City of Hartford
Inland Wetland and Watercourses Permit Application

State Project No. 63-721

Hartford Riverwalk North Extension
City of Hartford

March 2022

FUSS & O'NEILL

146 Hartford Road
Manchester, CT 06040

Project No. 20170860.A10

EnerGov App. #:_____

City of Hartford
Department of Development Services
Planning Division

Return Form to the Planning Desk at the
Licenses & Inspections Division Counter
860-757-9239
260 Constitution Plaza
Hartford, Connecticut 06103-1822

For Assistance Contact Planning Division
860-757-9040
250 Constitution Plaza, 4th Floor
Hartford, Connecticut 06103-1822
http://planning.hartford.gov

INLAND WETLANDS AND WATERCOURSES PERMIT APPLICATION

(Please reference all attachments by appropriate identification on application form)
_____ Wetlands Permit
_____ Map Amendment

A. PROPERTY INFORMATION

Property Address: 100 Leibert Road City: Hartford State: CT Zip Code: 06120

Zoning District: Open Space District (OS)

Property Owner: City of Hartford

Property Owner's Address: 550 Main Street City: Hartford State: CT Zip Code: 06103

Phone: (860) 757-9311 Email: _____

B. APPLICANT

Name of Applicant: State of CT Department of Transportation File Date: _____

Address: 2800 Berlin Turnpike City: Newington State CT Zip Code: 06131

Phone: 860-594-2156 Email: marilyn.gould@ct.gov

Is applicant owner, lessee, or prospective tenant? _____

Property Owner's Consent to Apply _____

C. PRIMARY POINT OF CONTACT:

Name: Kristen Solloway

Phone: (860) 646-2469 ext. 5344

Email: KSolloway@fando.com

D. PROJECT INFORMATION:

1. Project Name (may be address) Hartford Riverwalk Extension (State Project No. 63-721)
2. Size in Square Feet 571,670 SF
3. Linear Feet of Watercourse and/or Adjacent to site 12,100 LF
4. Describe Wetlands and/or Watercourses conditions that make Permit necessary. (Attach description)
5. Attach an 8 ½ x 11 inch photocopy of the appropriate portion of the USGS quadrangle map with the bounds of the property outlined or pinpointed with an arrow adequate to locate site on map.

E. PROPOSED ACTION:

1. Activity to be Undertaken:

- ☒ Filling
- ☐ Excavation
- ☐ Land clearing/grubbing (only)
- ☐ Stream stabilization
- ☐ Stream clearance (removal of debris only)
- ☒ Culverting (bridge construction)
- ☐ Underground utilities (no other activity)
- ☐ Roadway construction
- ☐ Drainage improvements, pond dredging/dam construction
- ☒ Other (Explain and attach)

2. How much soil will be removed by type of soil? (NCCS Classifications)? (Attach)
3. How much soil will be added by type? (NCCS Classifications)? (Attach)
4. Provide chemical analysis of fill materials by cubic yard. (Attach) N/A
5. Describe specific activities by soil type by cubic yard. (Attach) See table included on IMP01 & IMP-02
6. Describe all proposed paving and activities by location. (Attach) See plans
7. Describe all proposed buildings both permanent and temporary and give dimensions. (Attach) N/A

F. TIME PERIOD:

1. Is this permit needed for 2, 3, 4 or 5 years? 5 Years
2. Will applicant request renewal of permit? No Yes

G. Provide names and mailing addresses of all property owners within 150 feet of site including those opposite all public rights-of-way for map amendments and all abutting property owners for permit applications.

H. ALTERNATIVES:

1. Explain each alternative site considered for proposed activity and explain why it was rejected. (Attach location map for each site).
2. Explain each alternative considered for changing the wetlands and watercourses and explain why it was rejected. (Attach site plans and maps).

I. Required supplementary materials which must be attached to each copy of the application prior to its official receipt. Please reference each item by its identification on this application form.

1. Site plan showing existing conditions with contours at two (2) foot intervals, in relation to wetlands and watercourses, existing drainage ways, stormwater runoff systems and how they relate to the existing sewer system (including MDC).
2. Site plans for the proposed use or operation and the property which will be affected with two (2) foot contours, which show proposed conditions, wetlands and watercourses boundaries, boundaries of land ownership, proposed alterations and uses of wetlands and watercourses, and other pertinent features of the development drawn by a professional surveyor, engineer or landscape architect licensed and registered by the State of Connecticut or by other such qualified person.
3. Appropriate engineering reports and analyses and additional drawings to fully describe the proposed project and any filling, excavation, drainage or hydraulic modification to wetlands or watercourses.
4. A map of soil types consistent with the categories established by the National Cooperative Soil Survey (NCCS) of the U.S. Soil Conservation Service delineated in the field by a soil scientist. This soil information is to be incorporated into both side plans.
5. Descriptions of the ecological communities and functions of the wetlands and watercourses involved and the effects of the proposed regulated activities on these communities and wetland functions, and descriptions of how the proposed activities will change, diminish, or enhance the ecological communities and functions of the wetlands or watercourses involved in the application, and with each alternative, a description of why each alternative considered was deemed neither feasible nor prudent.
6. Descriptions of the mitigation actions proposed, including, but not limited to plans or actions which prevent destruction or diminution of wetland or watercourse functions, recreational uses and natural habitats; which prevent flooding, degradation of water quality, erosion and sedimentation and obstruction of drainage; or which otherwise safeguard water resources.
7. DEEP Wetlands and Watercourses Activity Form: http://www.ct.gov/deep/lib/deep/water_inland/wetlands/siwwarf.pdf

J. I hereby consent to the submission of the attached application for property identified above and for the use described herein.

