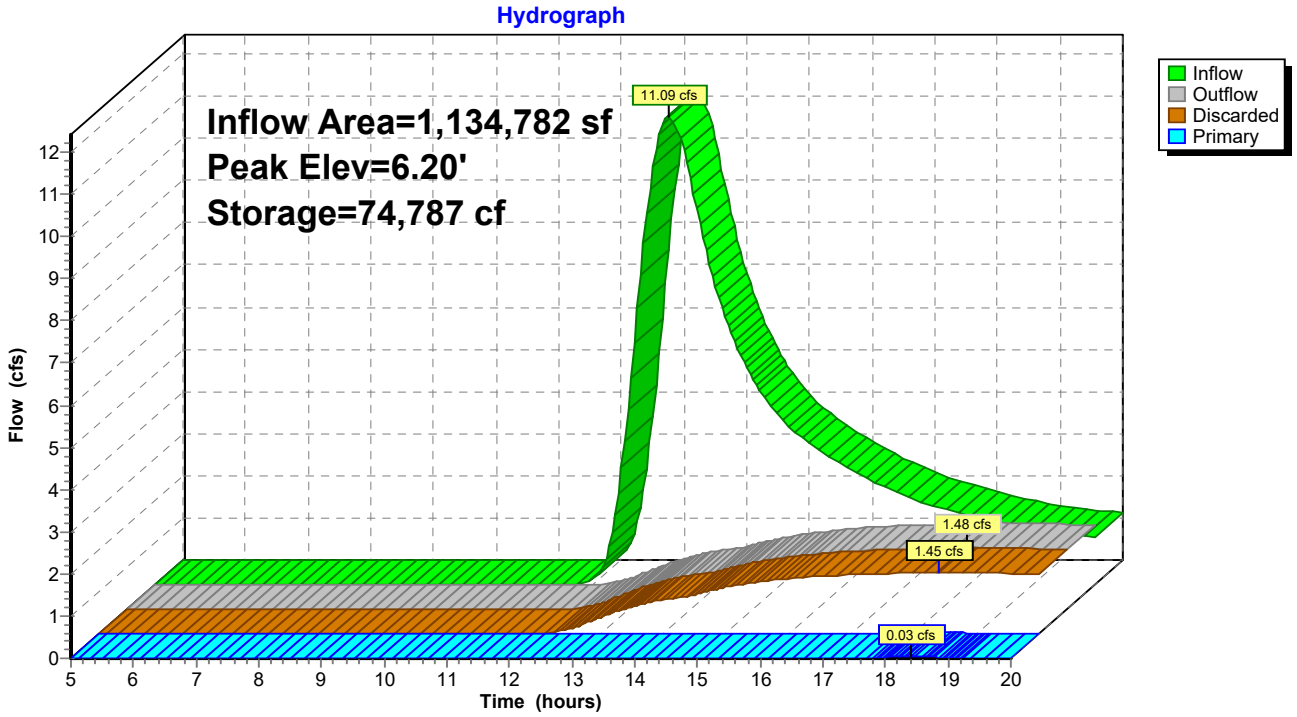
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	22,712	7,571	7,571	22,714
6.00	76,594	47,005	54,576	76,601
7.00	428,860	228,898	283,474	428,871

Device	Routing	Invert	Outlet Devices
#1	Primary	6.20'	**30.0' long x 233.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=1.45 cfs @ 18.42 hrs HW=6.20' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.45 cfs)

Primary OutFlow Max=0.01 cfs @ 18.42 hrs HW=6.20' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.14 fps)

Pond AP: Existing Pond A



Summary for Pond BP: Design Point 1

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 0.54" for 10-yr event
Inflow = 8.13 cfs @ 13.36 hrs, Volume= 81,460 cf
Outflow = 5.68 cfs @ 14.09 hrs, Volume= 77,610 cf, Atten= 30%, Lag= 43.5 min
Primary = 5.68 cfs @ 14.09 hrs, Volume= 77,610 cf
Routed to Link 1L : POC-A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 4.50' @ 14.09 hrs Surf.Area= 31,334 sf Storage= 18,803 cf

Plug-Flow detention time= 55.5 min calculated for 77,353 cf (95% of inflow)
Center-of-Mass det. time= 41.9 min (929.9 - 888.0)

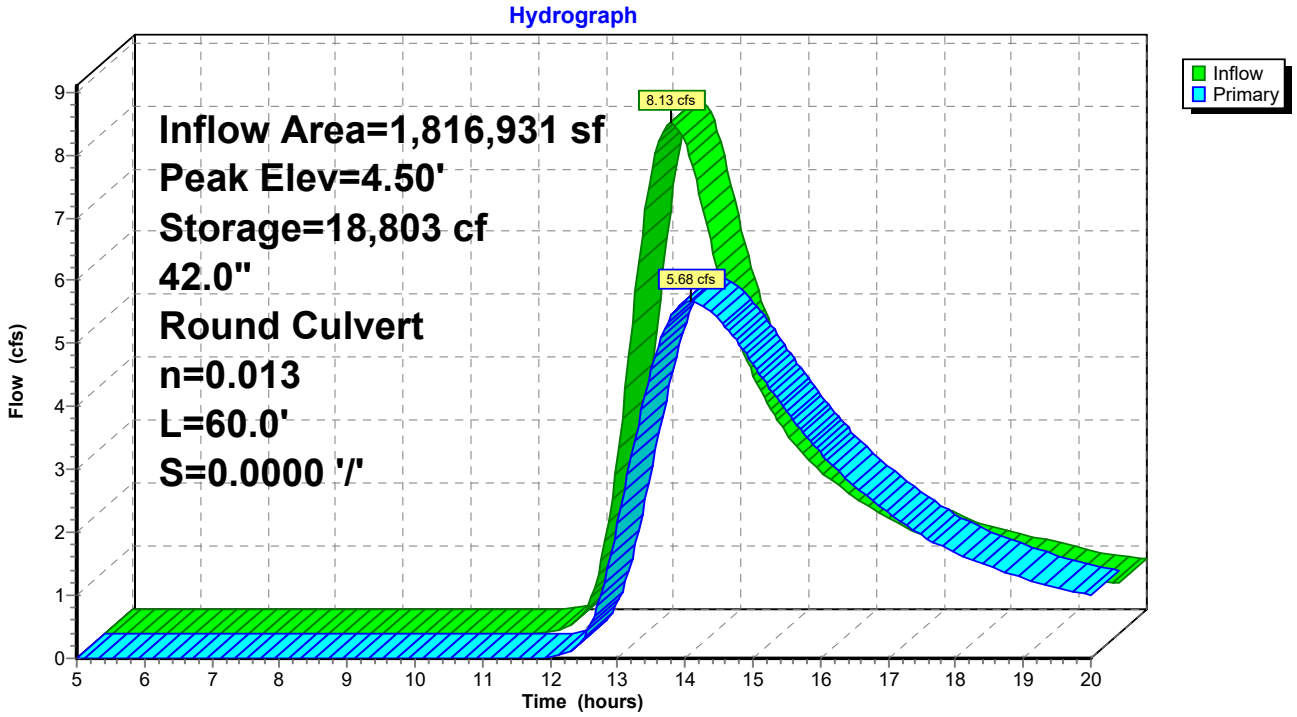
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,384	37,726	37,726
6.00	120,171	82,278	120,004

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=5.67 cfs @ 14.09 hrs HW=4.50' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 5.67 cfs @ 2.90 fps)

Pond BP: Design Point 1

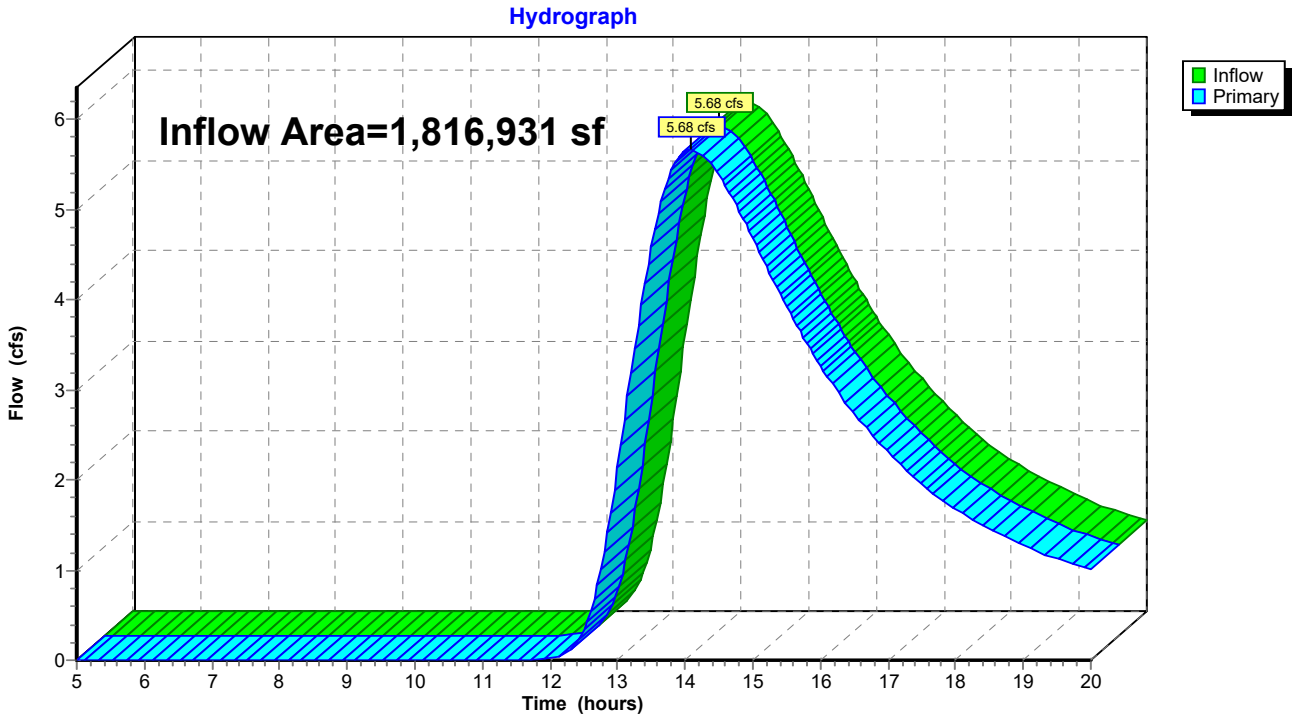


Summary for Link 1L: POC-A

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 0.51" for 10-yr event
Inflow = 5.68 cfs @ 14.09 hrs, Volume= 77,610 cf
Primary = 5.68 cfs @ 14.09 hrs, Volume= 77,610 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC-A

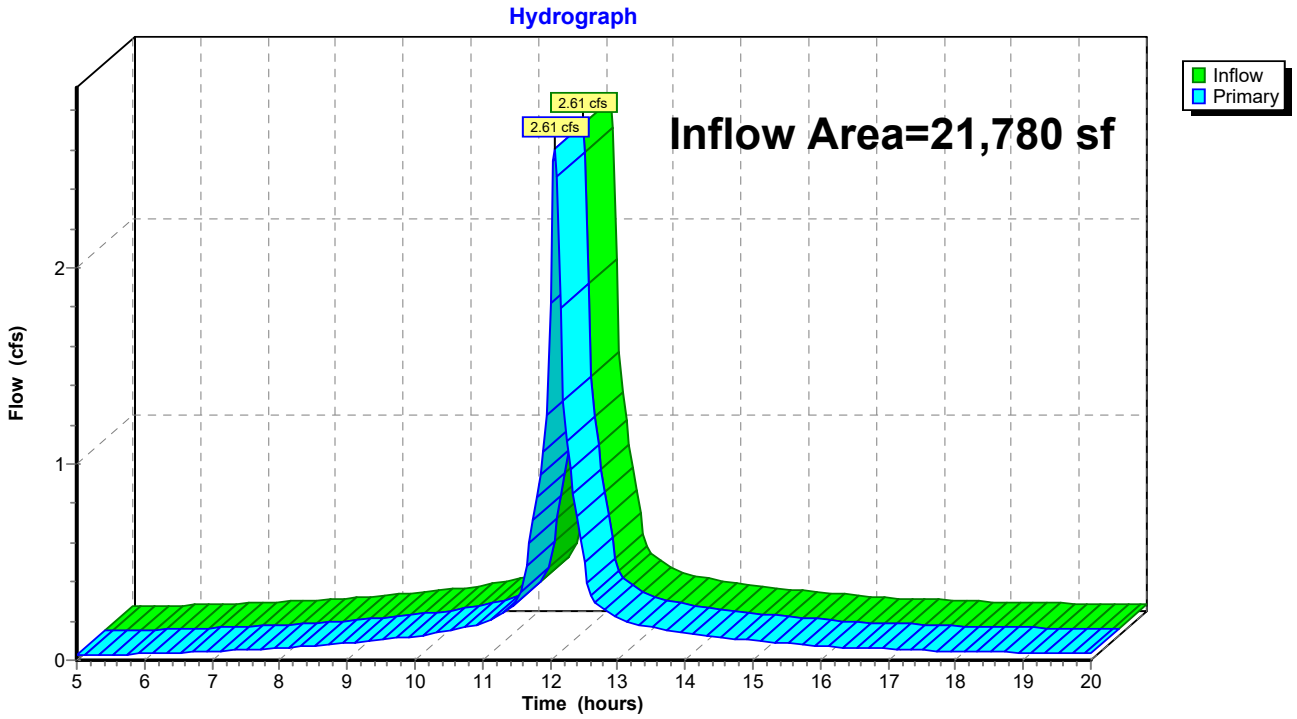


Summary for Link 2L: POC B

Inflow Area = 21,780 sf, 98.00% Impervious, Inflow Depth > 4.64" for 10-yr event
Inflow = 2.61 cfs @ 12.07 hrs, Volume= 8,429 cf
Primary = 2.61 cfs @ 12.07 hrs, Volume= 8,429 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

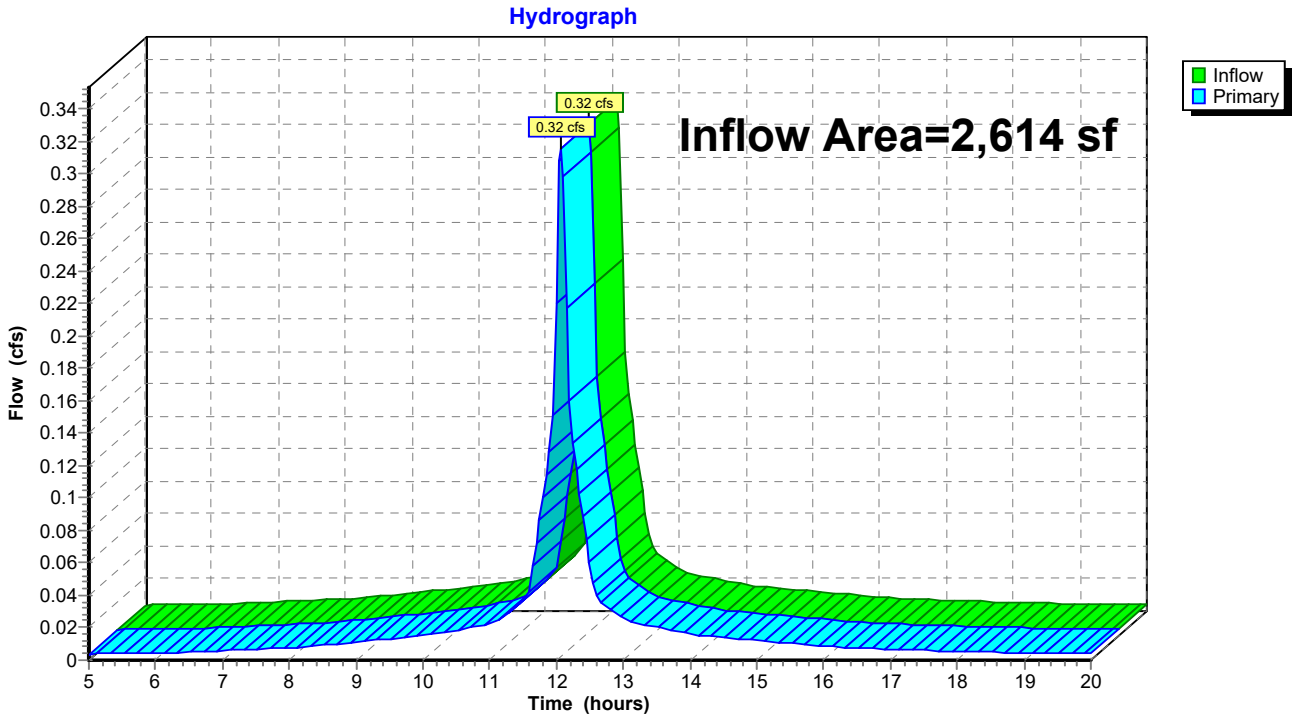


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 4.72" for 10-yr event
Inflow = 0.32 cfs @ 12.07 hrs, Volume= 1,028 cf
Primary = 0.32 cfs @ 12.07 hrs, Volume= 1,028 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C

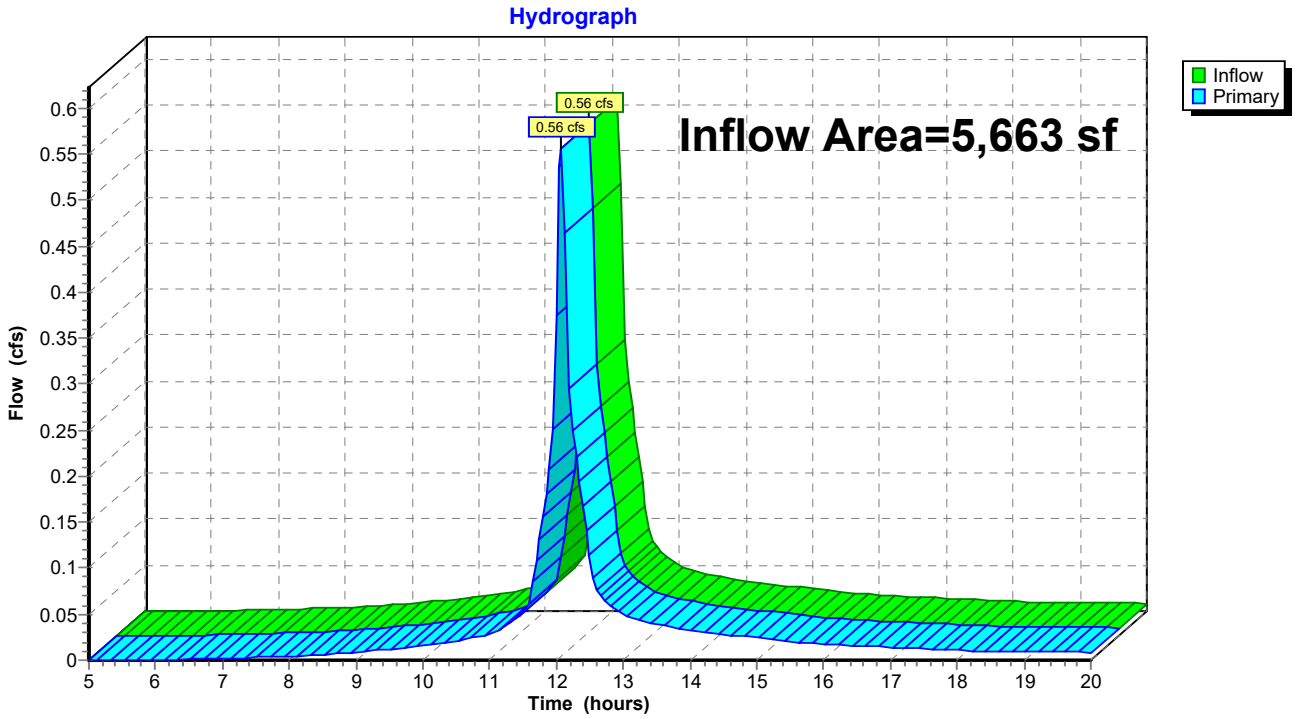


Summary for Link 4L: POC D

Inflow Area = 5,663 sf, 53.85% Impervious, Inflow Depth > 3.46" for 10-yr event
Inflow = 0.56 cfs @ 12.07 hrs, Volume= 1,632 cf
Primary = 0.56 cfs @ 12.07 hrs, Volume= 1,632 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: POC D



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A: WS-A Runoff Area=26.051 ac 0.00% Impervious Runoff Depth>1.74"
Tc=80.4 min CN=57 Runoff=18.30 cfs 164,201 cf

Subcatchment B: WS-B Runoff Area=15.660 ac 2.04% Impervious Runoff Depth>2.14"
Tc=95.9 min CN=62 Runoff=12.50 cfs 121,716 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.500 ac 98.00% Impervious Runoff Depth>5.70"
Tc=5.0 min CN=97 Runoff=3.19 cfs 10,354 cf

Subcatchment D: WS-D (Deisgn Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>5.77"
Tc=5.0 min CN=98 Runoff=0.38 cfs 1,258 cf

Subcatchment E: WS-E (Deisgn Point 4) Runoff Area=0.130 ac 53.85% Impervious Runoff Depth>4.50"
Tc=5.0 min CN=85 Runoff=0.71 cfs 2,122 cf

Pond AP: Existing Pond A Peak Elev=6.32' Storage=91,788 cf Inflow=18.30 cfs 164,201 cf
Discarded=1.84 cfs 41,621 cf Primary=3.47 cfs 43,803 cf Outflow=5.31 cfs 85,424 cf

Pond BP: Design Point 1 Peak Elev=4.80' Storage=29,376 cf Inflow=12.50 cfs 165,519 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=8.96 cfs 157,617 cf

Link 1L: POC-A Inflow=8.96 cfs 157,617 cf
Primary=8.96 cfs 157,617 cf

Link 2L: POC B Inflow=3.19 cfs 10,354 cf
Primary=3.19 cfs 10,354 cf

Link 3L: POC C Inflow=0.38 cfs 1,258 cf
Primary=0.38 cfs 1,258 cf

Link 4L: POC D Inflow=0.71 cfs 2,122 cf
Primary=0.71 cfs 2,122 cf

Total Runoff Area = 1,846,988 sf Runoff Volume = 299,651 cf Average Runoff Depth = 1.95"
97.78% Pervious = 1,806,041 sf 2.22% Impervious = 40,946 sf

Summary for Subcatchment A: WS-A

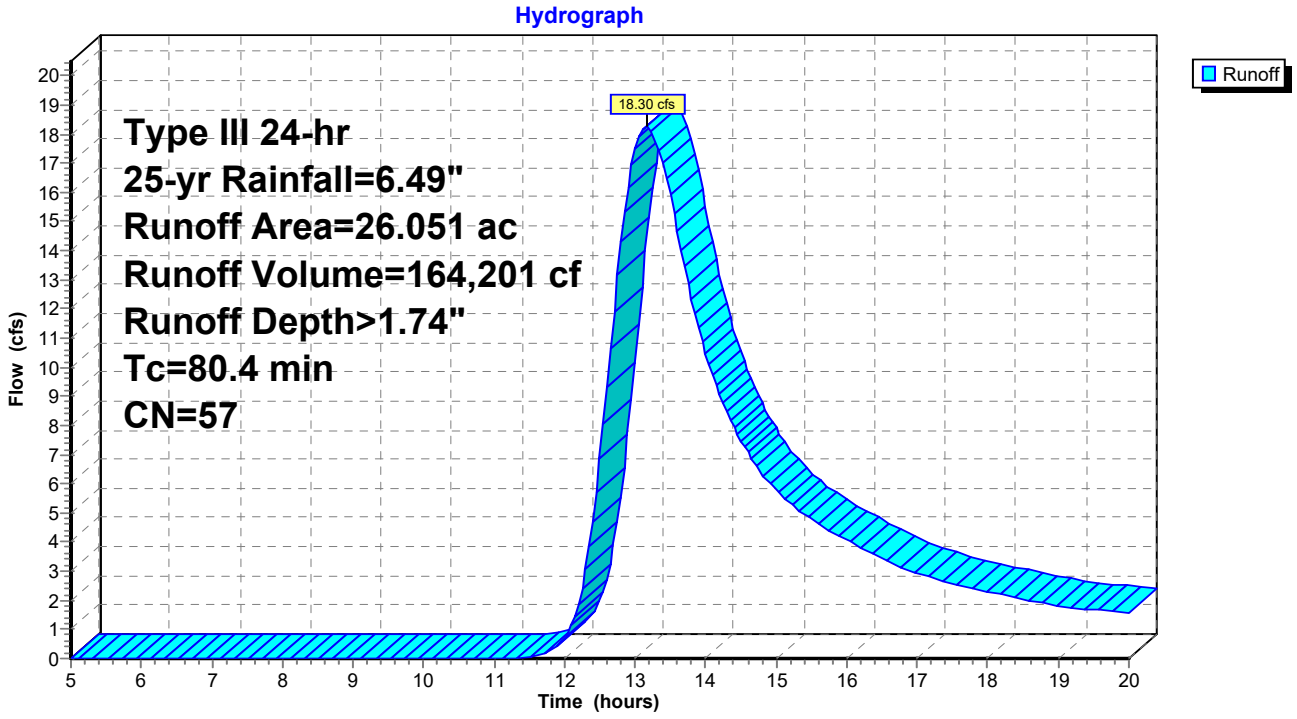
Runoff = 18.30 cfs @ 13.16 hrs, Volume= 164,201 cf, Depth> 1.74"
Routed to Pond AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	21.951	55	Wooded B
*	4.100	69	Grass B
	26.051	57	Weighted Average
	26.051		100.00% Pervious Area

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

Subcatchment A: WS-A



Summary for Subcatchment B: WS-B

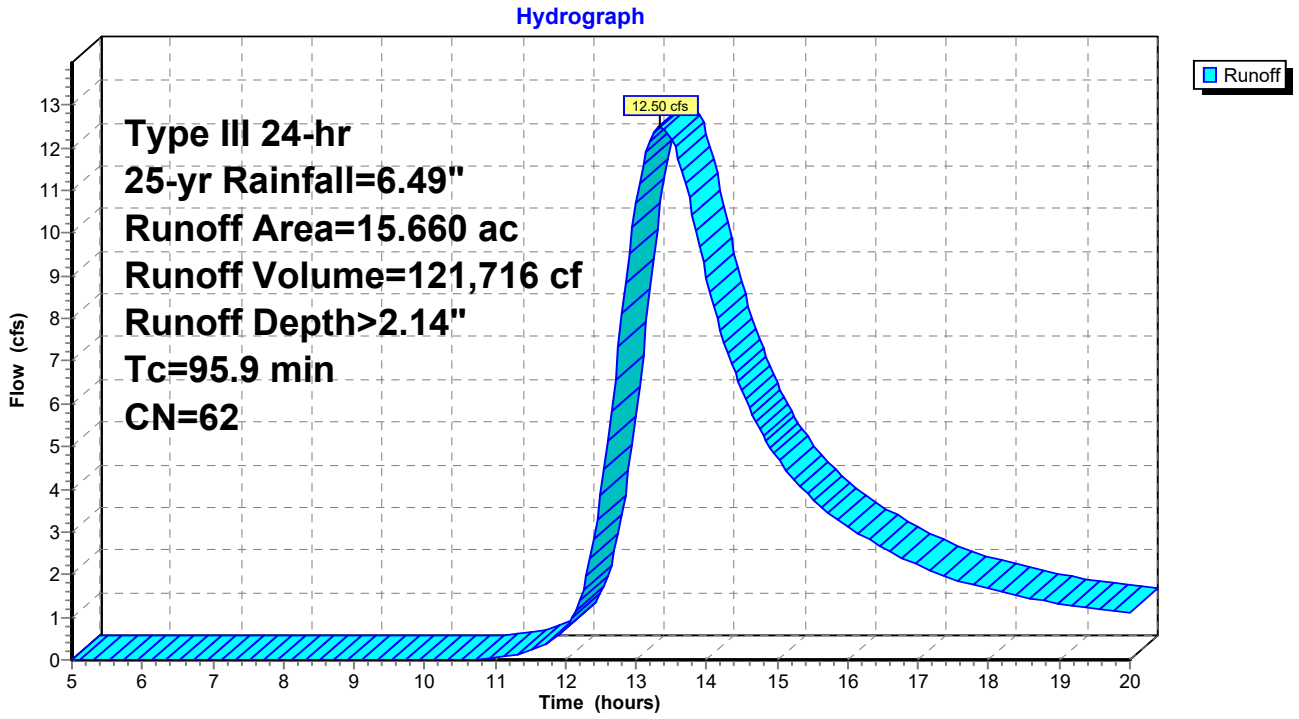
Runoff = 12.50 cfs @ 13.34 hrs, Volume= 121,716 cf, Depth> 2.14"
Routed to Pond BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.320	98	Impervious
*	10.070	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	15.660	62	Weighted Average
	15.340		97.96% Pervious Area
	0.320		2.04% Impervious Area

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

Subcatchment B: WS-B



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

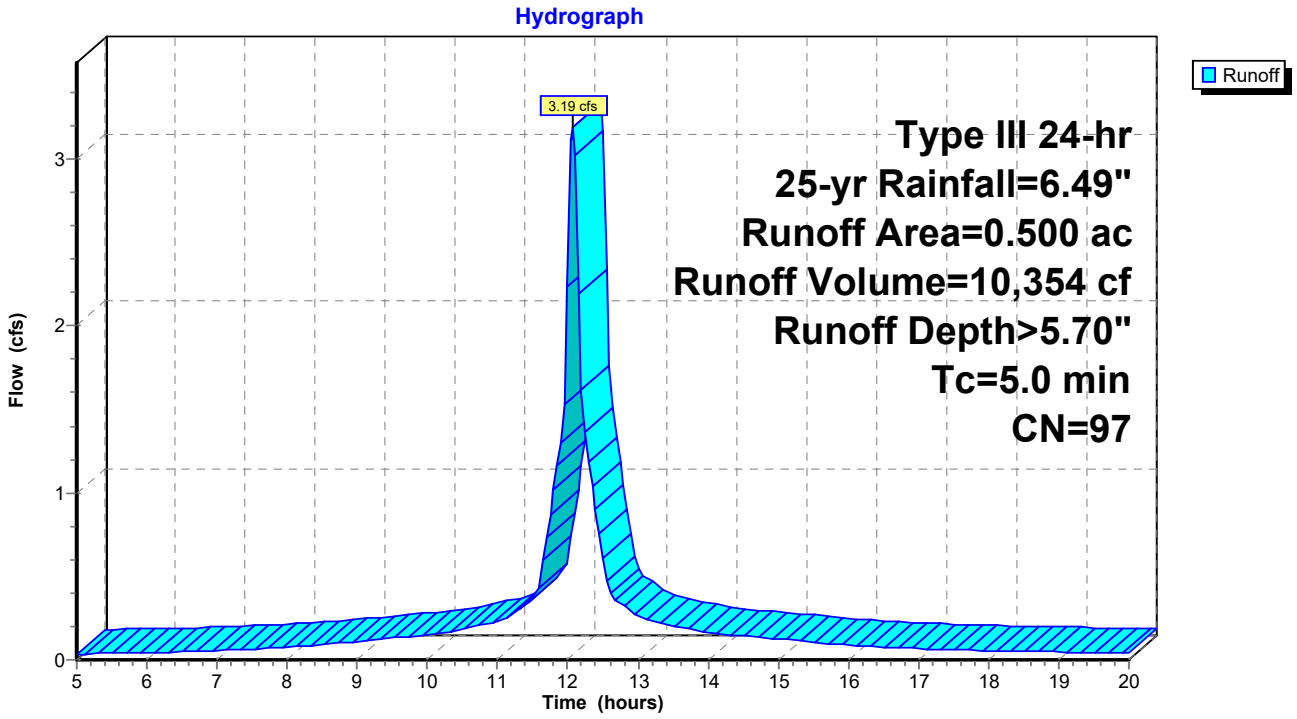
Runoff = 3.19 cfs @ 12.07 hrs, Volume= 10,354 cf, Depth> 5.70"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.490	98	Impervious
*	0.010	69	Grass B
	0.500	97	Weighted Average
	0.010		2.00% Pervious Area
	0.490		98.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Deisgn Point 3)

[49] Hint: Tc<2dt may require smaller dt

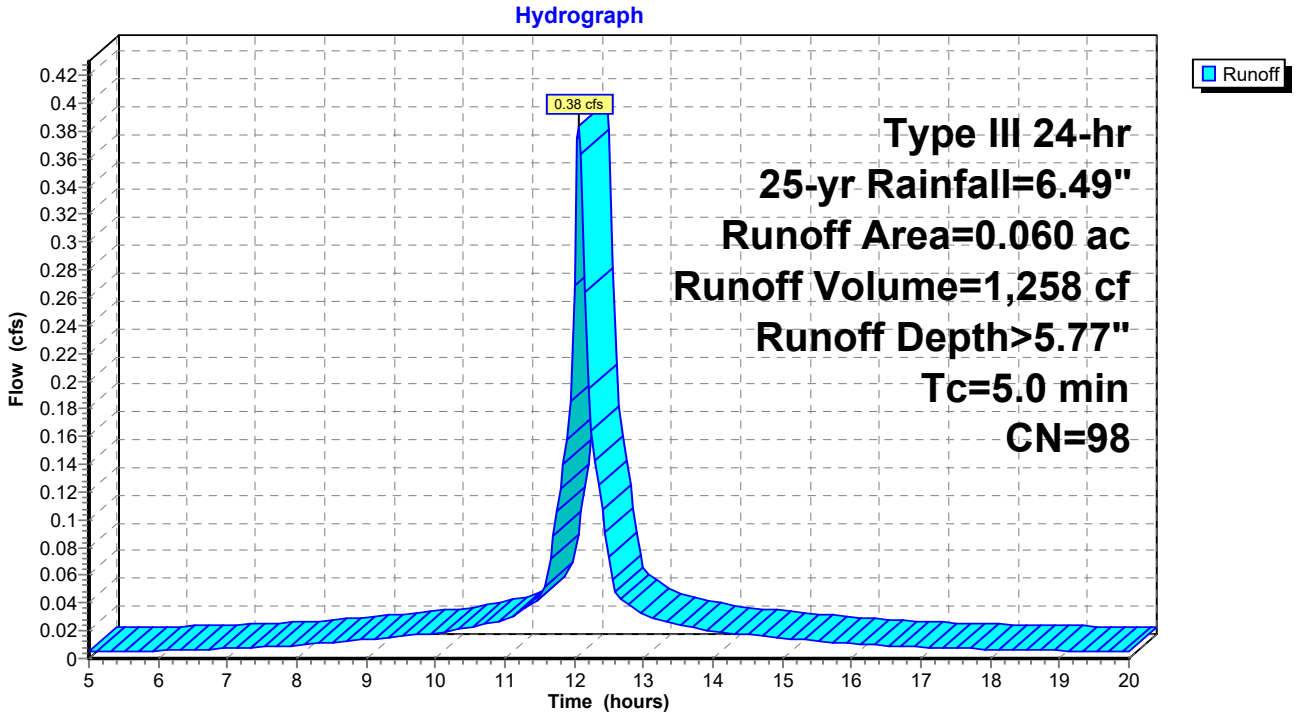
Runoff = 0.38 cfs @ 12.07 hrs, Volume= 1,258 cf, Depth> 5.77"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Deisgn Point 3)



Summary for Subcatchment E: WS-E (Deisgn Point 4)

[49] Hint: Tc<2dt may require smaller dt

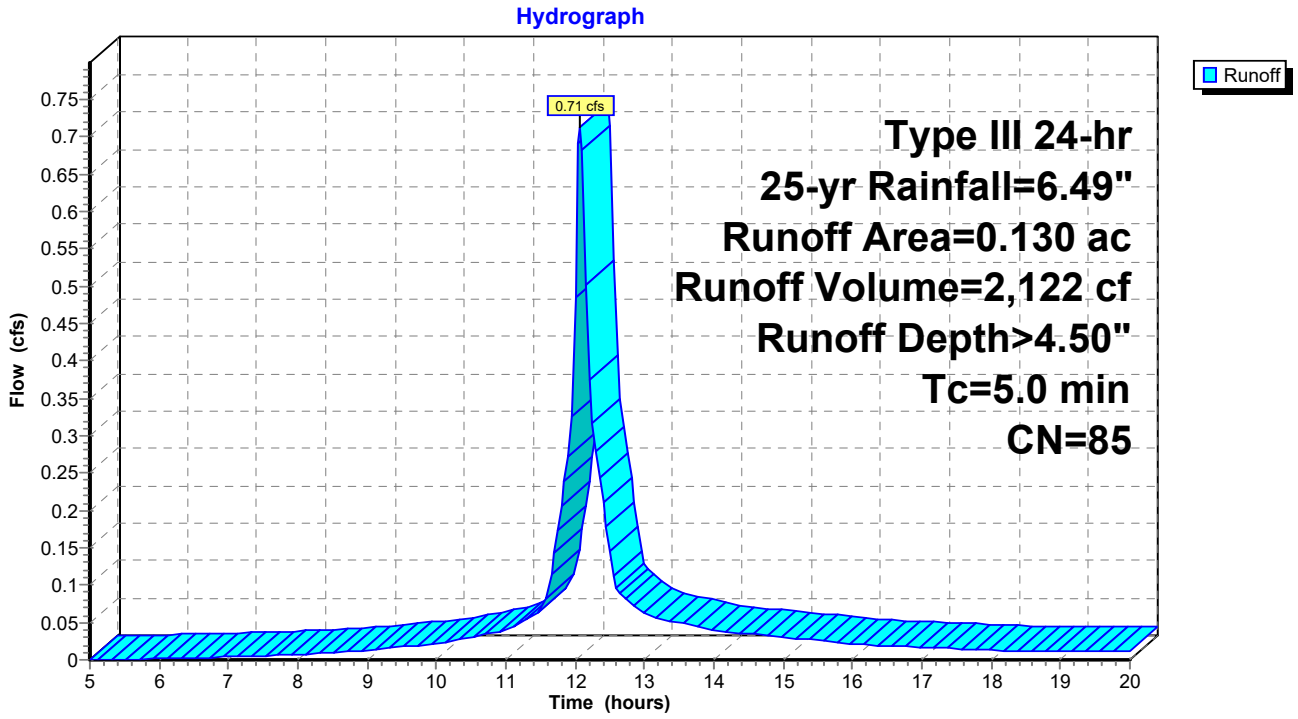
Runoff = 0.71 cfs @ 12.07 hrs, Volume= 2,122 cf, Depth> 4.50"
Routed to Link 4L : POC D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.070	98	Impervious
*	0.060	69	Grass B
	0.130	85	Weighted Average
	0.060		46.15% Pervious Area
	0.070		53.85% Impervious Area

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

Subcatchment E: WS-E (Deisgn Point 4)



Summary for Pond AP: Existing Pond A

Inflow Area = 1,134,782 sf, 0.00% Impervious, Inflow Depth > 1.74" for 25-yr event
Inflow = 18.30 cfs @ 13.16 hrs, Volume= 164,201 cf
Outflow = 5.31 cfs @ 15.20 hrs, Volume= 85,424 cf, Atten= 71%, Lag= 122.8 min
Discarded = 1.84 cfs @ 15.20 hrs, Volume= 41,621 cf
Primary = 3.47 cfs @ 15.20 hrs, Volume= 43,803 cf
Routed to Pond BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 6.32' @ 15.20 hrs Surf.Area= 159,016 sf Storage= 91,788 cf

Plug-Flow detention time= 193.5 min calculated for 85,424 cf (52% of inflow)
Center-of-Mass det. time= 109.2 min (986.0 - 876.8)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	283,474 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

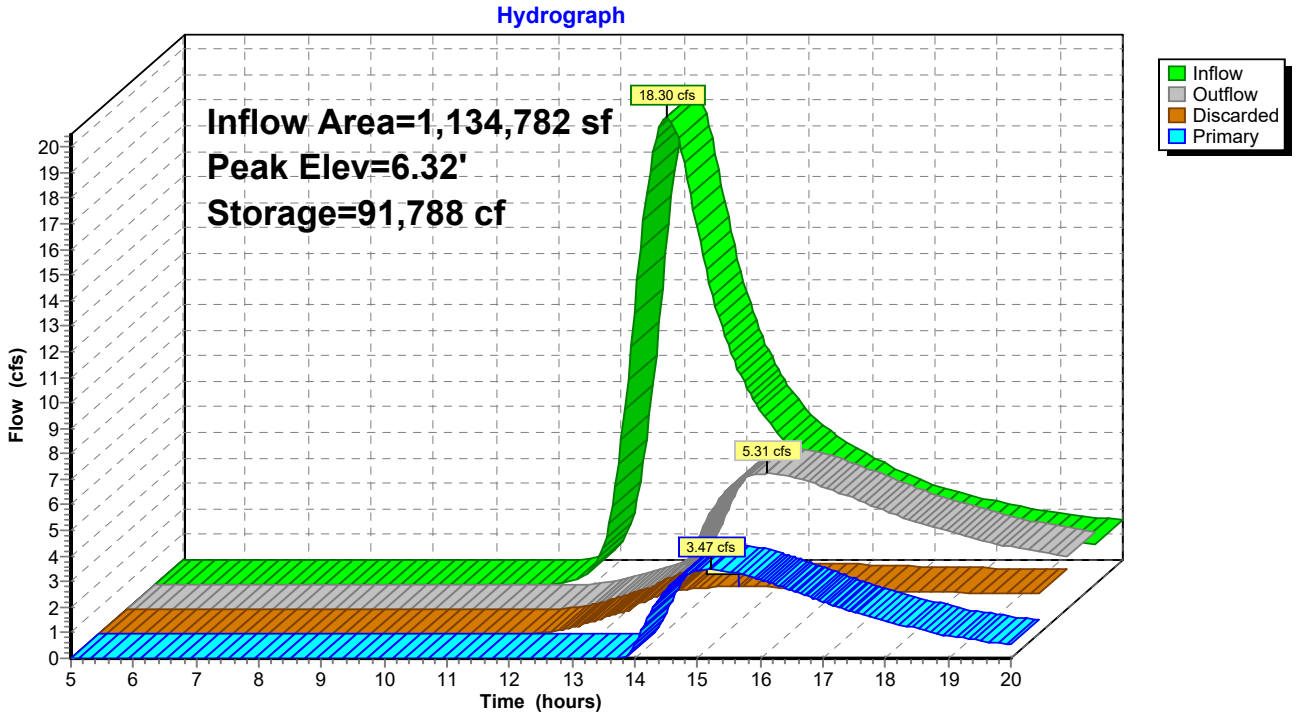
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	22,712	7,571	7,571	22,714
6.00	76,594	47,005	54,576	76,601
7.00	428,860	228,898	283,474	428,871

Device	Routing	Invert	Outlet Devices
#1	Primary	6.20'	**30.0' long x 233.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=1.84 cfs @ 15.20 hrs HW=6.32' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.84 cfs)

Primary OutFlow Max=3.45 cfs @ 15.20 hrs HW=6.32' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 3.45 cfs @ 0.94 fps)

Pond AP: Existing Pond A



Summary for Pond BP: Design Point 1

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 1.09" for 25-yr event
Inflow = 12.50 cfs @ 13.34 hrs, Volume= 165,519 cf
Outflow = 8.96 cfs @ 14.52 hrs, Volume= 157,617 cf, Atten= 28%, Lag= 70.9 min
Primary = 8.96 cfs @ 14.52 hrs, Volume= 157,617 cf
Routed to Link 1L : POC-A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 4.80' @ 14.52 hrs Surf.Area= 39,165 sf Storage= 29,376 cf

Plug-Flow detention time= 53.6 min calculated for 157,617 cf (95% of inflow)
Center-of-Mass det. time= 40.6 min (947.0 - 906.4)

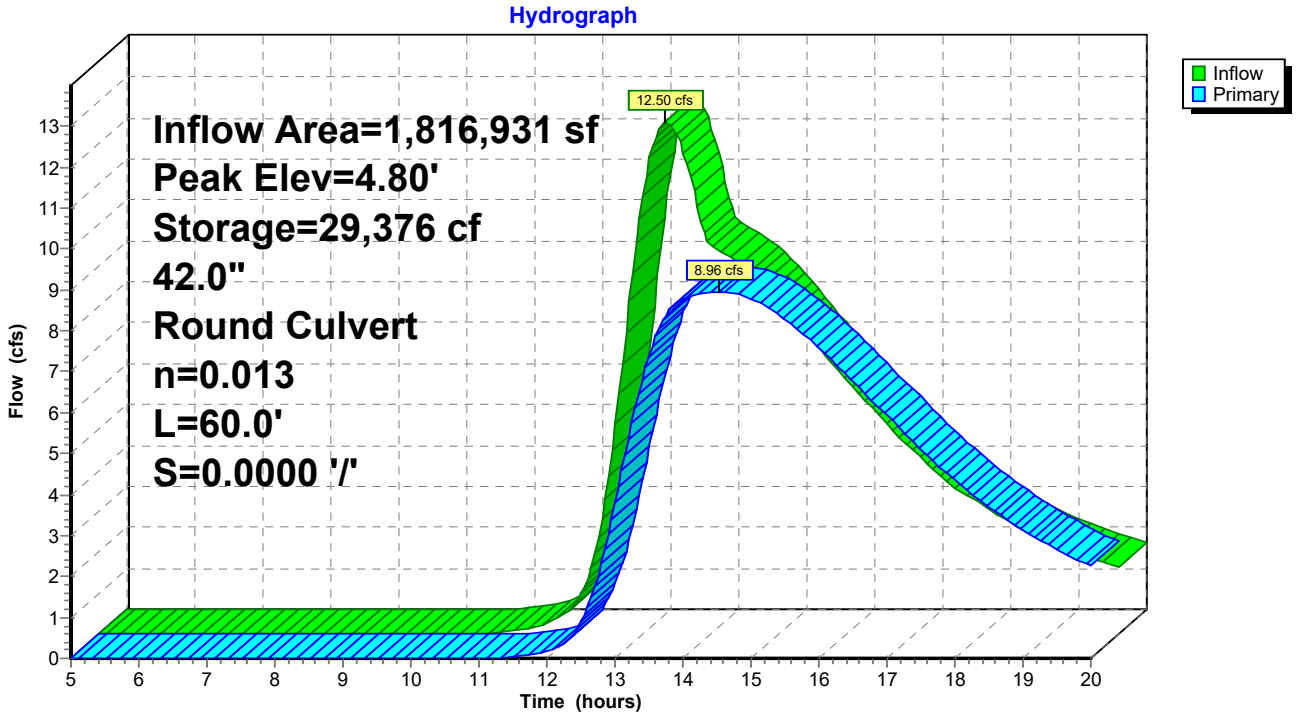
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,384	37,726	37,726
6.00	120,171	82,278	120,004

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=8.96 cfs @ 14.52 hrs HW=4.80' (Free Discharge)
↑**1=Culvert** (Barrel Controls 8.96 cfs @ 3.35 fps)

Pond BP: Design Point 1

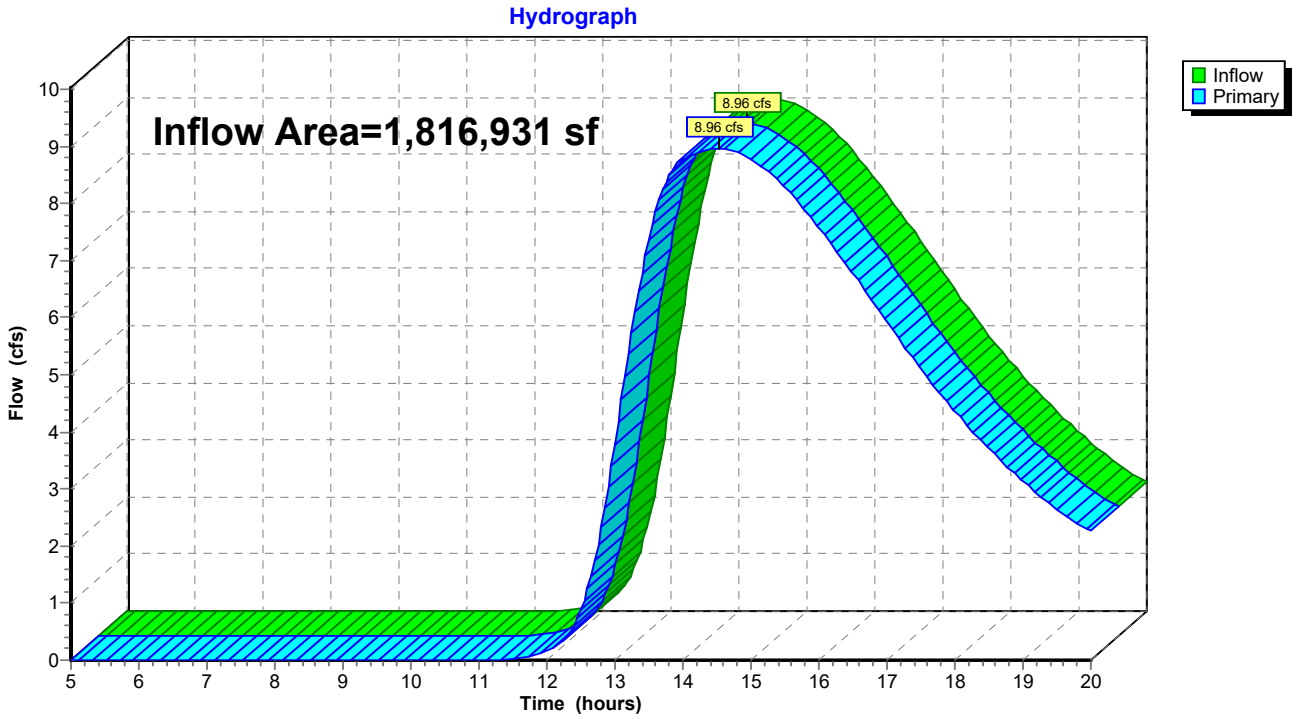


Summary for Link 1L: POC-A

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 1.04" for 25-yr event
Inflow = 8.96 cfs @ 14.52 hrs, Volume= 157,617 cf
Primary = 8.96 cfs @ 14.52 hrs, Volume= 157,617 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC-A

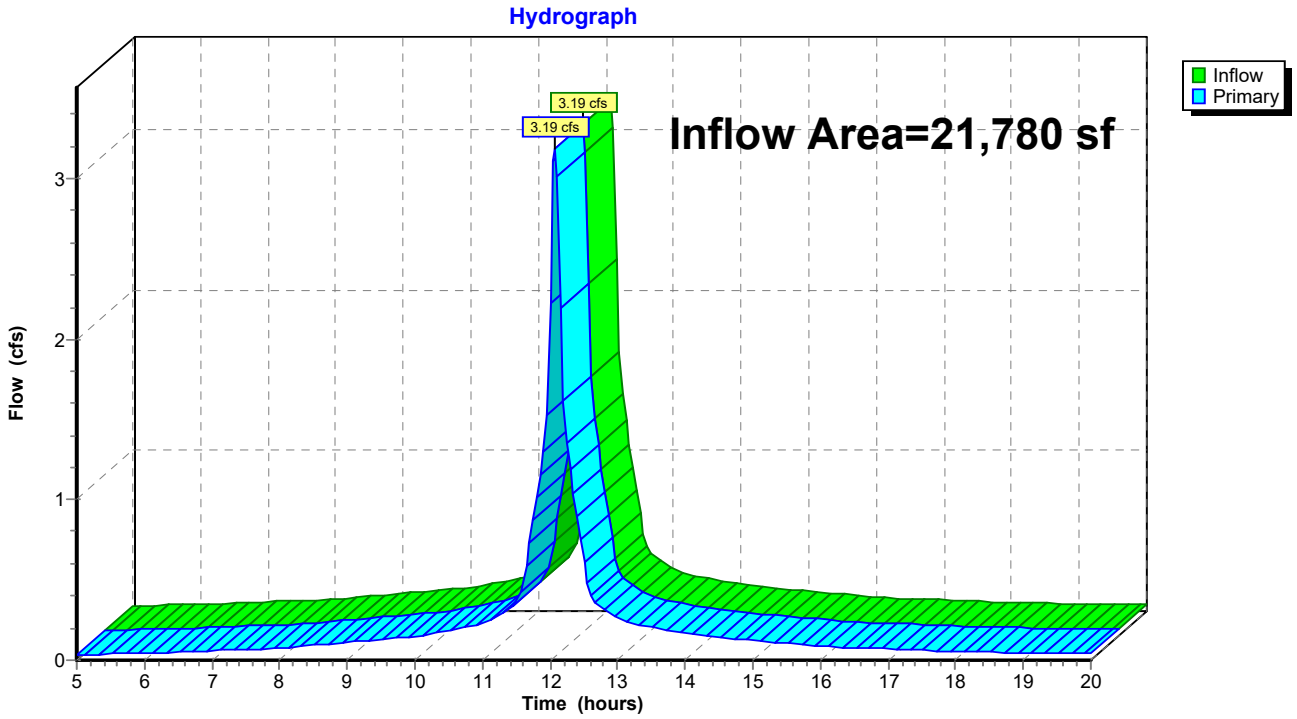


Summary for Link 2L: POC B

Inflow Area = 21,780 sf, 98.00% Impervious, Inflow Depth > 5.70" for 25-yr event
Inflow = 3.19 cfs @ 12.07 hrs, Volume= 10,354 cf
Primary = 3.19 cfs @ 12.07 hrs, Volume= 10,354 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

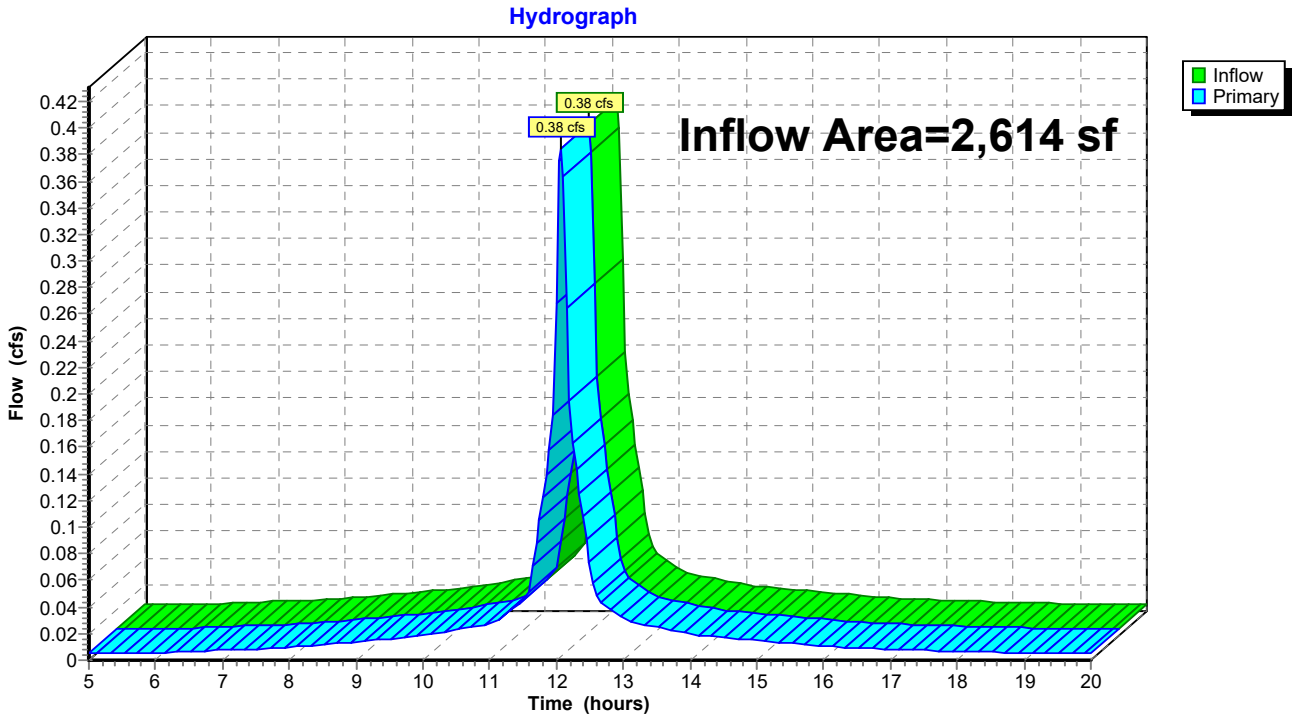


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 5.77" for 25-yr event
Inflow = 0.38 cfs @ 12.07 hrs, Volume= 1,258 cf
Primary = 0.38 cfs @ 12.07 hrs, Volume= 1,258 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C

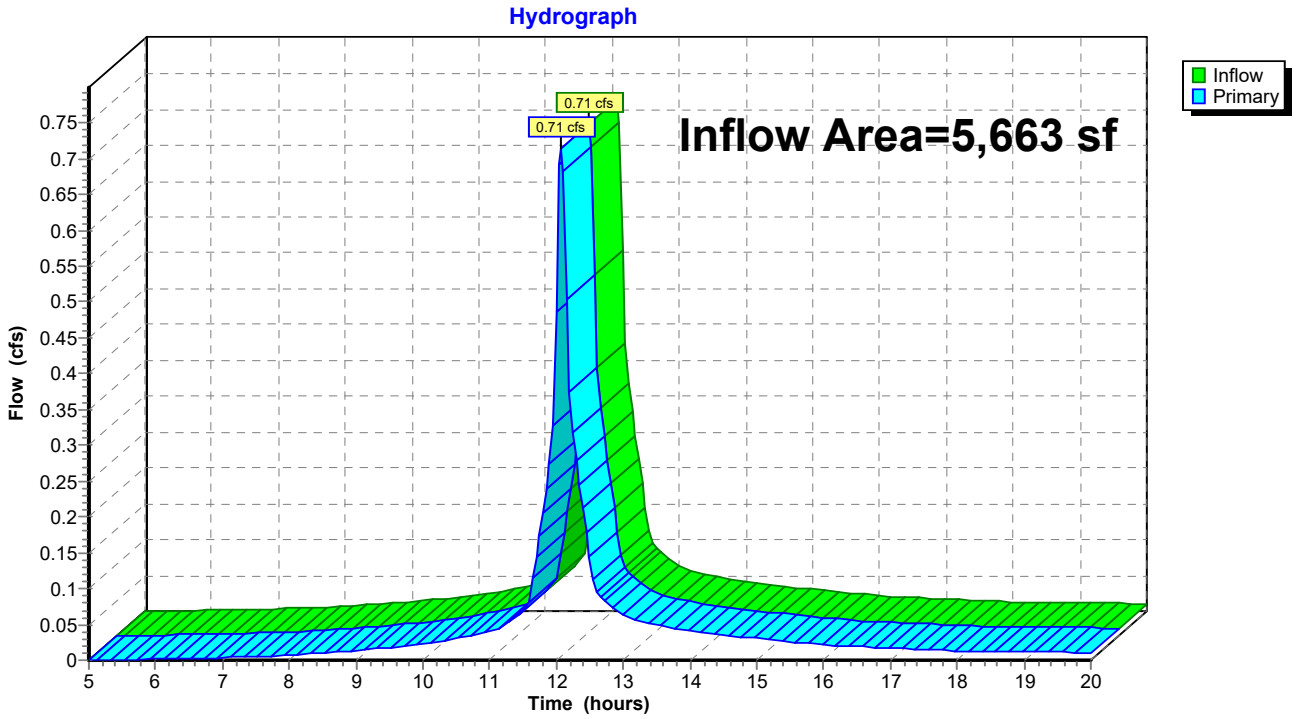


Summary for Link 4L: POC D

Inflow Area = 5,663 sf, 53.85% Impervious, Inflow Depth > 4.50" for 25-yr event
Inflow = 0.71 cfs @ 12.07 hrs, Volume= 2,122 cf
Primary = 0.71 cfs @ 12.07 hrs, Volume= 2,122 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: POC D



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A: WS-A Runoff Area=26.051 ac 0.00% Impervious Runoff Depth>2.25"
Tc=80.4 min CN=57 Runoff=24.13 cfs 212,342 cf

Subcatchment B: WS-B Runoff Area=15.660 ac 2.04% Impervious Runoff Depth>2.71"
Tc=95.9 min CN=62 Runoff=15.95 cfs 153,790 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.500 ac 98.00% Impervious Runoff Depth>6.48"
Tc=5.0 min CN=97 Runoff=3.61 cfs 11,762 cf

Subcatchment D: WS-D (Deisgn Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>6.55"
Tc=5.0 min CN=98 Runoff=0.44 cfs 1,426 cf

Subcatchment E: WS-E (Deisgn Point 4) Runoff Area=0.130 ac 53.85% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=85 Runoff=0.83 cfs 2,487 cf

Pond AP: Existing Pond A Peak Elev=6.40' Storage=104,397 cf Inflow=24.13 cfs 212,342 cf
Discarded=2.11 cfs 46,498 cf Primary=7.02 cfs 85,089 cf Outflow=9.13 cfs 131,587 cf

Pond BP: Design Point 1 Peak Elev=5.17' Storage=46,638 cf Inflow=17.29 cfs 238,878 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=13.93 cfs 228,566 cf

Link 1L: POC-A Inflow=13.93 cfs 228,566 cf
Primary=13.93 cfs 228,566 cf

Link 2L: POC B Inflow=3.61 cfs 11,762 cf
Primary=3.61 cfs 11,762 cf

Link 3L: POC C Inflow=0.44 cfs 1,426 cf
Primary=0.44 cfs 1,426 cf

Link 4L: POC D Inflow=0.83 cfs 2,487 cf
Primary=0.83 cfs 2,487 cf

Total Runoff Area = 1,846,988 sf Runoff Volume = 381,806 cf Average Runoff Depth = 2.48"
97.78% Pervious = 1,806,041 sf 2.22% Impervious = 40,946 sf

Summary for Subcatchment A: WS-A

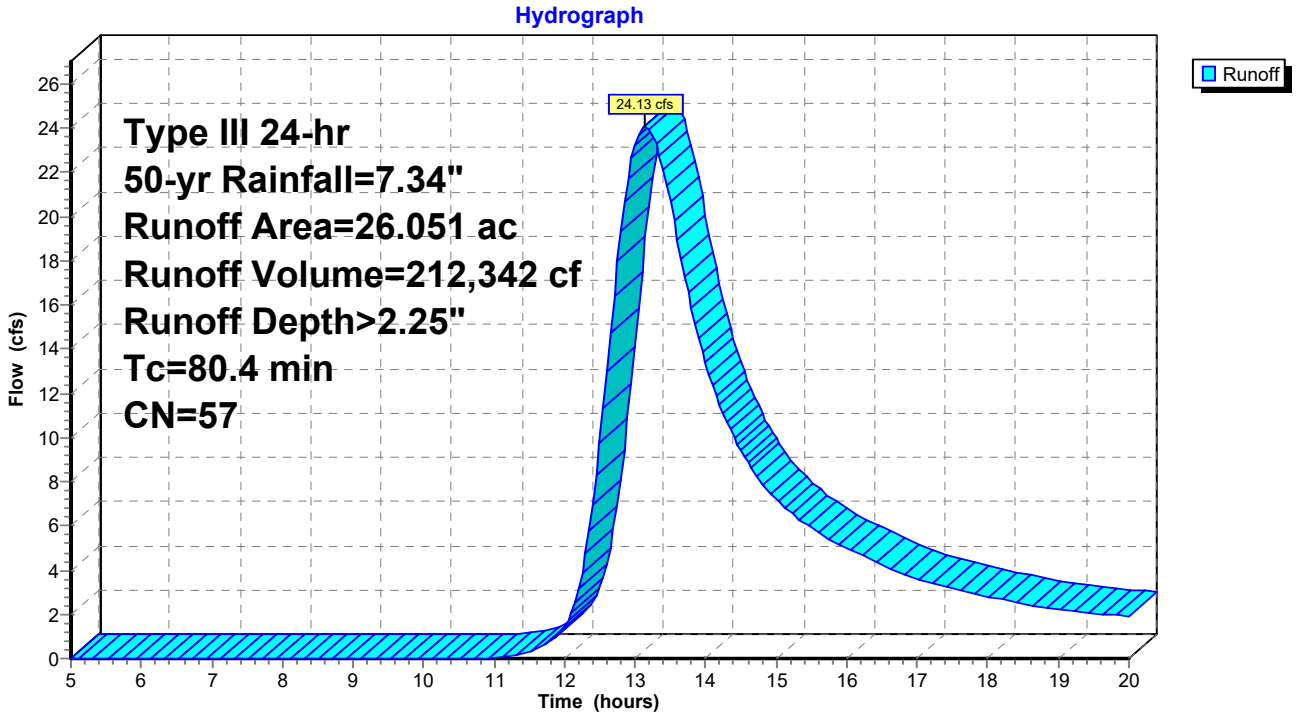
Runoff = 24.13 cfs @ 13.14 hrs, Volume= 212,342 cf, Depth> 2.25"
Routed to Pond AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	21.951	55	Wooded B
*	4.100	69	Grass B
	26.051	57	Weighted Average
	26.051		100.00% Pervious Area

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

Subcatchment A: WS-A



Summary for Subcatchment B: WS-B

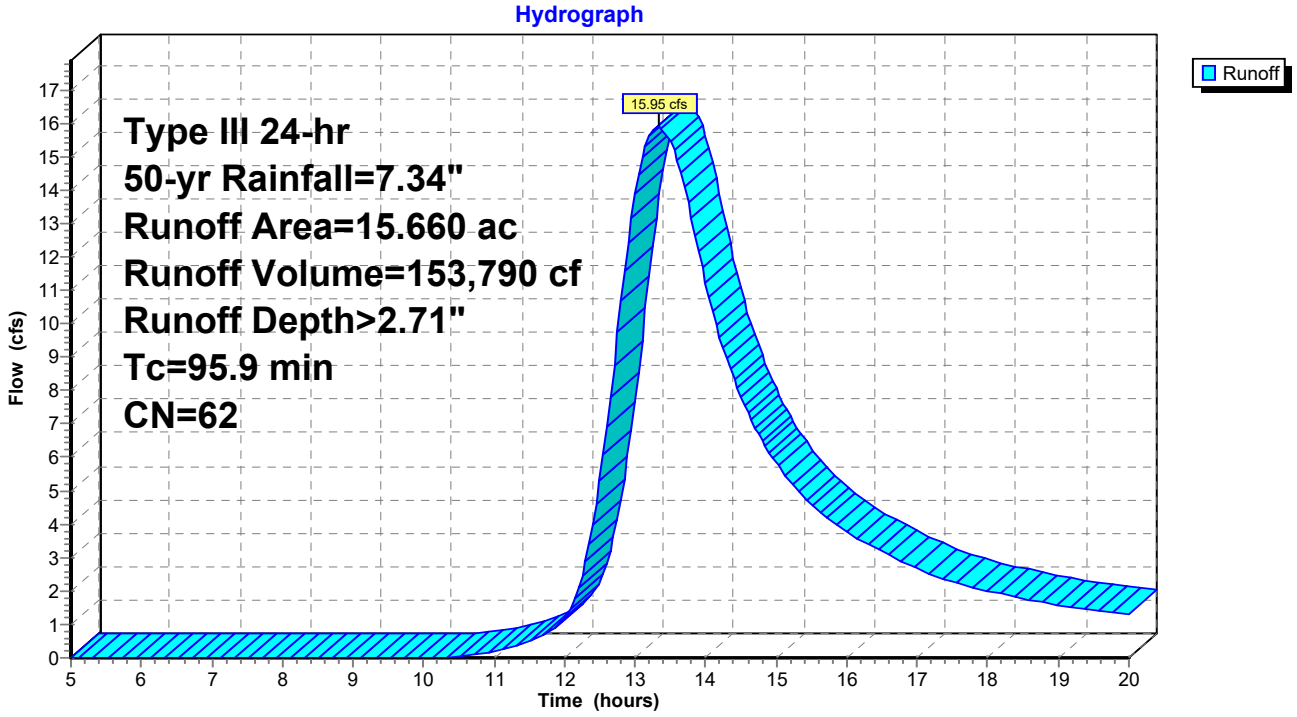
Runoff = 15.95 cfs @ 13.32 hrs, Volume= 153,790 cf, Depth> 2.71"
Routed to Pond BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.320	98	Impervious
*	10.070	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	15.660	62	Weighted Average
	15.340		97.96% Pervious Area
	0.320		2.04% Impervious Area

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

Subcatchment B: WS-B



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

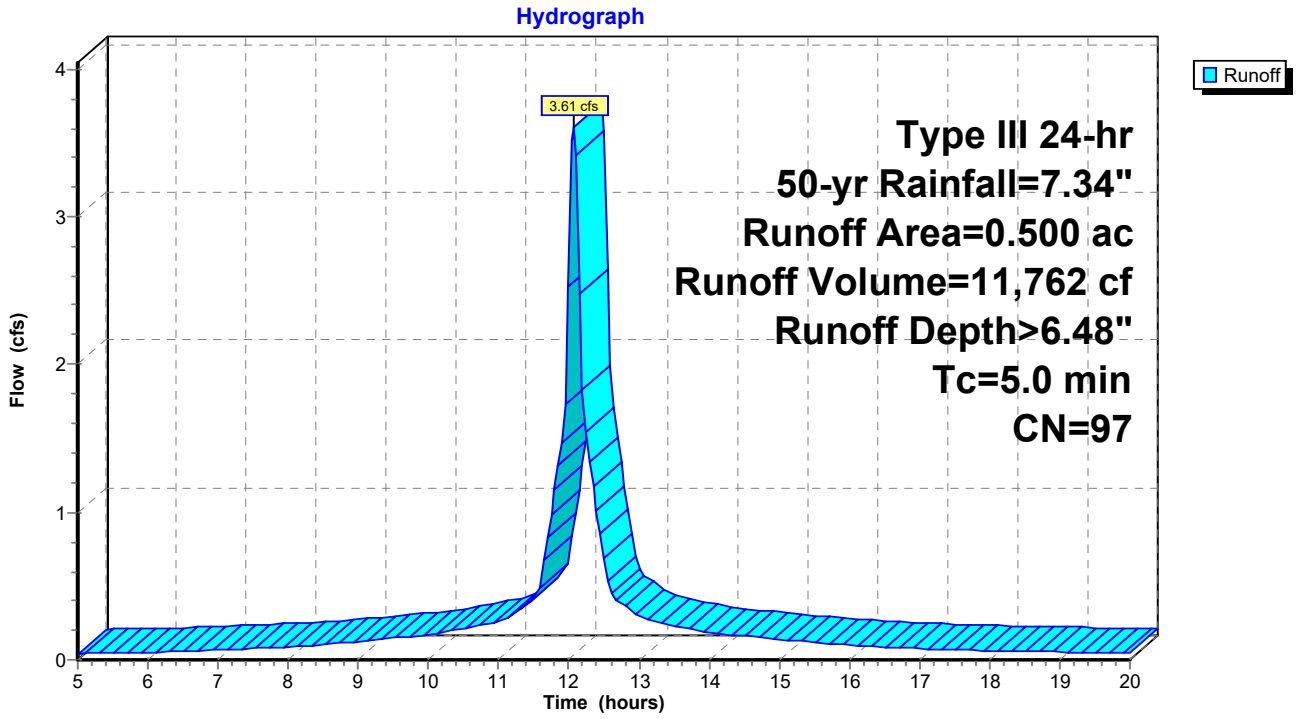
Runoff = 3.61 cfs @ 12.07 hrs, Volume= 11,762 cf, Depth> 6.48"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.490	98	Impervious
*	0.010	69	Grass B
	0.500	97	Weighted Average
	0.010		2.00% Pervious Area
	0.490		98.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Deisgn Point 3)

[49] Hint: Tc<2dt may require smaller dt

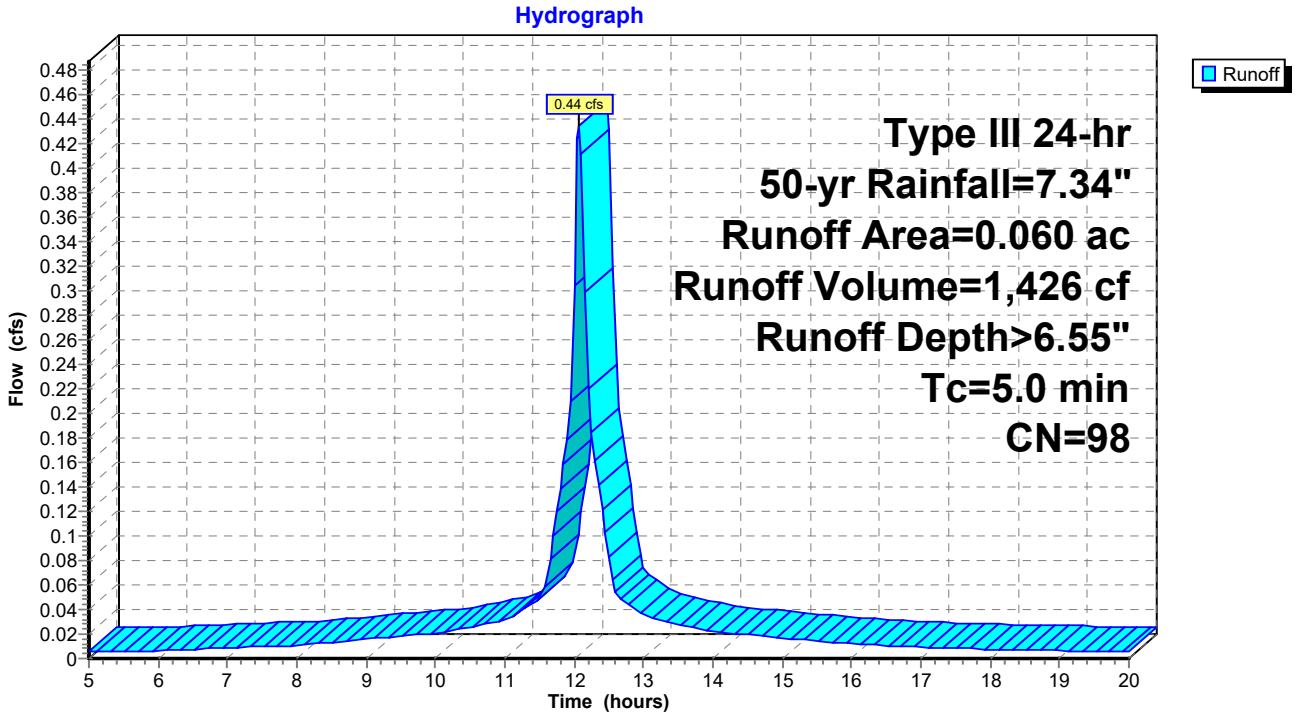
Runoff = 0.44 cfs @ 12.07 hrs, Volume= 1,426 cf, Depth> 6.55"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Deisgn Point 3)



Summary for Subcatchment E: WS-E (Deisgn Point 4)

[49] Hint: Tc<2dt may require smaller dt

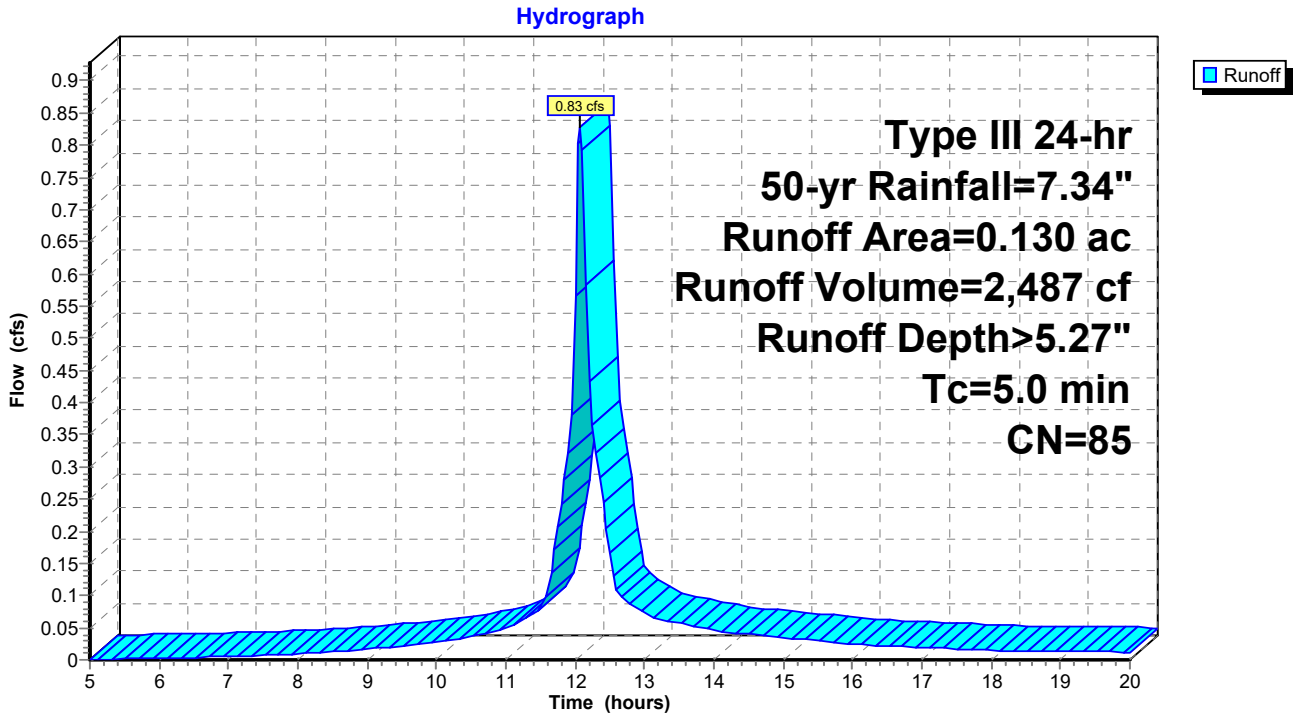
Runoff = 0.83 cfs @ 12.07 hrs, Volume= 2,487 cf, Depth> 5.27"
Routed to Link 4L : POC D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.070	98	Impervious
*	0.060	69	Grass B
	0.130	85	Weighted Average
	0.060		46.15% Pervious Area
	0.070		53.85% Impervious Area

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

Subcatchment E: WS-E (Deisgn Point 4)



Summary for Pond AP: Existing Pond A

Inflow Area = 1,134,782 sf, 0.00% Impervious, Inflow Depth > 2.25" for 50-yr event
Inflow = 24.13 cfs @ 13.14 hrs, Volume= 212,342 cf
Outflow = 9.13 cfs @ 14.55 hrs, Volume= 131,587 cf, Atten= 62%, Lag= 84.5 min
Discarded = 2.11 cfs @ 14.55 hrs, Volume= 46,498 cf
Primary = 7.02 cfs @ 14.55 hrs, Volume= 85,089 cf
Routed to Pond BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 6.40' @ 14.55 hrs Surf.Area= 182,108 sf Storage= 104,397 cf

Plug-Flow detention time= 163.9 min calculated for 131,587 cf (62% of inflow)
Center-of-Mass det. time= 91.1 min (962.7 - 871.6)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	283,474 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

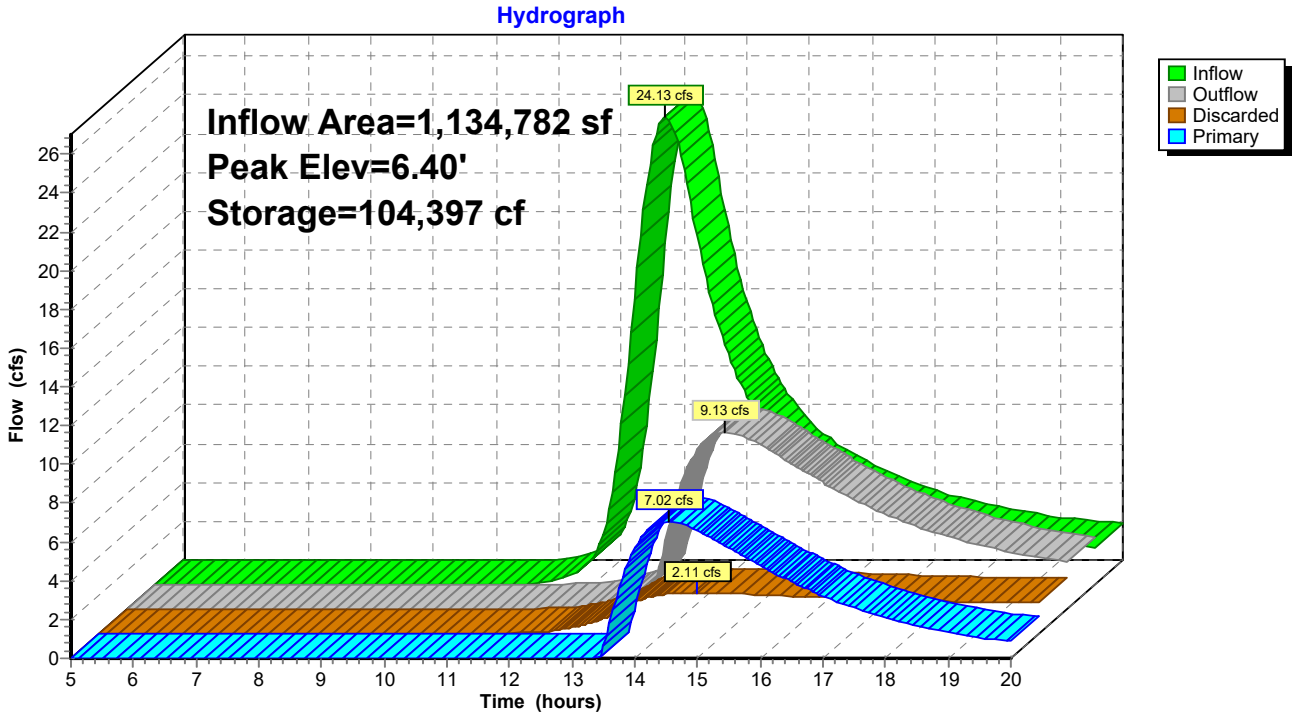
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	22,712	7,571	7,571	22,714
6.00	76,594	47,005	54,576	76,601
7.00	428,860	228,898	283,474	428,871

Device	Routing	Invert	Outlet Devices
#1	Primary	6.20'	**30.0' long x 233.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=2.11 cfs @ 14.55 hrs HW=6.40' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 2.11 cfs)

Primary OutFlow Max=7.01 cfs @ 14.55 hrs HW=6.40' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 7.01 cfs @ 1.19 fps)

Pond AP: Existing Pond A



Summary for Pond BP: Design Point 1

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 1.58" for 50-yr event
Inflow = 17.29 cfs @ 13.77 hrs, Volume= 238,878 cf
Outflow = 13.93 cfs @ 14.68 hrs, Volume= 228,566 cf, Atten= 19%, Lag= 54.7 min
Primary = 13.93 cfs @ 14.68 hrs, Volume= 228,566 cf
Routed to Link 1L : POC-A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 5.17' @ 14.68 hrs Surf.Area= 57,626 sf Storage= 46,638 cf

Plug-Flow detention time= 53.7 min calculated for 228,566 cf (96% of inflow)
Center-of-Mass det. time= 41.9 min (944.6 - 902.7)

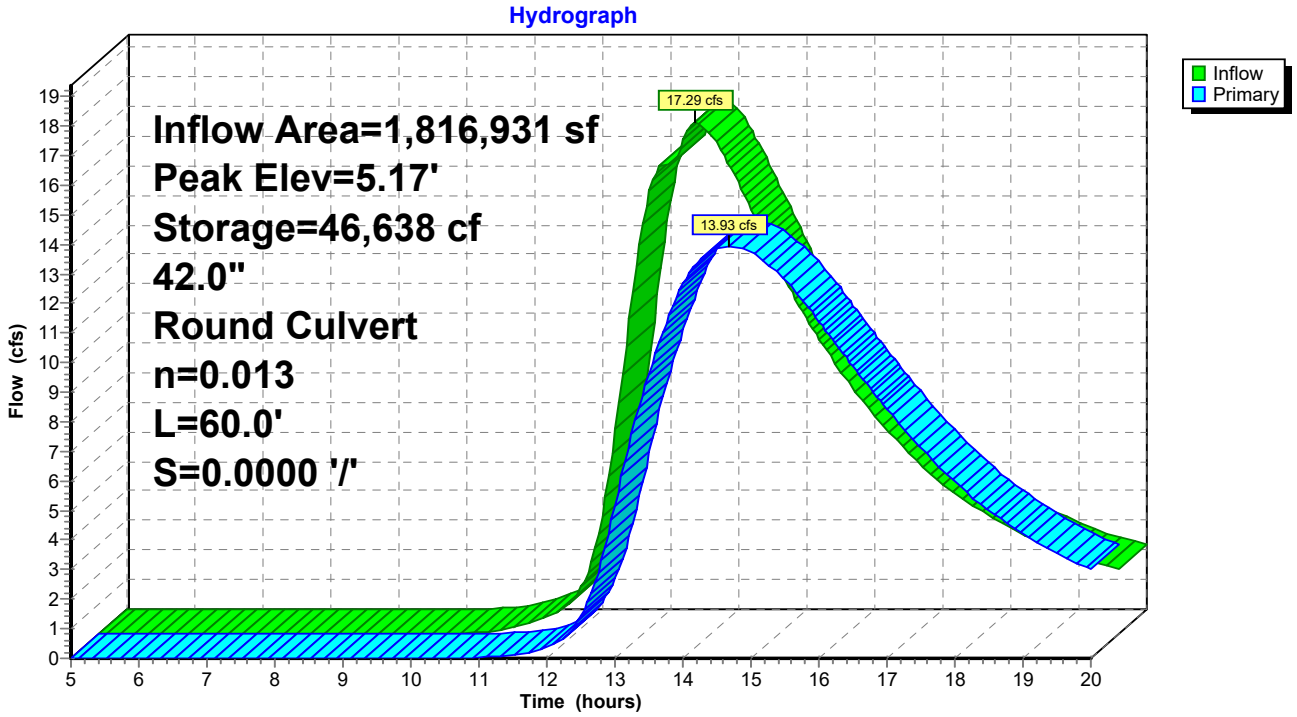
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,384	37,726	37,726
6.00	120,171	82,278	120,004