Michael T. Looney
Signature of Property Owner

Michael T. Looney
Print Name of Property Owner

11/14/22
Date

K. The applicant hereby certifies that he is familiar with all the information provided in the application and is aware of the penalties for obtaining a permit through deception and through inaccurate or misleading information.

Kristen Solloway
Signature of Applicant/Agent

Kristen Solloway, PE
Print Name of Applicant/Agent

11/14/2022
Date

L. The applicant hereby consents to necessary and proper access to the above-mentioned property by the agents of the Agency, at reasonable times, both before and after any permit in question has been granted or denied by the Agency for the purpose of evaluating the application, monitoring implementation or curtailing or correcting any violation of the Inland Wetlands and Watercourses Regulations brought about through the actions or inactions of the applicant or permittee .

Kristen Solloway
Signature of Applicant/Agent

Kristen Solloway, PE
Print Name of Applicant/Agent

11/14/2022
Date

M. Additionally the applicant shall certify and attach such certification as to whether:

1. Any portion of the property on which the regulated activity is proposed is located within 500 feet of the boundary of an adjoining municipality.
2. Traffic attributable to the completed project on the site will use streets within an adjoining municipality to enter or exit a site.
3. Sewer or water drainage from the project site will flow through and impact the sewage and drainage system within an adjoining municipality.

4. Water run-off from the improved site will impact streets or other municipal or private property with an adjoining municipality.

N. Application fee accepted.

_____ _____

Date Signature of Agent of Agency

Overall Project Description

Fuss & O'Neill, Inc. was retained by the City of Hartford, Connecticut to complete the design of the Hartford-Windsor Riverwalk Extension project (State Project 63-721). This project is being funded by the Connecticut Department of Transportation (CTDOT) Transportation Alternatives Program (TAP). The Hartford-Windsor Riverwalk Extension project is an extension of the existing multi-use trail along the Connecticut River from its current terminus at the Greater Hartford Jaycees Community Boathouse northerly for approximately two and a half (2.5) miles towards Windsor. The project ends on the north side of Meadow Brook, where it will connect to additional length of trail proposed by others. The proposed multi-use trail is envisioned as a vital link in the regional trail network.

The project includes the construction of approximately one-half mile of trail through a wooded area within the Connecticut River flood plain and an additional two miles of trail constructed on an existing gravel access road located at the waterside toe of the North Meadows Dike. This gravel access road is currently used for maintenance access to the levee and will continue to serve this function after the new trail is built. The proposed Hartford-Windsor Riverwalk extension involves the construction of a paved 12 foot wide multi-use path totaling 151,498 square feet of bituminous concrete pavement. The multi-use trail will start from its existing terminus at the Greater Hartford Jaycees Community Boathouse and will continue northerly along the west side of the Connecticut River.

From the Boathouse, the trail will continue northerly along the eastern side of Riverside Park and under the Connecticut Southern Railroad Bridge. North of the railroad bridge, the trail continues past the landfill parallel to Interstate 91, the CT Transit and Hartford Public Works Department facilities. The project will end on the north side of Meadow Brook.

The crossing of Meadow Brook will be via a precast concrete arch structure with u-shaped wingwalls and an 18' wide trail section. The highest practical low chord elevation is being proposed to minimize clearance under the bridge. The lower profile of this arch allows the footings to be raised and pulled further away from the brook, minimizing excavation and shoring requirements as well as minimizing fill and impact limits. It also provides a more open feel to the structure.

In addition to the bituminous concrete trail there are several additional features included in the project:

1. Turn around areas
2. Vista Areas
3. Interpretive Signage

There will be four (4) turnaround areas to serve emergency and maintenance vehicles. These areas were coordinated with the City of Hartford Police and Fire Departments.

There are four (4) proposed river vista areas and connections to the main paved trail along the bank of the Connecticut River. These river vista areas will be located approximately every half mile along the trail to provide users with scenic views of the river and will be furnished with park furniture. The vista areas will be connected to the main trail by accessible paved paths, providing views from the main trail to the river. The entry to each vista area will accommodate paved emergency vehicle turn around space. River bank vegetation will be trimmed, invasive plants removed and trees limbed up to provide river views while maintaining bank stabilization. Stone benches, similar to the existing Riverwalk Park system granite benches, will provide seating at the view areas. Native trees, low-growing groundcover and meadow plantings will enhance the new woodland edges, provide transition between the existing woods and the new trail openings, and enhance wildlife habitats. Lawn areas will provide space for informal gathering and mowable maintenance edges to help maintain trail connection openings.

Finally, interpretive signage is proposed at various locations within the project area. The signs will describe important aspects of the region's history, archeology, biology, geology, etc. Representative locations for these signs are depicted on the project drawings. However, the final locations, as well as the signage content, will be determined with input from the public and project stakeholders.

D. Project Information:

4. Describe wetlands and/or watercourse conditions that make permit necessary.

The Connecticut River flows in a southerly direction along the eastern edge of the proposed project. The bank of the river in this location is steep to nearly vertical. The project is located between the Hartford Levee and the Connecticut River. This area has been field delineated as Connecticut Floodplain Wetlands. The proposed trail and vista construction will occur almost entirely within the state-regulated wetland.

Meadow Brook is a channelized watercourse flowing southeasterly to its confluence with the Connecticut River. Both banks are moderately steep with a vegetated buffer of mature deciduous trees and shrubs. The proposed bridge crossing at Meadow Brook will permanently impact federally regulated wetlands as a result of grading required to construct the bridge.

Impacts to both state and federally regulated wetlands are included in the table provided on the impact area plan sheets (IMP-01 and IMP-02).

E. Proposed Action

2. How much soil will be removed by type of soil?

Soil will be excavated along the length of the proposed trail and at the vistas. A total of 8,890 cubic yards of soil will be removed. The soil near the existing Hartford Boat House to just north of the railroad bridge is mapped as udorthents or urban land. The majority of the trail north of the railroad bridge is mapped as Occum fine sandy loam, except for the southern bank of Meadow Brook, which is mapped

as Limerick and Lim soils. A Natural Resources Conservation Service Web Soil Survey Map is attached for reference.

3. How much soil will be added by type?

No soil will be added. Fill material will include bituminous concrete, gravel, and riprap. There will be a net cut for the project (see impact area plans).

H. Alternatives

1. Explain each alternative site considered for proposed activity and explain why it was rejected.

The original design had the trail terminus at Weston Street. This was revised when Riverfront Land, Inc. acquired the parcels north of Meadow Brook. This allowed the trail to cross Meadow Brook and continue north to tie into the Windsor Riverwalk Trail. The only other alternative was to leave the existing trail as-is, which was determined not to be feasible due to lack of accessibility.

2. Explain each alternative for changing the wetlands and watercourses and explain why it was rejected.

A trail already exists along the toe of the Hartford Levee, within Connecticut-regulated floodplain wetlands. The proposed project will enhance the existing trail. There will be net-zero fill placed within this wetland. Impacts to federally-regulated wetlands in the vicinity of the trail along the Connecticut River have been avoided.

Impacts to federally-regulated wetlands at the Meadow Brook crossing have been minimized through bridge design and construction methods. Several different culvert designs were considered, but ultimately rejected due to greater impacts to Meadow Brook and its field-delineated wetlands than that of the chosen design.

I. Required Supplementary Materials

6. Description of mitigation actions proposed.

The project will enhance recreational opportunities along the Riverwalk trail system. It will extend the existing multi-use trail along the Connecticut River from its current terminus at the Greater Hartford Jaycees Community Boathouse northerly for approximately 2.5 miles. Four vistas will be constructed to provide users with scenic views of the Connecticut River. Existing vegetation will be trimmed, but left to maintain bank stabilization. Additional native plantings will be used to transition between existing woods and the trail, and to enhance wildlife habitat. Invasive plants will be removed.

The trail will be constructed on an existing gravel access road located at the waterside toe of the North Meadows Dike. This existing access road is used for maintenance access to the levee and will continue this function after the new trail is built. By constructing the proposed project on the existing access road,

the project has minimized the environmental impact. Additionally, construction activities will result in a net cut. Best management practices during construction will reduce the likelihood of erosion and sedimentation impacts from the project.

The crossing of Meadow Brook will be via a precast concrete arch structure with u-shaped wingwalls and an 18' wide trail section. The highest practical low chord elevation is being proposed to minimize clearance under the bridge. The lower profile of this arch allows the footings to be raised and pulled further away from the brook, minimizing excavation and shoring requirements as well as minimizing fill and impact limits. It also provides a more open, natural feel to the structure.

DEEP Wetlands and Watercourses Activity Form

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

GIS CODE #: ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
For DEEP Use Only

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete this form in accordance with the instructions on pages 2 and 3 and mail to:
DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106
Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____
2. ACTION TAKEN (see instructions - one code only): _____
3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
   (print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTIVITY IS OCCURRING (print name): Hartford
   does this project cross municipal boundaries (check one)? yes ☐ no ☒
   if yes, list the other town(s) in which the activity is occurring (print name(s)): _____, _____
6. LOCATION (see instructions for information): USGS quad name: Hartford North Quadrangle or number: _____
   subregional drainage basin number: 4000
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): State of Connecticut DOT
8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): Hartford Riverwalk Extension (State Project No. 63-721; 100 Leibert Road, Hartford, CT
   briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☒ description: _____
   The Hartford Riverwalk Extension project includes the construction of approximately one-half mile of multi-use trail on an existing unimproved path through a wooded area and an additional approximately 2 miles of multi-use trail along an existing gravel access road located at the waterside toe of the North Meadows levee. The project will also provide a pedestrian bridge over Meadow Brook and connections to the existing network of unimproved paths along the river.
9. ACTIVITY *PURPOSE* CODE (see instructions - one code only): N
10. ACTIVITY *TYPE* CODE(S) (see instructions for codes): 9, _____, _____, _____
11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):
    wetlands: 12.2 acres open water body: 0 acres stream: 45 linear feet
12. UPLAND AREA ALTERED (must provide acres): 0 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

Wetlands Report

WETLAND DELINEATION REPORT

Project Name: Hartford-Windsor Riverwalk North Extension
Site Location: Hartford and Windsor, Connecticut
(N 41.804754°, West -72.651742°)

Prepared For: Riverfront Recapture
Contact: Marc Nichol, 50 Columbus Blvd., 1st Floor, Hartford, CT, 06106

F&O Project No: 20170277.A30

Project Description: Redevelopment for a public park and access to the Connecticut River

Date(s) of Investigation: March 9, 2020

Weather: 60°F, Sunny **Rainfall (last 24 hours):** 00.00 inches

METHOD OF WETLAND/WATERCOURSE DELINEATION

Delineation: ☒ Connecticut Inland Wetlands & Watercourses (CGS 22a-36 to 22a-45)
☒ U.S. Army Corps of Engineers
☒ Tidal Wetlands

Flag Number Sequence: A100-A252, B200-B253, C300-C318

Field Plotted: ☐ Site sketch ☐ Aerial photograph ☒ GPS (sub-meter) located
☐ Site mapping: Title of Site Map
Sheet No.: Scale: Contours: n/a ft.