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=13.92 cfs @ 14.68 hrs HW=5.17' (Free Discharge)
1=Culvert (Barrel Controls 13.92 cfs @ 3.85 fps)

Pond BP: Design Point 1

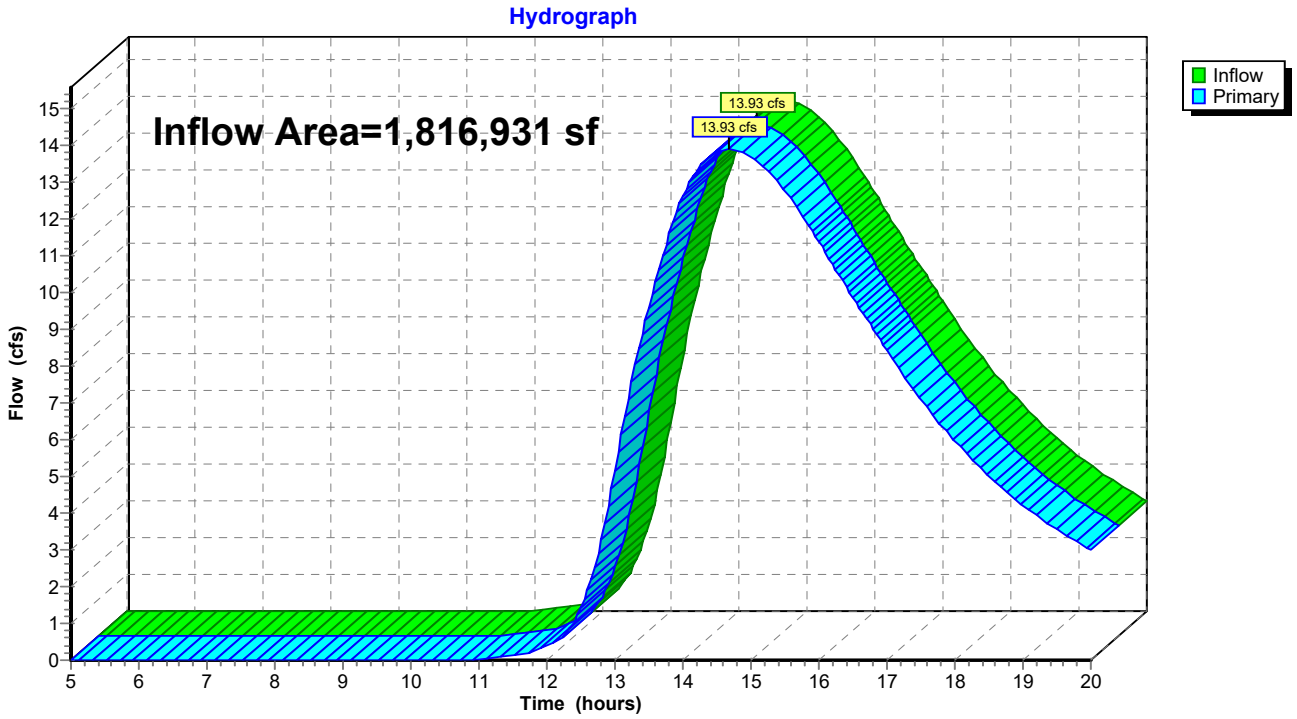


Summary for Link 1L: POC-A

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 1.51" for 50-yr event
Inflow = 13.93 cfs @ 14.68 hrs, Volume= 228,566 cf
Primary = 13.93 cfs @ 14.68 hrs, Volume= 228,566 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC-A

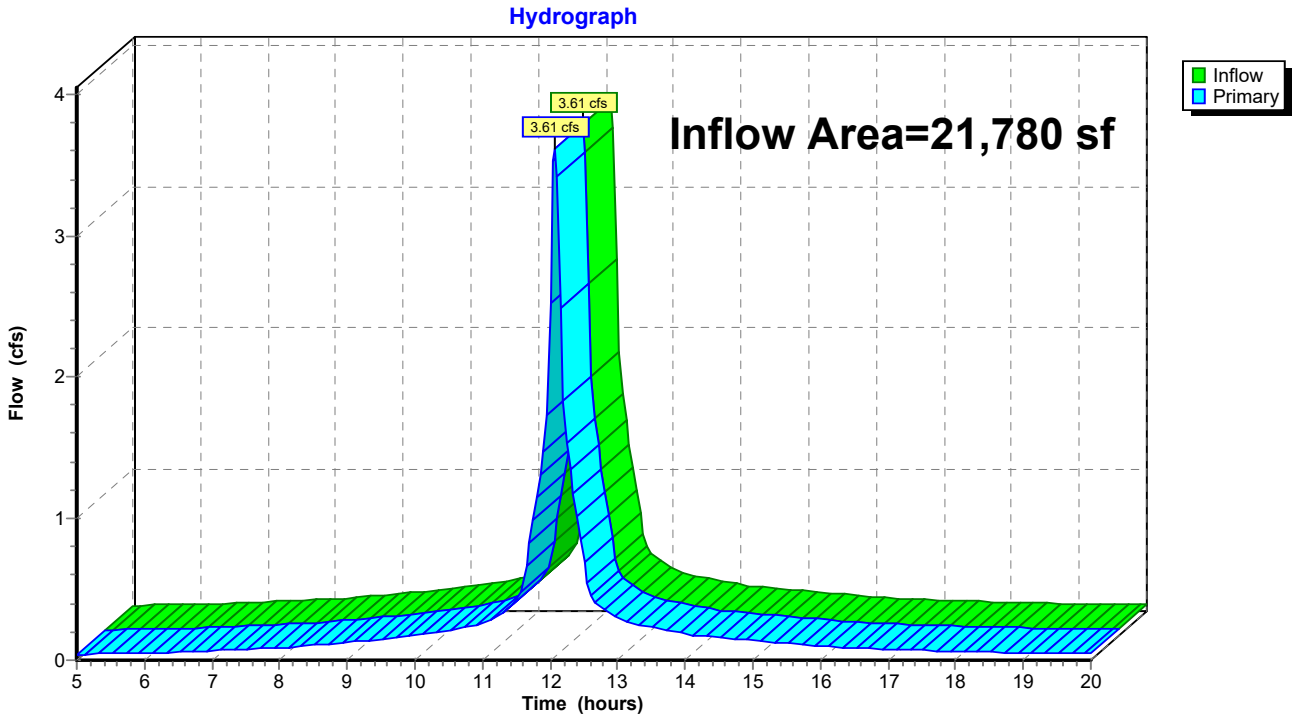


Summary for Link 2L: POC B

Inflow Area = 21,780 sf, 98.00% Impervious, Inflow Depth > 6.48" for 50-yr event
Inflow = 3.61 cfs @ 12.07 hrs, Volume= 11,762 cf
Primary = 3.61 cfs @ 12.07 hrs, Volume= 11,762 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

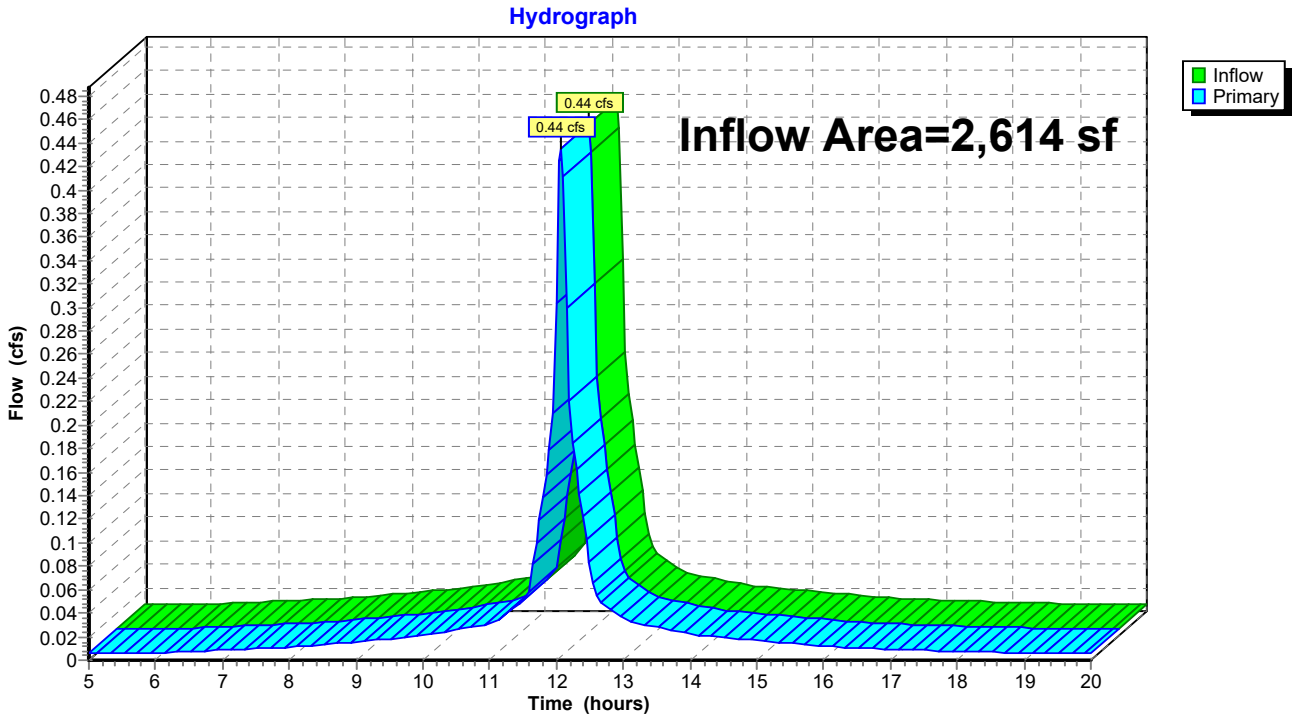


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 6.55" for 50-yr event
Inflow = 0.44 cfs @ 12.07 hrs, Volume= 1,426 cf
Primary = 0.44 cfs @ 12.07 hrs, Volume= 1,426 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C

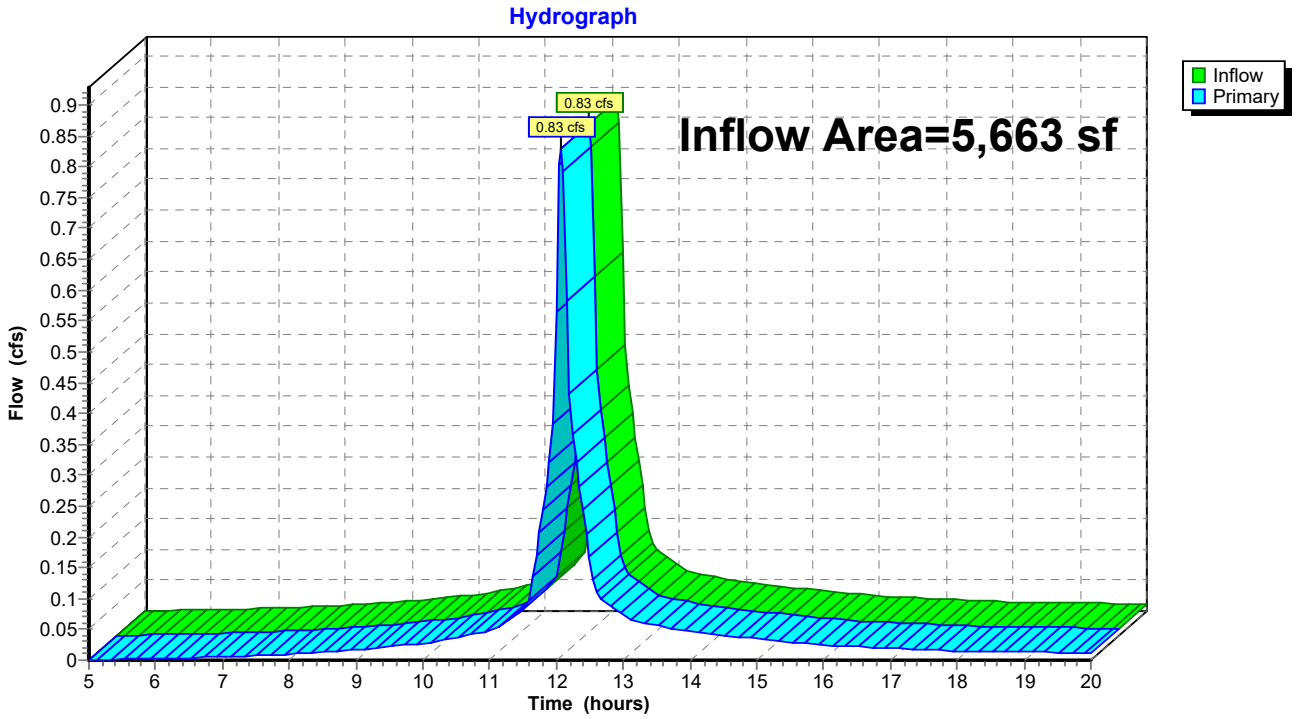


Summary for Link 4L: POC D

Inflow Area = 5,663 sf, 53.85% Impervious, Inflow Depth > 5.27" for 50-yr event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 2,487 cf
Primary = 0.83 cfs @ 12.07 hrs, Volume= 2,487 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: POC D



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A: WS-A Runoff Area=26.051 ac 0.00% Impervious Runoff Depth>2.83"
Tc=80.4 min CN=57 Runoff=30.83 cfs 268,022 cf

Subcatchment B: WS-B Runoff Area=15.660 ac 2.04% Impervious Runoff Depth>3.35"
Tc=95.9 min CN=62 Runoff=19.86 cfs 190,370 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.500 ac 98.00% Impervious Runoff Depth>7.32"
Tc=5.0 min CN=97 Runoff=4.07 cfs 13,283 cf

Subcatchment D: WS-D (Deisgn Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>7.38"
Tc=5.0 min CN=98 Runoff=0.49 cfs 1,607 cf

Subcatchment E: WS-E (Deisgn Point 4) Runoff Area=0.130 ac 53.85% Impervious Runoff Depth>6.11"
Tc=5.0 min CN=85 Runoff=0.95 cfs 2,883 cf

Pond AP: Existing Pond A Peak Elev=6.47' Storage=119,347 cf Inflow=30.83 cfs 268,022 cf
Discarded=2.40 cfs 51,240 cf Primary=11.54 cfs 134,113 cf Outflow=13.94 cfs 185,353 cf

Pond BP: Design Point 1 Peak Elev=5.51' Storage=70,300 cf Inflow=26.46 cfs 324,484 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=19.08 cfs 311,429 cf

Link 1L: POC-A Inflow=19.08 cfs 311,429 cf
Primary=19.08 cfs 311,429 cf

Link 2L: POC B Inflow=4.07 cfs 13,283 cf
Primary=4.07 cfs 13,283 cf

Link 3L: POC C Inflow=0.49 cfs 1,607 cf
Primary=0.49 cfs 1,607 cf

Link 4L: POC D Inflow=0.95 cfs 2,883 cf
Primary=0.95 cfs 2,883 cf

Total Runoff Area = 1,846,988 sf Runoff Volume = 476,166 cf Average Runoff Depth = 3.09"
97.78% Pervious = 1,806,041 sf 2.22% Impervious = 40,946 sf

Summary for Subcatchment A: WS-A

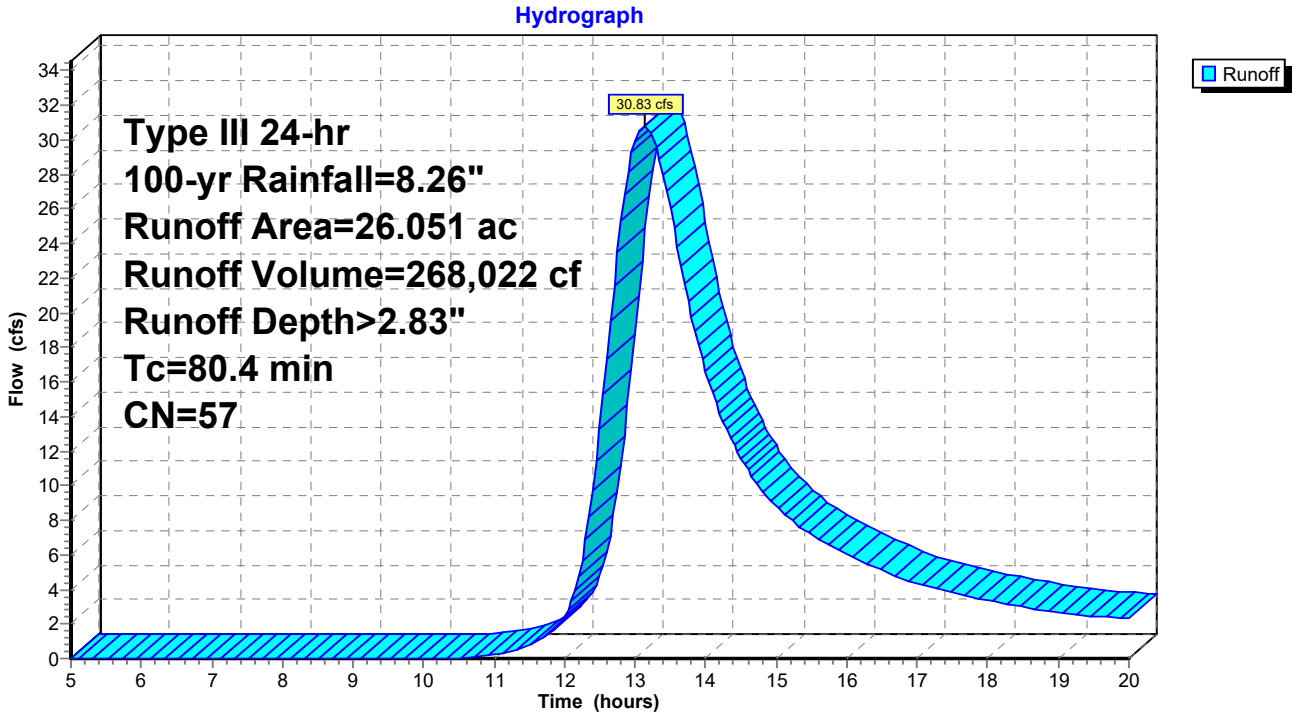
Runoff = 30.83 cfs @ 13.13 hrs, Volume= 268,022 cf, Depth> 2.83"
Routed to Pond AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	21.951	55	Wooded B
*	4.100	69	Grass B
	26.051	57	Weighted Average
	26.051		100.00% Pervious Area

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

Subcatchment A: WS-A



Summary for Subcatchment B: WS-B

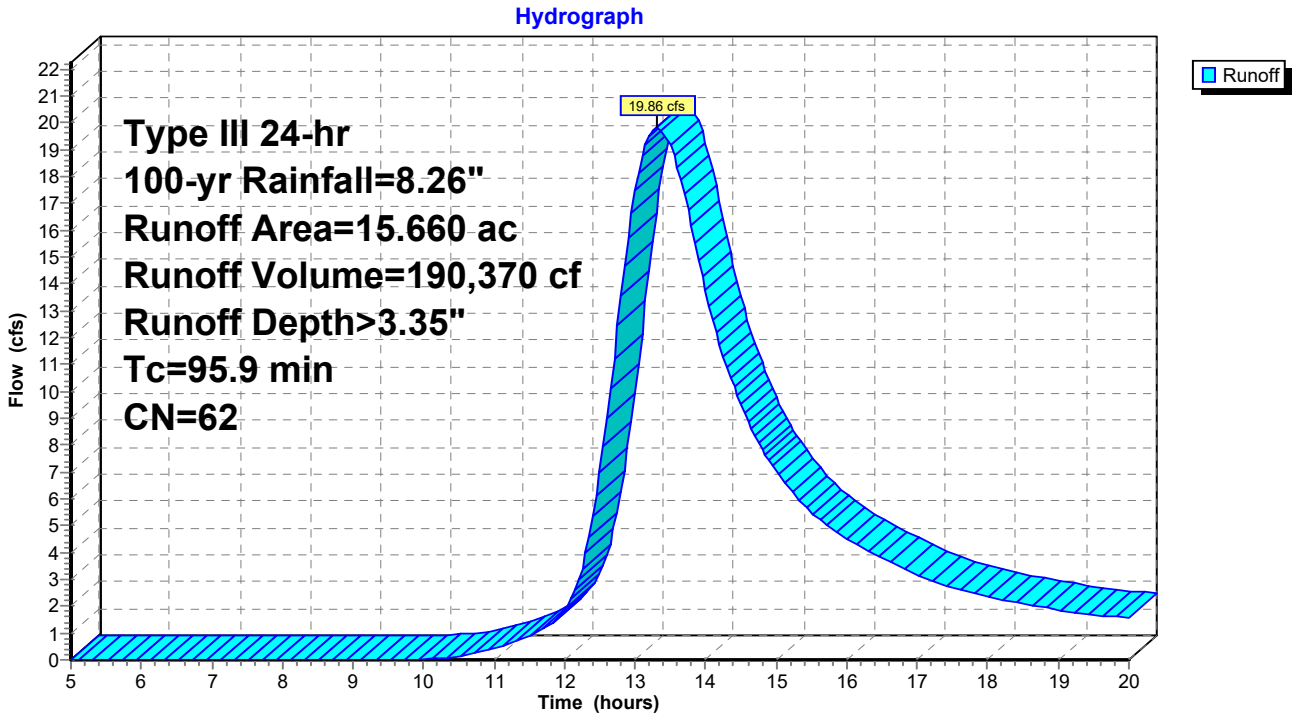
Runoff = 19.86 cfs @ 13.32 hrs, Volume= 190,370 cf, Depth> 3.35"
Routed to Pond BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.320	98	Impervious
*	10.070	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	15.660	62	Weighted Average
	15.340		97.96% Pervious Area
	0.320		2.04% Impervious Area

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

Subcatchment B: WS-B



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

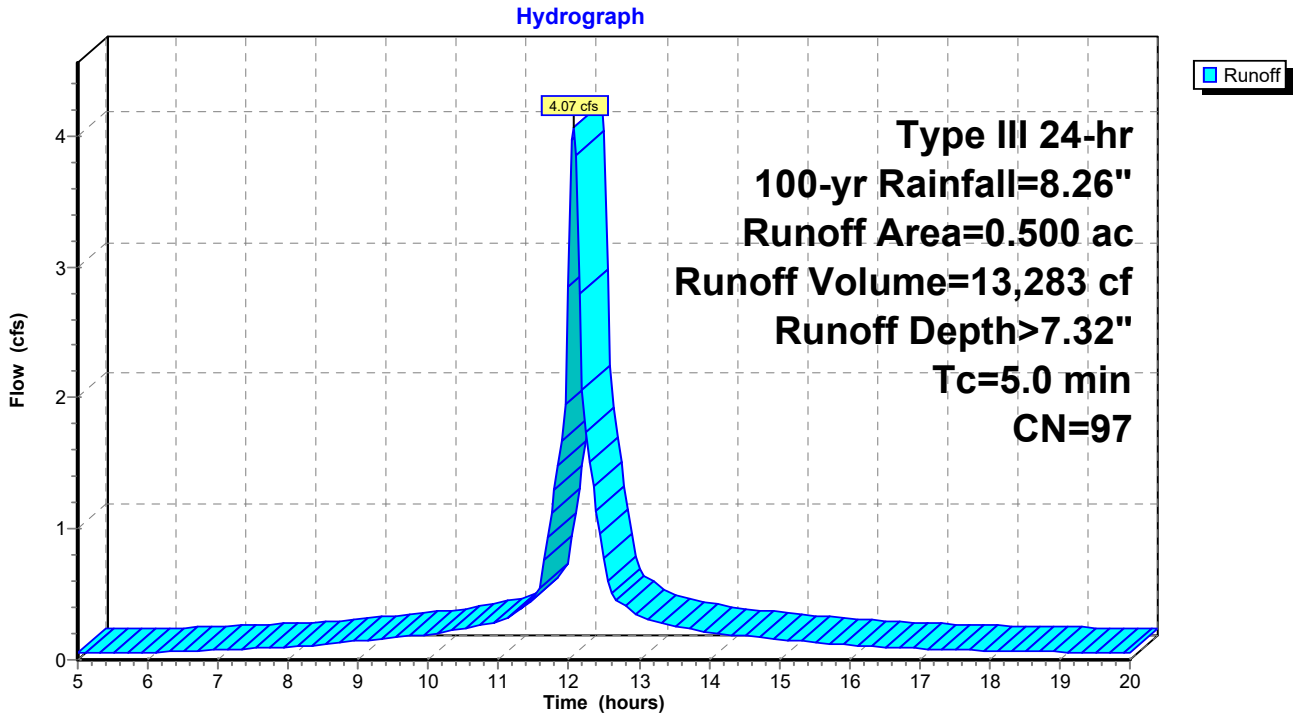
Runoff = 4.07 cfs @ 12.07 hrs, Volume= 13,283 cf, Depth> 7.32"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.490	98	Impervious
*	0.010	69	Grass B
	0.500	97	Weighted Average
	0.010		2.00% Pervious Area
	0.490		98.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Deisgn Point 3)

[49] Hint: Tc<2dt may require smaller dt

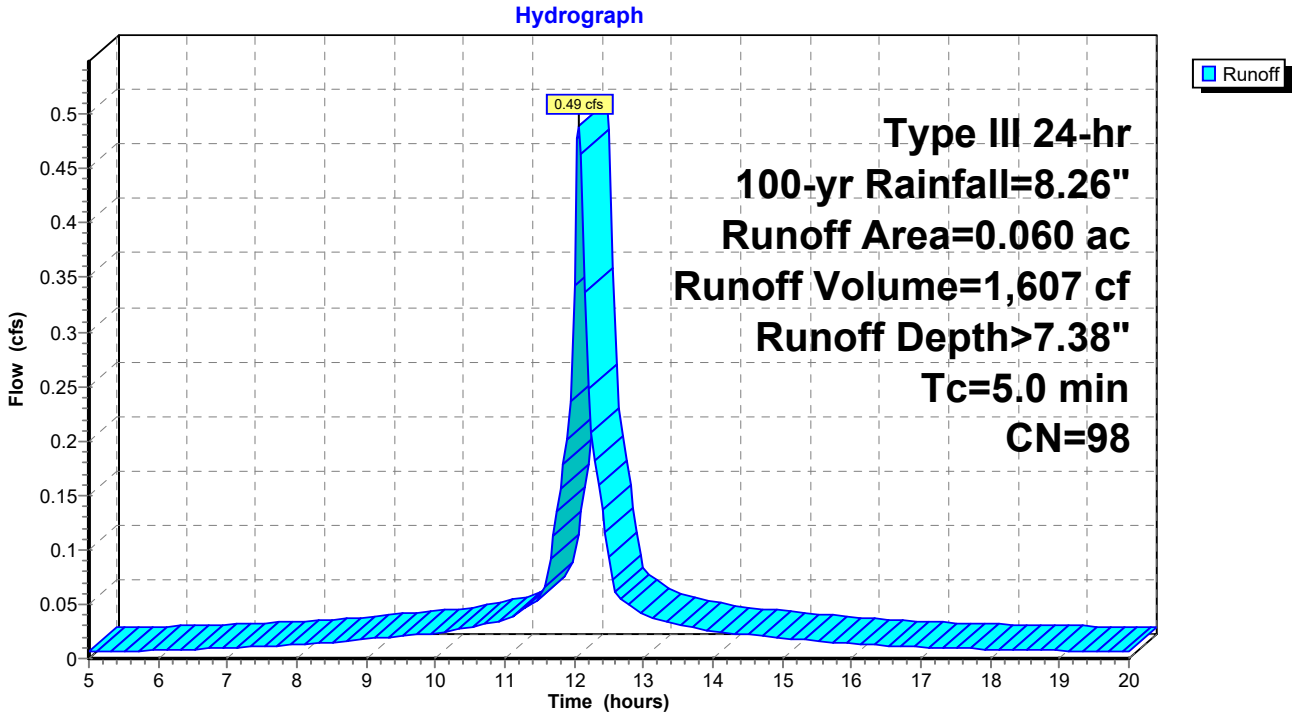
Runoff = 0.49 cfs @ 12.07 hrs, Volume= 1,607 cf, Depth> 7.38"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Deisgn Point 3)



Summary for Subcatchment E: WS-E (Deisgn Point 4)

[49] Hint: Tc<2dt may require smaller dt

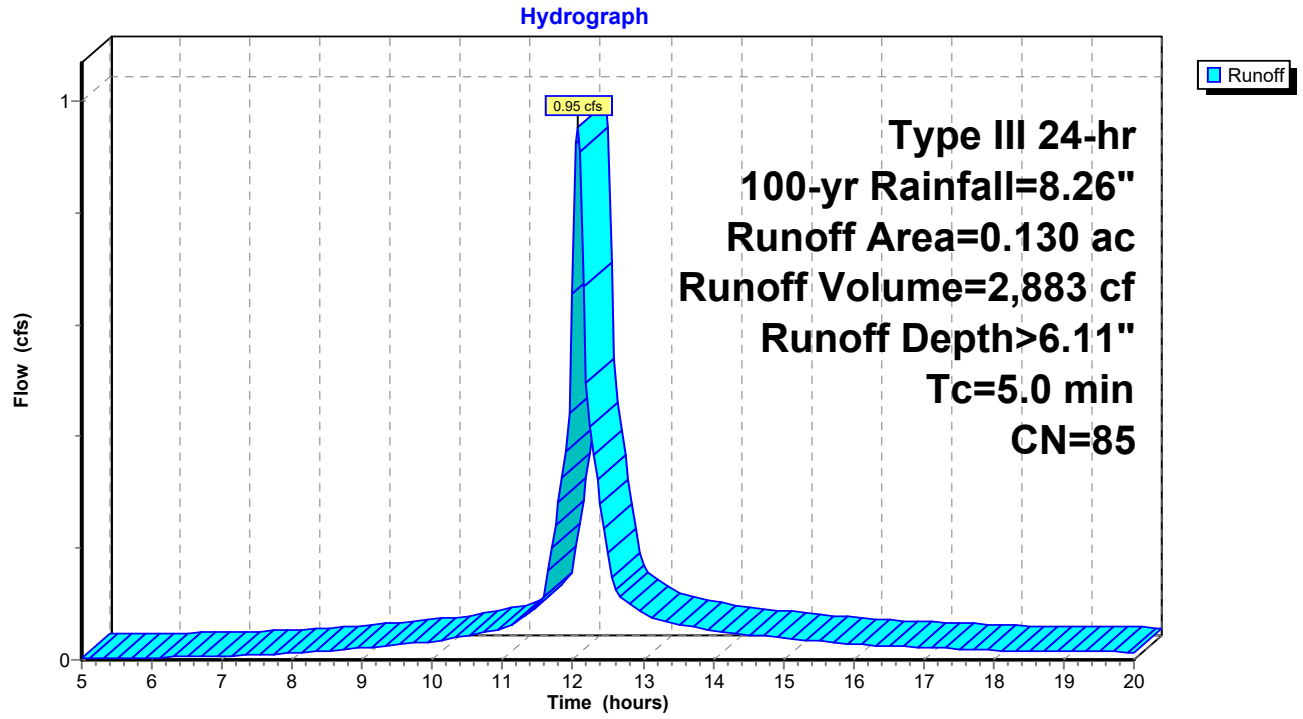
Runoff = 0.95 cfs @ 12.07 hrs, Volume= 2,883 cf, Depth> 6.11"
Routed to Link 4L : POC D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.070	98	Impervious
*	0.060	69	Grass B
	0.130	85	Weighted Average
	0.060		46.15% Pervious Area
	0.070		53.85% Impervious Area

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

Subcatchment E: WS-E (Deisgn Point 4)



Summary for Pond AP: Existing Pond A

Inflow Area = 1,134,782 sf, 0.00% Impervious, Inflow Depth > 2.83" for 100-yr event
Inflow = 30.83 cfs @ 13.13 hrs, Volume= 268,022 cf
Outflow = 13.94 cfs @ 14.23 hrs, Volume= 185,353 cf, Atten= 55%, Lag= 65.6 min
Discarded = 2.40 cfs @ 14.23 hrs, Volume= 51,240 cf
Primary = 11.54 cfs @ 14.23 hrs, Volume= 134,113 cf
Routed to Pond BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 6.47' @ 14.23 hrs Surf.Area= 207,720 sf Storage= 119,347 cf

Plug-Flow detention time= 142.9 min calculated for 185,353 cf (69% of inflow)
Center-of-Mass det. time= 79.3 min (946.2 - 866.9)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	283,474 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

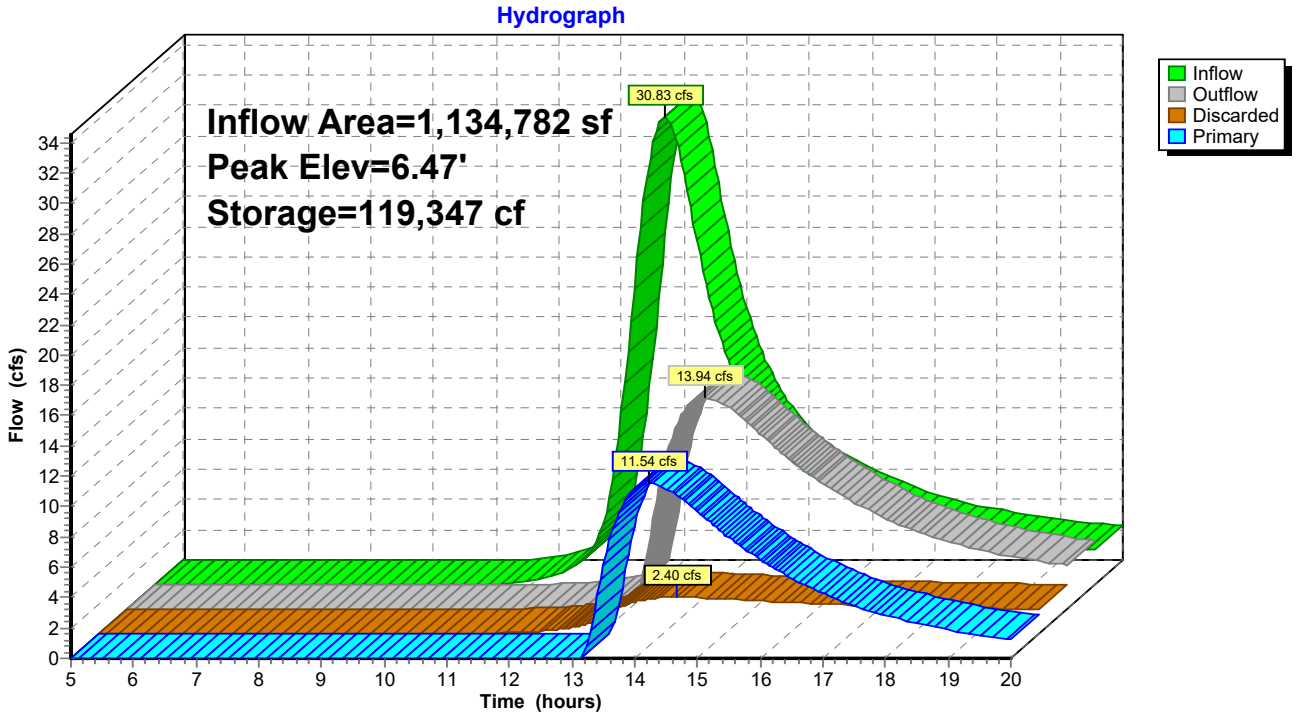
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	22,712	7,571	7,571	22,714
6.00	76,594	47,005	54,576	76,601
7.00	428,860	228,898	283,474	428,871

Device	Routing	Invert	Outlet Devices
#1	Primary	6.20'	**30.0' long x 233.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=2.40 cfs @ 14.23 hrs HW=6.47' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 2.40 cfs)

Primary OutFlow Max=11.52 cfs @ 14.23 hrs HW=6.47' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 11.52 cfs @ 1.41 fps)

Pond AP: Existing Pond A



Summary for Pond BP: Design Point 1

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 2.14" for 100-yr event
Inflow = 26.46 cfs @ 13.71 hrs, Volume= 324,484 cf
Outflow = 19.08 cfs @ 14.69 hrs, Volume= 311,429 cf, Atten= 28%, Lag= 59.1 min
Primary = 19.08 cfs @ 14.69 hrs, Volume= 311,429 cf
Routed to Link 1L : POC-A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 5.51' @ 14.69 hrs Surf.Area= 83,110 sf Storage= 70,300 cf

Plug-Flow detention time= 56.2 min calculated for 310,394 cf (96% of inflow)
Center-of-Mass det. time= 45.0 min (943.0 - 898.0)

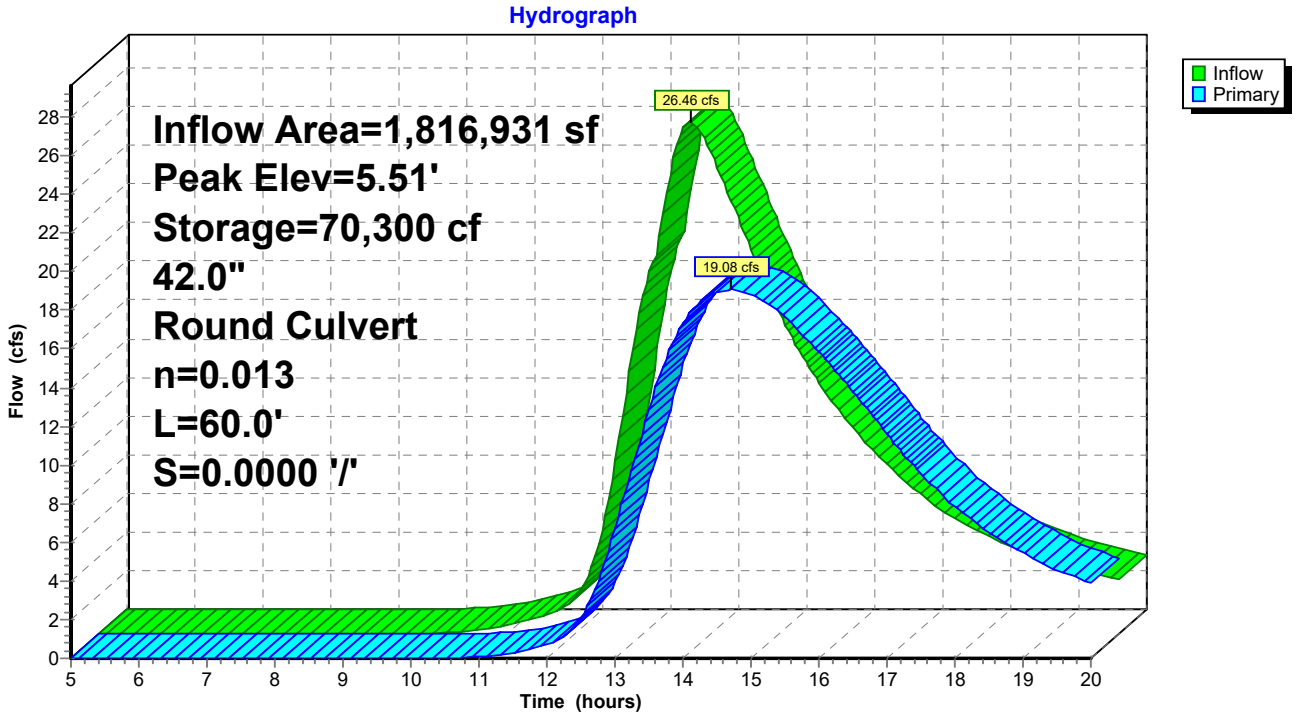
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,384	37,726	37,726
6.00	120,171	82,278	120,004

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=19.08 cfs @ 14.69 hrs HW=5.51' (Free Discharge)
1=Culvert (Barrel Controls 19.08 cfs @ 4.25 fps)

Pond BP: Design Point 1

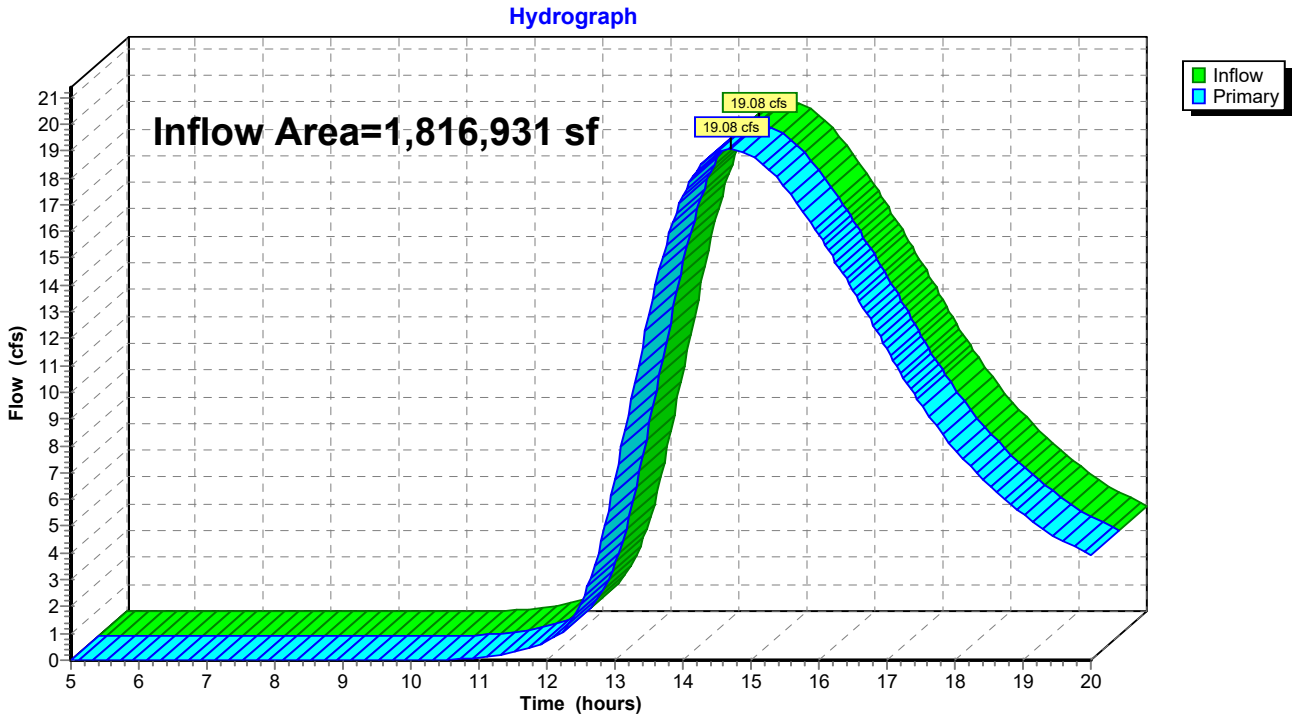


Summary for Link 1L: POC-A

Inflow Area = 1,816,931 sf, 0.77% Impervious, Inflow Depth > 2.06" for 100-yr event
Inflow = 19.08 cfs @ 14.69 hrs, Volume= 311,429 cf
Primary = 19.08 cfs @ 14.69 hrs, Volume= 311,429 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC-A

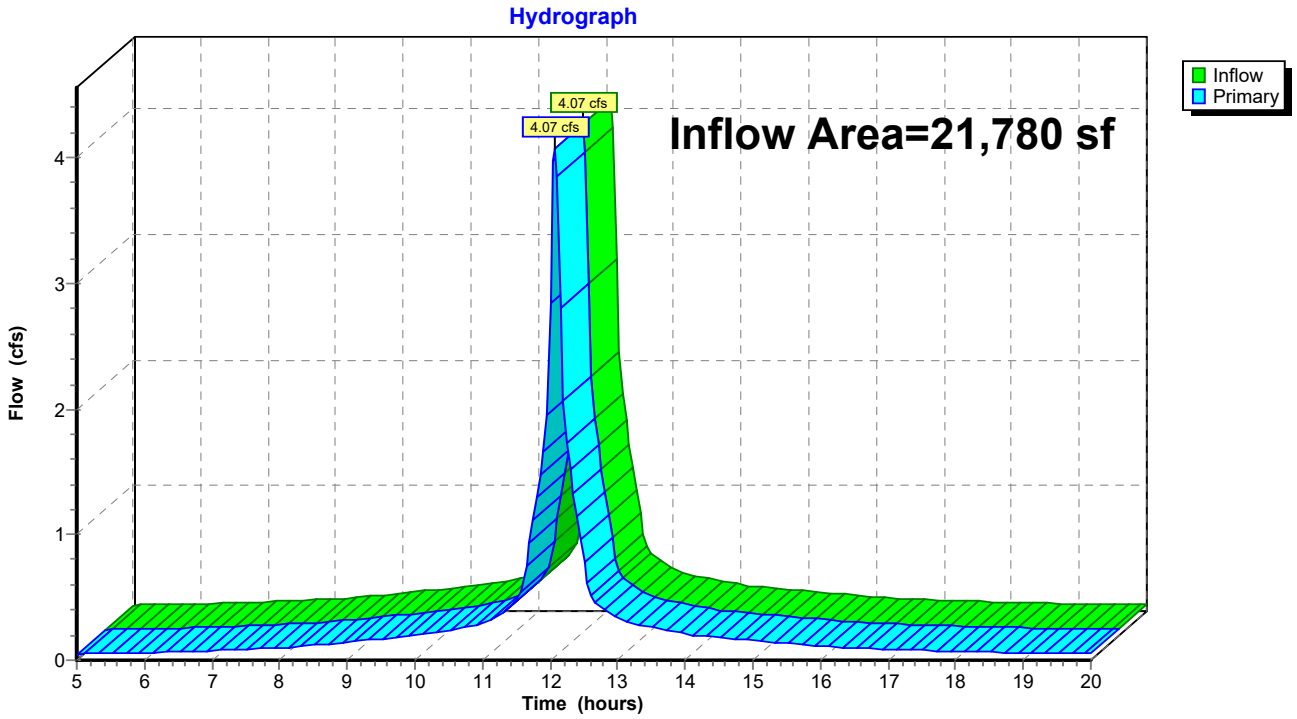


Summary for Link 2L: POC B

Inflow Area = 21,780 sf, 98.00% Impervious, Inflow Depth > 7.32" for 100-yr event
Inflow = 4.07 cfs @ 12.07 hrs, Volume= 13,283 cf
Primary = 4.07 cfs @ 12.07 hrs, Volume= 13,283 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

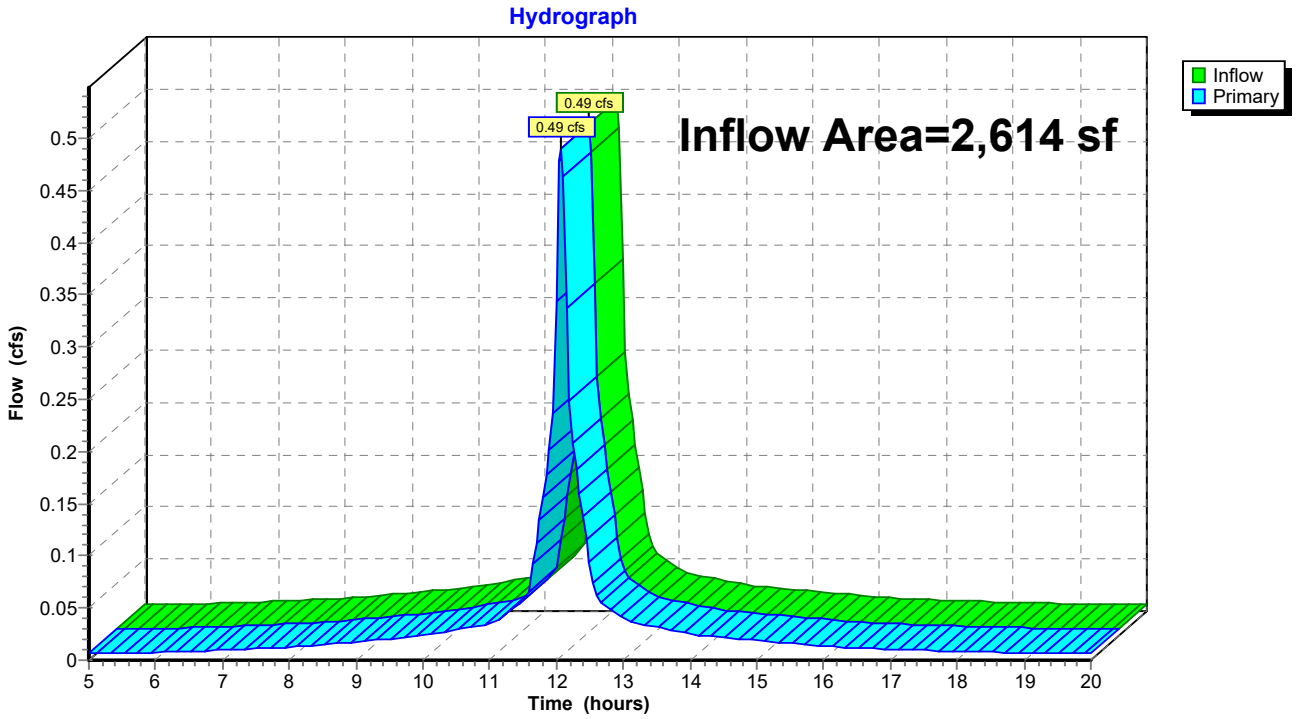


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 7.38" for 100-yr event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 1,607 cf
Primary = 0.49 cfs @ 12.07 hrs, Volume= 1,607 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C

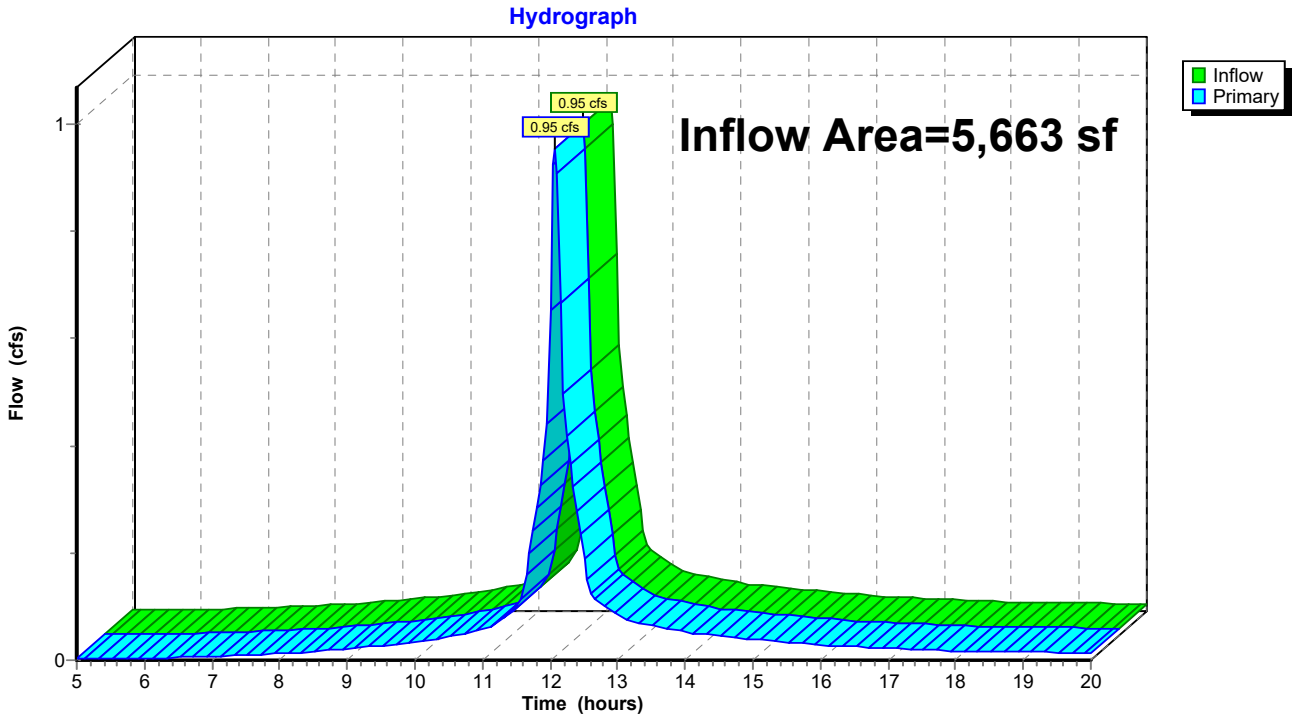


Summary for Link 4L: POC D

Inflow Area = 5,663 sf, 53.85% Impervious, Inflow Depth > 6.11" for 100-yr event
Inflow = 0.95 cfs @ 12.07 hrs, Volume= 2,883 cf
Primary = 0.95 cfs @ 12.07 hrs, Volume= 2,883 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: POC D



APPENDIX C

DESIGN POINT 3

PR WS-D

DESIGN POINT 4

PR WS-E

PR WS-A3

PR WS-C

DESIGN POINT 2

PR WS-A2

PR WS-B3

PR WS-B2

PR WS-A1

PR WS-B1

DESIGN POINT 1

N

0 250' 500'

SCALE: 1" = 250'

MANRESA ISLAND CORPORATION
NORWALK, CT

NORTH FOREST
PROPOSED WATERSHED MAP

DATE: 11/17/2025
SCALE: AS SHOWN
FIGURE: PR-WS

Tighe&Bond

J:\WM5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Design\Stormwater\M5177-004-PR-WS.dwg

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EB** Date: **November 13, 2025**

Designation: **PR WS-A1**

Cover Type	Area, ac	CN	A x CN
Impervious	1.315	98	128.847
Wooded (B)	19.658	55	1081.177
Wooded (D)	0.000	77	0.000
Grass (B)	4.227	69	291.669
Grass (D)	0.000	84	0.000
	25.200		1501.693

Weighted CN: **60**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland			
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	17	0.060	2.2
Segment B - C	0.4	283	0.012	59.6

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment C - D	unpaved	0.002	0.72	735	17.0
Segment D - E	unpaved	0.007	1.35	132	1.6

Total Tc = **80.4**

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EB** Date: **November 13, 2025**

Designation: **PR WS-A2**

Cover Type	Area, ac	CN	A x CN
Impervious	0.217	98	21.299
Wooded (B)	0.000	55	0.000
Wooded (D)	0.000	77	0.000
Grass (B)	0.195	69	13.428
Grass (D)	0.000	84	0.000
	0.412		34.726

Weighted CN: **84**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	40	0.005	1.3
Segment B - C	0.24	14	0.330	0.9
Segment C - D	0.24	173	0.005	37.9

Total Tc = **40.2**

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EB** Date: **November 13, 2025**

Designation: **PR WS-A3**

Cover Type	Area, ac	CN	A x CN
Impervious	0.148	98	14.473
Wooded (B)	0.000	55	0.000
Wooded (D)	0.000	77	0.000
Grass (B)	0.054	69	3.696
Grass (D)	0.000	84	0.000
	0.201		18.168

Weighted CN: **90**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	60	0.005	1.8
Segment B - C	0.24	13	0.330	0.9

Total Tc = **2.7**
USE 5.0 MIN (MINIMUM)

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EB** Date: **November 13, 2025**

Designation: **PR WS-B1**

Cover Type	Area, ac	CN	A x CN
Impervious	0.42	98	41.592
Wooded (B)	8.86	55	487.158
Wooded (D)	0.00	77	0.000
Grass (B)	4.26	69	293.998
Grass (D)	1.01	84	85.163
	14.56		907.910

Weighted CN: **62**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland			
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	55	0.045	9.2
Segment B - C	0.24	181	0.011	27.8
Segment C - D	0.4	64	0.023	13.6

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment D - E	unpaved	0.0035	0.60	628	17.5
Segment E - F	unpaved	0.002	0.45	647	23.8

Total Tc = **91.9**

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EB** Date: **November 13, 2025**

Designation: **PR WS-B2**

Cover Type	Area, ac	CN	A x CN
Impervious	0.530	98	51.963
Wooded (B)	0.000	55	0.000
Wooded (D)	0.000	77	0.000
Grass (B)	0.180	69	12.444
Grass (D)	0.000	84	0.000
	0.711		64.407

Weighted CN: **91**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	103	0.050	1.1
Segment B - C	0.24	10	0.330	0.7

Total Tc = **1.8**
USE 5.0 MIN (MINIMUM)

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EB** Date: **November 13, 2025**

Designation: **PR WS-B3**

Cover Type	Area, ac	CN	A x CN
Impervious	0.388	98	38.030
Wooded (B)	0.191	55	10.518
Wooded (D)	0.000	77	0.000
Grass (B)	0.130	69	8.970
Grass (D)	0.000	84	0.000
	0.709		57.518

Weighted CN: **81**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland			
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	48	0.005	1.4
Segment B - C	0.24	16	0.330	1.0
Segment C - D	0.24	252	0.010	37.7

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment D - E	unpaved	0.24	4.95	70	0.2
Segment E - F	unpaved	0.4	6.39	75	0.2

Total Tc = **40.3**

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EB** Date: **November 13, 2025**

Designation: **PR WS-C**

Cover Type	Area, ac	CN	A x CN
Impervious	0.447	98	43.828
Wooded (B)	0.000	55	0.000
Wooded (D)	0.000	77	0.000
Grass (B)	0.000	69	0.000
Grass (D)	0.000	84	0.000
	0.447		43.828

Weighted CN: **98**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	75	0.005	2.1

Total Tc = **2.1**
USE 5.0 MIN (MINIMUM)

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EB** Date: **November 13, 2025**

Designation: **PR WS-D**

Cover Type	Area, ac	CN	A x CN
Impervious	0.06	98	5.488
Wooded (B)	0.00	55	0.000
Wooded (D)	0.00	77	0.000
Grass (B)	0.00	69	0.000
Grass (D)	0.00	84	0.000
	0.06		5.488

Weighted CN: **98**

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	15	0.005	0.6

Total Tc = **0.6**
USE 5.0 MIN (MINIMUM)

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EB** Date: **November 13, 2025**

Designation: **PR WS-E**

Cover Type	Area, ac	CN	A x CN
Impervious	0.11	98	11.256
Wooded (B)	0.00	55	0.000
Wooded (D)	0.00	77	0.000
Grass (B)	0.00	69	0.000
Grass (D)	0.00	84	0.000
	0.11		11.256

Weighted CN: **98**

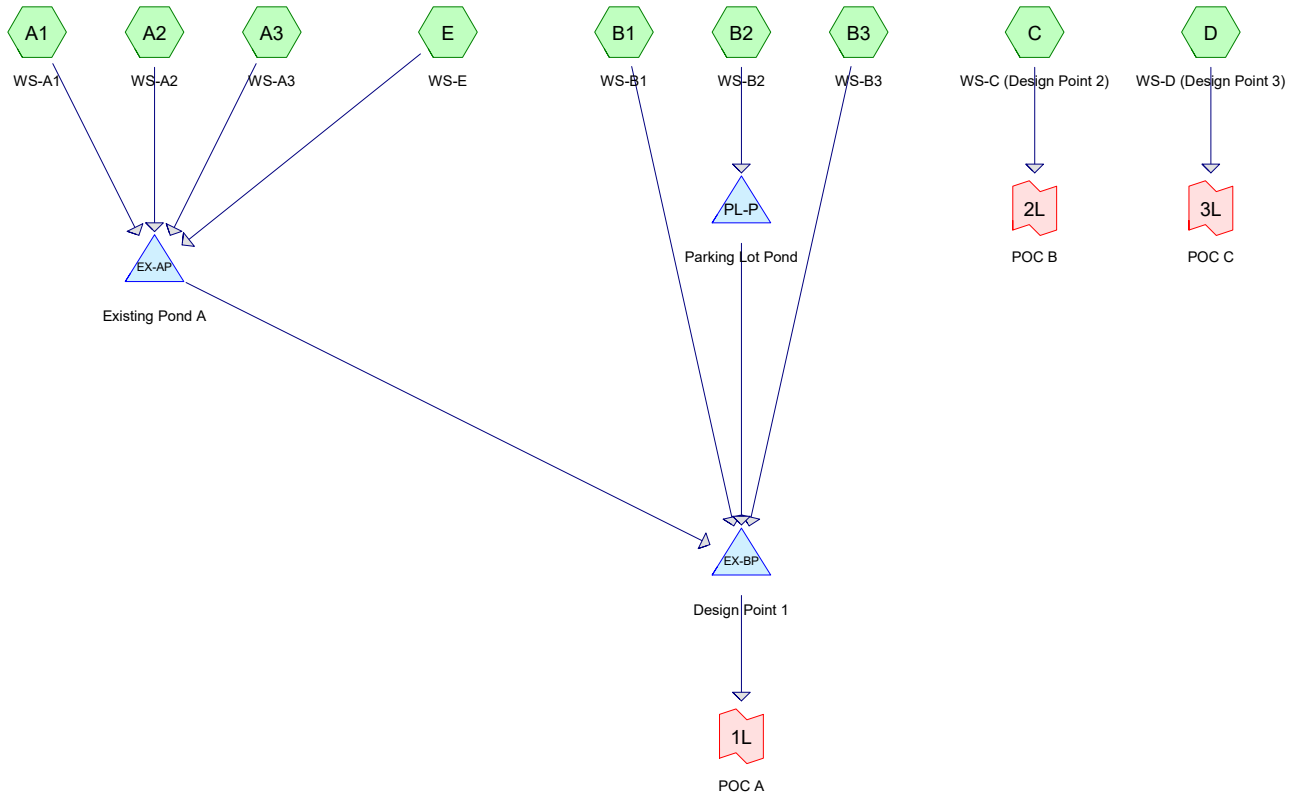
Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	172	0.005	4.1

Total Tc = **4.1**
USE 5.0 MIN (MINIMUM)



Subcat Reach Pond Link

Routing Diagram for PR-WS
Prepared by Tighe & Bond, Printed 12/10/2025
HydroCAD® 10.20-4c s/n 01453 © 2024 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type III 24-hr		Default	24.00	1	2.87	2
2	2-yr	Type III 24-hr		Default	24.00	1	3.49	2
3	5-yr	Type III 24-hr		Default	24.00	1	4.50	2
4	10-yr	Type III 24-hr		Default	24.00	1	5.33	2
5	25-yr	Type III 24-hr		Default	24.00	1	6.49	2
6	50-yr	Type III 24-hr		Default	24.00	1	7.34	2
7	100-yr	Type III 24-hr		Default	24.00	1	8.26	2

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A1: WS-A1 Runoff Area=25.200 ac 5.22% Impervious Runoff Depth>0.23"
Tc=80.4 min CN=60 Runoff=1.62 cfs 21,188 cf

Subcatchment A2: WS-A2 Runoff Area=0.412 ac 52.67% Impervious Runoff Depth>1.29"
Tc=40.2 min CN=84 Runoff=0.33 cfs 1,932 cf

Subcatchment A3: WS-A3 Runoff Area=0.202 ac 73.27% Impervious Runoff Depth>1.75"
Tc=5.0 min CN=90 Runoff=0.44 cfs 1,284 cf

Subcatchment B1: WS-B1 Runoff Area=14.550 ac 2.89% Impervious Runoff Depth>0.28"
Tc=91.9 min CN=62 Runoff=1.15 cfs 14,895 cf

Subcatchment B2: WS-B2 Runoff Area=0.710 ac 74.65% Impervious Runoff Depth>1.83"
Tc=5.0 min CN=91 Runoff=1.61 cfs 4,728 cf

Subcatchment B3: WS-B3 Runoff Area=0.709 ac 54.72% Impervious Runoff Depth>1.10"
Tc=40.3 min CN=81 Runoff=0.49 cfs 2,843 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.447 ac 100.00% Impervious Runoff Depth>2.47"
Tc=5.0 min CN=98 Runoff=1.25 cfs 4,009 cf

Subcatchment D: WS-D (Design Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>2.47"
Tc=5.0 min CN=98 Runoff=0.17 cfs 538 cf

Subcatchment E: WS-E Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>2.47"
Tc=5.0 min CN=98 Runoff=0.31 cfs 987 cf

Pond EX-AP: Existing Pond A Peak Elev=5.39' Storage=16,542 cf Inflow=1.77 cfs 25,391 cf
Discarded=0.37 cfs 8,848 cf Primary=0.00 cfs 0 cf Outflow=0.37 cfs 8,848 cf

Pond EX-BP: Design Point 1 Peak Elev=3.88' Storage=4,412 cf Inflow=1.56 cfs 22,465 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=1.16 cfs 20,943 cf

Pond PL-P: Parking Lot Pond Peak Elev=10.42' Storage=677 cf Inflow=1.61 cfs 4,728 cf
Outflow=0.61 cfs 4,727 cf

Link 1L: POC A Inflow=1.16 cfs 20,943 cf
Primary=1.16 cfs 20,943 cf

Link 2L: POC B Inflow=1.25 cfs 4,009 cf
Primary=1.25 cfs 4,009 cf

Link 3L: POC C Inflow=0.17 cfs 538 cf
Primary=0.17 cfs 538 cf

Total Runoff Area = 1,846,944 sf Runoff Volume = 52,404 cf Average Runoff Depth = 0.34"
91.43% Pervious = 1,688,603 sf 8.57% Impervious = 158,341 sf

Summary for Subcatchment A1: WS-A1

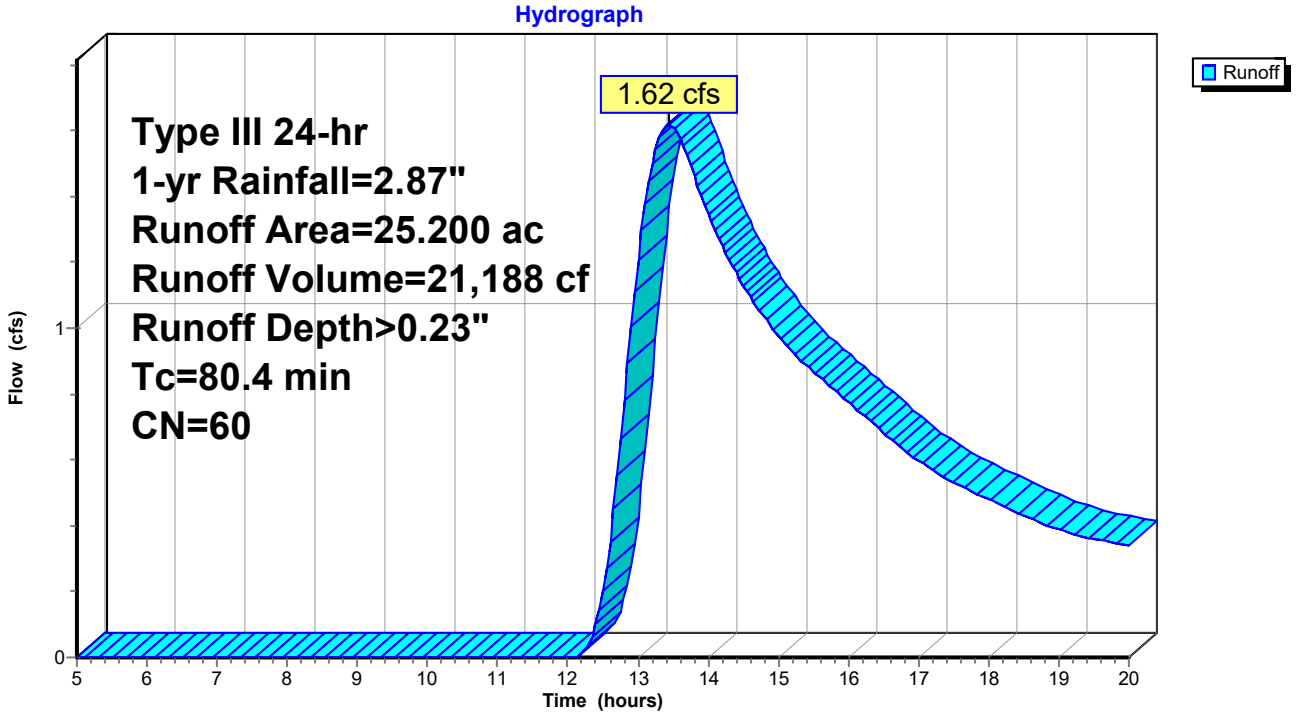
Runoff = 1.62 cfs @ 13.45 hrs, Volume= 21,188 cf, Depth> 0.23"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	19.658	55	Wooded B
*	4.227	69	Grass B
*	1.315	98	Impervious
	25.200	60	Weighted Average
	23.885		94.78% Pervious Area
	1.315		5.22% Impervious Area

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

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

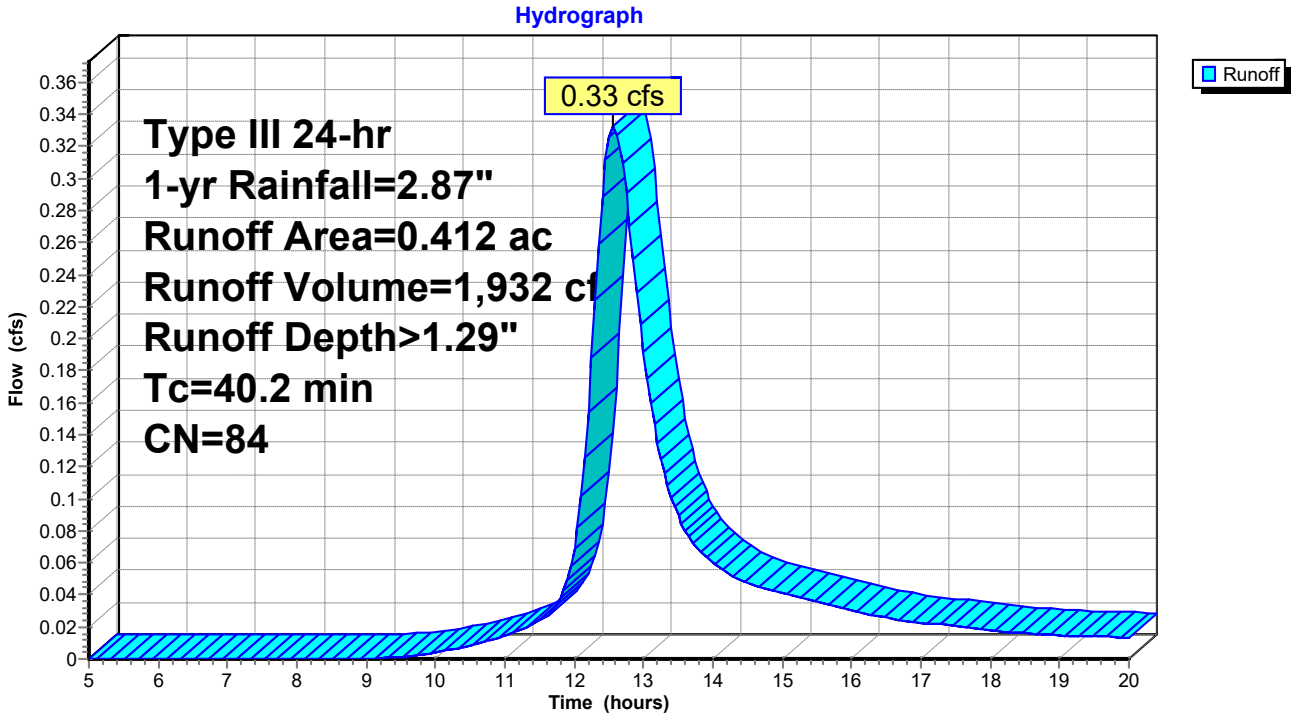
Runoff = 0.33 cfs @ 12.57 hrs, Volume= 1,932 cf, Depth> 1.29"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.217	98	Impervious
*	0.195	69	Grass B
	0.412	84	Weighted Average
	0.195		47.33% Pervious Area
	0.217		52.67% Impervious Area

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

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

[49] Hint: Tc<2dt may require smaller dt

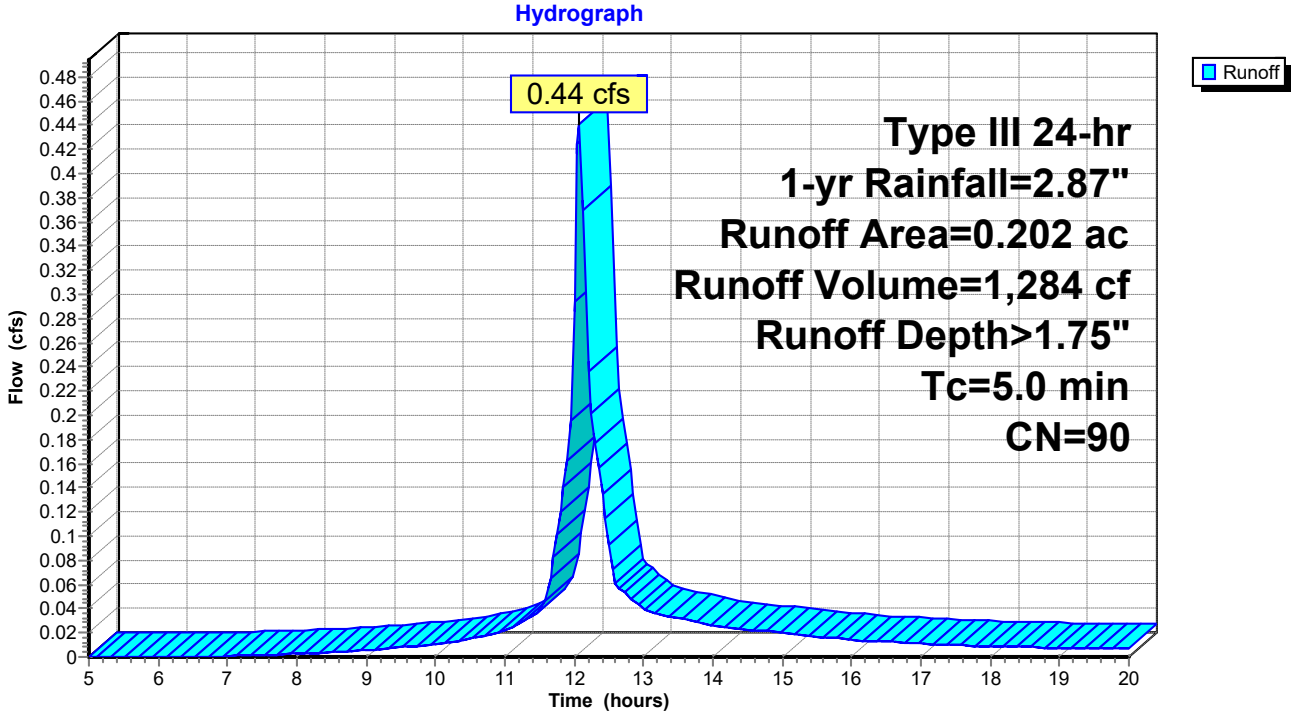
Runoff = 0.44 cfs @ 12.07 hrs, Volume= 1,284 cf, Depth> 1.75"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.148	98	Impervious
*	0.054	69	Grass B
	0.202	90	Weighted Average
	0.054		26.73% Pervious Area
	0.148		73.27% Impervious Area

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

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

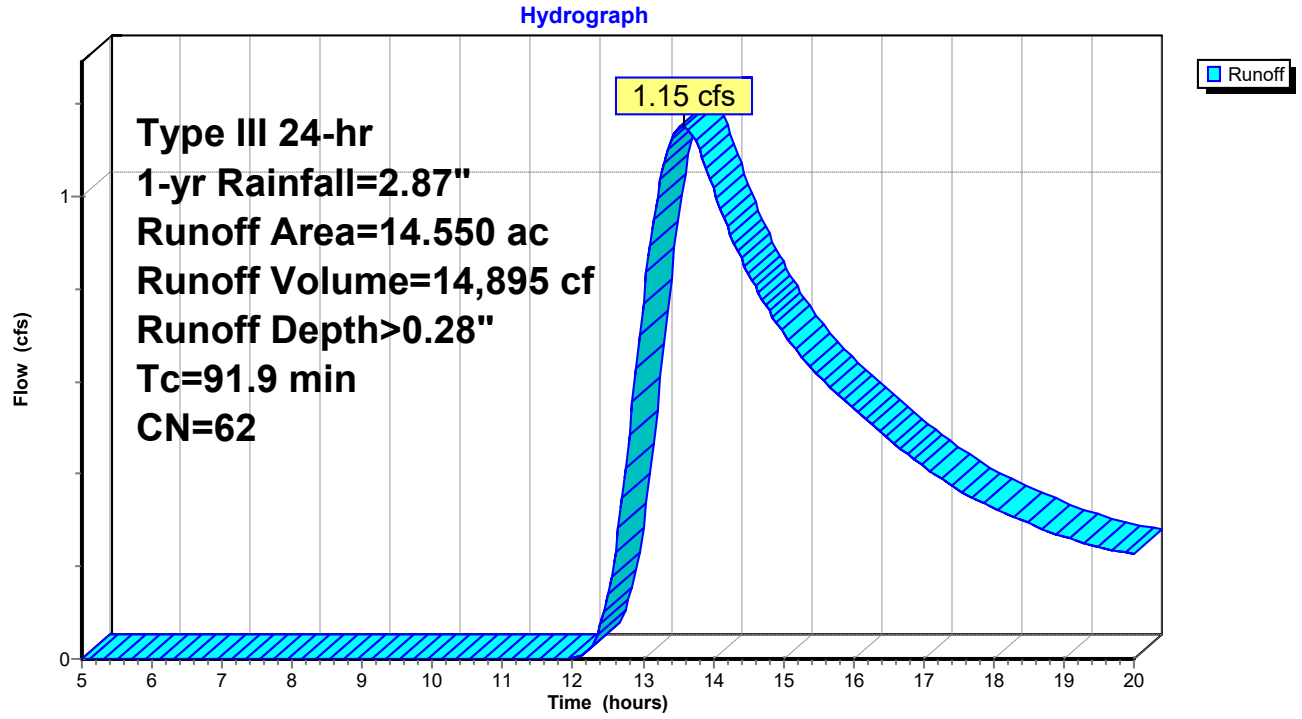
Runoff = 1.15 cfs @ 13.57 hrs, Volume= 14,895 cf, Depth> 0.28"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.420	98	Impervious
*	8.860	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	14.550	62	Weighted Average
	14.130		97.11% Pervious Area
	0.420		2.89% Impervious Area

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

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

[49] Hint: Tc<2dt may require smaller dt

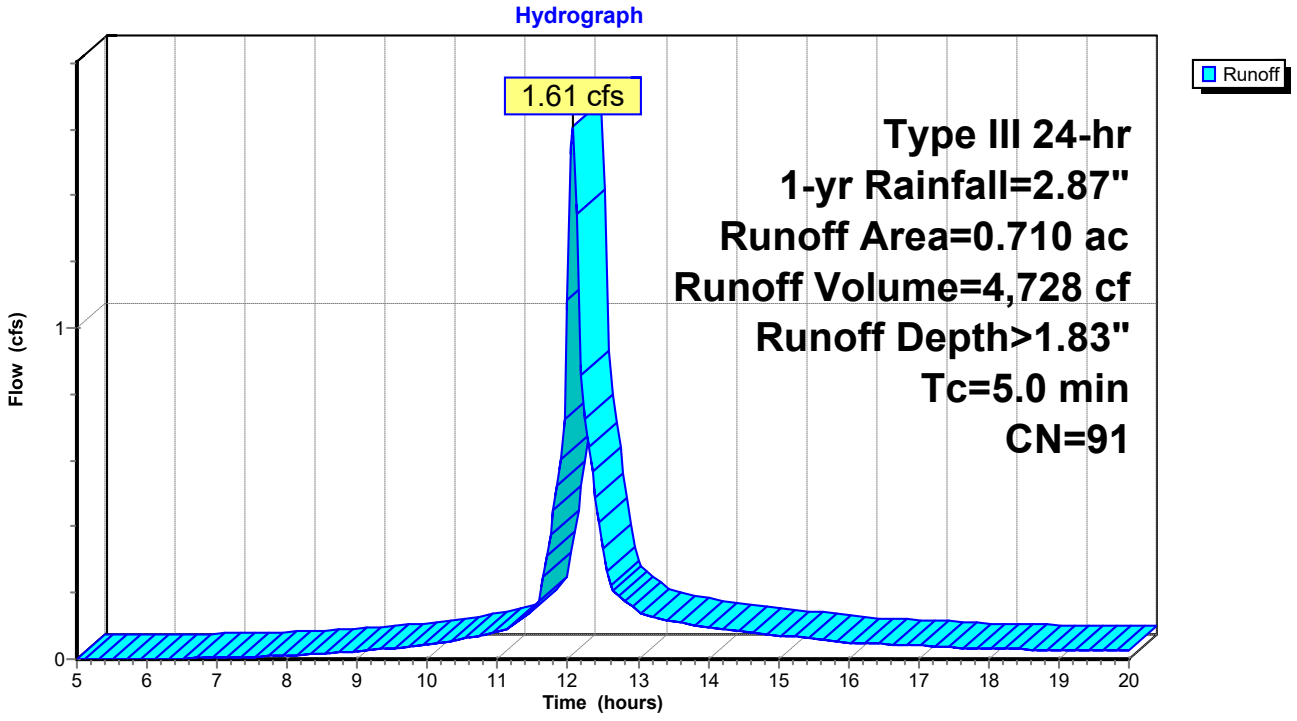
Runoff = 1.61 cfs @ 12.07 hrs, Volume= 4,728 cf, Depth> 1.83"
Routed to Pond PL-P : Parking Lot Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.530	98	Impervious
*	0.000	55	Wooded B
*	0.180	69	Grass B
*	0.000	84	Grass D
	0.710	91	Weighted Average
	0.180		25.35% Pervious Area
	0.530		74.65% Impervious Area

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

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

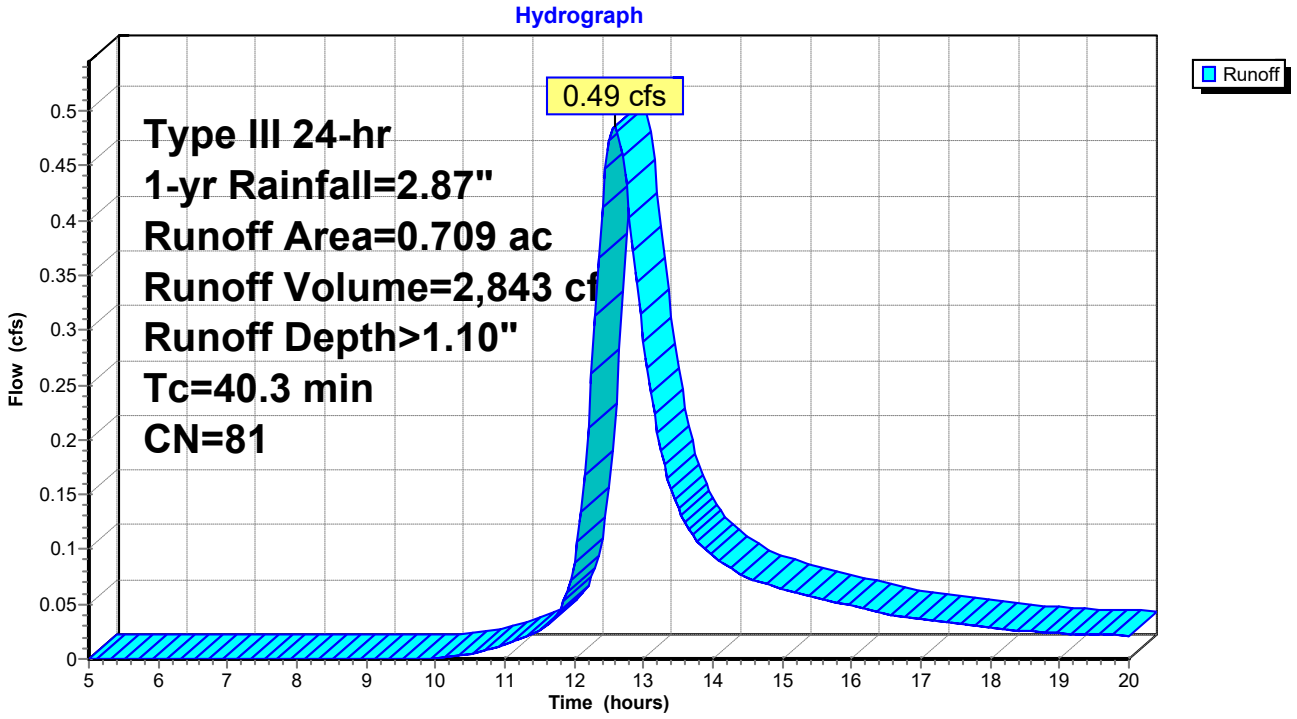
Runoff = 0.49 cfs @ 12.58 hrs, Volume= 2,843 cf, Depth> 1.10"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.388	98	Impervious
*	0.191	55	Wooded B
*	0.130	69	Grass B
*	0.000	84	Grass D
	0.709	81	Weighted Average
	0.321		45.28% Pervious Area
	0.388		54.72% Impervious Area