METHOD OF UPLAND SOIL DELINEATION

☒ Field Delineated ☐ Field confirmed NRCS soil mapping

FIELD INVESTIGATION METHOD

☒ Spade & Auger ☐ Deep test pit (backhoe) ☐ Other:_____

SOIL CONDITIONS

☐ Dry ☒ Moist ☐ Wet ☐ Frozen (_____ in.) ☐ Snow cover (_____ in.)

WETLAND DELINEATION REPORT

INTRODUCTION

A field inspection of the project area, located along the Connecticut River at the eastern end of Meadow Road ("site"), was conducted on March 9, 2020 for the purpose of identifying and delineating wetlands/watercourses on and adjacent to the project area. The work was conducted for the organization Riverfront Recapture, Inc. as part of the overall site assessment for its redevelopment as public open space along the Connecticut River. The intent is to extend the park system known as Riverwalk northward to this site. The site is not currently being utilized. Most recently, it was used for agriculture.

METHODOLOGY

Inland wetlands and watercourses are regulated in the State of Connecticut by Connecticut General Statutes, Inland Wetlands and Watercourses Act, Chapter 440, sections 22a-36 to 22a-45. **Wetlands** are defined as "soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey." **Watercourses** are defined as "rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private." **Intermittent watercourses** are identified by "a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (a) Evidence of scour or deposits of recent alluvium or detritus, (b) the presence of standing or flowing water for a duration longer than a particular storm incident, and (c) the presence of hydrophytic vegetation. "

Tidal Wetlands are "those areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marshes, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters, and whose surface is at or below an elevation of one foot above local extreme high water; and upon which may grow or be capable of growing some, but not necessarily all, of [a list of specific plant species - see CGS section 22a-29(2)]."

Federal jurisdictional wetland boundaries are defined by 33 CFR 328-329. **Federal jurisdictional wetlands** are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Federal wetlands were delineated in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0, January 2012). Activities occurring within Inland Waters and Wetlands within the State of Connecticut are subject to approval by the US Army Corps of Engineers, New England District.

RESULTS

SUMMARY OF SOILS

Wetland Soils

Aquents: Poorly to very poorly drained soils formed in human transported material or on excavated (cut) landscapes. No development to incipient B-horizon typical. Evidence of aquic moisture regime found where saturation results in redoximorphic features in upper 20 inches. No soils are mapped as Aquents nor were observed at the site.

Aquepts: Poorly to very poorly drained soils with an aquic moisture regime and showing some soil development in the B-horizon. Soils mapped as Aquepts at the site belong to the Limerick and Lim Soil Series (Map Unit 107). The Limerick and Lim series are very deep, poorly drained soils formed in alluvium. They consist on coarse-silty or course-loamy soils that are nearly level soils and found on floodplains.

Saprists: Very poorly drained soils comprised primarily of organic materials occurring through 16 inches or greater of the surface soil horizon. These soils occur in areas where the ground water table tends to fluctuate within the soils or in areas where the soils were aerobic during drier periods in the past. No soils are mapped as Saprists nor were observed at the site.

Fluvaquents/Fluvents: soils occurring along watercourses and occupying nearly all level areas subject to periodic flooding. These soils are formed when material is deposited by flowing water. Such material can be composed of clay, silt, sand or gravel. Alluvial and floodplain soils range from excessively drained to very poorly drained. Three soil series are mapped as Fluvaquents/Fluvents and occupy the majority of the site:

- Occum fine sandy loam (Map Unit 101) – very deep, well drained loamy soils formed in alluvial sediments. They are nearly level soils on floodplains along rivers and streams and subject to common flooding.
- Hadley silt loam (Map Unit 105) – very deep, well drained soils formed in alluvium consisting primarily of very fine sand and silt. They are nearly level soils on floodplains and high bottoms. Flooding frequency ranges from once a year to once in 5 to 10 or more years.
- Winooski silt loam (Map Unit 106) – very deep, moderately well drained soils formed in alluvial deposits of very fine sand and silt. These soils are on nearly level floodplains, typically in broad depressions.

Soils investigated in test pits in the floodplain revealed soil disturbance throughout the floodplain to a depth of 16-26 inches. This likely due to the site's long history as farmland. To delineate floodplain wetlands subject to Connecticut's Inland Wetlands and Watercourses Act, an elevation of 19 feet was selected at the boundary of the floodplain.

Upland Soils

Udorthents: Well drained to excessively drained soils that have been disturbed by cutting or filling, and areas that are typically covered by buildings and pavement. As mapped by National Cooperative Soils Survey, soils in this Series are mapped at an area of 21± acres in the southwest corner of the site – north of Meadow Brook and east of the railway. These have been classified as "Udorthents-smoothed" (Map Unit 308). This area has been the site of material stockpiling operations since the mid-1980s.

Other upland soils mapped at the site are of the Enfield silt loam series (Map Unit 704B). This series consists of very deep, well drained loamy soils formed in a silty mantle overlying glacial outwash. They are nearly level to sloping soils on outwash plains and terraces.