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

Subcatchment B3: WS-B3



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

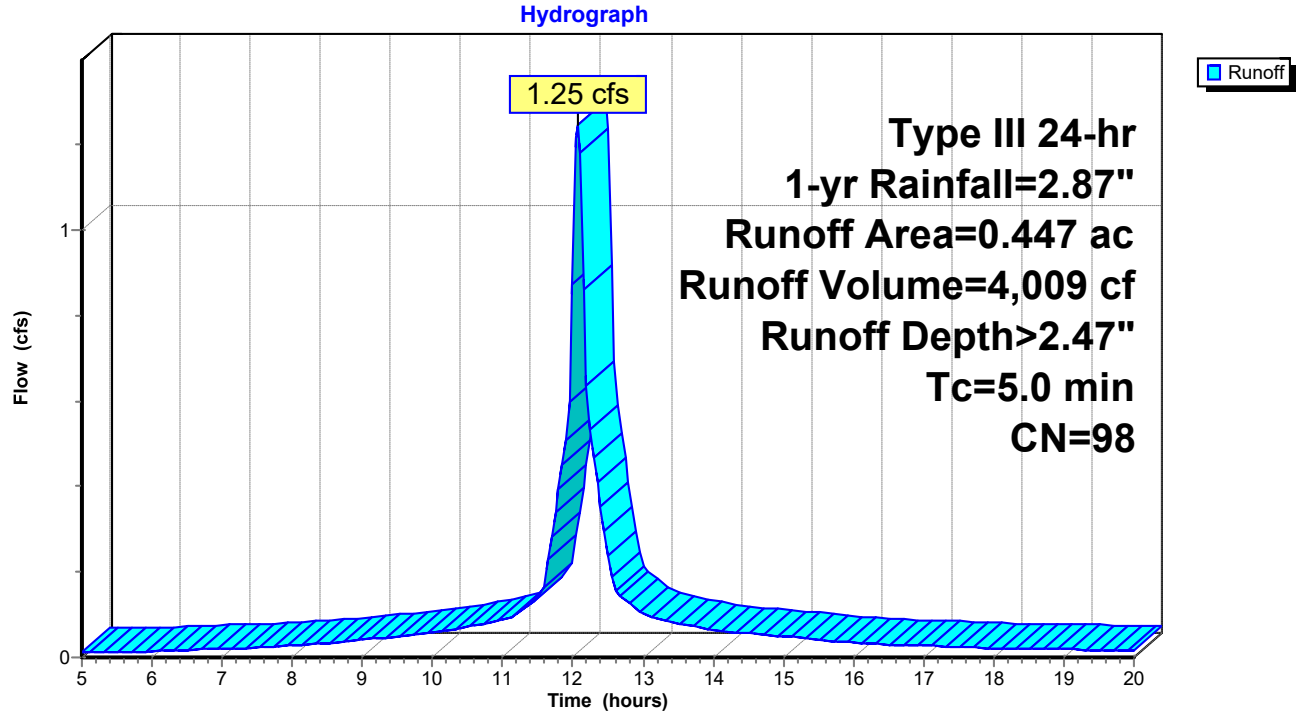
Runoff = 1.25 cfs @ 12.07 hrs, Volume= 4,009 cf, Depth> 2.47"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.447	98	Impervious
*	0.000	69	Grass B
	0.447	98	Weighted Average
	0.447		100.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Design Point 3)

[49] Hint: Tc<2dt may require smaller dt

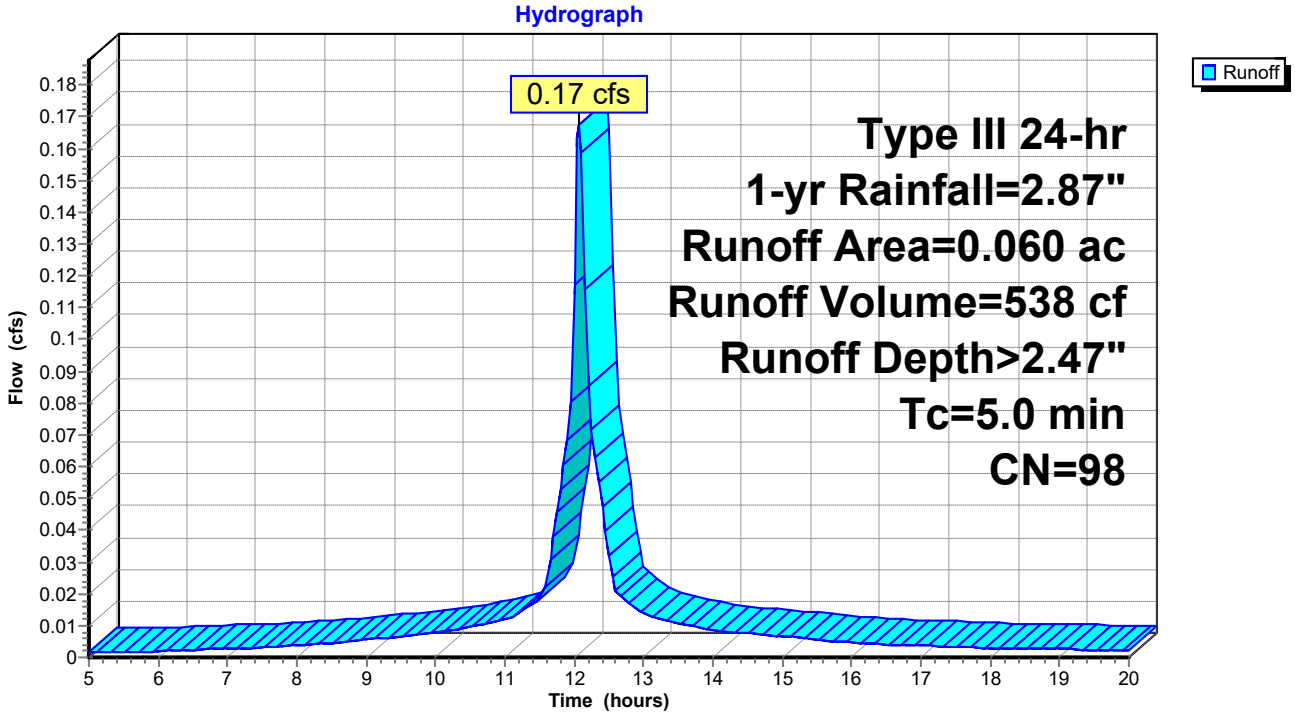
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 538 cf, Depth> 2.47"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Design Point 3)



Summary for Subcatchment E: WS-E

[49] Hint: Tc<2dt may require smaller dt

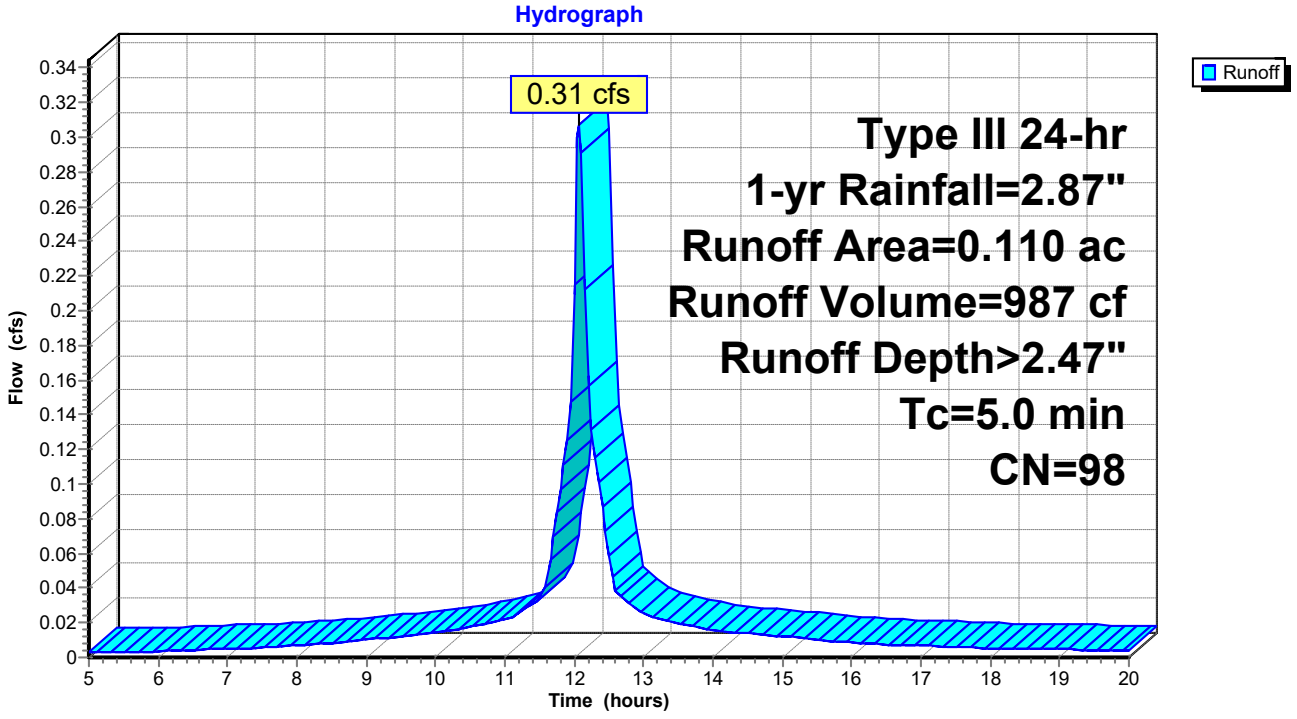
Runoff = 0.31 cfs @ 12.07 hrs, Volume= 987 cf, Depth> 2.47"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.87"

	Area (ac)	CN	Description
*	0.110	98	Impervious
*	0.000	69	Grass B
	0.110	98	Weighted Average
	0.110		100.00% Impervious Area

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

Subcatchment E: WS-E



Summary for Pond EX-AP: Existing Pond A

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1,129,249 sf, 6.90% Impervious, Inflow Depth > 0.27" for 1-yr event
Inflow = 1.77 cfs @ 13.41 hrs, Volume= 25,391 cf
Outflow = 0.37 cfs @ 19.78 hrs, Volume= 8,848 cf, Atten= 79%, Lag= 382.2 min
Discarded = 0.37 cfs @ 19.78 hrs, Volume= 8,848 cf
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 5.39' @ 19.78 hrs Surf.Area= 32,255 sf Storage= 16,542 cf

Plug-Flow detention time= 216.3 min calculated for 8,847 cf (35% of inflow)
Center-of-Mass det. time= 87.3 min (988.3 - 901.1)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	245,195 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

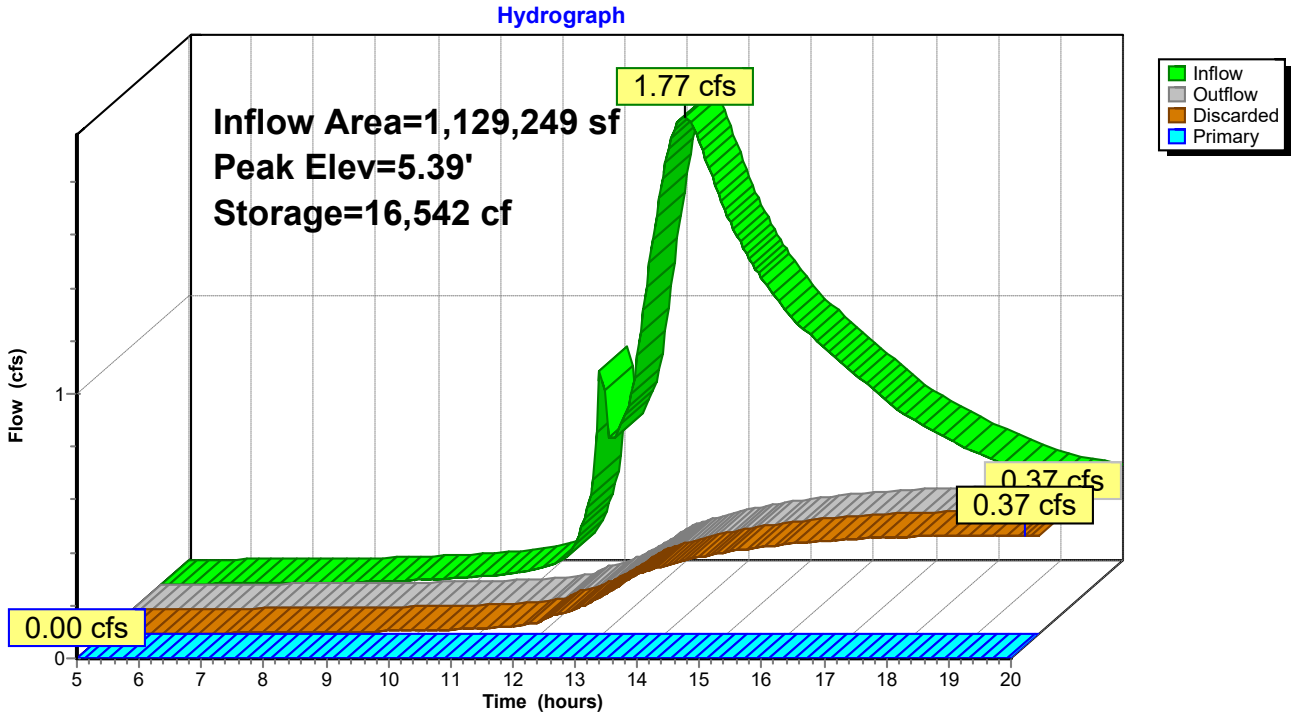
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	19,830	6,610	6,610	19,832
6.00	58,335	37,392	44,002	58,343
7.00	393,697	201,193	245,195	393,708

Device	Routing	Invert	Outlet Devices
#1	Primary	6.30'	**24.0" Round Culvert - Pipe** L= 97.0' Ke= 0.600 Inlet / Outlet Invert= 6.30' / 6.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.37 cfs @ 19.78 hrs HW=5.39' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.37 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=4.02' (Free Discharge)
↑—**1=Culvert - Pipe** (Controls 0.00 cfs)

Pond EX-AP: Existing Pond A



Summary for Pond EX-BP: Design Point 1

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.15" for 1-yr event
Inflow = 1.56 cfs @ 12.88 hrs, Volume= 22,465 cf
Outflow = 1.16 cfs @ 14.10 hrs, Volume= 20,943 cf, Atten= 26%, Lag= 72.9 min
Primary = 1.16 cfs @ 14.10 hrs, Volume= 20,943 cf
Routed to Link 1L : POC A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 3.88' @ 14.10 hrs Surf.Area= 15,255 sf Storage= 4,412 cf

Plug-Flow detention time= 65.1 min calculated for 20,874 cf (93% of inflow)
Center-of-Mass det. time= 45.1 min (925.7 - 880.5)

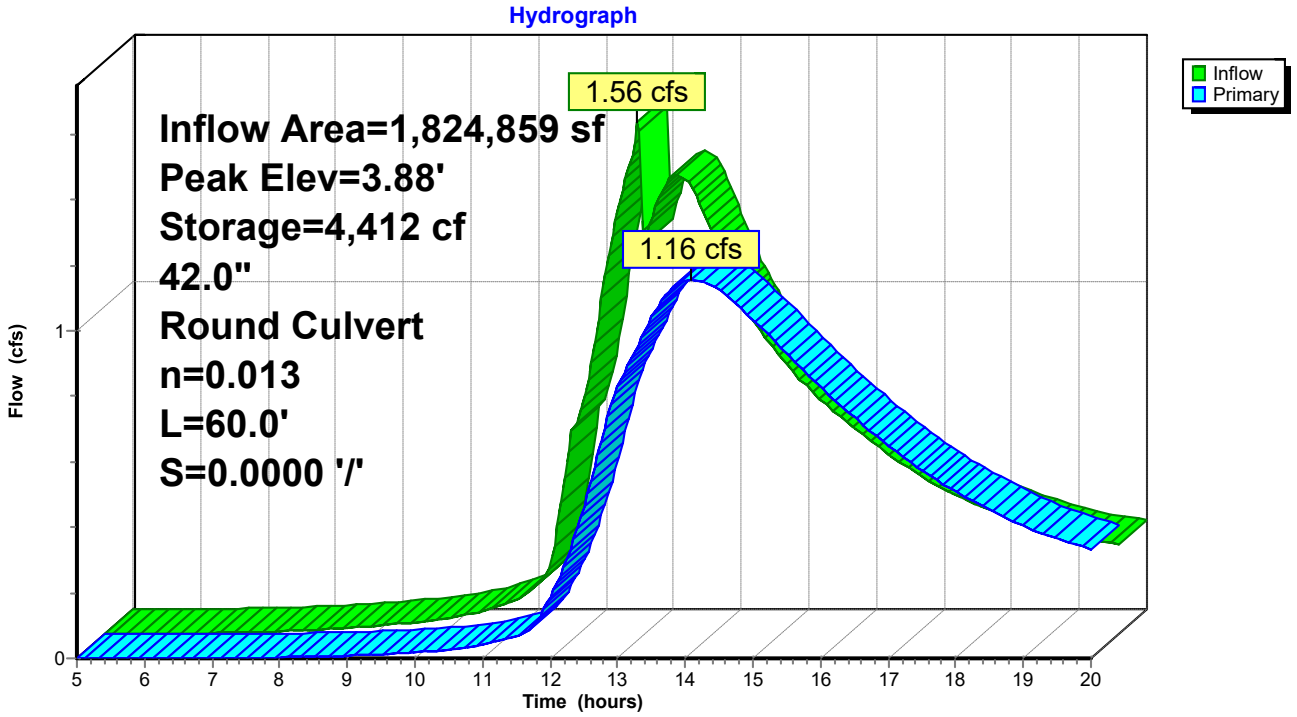
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,611 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,834	38,109	38,109
6.00	120,171	82,503	120,611

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=1.15 cfs @ 14.10 hrs HW=3.88' (Free Discharge)
1=Culvert (Barrel Controls 1.15 cfs @ 1.68 fps)

Pond EX-BP: Design Point 1



Summary for Pond PL-P: Parking Lot Pond

[44] Hint: Outlet device #3 is below defined storage

Inflow Area = 30,928 sf, 74.65% Impervious, Inflow Depth > 1.83" for 1-yr event
Inflow = 1.61 cfs @ 12.07 hrs, Volume= 4,728 cf
Outflow = 0.61 cfs @ 12.32 hrs, Volume= 4,727 cf, Atten= 62%, Lag= 14.9 min
Primary = 0.61 cfs @ 12.32 hrs, Volume= 4,727 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.42' @ 12.32 hrs Surf.Area= 1,922 sf Storage= 677 cf

Plug-Flow detention time= 5.7 min calculated for 4,711 cf (100% of inflow)
Center-of-Mass det. time= 5.6 min (779.1 - 773.5)

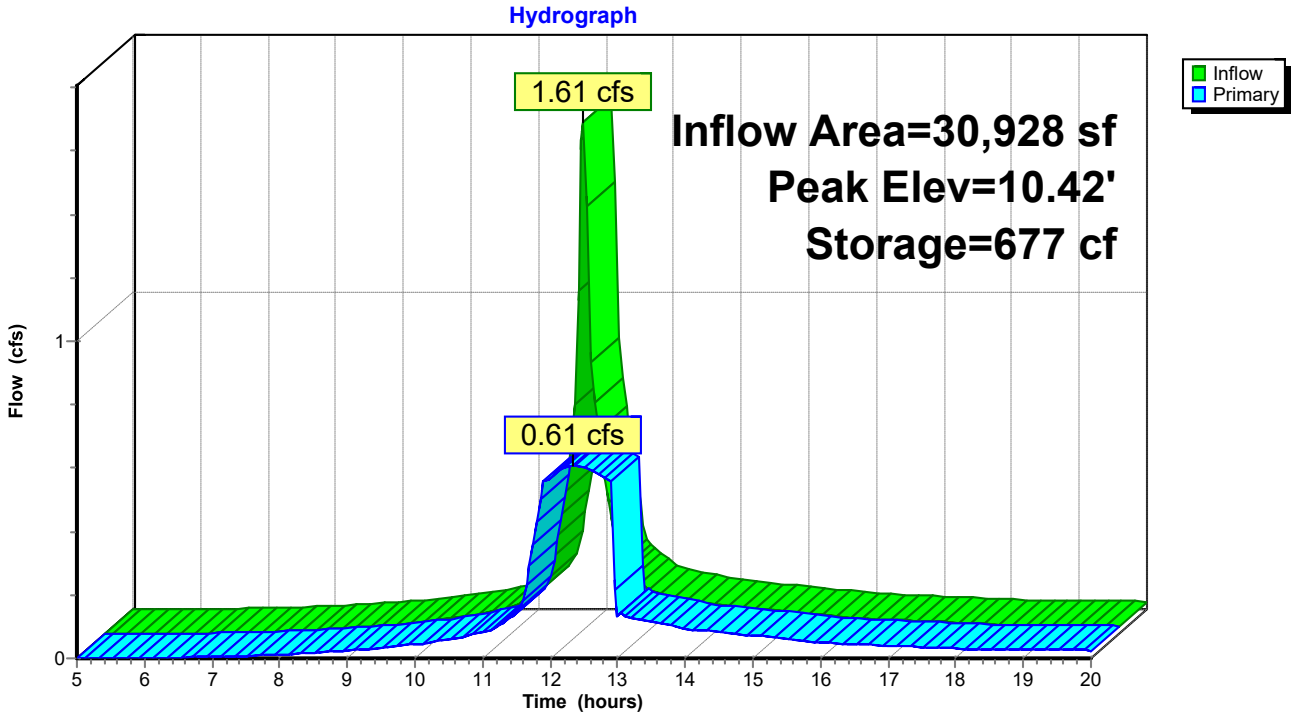
Volume	Invert	Avail.Storage	Storage Description
#1	10.00'	5,740 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.00	1,350	0	0	1,350
11.00	2,894	2,074	2,074	2,902
12.00	4,497	3,666	5,740	4,520

Device	Routing	Invert	Outlet Devices
#1	Primary	7.33'	**12.0" Round Culvert** L= 92.0' Ke= 0.600 Inlet / Outlet Invert= 7.33' / 6.40' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	11.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	8.00'	**6.0" Round Culvert** L= 200.0' Ke= 0.600 Inlet / Outlet Invert= 8.00' / 7.33' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=0.61 cfs @ 12.32 hrs HW=10.42' (Free Discharge)
└**1=Culvert** (Passes 0.61 cfs of 5.17 cfs potential flow)
└**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Culvert** (Barrel Controls 0.61 cfs @ 3.09 fps)

Pond PL-P: Parking Lot Pond

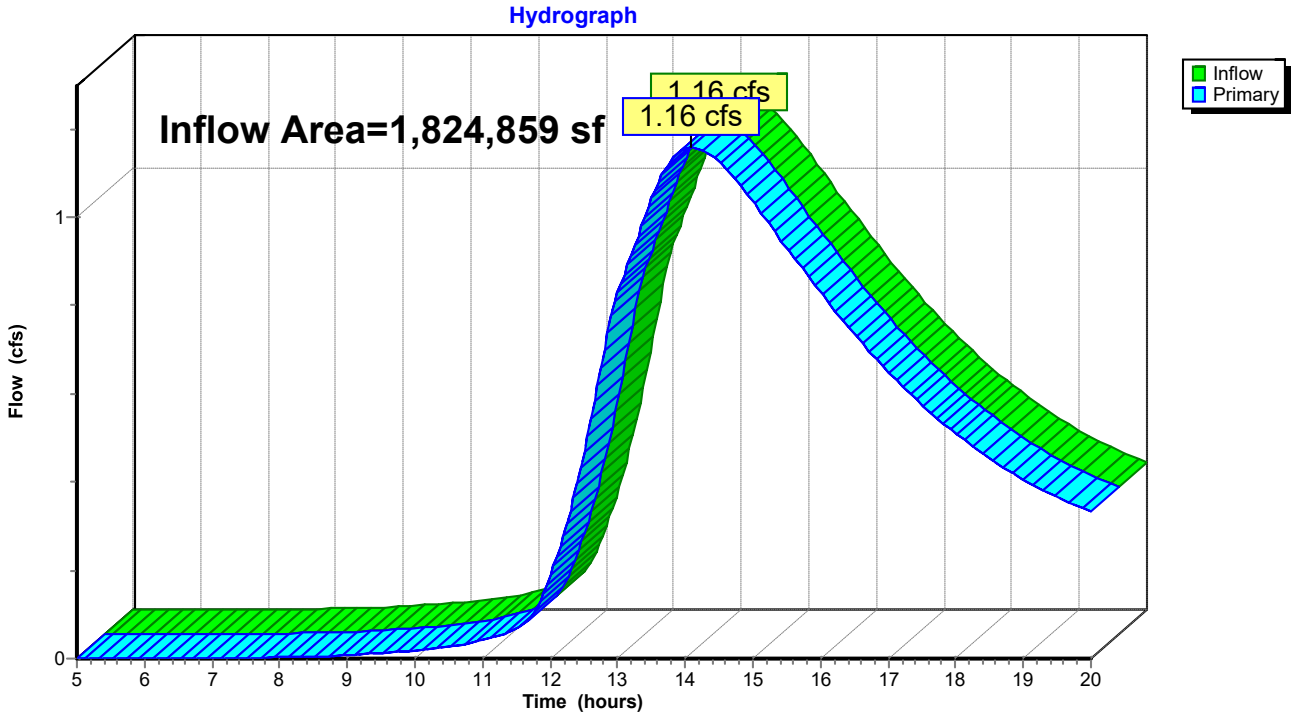


Summary for Link 1L: POC A

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.14" for 1-yr event
Inflow = 1.16 cfs @ 14.10 hrs, Volume= 20,943 cf
Primary = 1.16 cfs @ 14.10 hrs, Volume= 20,943 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC A

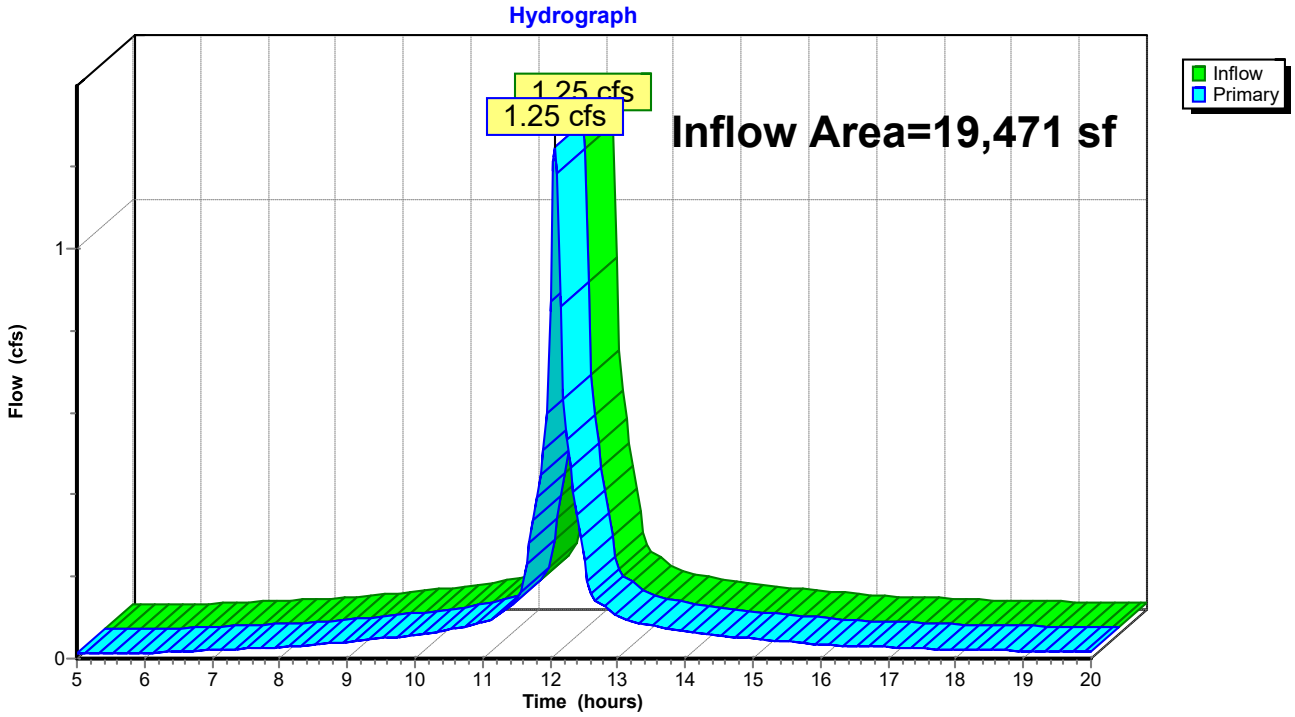


Summary for Link 2L: POC B

Inflow Area = 19,471 sf,100.00% Impervious, Inflow Depth > 2.47" for 1-yr event
Inflow = 1.25 cfs @ 12.07 hrs, Volume= 4,009 cf
Primary = 1.25 cfs @ 12.07 hrs, Volume= 4,009 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

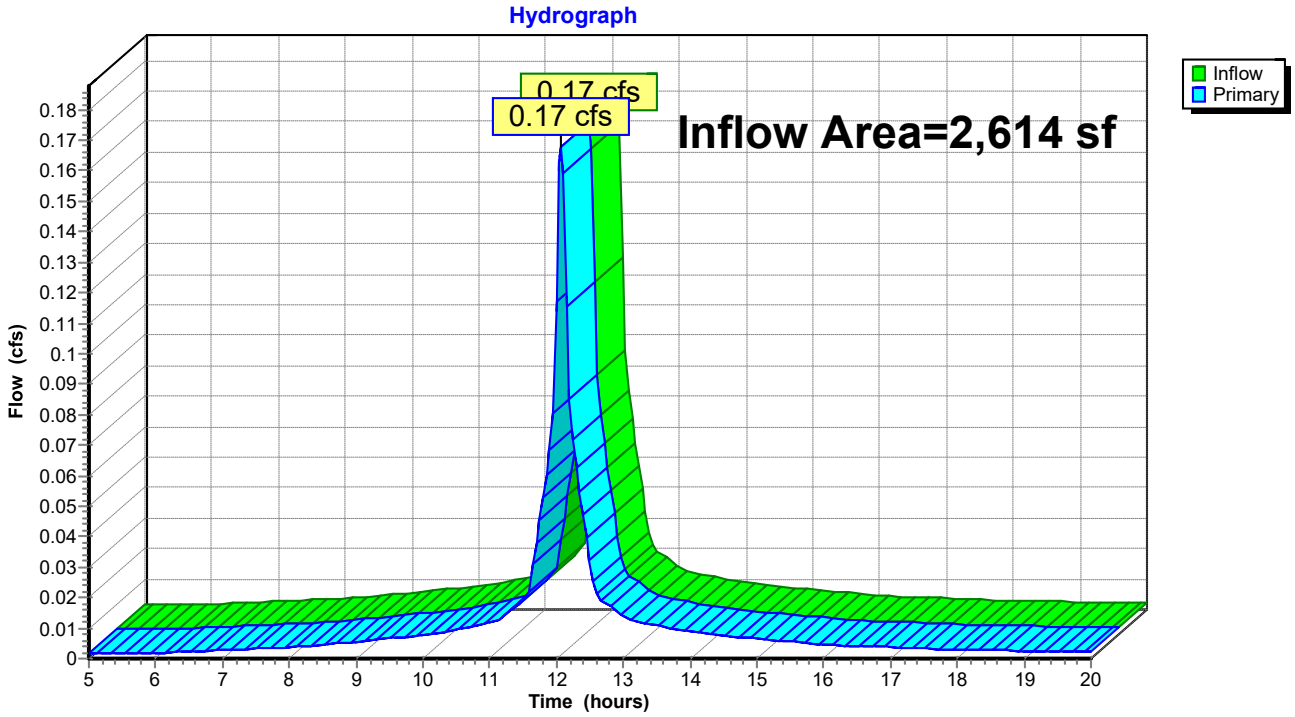


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 2.47" for 1-yr event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 538 cf
Primary = 0.17 cfs @ 12.07 hrs, Volume= 538 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A1: WS-A1 Runoff Area=25.200 ac 5.22% Impervious Runoff Depth>0.44"
Tc=80.4 min CN=60 Runoff=3.67 cfs 40,237 cf

Subcatchment A2: WS-A2 Runoff Area=0.412 ac 52.67% Impervious Runoff Depth>1.78"
Tc=40.2 min CN=84 Runoff=0.46 cfs 2,657 cf

Subcatchment A3: WS-A3 Runoff Area=0.202 ac 73.27% Impervious Runoff Depth>2.30"
Tc=5.0 min CN=90 Runoff=0.57 cfs 1,684 cf

Subcatchment B1: WS-B1 Runoff Area=14.550 ac 2.89% Impervious Runoff Depth>0.51"
Tc=91.9 min CN=62 Runoff=2.38 cfs 27,001 cf

Subcatchment B2: WS-B2 Runoff Area=0.710 ac 74.65% Impervious Runoff Depth>2.39"
Tc=5.0 min CN=91 Runoff=2.07 cfs 6,154 cf

Subcatchment B3: WS-B3 Runoff Area=0.709 ac 54.72% Impervious Runoff Depth>1.56"
Tc=40.3 min CN=81 Runoff=0.69 cfs 4,008 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.447 ac 100.00% Impervious Runoff Depth>3.04"
Tc=5.0 min CN=98 Runoff=1.53 cfs 4,932 cf

Subcatchment D: WS-D (Design Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>3.04"
Tc=5.0 min CN=98 Runoff=0.20 cfs 662 cf

Subcatchment E: WS-E Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>3.04"
Tc=5.0 min CN=98 Runoff=0.38 cfs 1,214 cf

Pond EX-AP: Existing Pond A Peak Elev=5.79' Storage=32,556 cf Inflow=3.89 cfs 45,791 cf
Discarded=0.56 cfs 13,225 cf Primary=0.00 cfs 0 cf Outflow=0.56 cfs 13,225 cf

Pond EX-BP: Design Point 1 Peak Elev=4.07' Storage=7,766 cf Inflow=3.11 cfs 37,161 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=2.18 cfs 35,043 cf

Pond PL-P: Parking Lot Pond Peak Elev=10.64' Storage=1,152 cf Inflow=2.07 cfs 6,154 cf
Outflow=0.63 cfs 6,152 cf

Link 1L: POC A Inflow=2.18 cfs 35,043 cf
Primary=2.18 cfs 35,043 cf

Link 2L: POC B Inflow=1.53 cfs 4,932 cf
Primary=1.53 cfs 4,932 cf

Link 3L: POC C Inflow=0.20 cfs 662 cf
Primary=0.20 cfs 662 cf

Total Runoff Area = 1,846,944 sf Runoff Volume = 88,548 cf Average Runoff Depth = 0.58"
91.43% Pervious = 1,688,603 sf 8.57% Impervious = 158,341 sf

Summary for Subcatchment A1: WS-A1

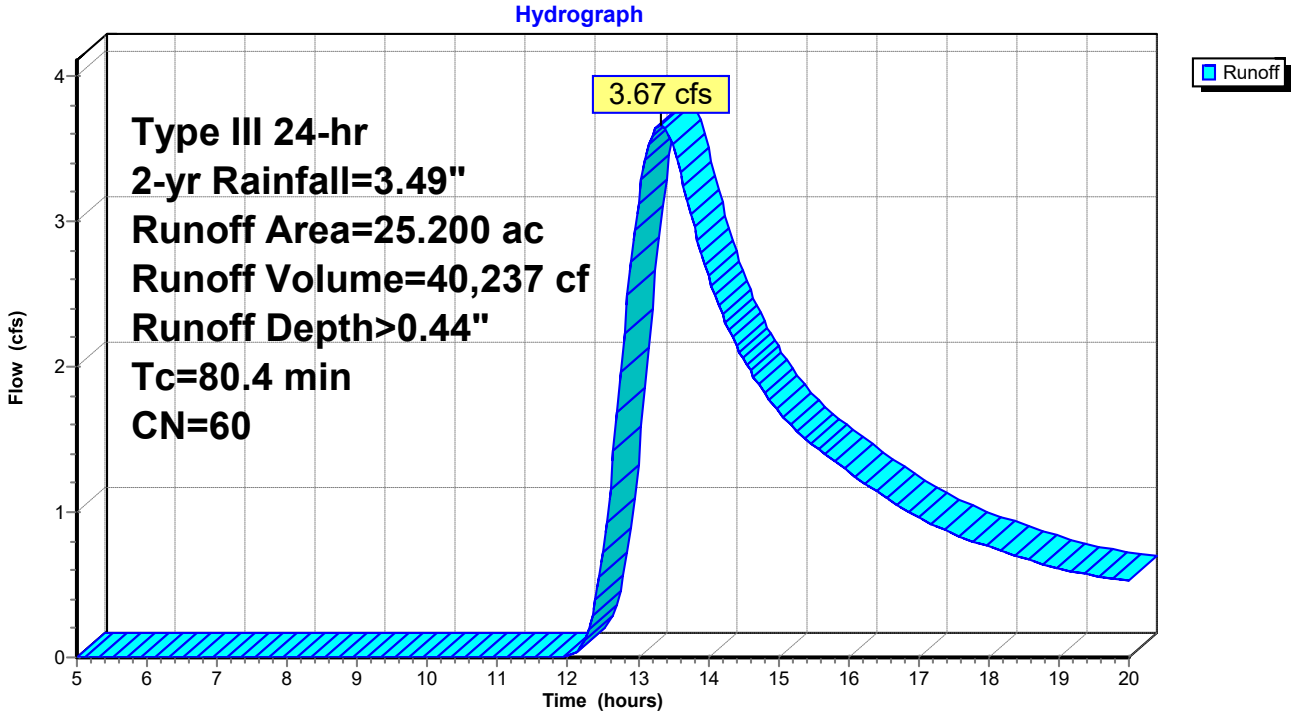
Runoff = 3.67 cfs @ 13.31 hrs, Volume= 40,237 cf, Depth> 0.44"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	19.658	55	Wooded B
*	4.227	69	Grass B
*	1.315	98	Impervious
	25.200	60	Weighted Average
	23.885		94.78% Pervious Area
	1.315		5.22% Impervious Area

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

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

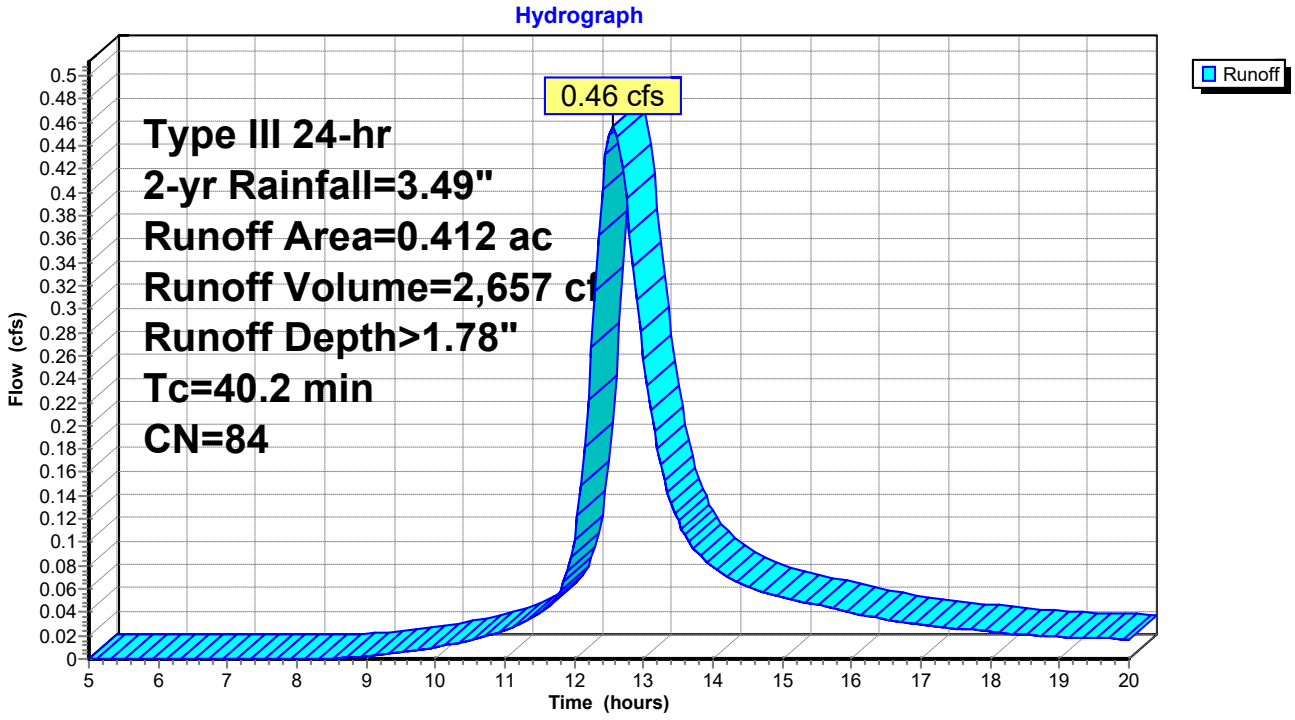
Runoff = 0.46 cfs @ 12.56 hrs, Volume= 2,657 cf, Depth> 1.78"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.217	98	Impervious
*	0.195	69	Grass B
	0.412	84	Weighted Average
	0.195		47.33% Pervious Area
	0.217		52.67% Impervious Area

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

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

[49] Hint: Tc<2dt may require smaller dt

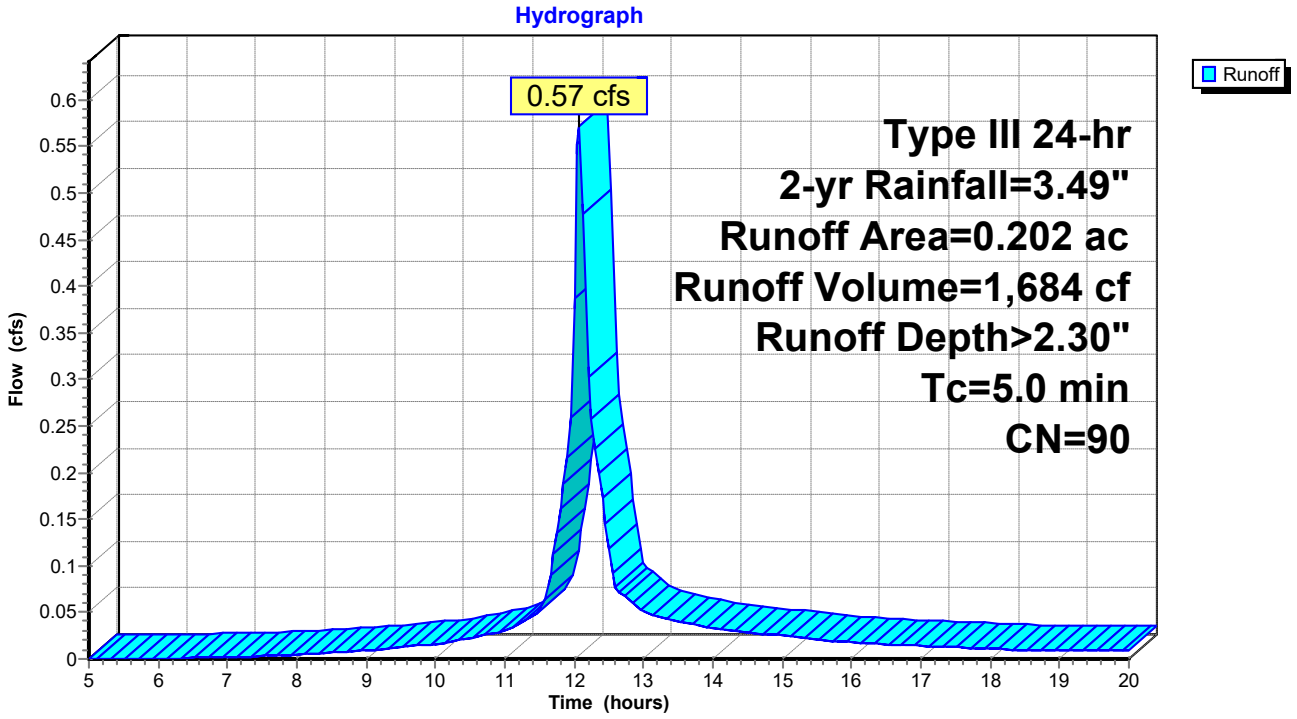
Runoff = 0.57 cfs @ 12.07 hrs, Volume= 1,684 cf, Depth> 2.30"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.148	98	Impervious
*	0.054	69	Grass B
	0.202	90	Weighted Average
	0.054		26.73% Pervious Area
	0.148		73.27% Impervious Area

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

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

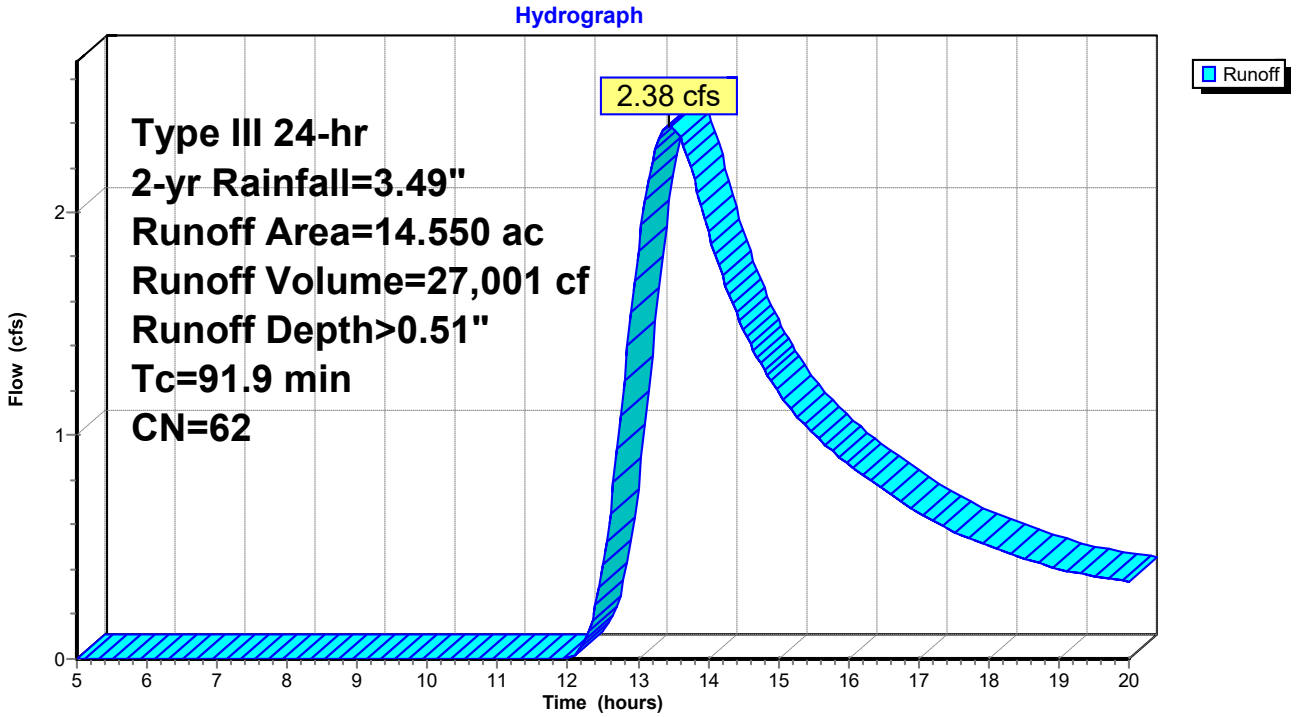
Runoff = 2.38 cfs @ 13.44 hrs, Volume= 27,001 cf, Depth> 0.51"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.420	98	Impervious
*	8.860	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	14.550	62	Weighted Average
	14.130		97.11% Pervious Area
	0.420		2.89% Impervious Area

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

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

[49] Hint: Tc<2dt may require smaller dt

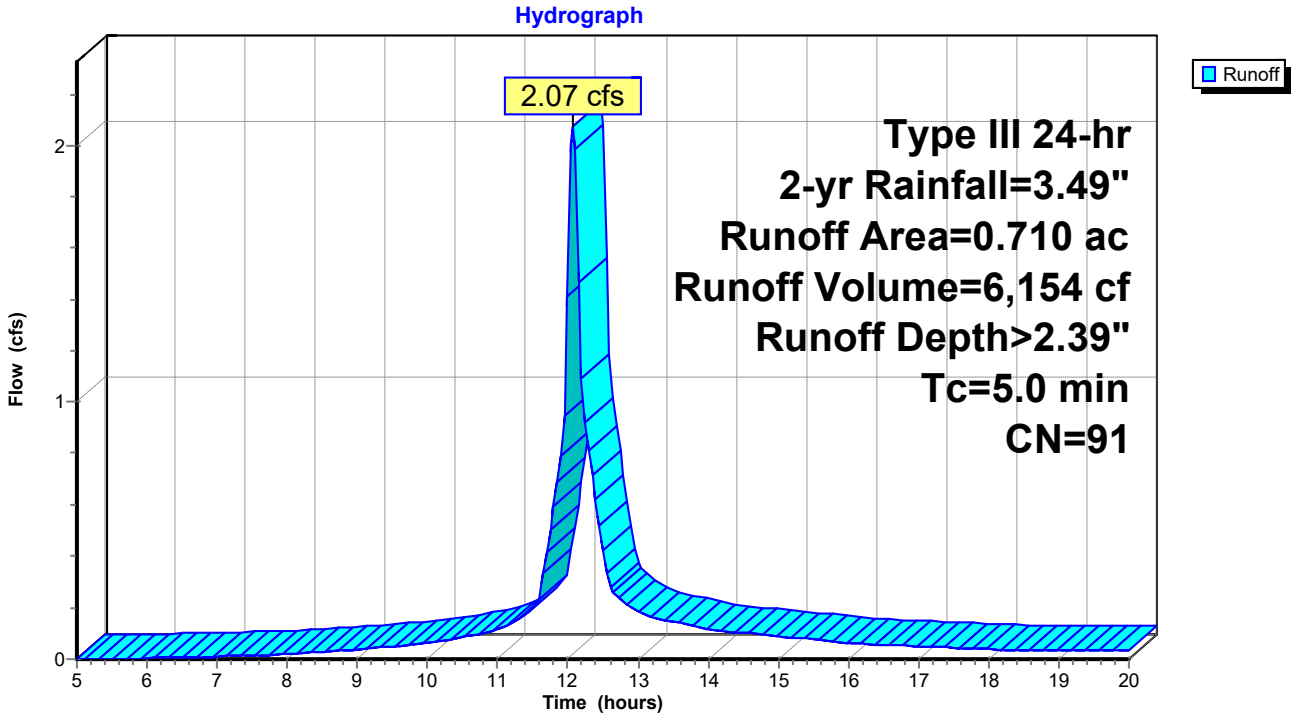
Runoff = 2.07 cfs @ 12.07 hrs, Volume= 6,154 cf, Depth> 2.39"
Routed to Pond PL-P : Parking Lot Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.530	98	Impervious
*	0.000	55	Wooded B
*	0.180	69	Grass B
*	0.000	84	Grass D
	0.710	91	Weighted Average
	0.180		25.35% Pervious Area
	0.530		74.65% Impervious Area

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

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

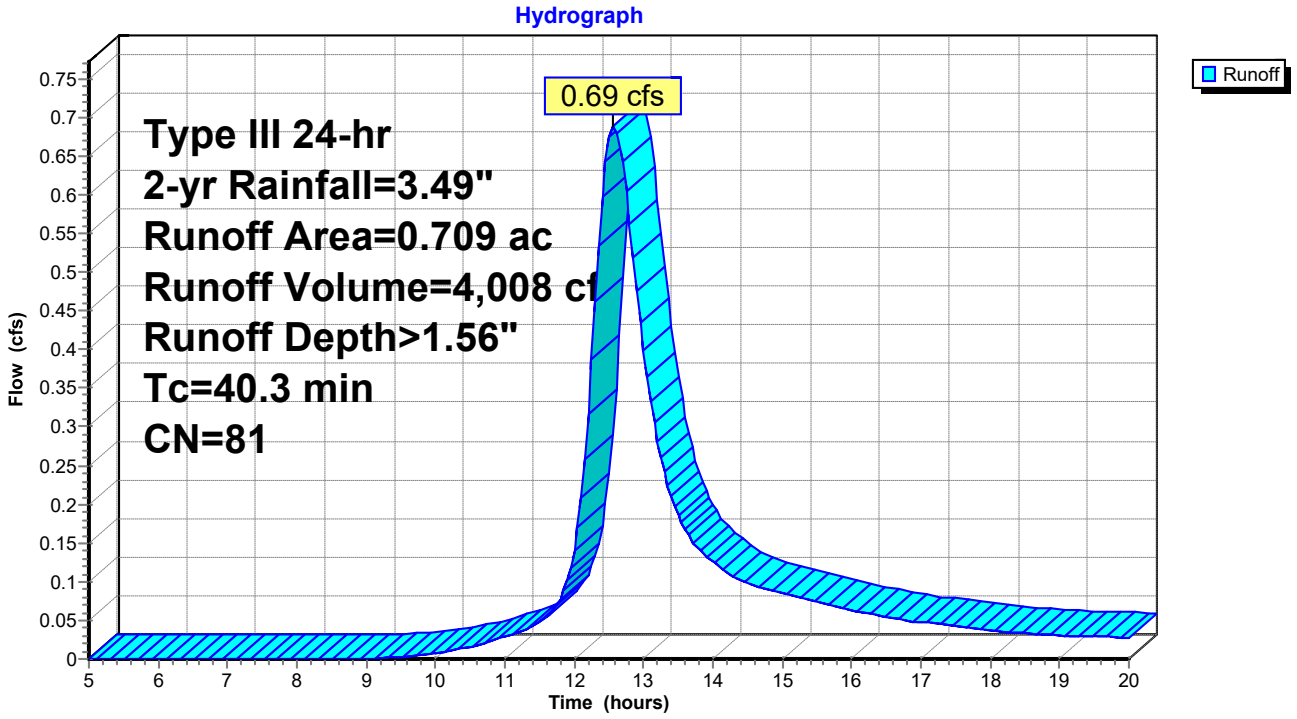
Runoff = 0.69 cfs @ 12.57 hrs, Volume= 4,008 cf, Depth> 1.56"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.388	98	Impervious
*	0.191	55	Wooded B
*	0.130	69	Grass B
*	0.000	84	Grass D
	0.709	81	Weighted Average
	0.321		45.28% Pervious Area
	0.388		54.72% Impervious Area

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

Subcatchment B3: WS-B3



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

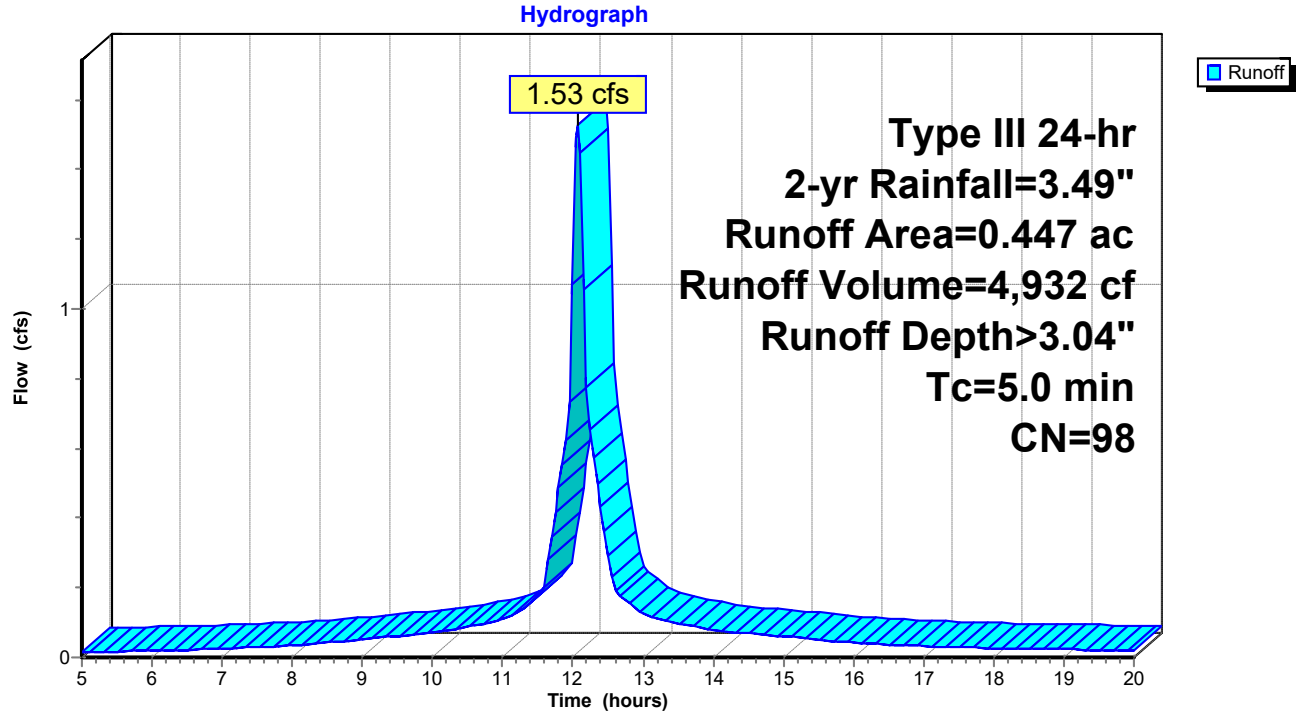
Runoff = 1.53 cfs @ 12.07 hrs, Volume= 4,932 cf, Depth> 3.04"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.447	98	Impervious
*	0.000	69	Grass B
	0.447	98	Weighted Average
	0.447		100.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Design Point 3)

[49] Hint: Tc<2dt may require smaller dt

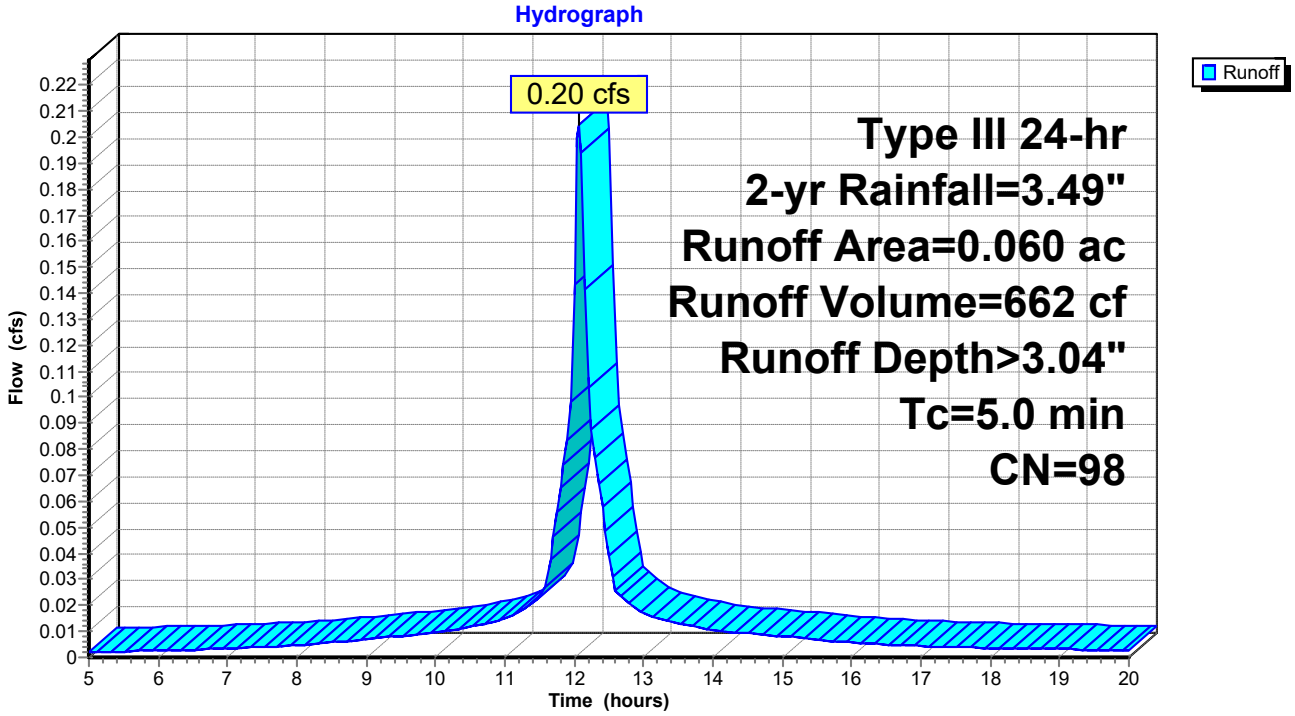
Runoff = 0.20 cfs @ 12.07 hrs, Volume= 662 cf, Depth> 3.04"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Design Point 3)



Summary for Subcatchment E: WS-E

[49] Hint: Tc<2dt may require smaller dt

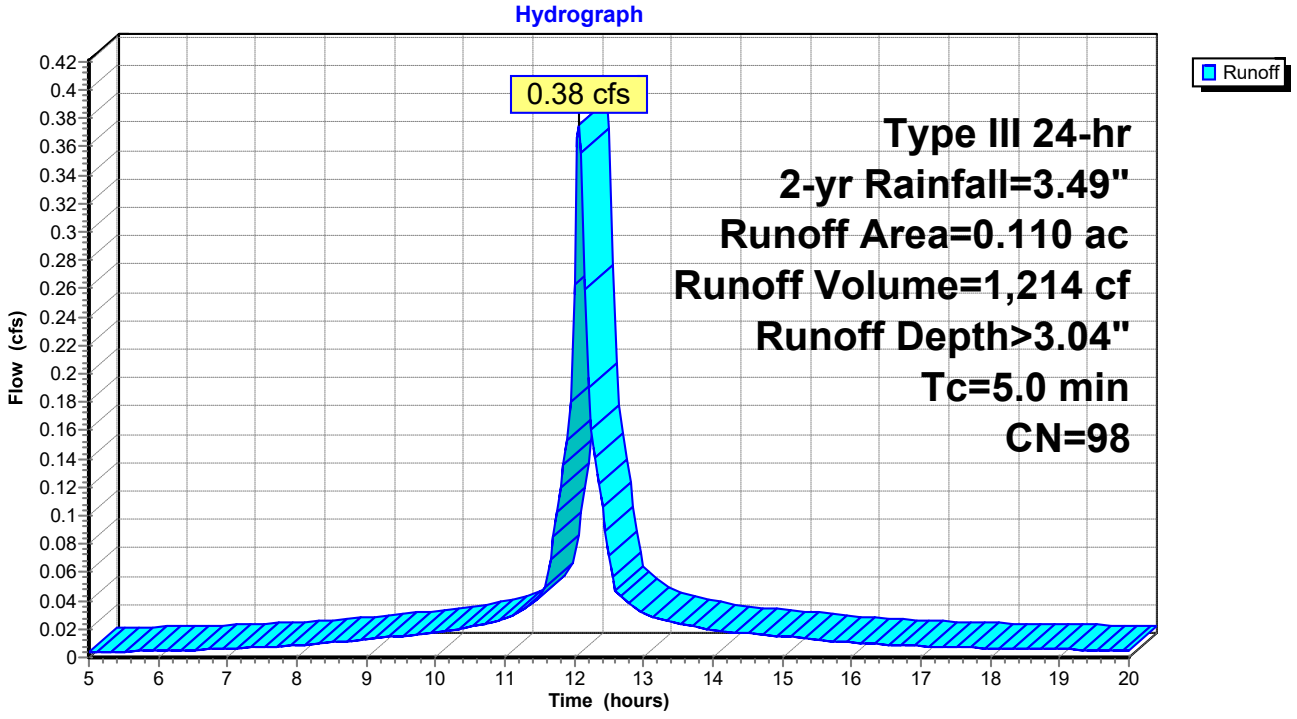
Runoff = 0.38 cfs @ 12.07 hrs, Volume= 1,214 cf, Depth> 3.04"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.49"

	Area (ac)	CN	Description
*	0.110	98	Impervious
*	0.000	69	Grass B
	0.110	98	Weighted Average
	0.110		100.00% Impervious Area

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

Subcatchment E: WS-E



Summary for Pond EX-AP: Existing Pond A

Inflow Area = 1,129,249 sf, 6.90% Impervious, Inflow Depth > 0.49" for 2-yr event
Inflow = 3.89 cfs @ 13.30 hrs, Volume= 45,791 cf
Outflow = 0.56 cfs @ 20.00 hrs, Volume= 13,225 cf, Atten= 86%, Lag= 402.2 min
Discarded = 0.56 cfs @ 20.00 hrs, Volume= 13,225 cf
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 5.79' @ 20.00 hrs Surf.Area= 48,349 sf Storage= 32,556 cf

Plug-Flow detention time= 225.9 min calculated for 13,181 cf (29% of inflow)
Center-of-Mass det. time= 99.2 min (989.7 - 890.4)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	245,195 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

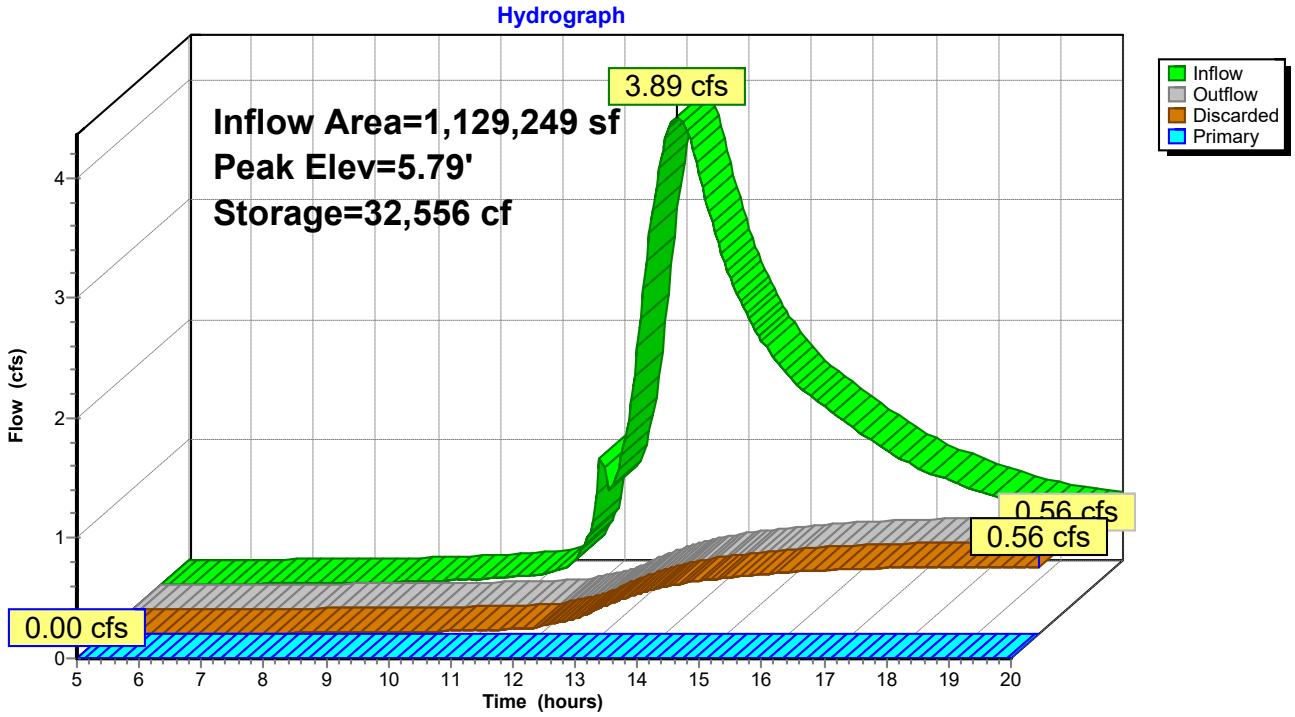
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	19,830	6,610	6,610	19,832
6.00	58,335	37,392	44,002	58,343
7.00	393,697	201,193	245,195	393,708

Device	Routing	Invert	Outlet Devices
#1	Primary	6.30'	**24.0" Round Culvert - Pipe** L= 97.0' Ke= 0.600 Inlet / Outlet Invert= 6.30' / 6.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.56 cfs @ 20.00 hrs HW=5.79' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.56 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=4.03' (Free Discharge)
↑—**1=Culvert - Pipe** (Controls 0.00 cfs)

Pond EX-AP: Existing Pond A



Summary for Pond EX-BP: Design Point 1

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.24" for 2-yr event
Inflow = 3.11 cfs @ 13.24 hrs, Volume= 37,161 cf
Outflow = 2.18 cfs @ 13.98 hrs, Volume= 35,043 cf, Atten= 30%, Lag= 44.9 min
Primary = 2.18 cfs @ 13.98 hrs, Volume= 35,043 cf
Routed to Link 1L : POC A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 4.07' @ 13.98 hrs Surf.Area= 20,239 sf Storage= 7,766 cf

Plug-Flow detention time= 61.3 min calculated for 35,043 cf (94% of inflow)
Center-of-Mass det. time= 44.2 min (920.5 - 876.3)

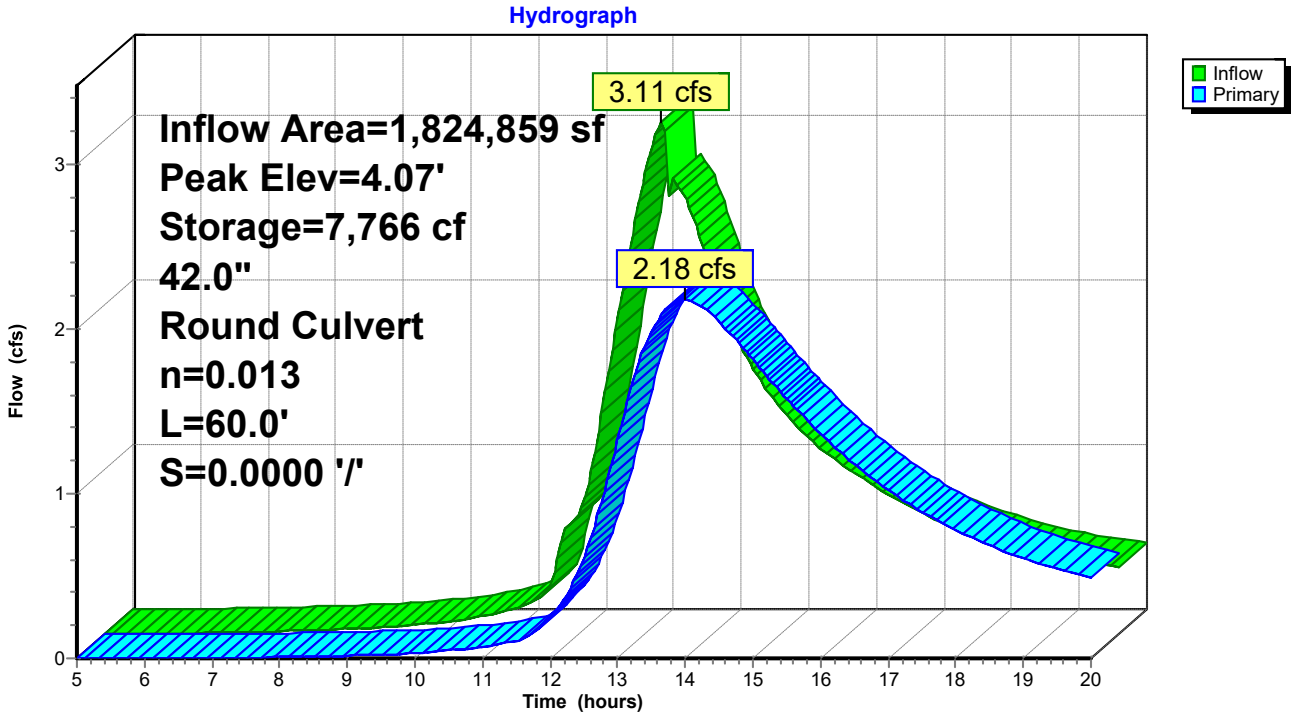
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,611 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,834	38,109	38,109
6.00	120,171	82,503	120,611

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=2.18 cfs @ 13.98 hrs HW=4.07' (Free Discharge)
1=Culvert (Barrel Controls 2.18 cfs @ 2.11 fps)

Pond EX-BP: Design Point 1



Summary for Pond PL-P: Parking Lot Pond

[44] Hint: Outlet device #3 is below defined storage

Inflow Area = 30,928 sf, 74.65% Impervious, Inflow Depth > 2.39" for 2-yr event
Inflow = 2.07 cfs @ 12.07 hrs, Volume= 6,154 cf
Outflow = 0.63 cfs @ 12.39 hrs, Volume= 6,152 cf, Atten= 69%, Lag= 19.1 min
Primary = 0.63 cfs @ 12.39 hrs, Volume= 6,152 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.64' @ 12.39 hrs Surf.Area= 2,275 sf Storage= 1,152 cf

Plug-Flow detention time= 9.8 min calculated for 6,132 cf (100% of inflow)
Center-of-Mass det. time= 9.6 min (776.8 - 767.2)

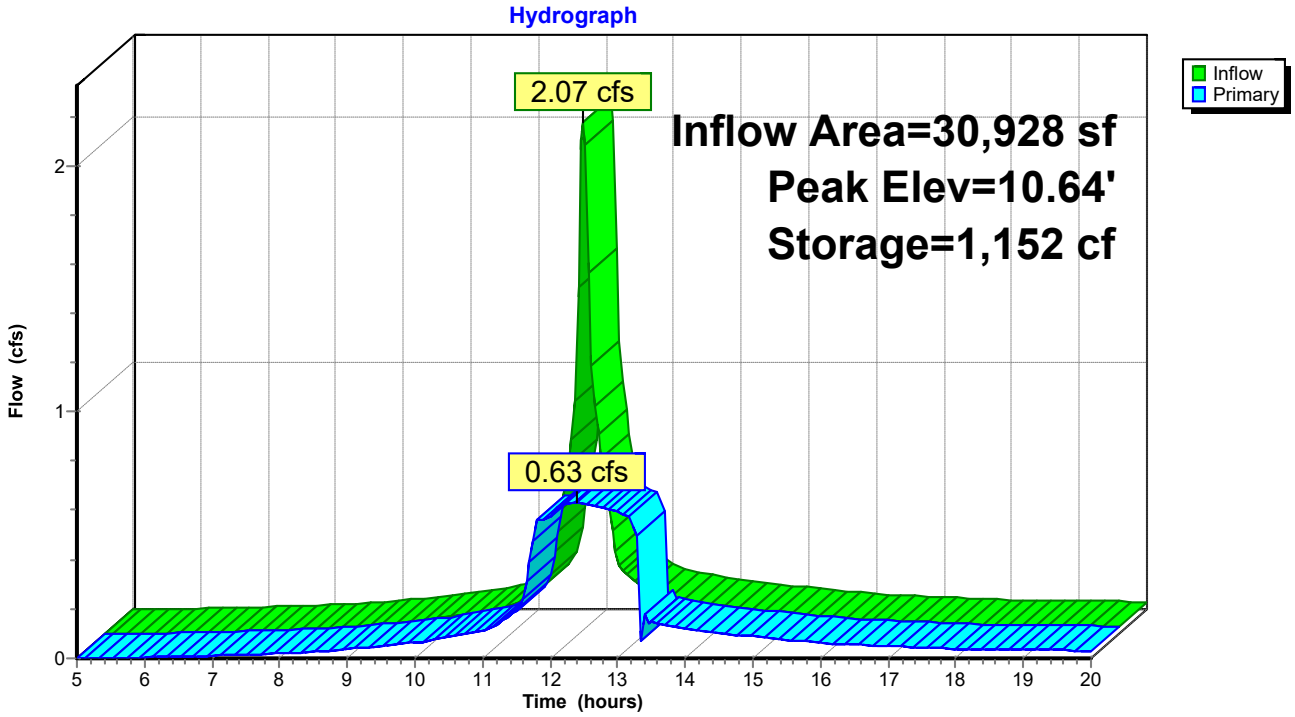
Volume	Invert	Avail.Storage	Storage Description
#1	10.00'	5,740 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.00	1,350	0	0	1,350
11.00	2,894	2,074	2,074	2,902
12.00	4,497	3,666	5,740	4,520

Device	Routing	Invert	Outlet Devices
#1	Primary	7.33'	**12.0" Round Culvert** L= 92.0' Ke= 0.600 Inlet / Outlet Invert= 7.33' / 6.40' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	11.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	8.00'	**6.0" Round Culvert** L= 200.0' Ke= 0.600 Inlet / Outlet Invert= 8.00' / 7.33' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=0.63 cfs @ 12.39 hrs HW=10.64' (Free Discharge)
└**1=Culvert** (Passes 0.63 cfs of 5.36 cfs potential flow)
└**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Culvert** (Barrel Controls 0.63 cfs @ 3.22 fps)

Pond PL-P: Parking Lot Pond

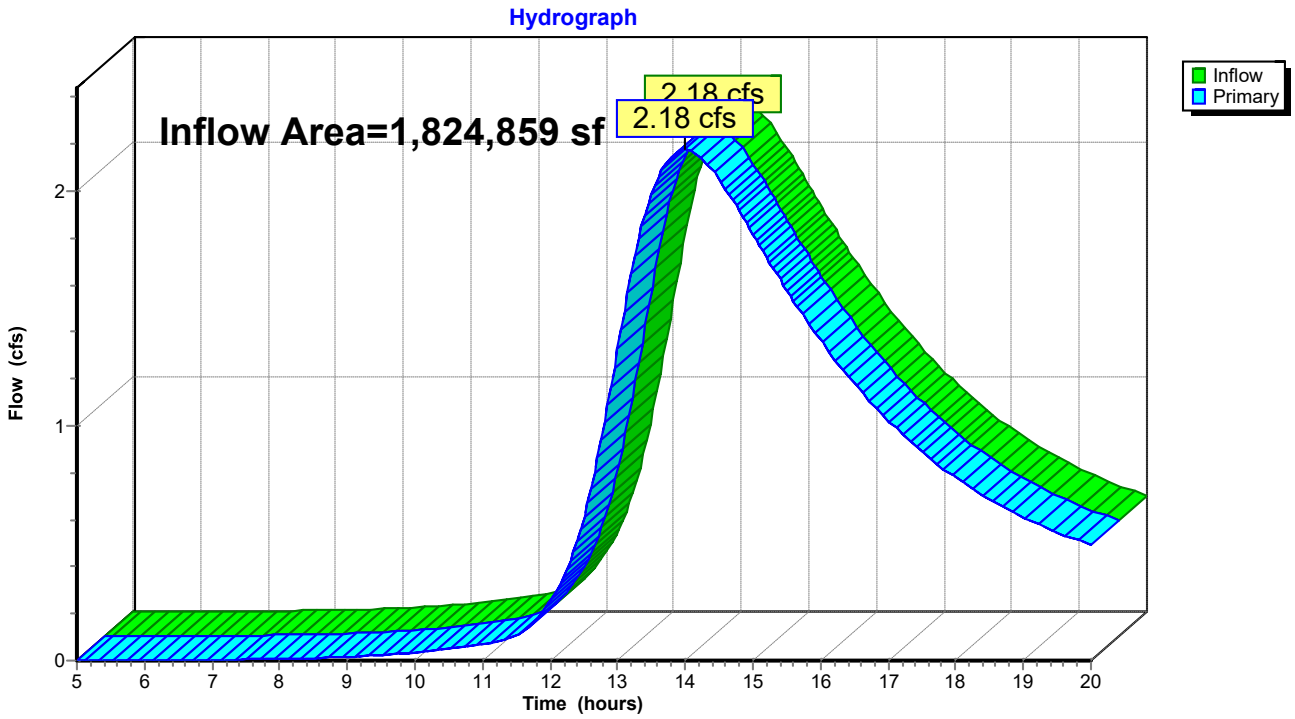


Summary for Link 1L: POC A

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.23" for 2-yr event
Inflow = 2.18 cfs @ 13.98 hrs, Volume= 35,043 cf
Primary = 2.18 cfs @ 13.98 hrs, Volume= 35,043 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC A

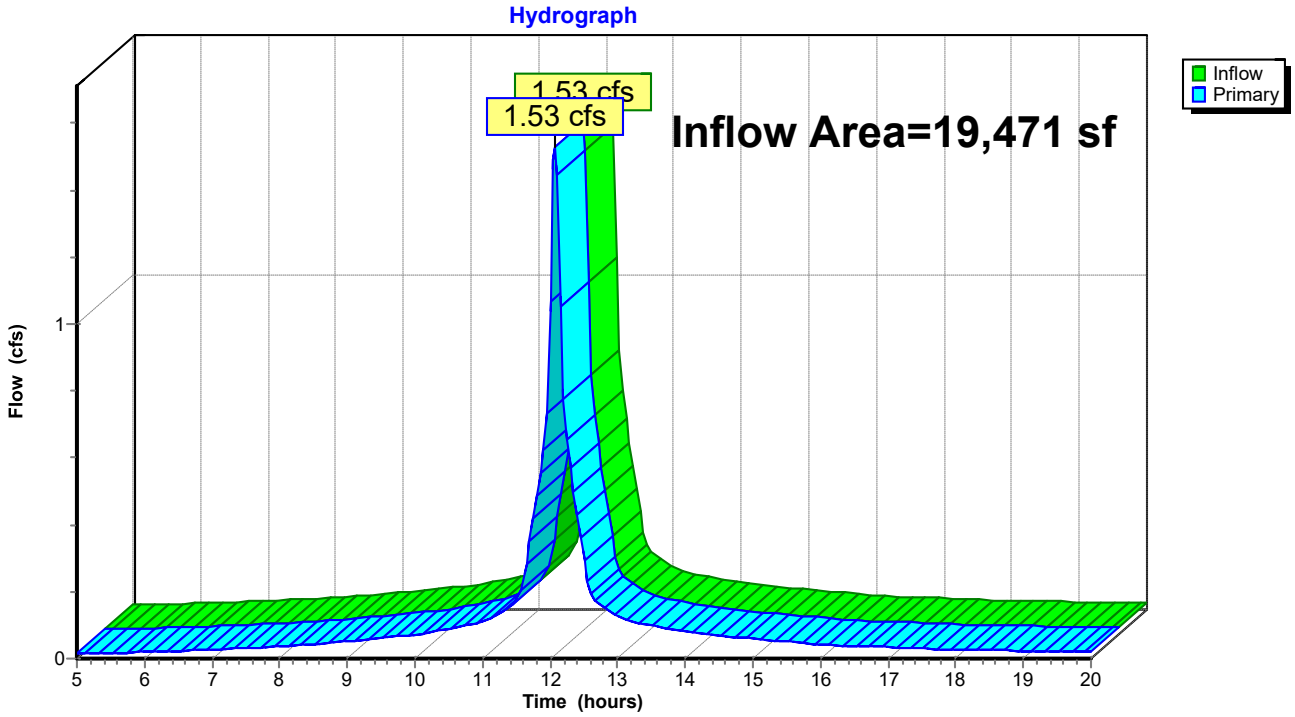


Summary for Link 2L: POC B

Inflow Area = 19,471 sf,100.00% Impervious, Inflow Depth > 3.04" for 2-yr event
Inflow = 1.53 cfs @ 12.07 hrs, Volume= 4,932 cf
Primary = 1.53 cfs @ 12.07 hrs, Volume= 4,932 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

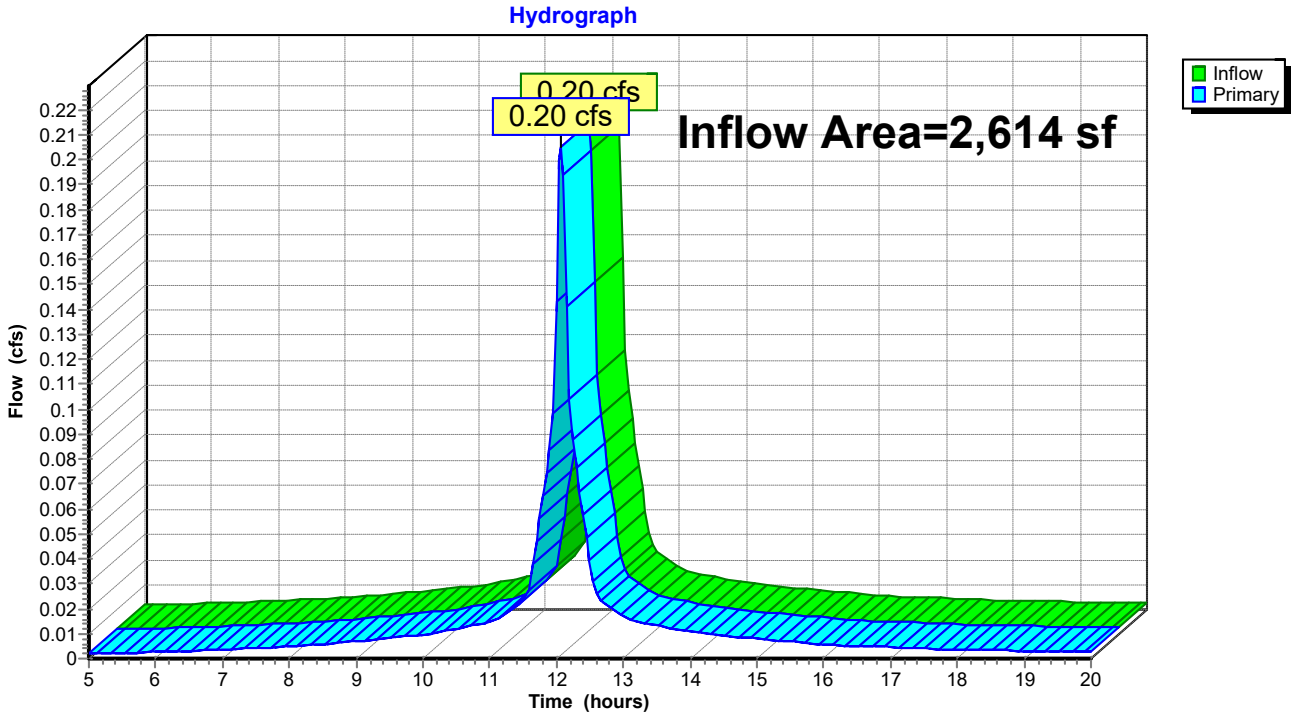


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 3.04" for 2-yr event
Inflow = 0.20 cfs @ 12.07 hrs, Volume= 662 cf
Primary = 0.20 cfs @ 12.07 hrs, Volume= 662 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A1: WS-A1 Runoff Area=25.200 ac 5.22% Impervious Runoff Depth>0.88"
Tc=80.4 min CN=60 Runoff=8.34 cfs 80,206 cf

Subcatchment A2: WS-A2 Runoff Area=0.412 ac 52.67% Impervious Runoff Depth>2.61"
Tc=40.2 min CN=84 Runoff=0.67 cfs 3,904 cf

Subcatchment A3: WS-A3 Runoff Area=0.202 ac 73.27% Impervious Runoff Depth>3.21"
Tc=5.0 min CN=90 Runoff=0.79 cfs 2,352 cf

Subcatchment B1: WS-B1 Runoff Area=14.550 ac 2.89% Impervious Runoff Depth>0.98"
Tc=91.9 min CN=62 Runoff=5.08 cfs 51,789 cf

Subcatchment B2: WS-B2 Runoff Area=0.710 ac 74.65% Impervious Runoff Depth>3.31"
Tc=5.0 min CN=91 Runoff=2.82 cfs 8,521 cf

Subcatchment B3: WS-B3 Runoff Area=0.709 ac 54.72% Impervious Runoff Depth>2.35"
Tc=40.3 min CN=81 Runoff=1.04 cfs 6,049 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.447 ac 100.00% Impervious Runoff Depth>3.96"
Tc=5.0 min CN=98 Runoff=1.98 cfs 6,430 cf

Subcatchment D: WS-D (Design Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>3.96"
Tc=5.0 min CN=98 Runoff=0.27 cfs 863 cf

Subcatchment E: WS-E Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>3.96"
Tc=5.0 min CN=98 Runoff=0.49 cfs 1,582 cf

Pond EX-AP: Existing Pond A Peak Elev=6.22' Storage=61,889 cf Inflow=8.69 cfs 88,044 cf
Discarded=1.23 cfs 27,173 cf Primary=0.00 cfs 0 cf Outflow=1.23 cfs 27,173 cf

Pond EX-BP: Design Point 1 Peak Elev=4.37' Storage=14,989 cf Inflow=6.03 cfs 66,357 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=4.43 cfs 63,233 cf

Pond PL-P: Parking Lot Pond Peak Elev=10.99' Storage=2,041 cf Inflow=2.82 cfs 8,521 cf
Outflow=0.67 cfs 8,519 cf

Link 1L: POC A Inflow=4.43 cfs 63,233 cf
Primary=4.43 cfs 63,233 cf

Link 2L: POC B Inflow=1.98 cfs 6,430 cf
Primary=1.98 cfs 6,430 cf

Link 3L: POC C Inflow=0.27 cfs 863 cf
Primary=0.27 cfs 863 cf

Total Runoff Area = 1,846,944 sf Runoff Volume = 161,696 cf Average Runoff Depth = 1.05"
91.43% Pervious = 1,688,603 sf 8.57% Impervious = 158,341 sf

Summary for Subcatchment A1: WS-A1

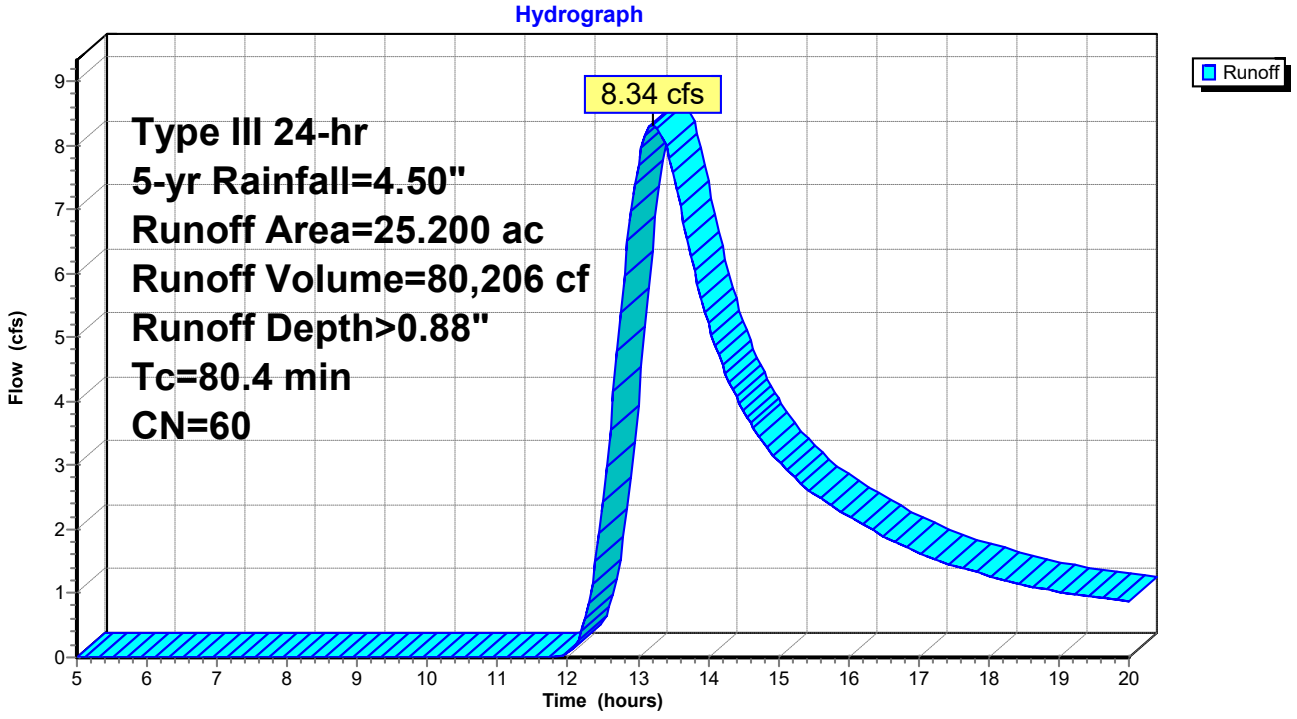
Runoff = 8.34 cfs @ 13.21 hrs, Volume= 80,206 cf, Depth> 0.88"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	19.658	55	Wooded B
*	4.227	69	Grass B
*	1.315	98	Impervious
	25.200	60	Weighted Average
	23.885		94.78% Pervious Area
	1.315		5.22% Impervious Area

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

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

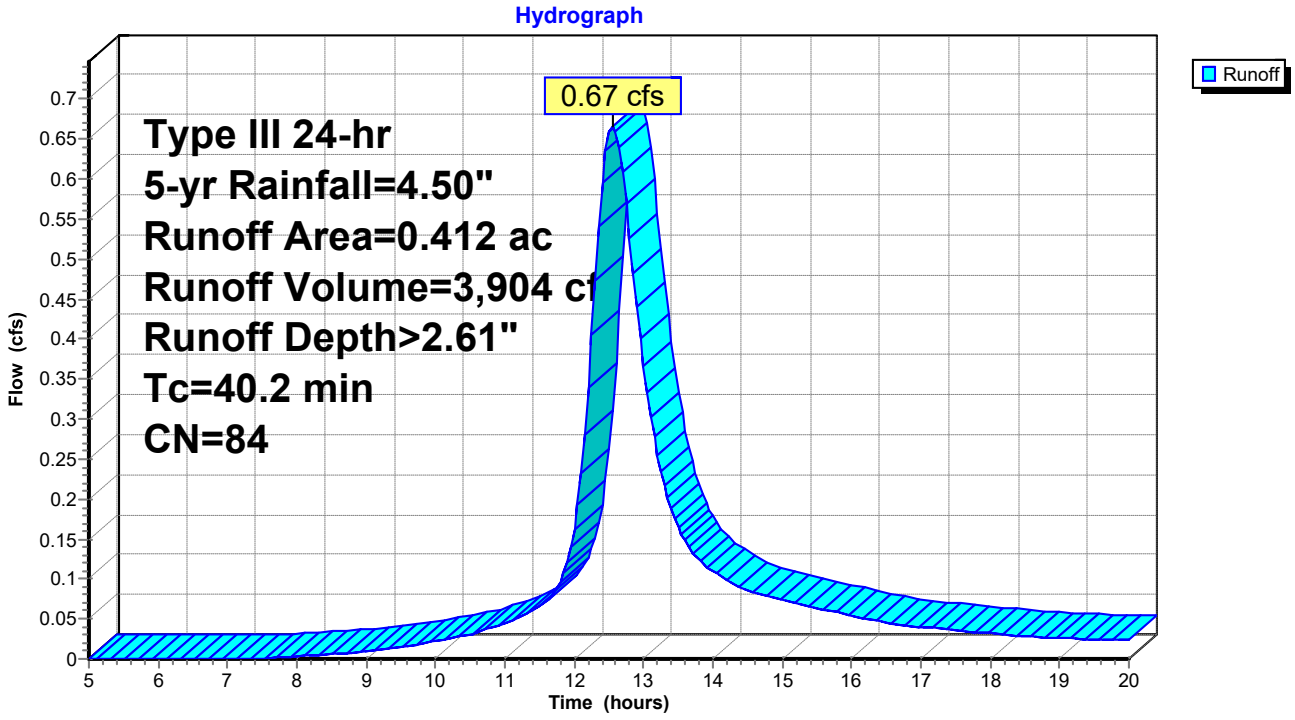
Runoff = 0.67 cfs @ 12.55 hrs, Volume= 3,904 cf, Depth> 2.61"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.217	98	Impervious
*	0.195	69	Grass B
	0.412	84	Weighted Average
	0.195		47.33% Pervious Area
	0.217		52.67% Impervious Area

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

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

[49] Hint: Tc<2dt may require smaller dt

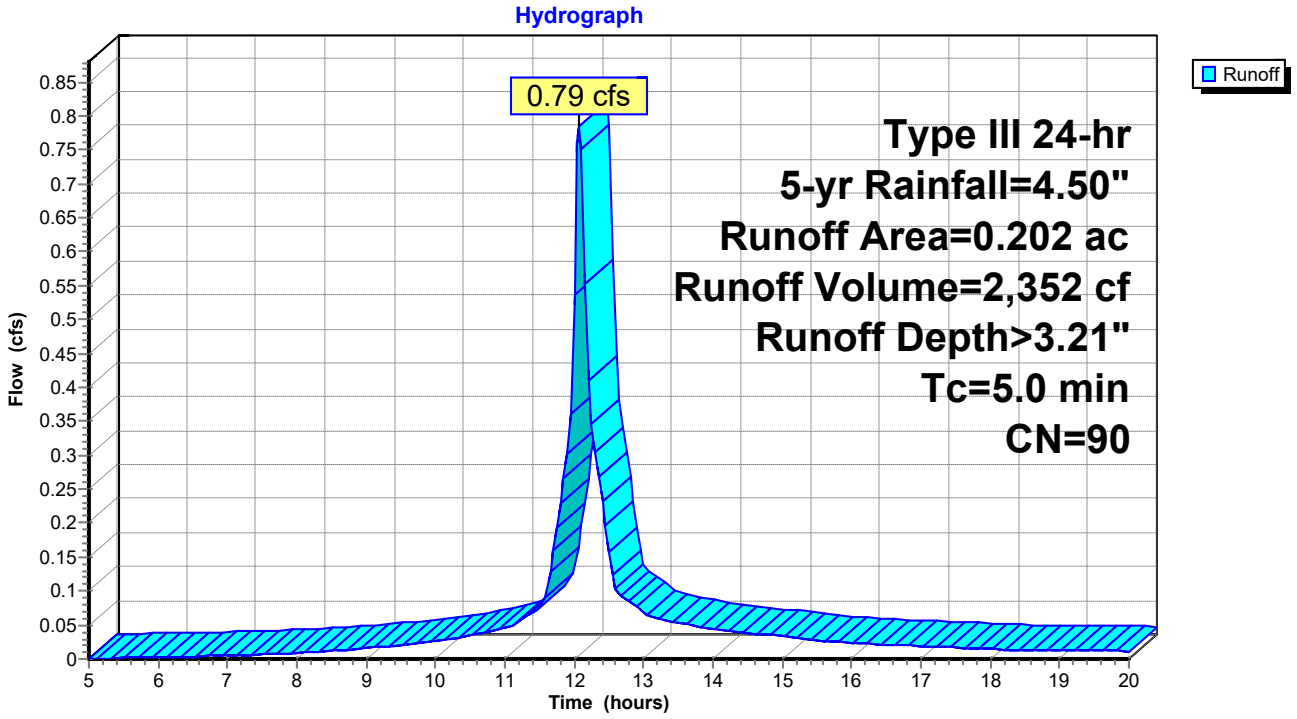
Runoff = 0.79 cfs @ 12.07 hrs, Volume= 2,352 cf, Depth> 3.21"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.148	98	Impervious
*	0.054	69	Grass B
	0.202	90	Weighted Average
	0.054		26.73% Pervious Area
	0.148		73.27% Impervious Area

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

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

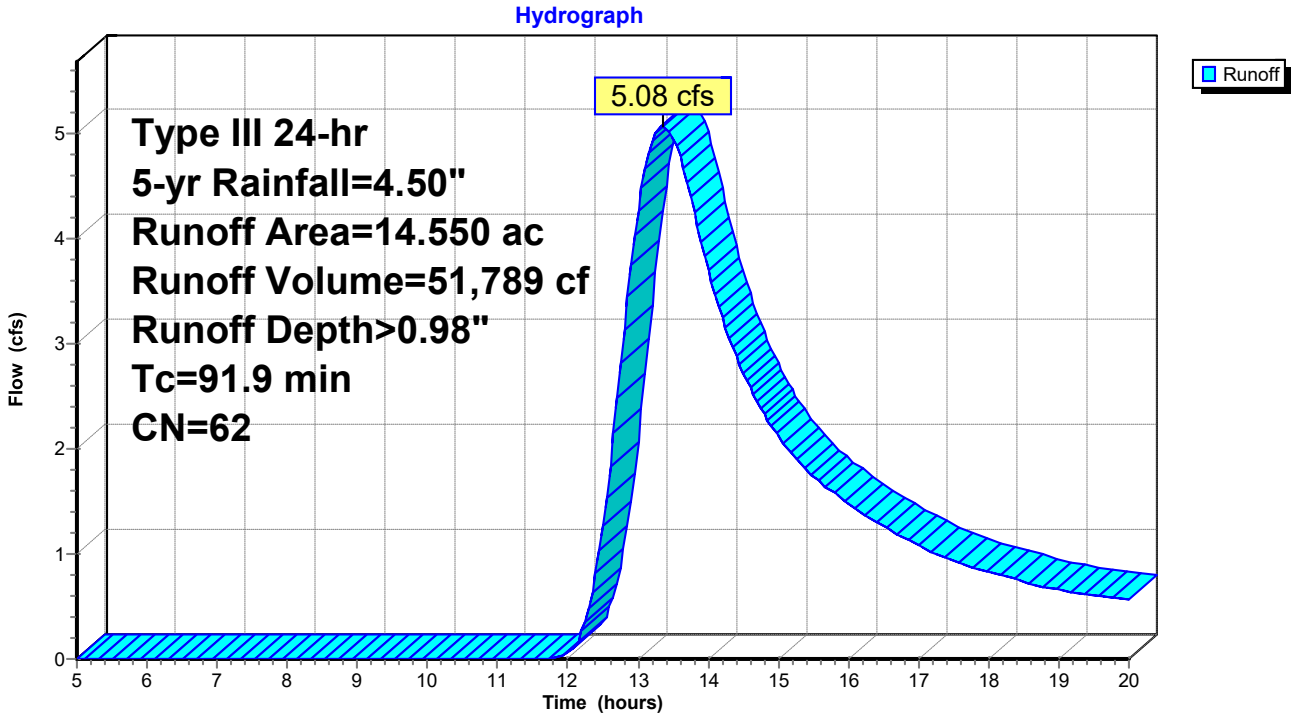
Runoff = 5.08 cfs @ 13.37 hrs, Volume= 51,789 cf, Depth> 0.98"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.420	98	Impervious
*	8.860	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	14.550	62	Weighted Average
	14.130		97.11% Pervious Area
	0.420		2.89% Impervious Area

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

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

[49] Hint: Tc<2dt may require smaller dt

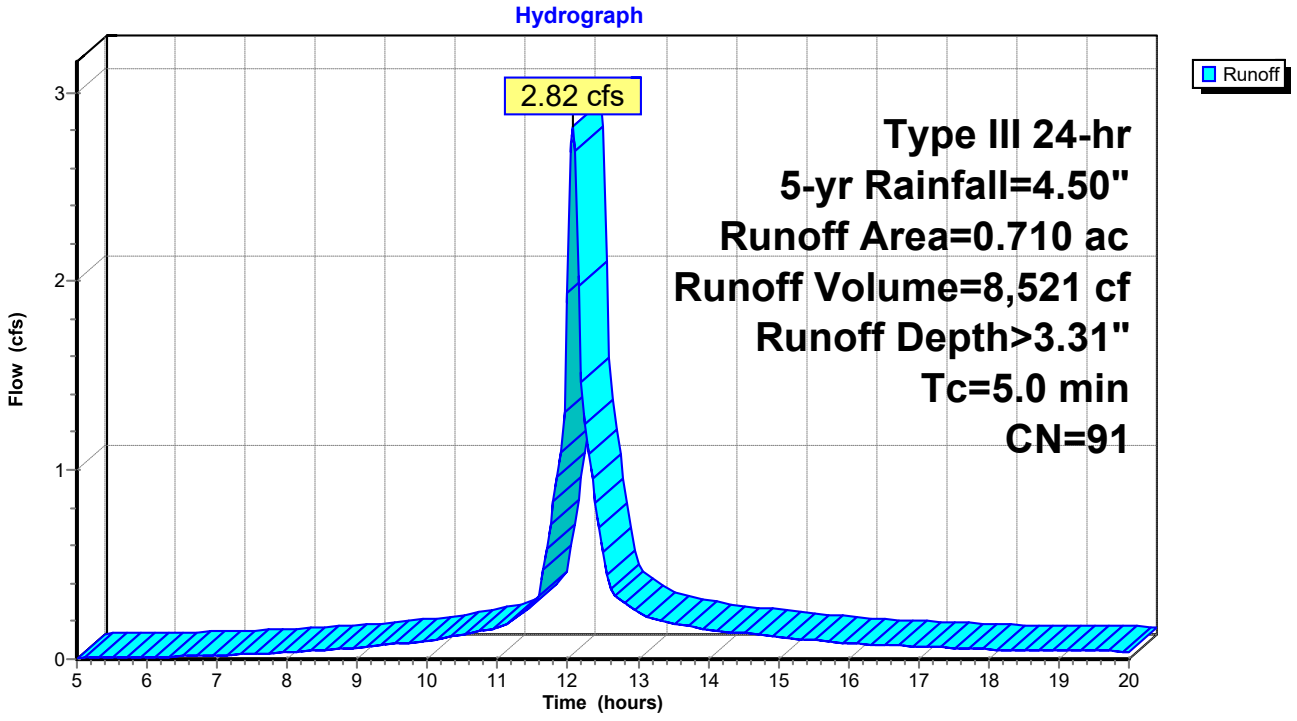
Runoff = 2.82 cfs @ 12.07 hrs, Volume= 8,521 cf, Depth> 3.31"
Routed to Pond PL-P : Parking Lot Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.530	98	Impervious
*	0.000	55	Wooded B
*	0.180	69	Grass B
*	0.000	84	Grass D
	0.710	91	Weighted Average
	0.180		25.35% Pervious Area
	0.530		74.65% Impervious Area

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

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

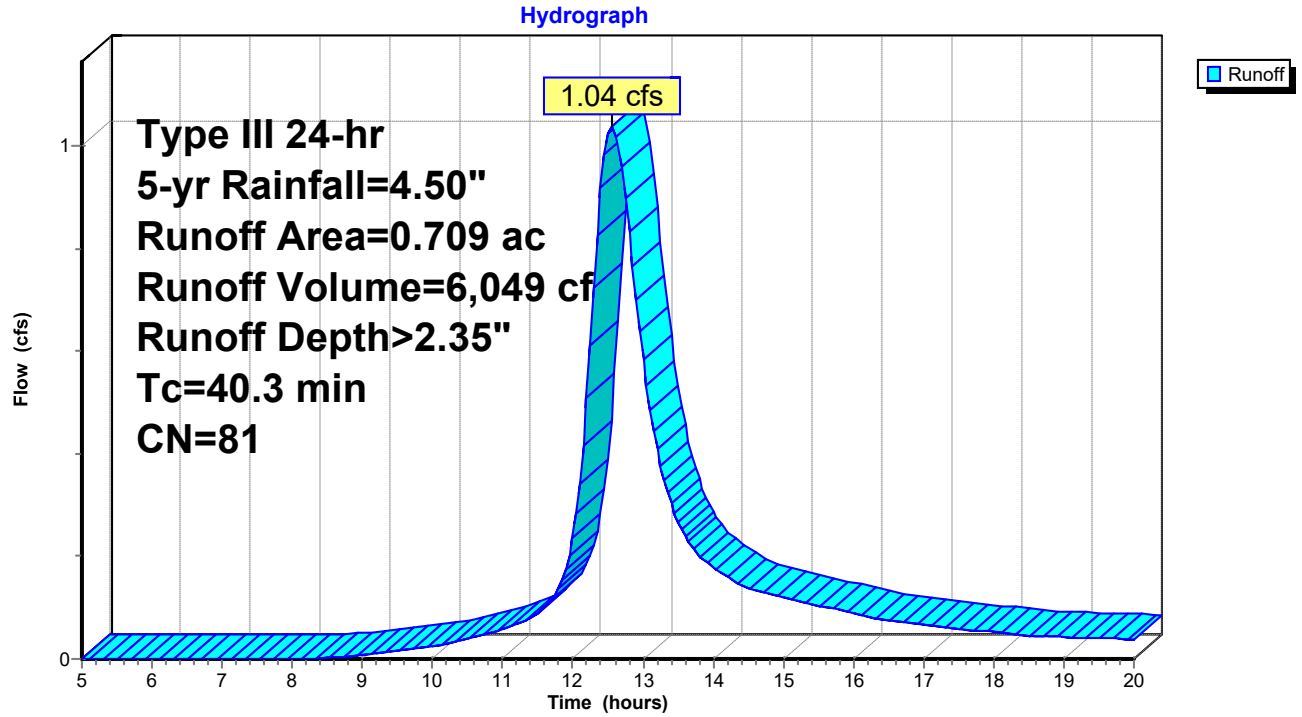
Runoff = 1.04 cfs @ 12.56 hrs, Volume= 6,049 cf, Depth> 2.35"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.388	98	Impervious
*	0.191	55	Wooded B
*	0.130	69	Grass B
*	0.000	84	Grass D
	0.709	81	Weighted Average
	0.321		45.28% Pervious Area
	0.388		54.72% Impervious Area

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

Subcatchment B3: WS-B3



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

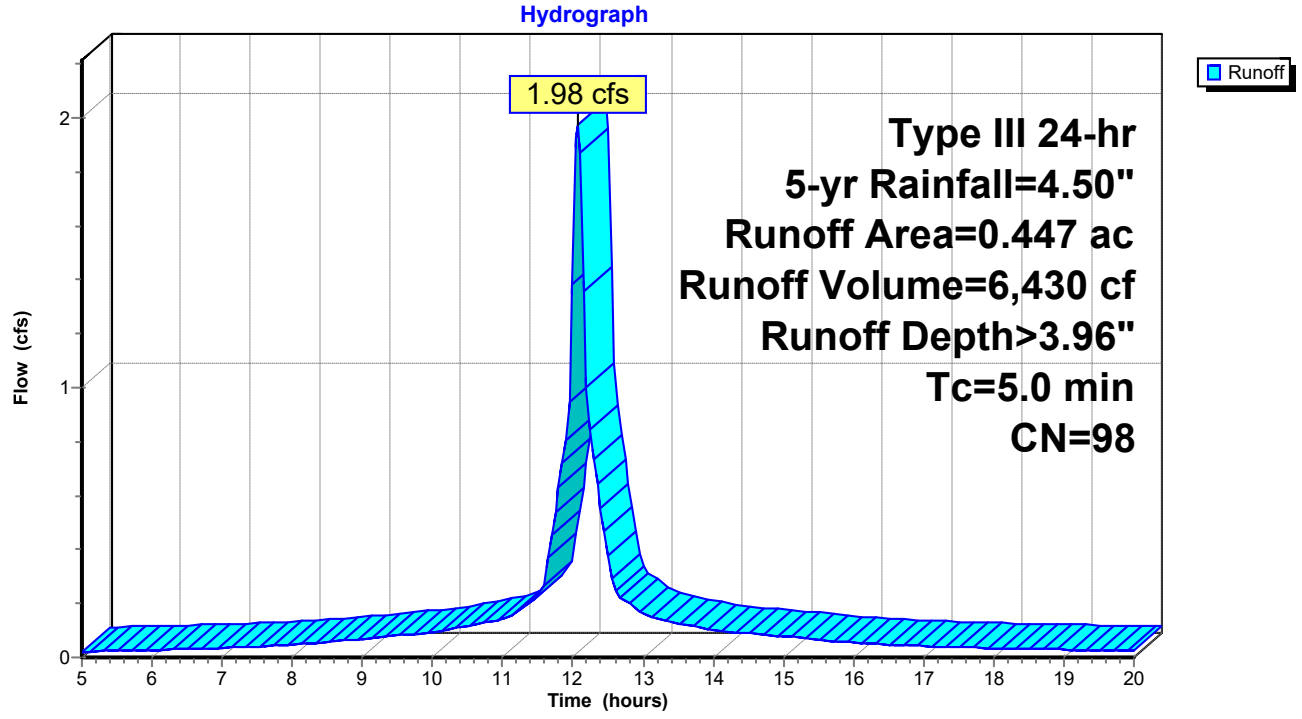
Runoff = 1.98 cfs @ 12.07 hrs, Volume= 6,430 cf, Depth> 3.96"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.447	98	Impervious
*	0.000	69	Grass B
	0.447	98	Weighted Average
	0.447		100.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Design Point 3)

[49] Hint: Tc<2dt may require smaller dt

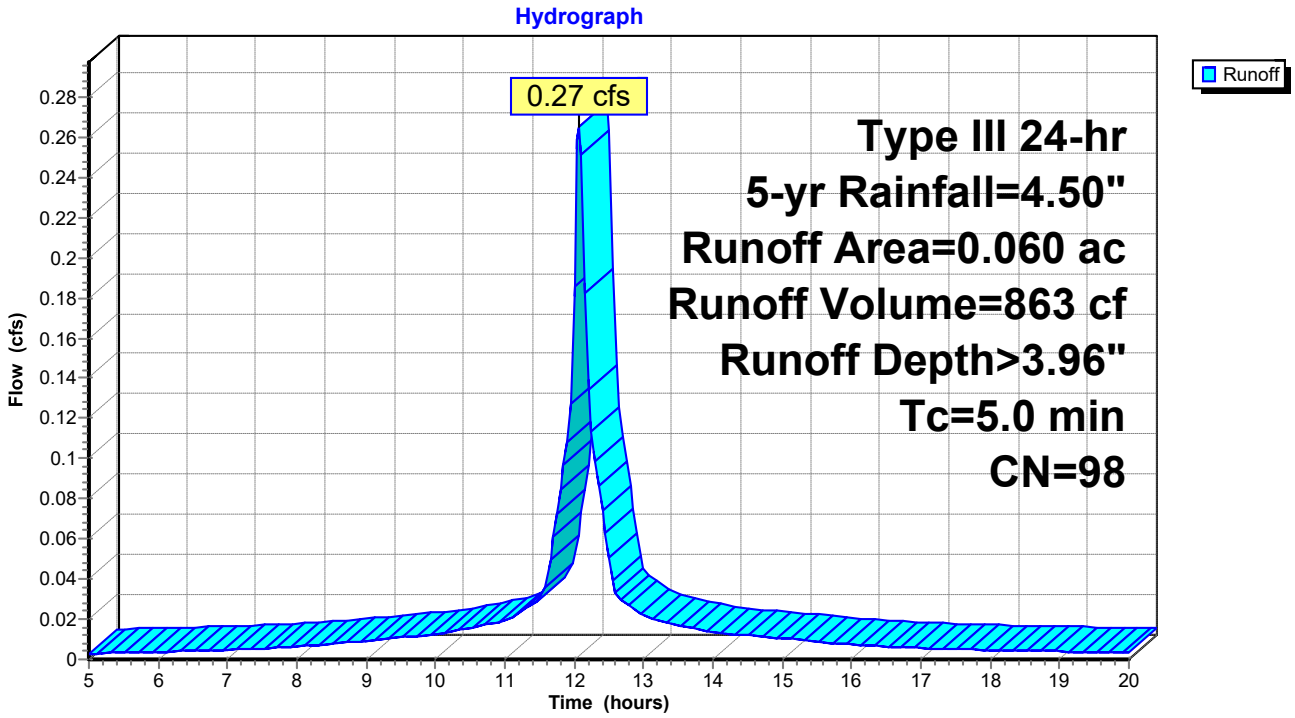
Runoff = 0.27 cfs @ 12.07 hrs, Volume= 863 cf, Depth> 3.96"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Design Point 3)



Summary for Subcatchment E: WS-E

[49] Hint: Tc<2dt may require smaller dt

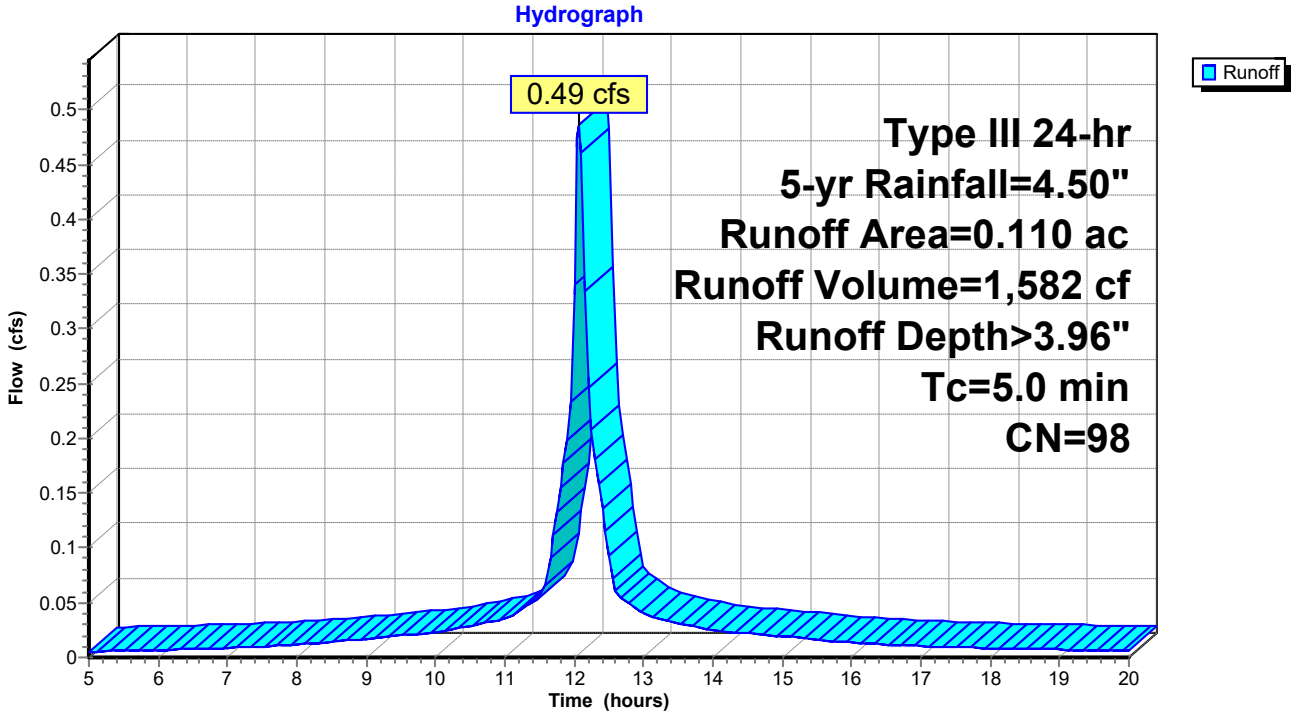
Runoff = 0.49 cfs @ 12.07 hrs, Volume= 1,582 cf, Depth> 3.96"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-yr Rainfall=4.50"

	Area (ac)	CN	Description
*	0.110	98	Impervious
*	0.000	69	Grass B
	0.110	98	Weighted Average
	0.110		100.00% Impervious Area

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

Subcatchment E: WS-E



Summary for Pond EX-AP: Existing Pond A

Inflow Area = 1,129,249 sf, 6.90% Impervious, Inflow Depth > 0.94" for 5-yr event
Inflow = 8.69 cfs @ 13.19 hrs, Volume= 88,044 cf
Outflow = 1.23 cfs @ 18.33 hrs, Volume= 27,173 cf, Atten= 86%, Lag= 308.7 min
Discarded = 1.23 cfs @ 18.33 hrs, Volume= 27,173 cf
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 6.22' @ 18.33 hrs Surf.Area= 106,588 sf Storage= 61,889 cf

Plug-Flow detention time= 238.8 min calculated for 27,082 cf (31% of inflow)
Center-of-Mass det. time= 124.9 min (1,003.7 - 878.8)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	245,195 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

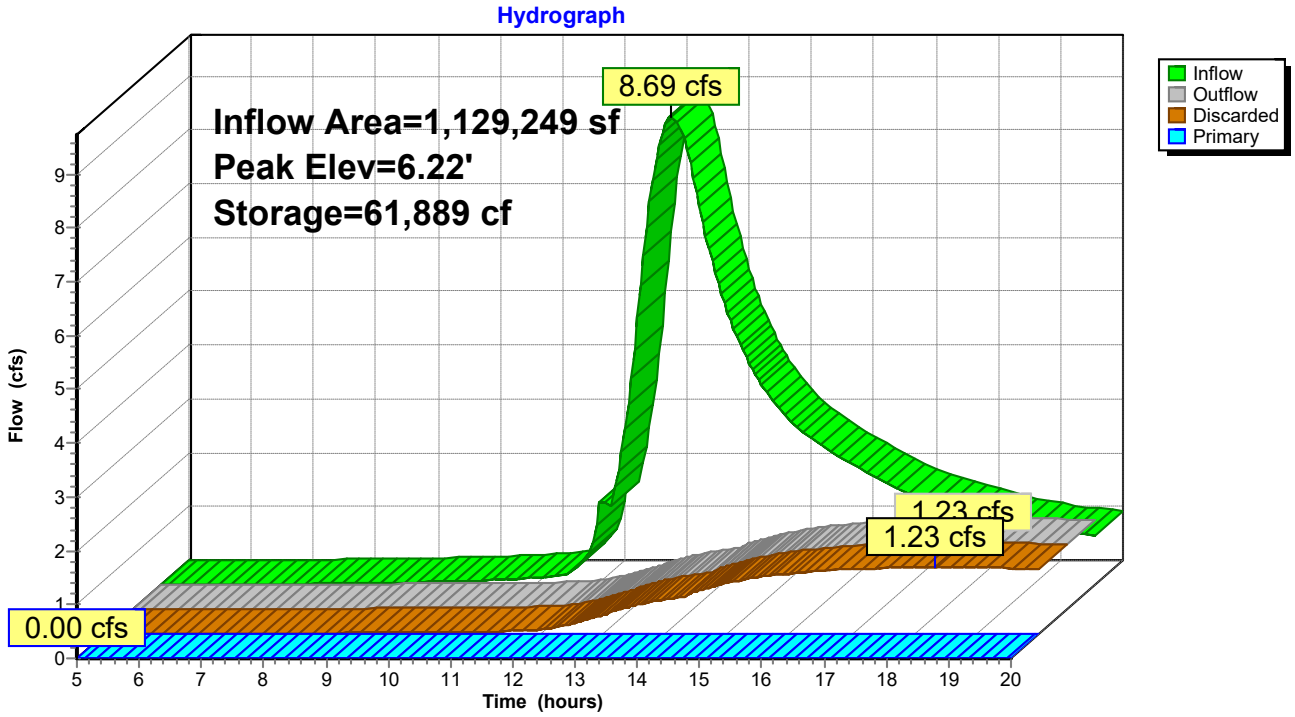
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	19,830	6,610	6,610	19,832
6.00	58,335	37,392	44,002	58,343
7.00	393,697	201,193	245,195	393,708

Device	Routing	Invert	Outlet Devices
#1	Primary	6.30'	**24.0" Round Culvert - Pipe** L= 97.0' Ke= 0.600 Inlet / Outlet Invert= 6.30' / 6.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=1.23 cfs @ 18.33 hrs HW=6.22' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.23 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=4.04' (Free Discharge)
↑—**1=Culvert - Pipe** (Controls 0.00 cfs)

Pond EX-AP: Existing Pond A



Summary for Pond EX-BP: Design Point 1

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.44" for 5-yr event
Inflow = 6.03 cfs @ 13.32 hrs, Volume= 66,357 cf
Outflow = 4.43 cfs @ 13.95 hrs, Volume= 63,233 cf, Atten= 27%, Lag= 38.1 min
Primary = 4.43 cfs @ 13.95 hrs, Volume= 63,233 cf
Routed to Link 1L : POC A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 4.37' @ 13.95 hrs Surf.Area= 28,117 sf Storage= 14,989 cf

Plug-Flow detention time= 57.9 min calculated for 63,023 cf (95% of inflow)
Center-of-Mass det. time= 43.6 min (914.1 - 870.5)

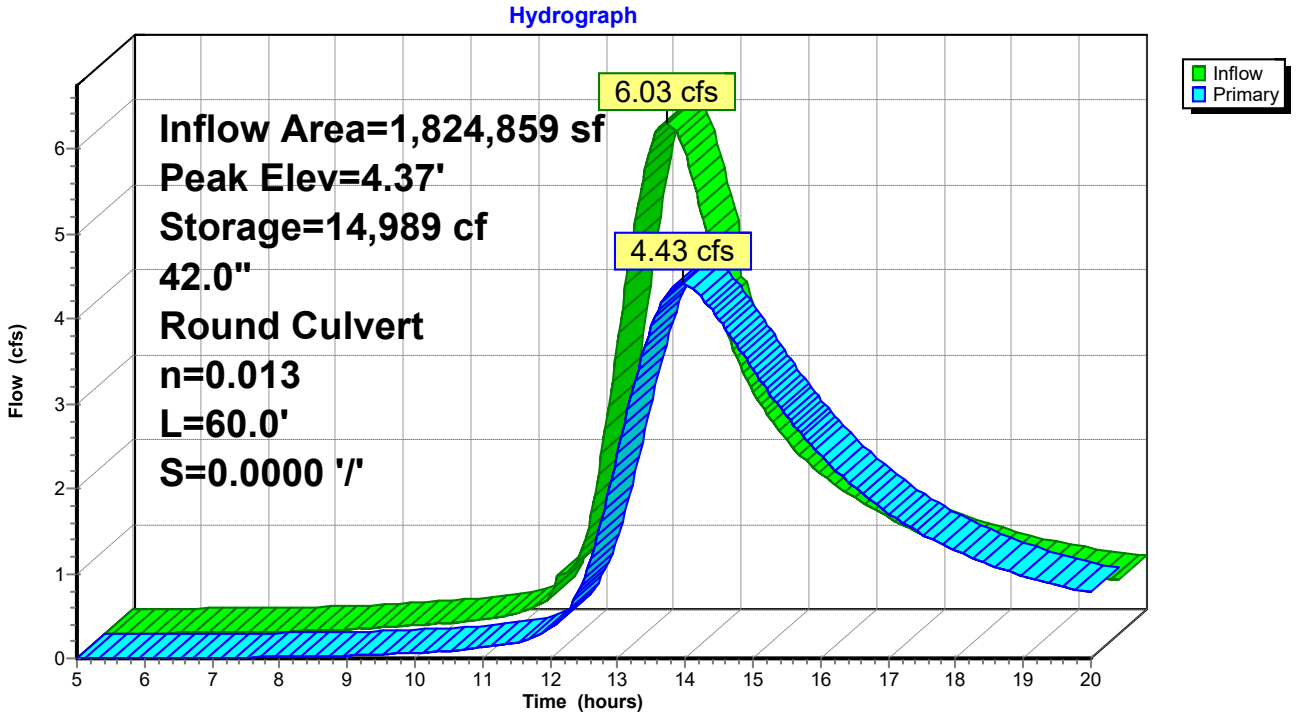
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,611 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,834	38,109	38,109
6.00	120,171	82,503	120,611

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=4.43 cfs @ 13.95 hrs HW=4.37' (Free Discharge)
1=Culvert (Barrel Controls 4.43 cfs @ 2.67 fps)

Pond EX-BP: Design Point 1



Summary for Pond PL-P: Parking Lot Pond

[82] Warning: Early inflow requires earlier time span
[44] Hint: Outlet device #3 is below defined storage

Inflow Area = 30,928 sf, 74.65% Impervious, Inflow Depth > 3.31" for 5-yr event
Inflow = 2.82 cfs @ 12.07 hrs, Volume= 8,521 cf
Outflow = 0.67 cfs @ 12.46 hrs, Volume= 8,519 cf, Atten= 76%, Lag= 23.2 min
Primary = 0.67 cfs @ 12.46 hrs, Volume= 8,519 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.99' @ 12.46 hrs Surf.Area= 2,873 sf Storage= 2,041 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 17.5 min (777.2 - 759.7)

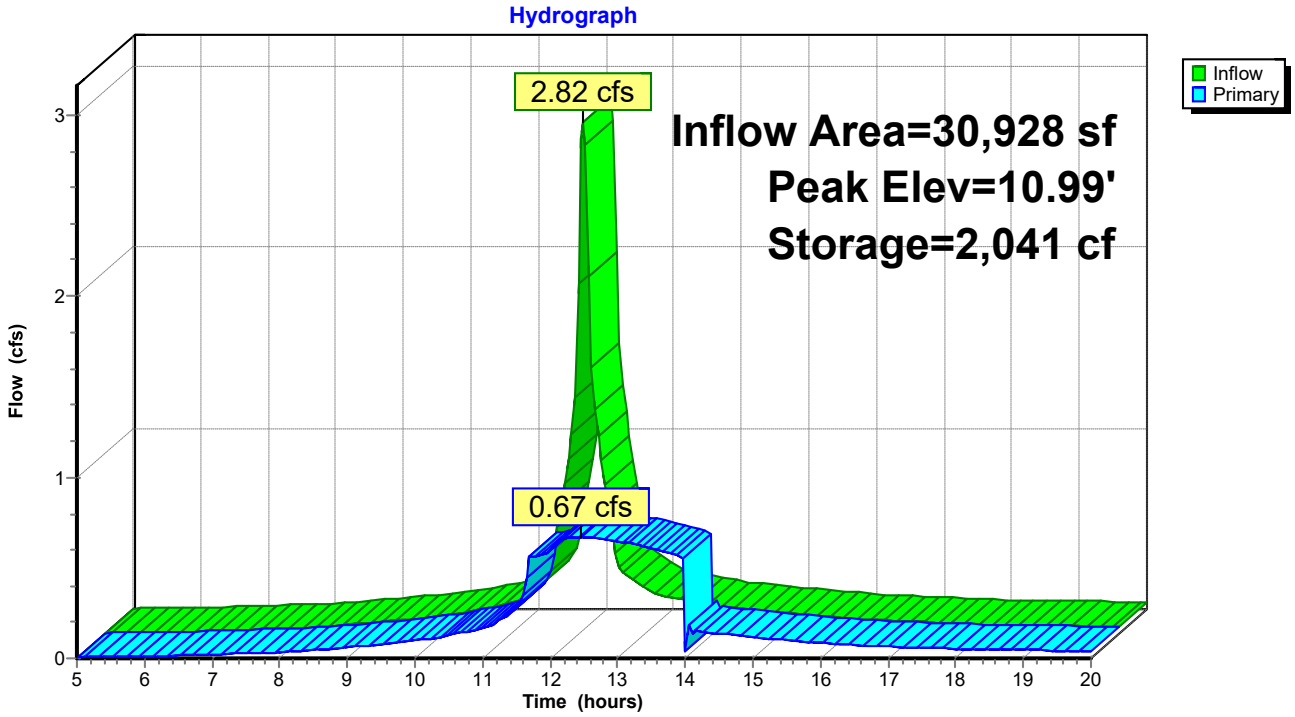
Volume	Invert	Avail.Storage	Storage Description
#1	10.00'	5,740 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.00	1,350	0	0	1,350
11.00	2,894	2,074	2,074	2,902
12.00	4,497	3,666	5,740	4,520

Device	Routing	Invert	Outlet Devices
#1	Primary	7.33'	**12.0" Round Culvert** L= 92.0' Ke= 0.600 Inlet / Outlet Invert= 7.33' / 6.40' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	11.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	8.00'	**6.0" Round Culvert** L= 200.0' Ke= 0.600 Inlet / Outlet Invert= 8.00' / 7.33' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=0.67 cfs @ 12.46 hrs HW=10.99' (Free Discharge)
└**1=Culvert** (Passes 0.67 cfs of 5.64 cfs potential flow)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Culvert** (Barrel Controls 0.67 cfs @ 3.42 fps)

Pond PL-P: Parking Lot Pond

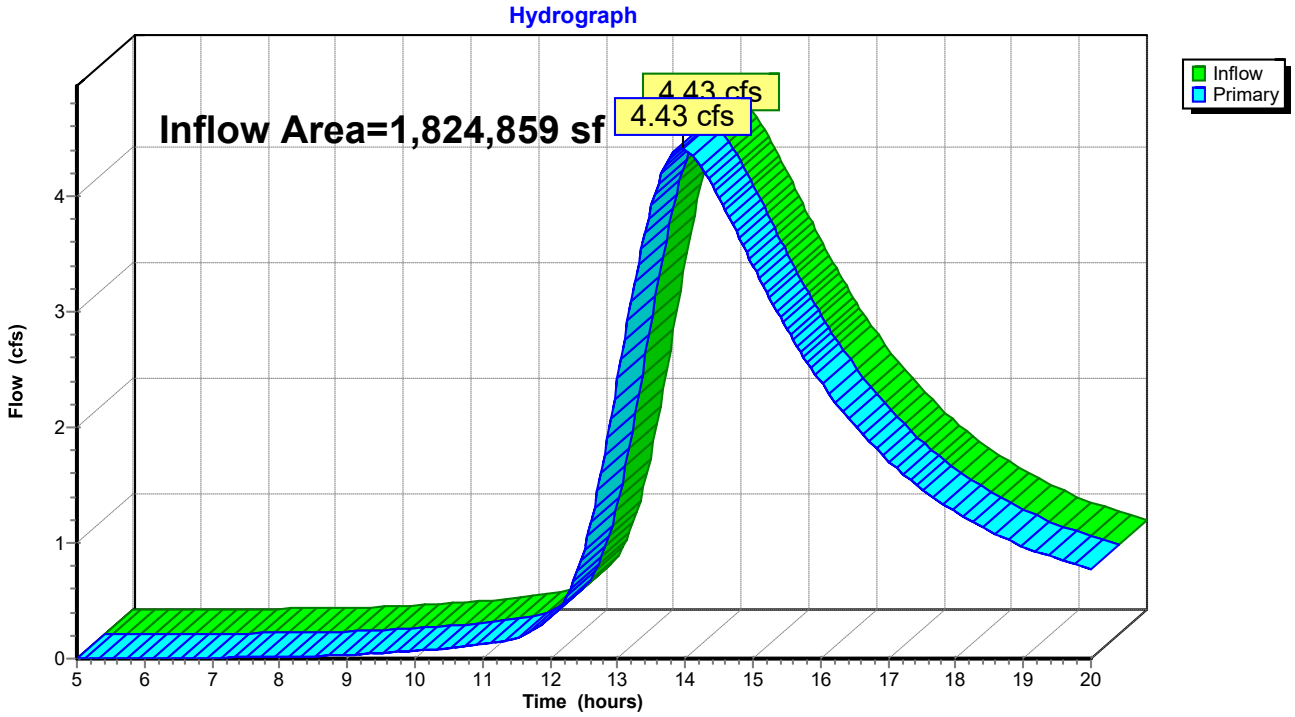


Summary for Link 1L: POC A

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.42" for 5-yr event
Inflow = 4.43 cfs @ 13.95 hrs, Volume= 63,233 cf
Primary = 4.43 cfs @ 13.95 hrs, Volume= 63,233 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC A

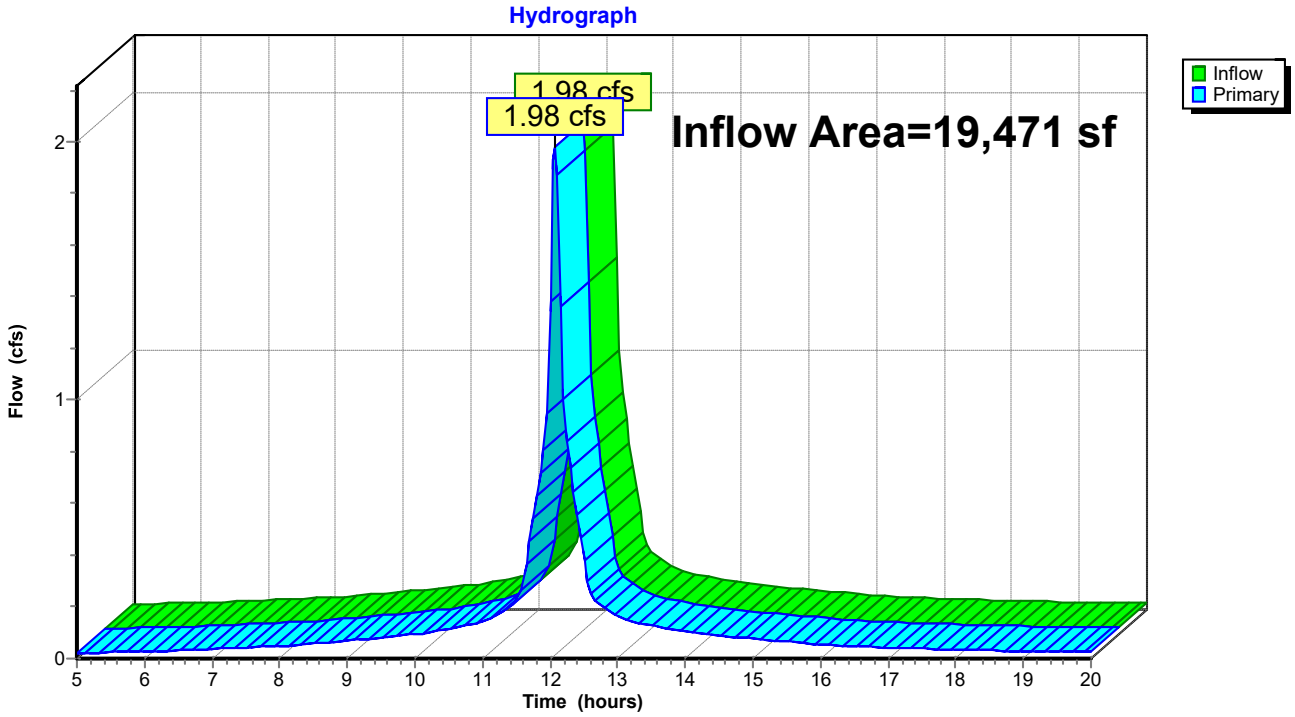


Summary for Link 2L: POC B

Inflow Area = 19,471 sf,100.00% Impervious, Inflow Depth > 3.96" for 5-yr event
Inflow = 1.98 cfs @ 12.07 hrs, Volume= 6,430 cf
Primary = 1.98 cfs @ 12.07 hrs, Volume= 6,430 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

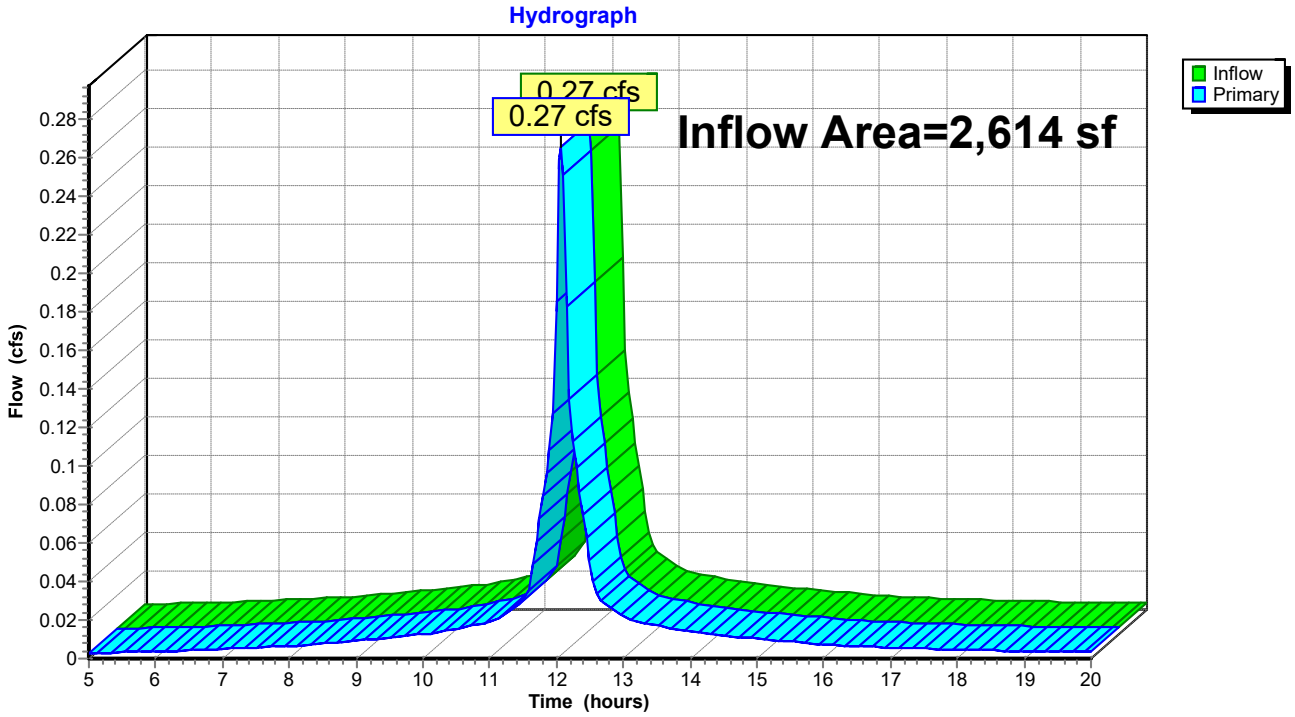


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 3.96" for 5-yr event
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 863 cf
Primary = 0.27 cfs @ 12.07 hrs, Volume= 863 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A1: WS-A1 Runoff Area=25.200 ac 5.22% Impervious Runoff Depth>1.31"
Tc=80.4 min CN=60 Runoff=13.11 cfs 119,488 cf

Subcatchment A2: WS-A2 Runoff Area=0.412 ac 52.67% Impervious Runoff Depth>3.32"
Tc=40.2 min CN=84 Runoff=0.84 cfs 4,970 cf

Subcatchment A3: WS-A3 Runoff Area=0.202 ac 73.27% Impervious Runoff Depth>3.97"
Tc=5.0 min CN=90 Runoff=0.96 cfs 2,908 cf

Subcatchment B1: WS-B1 Runoff Area=14.550 ac 2.89% Impervious Runoff Depth>1.43"
Tc=91.9 min CN=62 Runoff=7.73 cfs 75,765 cf

Subcatchment B2: WS-B2 Runoff Area=0.710 ac 74.65% Impervious Runoff Depth>4.07"
Tc=5.0 min CN=91 Runoff=3.44 cfs 10,484 cf

Subcatchment B3: WS-B3 Runoff Area=0.709 ac 54.72% Impervious Runoff Depth>3.04"
Tc=40.3 min CN=81 Runoff=1.33 cfs 7,814 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.447 ac 100.00% Impervious Runoff Depth>4.72"
Tc=5.0 min CN=98 Runoff=2.35 cfs 7,658 cf

Subcatchment D: WS-D (Design Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>4.72"
Tc=5.0 min CN=98 Runoff=0.32 cfs 1,028 cf

Subcatchment E: WS-E Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>4.72"
Tc=5.0 min CN=98 Runoff=0.58 cfs 1,884 cf

Pond EX-AP: Existing Pond A Peak Elev=6.42' Storage=88,875 cf Inflow=13.56 cfs 129,251 cf
Discarded=1.89 cfs 43,174 cf Primary=0.02 cfs 221 cf Outflow=1.91 cfs 43,395 cf

Pond EX-BP: Design Point 1 Peak Elev=4.57' Storage=21,383 cf Inflow=8.82 cfs 94,282 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=6.42 cfs 90,274 cf

Pond PL-P: Parking Lot Pond Peak Elev=11.25' Storage=2,827 cf Inflow=3.44 cfs 10,484 cf
Outflow=0.70 cfs 10,482 cf

Link 1L: POC A Inflow=6.42 cfs 90,274 cf
Primary=6.42 cfs 90,274 cf

Link 2L: POC B Inflow=2.35 cfs 7,658 cf
Primary=2.35 cfs 7,658 cf

Link 3L: POC C Inflow=0.32 cfs 1,028 cf
Primary=0.32 cfs 1,028 cf

Total Runoff Area = 1,846,944 sf Runoff Volume = 231,999 cf Average Runoff Depth = 1.51"
91.43% Pervious = 1,688,603 sf 8.57% Impervious = 158,341 sf

Summary for Subcatchment A1: WS-A1

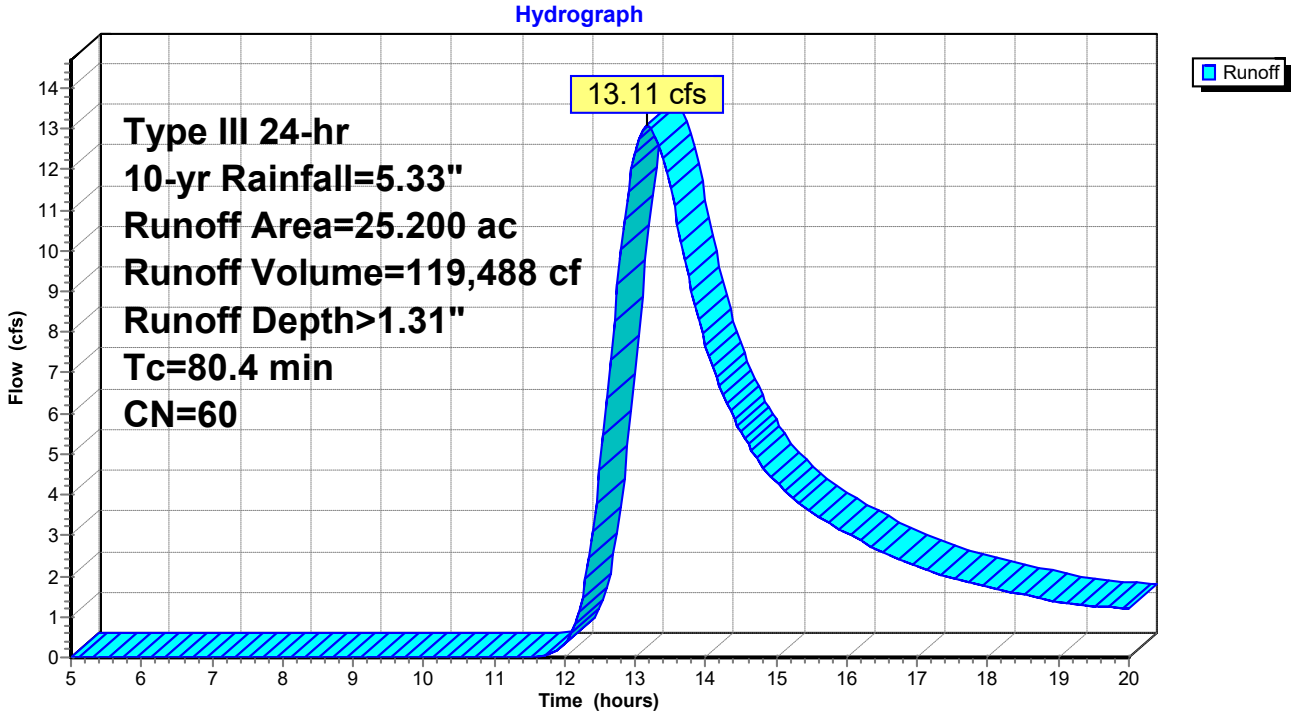
Runoff = 13.11 cfs @ 13.17 hrs, Volume= 119,488 cf, Depth> 1.31"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	19.658	55	Wooded B
*	4.227	69	Grass B
*	1.315	98	Impervious
	25.200	60	Weighted Average
	23.885		94.78% Pervious Area
	1.315		5.22% Impervious Area

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

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

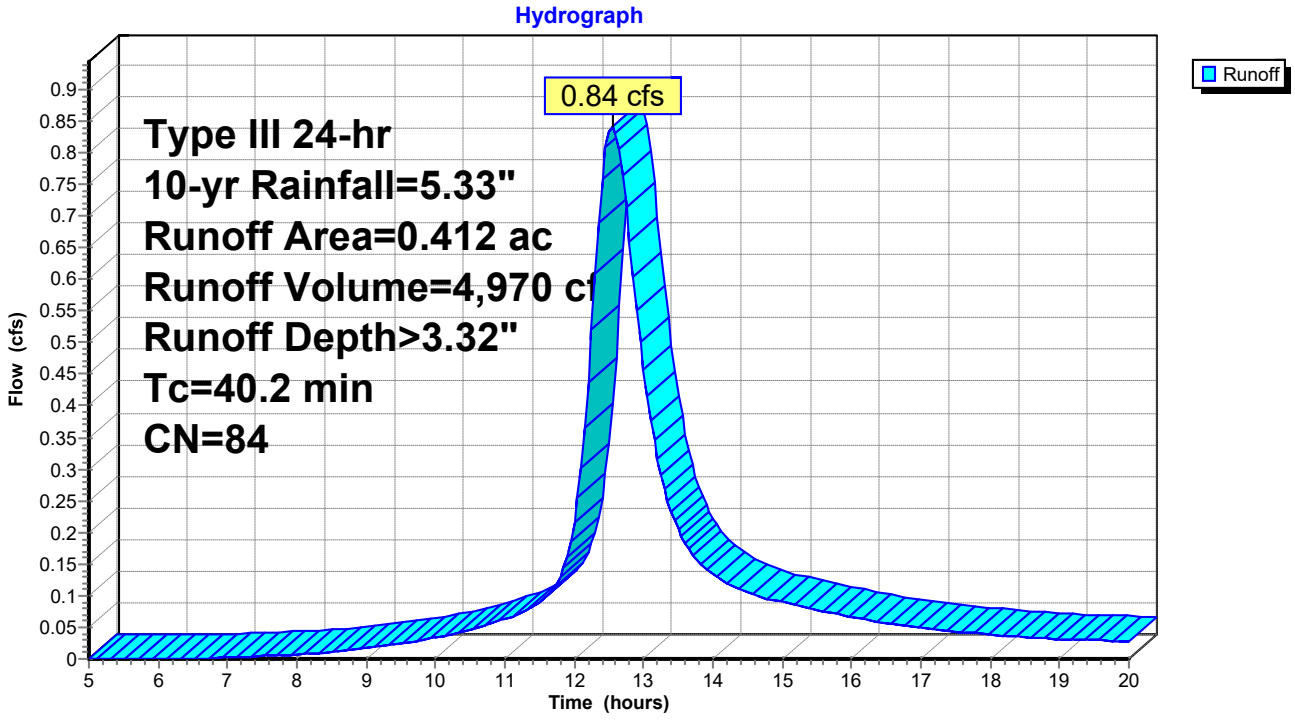
Runoff = 0.84 cfs @ 12.55 hrs, Volume= 4,970 cf, Depth> 3.32"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.217	98	Impervious
*	0.195	69	Grass B
	0.412	84	Weighted Average
	0.195		47.33% Pervious Area
	0.217		52.67% Impervious Area

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

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

[49] Hint: Tc<2dt may require smaller dt

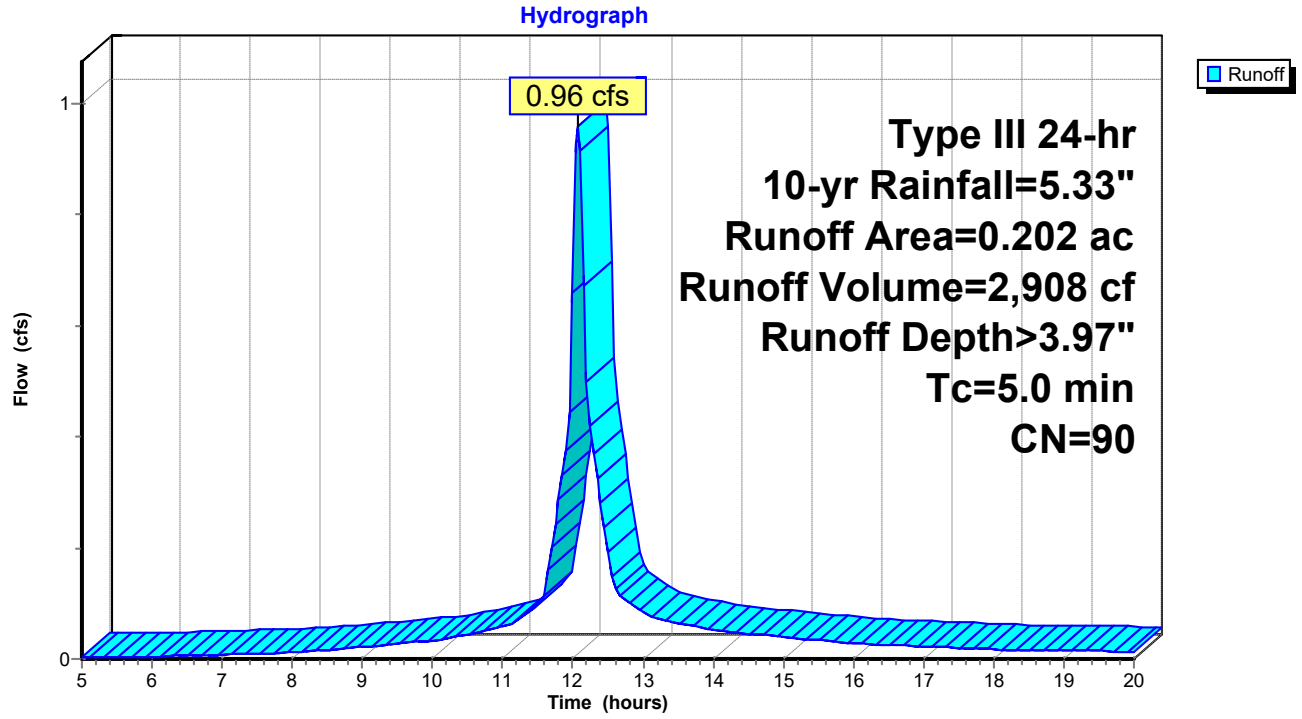
Runoff = 0.96 cfs @ 12.07 hrs, Volume= 2,908 cf, Depth> 3.97"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.148	98	Impervious
*	0.054	69	Grass B
	0.202	90	Weighted Average
	0.054		26.73% Pervious Area
	0.148		73.27% Impervious Area

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

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

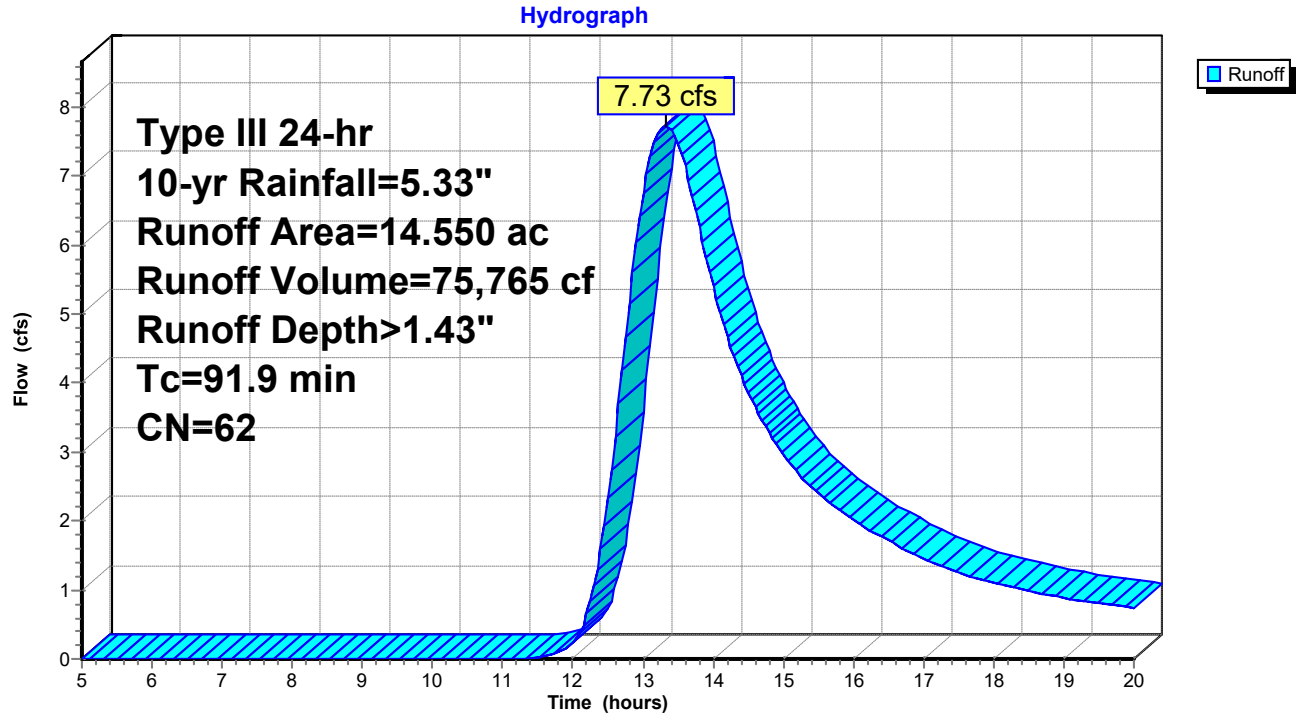
Runoff = 7.73 cfs @ 13.33 hrs, Volume= 75,765 cf, Depth> 1.43"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.420	98	Impervious
*	8.860	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	14.550	62	Weighted Average
	14.130		97.11% Pervious Area
	0.420		2.89% Impervious Area

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

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

[49] Hint: Tc<2dt may require smaller dt

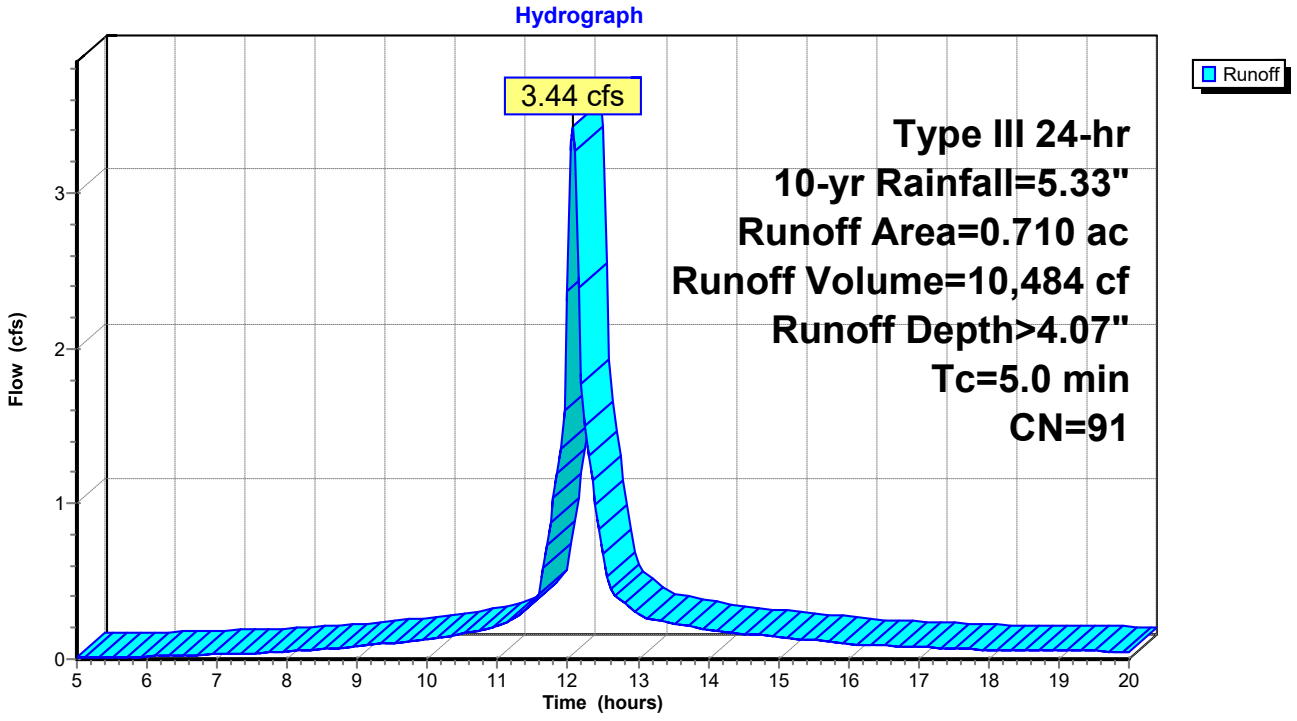
Runoff = 3.44 cfs @ 12.07 hrs, Volume= 10,484 cf, Depth> 4.07"
Routed to Pond PL-P : Parking Lot Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.530	98	Impervious
*	0.000	55	Wooded B
*	0.180	69	Grass B
*	0.000	84	Grass D
	0.710	91	Weighted Average
	0.180		25.35% Pervious Area
	0.530		74.65% Impervious Area

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

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

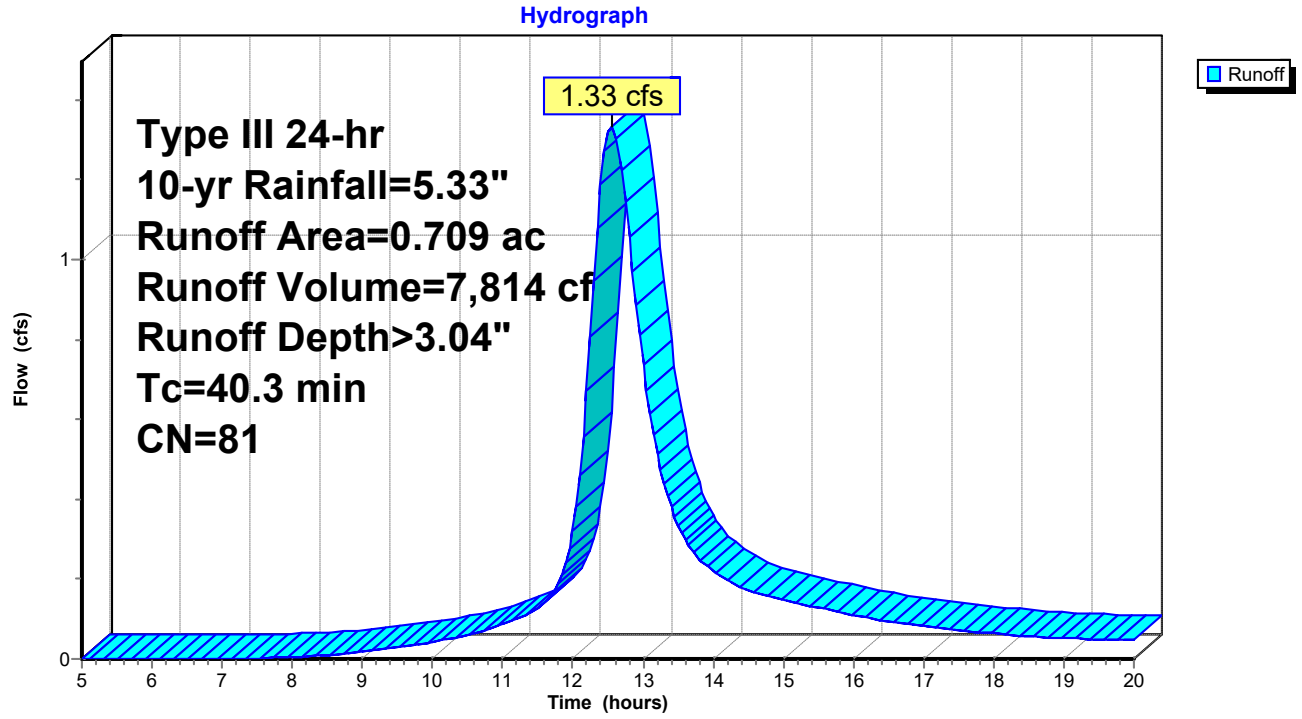
Runoff = 1.33 cfs @ 12.55 hrs, Volume= 7,814 cf, Depth> 3.04"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.388	98	Impervious
*	0.191	55	Wooded B
*	0.130	69	Grass B
*	0.000	84	Grass D
	0.709	81	Weighted Average
	0.321		45.28% Pervious Area
	0.388		54.72% Impervious Area

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

Subcatchment B3: WS-B3



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

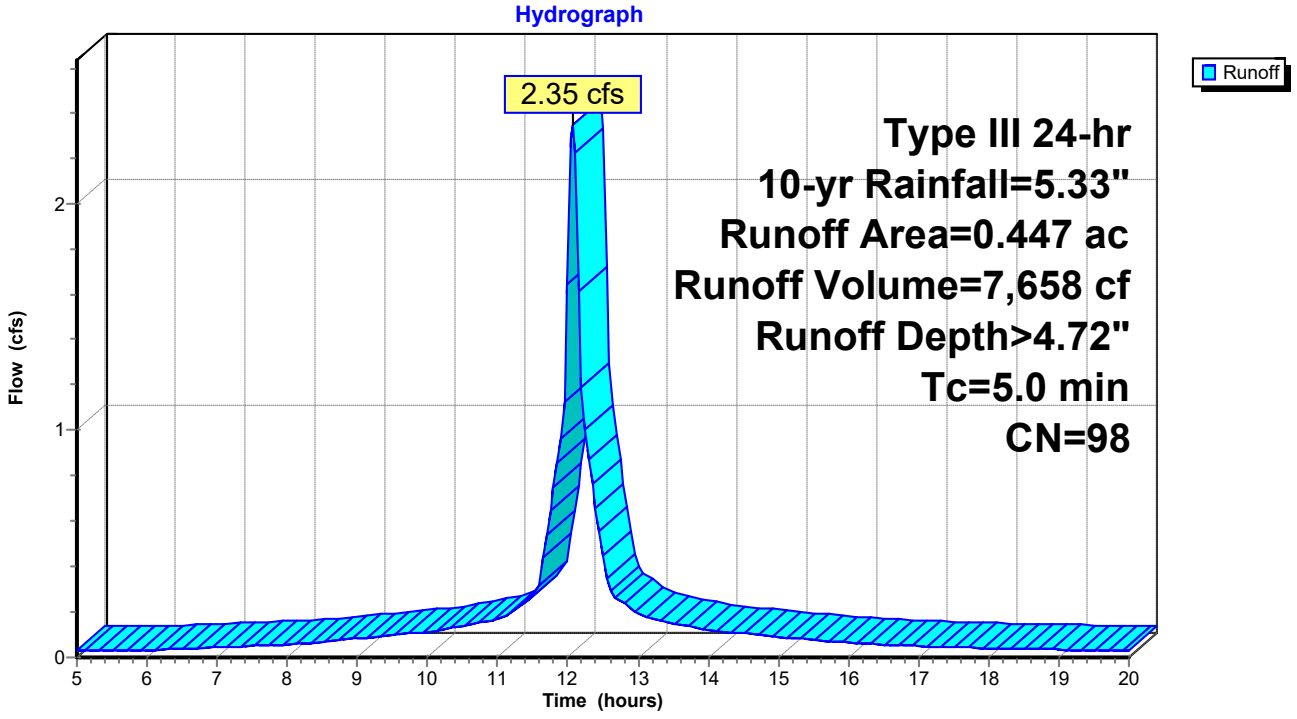
Runoff = 2.35 cfs @ 12.07 hrs, Volume= 7,658 cf, Depth> 4.72"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.447	98	Impervious
*	0.000	69	Grass B
	0.447	98	Weighted Average
	0.447		100.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Design Point 3)

[49] Hint: Tc<2dt may require smaller dt

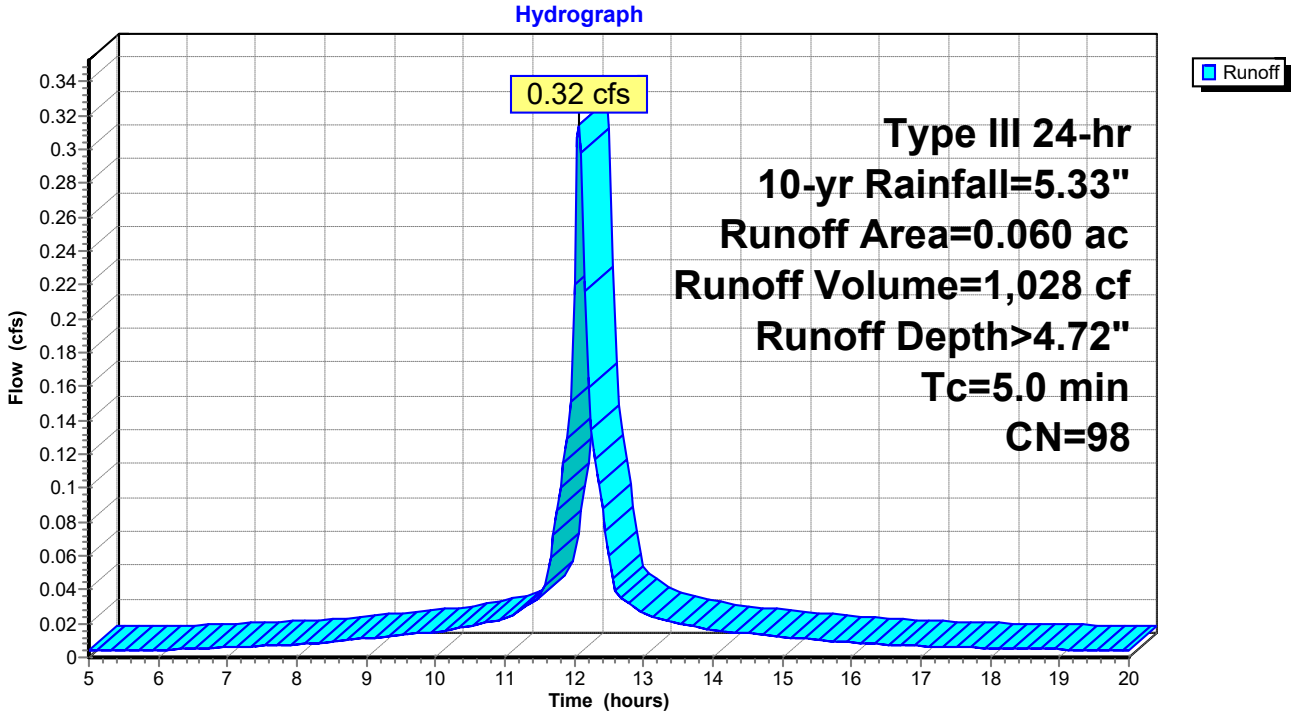
Runoff = 0.32 cfs @ 12.07 hrs, Volume= 1,028 cf, Depth> 4.72"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Design Point 3)