WETLAND DELINEATION REPORT

SUMMARY OF WATERCOURSE AND HYDROLOGY

The site is bordered by two tributaries to the Connecticut River: Decker Brook to the north and Meadow Brook to the south. Both watercourses are perennial and have watersheds of a few square miles located northwest of the site. At the site, Meadow Brook is a channelized watercourse flowing southeasterly to its confluence with the Connecticut River (at the southeast corner of the site). Approximately 500 feet east of the railway, a palustrine scrub-shrub/emergent wetland extends northward toward Meadow Road's railway crossing. At the time of this inspection, surface water was observed in most of this wetland. Test pits were dug at the north limit of the wetland's delineated boundary and exhibited saturated soils within the delineated area. The majority of this wetland occupies a narrow depression in the land, bound by moderately steep banks to the surrounding floodplain. Along the wetland's southeastern boundary, the smaller lobe of emergent wetland contains a nearly level transition to the surrounding floodplain. Dominant vegetation in the wetland includes [common name/*scientific name* (indicator status)]: green ash/*Fraxinus pennsylvanica* (FACW), mugwort/*Artemesia vulgaris* (UPL), broad-leaf cat-tail/*Typha latifolia* (OBL), goldenrod/*Solidago sp.,* and wild carrot/*Daucus carota.*

Meadow Brook widens from approximately 10 feet at the railway crossing to more than 70' at its mouth. A vegetated buffer of mature deciduous trees and shrubs is present on both banks; the buffer ranges from 20-300 feet wide and averages a width of 50 feet. Dominant vegetation in the buffer includes [common name/*scientific name* (indicator status)]: red maple/*Acer rubrum* (FAC), shagbark hickory/*Carya ovata* (FACU), red oak/*Quercus rubra* (FACU), multiflora rose/*Rosa multiflora* (FACU), mugwort/*Artemesia vulgaris* (UPL), goldenrod/*Solidago sp.,* and aster/*Symphiotrichum sp.*

Deckers Brook is a tributary that flows easterly along the northern boundary of the site. While it is more sinuous than Meadow Brook, it has likely experienced some channelization and widens considerably over the ¼-mile segment that was inspected. The vegetated buffer along the south bank of Deckers Brook ranges from 30-200 feet wide and averages a width of 100 feet. The buffer along the north bank is contiguous with undeveloped woodlands protected within Windsor Meadows State Park. These buffers are similar to Meadow Brook in terms of their composition of species and structure.

The site's eastern boundary is the Connecticut River between the mouths of Decker Brook and Meadow Brook. The State of Connecticut regulates the Connecticut River as tidal to the Massachusetts state line. The west bank of the river, which was delineated, is 20-30 feet in height and steep to nearly vertical. The bank is vegetated by deciduous woody species, primarily red maple/*Acer rubrum*. The bank is interrupted 350± feet north of Meadow Book by a narrow cove of 3± acres in area. Historical aerial imagery shows that the cove formed between 1970 and 1986. During this field the inspection, fish and a muskrat were observed in the cove. Signs of beaver activity – recently chewed stumps and branches – were observed in many locations, most frequently along the southern-most portion of the cove's west bank.

WETLAND DELINEATION REPORT

WETLAND FUNCTION & VALUES ASSESSMENT

Table 1 summarizes the Function &Values Assessments conducted during the field inspection of the resources identified and delineated. A description of the methodology and records of the assessment conducted are provided in Appendix B.

Wetland/ Watercourse		Inland wetland along Meadow Brook	Meadow Brook	Deckers Brook	Connecticut River
Estimated size in or near area of interest		0.25± acres	2,200± linear ft	1,300± linear ft	2,600± linear ft
USFWS NWI Code		PSS1E/PEM1E*	R5UBH*	R5UBH	R1UBV
FUNCTIONS & VALUES	Groundwater Recharge/Discharge	P (*D*) S (*R*)	S (*D*)	S (*D*)	S (*R*)
	Floodflow Alteration	-	-	-	-
	Fish and Shellfish Habitat	-	S	S	S
	Sediment/Toxicant Retention	P	-	-	S
	Nutrient Removal/Retention	P	-	-	S
	Production Export	S	S	S	P
	Sediment/Shoreline Stabilization	-	-	-	P
	Wildlife Habitat	-	-	-	P
	Recreation	-	-	-	P
	Educational/ Scientific Value	-	-	-	P
	Uniqueness/ Heritage	-	-	-	P
	Visual Quality/ Aesthetics	-	-	-	P
	Threatened or Endangered Species Habitat†	-	-	-	P

Table 1: Summary of Wetland/Watercourse Functions and Values

Abbreviations: "P" = Principal Function or Value; "S" = Secondary Function or Value; "*R*" = Recharge; "*D*" = Discharge

*Wetlands not classified by USFWS.

†Presence or absence of listed species was not verified in this inspection.

WETLAND DELINEATION REPORT

Report Preparation

The wetland and watercourses were delineated in accordance with applicable local, state and federal statutes, regulations and guidance. Classification and mapping of soils on site were conducted in a manner consistent with the U.S. Department of Agriculture Soil Survey Manual (Soil Survey Staff, 1992). This delineation does not constitute an official wetland boundary until such time as it is accepted and approved by local, state or federal regulatory agencies.