Summary for Subcatchment E: WS-E

[49] Hint: Tc<2dt may require smaller dt

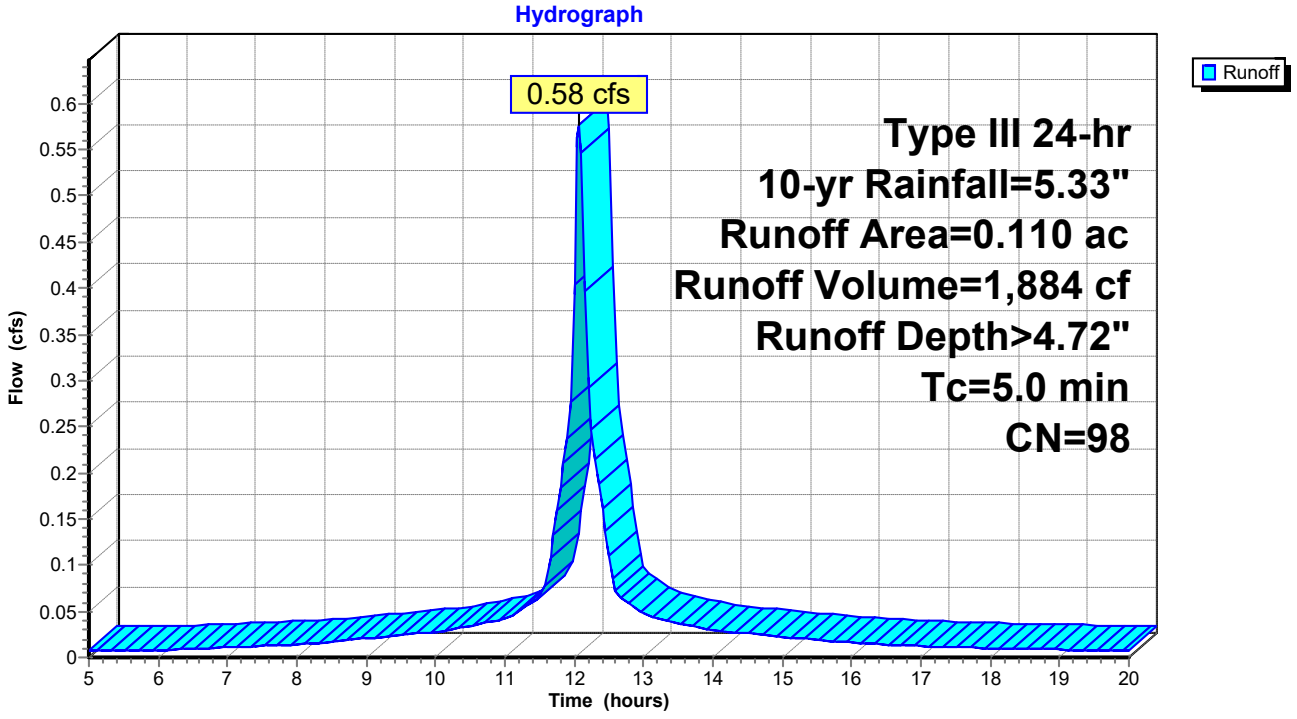
Runoff = 0.58 cfs @ 12.07 hrs, Volume= 1,884 cf, Depth> 4.72"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.33"

	Area (ac)	CN	Description
*	0.110	98	Impervious
*	0.000	69	Grass B
	0.110	98	Weighted Average
	0.110		100.00% Impervious Area

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

Subcatchment E: WS-E



Summary for Pond EX-AP: Existing Pond A

Inflow Area = 1,129,249 sf, 6.90% Impervious, Inflow Depth > 1.37" for 10-yr event
Inflow = 13.56 cfs @ 13.16 hrs, Volume= 129,251 cf
Outflow = 1.91 cfs @ 17.75 hrs, Volume= 43,395 cf, Atten= 86%, Lag= 275.5 min
Discarded = 1.89 cfs @ 17.75 hrs, Volume= 43,174 cf
Primary = 0.02 cfs @ 17.75 hrs, Volume= 221 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 6.42' @ 17.75 hrs Surf.Area= 163,387 sf Storage= 88,875 cf

Plug-Flow detention time= 235.9 min calculated for 43,394 cf (34% of inflow)
Center-of-Mass det. time= 129.0 min (1,001.2 - 872.2)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	245,195 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

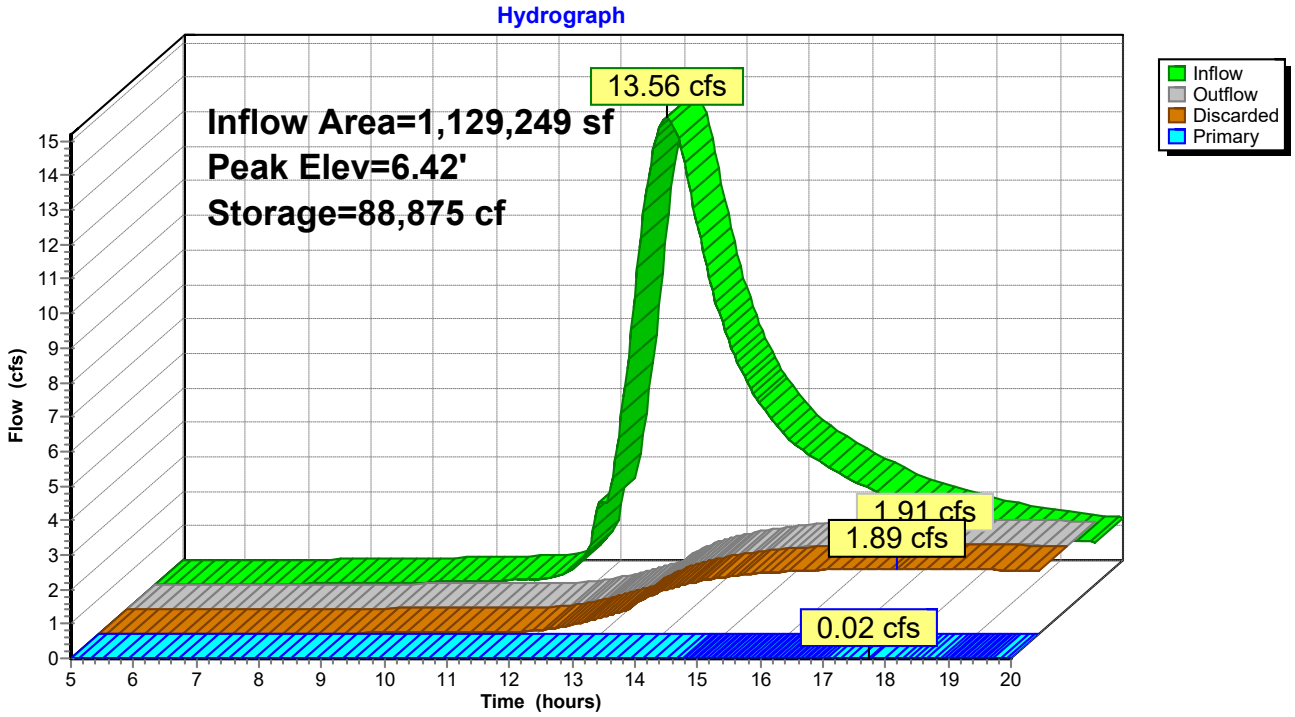
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	19,830	6,610	6,610	19,832
6.00	58,335	37,392	44,002	58,343
7.00	393,697	201,193	245,195	393,708

Device	Routing	Invert	Outlet Devices
#1	Primary	6.30'	**24.0" Round Culvert - Pipe** L= 97.0' Ke= 0.600 Inlet / Outlet Invert= 6.30' / 6.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=1.89 cfs @ 17.75 hrs HW=6.42' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.89 cfs)

Primary OutFlow Max=0.02 cfs @ 17.75 hrs HW=6.42' (Free Discharge)
↑—**1=Culvert - Pipe** (Barrel Controls 0.02 cfs @ 0.30 fps)

Pond EX-AP: Existing Pond A



Summary for Pond EX-BP: Design Point 1

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.62" for 10-yr event
Inflow = 8.82 cfs @ 13.27 hrs, Volume= 94,282 cf
Outflow = 6.42 cfs @ 13.96 hrs, Volume= 90,274 cf, Atten= 27%, Lag= 41.3 min
Primary = 6.42 cfs @ 13.96 hrs, Volume= 90,274 cf
Routed to Link 1L : POC A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 4.57' @ 13.96 hrs Surf.Area= 33,583 sf Storage= 21,383 cf

Plug-Flow detention time= 56.6 min calculated for 90,273 cf (96% of inflow)
Center-of-Mass det. time= 43.5 min (910.6 - 867.1)

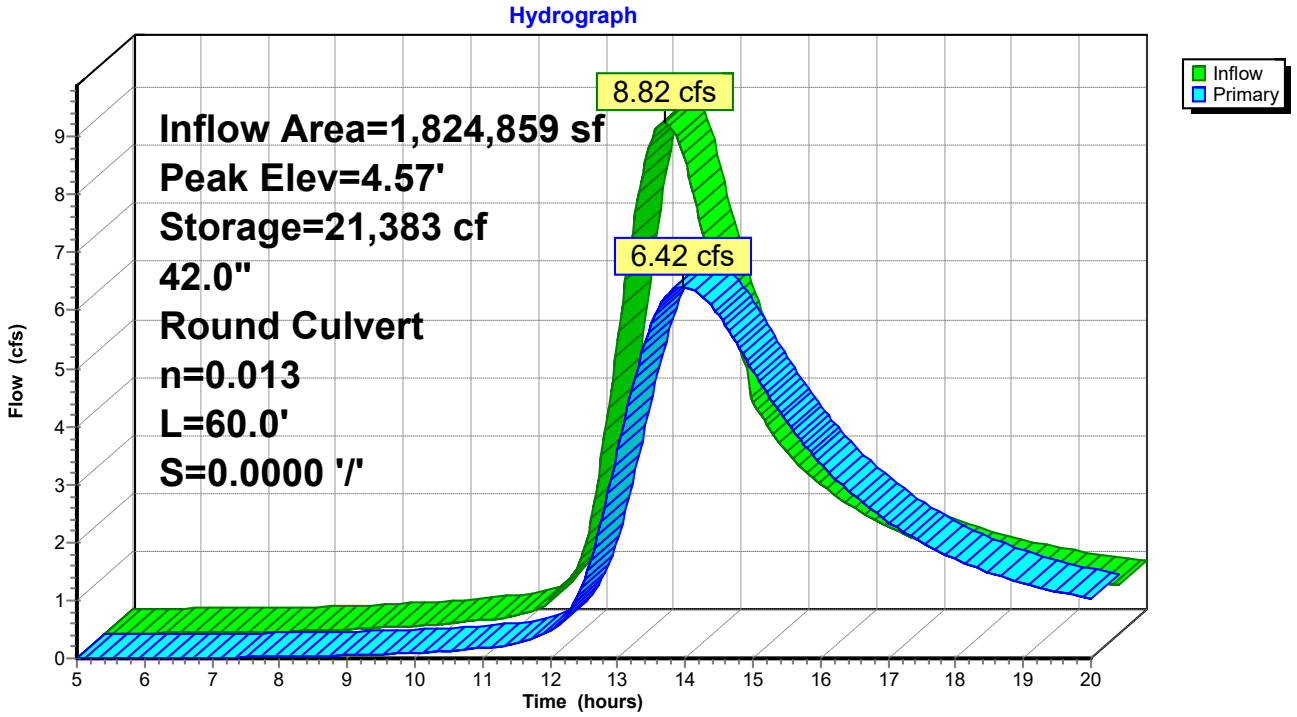
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,611 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,834	38,109	38,109
6.00	120,171	82,503	120,611

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=6.41 cfs @ 13.96 hrs HW=4.57' (Free Discharge)
1=Culvert (Barrel Controls 6.41 cfs @ 3.02 fps)

Pond EX-BP: Design Point 1



Summary for Pond PL-P: Parking Lot Pond

[82] Warning: Early inflow requires earlier time span
[44] Hint: Outlet device #3 is below defined storage

Inflow Area = 30,928 sf, 74.65% Impervious, Inflow Depth > 4.07" for 10-yr event
Inflow = 3.44 cfs @ 12.07 hrs, Volume= 10,484 cf
Outflow = 0.70 cfs @ 12.49 hrs, Volume= 10,482 cf, Atten= 80%, Lag= 25.4 min
Primary = 0.70 cfs @ 12.49 hrs, Volume= 10,482 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.25' @ 12.49 hrs Surf.Area= 3,255 sf Storage= 2,827 cf

Plug-Flow detention time= 24.9 min calculated for 10,447 cf (100% of inflow)
Center-of-Mass det. time= 24.7 min (780.1 - 755.4)

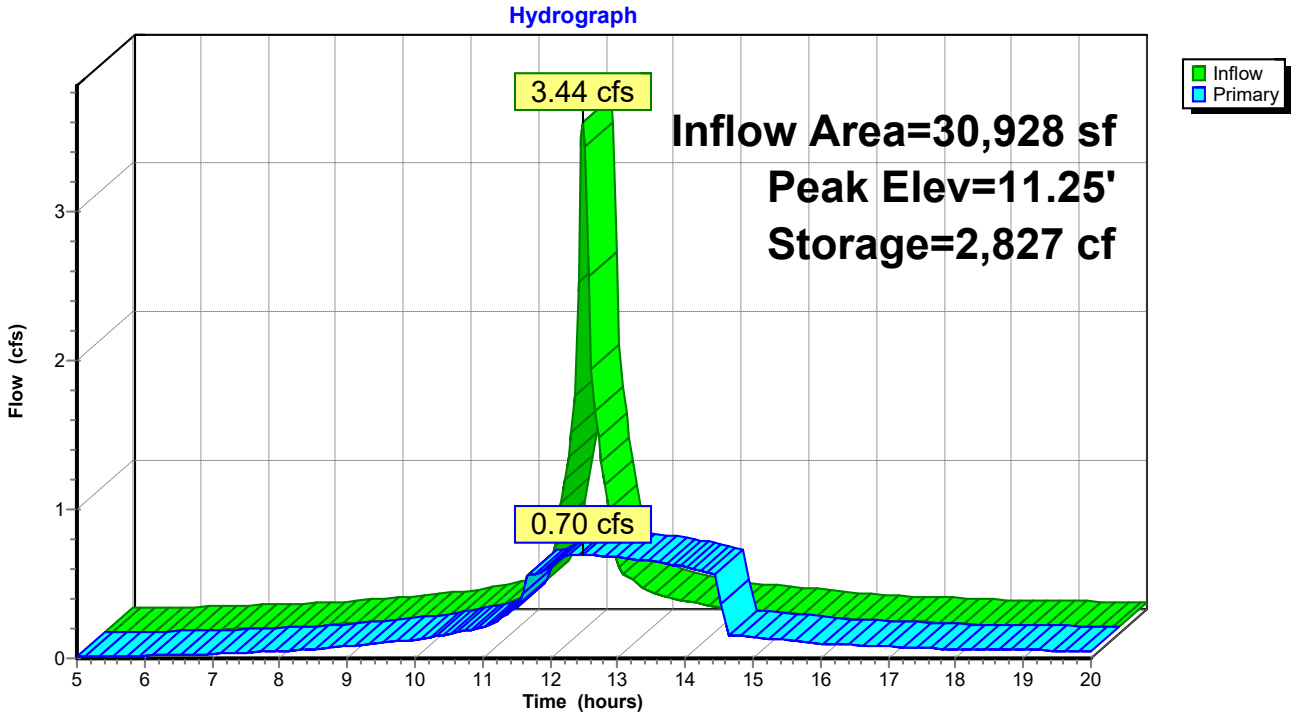
Volume	Invert	Avail.Storage	Storage Description
#1	10.00'	5,740 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.00	1,350	0	0	1,350
11.00	2,894	2,074	2,074	2,902
12.00	4,497	3,666	5,740	4,520

Device	Routing	Invert	Outlet Devices
#1	Primary	7.33'	**12.0" Round Culvert** L= 92.0' Ke= 0.600 Inlet / Outlet Invert= 7.33' / 6.40' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	11.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	8.00'	**6.0" Round Culvert** L= 200.0' Ke= 0.600 Inlet / Outlet Invert= 8.00' / 7.33' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=0.70 cfs @ 12.49 hrs HW=11.24' (Free Discharge)
└**1=Culvert** (Passes 0.70 cfs of 5.83 cfs potential flow)
└**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Culvert** (Barrel Controls 0.70 cfs @ 3.55 fps)

Pond PL-P: Parking Lot Pond

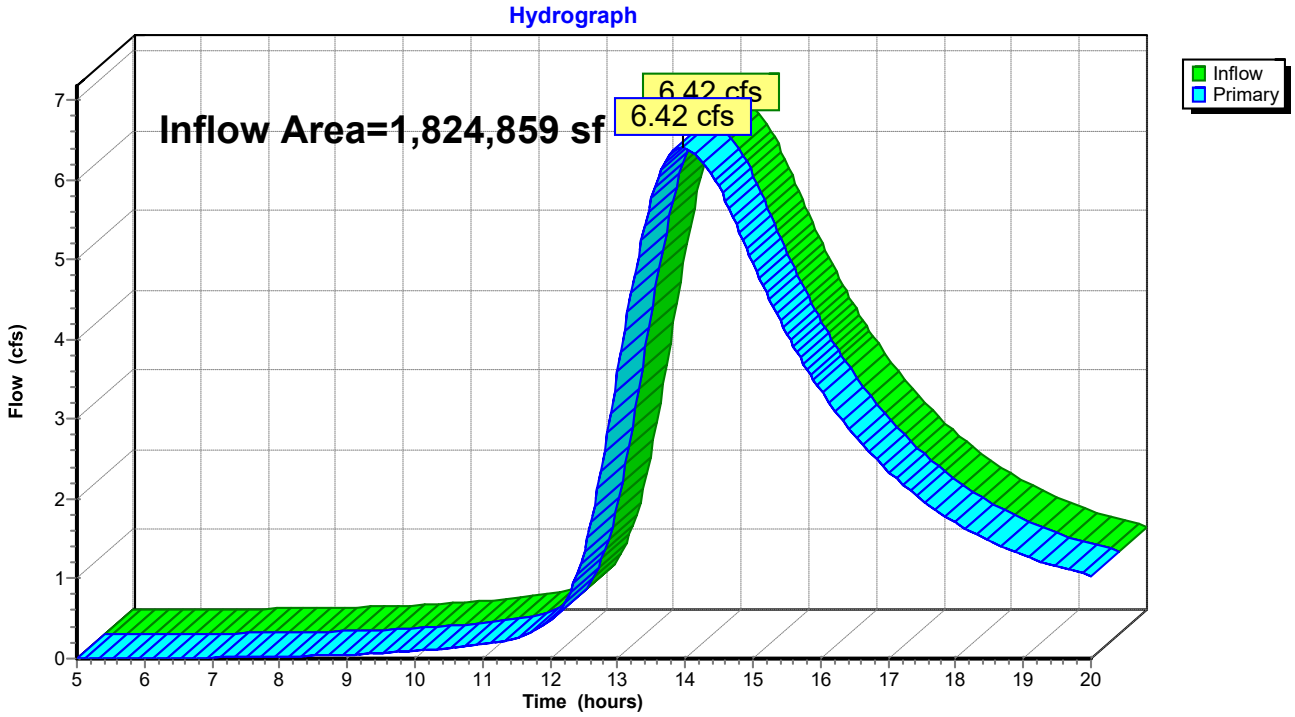


Summary for Link 1L: POC A

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.59" for 10-yr event
Inflow = 6.42 cfs @ 13.96 hrs, Volume= 90,274 cf
Primary = 6.42 cfs @ 13.96 hrs, Volume= 90,274 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC A

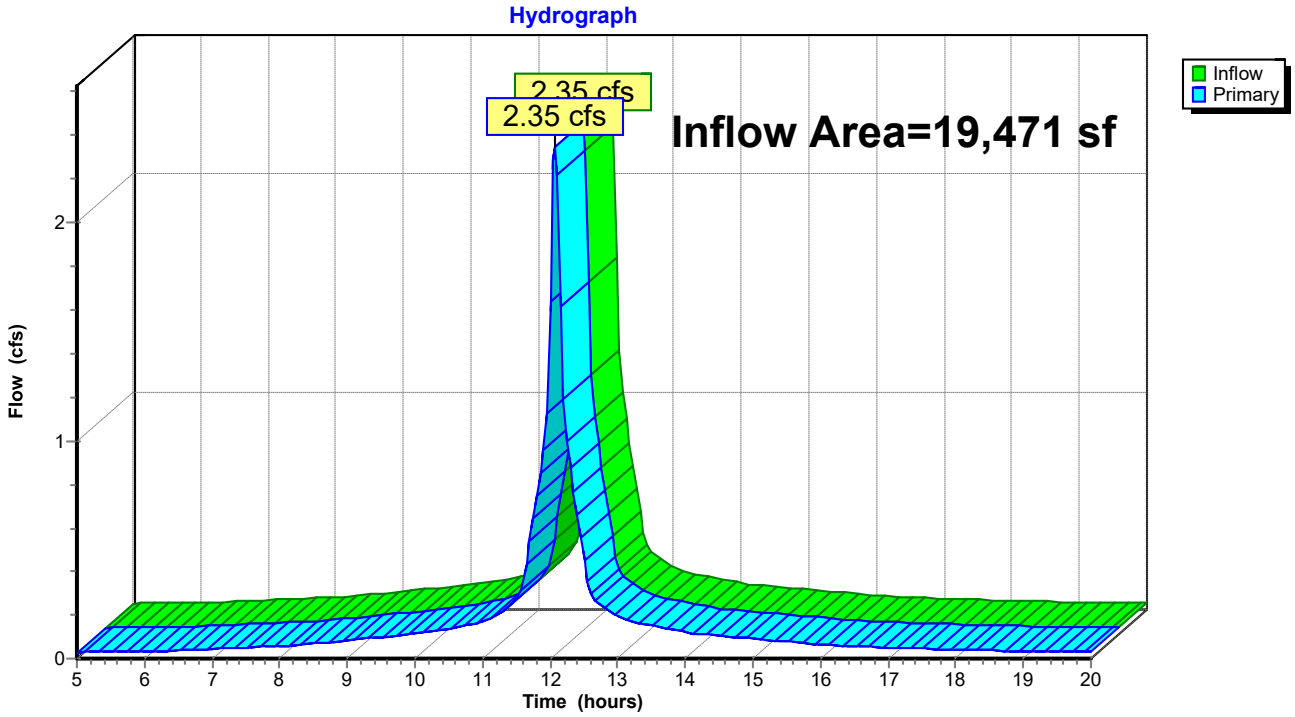


Summary for Link 2L: POC B

Inflow Area = 19,471 sf,100.00% Impervious, Inflow Depth > 4.72" for 10-yr event
Inflow = 2.35 cfs @ 12.07 hrs, Volume= 7,658 cf
Primary = 2.35 cfs @ 12.07 hrs, Volume= 7,658 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

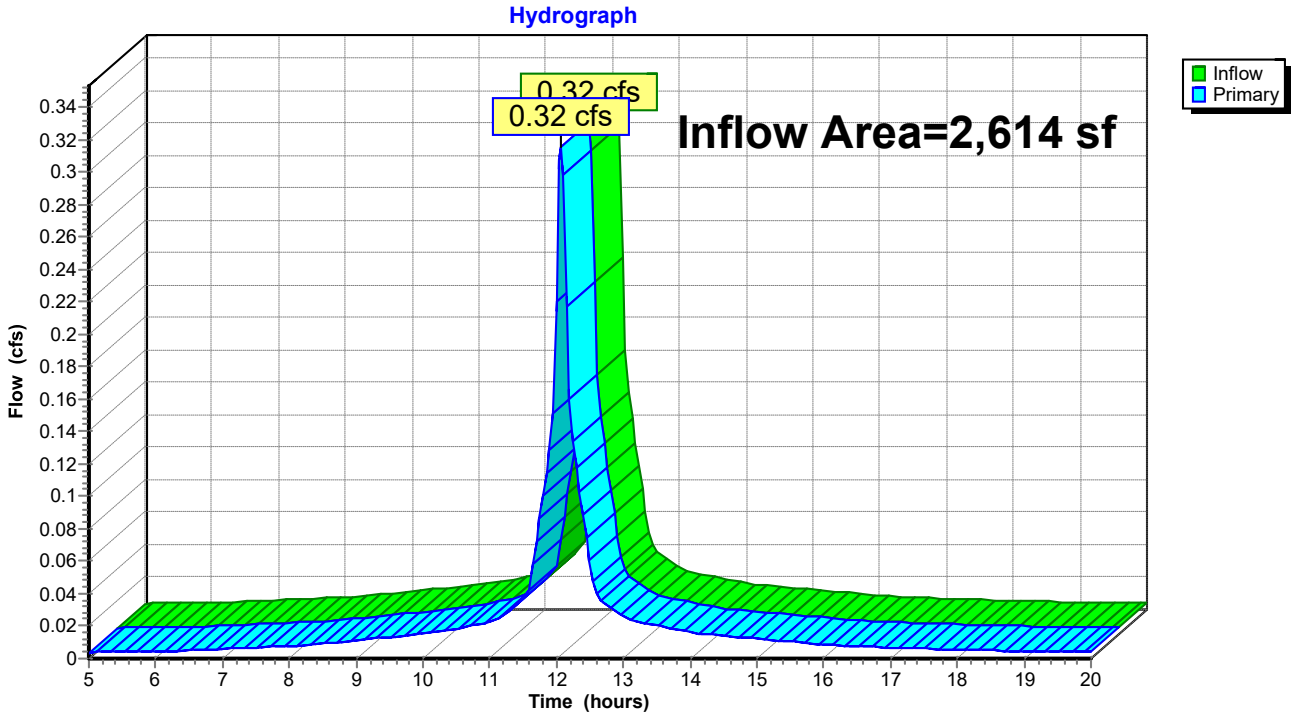


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 4.72" for 10-yr event
Inflow = 0.32 cfs @ 12.07 hrs, Volume= 1,028 cf
Primary = 0.32 cfs @ 12.07 hrs, Volume= 1,028 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A1: WS-A1 Runoff Area=25.200 ac 5.22% Impervious Runoff Depth>1.99"
Tc=80.4 min CN=60 Runoff=20.65 cfs 181,719 cf

Subcatchment A2: WS-A2 Runoff Area=0.412 ac 52.67% Impervious Runoff Depth>4.35"
Tc=40.2 min CN=84 Runoff=1.09 cfs 6,498 cf

Subcatchment A3: WS-A3 Runoff Area=0.202 ac 73.27% Impervious Runoff Depth>5.03"
Tc=5.0 min CN=90 Runoff=1.20 cfs 3,690 cf

Subcatchment B1: WS-B1 Runoff Area=14.550 ac 2.89% Impervious Runoff Depth>2.15"
Tc=91.9 min CN=62 Runoff=11.86 cfs 113,328 cf

Subcatchment B2: WS-B2 Runoff Area=0.710 ac 74.65% Impervious Runoff Depth>5.14"
Tc=5.0 min CN=91 Runoff=4.28 cfs 13,239 cf

Subcatchment B3: WS-B3 Runoff Area=0.709 ac 54.72% Impervious Runoff Depth>4.03"
Tc=40.3 min CN=81 Runoff=1.75 cfs 10,368 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.447 ac 100.00% Impervious Runoff Depth>5.77"
Tc=5.0 min CN=98 Runoff=2.86 cfs 9,370 cf

Subcatchment D: WS-D (Design Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>5.77"
Tc=5.0 min CN=98 Runoff=0.38 cfs 1,258 cf

Subcatchment E: WS-E Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>5.77"
Tc=5.0 min CN=98 Runoff=0.70 cfs 2,306 cf

Pond EX-AP: Existing Pond A Peak Elev=6.64' Storage=132,415 cf Inflow=21.24 cfs 194,213 cf
Discarded=2.76 cfs 65,008 cf Primary=0.20 cfs 3,739 cf Outflow=2.97 cfs 68,747 cf

Pond EX-BP: Design Point 1 Peak Elev=4.85' Storage=31,513 cf Inflow=13.15 cfs 140,671 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=9.52 cfs 134,929 cf

Pond PL-P: Parking Lot Pond Peak Elev=11.38' Storage=3,269 cf Inflow=4.28 cfs 13,239 cf
Outflow=1.64 cfs 13,237 cf

Link 1L: POC A Inflow=9.52 cfs 134,929 cf
Primary=9.52 cfs 134,929 cf

Link 2L: POC B Inflow=2.86 cfs 9,370 cf
Primary=2.86 cfs 9,370 cf

Link 3L: POC C Inflow=0.38 cfs 1,258 cf
Primary=0.38 cfs 1,258 cf

Total Runoff Area = 1,846,944 sf Runoff Volume = 341,775 cf Average Runoff Depth = 2.22"
91.43% Pervious = 1,688,603 sf 8.57% Impervious = 158,341 sf

Summary for Subcatchment A1: WS-A1

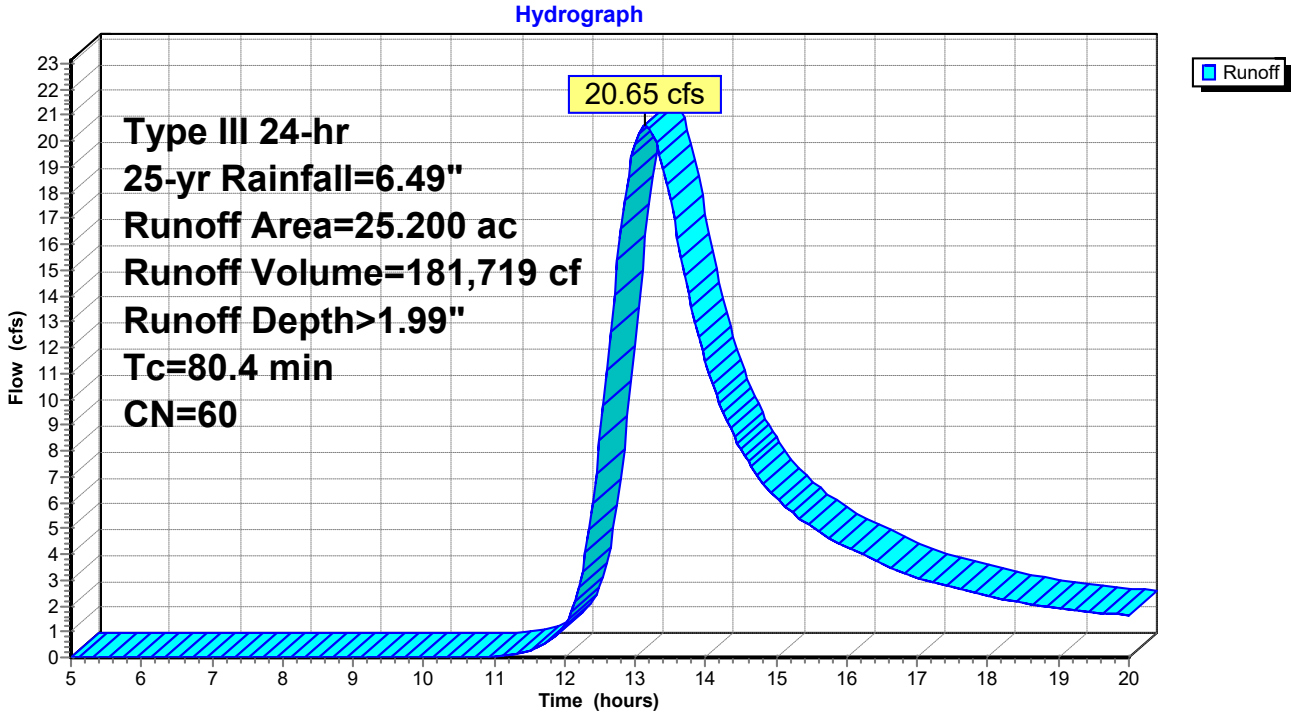
Runoff = 20.65 cfs @ 13.14 hrs, Volume= 181,719 cf, Depth> 1.99"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	19.658	55	Wooded B
*	4.227	69	Grass B
*	1.315	98	Impervious
	25.200	60	Weighted Average
	23.885		94.78% Pervious Area
	1.315		5.22% Impervious Area

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

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

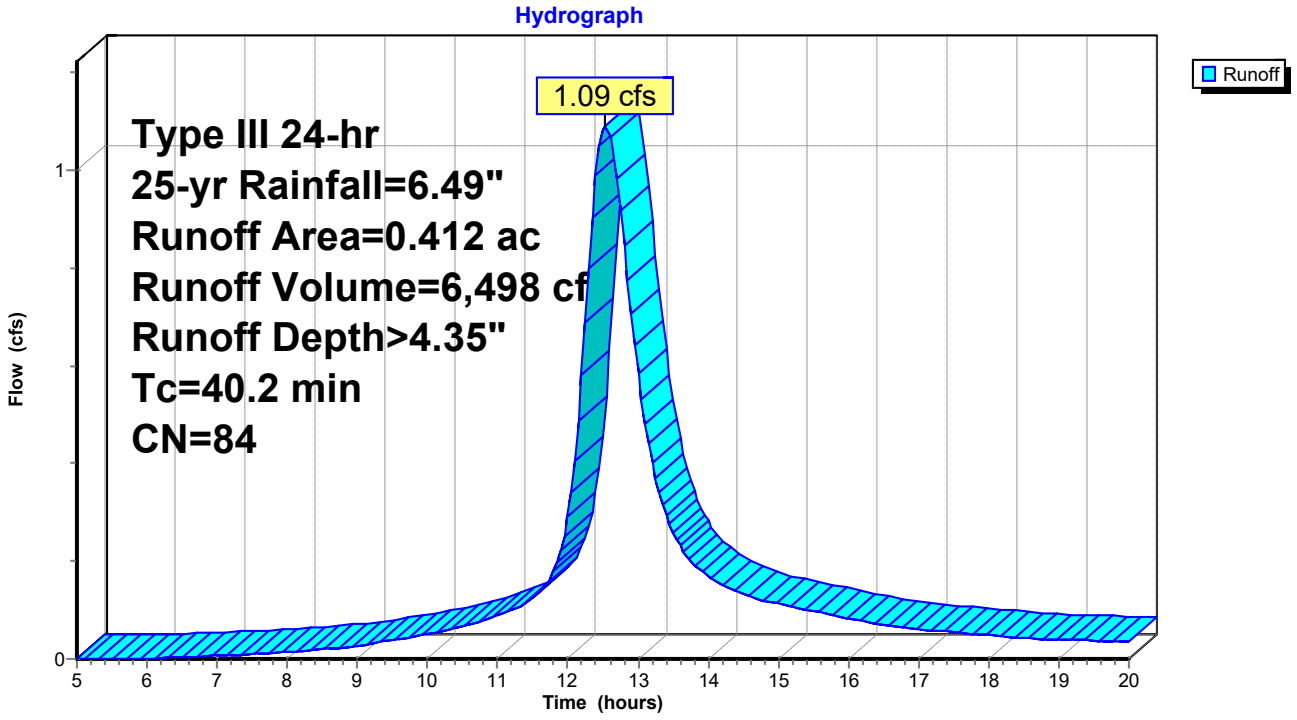
Runoff = 1.09 cfs @ 12.54 hrs, Volume= 6,498 cf, Depth> 4.35"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.217	98	Impervious
*	0.195	69	Grass B
	0.412	84	Weighted Average
	0.195		47.33% Pervious Area
	0.217		52.67% Impervious Area

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

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

[49] Hint: Tc<2dt may require smaller dt

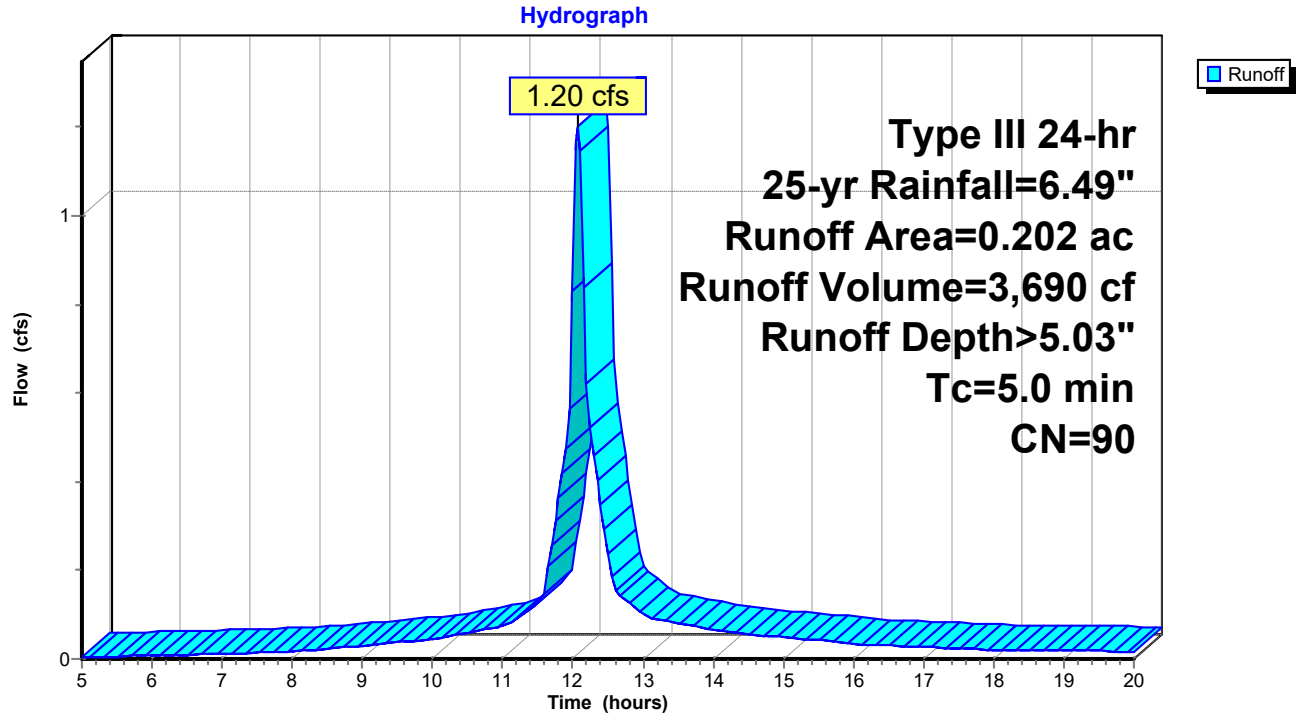
Runoff = 1.20 cfs @ 12.07 hrs, Volume= 3,690 cf, Depth> 5.03"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.148	98	Impervious
*	0.054	69	Grass B
	0.202	90	Weighted Average
	0.054		26.73% Pervious Area
	0.148		73.27% Impervious Area

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

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

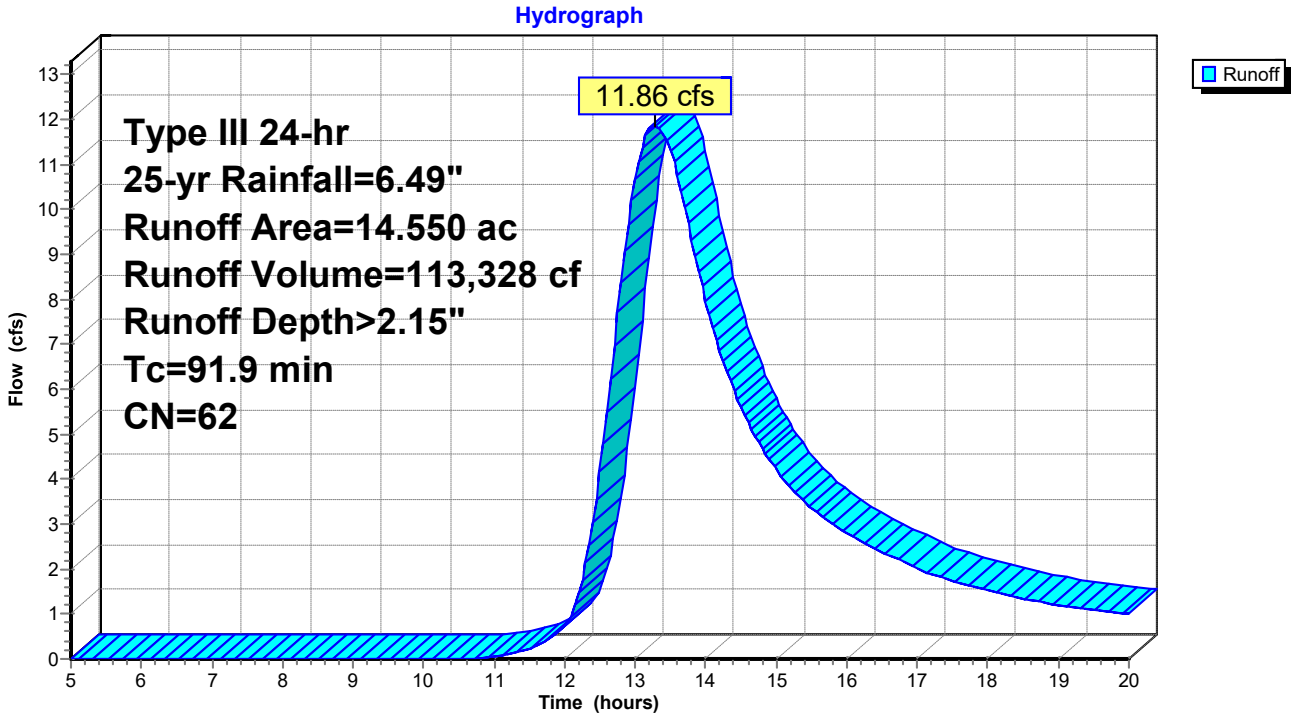
Runoff = 11.86 cfs @ 13.28 hrs, Volume= 113,328 cf, Depth> 2.15"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.420	98	Impervious
*	8.860	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	14.550	62	Weighted Average
	14.130		97.11% Pervious Area
	0.420		2.89% Impervious Area

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

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

[49] Hint: Tc<2dt may require smaller dt

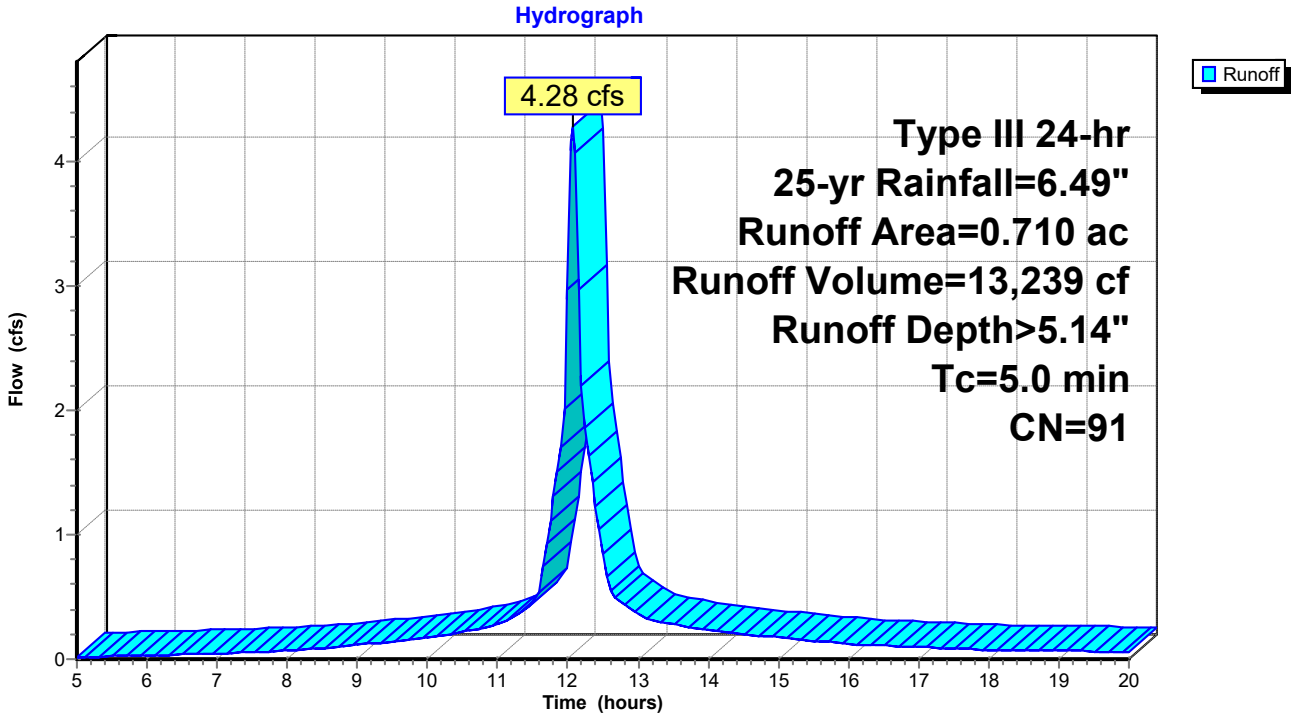
Runoff = 4.28 cfs @ 12.07 hrs, Volume= 13,239 cf, Depth> 5.14"
Routed to Pond PL-P : Parking Lot Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.530	98	Impervious
*	0.000	55	Wooded B
*	0.180	69	Grass B
*	0.000	84	Grass D
	0.710	91	Weighted Average
	0.180		25.35% Pervious Area
	0.530		74.65% Impervious Area

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

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

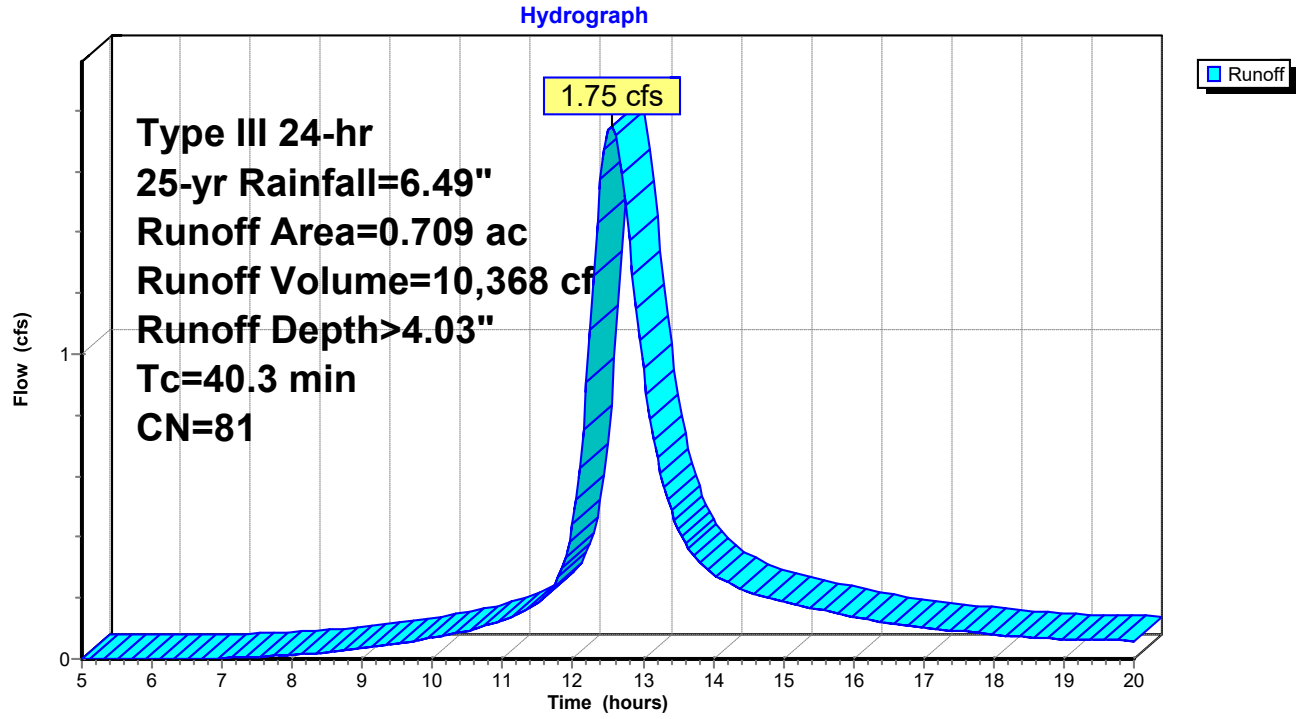
Runoff = 1.75 cfs @ 12.55 hrs, Volume= 10,368 cf, Depth> 4.03"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.388	98	Impervious
*	0.191	55	Wooded B
*	0.130	69	Grass B
*	0.000	84	Grass D
	0.709	81	Weighted Average
	0.321		45.28% Pervious Area
	0.388		54.72% Impervious Area

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

Subcatchment B3: WS-B3



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

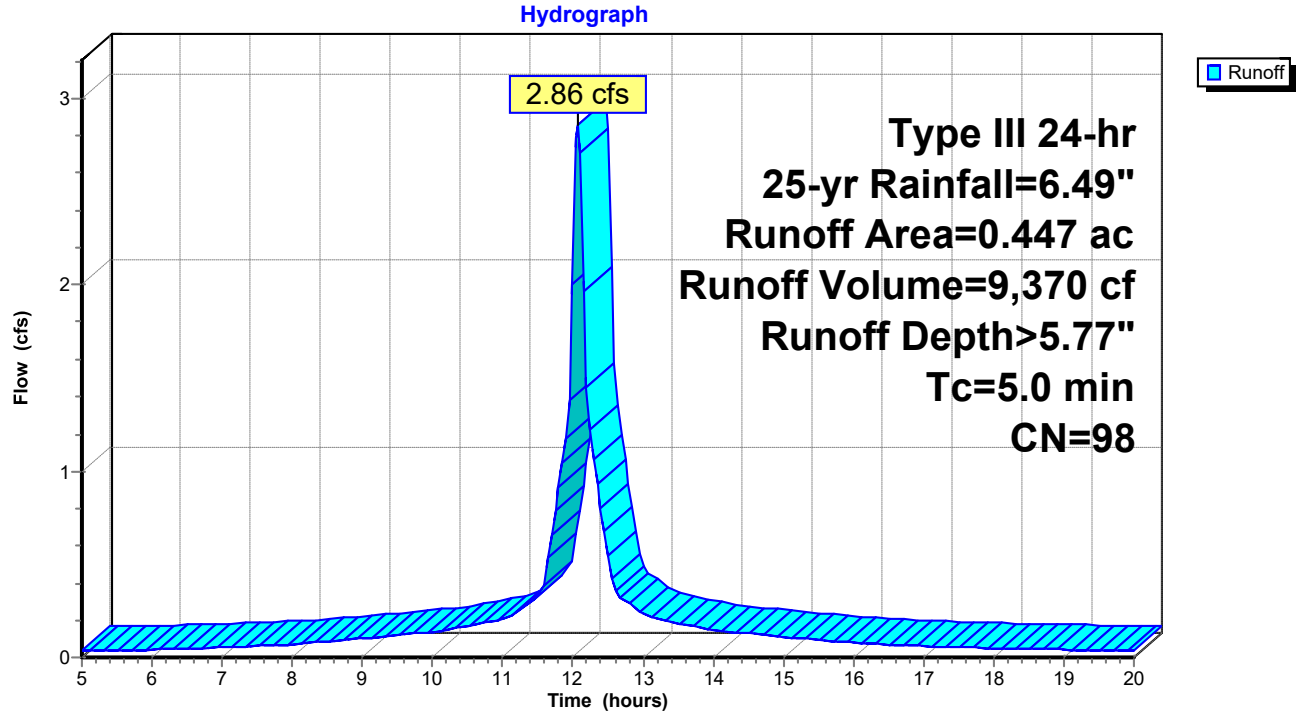
Runoff = 2.86 cfs @ 12.07 hrs, Volume= 9,370 cf, Depth> 5.77"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.447	98	Impervious
*	0.000	69	Grass B
	0.447	98	Weighted Average
	0.447		100.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Design Point 3)

[49] Hint: Tc<2dt may require smaller dt

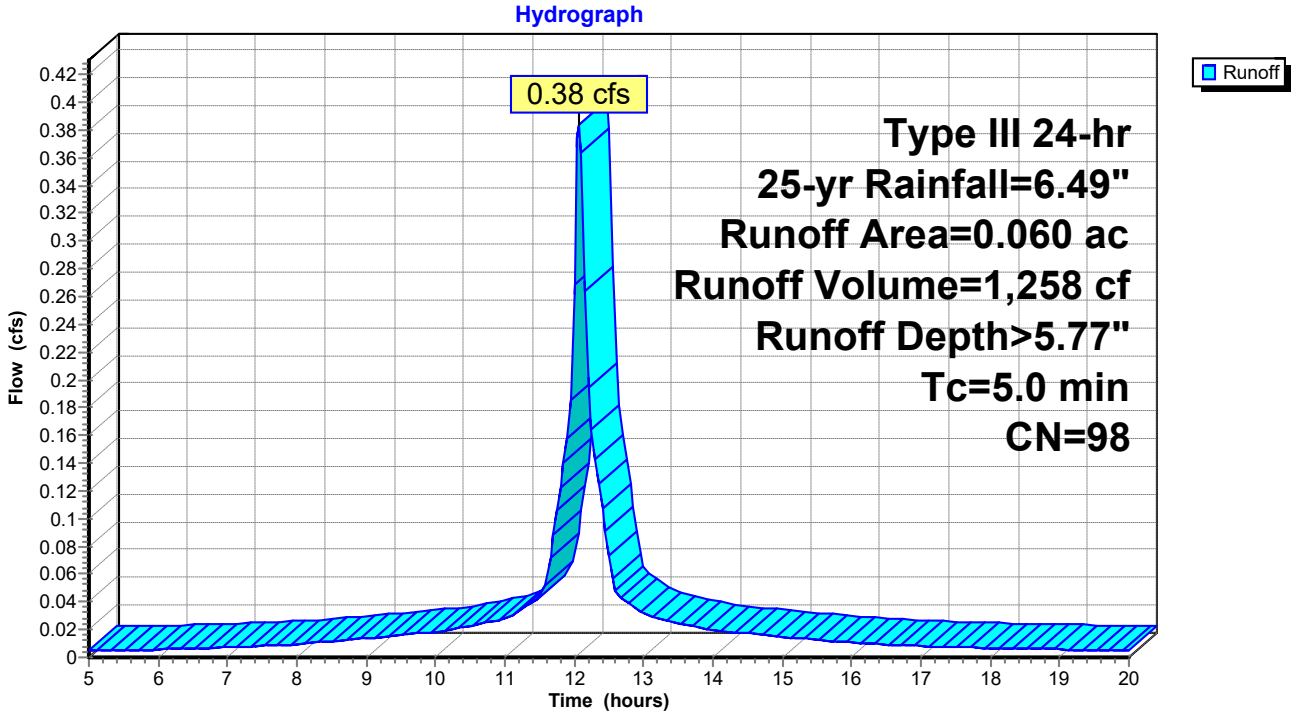
Runoff = 0.38 cfs @ 12.07 hrs, Volume= 1,258 cf, Depth> 5.77"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Design Point 3)



Summary for Subcatchment E: WS-E

[49] Hint: Tc<2dt may require smaller dt

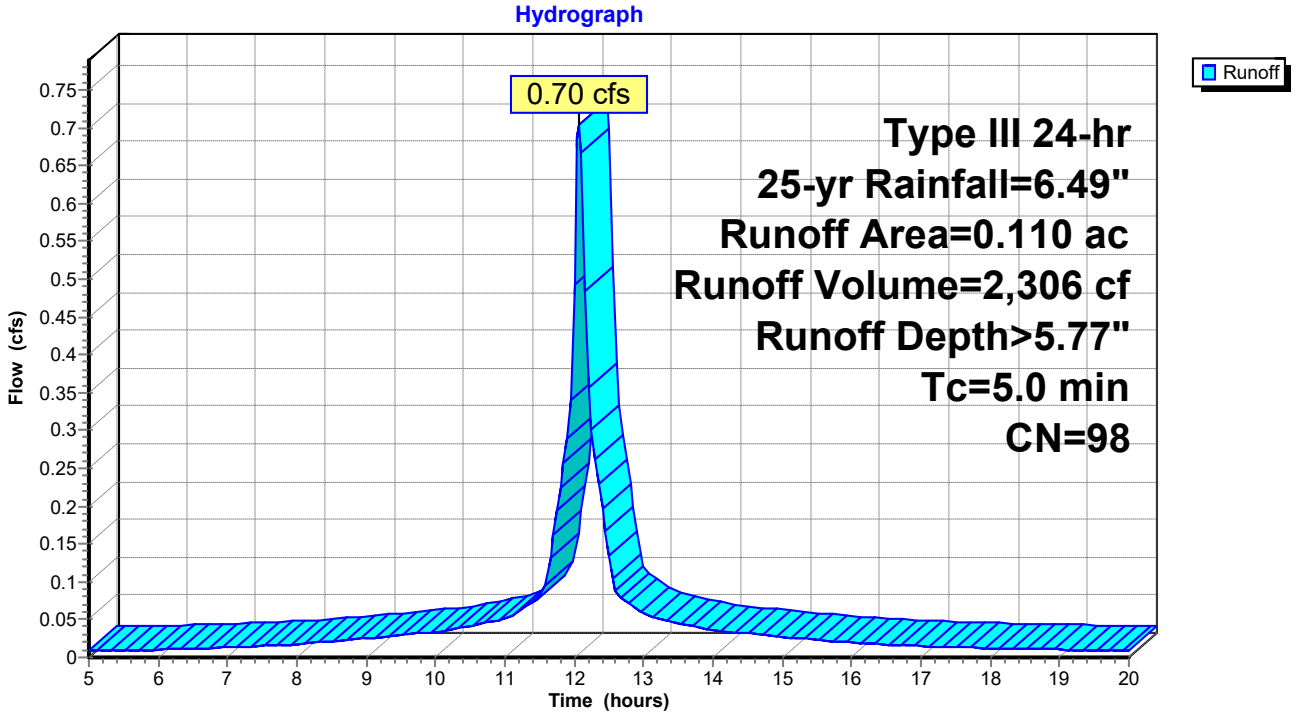
Runoff = 0.70 cfs @ 12.07 hrs, Volume= 2,306 cf, Depth> 5.77"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.49"

	Area (ac)	CN	Description
*	0.110	98	Impervious
*	0.000	69	Grass B
	0.110	98	Weighted Average
	0.110		100.00% Impervious Area

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

Subcatchment E: WS-E



Summary for Pond EX-AP: Existing Pond A

Inflow Area = 1,129,249 sf, 6.90% Impervious, Inflow Depth > 2.06" for 25-yr event
Inflow = 21.24 cfs @ 13.14 hrs, Volume= 194,213 cf
Outflow = 2.97 cfs @ 17.26 hrs, Volume= 68,747 cf, Atten= 86%, Lag= 247.7 min
Discarded = 2.76 cfs @ 17.26 hrs, Volume= 65,008 cf
Primary = 0.20 cfs @ 17.26 hrs, Volume= 3,739 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 6.64' @ 17.26 hrs Surf.Area= 238,469 sf Storage= 132,415 cf

Plug-Flow detention time= 234.4 min calculated for 68,746 cf (35% of inflow)
Center-of-Mass det. time= 132.9 min (998.1 - 865.2)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	245,195 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

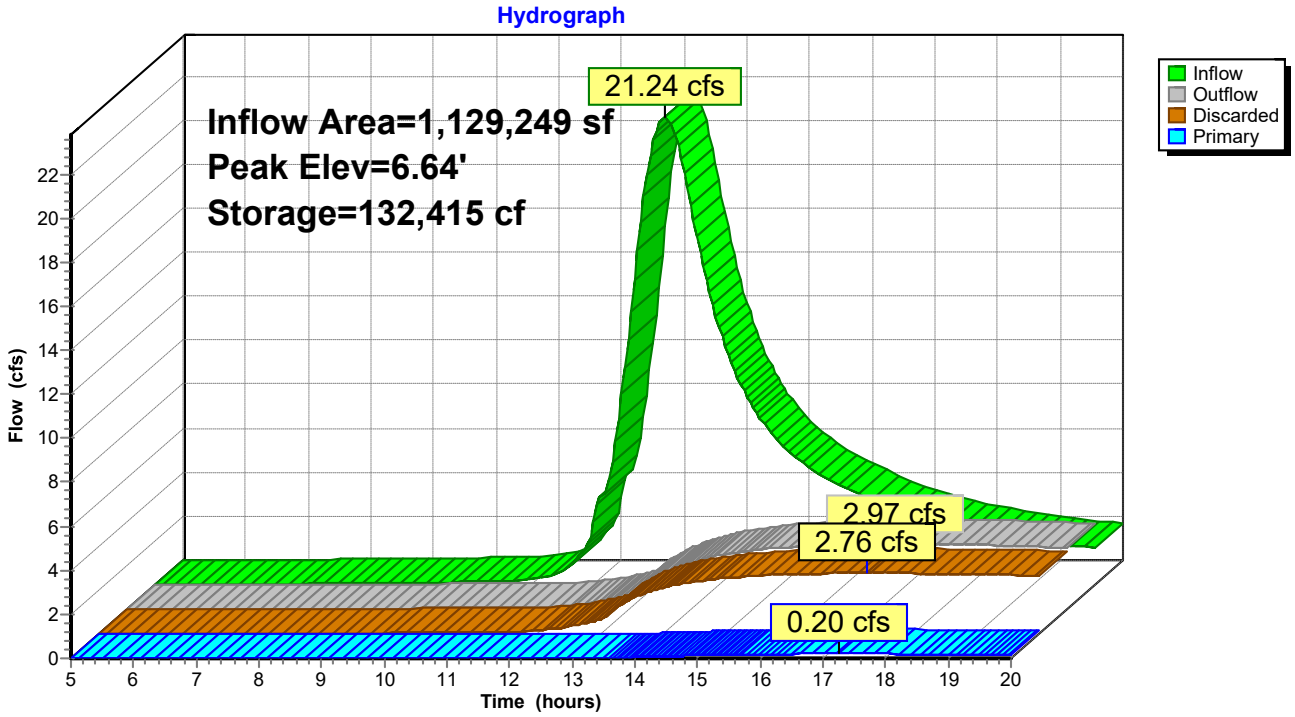
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	19,830	6,610	6,610	19,832
6.00	58,335	37,392	44,002	58,343
7.00	393,697	201,193	245,195	393,708

Device	Routing	Invert	Outlet Devices
#1	Primary	6.30'	**24.0" Round Culvert - Pipe** L= 97.0' Ke= 0.600 Inlet / Outlet Invert= 6.30' / 6.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=2.76 cfs @ 17.26 hrs HW=6.64' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 2.76 cfs)

Primary OutFlow Max=0.20 cfs @ 17.26 hrs HW=6.64' (Free Discharge)
↑—**1=Culvert - Pipe** (Barrel Controls 0.20 cfs @ 0.87 fps)

Pond EX-AP: Existing Pond A



Summary for Pond EX-BP: Design Point 1

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.93" for 25-yr event
Inflow = 13.15 cfs @ 13.22 hrs, Volume= 140,671 cf
Outflow = 9.52 cfs @ 13.91 hrs, Volume= 134,929 cf, Atten= 28%, Lag= 41.2 min
Primary = 9.52 cfs @ 13.91 hrs, Volume= 134,929 cf
Routed to Link 1L : POC A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 4.85' @ 13.91 hrs Surf.Area= 40,770 sf Storage= 31,513 cf

Plug-Flow detention time= 55.4 min calculated for 134,480 cf (96% of inflow)
Center-of-Mass det. time= 42.8 min (908.6 - 865.9)

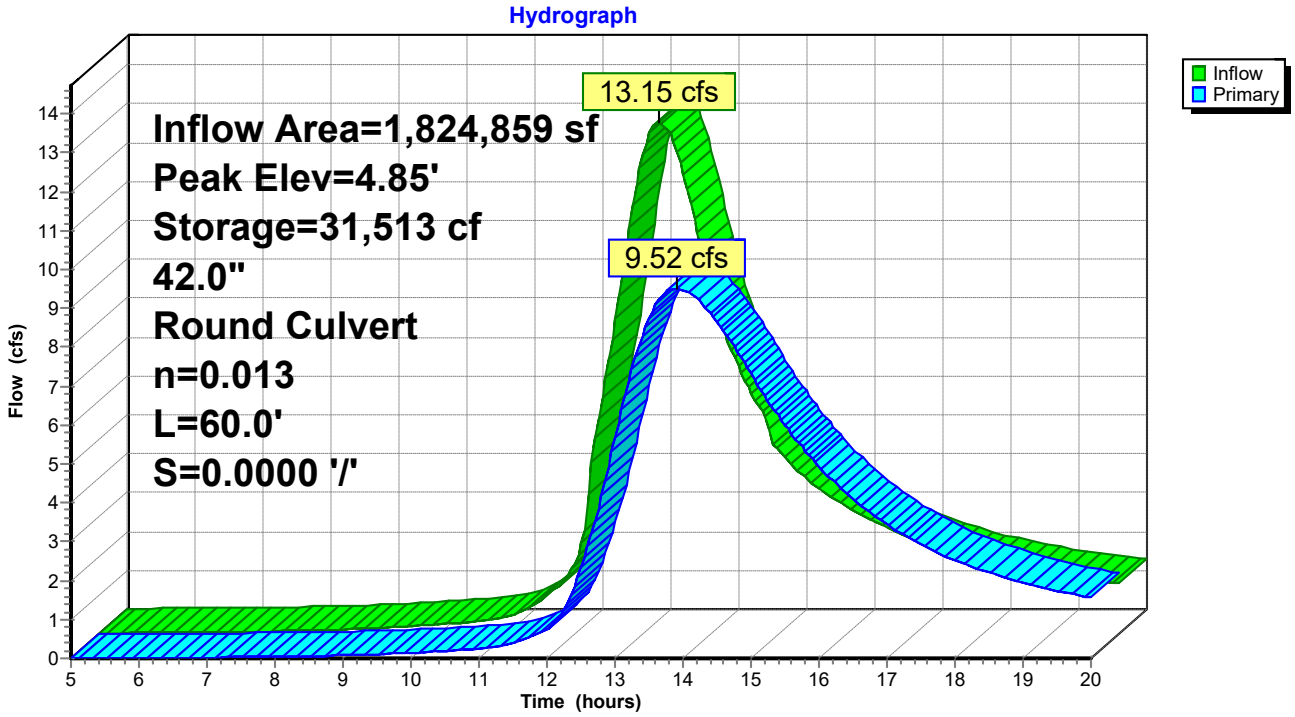
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,611 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,834	38,109	38,109
6.00	120,171	82,503	120,611

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=9.52 cfs @ 13.91 hrs HW=4.85' (Free Discharge)
1=Culvert (Barrel Controls 9.52 cfs @ 3.42 fps)

Pond EX-BP: Design Point 1



Summary for Pond PL-P: Parking Lot Pond

[82] Warning: Early inflow requires earlier time span
[44] Hint: Outlet device #3 is below defined storage

Inflow Area = 30,928 sf, 74.65% Impervious, Inflow Depth > 5.14" for 25-yr event
Inflow = 4.28 cfs @ 12.07 hrs, Volume= 13,239 cf
Outflow = 1.64 cfs @ 12.31 hrs, Volume= 13,237 cf, Atten= 62%, Lag= 14.0 min
Primary = 1.64 cfs @ 12.31 hrs, Volume= 13,237 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.38' @ 12.31 hrs Surf.Area= 3,457 sf Storage= 3,269 cf

Plug-Flow detention time= 24.9 min calculated for 13,236 cf (100% of inflow)
Center-of-Mass det. time= 24.7 min (775.7 - 750.9)

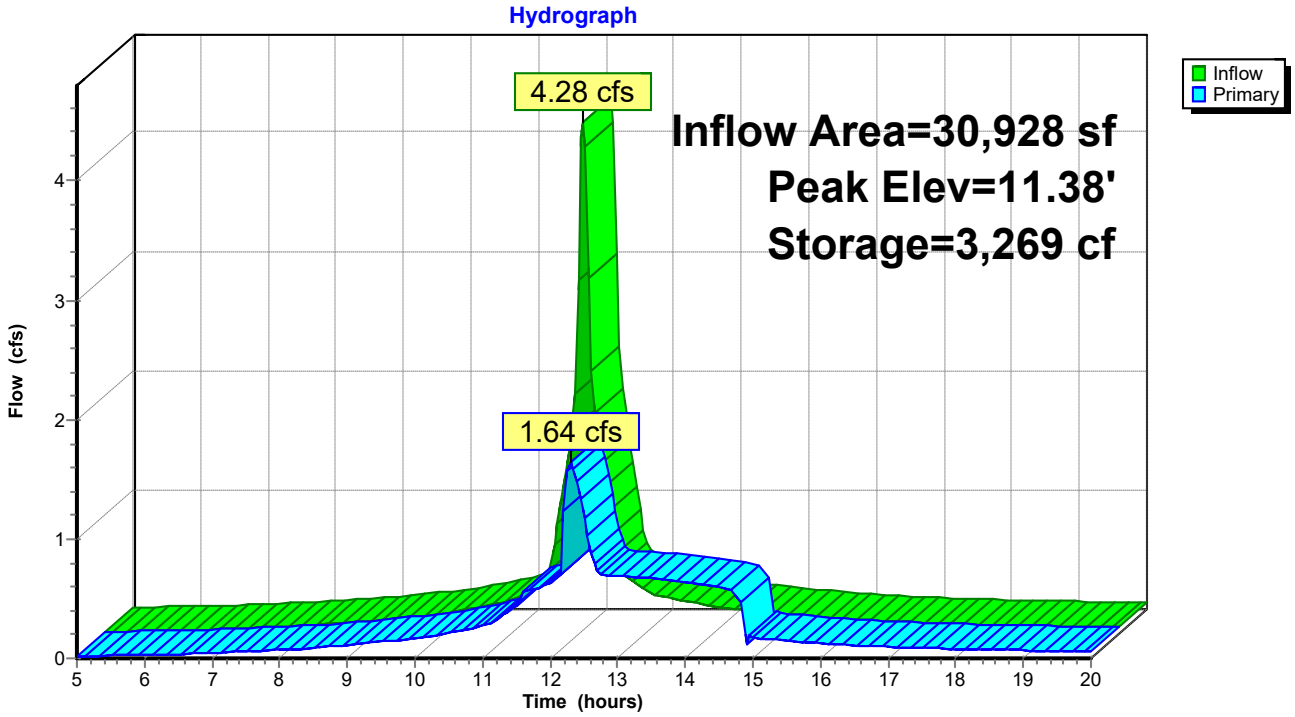
Volume	Invert	Avail.Storage	Storage Description
#1	10.00'	5,740 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.00	1,350	0	0	1,350
11.00	2,894	2,074	2,074	2,902
12.00	4,497	3,666	5,740	4,520

Device	Routing	Invert	Outlet Devices
#1	Primary	7.33'	**12.0" Round Culvert** L= 92.0' Ke= 0.600 Inlet / Outlet Invert= 7.33' / 6.40' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	11.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	8.00'	**6.0" Round Culvert** L= 200.0' Ke= 0.600 Inlet / Outlet Invert= 8.00' / 7.33' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=1.64 cfs @ 12.31 hrs HW=11.38' (Free Discharge)
└**1=Culvert** (Passes 1.64 cfs of 5.93 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 0.92 cfs @ 1.16 fps)
└**3=Culvert** (Barrel Controls 0.71 cfs @ 3.62 fps)

Pond PL-P: Parking Lot Pond

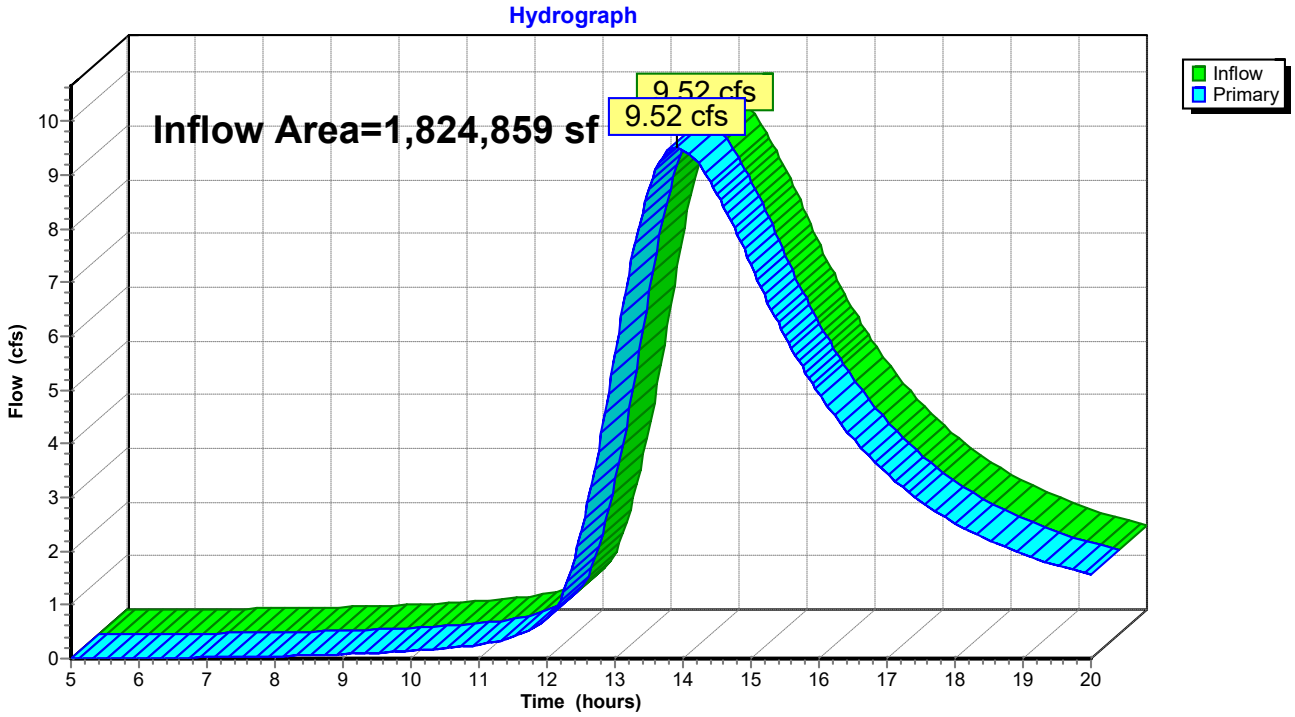


Summary for Link 1L: POC A

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 0.89" for 25-yr event
Inflow = 9.52 cfs @ 13.91 hrs, Volume= 134,929 cf
Primary = 9.52 cfs @ 13.91 hrs, Volume= 134,929 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC A

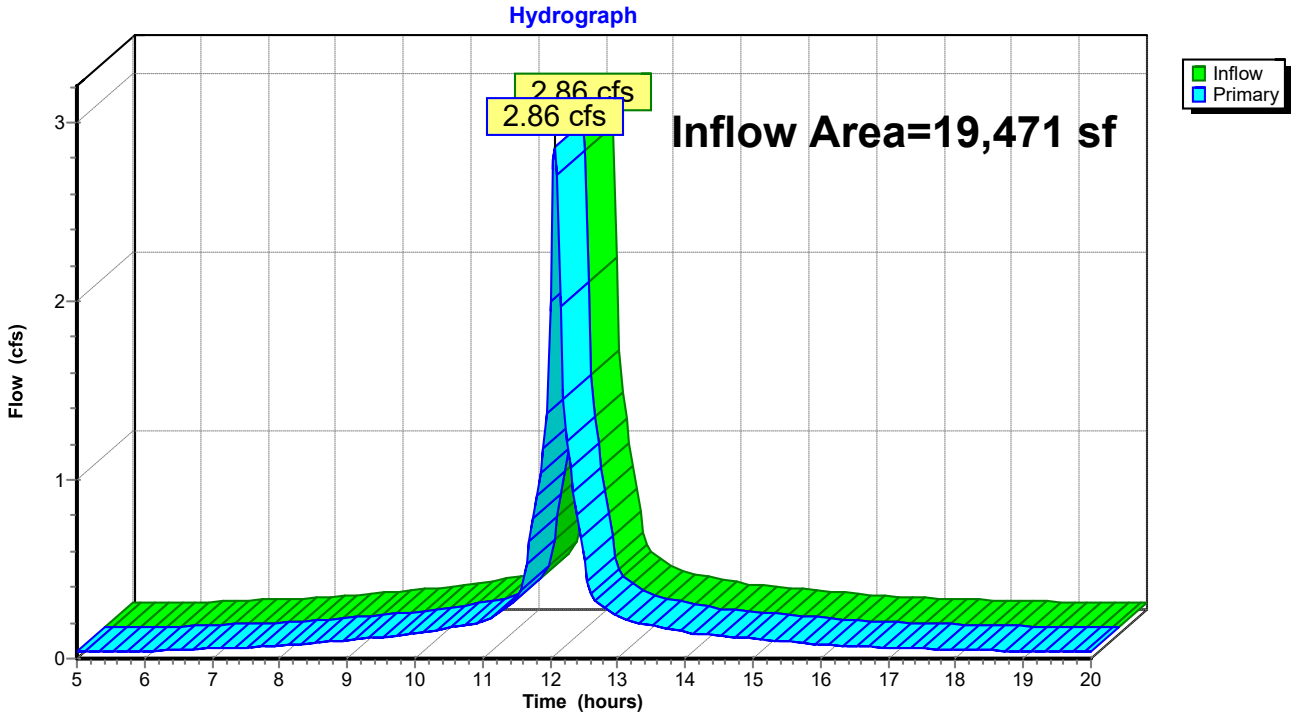


Summary for Link 2L: POC B

Inflow Area = 19,471 sf,100.00% Impervious, Inflow Depth > 5.77" for 25-yr event
Inflow = 2.86 cfs @ 12.07 hrs, Volume= 9,370 cf
Primary = 2.86 cfs @ 12.07 hrs, Volume= 9,370 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

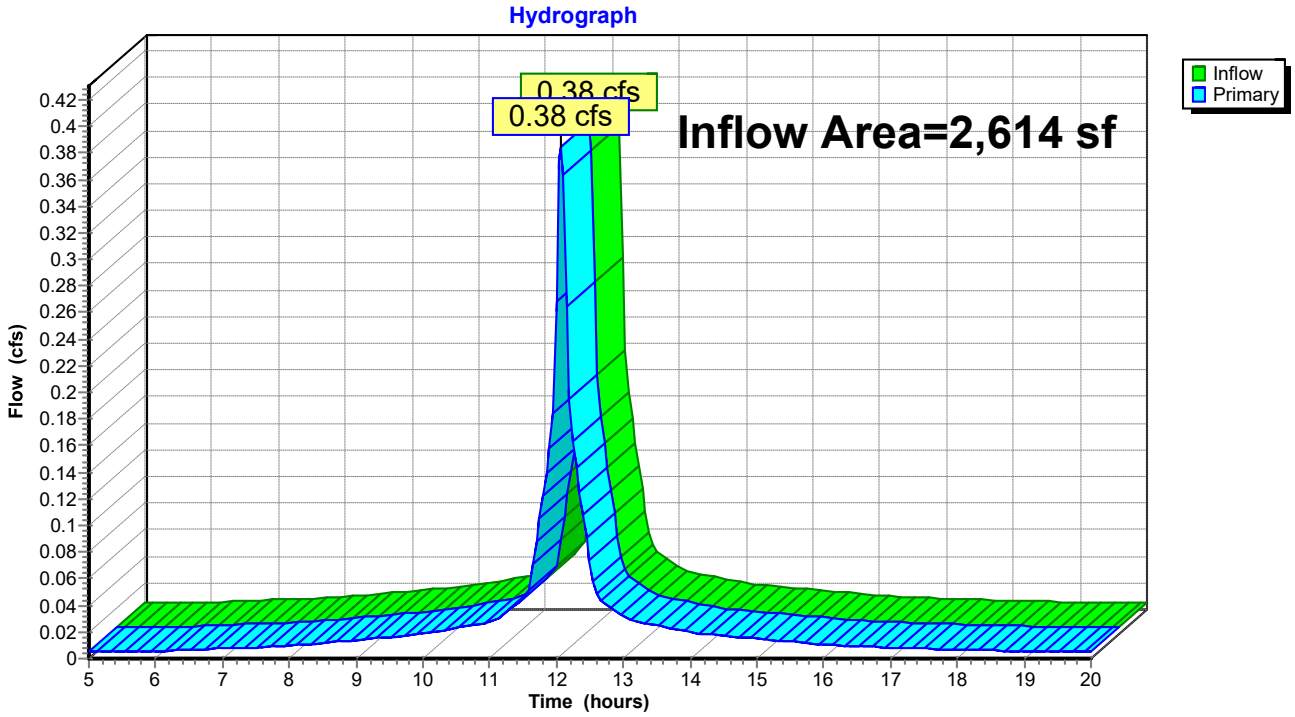


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 5.77" for 25-yr event
Inflow = 0.38 cfs @ 12.07 hrs, Volume= 1,258 cf
Primary = 0.38 cfs @ 12.07 hrs, Volume= 1,258 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A1: WS-A1 Runoff Area=25.200 ac 5.22% Impervious Runoff Depth>2.53"
Tc=80.4 min CN=60 Runoff=26.65 cfs 231,561 cf

Subcatchment A2: WS-A2 Runoff Area=0.412 ac 52.67% Impervious Runoff Depth>5.11"
Tc=40.2 min CN=84 Runoff=1.27 cfs 7,637 cf

Subcatchment A3: WS-A3 Runoff Area=0.202 ac 73.27% Impervious Runoff Depth>5.82"
Tc=5.0 min CN=90 Runoff=1.38 cfs 4,265 cf

Subcatchment B1: WS-B1 Runoff Area=14.550 ac 2.89% Impervious Runoff Depth>2.71"
Tc=91.9 min CN=62 Runoff=15.14 cfs 143,176 cf

Subcatchment B2: WS-B2 Runoff Area=0.710 ac 74.65% Impervious Runoff Depth>5.92"
Tc=5.0 min CN=91 Runoff=4.90 cfs 15,262 cf

Subcatchment B3: WS-B3 Runoff Area=0.709 ac 54.72% Impervious Runoff Depth>4.77"
Tc=40.3 min CN=81 Runoff=2.06 cfs 12,283 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.447 ac 100.00% Impervious Runoff Depth>6.55"
Tc=5.0 min CN=98 Runoff=3.24 cfs 10,622 cf

Subcatchment D: WS-D (Design Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>6.55"
Tc=5.0 min CN=98 Runoff=0.44 cfs 1,426 cf

Subcatchment E: WS-E Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>6.55"
Tc=5.0 min CN=98 Runoff=0.80 cfs 2,614 cf

Pond EX-AP: Existing Pond A Peak Elev=6.77' Storage=167,369 cf Inflow=27.34 cfs 246,077 cf
Discarded=3.37 cfs 80,501 cf Primary=0.45 cfs 8,825 cf Outflow=3.82 cfs 89,326 cf

Pond EX-BP: Design Point 1 Peak Elev=5.03' Storage=39,696 cf Inflow=16.56 cfs 179,542 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=11.96 cfs 172,216 cf

Pond PL-P: Parking Lot Pond Peak Elev=11.44' Storage=3,495 cf Inflow=4.90 cfs 15,262 cf
Outflow=2.43 cfs 15,259 cf

Link 1L: POC A Inflow=11.96 cfs 172,216 cf
Primary=11.96 cfs 172,216 cf

Link 2L: POC B Inflow=3.24 cfs 10,622 cf
Primary=3.24 cfs 10,622 cf

Link 3L: POC C Inflow=0.44 cfs 1,426 cf
Primary=0.44 cfs 1,426 cf

Total Runoff Area = 1,846,944 sf Runoff Volume = 428,845 cf Average Runoff Depth = 2.79"
91.43% Pervious = 1,688,603 sf 8.57% Impervious = 158,341 sf