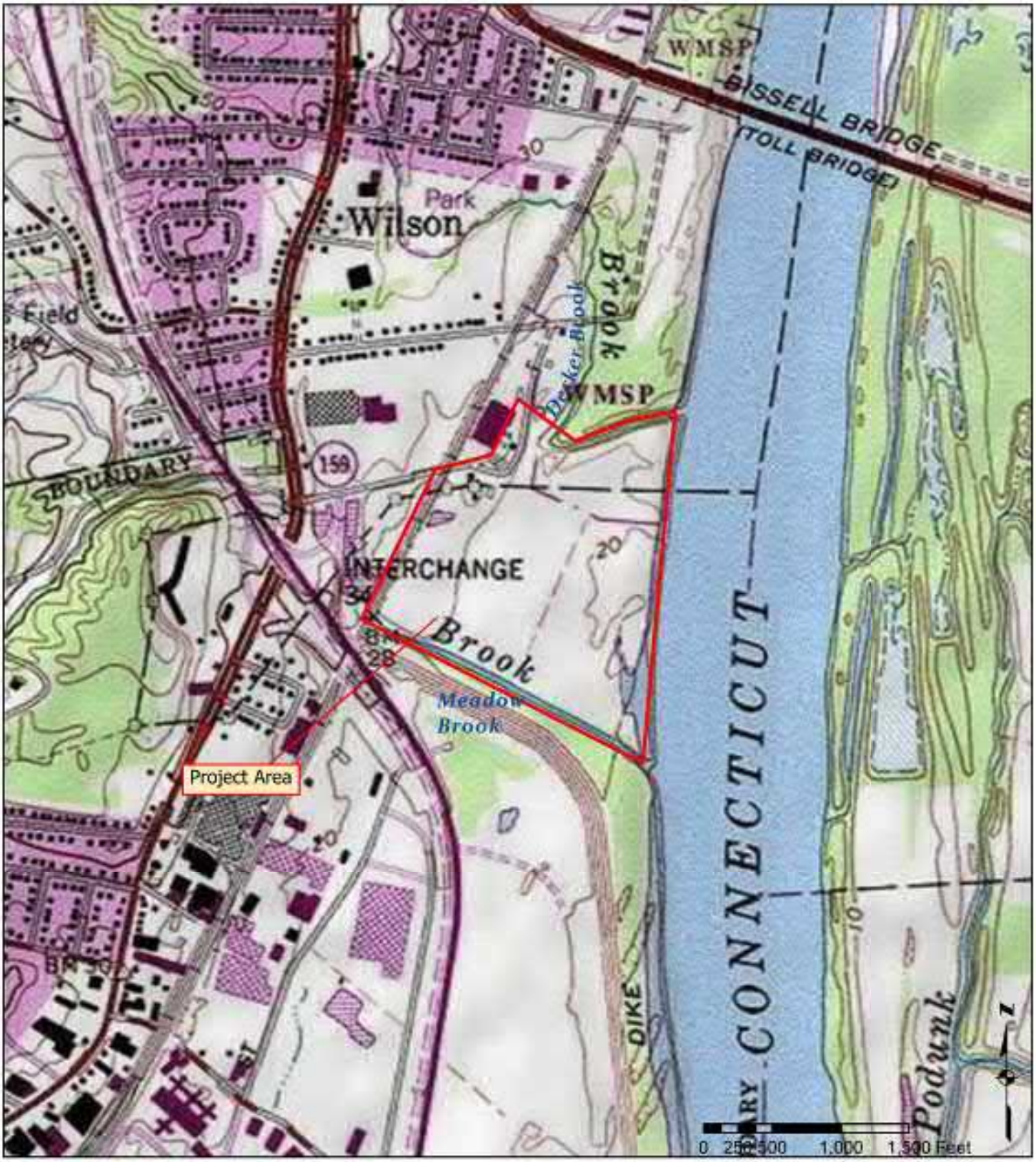
As Prepared By:

Michael E. Soares
Registered Soil Scientist

WETLAND DELINEATION REPORT

ATTACHMENTS

- Appendix A Location Map
- Appendix B USACE Wetland Determination Data Forms
- Appendix C Site Photographs
- Appendix D Army Corp of Engineers Wetland Function-Value Evaluation Form
- Appendix E Impact Assessment
- Appendix F NRCS Soil Drainge Class Mapping
- Appendix G Wetland Delineation Sketch