Summary for Subcatchment A1: WS-A1

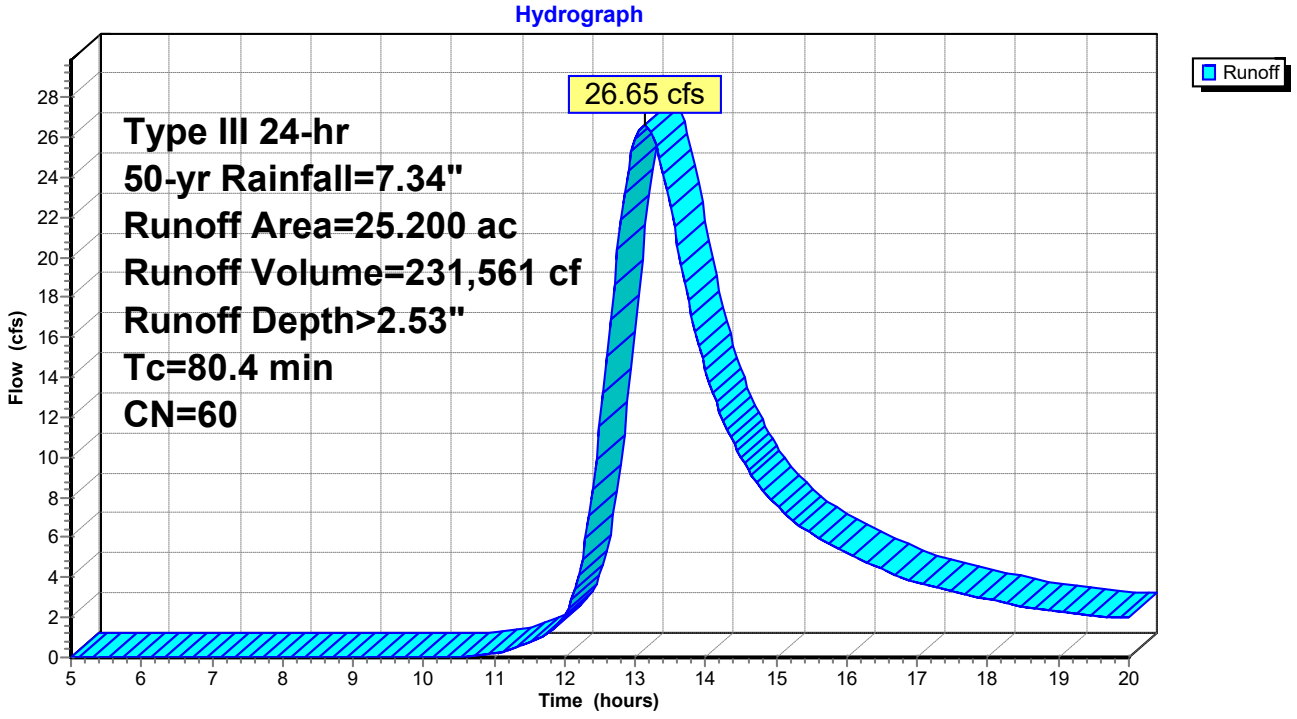
Runoff = 26.65 cfs @ 13.13 hrs, Volume= 231,561 cf, Depth> 2.53"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	19.658	55	Wooded B
*	4.227	69	Grass B
*	1.315	98	Impervious
	25.200	60	Weighted Average
	23.885		94.78% Pervious Area
	1.315		5.22% Impervious Area

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

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

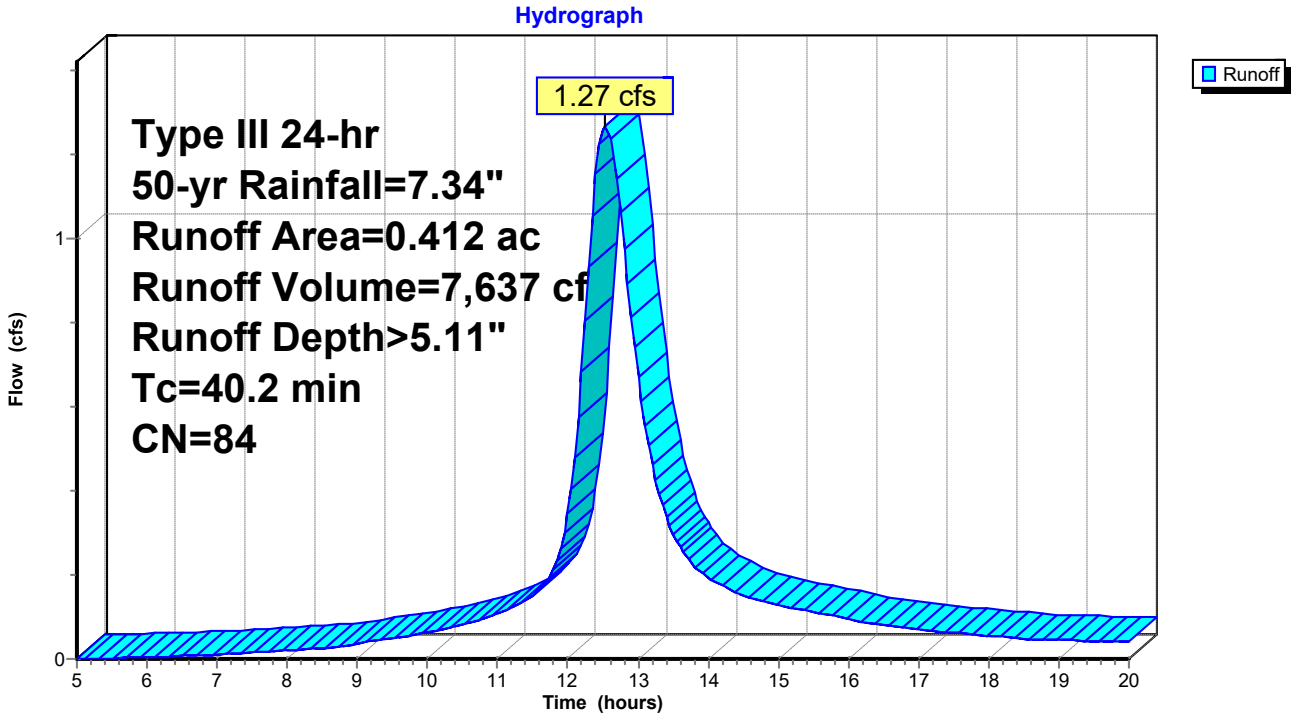
Runoff = 1.27 cfs @ 12.54 hrs, Volume= 7,637 cf, Depth> 5.11"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.217	98	Impervious
*	0.195	69	Grass B
	0.412	84	Weighted Average
	0.195		47.33% Pervious Area
	0.217		52.67% Impervious Area

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

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

[49] Hint: Tc<2dt may require smaller dt

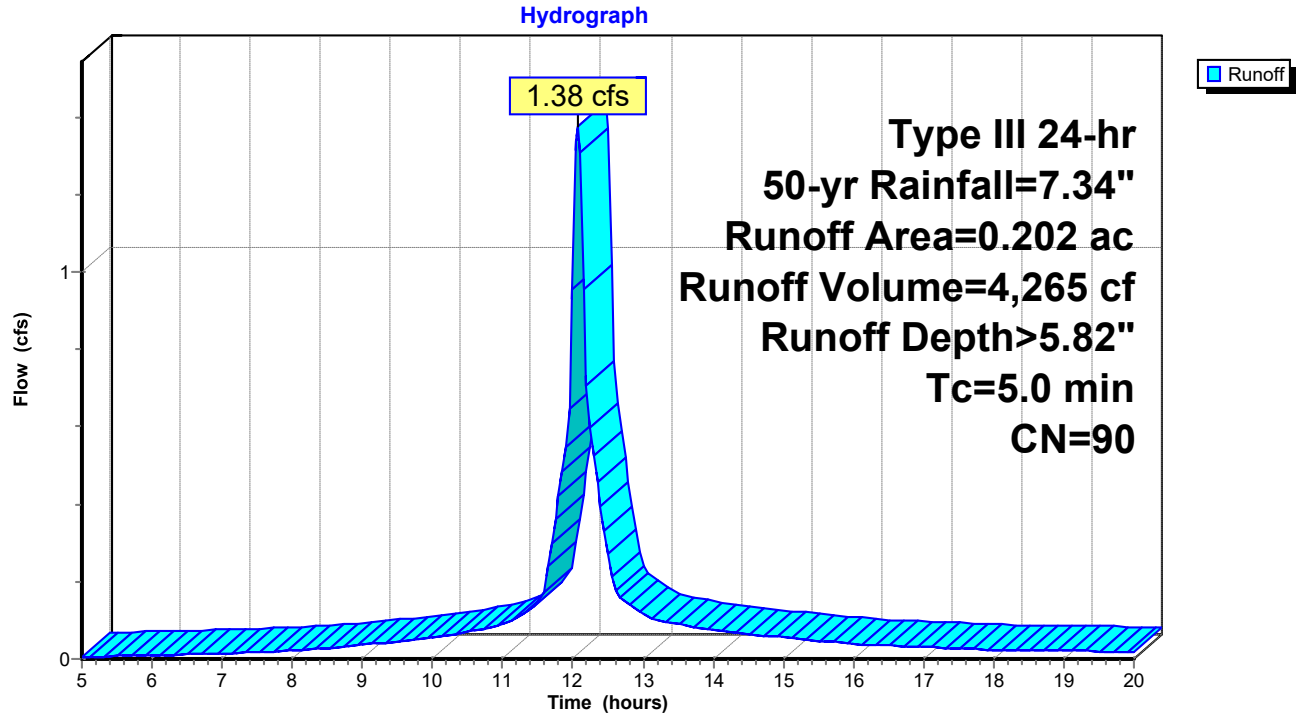
Runoff = 1.38 cfs @ 12.07 hrs, Volume= 4,265 cf, Depth> 5.82"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.148	98	Impervious
*	0.054	69	Grass B
	0.202	90	Weighted Average
	0.054		26.73% Pervious Area
	0.148		73.27% Impervious Area

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

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

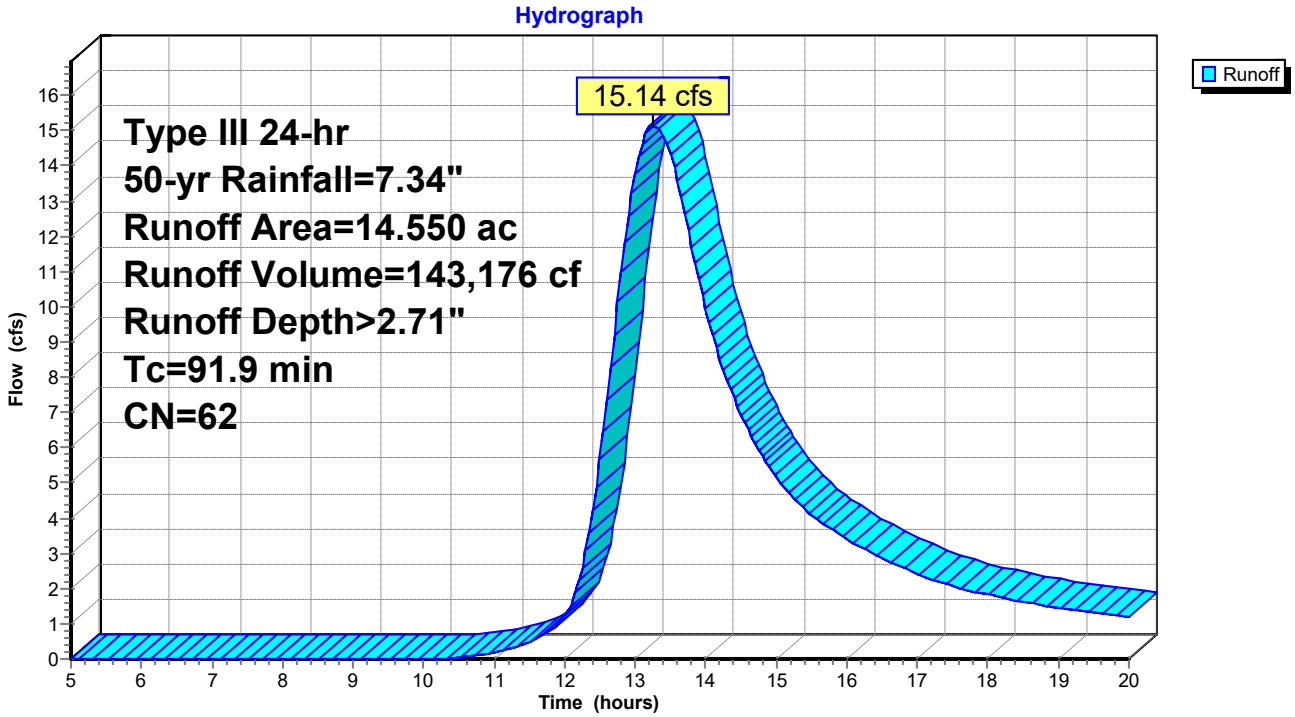
Runoff = 15.14 cfs @ 13.26 hrs, Volume= 143,176 cf, Depth> 2.71"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.420	98	Impervious
*	8.860	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	14.550	62	Weighted Average
	14.130		97.11% Pervious Area
	0.420		2.89% Impervious Area

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

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

[49] Hint: Tc<2dt may require smaller dt

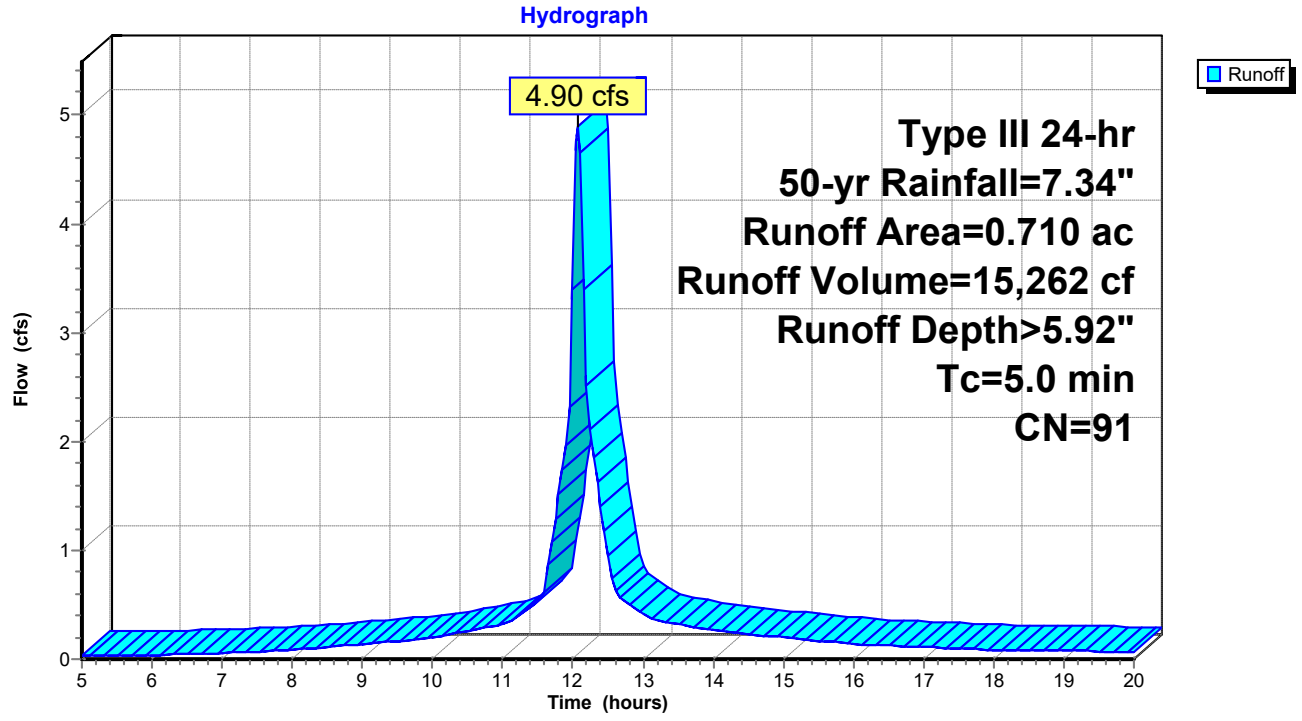
Runoff = 4.90 cfs @ 12.07 hrs, Volume= 15,262 cf, Depth> 5.92"
Routed to Pond PL-P : Parking Lot Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.530	98	Impervious
*	0.000	55	Wooded B
*	0.180	69	Grass B
*	0.000	84	Grass D
	0.710	91	Weighted Average
	0.180		25.35% Pervious Area
	0.530		74.65% Impervious Area

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

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

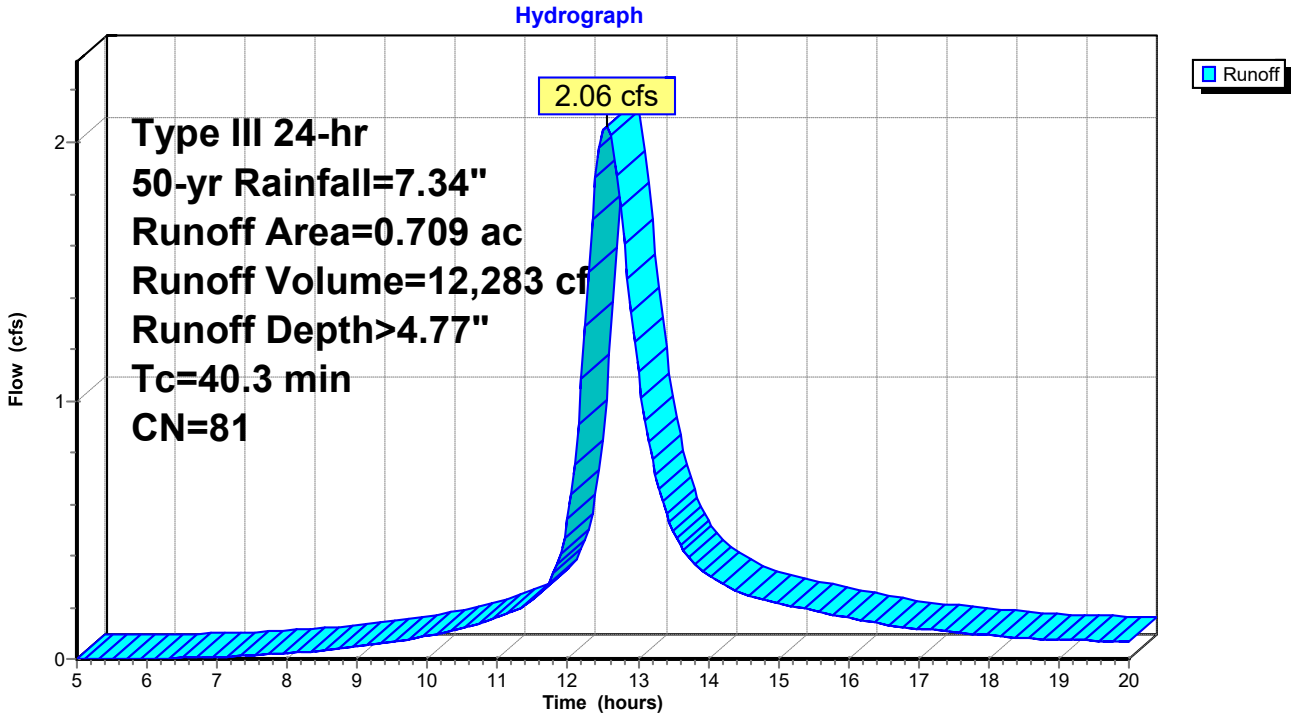
Runoff = 2.06 cfs @ 12.54 hrs, Volume= 12,283 cf, Depth> 4.77"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.388	98	Impervious
*	0.191	55	Wooded B
*	0.130	69	Grass B
*	0.000	84	Grass D
	0.709	81	Weighted Average
	0.321		45.28% Pervious Area
	0.388		54.72% Impervious Area

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

Subcatchment B3: WS-B3



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

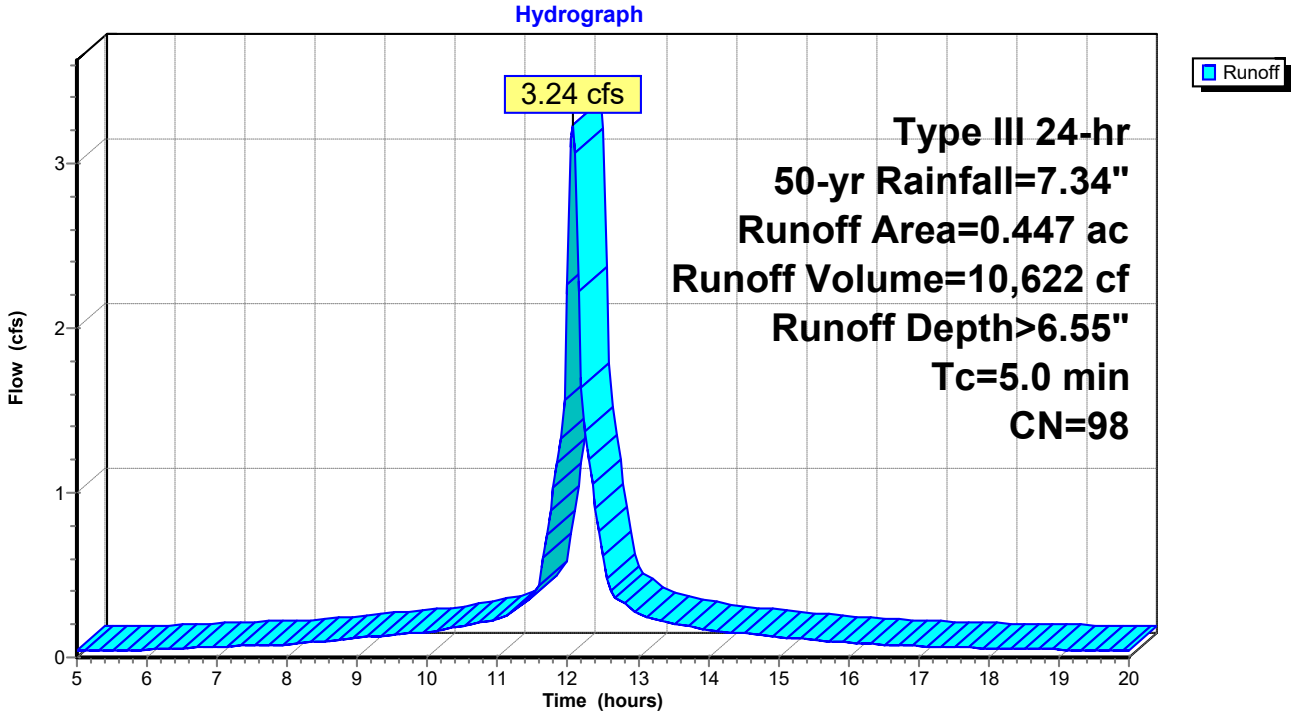
Runoff = 3.24 cfs @ 12.07 hrs, Volume= 10,622 cf, Depth> 6.55"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.447	98	Impervious
*	0.000	69	Grass B
	0.447	98	Weighted Average
	0.447		100.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Design Point 3)

[49] Hint: Tc<2dt may require smaller dt

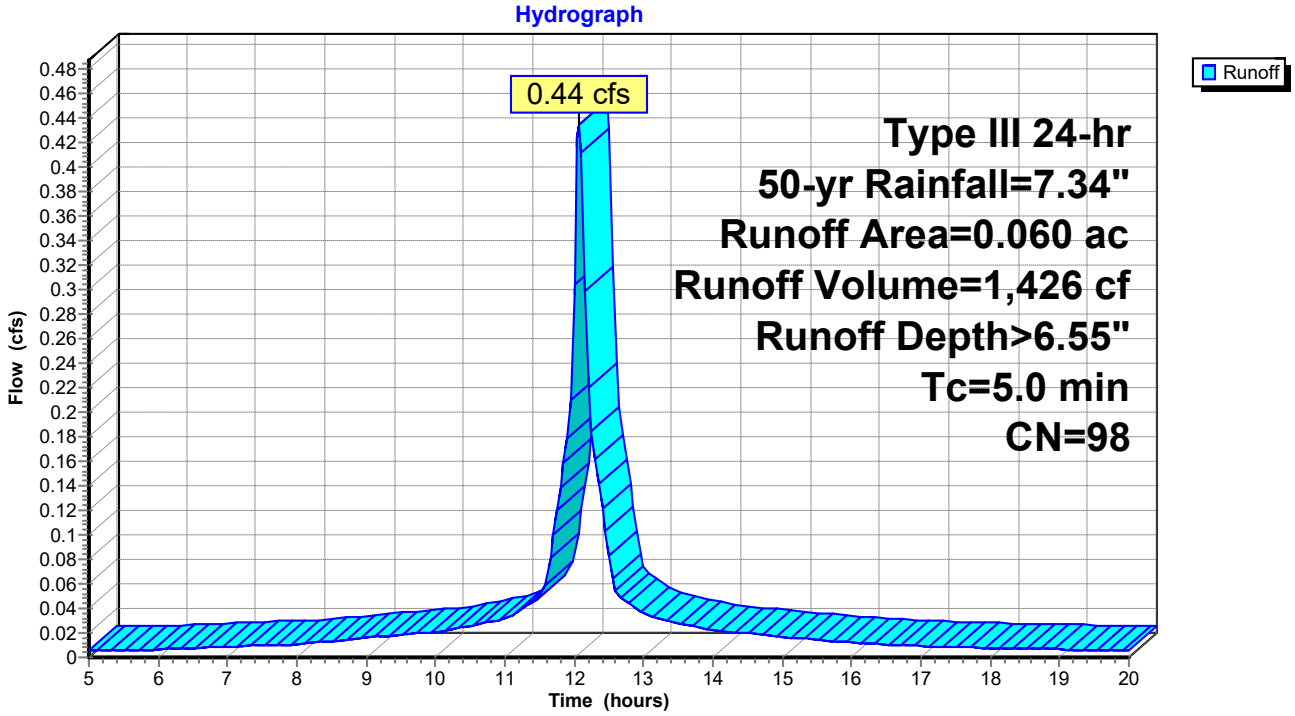
Runoff = 0.44 cfs @ 12.07 hrs, Volume= 1,426 cf, Depth> 6.55"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Design Point 3)



Summary for Subcatchment E: WS-E

[49] Hint: Tc<2dt may require smaller dt

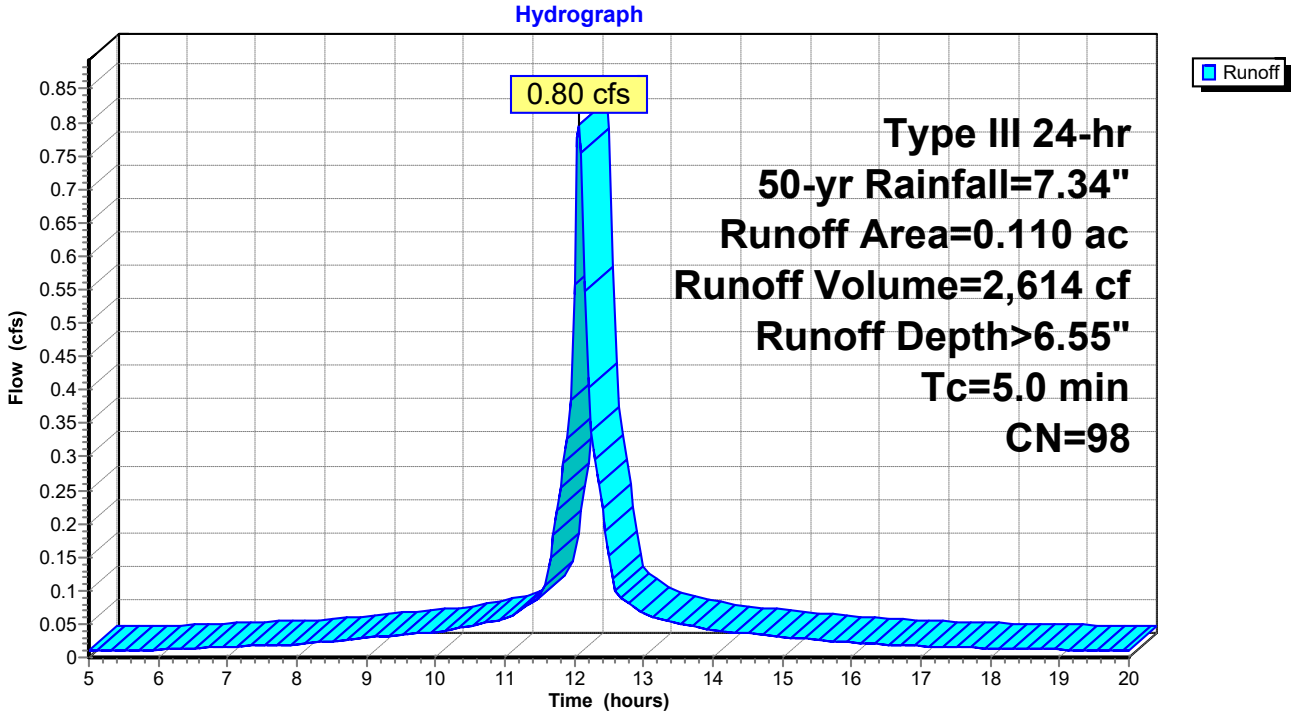
Runoff = 0.80 cfs @ 12.07 hrs, Volume= 2,614 cf, Depth> 6.55"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.34"

	Area (ac)	CN	Description
*	0.110	98	Impervious
*	0.000	69	Grass B
	0.110	98	Weighted Average
	0.110		100.00% Impervious Area

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

Subcatchment E: WS-E



Summary for Pond EX-AP: Existing Pond A

Inflow Area = 1,129,249 sf, 6.90% Impervious, Inflow Depth > 2.61" for 50-yr event
Inflow = 27.34 cfs @ 13.13 hrs, Volume= 246,077 cf
Outflow = 3.82 cfs @ 17.03 hrs, Volume= 89,326 cf, Atten= 86%, Lag= 234.5 min
Discarded = 3.37 cfs @ 17.03 hrs, Volume= 80,501 cf
Primary = 0.45 cfs @ 17.03 hrs, Volume= 8,825 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 6.77' @ 17.03 hrs Surf.Area= 290,929 sf Storage= 167,369 cf

Plug-Flow detention time= 234.4 min calculated for 89,325 cf (36% of inflow)
Center-of-Mass det. time= 135.1 min (996.1 - 861.0)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	245,195 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

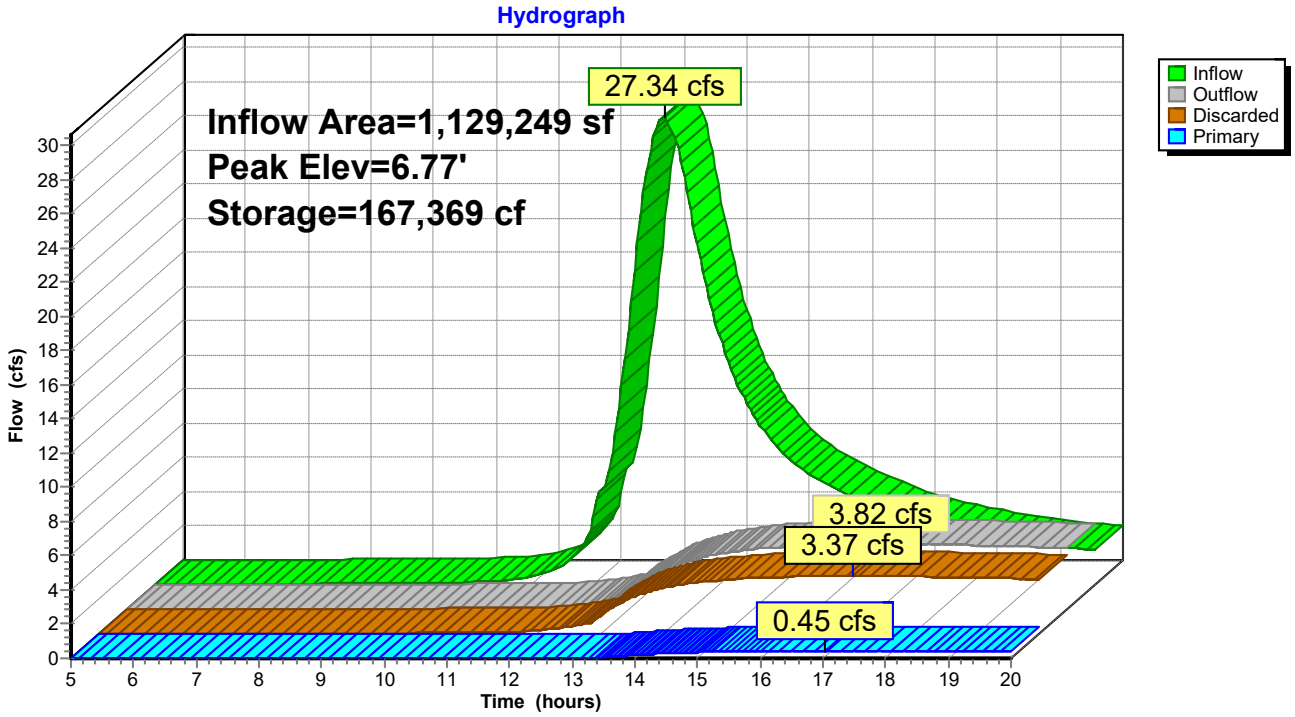
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	19,830	6,610	6,610	19,832
6.00	58,335	37,392	44,002	58,343
7.00	393,697	201,193	245,195	393,708

Device	Routing	Invert	Outlet Devices
#1	Primary	6.30'	**24.0" Round Culvert - Pipe** L= 97.0' Ke= 0.600 Inlet / Outlet Invert= 6.30' / 6.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=3.37 cfs @ 17.03 hrs HW=6.77' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 3.37 cfs)

Primary OutFlow Max=0.45 cfs @ 17.03 hrs HW=6.77' (Free Discharge)
↑—**1=Culvert - Pipe** (Barrel Controls 0.45 cfs @ 1.20 fps)

Pond EX-AP: Existing Pond A



Summary for Pond EX-BP: Design Point 1

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 1.18" for 50-yr event
Inflow = 16.56 cfs @ 13.22 hrs, Volume= 179,542 cf
Outflow = 11.96 cfs @ 13.90 hrs, Volume= 172,216 cf, Atten= 28%, Lag= 41.0 min
Primary = 11.96 cfs @ 13.90 hrs, Volume= 172,216 cf
Routed to Link 1L : POC A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 5.03' @ 13.90 hrs Surf.Area= 47,427 sf Storage= 39,696 cf

Plug-Flow detention time= 55.0 min calculated for 172,215 cf (96% of inflow)
Center-of-Mass det. time= 42.3 min (908.3 - 866.0)

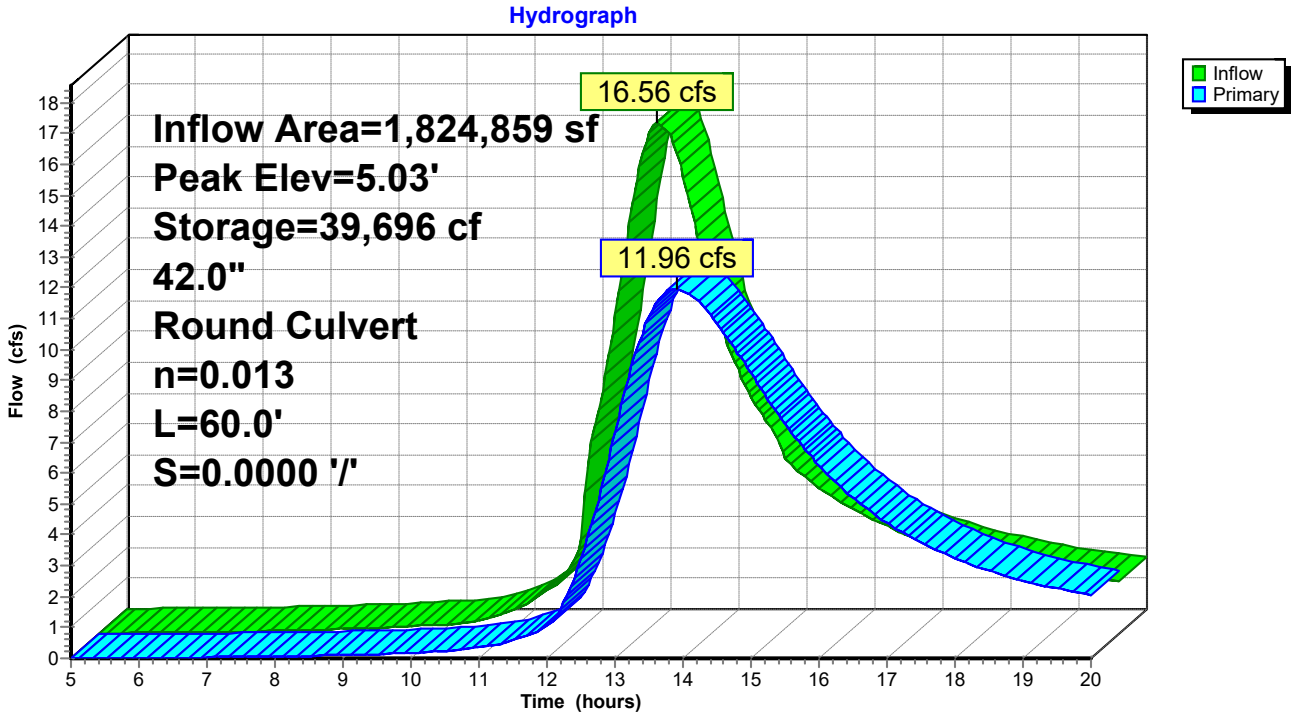
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,611 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,834	38,109	38,109
6.00	120,171	82,503	120,611

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=11.96 cfs @ 13.90 hrs HW=5.03' (Free Discharge)
1=Culvert (Barrel Controls 11.96 cfs @ 3.67 fps)

Pond EX-BP: Design Point 1



Summary for Pond PL-P: Parking Lot Pond

[82] Warning: Early inflow requires earlier time span
[44] Hint: Outlet device #3 is below defined storage

Inflow Area = 30,928 sf, 74.65% Impervious, Inflow Depth > 5.92" for 50-yr event
Inflow = 4.90 cfs @ 12.07 hrs, Volume= 15,262 cf
Outflow = 2.43 cfs @ 12.22 hrs, Volume= 15,259 cf, Atten= 50%, Lag= 9.1 min
Primary = 2.43 cfs @ 12.22 hrs, Volume= 15,259 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.44' @ 12.22 hrs Surf.Area= 3,558 sf Storage= 3,495 cf

Plug-Flow detention time= 24.0 min calculated for 15,207 cf (100% of inflow)
Center-of-Mass det. time= 23.8 min (772.3 - 748.5)

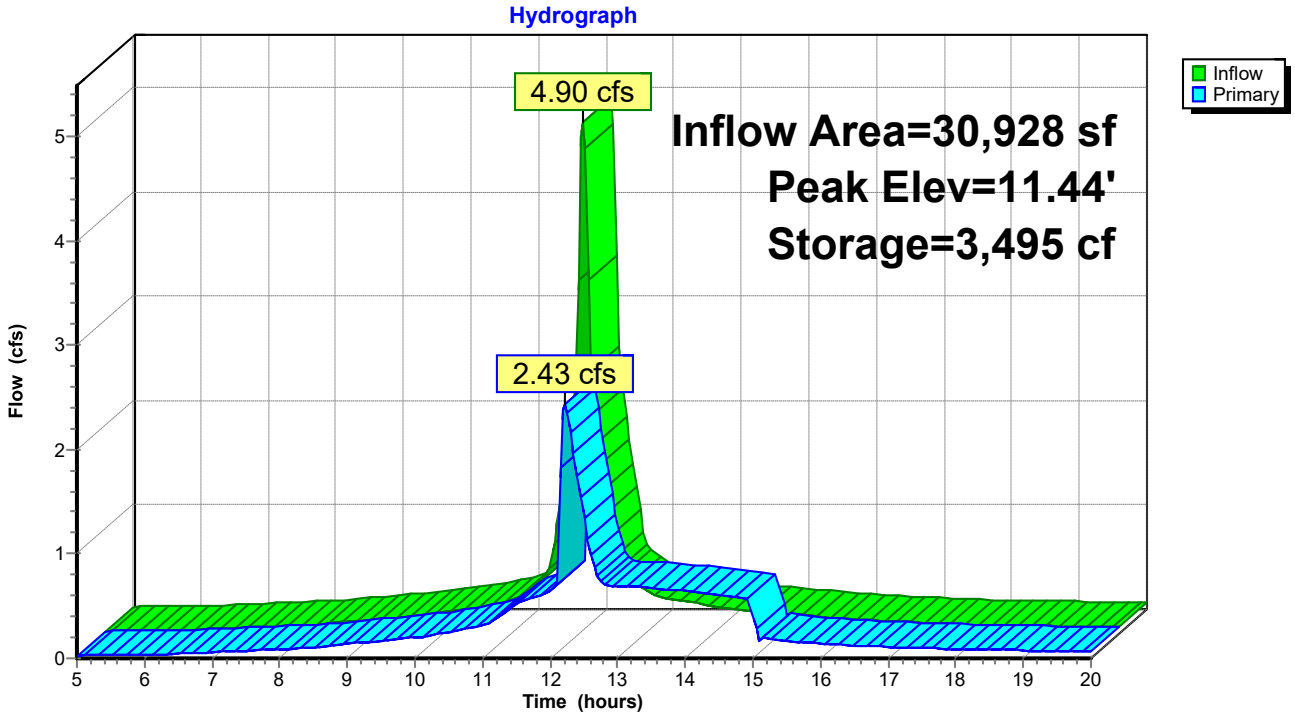
Volume	Invert	Avail.Storage	Storage Description
#1	10.00'	5,740 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.00	1,350	0	0	1,350
11.00	2,894	2,074	2,074	2,902
12.00	4,497	3,666	5,740	4,520

Device	Routing	Invert	Outlet Devices
#1	Primary	7.33'	**12.0" Round Culvert** L= 92.0' Ke= 0.600 Inlet / Outlet Invert= 7.33' / 6.40' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	11.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	8.00'	**6.0" Round Culvert** L= 200.0' Ke= 0.600 Inlet / Outlet Invert= 8.00' / 7.33' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=2.36 cfs @ 12.22 hrs HW=11.44' (Free Discharge)
└**1=Culvert** (Passes 2.36 cfs of 5.98 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 1.64 cfs @ 1.41 fps)
└**3=Culvert** (Barrel Controls 0.72 cfs @ 3.65 fps)

Pond PL-P: Parking Lot Pond

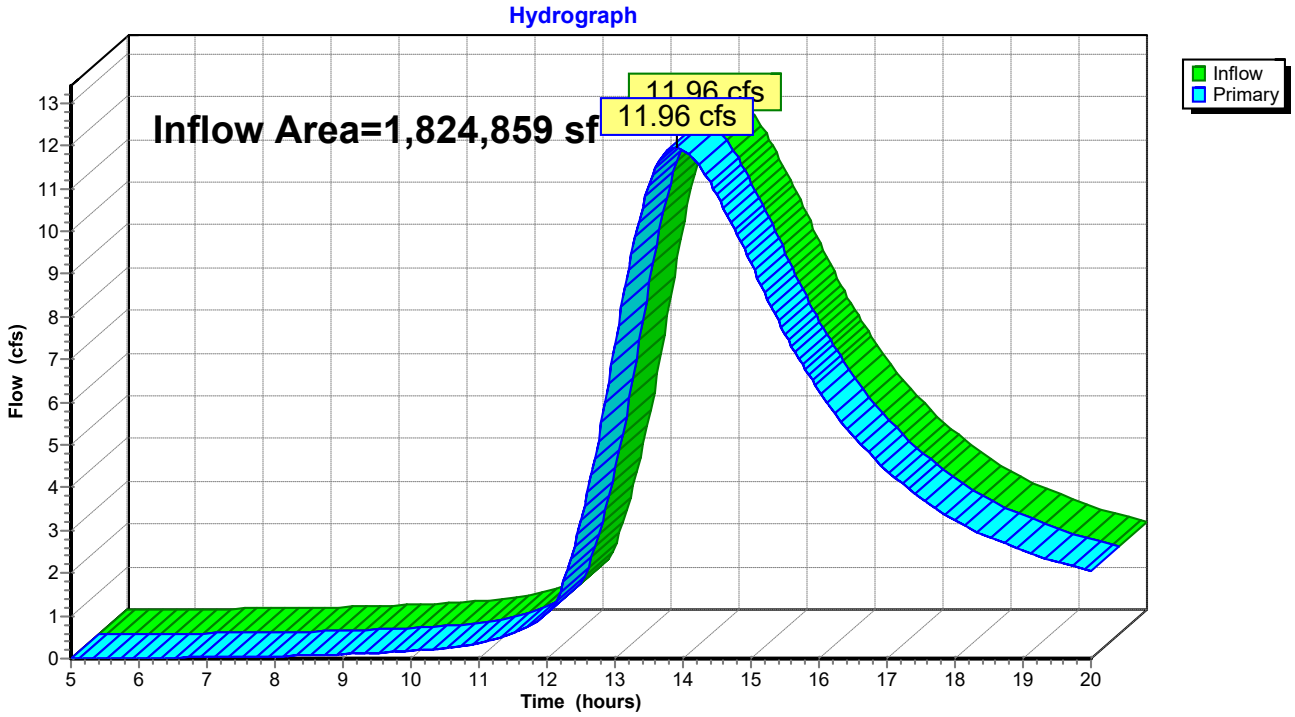


Summary for Link 1L: POC A

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 1.13" for 50-yr event
Inflow = 11.96 cfs @ 13.90 hrs, Volume= 172,216 cf
Primary = 11.96 cfs @ 13.90 hrs, Volume= 172,216 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC A

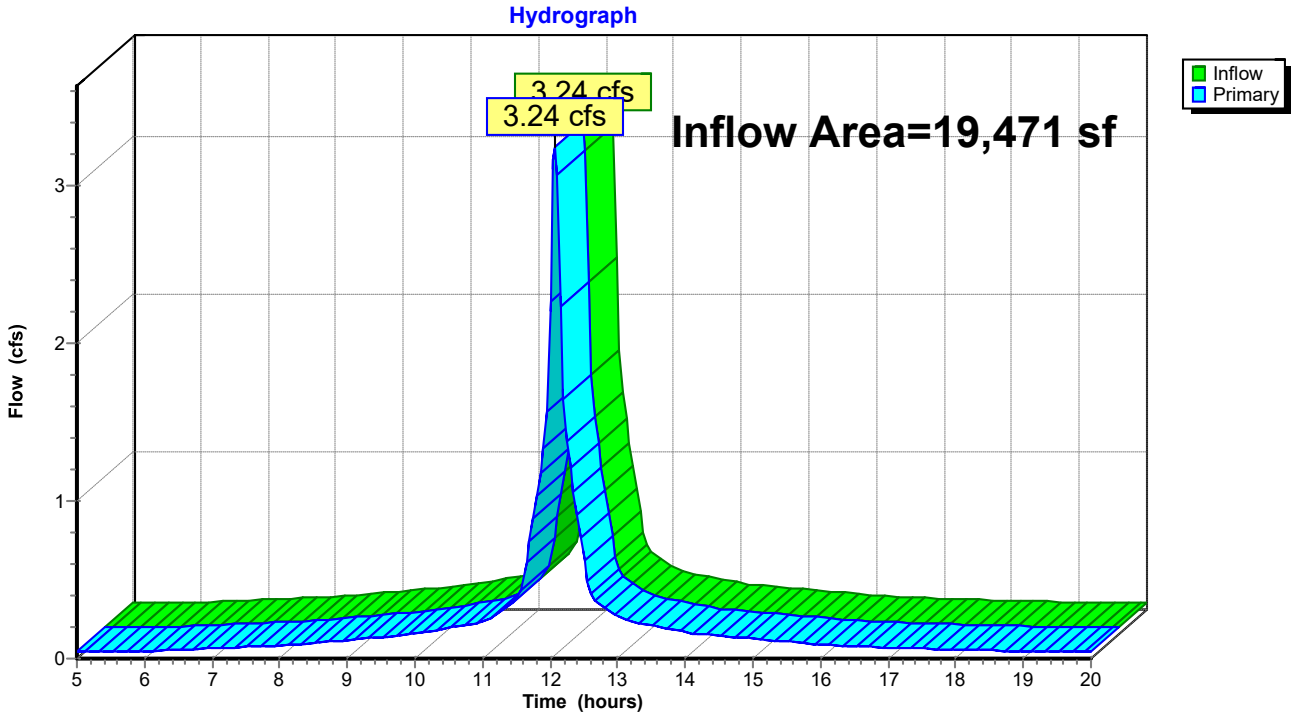


Summary for Link 2L: POC B

Inflow Area = 19,471 sf,100.00% Impervious, Inflow Depth > 6.55" for 50-yr event
Inflow = 3.24 cfs @ 12.07 hrs, Volume= 10,622 cf
Primary = 3.24 cfs @ 12.07 hrs, Volume= 10,622 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

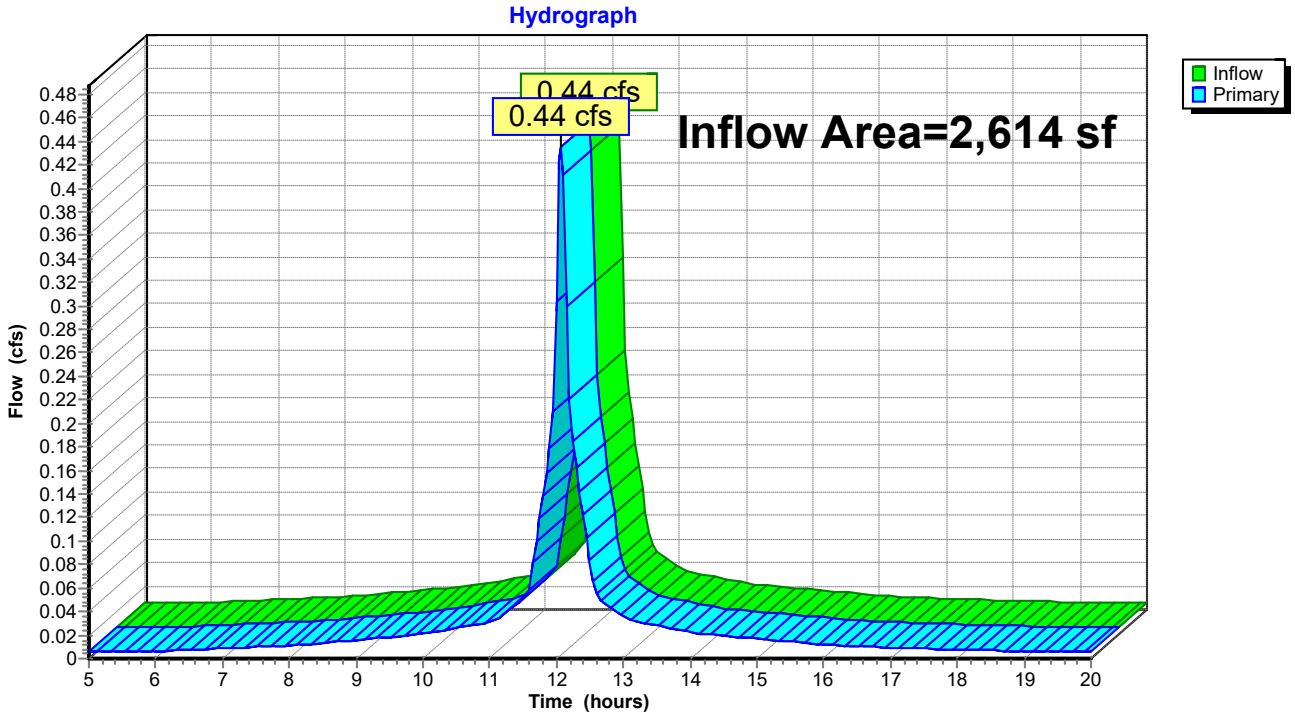


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 6.55" for 50-yr event
Inflow = 0.44 cfs @ 12.07 hrs, Volume= 1,426 cf
Primary = 0.44 cfs @ 12.07 hrs, Volume= 1,426 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A1: WS-A1 Runoff Area=25.200 ac 5.22% Impervious Runoff Depth>3.16"
Tc=80.4 min CN=60 Runoff=33.47 cfs 288,700 cf

Subcatchment A2: WS-A2 Runoff Area=0.412 ac 52.67% Impervious Runoff Depth>5.94"
Tc=40.2 min CN=84 Runoff=1.47 cfs 8,883 cf

Subcatchment A3: WS-A3 Runoff Area=0.202 ac 73.27% Impervious Runoff Depth>6.67"
Tc=5.0 min CN=90 Runoff=1.57 cfs 4,888 cf

Subcatchment B1: WS-B1 Runoff Area=14.550 ac 2.89% Impervious Runoff Depth>3.36"
Tc=91.9 min CN=62 Runoff=18.85 cfs 177,216 cf

Subcatchment B2: WS-B2 Runoff Area=0.710 ac 74.65% Impervious Runoff Depth>6.77"
Tc=5.0 min CN=91 Runoff=5.57 cfs 17,452 cf

Subcatchment B3: WS-B3 Runoff Area=0.709 ac 54.72% Impervious Runoff Depth>5.59"
Tc=40.3 min CN=81 Runoff=2.40 cfs 14,385 cf

Subcatchment C: WS-C (Design Point 2) Runoff Area=0.447 ac 100.00% Impervious Runoff Depth>7.38"
Tc=5.0 min CN=98 Runoff=3.65 cfs 11,976 cf

Subcatchment D: WS-D (Design Point 3) Runoff Area=0.060 ac 100.00% Impervious Runoff Depth>7.38"
Tc=5.0 min CN=98 Runoff=0.49 cfs 1,607 cf

Subcatchment E: WS-E Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>7.38"
Tc=5.0 min CN=98 Runoff=0.90 cfs 2,947 cf

Pond EX-AP: Existing Pond A Peak Elev=6.90' Storage=207,598 cf Inflow=34.26 cfs 305,417 cf
Discarded=4.01 cfs 96,914 cf Primary=0.78 cfs 16,019 cf Outflow=4.79 cfs 112,933 cf

Pond EX-BP: Design Point 1 Peak Elev=5.22' Storage=49,578 cf Inflow=20.45 cfs 225,068 cf
42.0" Round Culvert n=0.013 L=60.0' S=0.0000 '/' Outflow=14.53 cfs 215,834 cf

Pond PL-P: Parking Lot Pond Peak Elev=11.50' Storage=3,704 cf Inflow=5.57 cfs 17,452 cf
Outflow=3.28 cfs 17,448 cf

Link 1L: POC A Inflow=14.53 cfs 215,834 cf
Primary=14.53 cfs 215,834 cf

Link 2L: POC B Inflow=3.65 cfs 11,976 cf
Primary=3.65 cfs 11,976 cf

Link 3L: POC C Inflow=0.49 cfs 1,607 cf
Primary=0.49 cfs 1,607 cf

Total Runoff Area = 1,846,944 sf Runoff Volume = 528,053 cf Average Runoff Depth = 3.43"
91.43% Pervious = 1,688,603 sf 8.57% Impervious = 158,341 sf

Summary for Subcatchment A1: WS-A1

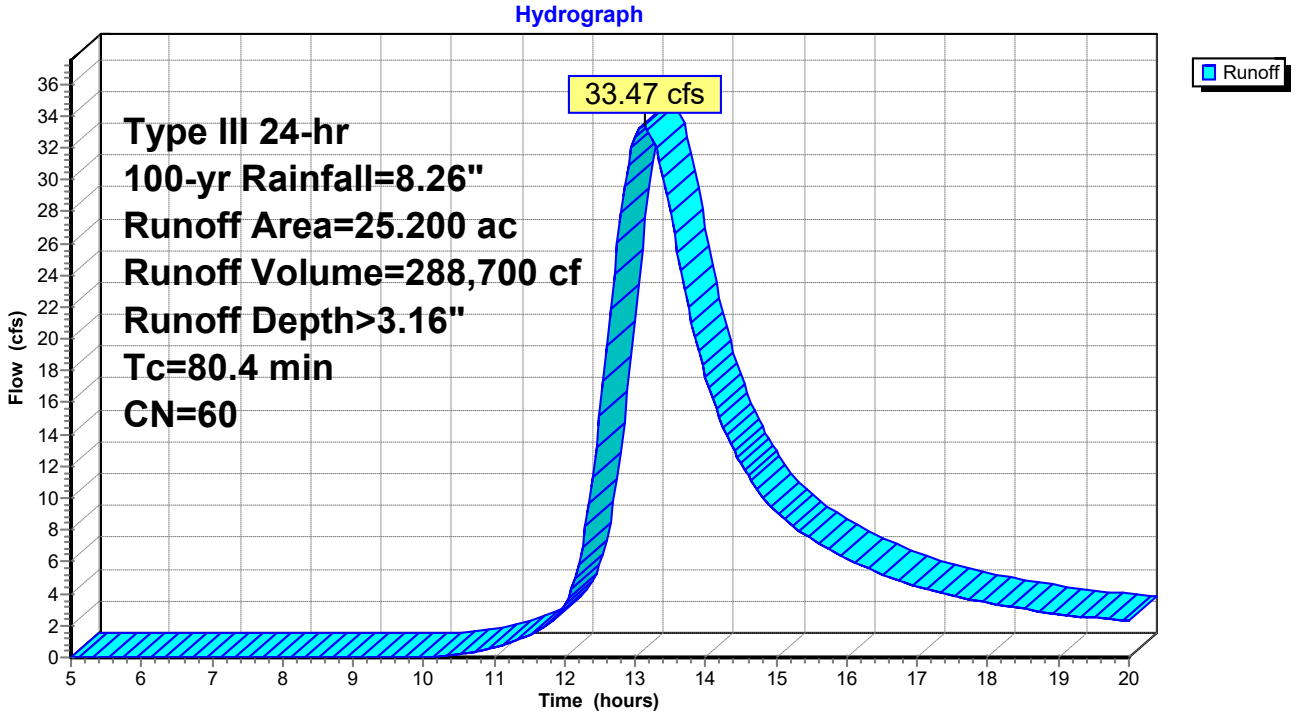
Runoff = 33.47 cfs @ 13.13 hrs, Volume= 288,700 cf, Depth> 3.16"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	19.658	55	Wooded B
*	4.227	69	Grass B
*	1.315	98	Impervious
	25.200	60	Weighted Average
	23.885		94.78% Pervious Area
	1.315		5.22% Impervious Area

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

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

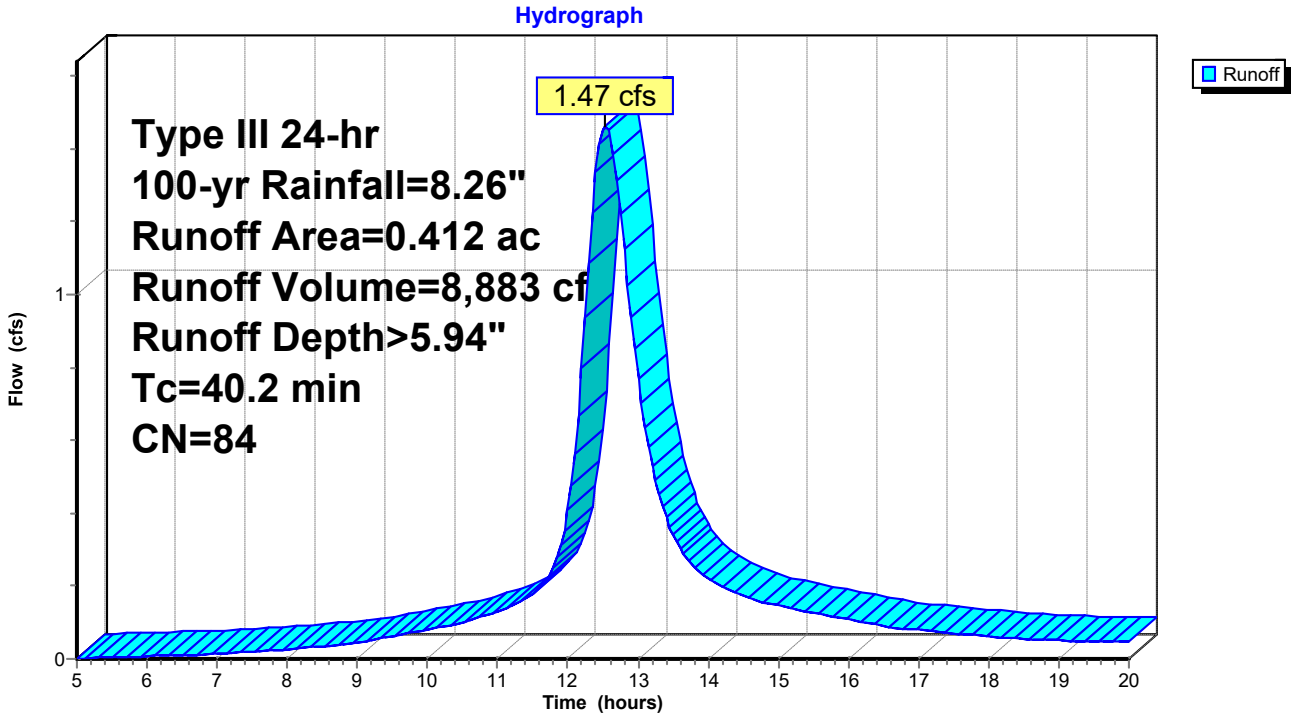
Runoff = 1.47 cfs @ 12.54 hrs, Volume= 8,883 cf, Depth> 5.94"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.217	98	Impervious
*	0.195	69	Grass B
	0.412	84	Weighted Average
	0.195		47.33% Pervious Area
	0.217		52.67% Impervious Area

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

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

[49] Hint: Tc<2dt may require smaller dt

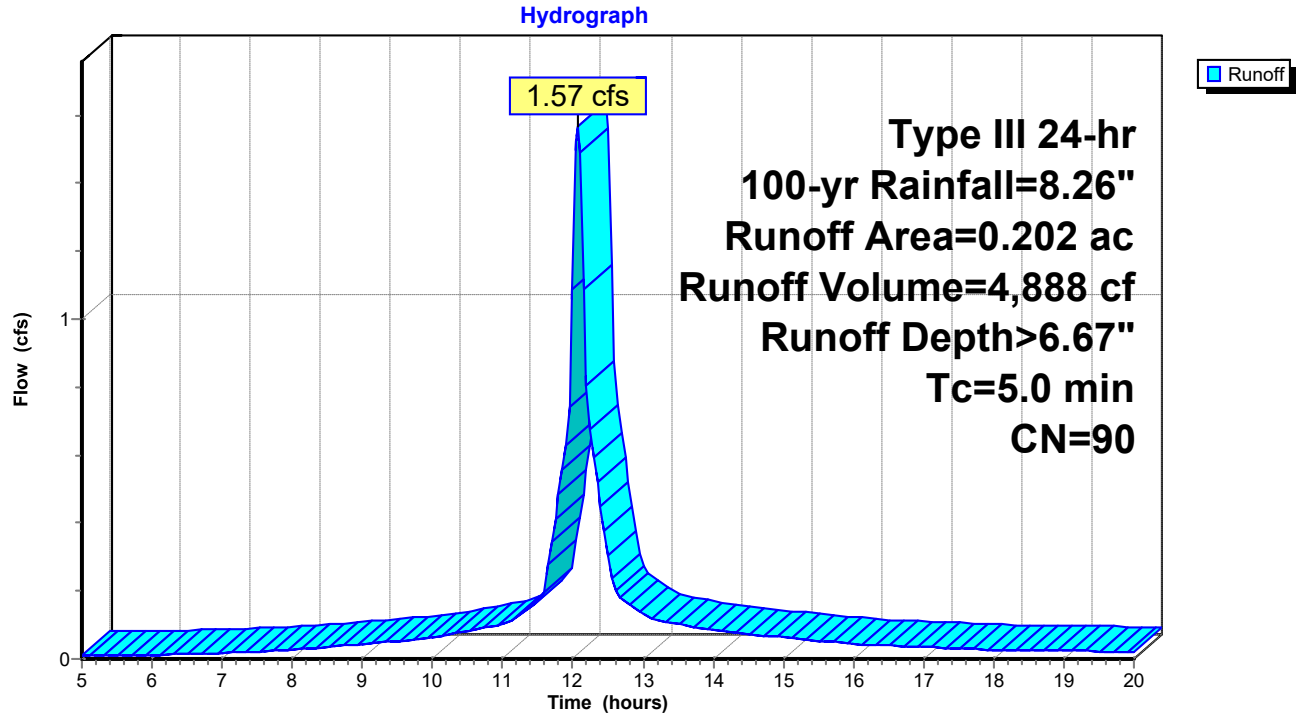
Runoff = 1.57 cfs @ 12.07 hrs, Volume= 4,888 cf, Depth> 6.67"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.148	98	Impervious
*	0.054	69	Grass B
	0.202	90	Weighted Average
	0.054		26.73% Pervious Area
	0.148		73.27% Impervious Area

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

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

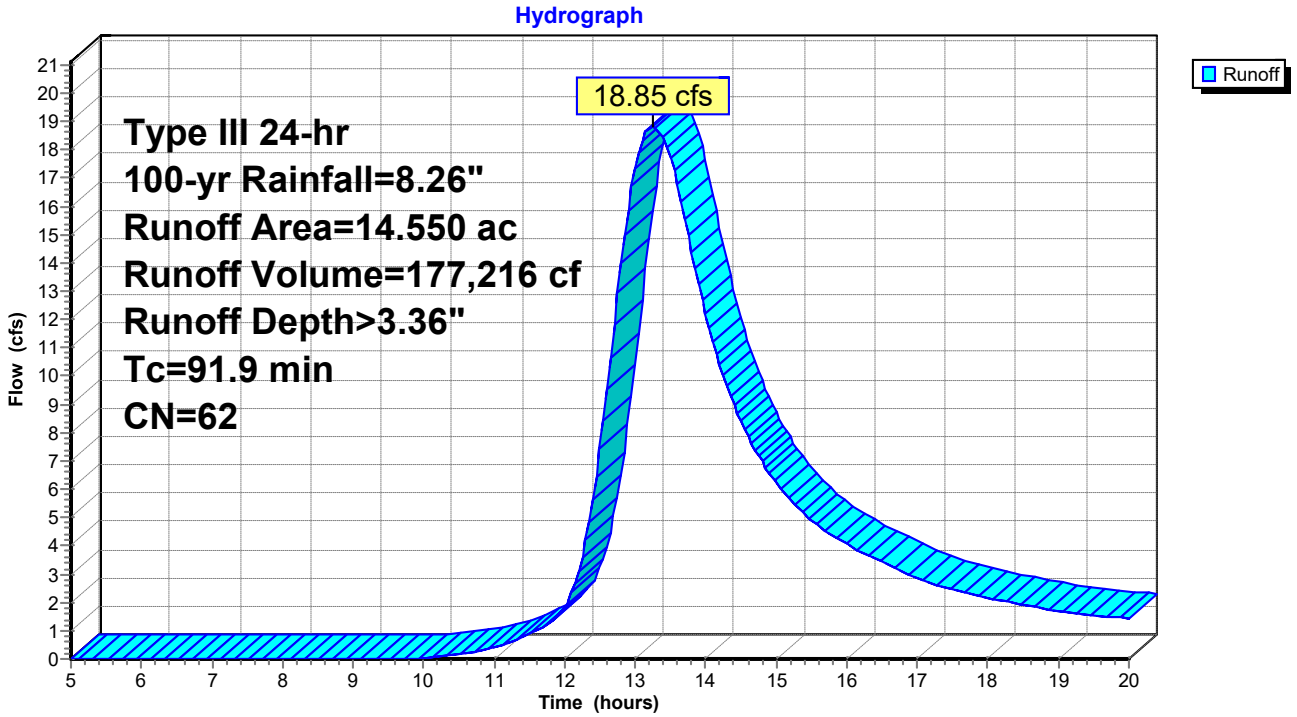
Runoff = 18.85 cfs @ 13.24 hrs, Volume= 177,216 cf, Depth> 3.36"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.420	98	Impervious
*	8.860	55	Wooded B
*	4.260	69	Grass B
*	1.010	84	Grass D
	14.550	62	Weighted Average
	14.130		97.11% Pervious Area
	0.420		2.89% Impervious Area

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

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

[49] Hint: Tc<2dt may require smaller dt

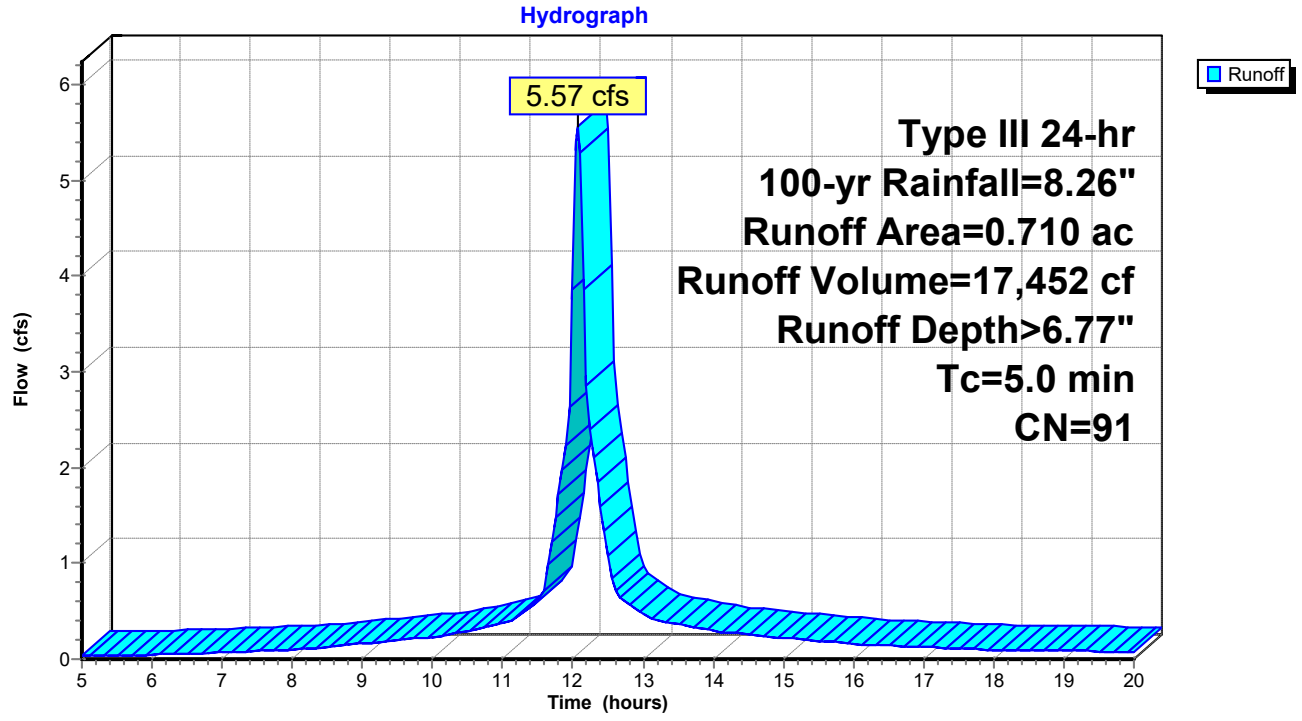
Runoff = 5.57 cfs @ 12.07 hrs, Volume= 17,452 cf, Depth> 6.77"
Routed to Pond PL-P : Parking Lot Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.530	98	Impervious
*	0.000	55	Wooded B
*	0.180	69	Grass B
*	0.000	84	Grass D
	0.710	91	Weighted Average
	0.180		25.35% Pervious Area
	0.530		74.65% Impervious Area

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

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

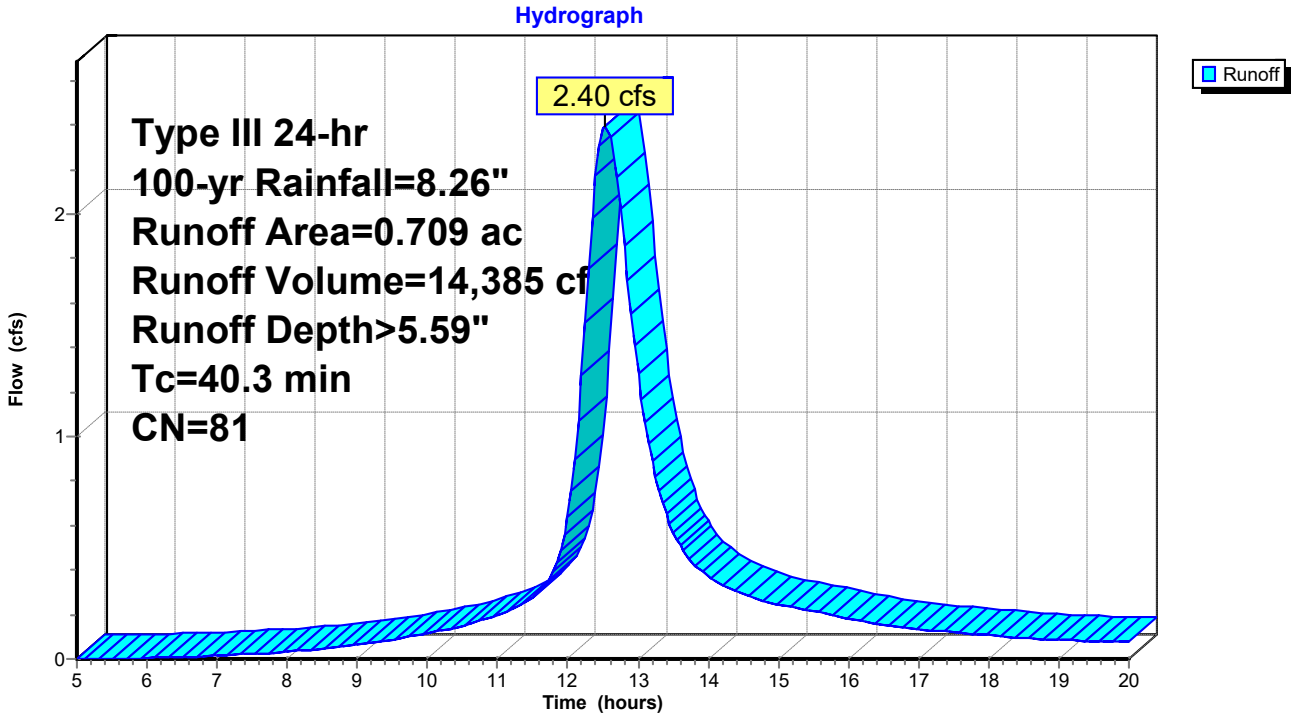
Runoff = 2.40 cfs @ 12.54 hrs, Volume= 14,385 cf, Depth> 5.59"
Routed to Pond EX-BP : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.388	98	Impervious
*	0.191	55	Wooded B
*	0.130	69	Grass B
*	0.000	84	Grass D
	0.709	81	Weighted Average
	0.321		45.28% Pervious Area
	0.388		54.72% Impervious Area

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

Subcatchment B3: WS-B3



Summary for Subcatchment C: WS-C (Design Point 2)

[49] Hint: Tc<2dt may require smaller dt

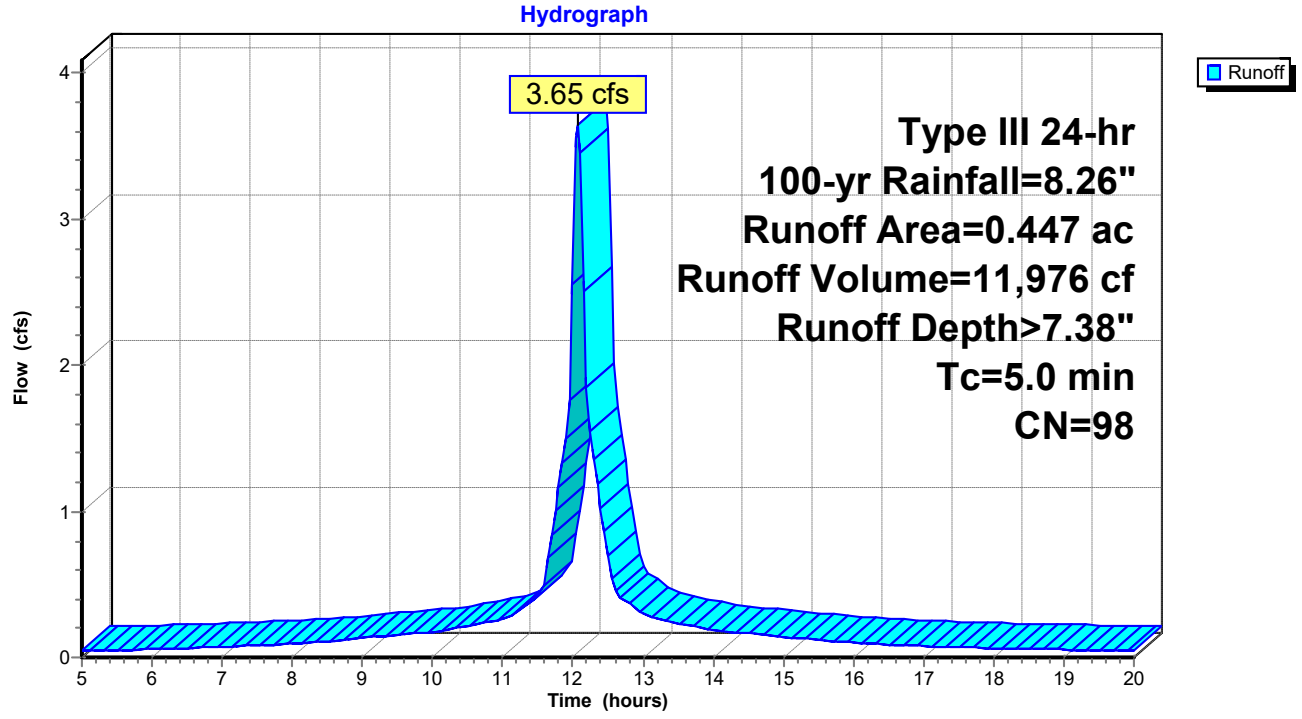
Runoff = 3.65 cfs @ 12.07 hrs, Volume= 11,976 cf, Depth> 7.38"
Routed to Link 2L : POC B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.447	98	Impervious
*	0.000	69	Grass B
	0.447	98	Weighted Average
	0.447		100.00% Impervious Area

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

Subcatchment C: WS-C (Design Point 2)



Summary for Subcatchment D: WS-D (Design Point 3)

[49] Hint: Tc<2dt may require smaller dt

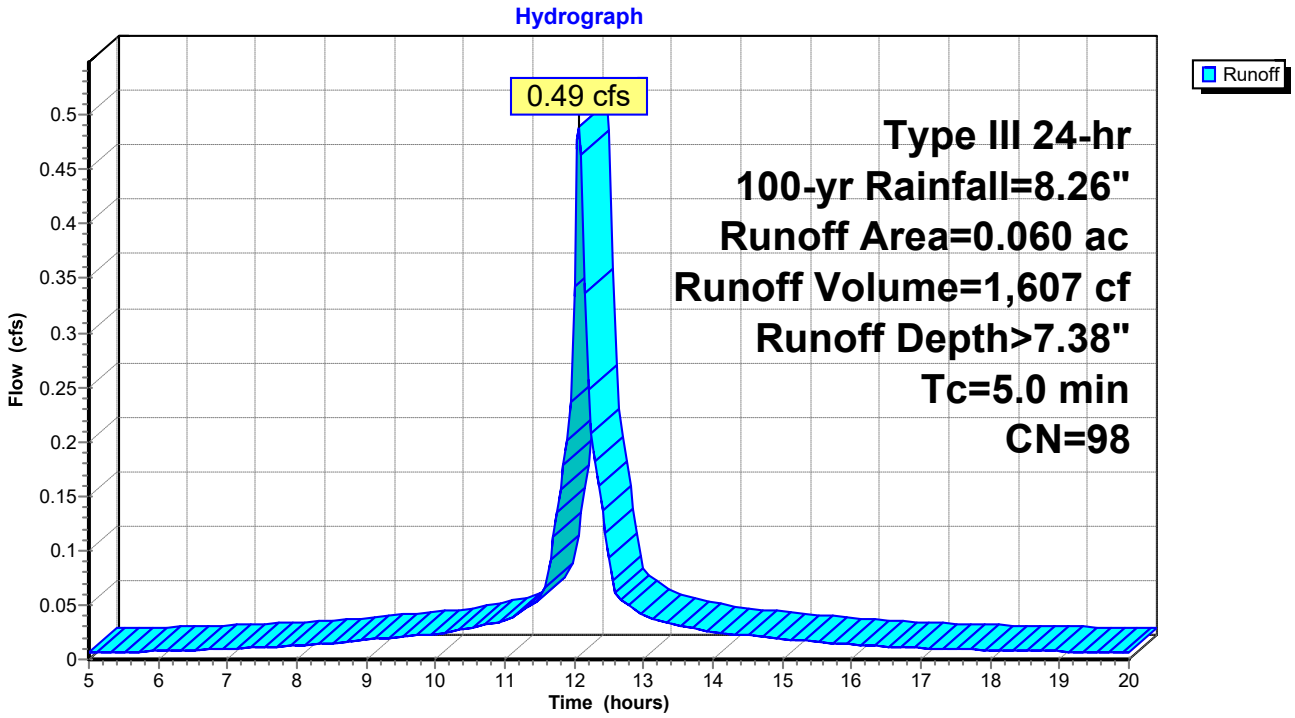
Runoff = 0.49 cfs @ 12.07 hrs, Volume= 1,607 cf, Depth> 7.38"
Routed to Link 3L : POC C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.060	98	Impervious
	0.060		100.00% Impervious Area

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

Subcatchment D: WS-D (Design Point 3)



Summary for Subcatchment E: WS-E

[49] Hint: Tc<2dt may require smaller dt

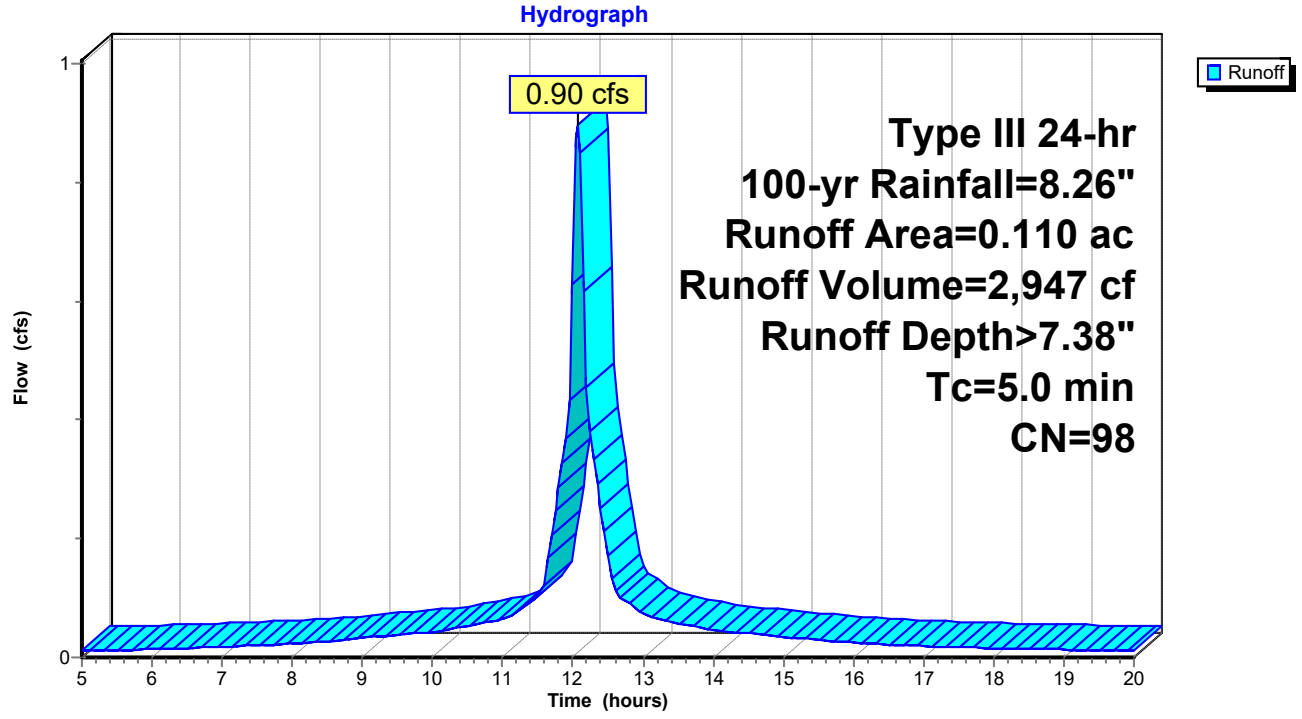
Runoff = 0.90 cfs @ 12.07 hrs, Volume= 2,947 cf, Depth> 7.38"
Routed to Pond EX-AP : Existing Pond A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.26"