Location Map

Data source:
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LOCATION MAP

Hartford-Windsor Riverwalk Park
North Extension

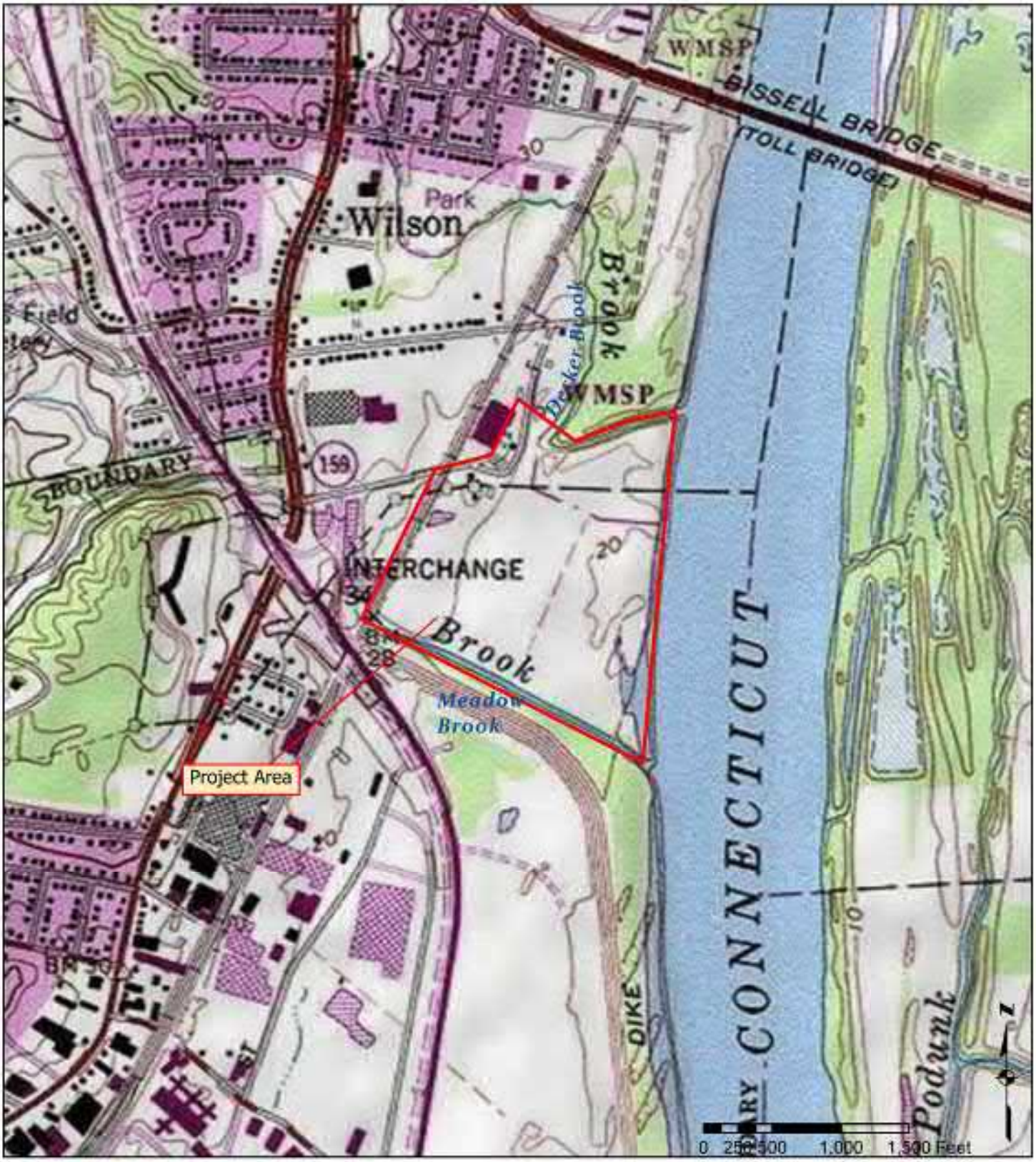
Hartford — Connecticut

FUSS & O'NEILL
146 Hartford Road
Manchester, CT 06040
860.646.2469 | www.fando.com

Figure #1

April 2020

K:\P2017\03\50\A10\MXD\Riverwalk_Park\Riverwalk_Prelim.aprx



Location Map

Data source:
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LOCATION MAP

Hartford-Windsor Riverwalk Park
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Figure #1

April 2020

K:\P2017\03\50\A10\MXD\Riverwalk_Park\Riverwalk_Prelim.aprx

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hartford-Windsor Riverwalk Park City/County: Hartford Sampling Date: 03/09/20

Applicant/Owner: City of Hartford State: CT Sampling Point: AW1

Investigator(s): Michael Soares, Kristin Connell Section, Township, Range: Hartford County

Landform (hillside, terrace, etc.): floodplain, bank Local relief (concave, convex, none): level Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 41.804065 Long: -72.654351 Datum: CT State Plane 1983

Soil Map Unit Name: Udorthents-smoothed (Map Unit 308) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____	
Water Table Present?	Yes X	No ____	Depth (inches): 8	
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____	**Wetland Hydrology Present?** **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: AW1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	50 =Total Cover		
Herb Stratum (Plot size:)			
1. *Artemisia vulgaris*	10	Yes	UPL
2. *Daucus carota*	5	Yes	UPL
3. *Typha latifolia*	5	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	15	x 5 =	75
Column Totals:	70 (A)		180 (B)

Prevalence Index = B/A = 2.57

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: AW1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2						Mucky Sand	
4-9	5YR 4/3						Loamy/Clayey	fsl

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 9

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hartford-Windsor Riverwalk Park City/County: Hartford Sampling Date: 03/09/20

Applicant/Owner: City of Hartford State: CT Sampling Point: FDPN1

Investigator(s): Michael Soares, Kristin Connell Section, Township, Range: Hartford County

Landform (hillside, terrace, etc.): floodplain, bank Local relief (concave, convex, none): level Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 41.803786 Long: -72.650205 Datum: CT State Plane 1983

Soil Map Unit Name: Udorthents-smoothed (Map Unit 308) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____	
Water Table Present?	Yes ____	No ____	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____	**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
This Sampling Point is representative of floodplain soils observed at the site, subject to regulation by the State of Connecticut. Soil disturbance was observed, as the site was an agricultual field for many decades or more.

VEGETATION – Use scientific names of plants. Sampling Point: FDPN1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	50 =Total Cover		
Herb Stratum (Plot size:)			
1. *Artemisia vulgaris*	50	Yes	UPL
2. *Symphyotrichum racemosum*	5	No	FACW
3. *Grasses*	80	Yes	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	135 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	50	x 5 =	250
Column Totals:	105 (A)		360 (B)

Prevalence Index = B/A = 3.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDPN1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/1						Sandy	fine/med. sand
2-7	2.5YR 4/4						Sandy	fine/med. Sand
7-18	10YR 6/4						Sandy	fine-coarse sand
18-22	2.5YR 3/4						Loamy/Clayey	silty sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hartford-Windsor Riverwalk Park City/County: Hartford Sampling Date: 03/09/20

Applicant/Owner: City of Hartford State: CT Sampling Point: UPL1

Investigator(s): Michael Soares, Kristin Connell Section, Township, Range: Hartford County

Landform (hillside, terrace, etc.): floodplain, bank Local relief (concave, convex, none): level Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 41.803946 Long: -72.654236 Datum: CT State Plane 1983

Soil Map Unit Name: Udorthents-smoothed (Map Unit 308) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil disturbance was observed, as the site was an agricultual field for many decades or more.