	Area (ac)	CN	Description
*	0.110	98	Impervious
*	0.000	69	Grass B
	0.110	98	Weighted Average
	0.110		100.00% Impervious Area

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

Subcatchment E: WS-E



Summary for Pond EX-AP: Existing Pond A

Inflow Area = 1,129,249 sf, 6.90% Impervious, Inflow Depth > 3.25" for 100-yr event
Inflow = 34.26 cfs @ 13.11 hrs, Volume= 305,417 cf
Outflow = 4.79 cfs @ 16.86 hrs, Volume= 112,933 cf, Atten= 86%, Lag= 224.9 min
Discarded = 4.01 cfs @ 16.86 hrs, Volume= 96,914 cf
Primary = 0.78 cfs @ 16.86 hrs, Volume= 16,019 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 6.90' @ 16.86 hrs Surf.Area= 345,970 sf Storage= 207,598 cf

Plug-Flow detention time= 234.3 min calculated for 112,556 cf (37% of inflow)
Center-of-Mass det. time= 137.1 min (994.2 - 857.1)

Volume	Invert	Avail.Storage	Storage Description
#1	4.00'	245,195 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

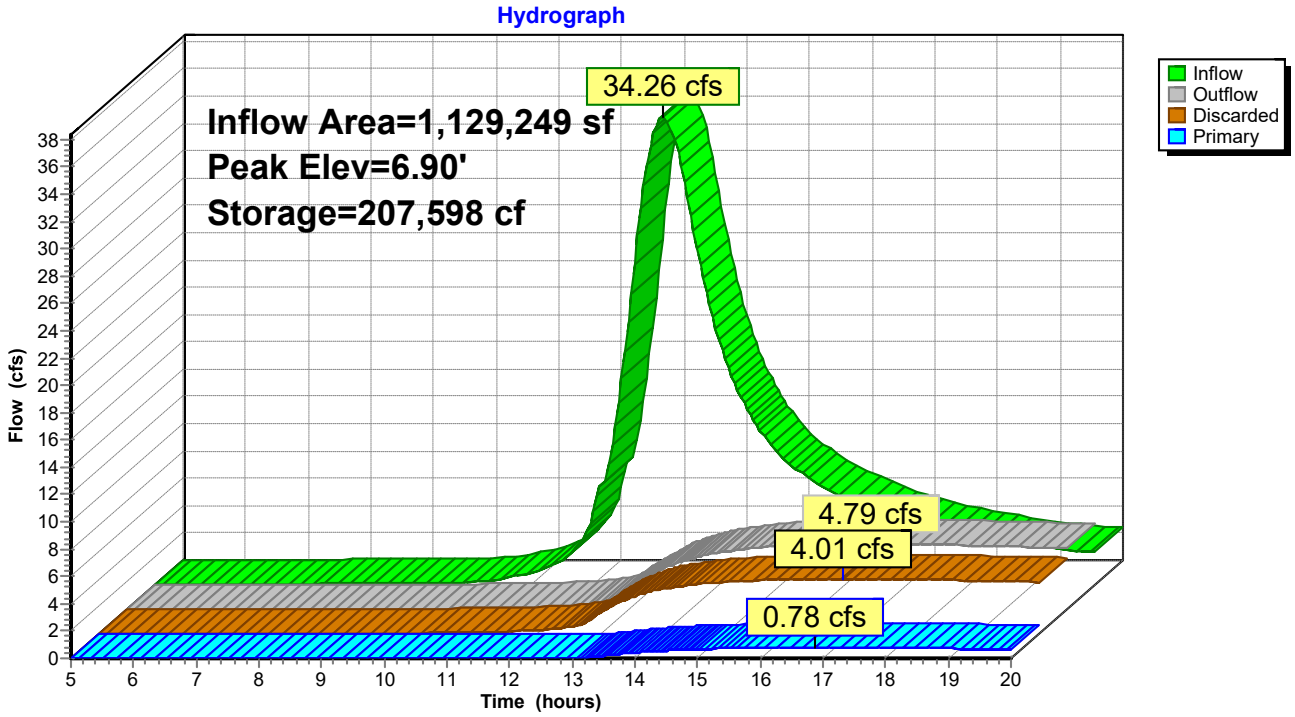
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.00	0	0	0	0
5.00	19,830	6,610	6,610	19,832
6.00	58,335	37,392	44,002	58,343
7.00	393,697	201,193	245,195	393,708

Device	Routing	Invert	Outlet Devices
#1	Primary	6.30'	**24.0" Round Culvert - Pipe** L= 97.0' Ke= 0.600 Inlet / Outlet Invert= 6.30' / 6.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Discarded	4.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=4.00 cfs @ 16.86 hrs HW=6.90' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 4.00 cfs)

Primary OutFlow Max=0.78 cfs @ 16.86 hrs HW=6.90' (Free Discharge)
↑—**1=Culvert - Pipe** (Barrel Controls 0.78 cfs @ 1.48 fps)

Pond EX-AP: Existing Pond A



Summary for Pond EX-BP: Design Point 1

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 1.48" for 100-yr event
Inflow = 20.45 cfs @ 13.21 hrs, Volume= 225,068 cf
Outflow = 14.53 cfs @ 13.91 hrs, Volume= 215,834 cf, Atten= 29%, Lag= 42.0 min
Primary = 14.53 cfs @ 13.91 hrs, Volume= 215,834 cf
Routed to Link 1L : POC A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 5.22' @ 13.91 hrs Surf.Area= 61,141 sf Storage= 49,578 cf

Plug-Flow detention time= 55.1 min calculated for 215,115 cf (96% of inflow)
Center-of-Mass det. time= 42.2 min (908.4 - 866.1)

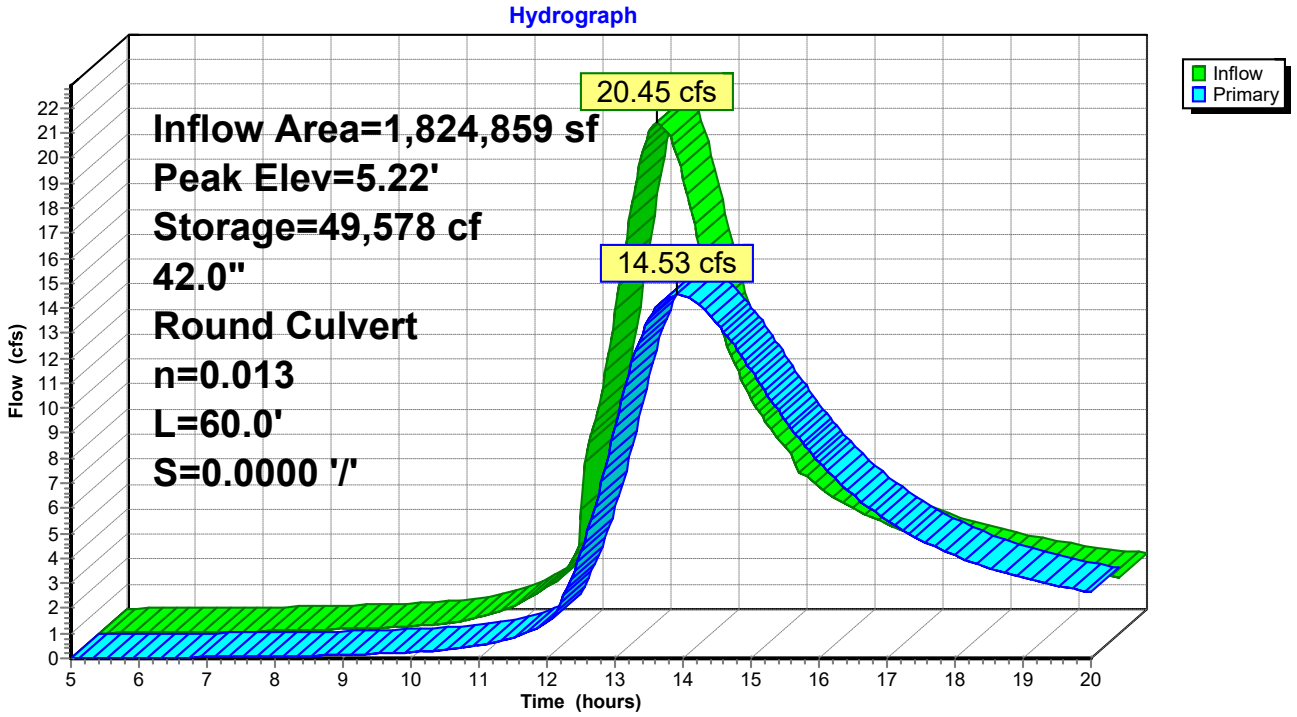
Volume	Invert	Avail.Storage	Storage Description
#1	3.30'	120,611 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.30	0	0	0
5.00	44,834	38,109	38,109
6.00	120,171	82,503	120,611

Device	Routing	Invert	Outlet Devices
#1	Primary	3.30'	**42.0" Round Culvert** L= 60.0' Ke= 0.600 Inlet / Outlet Invert= 3.30' / 3.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=14.53 cfs @ 13.91 hrs HW=5.22' (Free Discharge)
1=Culvert (Barrel Controls 14.53 cfs @ 3.90 fps)

Pond EX-BP: Design Point 1



Summary for Pond PL-P: Parking Lot Pond

[82] Warning: Early inflow requires earlier time span
[44] Hint: Outlet device #3 is below defined storage

Inflow Area = 30,928 sf, 74.65% Impervious, Inflow Depth > 6.77" for 100-yr event
Inflow = 5.57 cfs @ 12.07 hrs, Volume= 17,452 cf
Outflow = 3.28 cfs @ 12.19 hrs, Volume= 17,448 cf, Atten= 41%, Lag= 6.9 min
Primary = 3.28 cfs @ 12.19 hrs, Volume= 17,448 cf
Routed to Pond EX-BP : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.50' @ 12.19 hrs Surf.Area= 3,651 sf Storage= 3,704 cf

Plug-Flow detention time= 23.3 min calculated for 17,389 cf (100% of inflow)
Center-of-Mass det. time= 23.0 min (769.3 - 746.3)

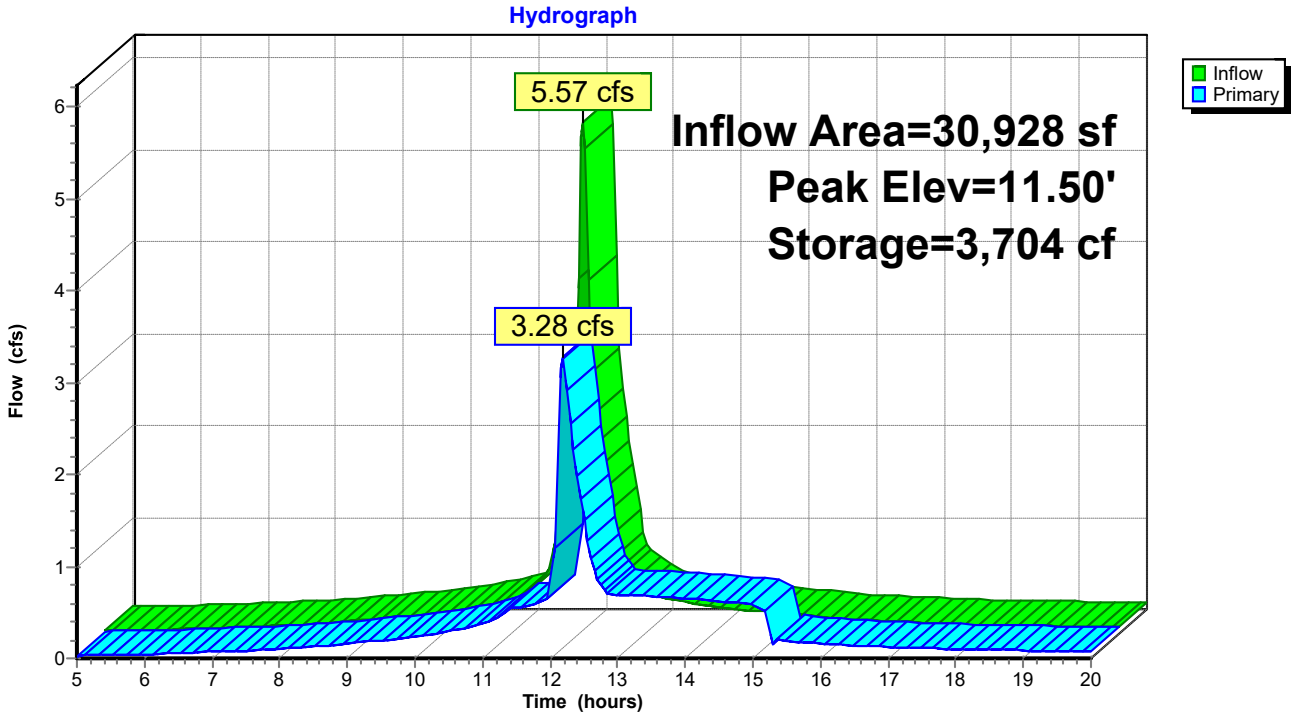
Volume	Invert	Avail.Storage	Storage Description
#1	10.00'	5,740 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
10.00	1,350	0	0	1,350
11.00	2,894	2,074	2,074	2,902
12.00	4,497	3,666	5,740	4,520

Device	Routing	Invert	Outlet Devices
#1	Primary	7.33'	**12.0" Round Culvert** L= 92.0' Ke= 0.600 Inlet / Outlet Invert= 7.33' / 6.40' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	11.25'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	8.00'	**6.0" Round Culvert** L= 200.0' Ke= 0.600 Inlet / Outlet Invert= 8.00' / 7.33' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=3.24 cfs @ 12.19 hrs HW=11.50' (Free Discharge)
└**1=Culvert** (Passes 3.24 cfs of 6.02 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 2.51 cfs @ 1.62 fps)
└**3=Culvert** (Barrel Controls 0.72 cfs @ 3.68 fps)

Pond PL-P: Parking Lot Pond

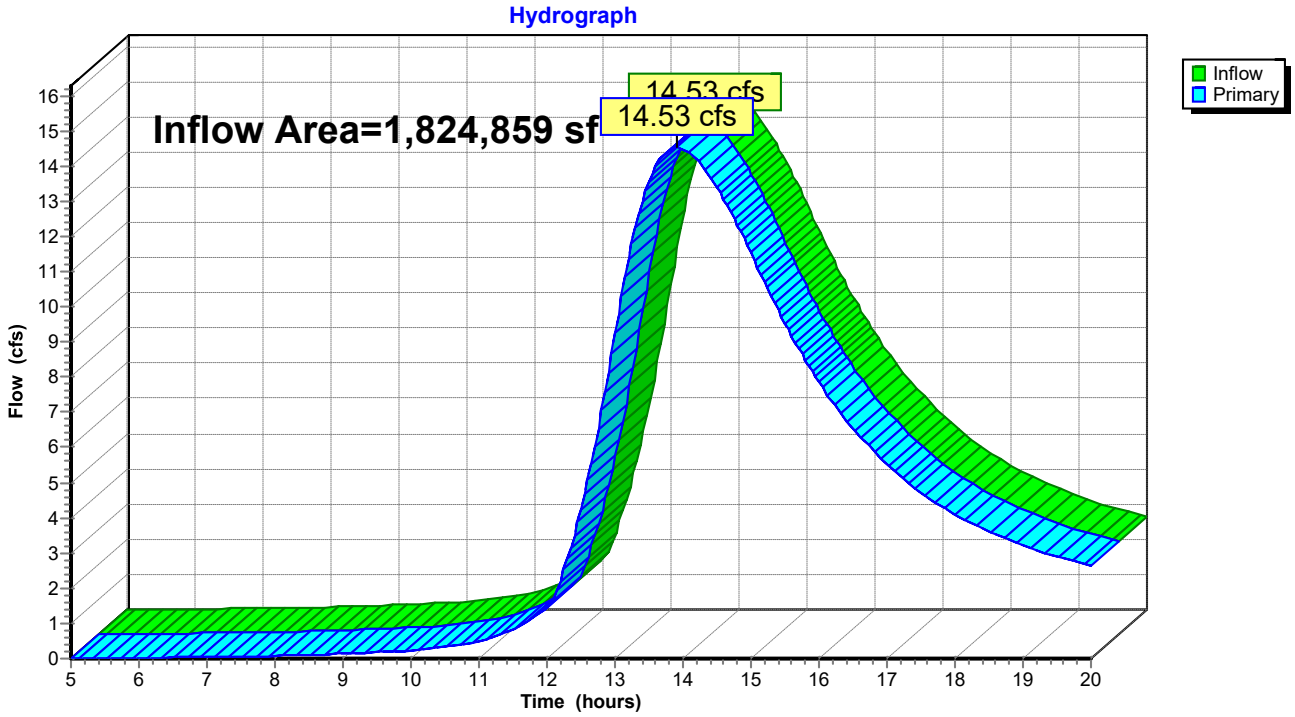


Summary for Link 1L: POC A

Inflow Area = 1,824,859 sf, 7.47% Impervious, Inflow Depth > 1.42" for 100-yr event
Inflow = 14.53 cfs @ 13.91 hrs, Volume= 215,834 cf
Primary = 14.53 cfs @ 13.91 hrs, Volume= 215,834 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: POC A

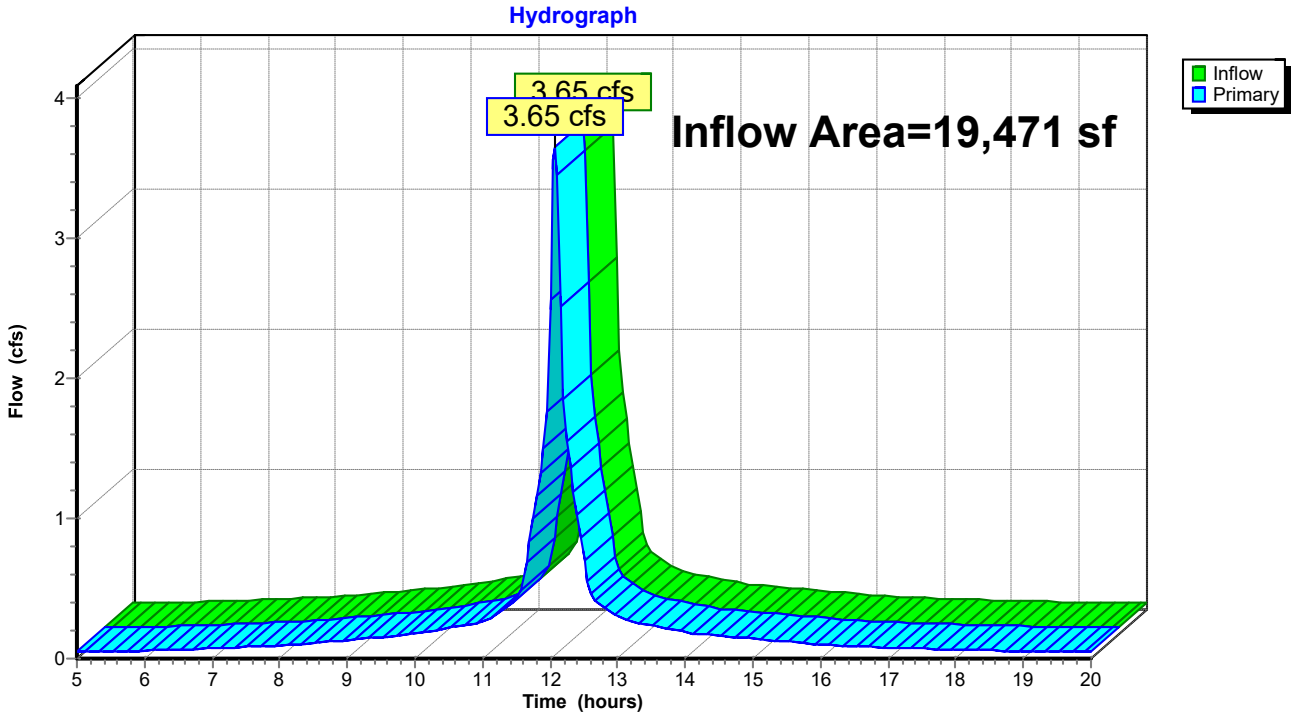


Summary for Link 2L: POC B

Inflow Area = 19,471 sf,100.00% Impervious, Inflow Depth > 7.38" for 100-yr event
Inflow = 3.65 cfs @ 12.07 hrs, Volume= 11,976 cf
Primary = 3.65 cfs @ 12.07 hrs, Volume= 11,976 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: POC B

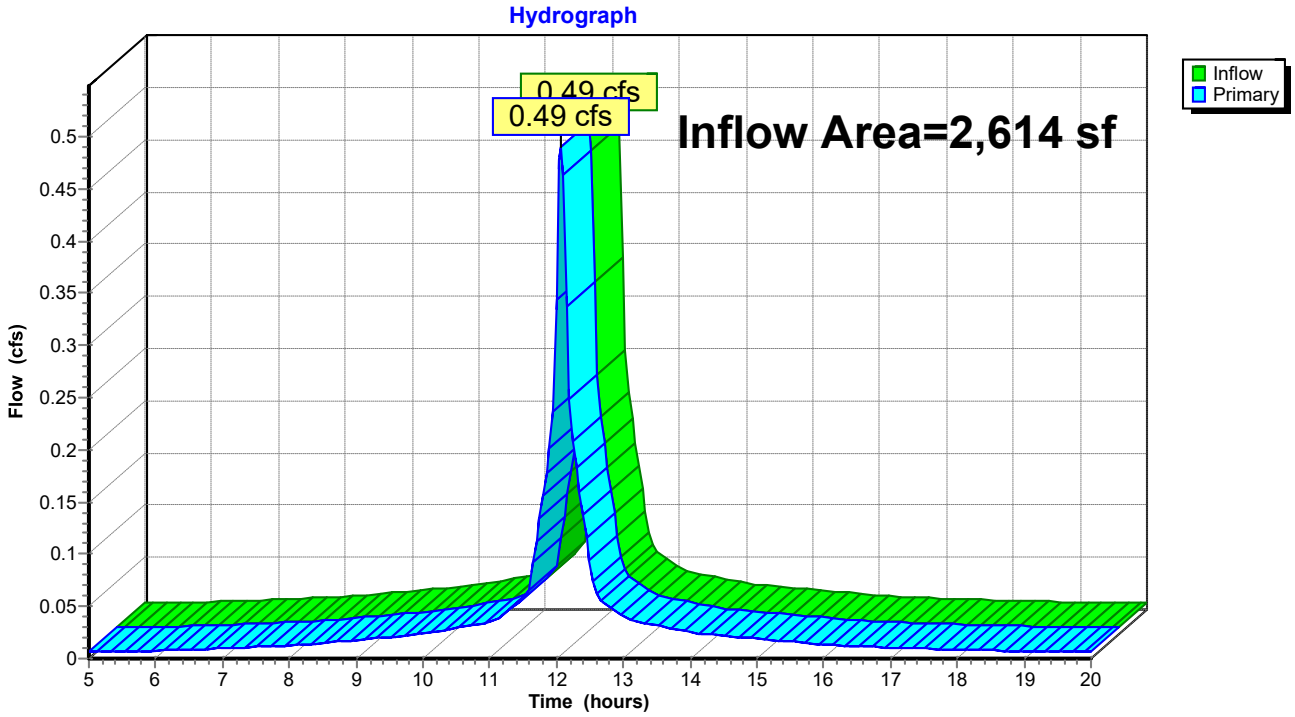


Summary for Link 3L: POC C

Inflow Area = 2,614 sf,100.00% Impervious, Inflow Depth > 7.38" for 100-yr event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 1,607 cf
Primary = 0.49 cfs @ 12.07 hrs, Volume= 1,607 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: POC C



APPENDIX D

Channel Report

Swale - North Drive

Trapezoidal

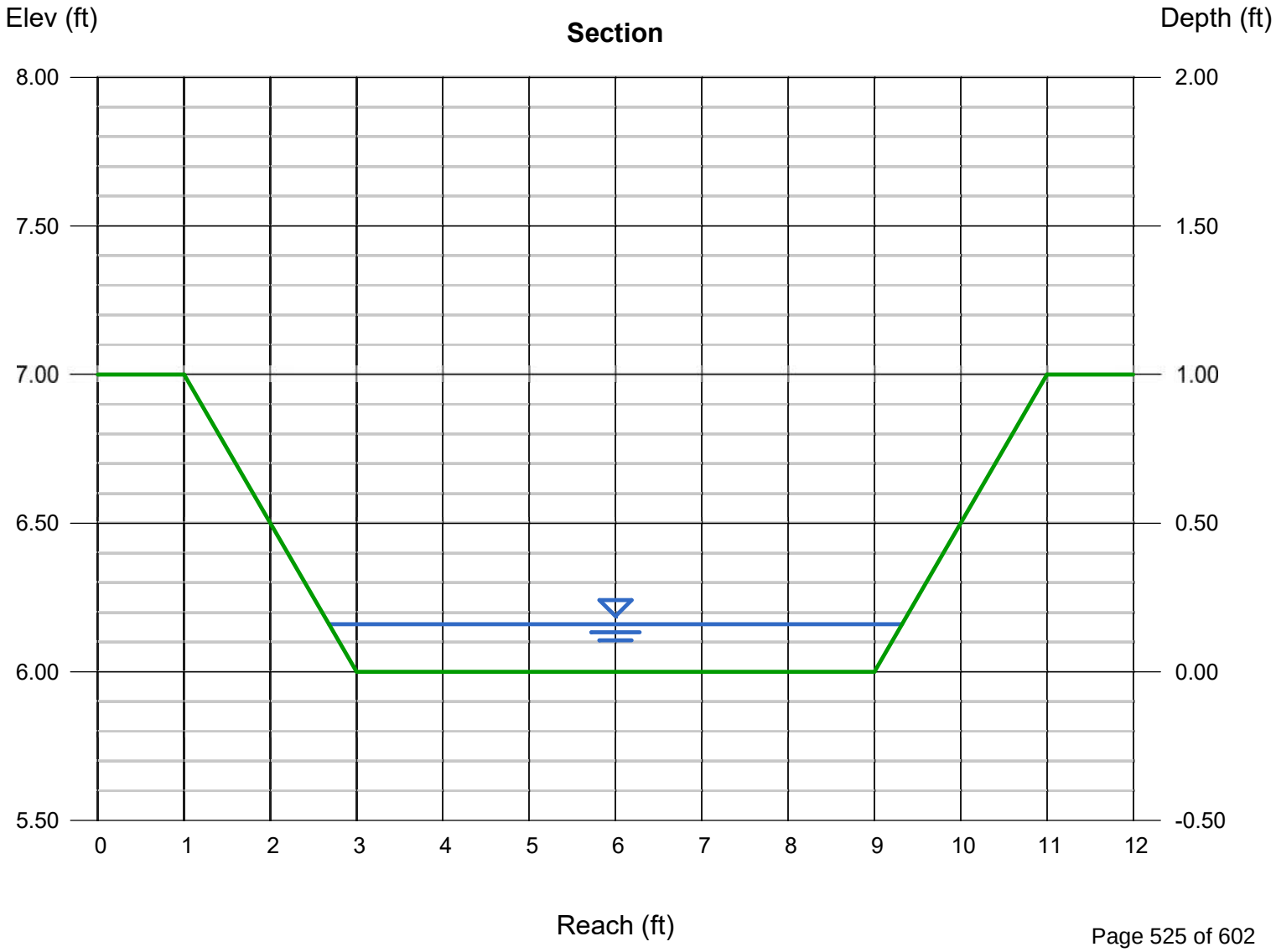
Bottom Width (ft)	= 6.00
Side Slopes (z:1)	= 2.00, 2.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 6.00
Slope (%)	= 0.60
N-Value	= 0.030

Calculations

Compute by:	Known Q
Known Q (cfs)	= 1.09

Highlighted

Depth (ft)	= 0.16
Q (cfs)	= 1.090
Area (sqft)	= 1.01
Velocity (ft/s)	= 1.08
Wetted Perim (ft)	= 6.72
Crit Depth, Yc (ft)	= 0.10
Top Width (ft)	= 6.64
EGL (ft)	= 0.18



Channel Report

12 Inch HDPE Pipe (END-01 to FES-04)

Circular

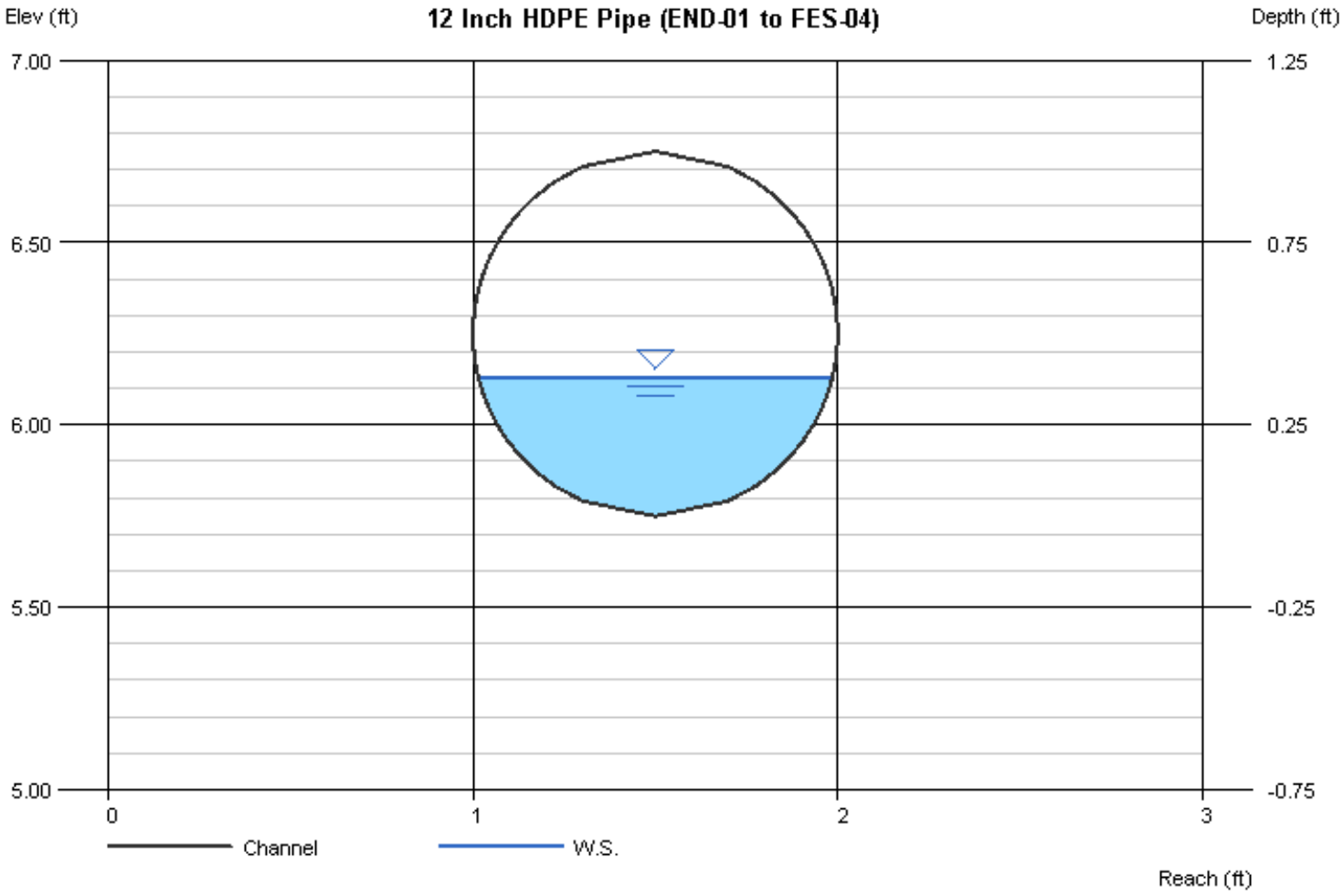
Diameter (ft)	= 1.00
Invert Elev (ft)	= 5.75
Slope (%)	= 1.00
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 1.09

Highlighted

Depth (ft)	= 0.38
Q (cfs)	= 1.090
Area (sqft)	= 0.27
Velocity (ft/s)	= 3.97
Wetted Perim (ft)	= 1.33
Crit Depth, Yc (ft)	= 0.44
Top Width (ft)	= 0.97
EGL (ft)	= 0.62



Channel Report

Swale - South Drive

Trapezoidal

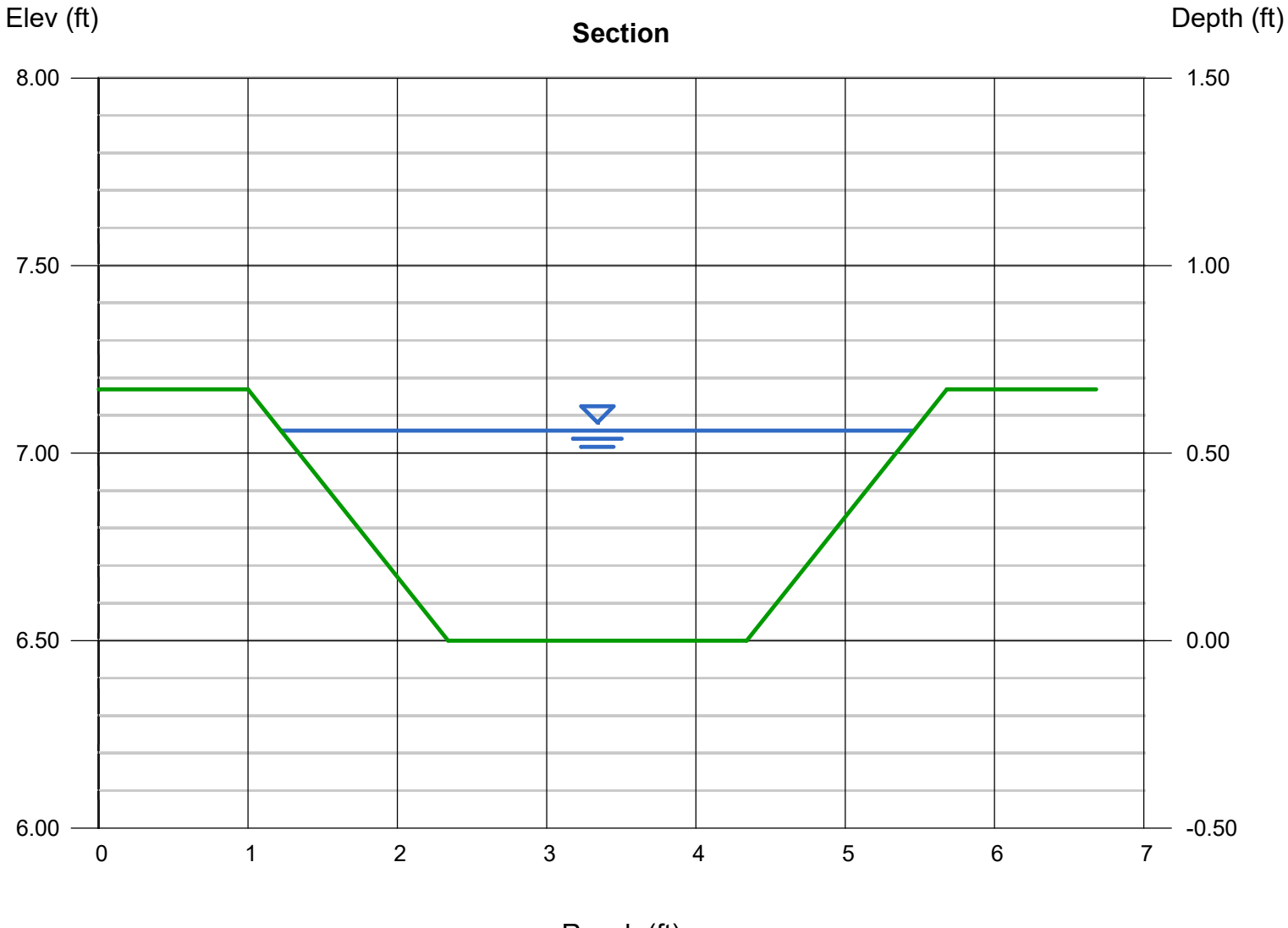
Bottom Width (ft)	= 2.00
Side Slopes (z:1)	= 2.00, 2.00
Total Depth (ft)	= 0.67
Invert Elev (ft)	= 6.50
Slope (%)	= 0.15
N-Value	= 0.030

Calculations

Compute by:	Known Q
Known Q (cfs)	= 1.75

Highlighted

Depth (ft)	= 0.56
Q (cfs)	= 1.750
Area (sqft)	= 1.75
Velocity (ft/s)	= 1.00
Wetted Perim (ft)	= 4.50
Crit Depth, Yc (ft)	= 0.27
Top Width (ft)	= 4.24
EGL (ft)	= 0.58



Channel Report

12 Inch HDPE Pipe (FES-05 to FES-06)

Circular

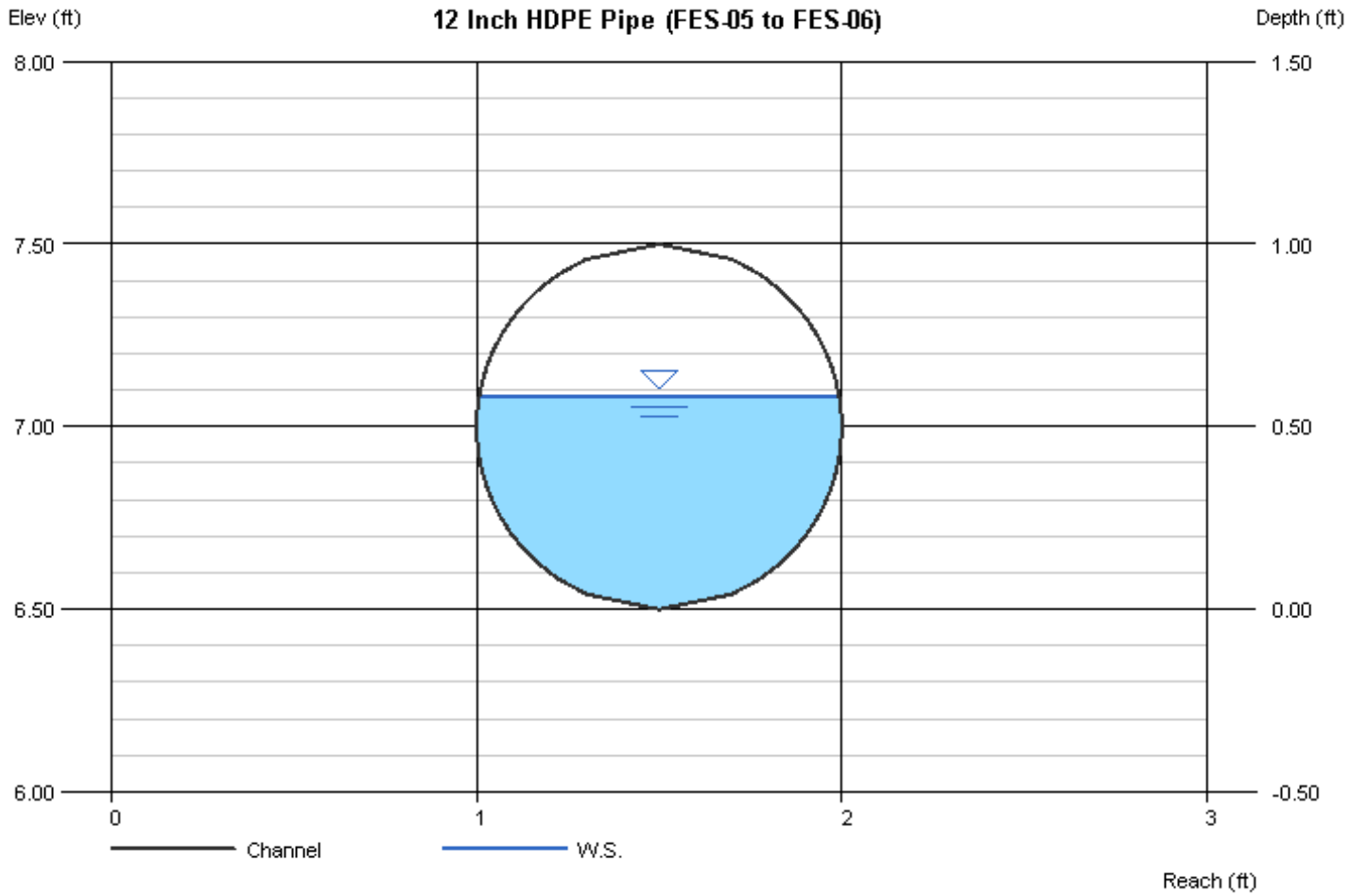
Diameter (ft)	= 1.00
Invert Elev (ft)	= 6.50
Slope (%)	= 0.60
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 1.75

Highlighted

Depth (ft)	= 0.58
Q (cfs)	= 1.750
Area (sqft)	= 0.47
Velocity (ft/s)	= 3.69
Wetted Perim (ft)	= 1.73
Crit Depth, Yc (ft)	= 0.57
Top Width (ft)	= 0.99
EGL (ft)	= 0.79



Channel Report

12 Inch HDPE Pipe (YD-01 to FES-03)

Circular

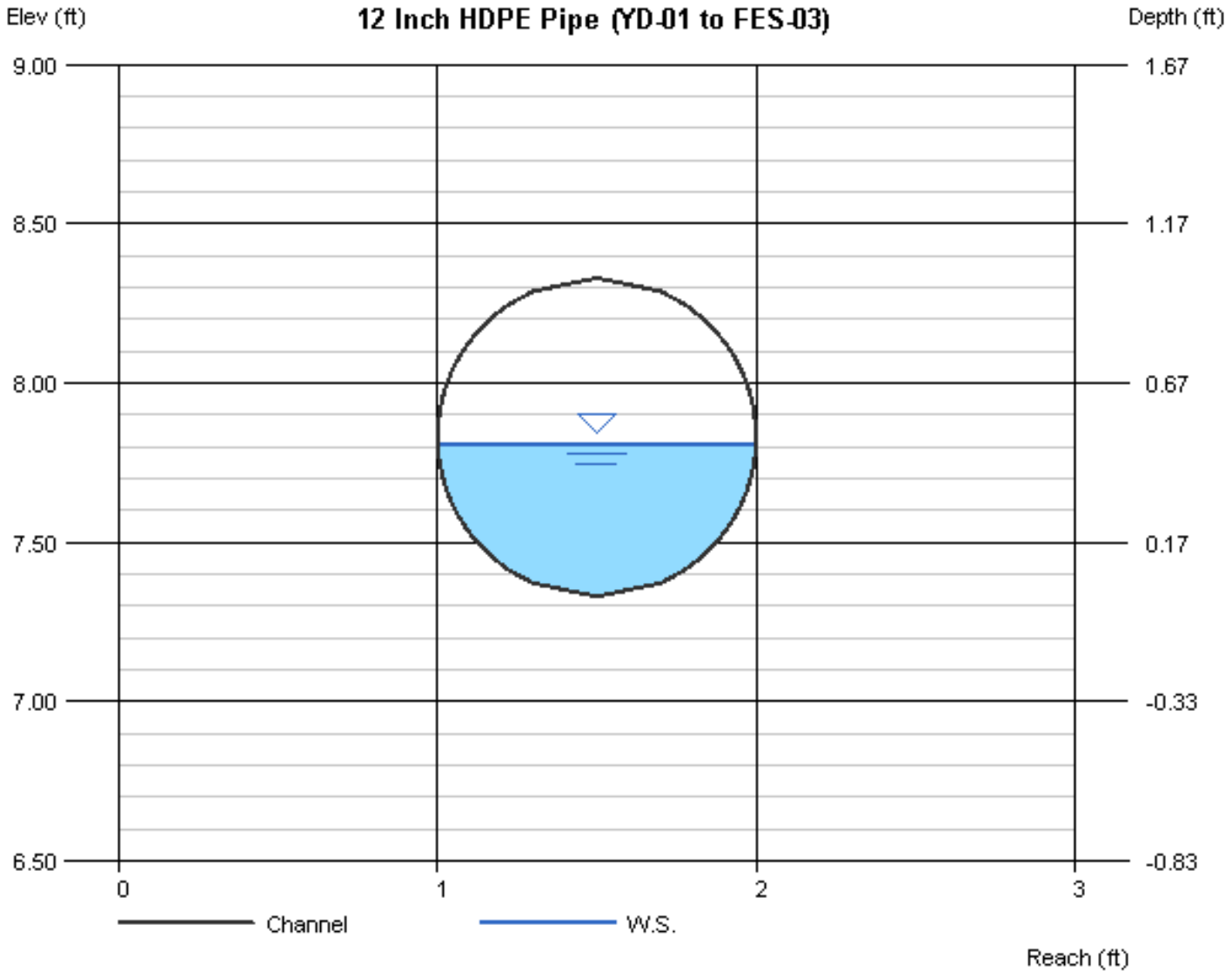
Diameter (ft)	= 1.00
Invert Elev (ft)	= 7.33
Slope (%)	= 1.00
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 1.64

Highlighted

Depth (ft)	= 0.48
Q (cfs)	= 1.640
Area (sqft)	= 0.37
Velocity (ft/s)	= 4.38
Wetted Perim (ft)	= 1.53
Crit Depth, Yc (ft)	= 0.55
Top Width (ft)	= 1.00
EGL (ft)	= 0.78



Channel Report

12-Inch-HDPE-Pipe (FES-01 to FES-02)

Circular

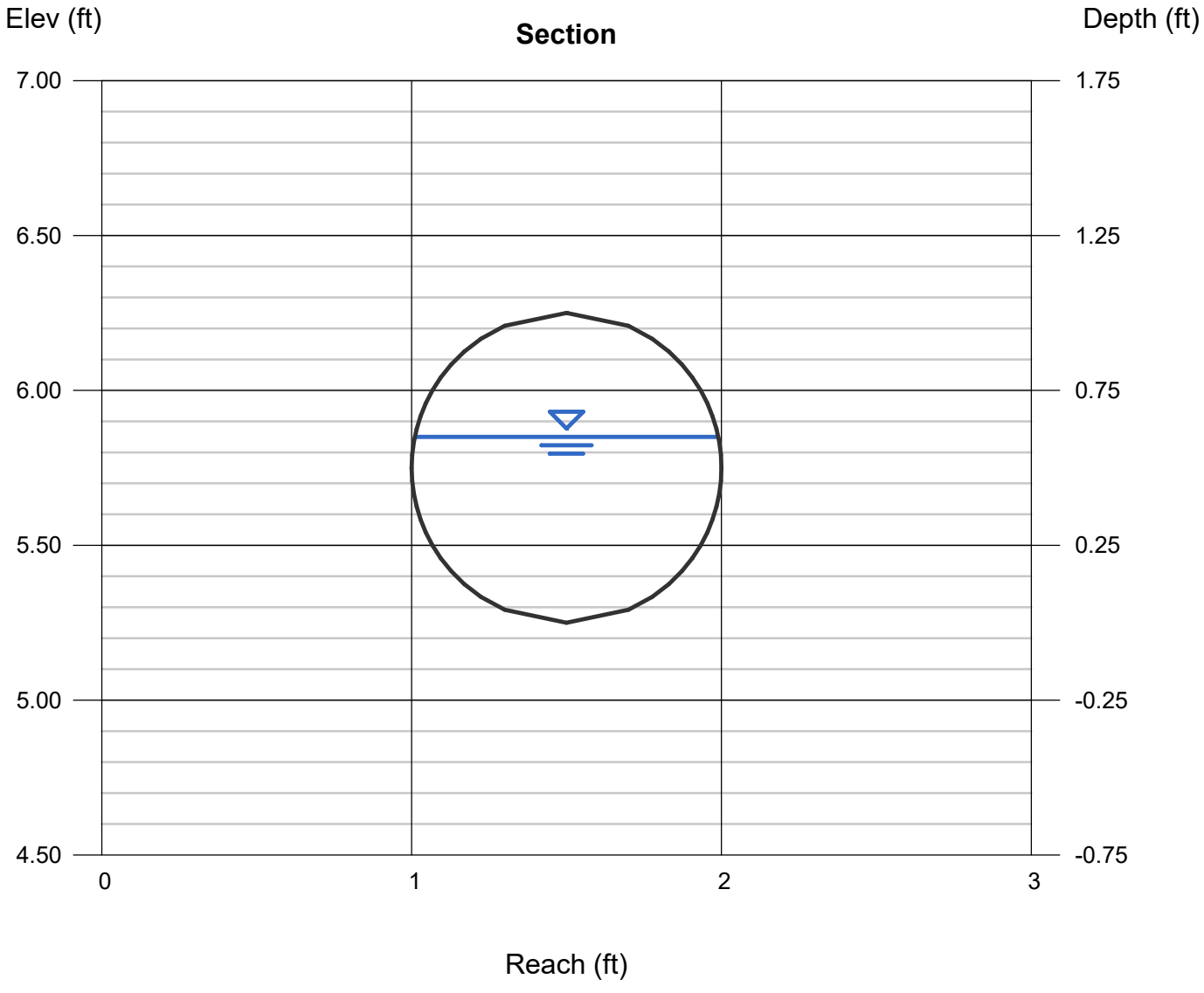
Diameter (ft)	= 1.00
Invert Elev (ft)	= 5.25
Slope (%)	= 0.25
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 1.20

Highlighted

Depth (ft)	= 0.60
Q (cfs)	= 1.200
Area (sqft)	= 0.49
Velocity (ft/s)	= 2.43
Wetted Perim (ft)	= 1.77
Crit Depth, Yc (ft)	= 0.46
Top Width (ft)	= 0.98
EGL (ft)	= 0.69



Channel Report

24 Inch Culvert FES-07 to FES-08

Circular

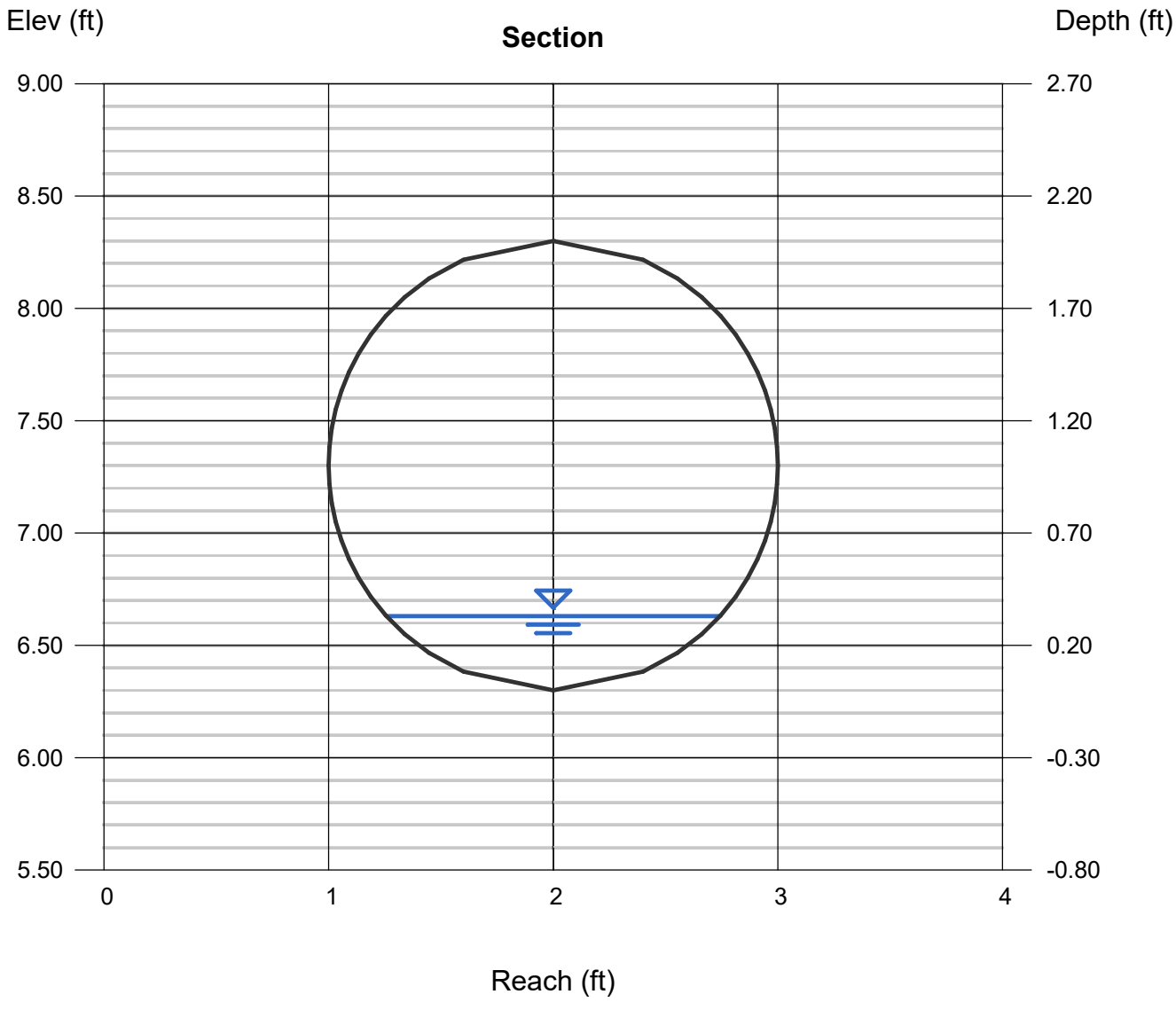
Diameter (ft)	= 2.00
Invert Elev (ft)	= 6.30
Slope (%)	= 0.00
N-Value	= 0.013

Calculations

Compute by:	Known Depth
Known Depth (ft)	= 0.33

Highlighted

Depth (ft)	= 0.33
Q (cfs)	= 2.930
Area (sqft)	= 0.34
Velocity (ft/s)	= 0.40
Wetted Perim (ft)	= 1.68
Crit Depth, Yc (ft)	= 0.13
Top Width (ft)	= 1.49
EGL (ft)	= 0.33



Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Riprap Apron Calculations**
Prepared By: **EB** Date: **November 14, 2025**

Riprap Apron (FES-02)

Invert Elevation =	5.00	ft	
Tailwater Elevation =	5.00	ft	
Tailwater Depth (TW) =	0.00	ft	
Inside Pipe Diameter (S_p) =	1.00	ft	
Pipe Discharge (Q) =	1.20	cfs	(From HydroCAD Model)
Outlet Velocity (V) =	2.43	ft/s	(From Express Model)

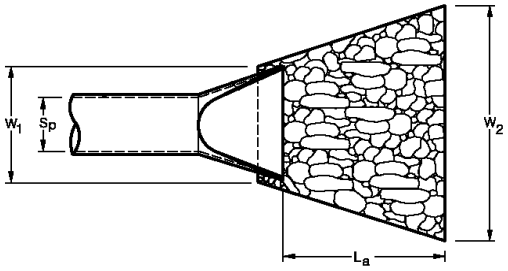
Apron Type

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

Type B Riprap Apron (Maximum Tailwater Condition) TW ≥ $0.5R_p$

TW < $0.5R_p$

Use Type A Apron



Apron Length

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$L_a = (1.8(Q-5.0)/Sp^{1.5})+10.0$

L_a =	3.16	ft

Apron Width

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$W_1 = 3*S_p$

$W_2 = 3*S_p+0.7L_a$

W_1 =	3.00	ft
W_2 =	5.21	ft

Riprap Specification

Outlet Velocity (V)=	0-8 ft/s	Modified
Outlet Velocity (V)=	8-10 ft/s	Intermediate
Outlet Velocity (V)=	10-14 ft/s	Standard

Outlet Velocity (V)=	2.430	ft/s	Use Modified Riprap

Outlet protection has been designed in accordance with the Section 11.13 of the ConnDOT Drainage Manual

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Riprap Apron Calculations**
Prepared By: **EB** Date: **November 14, 2025**

Riprap Apron (FES-03)

Invert Elevation =	6.40	ft	
Tailwater Elevation =	6.40	ft	
Tailwater Depth (TW) =	0.00	ft	
Inside Pipe Diameter (S_p) =	1.00	ft	
Pipe Discharge (Q) =	1.64	cfs	(From HydroCAD Model)
Outlet Velocity (V) =	4.38	ft/s	(From Express Model)

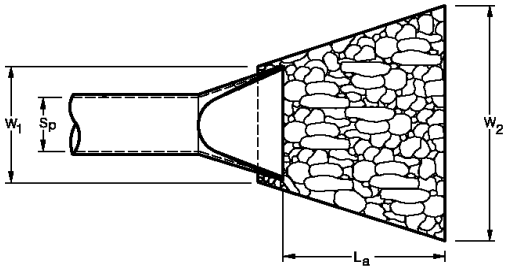
Apron Type

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

Type B Riprap Apron (Maximum Tailwater Condition) TW ≥ $0.5R_p$

TW < $0.5R_p$

Use Type A Apron



Apron Length

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$L_a = (1.8(Q-5.0)/Sp^{1.5})+10.0$

L_a = 3.95 ft

Apron Width

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$W_1 = 3*S_p$

$W_2 = 3*S_p+0.7L_a$

W_1 = 3.00 ft

W_2 = 5.77 ft

Riprap Specification

Outlet Velocity (V)=	0-8 ft/s	Modified
Outlet Velocity (V)=	8-10 ft/s	Intermediate
Outlet Velocity (V)=	10-14 ft/s	Standard

Outlet Velocity (V)= 4.380 ft/s Use Modified Riprap

Outlet protection has been designed in accordance with the Section 11.13 of the ConnDOT Drainage Manual

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Riprap Apron Calculations**
Prepared By: **EB** Date: **November 14, 2025**

Riprap Apron (FES-04)

Invert Elevation =	5.00	ft	
Tailwater Elevation =	5.00	ft	
Tailwater Depth (TW) =	0.00	ft	
Inside Pipe Diameter (S_p) =	1.00	ft	
Pipe Discharge (Q) =	1.09	cfs	(From HydroCAD Model)
Outlet Velocity (V) =	3.97	ft/s	(From Express Model)

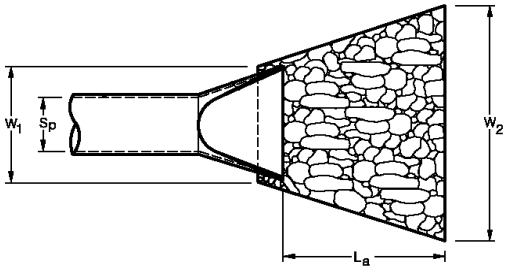
Apron Type

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

Type B Riprap Apron (Maximum Tailwater Condition) TW ≥ $0.5R_p$

TW < $0.5R_p$

Use Type A Apron



Apron Length

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$L_a = (1.8(Q-5.0)/Sp^{1.5})+10.0$

L_a =	2.96	ft

Apron Width

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$W_1 = 3*S_p$

$W_2 = 3*S_p+0.7L_a$

W_1 =	3.00	ft
W_2 =	5.07	ft

Riprap Specification

Outlet Velocity (V)=	0-8 ft/s	Modified
Outlet Velocity (V)=	8-10 ft/s	Intermediate
Outlet Velocity (V)=	10-14 ft/s	Standard

Outlet Velocity (V)=	3.970	ft/s	Use Modified Riprap

Outlet protection has been designed in accordance with the Section 11.13 of the ConnDOT Drainage Manual

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Riprap Apron Calculations**
Prepared By: **EB** Date: **November 14, 2025**

Riprap Apron (FES-06)

Invert Elevation =	6.30	ft	
Tailwater Elevation =	6.30	ft	
Tailwater Depth (TW) =	0.00	ft	
Inside Pipe Diameter (S_p) =	1.00	ft	
Pipe Discharge (Q) =	1.75	cfs	(From HydroCAD Model)
Outlet Velocity (V) =	3.69	ft/s	(From Express Model)

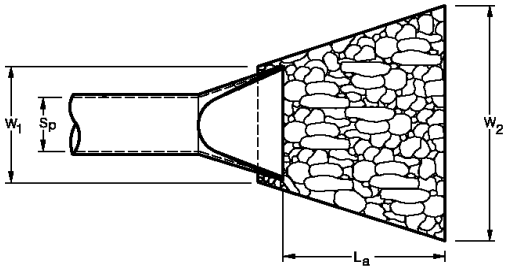
Apron Type

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

Type B Riprap Apron (Maximum Tailwater Condition) TW ≥ $0.5R_p$

TW < $0.5R_p$

Use Type A Apron



Apron Length

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$L_a = (1.8(Q-5.0)/Sp^{1.5})+10.0$

L_a =	4.15	ft

Apron Width

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$W_1 = 3*S_p$

$W_2 = 3*S_p+0.7L_a$

W_1 =	3.00	ft
W_2 =	5.91	ft

Riprap Specification

Outlet Velocity (V)=	0-8 ft/s	Modified
Outlet Velocity (V)=	8-10 ft/s	Intermediate
Outlet Velocity (V)=	10-14 ft/s	Standard

Outlet Velocity (V)=	3.690	ft/s	Use Modified Riprap

Outlet protection has been designed in accordance with the Section 11.13 of the ConnDOT Drainage Manual

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Riprap Apron Calculations**
Prepared By: **EB** Date: **November 14, 2025**

Riprap Apron (FES-08)

Invert Elevation =	6.30	ft	
Tailwater Elevation =	6.30	ft	
Tailwater Depth (TW) =	0.00	ft	
Inside Pipe Diameter (S_p) =	2.00	ft	
Pipe Discharge (Q) =	2.93	cfs	(From HydroCAD Model)
Outlet Velocity (V) =	0.40	ft/s	(From Express Model)

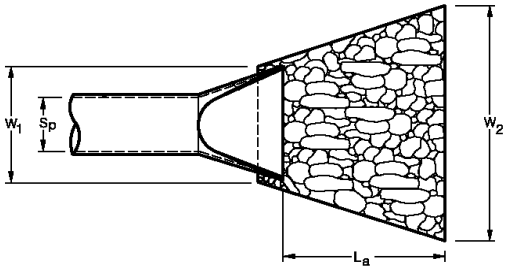
Apron Type

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

Type B Riprap Apron (Maximum Tailwater Condition) TW ≥ $0.5R_p$

TW < $0.5R_p$

Use Type A Apron



Apron Length

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$L_a = (1.8(Q-5.0)/Sp^{1.5})+10.0$

L_a =	8.68	ft

Apron Width

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$W_1 = 3*S_p$

$W_2 = 3*S_p+0.7L_a$

W_1 =	6.00	ft
W_2 =	12.08	ft

Riprap Specification

Outlet Velocity (V)=	0-8 ft/s	Modified
Outlet Velocity (V)=	8-10 ft/s	Intermediate
Outlet Velocity (V)=	10-14 ft/s	Standard

Outlet Velocity (V)=	0.400	ft/s	Use Modified Riprap

Outlet protection has been designed in accordance with the Section 11.13 of the ConnDOT Drainage Manual

APPENDIX E

WQA-A3

WQA-A1

WQA-A2

WQA-B3

WQA-B1

WQA-B2

N

0 250' 500'

SCALE: 1" = 250'

MANRESA ISLAND CORPORATION
NORWALK, CT

NORTH FOREST
PROPOSED WATER QUALITY MAP

DATE: 11/17/2025
SCALE: AS SHOWN
FIGURE: WQA-FIG

Tighe&Bond

J:\M\M5177 Manresa Island Corporation\0004 - Manresa Island - North Forest\Design\Stormwater\M5177-004-WQ-FIGURE.dwg

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-014**
Project Location: **Norwalk, CT**
Description: **Water Quality Calculations**
Prepared By: **AVC** Date: **November 17, 2025**

WQA-A1

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	25.200
Impervious Area in acres	=	1.315
Pecenct of Impervious Area (I)	=	5
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.097

WQv = $\frac{(1.3")(R)(A)}{12}$ = **0.2647 ac*ft**

= **11531 cf**

71232 cf Provided

Calculated in accordence with the 2024 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-014**
Project Location: **Norwalk, CT**
Description: **Water Quality Calculations**
Prepared By: **AVC** Date: **November 17, 2025**

WQA-A2

Required Water Quality Flow (WQf)

Total Area in acres (A)	=	0.412
Impervious Area in acres	=	0.217
Pecenct of Impervious Area (I)	=	53
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.524

$$\mathbf{WQv = \frac{(1.3")(R)(A)}{12}} = \mathbf{0.0234\ ac*ft}$$

WQv (Ac*ft)	=	0.0234
Drainage Area (Ac)	=	0.412

Q= WQv*12 / DA = **0.681 in**

Runoff Depth in inches (Q)	=	**0.681** in
Design Precipitation in inches (P)	=	**1.3** in

CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)$^{1/2}$] = **93 CN**

From table 4-1 in chapter 4, TR-55

I_a = **0.151 in**
I_a / P = **0.116**

Time of Concentration (per CN/Tc Calc) = **40.2 min**
= **0.7 hr**

From Exhibit 4-11 in chapter 4, TR-55

q_u = **350 csm/in**

Unit peak discharge in csm/in (q_u)	=	**350**
Area in square miles (A)	=	**0.0006**
Runoff Depth in inches (Q)	=	**0.681**

WQF=q_u*A*Q = **0.153 cfs**

0.7 cfs Provided from CDS-2015-4C

Calculated in accordence with the 2024 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-014**
Project Location: **Norwalk, CT**
Description: **Water Quality Calculations**
Prepared By: **AVC** Date: **November 17, 2025**

WQA-A3

Required Water Quality Flow (WQf)

Total Area in acres (A)	=	0.311
Impervious Area in acres	=	0.258
Pecenct of Impervious Area (I)	=	83
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.797

$$\mathbf{WQv = \frac{(1.3")(R)(A)}{12}} = \mathbf{0.0268\ ac*ft}$$

WQv (Ac*ft)	=	0.0268
Drainage Area (Ac)	=	0.311

Q= WQv*12 / DA = **1.036 in**

Runoff Depth in inches (Q)	=	**1.036** in
Design Precipitation in inches (P)	=	**1.3** in

CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)$^{1/2}$] = **97 CN**

From table 4-1 in chapter 4, TR-55

I_a = **0.062 in**
I_a / P = **0.048**

Time of Concentration (per CN/Tc Calc) = **5 min**
= **0.1 hr**

From Exhibit 4-11 in chapter 4, TR-55

q_u = **700 csm/in**

Unit peak discharge in csm/in (q_u)	=	**700**
Area in square miles (A)	=	**0.0005**
Runoff Depth in inches (Q)	=	**1.036**

WQF=q_u*A*Q = **0.352 cfs**

0.7 cfs Provided from CDS-2015-4C

Calculated in accordence with the 2024 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-014**
Project Location: **Norwalk, CT**
Description: **Water Quality Calculations**
Prepared By: **AVC** Date: **November 17, 2025**

WQA-B2

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	0.711
Impervious Area in acres	=	0.530
Pecenct of Impervious Area (I)	=	75
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.721

WQv = $\frac{(1.3")(R)(A)}{12}$ = **0.0555 ac*ft**

= **2419 cf**

2990 cf Provided

Calculated in accordence with the 2024 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-014**
Project Location: **Norwalk, CT**
Description: **Water Quality Calculations**
Prepared By: **AVC** Date: **November 17, 2025**

WQA-B3

Required Water Quality Flow (WQf)

Total Area in acres (A)	=	0.709
Impervious Area in acres	=	0.388
Pecenct of Impervious Area (I)	=	55
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.543

$$WQv = \frac{(1.3")(R)(A)}{12} = 0.0417 \text{ ac*ft}$$

WQv (Ac*ft)	=	0.0417
Drainage Area (Ac)	=	0.709

Q= WQv*12 / DA = **0.705 in**

Runoff Depth in inches (Q)	=	**0.705** in
Design Precipitation in inches (P)	=	**1.3** in

$CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)^{1/2}]$ = **93 CN**

From table 4-1 in chapter 4, TR-55

I_a = **0.151 in**
I_a / P = **0.116**

Time of Concentration (per CN/Tc Calc) = **40.3 min**
= **0.7 hr**

From Exhibit 4-11 in chapter 4, TR-55

q_u = **350 csm/in**

Unit peak discharge in csm/in (q_u)	=	**350**
Area in square miles (A)	=	**0.0011**
Runoff Depth in inches (Q)	=	**0.705**

WQF=q_u*A*Q = **0.273 cfs**

0.7 cfs Provided from CDS-2015-4C

Calculated in accordence with the 2024 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

CONTECH CONSTRUCTION PRODUCTS INC.

Hydrodynamic Separation Products Overview



CDS™ Vortechs® VortSentry® VortSentry® HS

Available Models

		CDS Model	Typical Internal MH Diameter or Equivalent ID[1] ft	m	Typical Depth[2] Below Pipe Invert ft	m	Water Quality Flow[3] 125 μm cfs	L/s	Screen Diameter/Height ft	m	Typical Sump Capacity yd³	m³
Precast**	Inline	CDS2015-4	4	1.2	3.5	1.1	0.7	19.8	2.0/1.5	0.6/0.5	0.5	0.4
		CDS2015	5	1.5	5.2	1.6	0.7	19.8	2.0/1.5	0.6/0.5	1.3	1.0
		CDS2020	5	1.5	5.7	1.7	1.1	31.2	2.0/2.0	0.6/0.6	1.3	1.0
		CDS2025	5	1.5	6.0	1.8	1.6	45.3	2.0/2.5	0.6/0.8	1.3	1.0
		CDS3020	6	1.8	6.2	1.9	2.0	56.6	3.0/2.0	0.9/0.6	2.1	1.6
		CDS3030	6	1.8	7.1	2.2	3.0	85.0	3.0/3.0	0.9/0.9	2.1	1.6
		CDS3035	6	1.8	7.6	2.3	3.8	106.2	3.0/3.5	0.9/1.1	2.1	1.6
		CDS4030	8	2.4	8.6	2.6	4.5	127.4	4.0/3.0	1.2/0.9	5.6	4.3
		CDS4040	8	2.4	9.7	3.0	6.0	169.9	4.0/4.0	1.2/1.2	5.6	4.3
		CDS4045	8	2.4	10.3	3.1	7.5	212.4	4.0/4.5	1.2/1.4	5.6	4.3
	Offline	CDS3020-D	6	1.8	6.2	1.9	2.0	56.6	3.0/2.0	0.9/0.6	2.1	1.6
		CDS3030-DV	6	1.8	6.9	2.1	3.0	85.0	3.0/3.0	0.9/0.9	2.1	1.6
		CDS3030-D	6	1.8	7.1	2.2	3.0	85.0	3.0/3.0	0.9/0.9	2.1	1.6
		CDS3035-D	6	1.8	8.7	2.6	3.8	106.2	3.0/3.5	0.9/1.1	2.1	1.6
		CDS4030-D	7	2.1	8.6	2.6	4.5	127.4	4.0/3.0	1.2/0.9	4.3	3.3
		CDS4040-D	7	2.1	9.6	2.9	6.0	169.9	4.0/4.0	1.2/1.2	4.3	3.3
		CDS4045-D	7	2.1	10.1	3.1	7.5	212.4	4.0/4.5	1.2/1.4	4.3	3.3
		CDS5042-DV	9.5	2.9	9.6	2.9	9.0	254.9	5.0/4.2	1.5/1.3	1.9	1.5
		CDS5640-D	8	2.4	9.5	2.9	9.0	254.9	5.6/4.0	1.7/1.2	5.6	4.3
		CDS5050-DV	9.5	2.9	10.3	3.1	11	311.5	5.0/5.0	1.5/1.5	1.9	1.5
		CDS5653-D	8	2.4	10.9	3.3	14	396.5	5.6/5.3	1.7/1.6	5.6	4.3
		CDS5668-D	8	2.4	12.4	3.8	19	538.1	5.6/6.8	1.7/2.1	5.6	4.3
		CDS5678-D	8	2.4	13.4	4.1	25	708.0	5.6/7.8	1.7/2.4	5.6	4.3
		CDS7070-DV	12	3.7	14	4.3	26	736.3	7.0/7.0	2.1/2.1	3.3	2.5
		CDS10060-DV	17.5	5.3	12	3.7	30	849.6	10.0/6.0	3.0/1.8	5.0 or 10.2	3.8 or 7.8
		CDS10080-DV	17.5	5.3	14	4.3	50	1416.0	10.0/8.0	3.0/2.4	5.0 or 10.2	3.8 or 7.8
		CDS100100-DV	17.5	5.3	16	4.9	64	1812.5	10.0/10.0	3.0/3.0	5.0 or 10.2	3.8 or 7.8
Cast In Place	Offline	CDS150134-DC	22	6.7**	22	6.7**	148	4191.4	15.0/13.4	4.6/4.1	20.4	15.6
		CDS200164-DC	26	7.9**	26	7.9**	270	7646.6	20.0/16.4	6.1/5.0	20.4	15.6
		CDS240160-DC	32	9.8**	25	7.6**	300	8496.2	24.0/16.0	7.3/4.9	20.4	15.6

**Sump Capacities and Depth Below Pipe Invert can vary due to specific site design

1. Structure diameter represents the typical inside dimension of the concrete structure. Offline systems will require additional concrete diversion components.
2. Depth Below Pipe and Sump Capacities can vary to accommodate specific site design.
3. Water Quality Flow is based on 80% removal of a Particle Size Distribution (PSD) having a mean particle size: d50=125-μm, which is a typical PSD gradation characterizing particulate matter (TSS/SSC) in urban rainfall runoff.

Water Quality Flow, Particle Size & Performance Notes:

- 80% removal (Re=80%) performance forecasts of the PSD having a d50=125-μm is derived from controlled tests of a unit equipped with 2400-μm screen. Performance forecasts for specific particle size gradations or d50s=50, 75, 125, 150 & 200-μm are also available. Removal forecasts based on unit evaluations conducted in accordance with the Technology Assessment Protocol - Ecology (TAPE) protocols, Washington Department of Ecology (WASDOE).
- Units can be sized to achieve specific Re performance for peak flow rates for specific Water Quality Flows, over the hydrograph of a Water Quality Storm Event or sized to meet a specific removal on an average basis using accepted probabilistic methods. When sizing based on a specific water quality flow rate, the required flow to be treated should be equal to or less than the listed water quality flow for the selected system.

  Contact our support staff for the most cost effective sizing for your area.

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Total Suspended Solids Removal Calculations**
Prepared By: **EB** Date: **November 13, 2025**

WQA - A1 = 25.200 acres

BMP	BMP DESCRIPTION	Starting TSS Load	TSS Removal Rate	Amout Removed	Remaining Load
Water Quality Pond	Infiltration Basin	1.00	100%	1.00	0.00

Total weighted average TSS removal efficiency = **100.00%**

WQA - A2 = 0.412 acres

BMP	BMP DESCRIPTION	Starting TSS Load	TSS Removal Rate	Amout Removed	Remaining Load
Street Sweeping	Street Sweping	1.00	10%	0.10	0.90
Hydrodynamic Separator	Contech CDS Unit	0.90	50%	0.45	0.45
Water Quality Pond	Infiltration Basin	0.45	100%	0.45	0.00

Total weighted average TSS removal efficiency = **100.00%**

WQA - A3 = 0.311 acres

BMP	BMP DESCRIPTION	Starting TSS Load	TSS Removal Rate	Amout Removed	Remaining Load
Street Sweeping	Street Sweping	1.00	10%	0.10	0.90
Hydrodynamic Separator	Contech CDS Unit	0.90	50%	0.45	0.45
Water Quality Pond	Infiltration Basin	0.45	100%	0.45	0.00

Total weighted average TSS removal efficiency = **100.00%**

WQA - B1 = 0.709 acres

BMP	BMP DESCRIPTION	Starting TSS Load	TSS Removal Rate	Amout Removed	Remaining Load
N/A	N/A	1.00	0%	0.00	1.00

Total weighted average TSS removal efficiency = **0.00%**

WQA - B2 = 0.711 acres

BMP	BMP DESCRIPTION	Starting TSS Load	TSS Removal Rate	Amout Removed	Remaining Load
Street Sweeping	Street Sweping	1.00	10%	0.10	0.90
Water Quality Pond	Rain Garden	0.90	90%	0.81	0.09

Total weighted average TSS removal efficiency = **91.00%**

WQA - B3 = 0.709 acres

BMP	BMP DESCRIPTION	Starting TSS Load	TSS Removal Rate	Amout Removed	Remaining Load
Street Sweeping	Street Sweping	1.00	10%	0.10	0.90
Hydrodynamic Separator	Contech CDS Unit	0.90	50%	0.45	0.45

Total weighted average TSS removal efficiency = **55.00%**

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Total Suspended Solids Removal Calculations**
Prepared By: **EB** Date: **November 13, 2025**

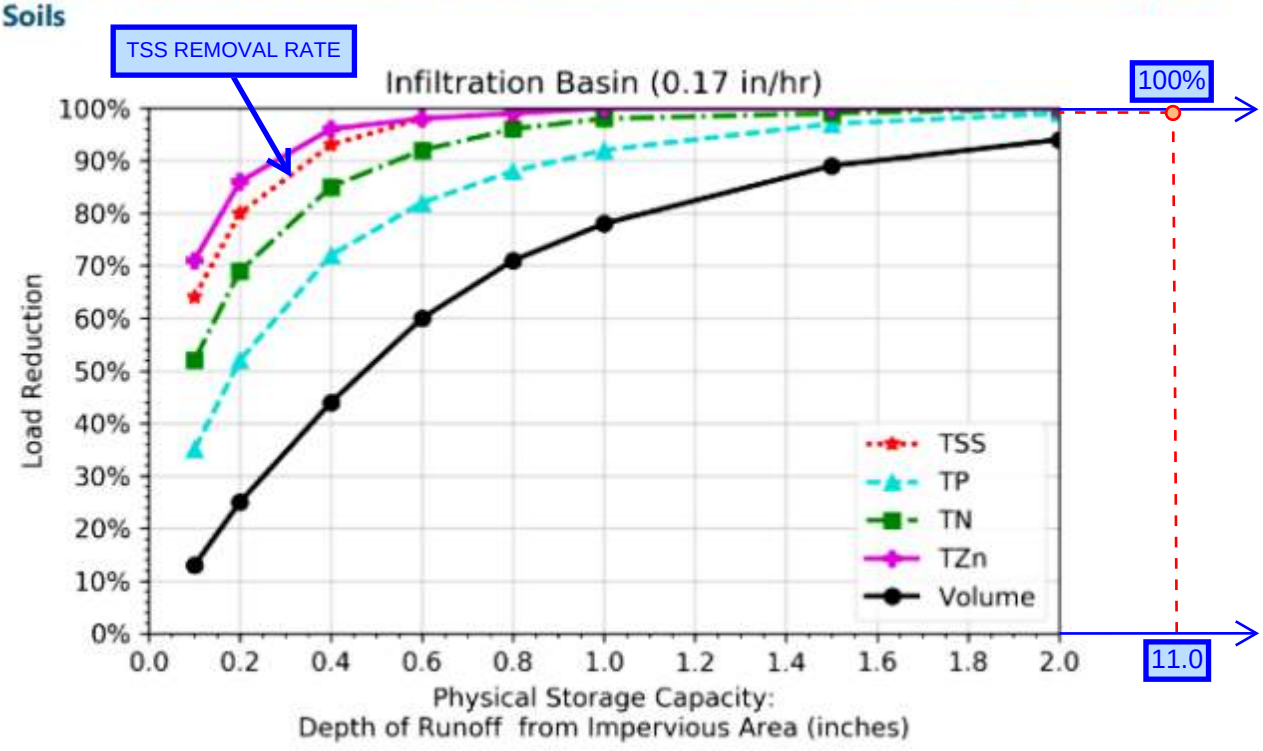
Treatment Area	Area	Removal Efficiency	Area x TSS removal
A1	25.200	1.0000	25.200
A2	0.412	1.0000	0.412
A3	0.311	1.0000	0.311
B1	0.709	0.0000	0.000
B2	0.711	0.9100	0.647
B3	0.709	0.5500	0.390
SUM:	28.052	4.460	26.960

Total weighted average TSS removal efficiency = **96.1%**

*SUPPORT FOR INFILTRATING BASIN TSS REMOVAL RATE:
PER CHAPTER 4, STANDARD 1, FIGURE 4-2 OF CT STORMWATER QUALITY MANUAL 2024

HYDROLOGIC SOIL GROUP = B
INIFLTRATION RATE= 0.5IN/HR > 0.17 IN/HR
PHYSICAL STORAGE CAPACITY (DEPTH OF RUNOFF FROM IMPERVIOUS AREA) = 71,232 CF / 77,972 SF =0.914 FEET = 11 INCHES

Figure 4- 2 Example Stormwater BMP Performance Curves for Infiltration Basin in Type B Soils



Source: University of New Hampshire Stormwater Center

Project Name: **Manresa Island Corporation**
Project Number: **M-5177-004**
Project Location: **Norwalk, CT**
Description: **Groundwater Recharge Volume**
Prepared By: **EB** Date: **November 13, 2025**

Groundwater Recharge Volume

Total Area in acres (A)	=	41.80
Post-Development Site Imperviousness (I)	=	2.80
Depth of Runoff for Type B Soil*	=	0.25

Minimum Ground Water Recharge Volume

$$GRV = \frac{(D)(A)(I)}{12}$$

	=	**2.390**	**ac-ft**
	=	**104090**	**cf**
Provided Ground Water Recharge Volume	=	**104360**	**cf***

***** volume provided below lowest outlet of existing pond

Time Required to Drain GRV

Wetted Area	=	127675	sf
Infiltration Rate**	=	0.50	in/hr
Infiltrated Volume Per Hour	=	5319.8	cf/hr
Time Required for Volume to Drain	=	**19.62**	**hrs**

**From Table 7-4, 2004 CT Stormwater Quality Manual*

***Determined via Rawls Rate of Infiltration for HSG B Type Soils*

APPENDIX F

Manresa Wilds

North Forest

Maintenance and Inspection Plan

November 2025

Stormwater management systems require periodic maintenance to ensure they function as designed. The initial inspection will be made during an intense rainfall to check the adequacy of the catch basins, manholes, piping, retention/detention ponds, bio-filtration swales, and system discharges/outlets.

The initial inspection will be made during an intense rainfall to check the adequacy of the catch basins, piping, ponds, and system outlets.

The following is a checklist of items that will be checked and maintained during scheduled maintenance operations.

Drainage Structures: The Owner will be responsible for cleaning the catch basins, manholes, piping, and outlet protection on their property. A Connecticut licensed hauler shall clean the sumps, and legally dispose of removed sand at an off-site location. The road sand may not be reused or stored on-site. As part of the hauling contract, the hauler shall notify the Owner in writing where the material is being disposed.

Each catch basin and manhole shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment. Maintain a log of inspections. Remove organic matter, sand, and debris from catch basins as necessary and dispose of legally. Inspections can be spaced further apart if initial observations show slow accumulation of debris.

Stormwater Ponds: The owner will be responsible for cleaning each pond and outlet structure of sediment and debris every four months at a minimum. Inspections will need to observe and make note of sediment depths in the pond and remove sediment as it collects to ensure it is not reducing the effective storage area of the pond. The wet pond will be equipped with a capped underdrain to allow for draw down of the permanent pool in order to observe sediment depths and slope conditions. The ponds will need to be mowed and maintained to ensure vegetation does not become overgrown, phragmites and tree saplings shall be removed when observed. Slopes of the pond (both inside and out) will need to be inspected to ensure no rutting or erosion is occurring. If any is damage is noted, repairs need to be performed immediately.

Hydrodynamic Separators: Water quality structures shall be maintained in accordance with the manufacturer's instructions. Inspections shall be performed quarterly at first, with more frequent inspections in the winter months when sanding operations may lead to rapid sediment deposition. Inspections may be spaced further apart if initial observations show slow accumulation of sediment. The systems shall be cleaned when the inspection indicates that the sediment depth has accumulated to within six inches of the dry-weather water level. Oil and gasoline spills shall be cleaned out immediately. Where oil or gas accumulates in small amounts over time, it shall be removed when an appreciable layer has been captured.

If the inspections indicate that the sediment depth requires cleaning, the unit may be cleaned using a vacuum truck. Cleanout should not occur within 6 hours of a rainfall event, so that the system can drain down. Where clamshells are used for solids removal, first absorbent pads or pillows shall be used in the oil chamber to remove floating contaminants.

Bio-Filtration Swale: The swale will be cleaned of all silt, debris and sediment, including the CB inlet structure. Check-dams will be observed to make sure they are intact and functioning properly.

Riprap Dissipators: Regular maintenance includes removing accumulated debris and sediment, checking for erosion, vegetative bare spots, and removing invasive plant species or tree saplings.

Pavement: Paved areas shall be swept periodically by the Owner to clean trash and other debris. The Owner will sweep paved areas on its property in the spring to remove winter accumulations of road sand.

Perform a visual inspection of paved areas four times per year with one inspection after the last snowfall, but no later than April 1. Sweep accumulated sediment and debris from the paved areas. Clean paved areas as necessary during the remainder of the year.

Drainage Structure Inspections

Each catch basin and manhole shall be inspected every four months, with one inspection occurring during the month of April.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Stormwater Pond Inspections

Clean each pond including the outlet structure of sediment and debris every four months at a minimum.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Hydrodynamic Separator Inspections

Water quality structures shall be maintained in accordance with the manufacturer's instructions. Inspections shall be performed quarterly at first, with more frequent inspections in the winter months when sanding operations may lead to rapid sediment deposition.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Bio-filtration Swales

The bio-filtration swales shall be inspected twice annually.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Riprap Dissipators

The riprap dissipators shall be inspected twice annually.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Pavement Inspection

Perform a visual inspection of paved areas four times per year with one inspection after the last snowfall, but no later than April 1. Sweep accumulated sediment and debris from the paved areas. Clean paved areas as necessary during the remainder of the year.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

APPENDIX G

Stormwater System Design Plan and Report Checklist for Submission

Project narrative including:

[Provide page number where located]

Sec. 1 Common address of site

Sec. 1 Project name

Sec. 1 Legal description of site

Appx. A Vicinity map

Sec. 1 Description of past, present, and proposed uses of the site

Sec. 2 Description of the proposed drainage system, including:

- LID elements incorporated in the design
- water quality treatments
- how impervious surfaces have been minimized to the extent practical
- outfall or discharge location (open watercourse versus existing downstream drainage system)

Sec. 2 Description of how zero increase in rate of runoff is met through the design, including a table documenting existing and proposed peak flows from the site for the 50, 10, 4, 2, and 1 percent annual chance events

Cover sheet with drawing index: (only required if not submitted with the Site Plan review)

C-001 Title block - Title shall include type of submittal from Site Development Review Request.

C-001 Legend

C-010 North arrow

C-010 Property boundary of subject property (including parcels or portions thereof, of abutting land in roadways within 100 feet of the property boundary)

Appx. A Site location map (recommended scale 1" = 1,000') with north arrow

Existing conditions map(s) detailing:

[Provide page number where located]

C-010 Base mapping for the Storm Drainage Plan shall consist of an existing conditions survey prepared in accordance with the Minimum Standards for Surveys and Maps in the State of Connecticut. The class of survey shall be A-2 and T-2 and shall be represented as such on the map. The base map shall be sealed and signed by a Professional Land Surveyor licensed in the State of Connecticut.

C-010 The plan shall indicate the scale of the drawing and if possible be at a scale of 1" = 20' or 1" = 40'.

C-010 The plan shall depict the existing topography at contour intervals of 2 feet for the site and at a minimum of 100 feet beyond the property limits of the subject property.

C-010 Topography that is flatter than 2 percent requires additional spot elevations, and the contour interval shall be a 1-foot contour interval instead of a 2-foot contour interval.

C-010 The plan shall show all required spot elevations.

C-010 The plan shall indicate the referenced or assumed elevation datum (the FEMA datum shall be used for sites located within a Flood Hazard Zone).

C-010 The plan shall have one permanent benchmark on the site within 100 feet of the proposed construction work area on the site.

C-010 The plan shall include roads, buildings, driveways, parking areas, patios, walks, walls, other structures on the property, storm drainage, sanitary sewers, subsurface sewage disposal systems (septic systems), curbs, sidewalks, trees, retaining walls, utilities such as water, gas, and electric etc.

C-010 The plan shall show the locations of stormwater discharges.

C-010 The plan shall show wetlands, perennial, intermittent streams.

C-100 The plan shall show vegetation and the proposed limits of clearing and disturbance.

N/A The plan shall show the locations of deep test and infiltration tests.

C-010 The plan shall show resource protection areas such as wetlands, lakes, ponds, and other setbacks (stream buffer zones, drinking water well setbacks, septic system setbacks, etc.).

C-010 The plan shall show utilities and easements.

C-010 The plan shall show the location of FEMA floodplain and floodway limits and the relationship of the site to upstream and downstream properties and drainage systems.

C-010 The plan shall show existing channel modifications (e.g., bridge or culvert installations).

C-010 The plan shall show existing peak-flow attenuation facilities.

Proposed conditions map(s) detailing:

[Provide page number where located]

C-200 The plan shall indicate the scale of the drawing and if possible be at a scale of 1" = 20' or 1" = 40'.

C-200 The plan shall depict the proposed topography at contour intervals of 2 feet for the site and at a minimum of 100 feet beyond the property limits of the subject property.

C-200 Topography that is flatter than 2 percent requires additional spot elevations, and the contour interval shall be a 1-foot contour interval instead of a 2-foot contour interval.

C-200 The plan shall show all required spot elevations.

C-200 The plan shall show proposed roads, buildings, driveways, parking areas, and other impervious surfaces.

C-400 The plan shall show proposed utilities (e.g., water, sewer, gas, electric) and utility easements.

C-400 The plan shall show proposed storm drain infrastructure (e.g., inlets, manholes, storm drains).

C-400 The plan shall show proposed channel modifications (e.g., bridge or culvert installations).

C-400 The plan shall show temporary and permanent conveyance systems (grass channels, swales, ditches, storm drains, etc.) building grades, dimensions, and directions of flow.

C-400 The plan shall show the location, size, maintenance access, and limits of disturbance of proposed structural stormwater management practices and low impact development (treatment practices, flood control facilities, stormwater diversion structures, etc.).

C-400 The plan shall show final landscaping plans for structural stormwater management practices and site revegetation (if no structural items are proposed, this portion of the plan may be signed by a licensed landscape architect or other environmental professional).

C-400 The plan shall show locations of nonstructural stormwater management practices (i.e., source controls).

N/A The plan shall show the excavation and fill quantities in a table if required by the Director.

COVER The plan shall be sealed and signed by a Professional Engineer licensed in the State of Connecticut.

Existing conditions hydrologic analysis including:

[Provide page number where located]

Appx. B Existing conditions map

Appx. B Delineation of each of the existing drainage areas and subwatersheds found on the development site (e.g., size, soil types, land cover characteristics)

Appx. B Delineation of any off-site drainage areas that contribute stormwater runoff to the development site (e.g., size, soil types, land cover characteristics)

Appx. B Calculation of the stormwater runoff rates (cfs) and volumes (ft^3) generated, under existing conditions, in each of the drainage areas found on the development site

Appx. B Calculation of the stormwater runoff rates (cfs) and volumes (ft^3) generated, under existing conditions, in each of the off-site drainage areas that contribute stormwater runoff to the development site

Appx. B Documentation (e.g., model diagram) and calculations showing how the existing conditions hydrologic analysis was completed

Proposed conditions hydrologic analysis, which includes:

[Provide page number where located]

Appx. C Proposed conditions map

Appx. C Delineation of each of the proposed drainage areas found on the development site (e.g., size, soil types, land cover characteristics)

Appx. C Delineation of the proposed conditions of any off-site drainage areas that contribute stormwater runoff to the development site (e.g., size, soil types, land cover characteristics)

Appx. C Calculation of the stormwater runoff rates (cfs) and volumes (ft^3) generated, under proposed conditions, in each of the drainage areas found on the development site

Appx. C Calculation of the stormwater runoff rates (cfs) and volumes (ft^3) generated, under proposed conditions, in each of the off-site drainage areas that contribute stormwater runoff to the development site

Appx. C Design computations of any detention or retention systems proposed as part of the project

Appx. C Documentation (e.g., model diagram) and calculations showing how the proposed conditions hydrologic analysis was completed

Postconstruction drainage system design computations including:

[Provide page number where located]

Appx. E Drainage diagrams indicating design/analysis points and all stormwater features

Appx. E Subwatershed mapping to each inlet structure

Appx. E Tailwater used in the drainage system analysis

N/A Analysis of the receiving drainage system if discharge is to an existing system

Appx. E Computations supporting design of the drainage system including pipe capacity and hydraulic grade line determinations

Appx. E Table of watershed areas, times of concentration, and runoff coefficients for each subwatershed area

Appx. E Profiles of drainage conveyance systems showing proposed structures, proposed grade, flow depth, hydraulic grade line, pipe and channel slopes, soil profiles in swales, bedding details, subdrain details, and types of construction materials

N/A Indicate the discharge location of all building roof leaders. If a building will discharge to more than one discharge location, these locations need to be indicated along with the pertinent area of contributing rooftop.

N/A Gutter flow analysis for applications that propose new roads or improvements to existing public roads

22-5122-002
December 12, 2025

Jessica Vonashek
Executive Director
Manresa Osprey LLC
50 Day Street
Norwalk, CT

Re: **Traffic Statement**
Manresa Wilds – North Forest (Phase 1)
Norwalk, CT

Dear Ms. Vonashek:

Tighe & Bond prepared this Traffic Statement to document the anticipated transportation effects associated with Phase 1 of the Manresa Wilds project, known as the North Forest. Phase 1 encompasses approximately 25 acres on the northern portion of the 144-acre Manresa Island property in Norwalk, Connecticut. The North Forest is planned as a passive recreation and ecological restoration area with a network of trails connecting three themed gathering areas—the Eco, Gather, and Learn nodes. Transportation-related elements of Phase 1 include:

- A parking lot providing approximately 44 parking spaces, including two accessible spaces, a bus drop-off area that can accommodate two buses with supporting low-impact stormwater measures and visitor amenities.
- A new internal site roadway connecting to Longshore Avenue that will function as the park access driveway.
- A bus turnaround with rider amenities located adjacent to Longshore Avenue to accommodate transit access to the site and to the Harborview neighborhood to the east.

Based on the trip-generation estimates developed for Phase 1 and a qualitative review of access and circulation patterns, traffic associated with the North Forest is not expected to result in material adverse effects on the surrounding roadway network under the assumptions and conditions described in this statement.

Existing Conditions

Phase 1 is accessed by Manresa Island Road, a two-lane paved drive that extends south from Longshore Avenue, the only roadway connection between the Manresa Wilds, Woodward Avenue, and the South Norwalk street network. Within the North Forest recreation area there are no existing internal paved roads or parking areas, only informal clearings and remnants of former utility service routes. The existing roadway terminates near the southern edge of the Phase 1 area, where limited drainage infrastructure—primarily small culverts and unlined outfalls—conveys runoff toward Norwalk Harbor. There are currently no sidewalks, transit facilities, or bicycle accommodations along the existing access route or within the North Forest.

Roadways

Woodward Avenue serves as the primary route to the site within the City of Norwalk. Woodward Avenue is classified as a local roadway between Longshore Avenue and Meadow Street (Route 136) and a minor arterial between Meadow Street (Route 136) and Concord Street. Route 136 also overlaps the segment of Woodward Avenue between Meadow Street and Burritt Avenue. Average daily traffic on Woodward Avenue, north of Burritt Avenue, is approximately 5,500 vehicles per day (vpd) and 7,700 vpd between Burritt Avenue and Meadow Street. The posted speed on Woodward Avenue is 25 miles per hour (mph).

Route 136 runs west to east within the local study area overlapping portions of Meadow Street, Woodwrd Avenue, Burritt Avenue and Water Street, however these portions of Route 136 remain under City of Norwalk control. Meadow Street and Grove Street provide cross connections between South Main Street and Woodward Avenue.

The Harborview neighborhood is a private residential subdivision located a quarter mile east of the site driveway at the end of Longshore Avenue.

Collision History

A review of motor vehicle collision data was completed using records from the Connecticut Crash Data Repository for the five-year period from June 1, 2020 through June 1, 2025. The defined study area is bounded by Route 136 to the west, Grove Street and Burritt Avenue to the north, and Norwalk Harbor to the east. Summary Tables 1-1 through 1-6 present detailed information for each reported collision, including collision type, contributing factors, severity, and time of day. The 2020 and 2025 columns reflect partial-year datasets (June 1–December 31, 2020 and January 1–June 1, 2025).

A total of 324 collisions were reported within the study area during the five-year review period. No fatal crashes occurred. Five collisions involved serious injuries, and 38 resulted in minor injuries; the remaining crashes were property-damage-only events. Six collisions involved a pedestrian, five of which occurred along the Woodward Avenue corridor. Two pedestrian collisions occurred at Woodward Avenue at Neptune Avenue, with one pedestrian collision each at Woodward Avenue at Burritt Avenue, Woodward Avenue at Sheridan Avenue, Woodward Avenue at Meadow Street, and Water Street at Burritt Avenue. The pedestrian collision at Burritt Avenue resulted in minor injuries; the remaining incidents were classified as possible injury or property-damage-only. More than half of all reported collisions occurred outside the weekday peak traffic periods.

TABLE 1-1
Study Area Collision Summary – Collision Type

COLLISION TYPE	2020	2021	2022	2023	2024	2025	Total	%
Other/Unknown	11	19	23	22	15	3	**93**	**28.7%**
Angle	4	15	11	14	10	4	**58**	**17.9%**
Sideswipe, Same Direction	3	10	14	8	11	3	**49**	**15.1%**
Rear-End	6	14	12	8	5	3	**48**	**14.8%**
Fixed Object	3	6	4	3	4	2	**22**	**6.8%**
Sideswipe, Opposite Direction	2	6	4	3	4	2	**21**	**6.5%**
Backing	2	6	0	4	4	1	**17**	**5.2%**
Head-On	0	2	1	0	1	2	**6**	**1.9%**
Pedestrian	1	0	1	2	1	1	**6**	**1.9%**
Animal	0	1	0	0	1	1	**3**	**0.9%**
Bicycle	1	0	0	0	0	0	**1**	**0.3%**
TOTAL	**33**	**79**	**70**	**64**	**56**	**22**	**324**	**100%**

TABLE 1-2
Study Area Collision Summary – Contributing Factor

CONTRIBUTING FACTOR	2020	2021	2022	2023	2024	2025	Total	%
None	29	62	59	52	49	19	**270**	**83.3%**
Other/Unknown	2	16	10	10	5	0	**43**	**13.3%**
Road Surface Condition[1]	1	1	0	0	0	3	**5**	**1.5%**
Work Zone[2]	0	0	1	1	1	0	**3**	**0.9%**
Non-Highway Work	0	0	0	1	1	0	**2**	**0.6%**
Backup Due to Regular Congestion	1	0	0	0	0	0	**1**	**0.3%**
TOTAL	**33**	**79**	**70**	**64**	**56**	**22**	**324**	**100%**

1. Road surface condition: wet, icy, snow, slush, etc.
2. Work zone: construction, maintenance, utility

TABLE 1-3
Study Area Collision Summary – Collision Event

COLLISION EVENT	2020	2021	2022	2023	2024	2025	Total	%
Motor Vehicle	31	79	69	62	55	21	**317**	**97.8%**
Pedestrian	1	0	1	2	1	1	**6**	**1.9%**
Cyclist	1	0	0	0	0	0	**1**	**0.3%**
TOTAL	**33**	**79**	**70**	**64**	**56**	**22**	**324**	**100%**

TABLE 1-4
Study Area Collision Summary - Severity

SEVERITY	2020	2021	2022	2023	2024	2025	Total	%
Property Damage Only	27	69	64	54	49	18	**281**	**86.7%**
Minor Injury	6	8	6	9	7	2	**38**	**11.7%**
Serious Injury	0	2	0	1	0	2	**5**	**1.5%**
Fatal	0	0	0	0	0	0	**0**	**0.0%**
TOTAL	**33**	**79**	**70**	**64**	**56**	**22**	**324**	**100%**

TABLE 1-5
Study Area Collision Summary – Time of Day

DAY & TIME	2020	2021	2022	2023	2024	2025	Total	%
Weekday 6-9 AM	1	17	11	9	7	3	**48**	**14.8%**
Weekday 3-6 PM	8	9	9	8	9	4	**47**	**14.5%**
Weekday Off-Peak	15	33	32	29	26	9	**144**	**44.4%**
Saturday 11 AM - 2 PM	0	3	1	1	1	0	**6**	**1.9%**
Weekend Off-Peak	9	17	17	17	13	6	**79**	**24.4%**
TOTAL	**33**	**79**	**70**	**64**	**56**	**22**	**324**	**100%**

As shown in Table 1-6, the Woodward Avenue at Burritt Avenue and Woodward Avenue at Meadow Street intersections experienced the most collisions, with 19 total collisions each (representing 5.9% of the total collisions). The South Main Street at Belle Avenue intersection experienced the next most collisions with 17 total collisions (5.2%). The Woodward Avenue at Grove Street intersection experienced 16 total collisions between June 2020 and June 2025 which accounted for 3.1% of the total crashes throughout the network. The remaining intersections each accounted for 15 collisions or less over that time.

TABLE 1-6
Study Area Intersection Collision Summary – Top 10 Intersections

Intersection	2020	2021	2022	2023	2024	2025	Total	Percent
Woodward Ave at Burritt Ave	0	5	1	5	4	4	**19**	**5.9%**
Woodward Ave at Meadow St	3	4	4	4	4	0	**19**	**5.9%**
South Main St at Belle Ave	3	6	2	4	2	0	**17**	**5.2%**
Woodward Ave at Grove St	4	3	5	3	0	1	**16**	**4.9%**
Meadow St at Novak St	1	6	2	2	2	2	**15**	**4.6%**
Meadow St at Lawrence St	1	3	6	2	1	0	**13**	**4.0%**
Woodward Ave at South Main St/Concord St	2	1	8	1	1	0	**13**	**4.0%**
South Main St at Novak St	0	3	1	1	5	1	**11**	**3.4%**
South Main St at Grove St	1	3	3	2	2	0	**11**	**3.4%**
South Main St at Merritt St	0	3	2	2	2	0	**9**	**2.8%**
TOTAL	**15**	**37**	**34**	**26**	**23**	**8**	**143**	**44%**

Public Transportation

Public bus service is provided in the general vicinity of the site via the Norwalk Transit District Main Ave Shuttle. The route serves Woodward Avenue near the site, with service extending north through downtown Norwalk and a terminus on Main Ave at the Walmart shopping plaza. The nearest bus stop to the project site is located 0.25 miles north of the site driveway, located on Woodward Avenue at Sable Street/ Dock Road. Service runs daily on both weekdays and weekends. A potential extension of Main Ave service to the site would improve access for non-drivers and encourage non-vehicular travel.

In addition to transit service, the Metro-North Railroad provides regional rail service with stations in Norwalk that could provide connections to the site; the South Norwalk station is located 1.5 miles north of the site and Rowayton station is located approximately three miles west of the site.

Proposed Conditions

Under the proposed conditions, Phase 1 – North Forest will introduce targeted access and circulation improvements at the site entrance to support public access while maintaining the natural character of the area. The existing Longshore Avenue and Manresa Island Road connection will remain the sole vehicular access route, with localized modifications to provide consistent two-way width and adequate emergency vehicle clearance. The driveway connection to Longshore Avenue will be realigned so that available sight distance and turning geometry comply with applicable City of Norwalk standards. The site driveway will also include a defined transit stop and bus turnaround area located at the driveway intersection to facilitate potential future transit routing and improve access for residents traveling along Woodward Avenue and from the Harborview neighborhood.

A 44-space parking lot plus two bus drop-off spots will be constructed to support the North Forest. The parking lot will give visitors free public access to approximately 2 miles of trails through wooded upland and tidal wetland areas connecting to the "Eco Node" for ecological interpretation and habitat viewing, the "Gather Node" which provides guests with a small clearing area for rest and informal programs and the "Learn Node" which is envisioned as an educational stop with signage or a small outdoor classroom. A small comfort station is also planned near the trailhead.

Site-Generated Traffic

Upon completion, the North Forest will function as a passive public recreation area supported by the 44-space parking lot and associated transit accommodations. Trip generation for the project was estimated using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition (2021). Land Use Code (LUC) 411, Public Park, was selected as the closest available land-use classification, recognizing that it does not fully align with the North Forest's specific programming but represents the most appropriate category among the limited recreational land uses included in the manual.

Using the published ITE regression equation for LUC 411, Phase 1 is estimated to generate about 104 daily vehicle trips during peak-season weekdays. Based on the ITE hourly distribution for LUC 411, the corresponding peak-hour volume is roughly 14 trips, typically occurring between 10 AM and 3 PM due to recreational visitation patterns. Because the project is expected to generate fewer than 20 peak-hour trips, the incremental volume falls below thresholds that typically warrant detailed operational analysis and is not expected to meaningfully alter traffic conditions within the study area. Because ITE Trip Generation accounts only for vehicle entries and exits and not dwell time, additional sensitivity testing was conducted assuming a doubled daily volume of 208 trips to assess both traffic operational

conditions and parking demand as noted in the following section. Even under this scenario, the study area roadway network is projected to operate acceptably given the traffic patterns and assumptions applied. Table 1-7 summarizes the estimated hourly trip generation for both the base and doubled daily trip estimates.

TABLE 1-7
Trip Generation – Land Use Code 411 (Public Park)

	ITE 12th Edition			ITE 12th Edition (doubled)		
Time of Day	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
7-8AM	1	1	2	2	2	4
8-9AM	3	0	3	6	0	6
9-10AM	7	3	10	14	6	20
10-11AM	6	5	11	12	10	22
11AM-12PM	5	9	14	10	18	28
12-1PM	8	5	13	16	10	26
1-2PM	6	4	10	12	8	20
2-3PM	5	7	12	10	14	24
3-4PM	4	6	10	8	12	20
4-5PM	2	7	9	4	14	18
5-6PM	2	2	4	4	4	8
6-7PM	3	3	6	6	6	12
Total	**52**	**52**	**104**	**104**	**104**	**208**

Parking Accumulation Comparison

A parking demand analysis was conducted using the trip-generation-based hourly distribution and an assumed average visitor dwell time of approximately two hours, consistent with the expected duration needed to experience the trail network and interpretive areas. Under the base trip-generation scenario (104 trips), the estimated peak parking demand is approximately 14 parked vehicles. When trip generation is doubled to 208 trips, the peak parking demand increases to approximately 28 vehicles. To present a conservative analysis, weekday trip generation (the highest of weekday, Saturday and Sunday periods) was applied throughout the day using the Saturday distribution from ITE's Trip Generation Manual, 11th Edition, since the 12th Edition does not include a distribution for this land use code.

For concurrence, a separate estimate was developed using the ITE Parking Generation Manual, 6th Edition (2023). Weekend parking demand was derived by averaging applicable Saturday and Sunday data points. Two outlier study sites with atypically large acreage (230 acres and 287 acres) were removed to improve representativeness of the dataset. For the remaining dataset (average size approximately 29 acres, comparable to the 25 acres of the North Forest), the ITE regression equation indicates a peak parking demand of approximately 34 vehicles on an average peak-season weekday and approximately 43 vehicles on an average peak-season weekend day.

Table 1-8 provides a comparison of parking demand estimates from the trip-generation-based method and the ITE Parking Generation method. Based on these results, the proposed 44-space parking lot is expected to accommodate the estimated peak parking demands under both methods, with a small operational buffer during peak-season weekend conditions.

TABLE 1-8
Estimated Maximum Hourly Parked Vehicles

Time of Day	Weekday (ITE Trip Gen)	Weekday (2x ITE Trip Gen)	Weekend (ITE Parking Gen)
7-8AM	1	2	7
8-9AM	4	8	12
9-10AM	10	20	13
10-11AM	13	26	15
11AM-12PM	11	22	29
12-1PM	13	26	33
1-2PM	14	28	41
2-3PM	11	22	43
3-4PM	9	18	41
4-5PM	5	10	34
5-6PM	2	4	24
6-7PM	0	0	23

As noted, the proposed site plan includes 44 parking spaces (including two accessible parking spaces) plus two bus parking spaces. Based on the estimated parking demand noted, the site will be capable of accommodating peak parking estimates using both Trip Generation and Parking Generation methodologies.

Multi-Modal Improvements

While this Traffic Statement focuses on vehicular operations associated with ongoing site use, multi-modal access considerations are also being evaluated in coordination with the City of Norwalk to improve multi-modal mobility and access to Manresa Wilds. If advanced through subsequent planning and funding phases, these improvements are anticipated to strengthen pedestrian, bicycle, and transit connectivity; improve overall multimodal access within the surrounding roadway network; and support responsible, context-sensitive site activation.

Conclusion

Based on trip generation calculations from the 12th edition of ITE's Trip Generation manual, the Manresa Island Phase 1 – North Forest is expected to generate 104 daily trips, during the peak season. Available parking in the 44-space North Forest lot is expected to sufficiently accommodate up to double the estimated trip generation as well as peak weekend demand using the 6th edition of ITE's Parking Generation manual.

The projected volumes indicate that even during peak summer months, traffic generated by the North Forest will remain within the capacity of the surrounding roadway network. It is the professional opinion of Tighe & Bond that the proposed Phase 1 – North Forest will generate minimal vehicular traffic and is not expected to result in any significant adverse impacts on local traffic operations once complete.

Sincerely,

TIGHE & BOND, INC.

Christopher O. Granatini, PE
Vice President



12/12/2025

J:\S\S5220 SCAPE Landscape Architecture DPC\0002 Manresa Island North Forest\Reports\2025-11-21 Traffic Statement\2025-12-12 Phase 1 - North Forest Traffic Statement.docx

22-5122-002
January 21, 2026

Jessica Vonashek
Executive Director
Manresa Osprey LLC
50 Day Street
Norwalk, CT

Re: **Construction Traffic and Hauling Memorandum**
Manresa Wilds – North Forest (Phase 1)
Norwalk, CT

Dear Ms. Vonashek:

Tighe & Bond prepared this memorandum to evaluate construction phase traffic effects related to Phase 1 of the Manresa Wilds project, known as the North Forest. Phase 1 encompasses approximately 25 acres on the northern portion of the 144-acre Manresa Island property in Norwalk, Connecticut. The North Forest is planned as a passive recreation and ecological restoration area with a network of trails connecting three themed gathering areas—the Eco, Gather, and Learn nodes.

This document summarizes the anticipated impacts of construction worker and truck activity on the adjacent roadway system and identifies the most appropriate haul-routes and haul-route controls.

Construction Traffic

Construction of the Manresa Wilds North Forest improvements will generate a combination of worker vehicle trips and construction truck activity over an approximately eleven-month period beginning in February 2026. Construction activity is expected to be steady but manageable throughout Phase 1, with truck volumes varying by month based on the specific material hauling needs and on-site tasks underway. Construction traffic is governed by clear assumptions, established activity durations, and defined haul routes to minimize impacts on the surrounding transportation network.

Construction Worker Traffic

Daily construction worker traffic will consist primarily of passenger vehicles and small trucks arriving near the start of the construction shift (typically between 6:30 AM and 8:00 AM) and departing near the end of the shift (generally between 3:00 PM and 5:00 PM). Worker-related site traffic is expected to be limited and is characterized below:

- Worker volumes are minimal relative to available roadway capacity.
- Arrival and departure times generally occur outside the roadway network's peak commuting periods.
- All construction related parking required to meet the project construction worker parking demand will be accommodated onsite. MIC will manage all parking to ensure compliance.

Construction worker activity is anticipated to generate approximately 10 to 20 daily vehicle trips. Because worker arrivals and departures occur largely outside the peak travel periods and represent a small share of total area traffic, this component of construction traffic is not expected to result in any measurable change in intersection level of service or delay during the construction period.

Construction Truck Activity

Construction truck traffic includes triaxle dump trucks, flatbeds, and other heavy vehicles delivering materials and equipment to support construction. The construction truck estimates in this statement are based on the following assumptions:

- Primary haul vehicles are triaxle dump trucks with a 15-cubic-yard capacity.
- Trucking occurs during allowable City of Norwalk work hours, as permitted.
- Each inbound delivery is paired with a corresponding outbound trip.
- Soil import and roadway embankment import are estimated at four inbound trucks per hour (~32 inbound trucks per average day).
- Activity durations are based on estimated material quantities and production rates for each construction component.

Construction Phasing and Truck-Generating Activities

Four primary construction activities generate the bulk of truck traffic. These activities and their associated durations are:

- Soil Import for Environmental Remediation Activities (5 months)
- Trails Construction (6 months)
- Soil Import for Roadway Embankment Construction (2 months)
- Roadway and Parking Lot Construction (3 months)

These durations, when combined with the hourly and daily truck assumptions, determine the total construction truck volumes for each activity and for the project as a whole. Peak truck activity is anticipated to take place during months 2-7 when the soil import and trail construction activities take place and then again when the roadway embankment materials import and trail construction activities overlap. In both cases, the estimated daily inbound trucks trips are expected to be 40, over the course of the day with those same 40 trucks exiting the site after they are unloaded. A summary of the trucking needs associated with each construction component is summarized in Table 1.

TABLE 1
Estimated Average Daily Construction Inbound Heavy Truck Trips by Activity

Timeframe	Soil Import Trucks	Trails Construction Trucks	Roadway Embankment Trucks	Roadway & Parking Lot Trucks	Average Daily Trucks
Month 1	32	0	0	0	32
Month 2-5	32	8	0	0	40
Month 6-7	0	8	32	0	40
Month 8-9	0	0	0	10	10
Month 10-11	0	0	0	5	5

Haul Route Plan

The haul route plan for the Manresa Wilds North Forest project describes the anticipated roadway corridors most suitable for construction-related heavy vehicle activity based on the material quantities, sourcing assumptions, and operational characteristics used to develop the construction truck estimates. The intent of this plan is to identify routing practices that minimize truck exposure on residential streets, maintain predictable travel patterns, and support safe and efficient truck access to the project site. The plan reflects standard traffic engineering considerations and does not prescribe contractor means or methods. Furthermore, these routes were discussed with City staff to facilitate the prioritization of the preferred routing that meets the primary objectives while minimizing impacts on other City projects in the area. Final routing decisions will be determined by the contractor in accordance with applicable City requirements and permit conditions.

Objectives of the Haul Route Plan

The haul route plan is structured to achieve the following objectives:

- Direct heavy vehicle activity to roadway corridors with the capacity and geometry appropriate for truck travel.
- Minimize heavy truck use of local residential streets and reduce exposure to sensitive land uses.
- Promote predictable and consistent routing to support the hourly truck-arrival assumptions used in the construction traffic analysis.
- Maintain safe approach and departure paths for all heavy vehicles accessing the site.
- Reduce impacts to active City of Norwalk construction projects to the extent feasible in coordination with the City.

Material Origins and Haul Distance Context

The construction assumptions reflect that imported soil and embankment materials may be sourced from a range of supplier locations, including both local facilities and more regional soil processing operations capable of meeting the project's material specifications. Potential sources include commercial soil processing yards, contractor stockpile locations, aggregate/material suppliers, and reclamation or fill operations located throughout Norwalk and the surrounding region, including sites accessible via the I-95 corridor and other primary freight routes. Final material sourcing will be determined by the contractor based on availability, quality requirements, and project logistics. The truck volume estimates apply an operational delivery pacing assumption (maximum inbound arrival rate during major import periods) intended to reflect controlled site receiving operations under typical urban conditions, independent of the specific supplier location ultimately selected.

Designated Haul Routes

To guide heavy trucks to and from the site while maintaining efficient regional travel patterns, the following corridors form the backbone of the haul route network and are based on prior haul route assumptions made by the Walk Bridge project and input from the City:

Primary Inbound and Outbound Corridors

- **Regional Haul Routes:** Interstate 95 (I-95) / Route 7: Used for long-distance portions of the haul from stockpile or material source locations to Norwalk
- **Primary Haul Route:** West Avenue / Dr. Martin Luther King Jr. Drive / Wilson Avenue / Meadow Street: Serves as the logical connection from points east and west of the project area
- **Secondary Haul Route:** West Avenue / Dr. Martin Luther King Jr. Drive / Monroe Street / South Main Street: Serves as the alternate routing to avoid conflicts with anticipated City projects on Meadow Street
- **Woodward Avenue:** Construction traffic will traverse the segment of Woodward Avenue south of Burritt Avenue and/or Meadow Street on the final approach to the project site

Routing Principles

To promote consistent and predictable haul patterns during construction, the following routing principles are recommended for consideration during contractor planning and City coordination:

- Use consistent inbound and outbound routes to limit routing variability.
- Avoid residential local streets for through truck travel where a reasonable alternative exists.
- Avoid U-turns and multi-point turns on constrained roadways; use intersections capable of safely accommodating truck turning movements.
- Provide truck operators with clear route guidance prior to construction, including recommended corridors, turn restrictions, and site access locations.

These principles are intended to support the traffic analysis and facilitate safe truck operations.

Operational Controls

To support safe construction-period operations and limit traffic impacts, the following traffic-related controls were assumed in the construction traffic assessment:

- Heavy truck movements occur during daytime hours consistent with a normal construction workday.
- Construction hours will comply with Norwalk regulations. Regulation state the hours between 7:00 a.m. and 8:00 p.m., Monday through Friday, the hours between 8:00 a.m. and 8:00 p.m. on Saturday and the hours 9:00 a.m. through 8:00 p.m. on Sundays and federal and state holidays.

- Construction-phase coordination with the City of Norwalk is expected as activity levels change across the estimated eleven-month construction period.

These controls reflect the operational parameters used in the traffic analysis and may be refined by the contractor as part of detailed construction planning.

Consistency with Construction Traffic Estimates

The haul route plan is consistent with the assumptions used to estimate construction truck activity. The identified corridors provide appropriate capacity and geometric characteristics to accommodate the projected peak volumes, including the assumed maximum of four inbound trucks per hour during soil and embankment import periods. Consolidating heavy vehicle travel onto suitable arterials and collectors supports predictable truck arrival patterns and limits potential off-site impacts. This routing framework provides a reasonable basis for understanding expected truck operations and evaluating potential traffic effects during construction.

CTDOT Walk Bridge Coordination

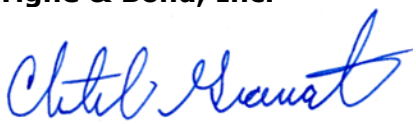
The CTDOT Walk Bridge is currently utilizing Manresa Island for material handling and staging. In support of the Walk Bridge project, CTDOT prepared a traffic study to assess the issues and impacts associated with the construction of the project. The "Manresa Island Traffic Study", dated October 2020, documents truck traffic and construction vehicle traffic that are anticipated to be generated by the project traveling between Manresa Island and the Walk Bridge project site on a daily basis. Based on information in the report, the Walk Bridge project is estimated to generate 3 truck trips and 20 vehicle trips per day. This small number of additional construction trips associated with the Walk Bridge project can be accommodated within the North Forest construction traffic and is considered negligible. Additionally, Manresa Island Corporation staff continue to conduct monthly coordination meetings with CTDOT staff to coordinate overall construction activity on the site.

Conclusion

Peak trucking activity estimated by Tighe & Bond results in 40 entering trucks on a weekday daily basis. It is the professional opinion of Tighe & Bond that the proposed Phase 1 – North Forest will generate minimal construction worker traffic and prescribed construction trucking/hauling efforts following the defined routes are not expected to result in any significant adverse impacts on local traffic operations during active construction.

Sincerely,

Tighe & Bond, Inc.



Christopher O. Granatini, PE
Vice President

J:\M\M5177 Manresa Island Corporation\0002 - Traffic-Parking Study_Submissions\2026-01-21 Construction Traffic (City Submission)\2026-01-21 Phase 1 - North Forest Construction Traffic Memo.docx

CITY OF NORWALK
Transportation Mobility & Parking
P: 203-854-7335
Norwalk City Hall
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

Sent via email to: esuchy@carmodylaw.com

To: Elizabeth A.B. Suchy, Esq. – Carmody Law

From: Benjamin Yeung, P.E. – Senior Traffic Engineer, TMP
James Travers – Director, TMP

Date: January 27, 2026

Subject: Manresa Wilds, North Forest – Proposed Park

The City of Norwalk Transportation, Mobility, and Parking (TMP) Department has completed a preliminary review of the following documents related to the proposed park at Longshore Avenue, called the "North Forest":

- Application for Coastal Site Plan Review, prepared by Carmody Torrance Sandak & Hennessey LLP (Carmody Law)
- Special Permit Application, prepared by Carmody Torrance Sandak & Hennessey LLP (Carmody Law)
- Site Plans titled "Manresa Island North Forest Access Drive and Parking", prepared by Tighe & Bond, Scape Landscape Architecture DPC, eDesign Dynamics, and AKRF, dated December 15, 2025; and
- "Area of Disturbance" Exhibits, prepared by Tighe & Bond, dated December 8, 2025;
- "Cut/Fill Analysis" Exhibits, prepared by Tighe & Bond, dated November 26, 2025;
- "Fire Engine Turning Movement" Exhibit, prepared by Tighe & Bond, dated December 9, 2025;
- "Impervious Coverage Map" Exhibits, prepared by Tighe & Bond, dated December 5, 2025;
- "Proposed Parking Lot Planting Figure", prepared by Tighe & Bond, dated December 12, 2025;
- "Traffic Statement, Manresa Wilds – North Forest (Phase 1)", prepared by Tighe & Bond, dated December 12, 2025; and,
- "Construction Traffic and Hauling Memorandum, Manresa Wilds – North Forest (Phase 1)", prepared by Tighe & Bond, dated January 21, 2026.

Based on review of the aforementioned documents, TMP has the following comments:

GENERAL:

1. The proposed park would greatly benefit from a pedestrian sidewalk connection on Longshore Avenue to the existing sidewalk on Woodward Avenue. Being able to safely walk to the park would help the park maximize its potential as a public recreational amenity and could reduce vehicle traffic and parking demand at the park.

2. South of the split between the proposed access road and the parking lot, a new two-way, 26-foot wide access road parallel to the parking lot for the North Forest is not essential to the operation of the North Forest alone (see Figure 1 below). But it is TMP's understanding that this continuation of the access road is necessary since it will be continued southward in future phases of construction to serve the rest of the Manresa Wilds site.

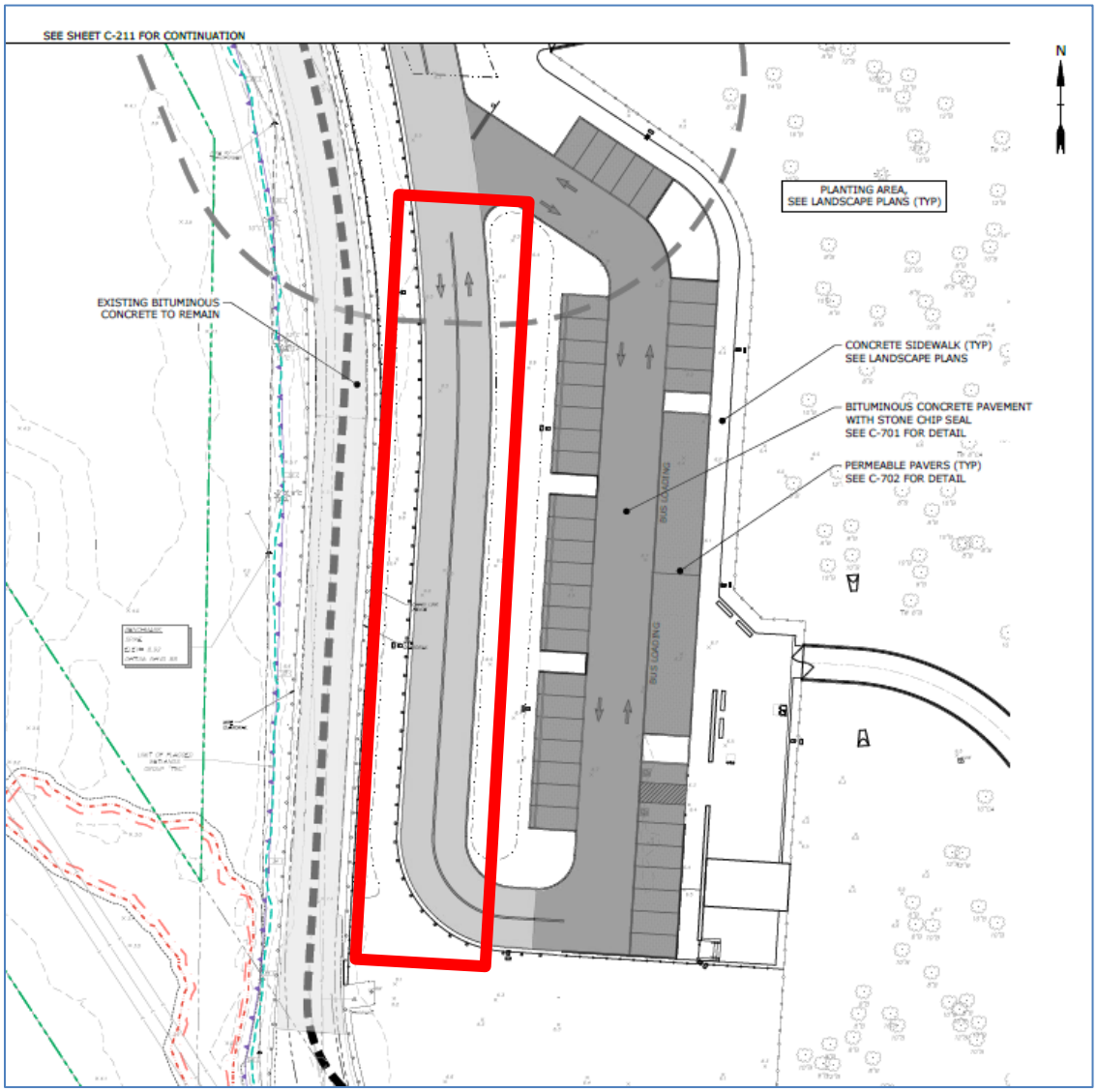


Figure 1: Proposed Access Road, parallel to 2-way parking lot drive aisle (Sheet C-212)

3. TMP notes that both traffic memoranda only include Phase 1 traffic (for either construction period or final condition), and that Phase 1 traffic projections will need to be added onto future traffic projections for future phases of development at Manresa Island.

SITE PLAN:

4. TMP recommends that an easily visible wayfinding sign with the place name (e.g. "North Forest" and/or "Manresa Wilds") be installed at the driveway entrance off of Longshore Avenue. TMP has received concerns from residents of the nearby Harborview neighborhood, immediately east of the project site on Longshore Avenue, that visitors or delivery drivers to Manresa Island may miss the turn and mistakenly continue into the Harborview neighborhood, which has narrow roads difficult for large vehicles to maneuver in.

5. TMP recommends that the applicant coordinate with the Norwalk Transit District on installation and maintenance of bus rider amenities at the proposed bus turnaround area near the driveway entrance just off of Longshore Avenue. These may include benches for waiting and/or a shelter. Increasing rider comfort can encourage higher usage of public transit to/from Manresa Island, which is more sustainable and supports management of traffic demand.

6. TMP recommends that "BUS ONLY" pavement marking and/or signage be installed at the spur/bus turnaround (see Figure 2). The concern is that with two potential lanes for traffic to exit the site turning left onto Longshore Avenue, there is an opportunity for passenger car drivers to try to cut past others using the bus spur as a bypass. This may become more of a potential issue later when Manresa Island is fully programmed and operational, but it is not too early to establish a regulation for the spur so that drivers of personal vehicles do not get used to using it.

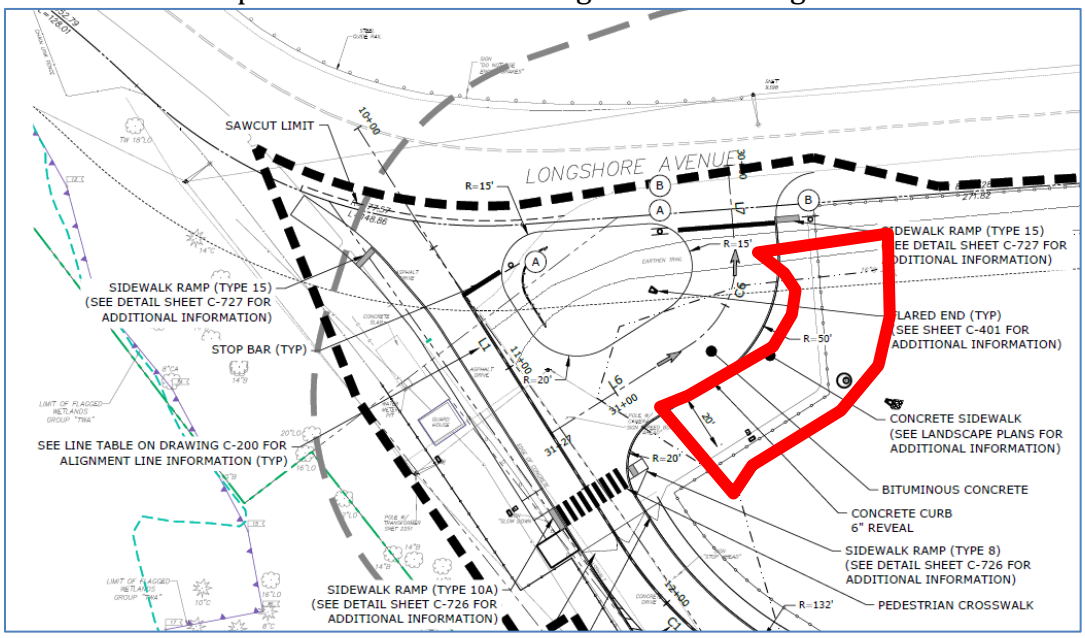


Figure 2: Spur/Bus Turnaround (Sheet C-201)

7. TMP strongly recommends that bike parking (e.g. racks) be installed near the parking lot or start of the North Forest trails. As a recreational facility with a shared-use path, it is reasonable to expect that many users will want to access the park by bicycle and then use the walking trails. Providing bike parking can also help reduce vehicular traffic demand to and from the North Forest.

SUMMARY:

Please note this review is based on all documents submitted to date. TMP reserves the right to comment on forthcoming revised/updated site plans or traffic studies.

Sincerely,

Benjamin Yeung

Benjamin Yeung, P.E., Senior Traffic Engineer – TMP

James Travers, Director – TMP

Cc: DPW Permits
Jay Habansky - Chief of Economic and Community Development
Garrett Bolella, P.E., PTOE, RSP1, Assistant Director – TMP
Nathan Fankhanel, E.I.T., Junior Engineer – TMP
Vanessa Valadares, P.E., Chief of Department of Public Works
Wilber Giron, P.E., Permit Engineer – Department of Public Works
Christine Cardascia, P.E., Assistant Engineer – Department of Public Works
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Land Use Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement
Ralph Kolb, P.E., Sr. Environmental Engineer – WPCA
Mario Pizighelli, P.E., Stormwater Systems Manager – WPCA
Christopher Cavaliere, Junior Engineer – WPCA
Alexis Cherichetti, Senior Environmental Officer – Conservation Office
William Mooney, Assistant Director of Health – Health Department
Troy Donohue, Deputy Fire Marshal – Fire Department
Kirk McDonald, Assistant Fire Marshal – Fire Department
Matt Pentz, CEO – Norwalk Transit District

CARMODY
TORRANCE | SANDAK | HENNESSEY LLP

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Laraine Caplan
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Beulah Sample, Trustee
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Norwalk, CT 06854



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esuchy@carmodylaw.com

1055 Washington Boulevard
Stamford, CT 06901

December 19, 2025

Re: ***Manresa Osprey LLC – Longshore Avenue, Norwalk, CT***
Applications for Special Permit and Coastal Site Plan Review
"North Forest"

Dear Neighboring Property Owner:

This firm represents Manresa Osprey LLC, owner of real property with the improvements thereon located on Longshore Avenue in Norwalk, CT (District 5, Block 86, Lots 1 and 2) (the "Property"). On December 18, 2025, our client filed Applications for Special Permit and Coastal Site Plan Review with the City of Norwalk Planning & Zoning Commission (the "Commission") for the creation of the "North Forest" to provide walking trails, observation areas, robust landscaping improvements, parking, restrooms, and other site improvements.

You are being notified of the submission of these applications, in accordance with the City of Norwalk Zoning Regulations, because your property may be located within 100' of the Property. The applications and supporting documentation are available for review in the City of Norwalk Department of Planning & Zoning ("P&Z") offices located at 125 East Avenue, Norwalk, Connecticut. Additionally, the applications and supporting documentation will soon be available to view on the P&Z website (www.norwalkct.gov).

Should you have any questions, please do not hesitate to contact me or Steven Kleppin (P&Z director; 203-854-7956; skleppin@norwalkct.gov).

Very truly yours,

Elizabeth A.B. Suchy

EABS
SENT VIA CERTIFICATE OF MAILING

Neighbor Correspondences Through 1.29.26

Hello Alexis
First the easy one: Is the deer/security fence meant to keep the deer in or out? If out, will the herd be dosed with contraceptives or something before their being shooed out and losing access to what must be their current prime home turf?
Then on to hours of operation and lighting. It seems likely that the gate will be closed to prevent overnight visits. This would make the extraordinary & excessive lighting unneeded. Mounted at that 24 foot height it will look like a stadium across the marsh. Prefer none at all in keeping with the nature area concept. But if they must be there then extreme hoods to prevent side-lighting.
Thank you
Marc Hawley
10 Dock Rd

Hi Steve,

Please include this email and attachments in public comments regarding the above.

Proposal for a raised parking area:

- Why is the proposed parking area is raised up 8ft from the adjacent existing grade and access road?

- A raised parking area would mean greater exposure to the adjacent residential area than a parking area closer to natural grade.
- Parking areas and portable toilets are not required to be raised above BFE.
- Nearby coastal recreation areas do not have raised parking or restrooms.

Lighting proposed for the access road and parking area:

- Why does a trail system used during daylight hours require lighting?
- The proposed site lighting is for (16) 150 w single pole mounted lights at 24 ft above grade.
- The average footcandle illumination of 3 fc is similar to a big box store parking lot.
- The proposed lighting would expose the adjacent community and habitat to harmful amounts of light pollution.
- The proposed lighting would be at 35 ft above the existing grade (8ft of fill for raised parking area plus 24ft fixture height)

The Manresa Wilds 'Good Neighbor' mission statement:

"dark sky lighting to prevent visual disturbance to both wildlife and surrounding communities"

Dense buffer for planting to screen the access drive and the parking area:

Neighbor Correspondences Through 1.29.26

- The documents show site sections through all of the trail areas <u>but not the proposed parking area.</u>
- It is not clear if any dense planting to screen the proposed parking access road from the adjacent residential area.

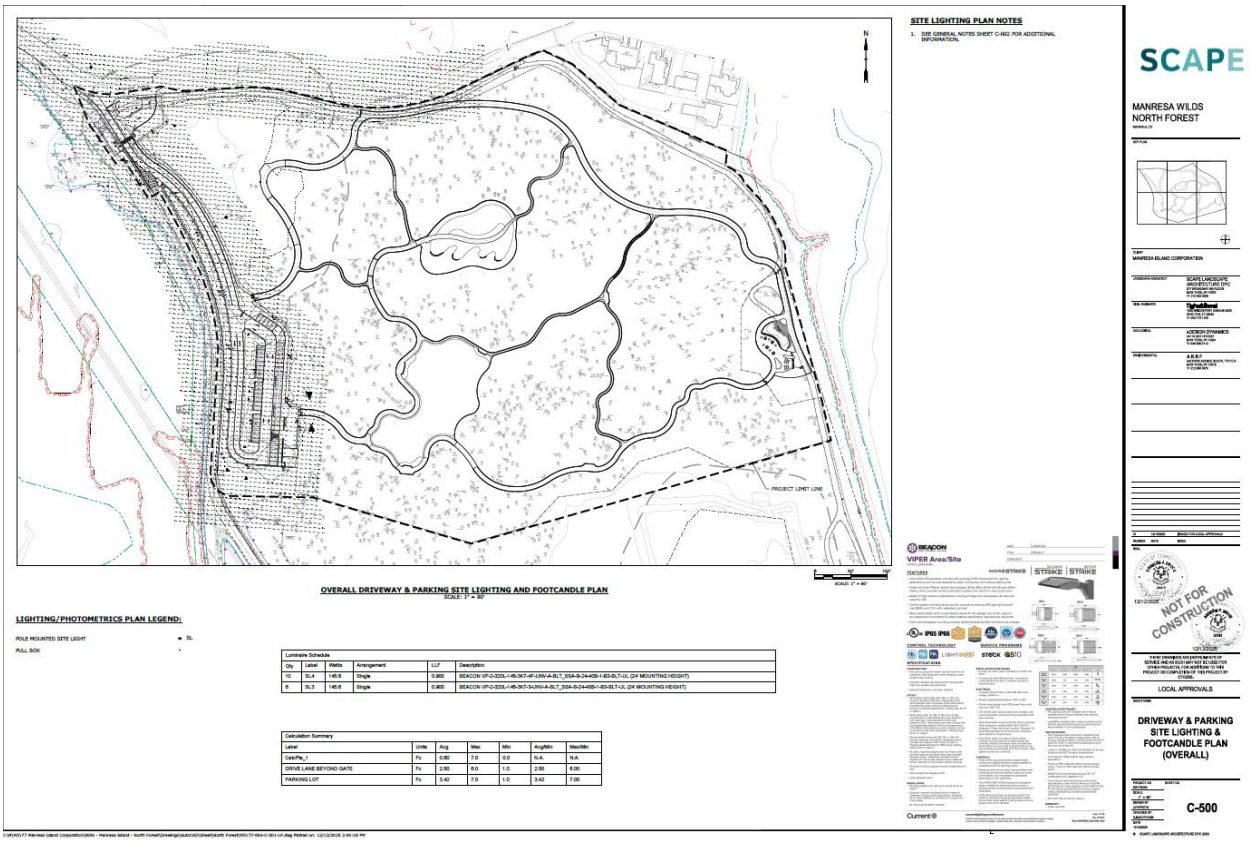
The Manresa Wilds 'Good Neighbor' mission statement:

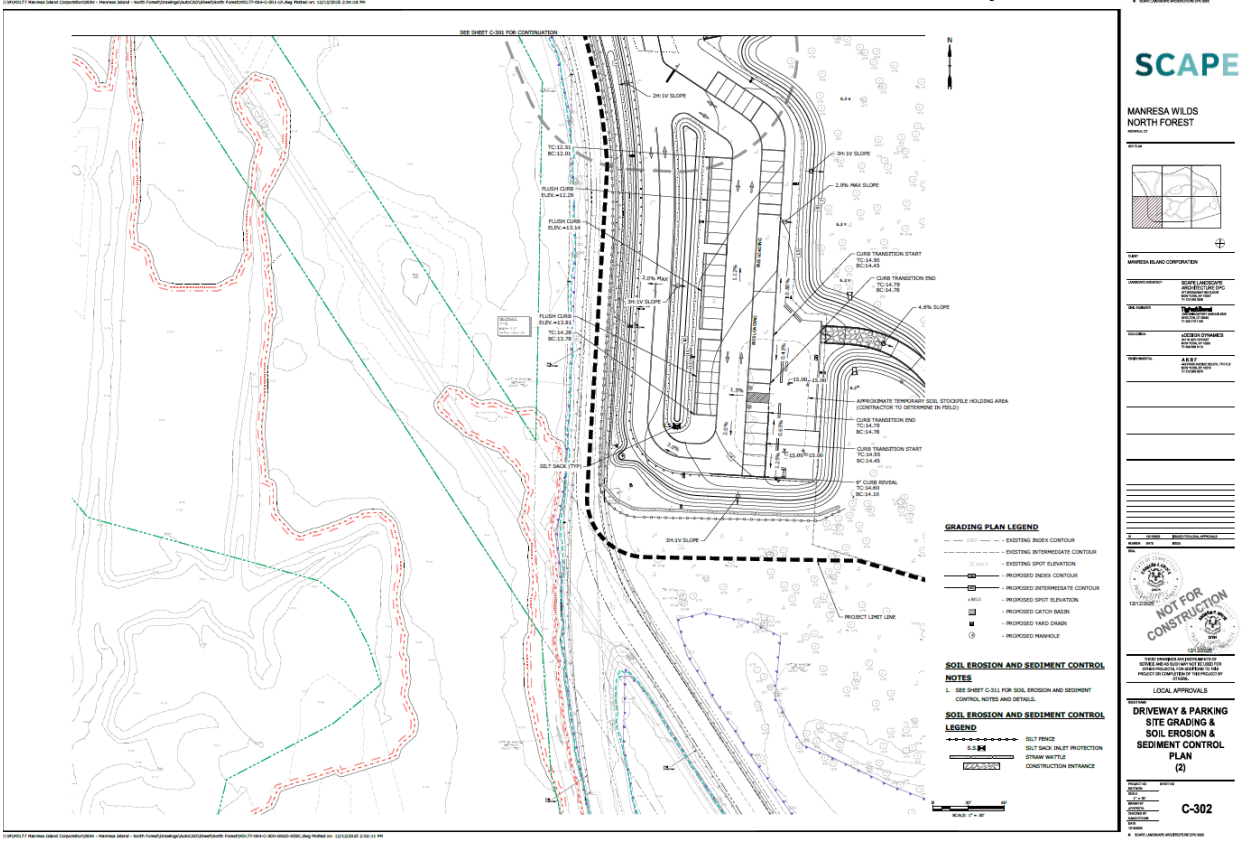
"natural areas to the south and west will be conserved with a focus on light, passive programming, and recreational trails. Activities will be screened by dense buffers of planting and the main entry road will be pulled deeper into the forest to minimize disturbance from traffic."

Best Regards,
Ben



Neighbor Correspondences Through 1.29.26





125 East Avenue
Norwalk, Connecticut

January 30, 2026

Memorandum

To: Planning & Zoning Commission, Chapin Bryce Chair

From: Steve Kleppin, Planning & Zoning Director

Re: #2025-95 SP/CSPR: Manresa Wilds (North Forest), Manresa Osprey, LLC

The application before you is for the clearing of land and import of fill, related to the proposed walking trails and associated amenities of the broader Manresa Wilds redevelopment. Because of the extent of the clearing and large amount of fill proposed to be imported, a special permit is required. Please note, the Coastal Site Plan Review application has been addressed in a separate memo.

The broader redevelopment proposal, which includes extensive remediation and repurposing of the existing structures will be revealed later this year, likely involving text and map amendments and additional site redevelopment of the southern portion of the site.

Prior to the adoption of the current zoning regulations the City had little oversight and no real mechanism to deal with an application involving significant land development or the import of large quantities of materials, when no principal structures were being constructed. The Commission should be credited with enacting regulations allowing the City oversight over this phase of the project and providing a platform for the neighbors to air their concerns.



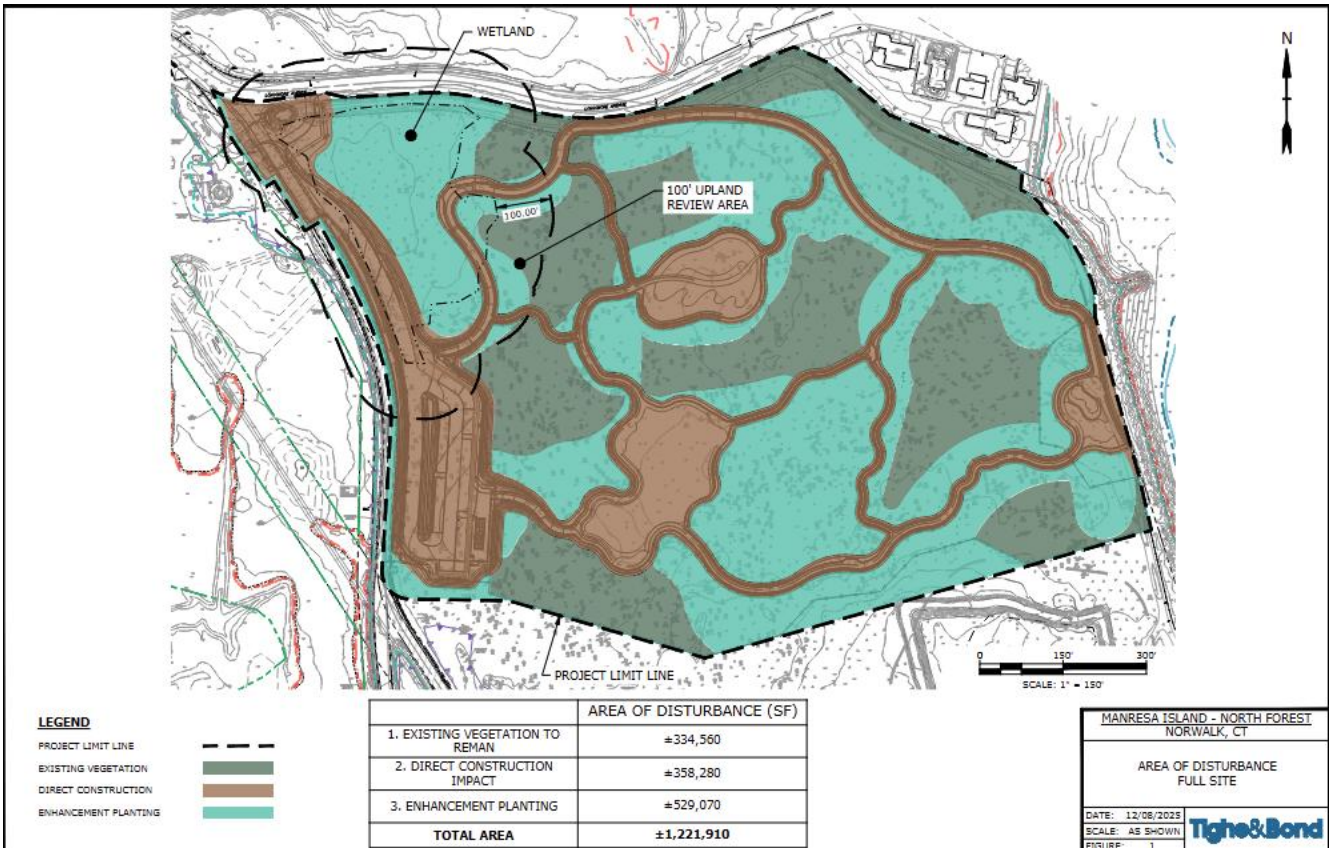
There are 3 main facets to the application that are impactful to the City and neighbors:

1. Site disturbance and site development.
2. Truck traffic related to import of material.
3. Operational impacts related to use of the North Forest.

Site Disturbance/Site Development

Perhaps the most impactful phase to the immediate/abutting neighbors is the activity and noise related to the tree clearing and creation of the trail network. The applicant has indicated that they have a tight window for the tree removal, which must be completed prior to April, in order to avoid bat nesting season. Assuming approval at your February 4th meeting, there are 2 intensive months of chainsaw activity and probably chipping.

The applicant will obviously have to comply with the noise ordinance, which sets the hours of operation for weekdays and weekends. Considering the recent weather, will that negatively impact the applicant's indicated timeframe?



Based on the proposed clearing and areas of disturbance, the applicant has maintained a vegetated barrier near the most directly impacts neighbors. However, there is a large area proposed for additional plantings on the northeast corner of the site. The applicant should clearly indicate planting methodology, timing and duration, as well associated impacts the neighbors should expect.

Staff provided initial comments to the applicant, which has mostly been addressed (updates and responses in *italic*):

- Has the Fire Marshal reviewed and approved Figure 5, which shows the turning movements? *The Fire Marshal has provided an approval email.*
- What was the determination that 40 parking spaces was sufficient for the proposed use? Was that based off utilization studies at like facilities or based on anticipated scheduling and capacity limitations of the site? *The proposed North Forest parking lot provides 44 parking spaces plus two additional bus dropoff / parking areas. The Traffic Engineering Statement presents the methodology utilized to establish the expected parking demand for the North Forest project. Please see pages 6-7 in the report which provide both an ITE Trip Generation based methodology and ITE Parking Generation based methodology supporting the proposed parking space supply.*
- Did you consider flexipave or similar material in lieu of asphalt for the trail? *No response to date. That material does not meet engineered control requirements set forth by DEEP.*
- The traffic study indicates street types that are no longer used by the City. While not critical to the proposed application, is important to note for the subsequent application.
- Please confirm that the only restroom facilities proposed are located at the parking area? *No response to date.*

In addition, where is the imported fill proposed to be stored? How will the materials be processed and stored while on-site? While concerns related to material piles may be less at this site, based on its significant size, staff is cognizant of concerns related to dust and noise from materials piles maintenance.

Note: The Harbor Management Commission found the proposal consistent with the Harbor Management Plan. To date no response has been received from DEEP.

<u>Truck Traffic</u>

This issue probably has the most significant impact on the City overall. In speaking with Transportation Mobility and Parking (TMP), they have shared their concerns with the applicant as well.

The plans indicate ~ 29,00 cu yds of fill being imported. However, the second phase of the development also requires additional significant fill. In addition, there is anticipated impactful site activity related to Walk Bridge construction, that is also adding to the truck traffic and volume.

Additional information was requested related to:

1. Total amount of fill being brought in for both phases
2. Fill proposed for stockpiling for second phase
3. Anticipated number of trucks entering per day
4. Number of days of anticipated truck traffic
5. Construction sequencing & site layout

6. Where materials will be stockpiled and how piles managed
7. Impacts on the causeway
8. DOT impacts on top of your activities
9. Can materials be barged?

The applicant has provided a supplemental memorandum related to trucking and hauling of materials, which addresses many of the points raised above. However, these items should be addressed by the applicant as part of the public hearing for the community's benefit.

Operational Impacts

Once the site work is complete and the site open to the public for passive recreation, there are potential impacts to the neighbors, but these can largely be addressed by regular communication, adhering to the noise ordinance and providing a clear template of potential activities that might happen on-site.

The applicant has indicated that they will be utilizing a reservation system for site access and will employ 24-7 on-site security, which will control crowds and vehicular traffic. However, there are other potential activities that might occur at differing times that should at least be understood if contemplated so there are no surprises post-opening. The intent is not to have the applicant notify the City of every type of visitation, simply to be as forthright as possible, understanding the scale and scope of activities is impossible to fully realize at this point and will be modified as there are successes and failures as well as programmatic changes that will arise based on demand and interest.

There were some emails received from concerned neighbors. Those have been forwarded to the applicant and uploaded to the application page for viewing.

This phase of the project will provide some insights into what is contemplated in the subsequent phases and also a preview of the concerns that the neighbors have.

The attached resolution is offered for your consideration.

END

DRAFT RESOLUTION TO APPROVE COASTAL SITE PLAN APPLICATION AND SPECIAL PERMIT APPLICATION

WHEREAS, the applicant presented the applications to the Commission at a public hearing on February 4, 2026;

WHEREAS, the Commission closed the public hearing on February 4, 2026;

WHEREAS, the Commission deliberated on the application on February 4, 2026;

WHEREAS, in consideration of the above, the Commission made the following findings:

- *WHEREAS*, the Commission is concerned with the impacts of the immediate neighbors from the site activities related to the tree clear and site improvements:
- *WHEREAS*, the Commission is also concerned with the impacts from significant truck traffic through South Norwalk as well as within the neighborhood:
- *WHEREAS*, the Commission acknowledges the need for additional open space and public access to the water in the City;
- *WHEREAS*, the Commission recognizes redevelopment of the mothballed powerplant will require remediation of portions of the site, while other portions of the site will be rendered publicly accessible through the placement of fill;
- *WHEREAS*, the Commission finds that there are no coastal impacts related to this application;
- *WHEREAS*, the Commission is confident that the applicant will take steps to ensure that impacts to the neighbors and the broader South Norwalk community are minimized;
- Now, **THEREFORE BE IT RESOLVED** by the Norwalk Planning & Zoning Commission, that the regulation amendment, submitted as part of application **#2025-95 SP/CSPR: Manresa Wilds (North Forest), Manresa Osprey, LLC** be **APPROVED,** subject to the following conditions:

    1. That a certificate of special permit and mylar map of the approved Site Plan (as revised by any conditions of approval) be filed on the Norwalk Land Records prior to the issuance of a zoning permit; and

    2. That all required soil sedimentation and erosion controls are in place prior to the start of any construction and maintained until the project is completed and stabilized; and

    3. That a surety, in an amount to be determined by Staff, be submitted to guarantee installation of the required soil sedimentation and erosion controls; and

    4. The applicant shall appoint a community liaison, including providing contact information, who shall address questions and concerns raised by the neighbors as part of site development and post-development operations; and

5. Significant deviations from the anticipated truck or fill volumes indicated in the Traffic and Hauling Memorandum, prepared by Tighe and Bond, dated 1.21.26, shall be reviewed with City staff; and
6. The site shall be improved consistent with the following plans:
    a. Areas if Disturbance Full Site, prepared by Tighe & Bond, dated 12.8.25.
    b. North Forest Proposed parking Lot Planting Figure, prepared by Tighe & Bond dated, 12.12.25.
    c. Manresa Island North Forest Access Drive and Parks, Local Approval, prepared by Tighe & Bond, dated 12.5.25.
7. That any changes to the plans be reviewed by Staff prior to implementation; and
8. The applicant shall work with City Staff on overall site signage plan for this phase and future phases; and
9. Per the memorandum prepared by the TMP Department, dated 1.27.26, the applicant shall:
    i. Consider adding a segregated pedestrian walkway on either the east or west side of the access road, connecting Longshore Avenue to the trail network.
    ii. Explore the installation of bus ridership amenities, in coordination with the Norwalk Transit District, per recommendation number 5.
    iii. Analyze and review with TMP the striping of "bus only" pavement marking at the spur/bus turn around per recommendation number 6.
    iv. Install bike racks consistent with recommendation number 7.
10. That the applicant shall comply with the conditions indicated by the Department of Public Works in their letter dated January 30, 2026.
11. Structured activities involving more than 100 people shall obtain a Special Events permit from the City; and
12. All proposed structures shall obtain the necessary permits; and
13. All soil piles shall be suitably covered with tarps or vegetated to prevent dust; and
14. All lighting shall be dark-sky compliant; and
15. The applicant shall comply with the City's noise ordinance at all times; and
16. 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 the effective date of this action be February 13, 2026.

CITY OF NORWALK
PLANNING & ZONING COMMISSION MINUTES
January 21, 2026

PRESENT: Chapin Bryce, Chair; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Harvey Jones; Ana Tabachneck

STAFF: Steve Kleppin; Bryan Baker

OTHERS: Atty Liz Suchy; Diane Cece; Bret Holzwarth; Tristan Toomey; Sabrina Godeski; Martin Cohen; Michael Losaso; Alexander Gurevich;

I. CALL TO ORDER

Mr. Bryce called the meeting to order at 6:00 p.m. It should be noted that this meeting was held on Zoom.com with participants calling in, separately.

II. ROLL CALL & SEATING OF ALTERNATES

Mr. Baker called the roll.

Mr. Bryce seated both Ms. Lenkowsky and Ms. Tabachneck. Mr. Bryce noted that one of the applications would not be presented at this meeting since they asked for a postponement to the February 18, 2026 meeting.

III. PUBLIC HEARINGS

A. #2025-89 SP – RMS 394 West Ave LLC – 370 West Avenue (District 1, Block 8, Lot 12) – Special permit for the installation of backlit cornice signs - Public hearing, report & recommended action

Mr. Bryce opened the public hearing and explained the procedure.

Atty Liz Suchy began the presentation by noting the application was for two cornice signs on the south side of the building. The public hearing had been noticed and the certified, return receipt cards had been returned to the Planning & Zoning office, as well as two signs being placed in front of the property. She described the zoning of the property. She said that the commission had approved their application in November for the text amendment to allow corner signs in this zone. She showed them a rendering of the cornice signs. She said that they met the regulations that had been adopted in November.

There was a discussion about which side of the building the signs would be on so that they could determine what it would be like from the other buildings around it. The signs were facing busy streets.

Mr. Bryce opened the hearing for the public to comment and explained the rules for commenting.

Diane Cece had concerns about these signs being light pollution in the community. She addressed the justification for the signs being for wayfinding. She asked if any of the other buildings in the area have these types of cornice signs. She had concerns that this application would be setting a precedent as well as the lights being kept on overnight. She said she was opposed to this application.

There were no other members of the public that spoke on this application.

Atty Suchy said that the cornice signs had become legally non-conforming under the revised regulations. The new text is similar to the language in the prior regulations. She addressed comments about the necessity for wayfinding. She said it met all of the zoning requirements.

**** MS. LANGALIS MOVED: THEREFORE, BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2025-89 SP – RMS 394 West Ave LLC – 370 West Avenue (District 1, Block 8, Lot 12) – Special permit for the installation of backlit cornice signs be **APPROVED** subject to the following:

1. That the site shall be developed in accordance with the following plans:

a. Per the signage exhibits provided as part of the special permit application package; 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 prior to the issuance of a Certificate of Zoning Compliance, the applicant shall provide documentation to Staff demonstrating compliance with the maximum illumination measurement permitted (200 nits); 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 January 30, 2026.

Mr. Jones seconded.
Chapin Bryce; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Harvey Jones; Ana Tabachneck approved.
No one opposed.
No one abstained.

IV. REVIEW AND ACTION ON APPLICATIONS

A. #2025-93 SPR – TCT Enterprises – 542 Westport Avenue (District 5, Block 8, Lot 6) – Change of use within portion of existing building from Retail to Commercial Recreation Establishment - Report & recommended action

Bret Holzwarth, the representative for the applicant, began the presentation by orienting the commissioners as to the location of the property on an aerial map. He then gave a brief description of the current property. There is a large vacancy where the Bed, Bath and Beyond had been in the building. They would like to open an indoor playspace for children which would also host birthday parties. He described the interior modifications which included adding some windows. He then discussed the parking analysis and count. He said that there was a parking surplus. He addressed staff's recommendation for blocking two of the parking spots.

Tristan Toomey continued the presentation by describing the indoor playspace which would be open to residents of Norwalk and surrounding towns. He said there would be STEM areas, calming areas, rooms for basketball, and rooms for birthdays.

There was a discussion about the age range for the children who would be visiting. There was also a discussion about the types of membership and whether they would be able to pay with EBT.

Mr. Holzwarth said that they would have to return to the commission with a signage application.

**** MS. TABACHNECK MOVED: THEREFORE, BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2025-93 SPR – TCT Enterprises – 542 Westport Avenue (District 5, Block 8, Lot 6) – Change of use within portion of existing building from Retail to Commercial Recreation Establishment be **APPROVED** subject to the following:

1. That the site shall be developed in accordance with the following plans:

a. Per architectural drawings entitled “Proposed Renovations to The Chalk Space for Children, 542 Westport Avenue, Norwalk, CT 06851,” prepared by Achilles Architects, dated 12/1/2025; 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 any and all conditions required by Norwalk Health Department are applicable to this approval; and

4. That any and all conditions required by Norwalk WPCA are applicable to this approval; and

5. That any and all conditions required by Norwalk DPW are applicable to this approval; and

6. 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 January 30, 2026.

Ms. Langalis seconded.

There was a discussion about changing the language about parking from a Whereas clause to a condition. There was also a discussion about whether the space would become retail if this business did not succeed.

Chapin Bryce; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Harvey Jones; Ana Tabachneck approved.
No one opposed.
No one abstained.

B. #2025-91 POCD – Planning & Zoning Commission – Amendment to the 2019-2029 Plan of Conservation and Development (POCD) to adopt the Art and

Cultural District Plan, dated 2025, as an addendum to the POCD - Preliminary review and referral

Sabrina Godeski, Director of Business Development & Tourism and staff to the Norwalk Arts Commission, introduced the project team who began the presentation.

Martin Cohen, Arts & Culture Plan, continued the presentation with a slide show. He began with the planning process and how it was connected to the POCD.

David Plettner, said that they had worked on the plan for a year. He said that they had held in person discussion groups and interviews, as well as open meetings and forums. They had done a resident survey for a total of about 500 residents who had been a part of the process. He then described the findings which included their top priorities of connectivity, infrastructure, artist support, historic preservation and management capacity. He noted that cultural districts are not successful without funding and infrastructure. He also discussed the tensions of the project which included the geographic scope of the area, plus overlay zones. There were also tensions from development vs. displacement, as well as tourism vs. resident focus.

Mr. Cohen noted that they had state certification for a formal arts district. He then described the POCD vision for Norwalk which included it as the center for art, culture and entertainment for the region. He addressed the core recommendations of the Arts & Cultural Plan which included those for programming and activation, artist support, marketing and branding, economic development, and connectivity and unification. He then discussed the references to Chapter 4 and 6 in the POCD. He also discussed the proposed POCD amendment. The last thing he discussed was the next steps.

Mr. Kleppin said that it would be referred to the Common Council and that there would be a public hearing.

Mr. Cohen said that they saw the opportunity that the arts and culture would bring to Norwalk. Mr. Plettner said that it was good to see that plans from the POCD were being implemented.

**** MR. SCHULMAN MOVED: THEREFORE, BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2025-91 POCD – Planning & Zoning Commission – Amendment to the 2019-2029 Plan of Conservation and Development (POCD) to adopt the Art and Cultural District Plan, dated 2025, as an addendum to the POCD will be referred to the Common Council as per 8-23.

Mr. Jones seconded.

Chapin Bryce; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Harvey Jones; Ana Tabachneck approved.
No one opposed.
No one abstained.

C. #2025-90 SPR – 200 Connecticut Ave, LLC – 200 Connecticut Avenue (District – 5, Block – 64, Lot 42) – Proposed interior renovations to convert 3 office floors to thirty-five residential units - Report & recommended action

Michael Losaso began the presentation by introducing the project team. He continued with a description of the zoning for the property as well as orienting the commissioners as to the location of the property on an aerial map. He also showed them the floor plans. There were no plans to change the exterior of the building. He explained that there were 1 or 2 bedroom units and affordable housing units. He discussed the number of units. There would be 3 two-bedroom units on the penthouse level. He then discussed the number of parking spaces and summarized the traffic study. There would not be a negative impact and believed that it reduced the amount of vehicles coming and going from the site. He then discussed the comments that they had received from other departments.

There was a discussion about the residential section having their own elevators. Alexander Gurevich said that one set of the elevators would be for residents. The lobby would be shared.

Mr. Kleppin asked about the occupancy for the remainder of the building. Mr. Losaso said that there would be retail. Mr. Gurevich said that the first floor only had a lobby and a small cafe. There is no retail in the building.

There was a discussion about the other businesses in the building, including law firms. They said that the conversion to residential should take about 12-18 months. There was also a discussion about a concierge service which would be 24 hours. There would also be a gym open to tenants and residents.

**** MS. LENKOWSKY MOVED: THEREFORE BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2025-90 SPR – 200 Connecticut Ave, LLC – 200 Connecticut Avenue (District – 5, Block – 64, Lot 42) – Proposed interior renovations to convert 3 office floors to thirty-five residential units be **APPROVED** subject to the following conditions:

1. That the site shall be developed in accordance with the following plans submitted as part of this application:

a. Per architectural plans entitled “200 Connecticut Avenue” prepared by Antinozzi Associates Architecture and Interiors, dated 11/25/2025 (three sheets); and

2. That all department sign-offs are obtained prior to issuance of any Zoning Permit; and

3. That any changes to the approved plans shall be submitted to the Commission’s Staff for review and approval prior to implementation. If any proposed changes are determined to be substantive, Staff shall refer the changes to the Commission for their review and approval prior to implementation; and

4. That a final Workforce Housing Plan showing a total of 4 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

5. That any and all existing conditions of approval remain in place; and

BE IT FURTHER RESOLVED that this application complies with all applicable sections of the Norwalk Building Zone Regulations; and

BE IT FURTHER RESOLVED that the effective date of this action shall be January 30th, 2026.

Ms. Langalis seconded.

At this point, they reviewed the resolution. There was a discussion about condition #4.

Chapin Bryce; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Harvey Jones; Ana Tabachneck approved.
No one opposed.
No one abstained.

D. #2025-79 SPR – Lofts M7 LLC – 101-201 Merritt 7 – Conversion of Office Buildings to Residential - Report & recommended action

This item was postponed until February 18, 2026.

V. DISCUSSION

A. #2026-02 R - Planning & Zoning Commission - Zoning regulation text amendment to Article 4 and Article 9 regarding Accessory Dwelling Units

Mr. Baker began the presentation by noting that the staff had made additional edits to the proposed Accessory Dwelling Unit (ADU) regulations based on the feedback from the commissioners. The proposed changes were separated into three different categories, the first being general requirements for all ADUs, the second being height, bulk and location standards for attached and detached ADUs and the third being permitting procedures. Under the permitting procedures, one item would be notification of the permitting for an ADU, both for over-the-counter applications and site plan review. However, neighbors would have to be sent a written notification.

There was a discussion about whether property owners should have to live on the property. Mr. Baker suggested that the commission should either allow it or not. He said that he could reach out to cities that don't require it to see how it is working for them or if there is an increase in corporate ownership of single family residences. There was a discussion about the number of ADUs in Norwalk and whether this could increase additional rental properties. Mr. Baker said that they could check whether they were owner-occupied. There was also a discussion about duplex ownership. There was also a discussion about holding a public hearing for the proposed regulations. Mr. Kleppin suggested that they could advance the application to public hearing and still make changes after they had heard the public comments. Mr. Baker said that Mr. Roina had read the regulation and would have additional comments at the public hearing. There was additional discussion about the notification process to neighbors.

The staff would begin the referral process and set a date for a public hearing.

B. #2026-03 R - Planning & Zoning Commission - Zoning regulation text amendment to Article(s) 4 regarding public realm requirements; Artist Live/Work uses and workforce housing; Band Sign requirements; definitions for Dormer, Earth Processing and Contractor's Materials Storage Yard, Landscape Nursery, Patio, Porch, Stoop, and Wetbar; Landscape Nursery use limitations; encroachments; village district review standards and procedures

Mr. Kleppin began the presentation by discussing proposed regulations which would exempt certain developments from providing public realm space. In lieu of that they would pay a fee which could upgrade or enhance park land or even purchase park lands. He discussed the formula for this payment. This regulation could only be used for certain types of developments. There was a further discussion about developments where the commission still may want the development to have a public realm space but

that it met the criteria for not having it. Mr. Kleppin said he could re-draft the language for their review at the next meeting. There was an additional change made to the language. There was a suggestion that there should be language in the regulation as to how the fees would be used. Mr. Kleppin said that Recreation and Parks would decide about the funds usage, and that it was referenced in the proposed regulation.

Mr. Kleppin discussed the certification in the form of an affidavit to certify that the artist's live-work spaces were still being used as an artist live-work space for those that are work-force housing. He also discussed proposed changes to band signs, the definition for dormer, and landscape nursery use limitations as to where it would be located. There were also changes to the definitions for patios and porches, as well as wet bars. There was a change to the language for village districts.

Mr. Kleppin said that he could work on revising the language further for the public realm spaces. Ms. Langalis said she had a tour of the public realm space at Mill Pond development which worked, and gave other examples of developments where public realm worked and did not work.

VI. ACCEPTANCE OF MINUTES

A. Regular Meeting: January 7, 2026

**** MR. SCHULMAN MOVED to approve the January 7, 2026 minutes, as amended.**

Ms. Langalis seconded.

Chapin Bryce; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Harvey Jones approved.

No one opposed.

Ana Tabachneck abstained.

VII. COMMENTS OF DIRECTOR

Mr. Kleppin said that the scam he had mentioned at the January 7 is ongoing. One developer had received an email and almost paid a large sum of money. They would continue to spread the word about it and the city would send out information on social media. They have reported it to the police. It has happened all over the state. He mentioned how he believed the scammers were getting applicant email addresses.

As part of the citation fine process, a fine had been appealed and they were settling the matter. Corporation Counsel asked that the settlement be approved by the Planning & Zoning Commission. Mr. Kleppin said that they could do a special meeting

before their February 4 meeting at 5:30 pm. He noted that the Manresa application would be on their full agenda that evening.

VIII. COMMENTS OF COMMISSIONERS

Mr. Schulman had comments about the trees taken down on Water Street at Harborside. Mr. Kleppin said that they had worked with DPW to get them to complete this but it had not been done in the fall. They would work with them in the spring to complete it.

Ms. Tabachneck had questions about the MIll Pond public access. Mr. Kleppin explained the next steps in the process. The staff would review the workforce housing regulations and the plan to confirm that the information is there. If not, they could amend the regulations.

Ms. Tabachneck requested that the application process should be the same for workforce housing units as the one for market rate units, including on the building's website. There was also a discussion about additional fees for the workforce housing units.

Ms. Tabachneck asked if there was a way to find out if the rents for market rate units were being increased to make up for the difference in the rents for the workforce housing units. There are developments that are not required to have workforce housing units because they are either smaller or older and are not required to have them. There was a further discussion about the inflation of rents and how to determine this.

Mr. Bryce asked when the referral for the Capital Budget would be on the agenda. Mr. Baker said that he would follow up with the Finance Department.

IX. ADJOURNMENT

Ms. Tabachneck made a Motion to Adjourn.
Ms. Langalis seconded.
Chapin Bryce; Diana Lenkowsky; Louis Schulman; Tammy Langalis; Harvey Jones; Richard Roina; Nick Kantor; Galen Wells; Jacquen Jordan-Byron approved.
No one opposed.
No one abstained.

The meeting was adjourned at 8:19 pm.

Respectfully submitted,

Diana Palmentiero