VEGETATION – Use scientific names of plants.

Sampling Point: UPL1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Artemisia vulgaris*	50	Yes	UPL
2. *Symphyotrichum sp*	30	Yes	
3. *Grasses*	10	No	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	50	x 5 =	250
Column Totals:	50 (A)		250 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPL1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/4						Loamy/Clayey	silt/clay
10-16	10YR 4/4						Sandy	fine-med. Sand
16-17	5Y 4/1	60	7.5YR 3/3	5	C	PL	Loamy/Clayey	silt/clay
			10YR 4/4	35	M	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: resistive layer

Depth (inches): 17

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

SITE PHOTOGRAPHS

Hartford-Windsor Riverwalk North Extension (#20170277.A30)

Figure 1. Reach of Meadow Brook upstream of bordering wetland. Looking west.

Figure 2. Reach of Meadow Brook downstream of bordering wetland. Looking southeast.

SITE PHOTOGRAPHS

Hartford-Windsor Riverwalk North Extension (#20170277.A30)

Figure 3. Reach of Meadow Brook near its confluence with the Connecticut River. Looking southeast.

Figure 4. Wetland bordering Meadow Brook. Looking east.

SITE PHOTOGRAPHS

Hartford-Windsor Riverwalk North Extension (#20170277.A30)

Figure 5. The cove near its confluence with the Connecticut River. Looking northwest from the upland southeast of the cove and west of the river.

Figure 6. Western bank of the cove, west of its confluence with the Connecticut River. Sprouting stumps are gray dogwood (*Swida racemosa*), cleared by North Americam beaver (*Castor canadensis*). Looking northeast, with the cove's eastern bank in the background.

SITE PHOTOGRAPHS

Hartford-Windsor Riverwalk North Extension (#20170277.A30)

Figure 7. Reach of Deckers Brook immediately upstream of its confluence with the Connecticut River. Looking west.

Figure 8. Mouth of Deckers Brook at the Connecticut River. Looking north-northeast.

SITE PHOTOGRAPHS

Hartford-Windsor Riverwalk North Extension (#20170277.A30)

Figure 9. Utility pipe crossing Deckers Brook. Looking north.

Figure 10. Reach of Deckers Brook downstream of the utility crossing. Looking east.

WETLAND FUNCTION & VALUE ASSESSMENT FIELD FORM

This form has been developed to streamline the function and value assessment process of wetlands and watercourses in the field. The form has largely been developed using the procedure outlined in the U.S. Army Corps of Engineers "Highway Methodology Work Book: Supplement. Wetland Functions and Values: A Descriptive Approach" (1999, NAEEP-360-1-30a). This methodology is a descriptive approach and does not rely upon semi-quantitative numerical models to identify principal functions and values of wetlands and watercourse.

Many of the criteria used as "considerations and qualifiers" are drawn directly from the U.S. Army Corps of Engineers methodology. However, other assessment methods were considered (e.g. Wisc. DNR, 1992, "Rapid Assessment Methodology for Evaluating Wetland functions and Values." and Ammann, et al., 1996,"Method for the Evaluation of Inland Wetlands in Connecticut.") as well professional experience. Each criteria listed is an indicator of that function or value . An affirmative response, therefore, supports the assumptions of a given function or value. Generally, a majority of affirmative responses will indicate that the given function or value is a "principal" function or value. However, the criteria are not weighted and thus it is incumbent upon the inspector to use his or her best professional judgment when identify "principal" functions or values.

Groundwater Recharge & Discharge
The capacity or potential for a wetland to interact with groundwater such that water moves from surface water to ground water (Recharge) or from ground water to surface water (Discharge).

Floodflow Alteration
The storage of inflowing water from storm or flooding events, resulting in detention and retention of water on the wetland surface.

Finfish Habitat (Ponds & Lakes)
Considers the quality of the aquatic habitat of a pond or lake, and its capacity to support finfish.

Finfish Habitat (Streams & Rivers)
Considers the quality of the aquatic habitat of a perennial watercourse, and its capacity to support finfish.

Sediment, Pollutant & Nutrient Removal
The capacity of a wetland to remove dissolved, suspended and floatable material from storm water runoff and prevents degradation of water quality.

Production Export
The capacity of a wetland to produce wildlife food sources, or to export biomass that sustains downstream ecosystems and local wildlife populations.

Wildlife Habitat
The capacity of a wetland to support a diverse and abundant wildlife community typically associated with wetland and wetland edges.

Educational, Scientific & Recreation Value
The suitability of a wetland for classroom field trips or scientific research, or to support various recreation activities (e.g., hiking, canoeing, boating, fishing, hunting, bird watching).

Uniqueness & Heritage
The degree to which a wetland is considered a locally or regionally unique natural resource.

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: AW1 (inland wetland bordering Meadow Brook)

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

GROUNDWATER RECHARGE

Considerations/Qualifiers	**Yes**	**No**
Wetland is underlain by stratified drift, gravel or sandy soils.	☐	☒
Wetland is *not* underlain by hardpan, impervious soils (e.g., clays and silts) or bedrock	☐	☒
Wetland is associated with a perennial or intermittent watercourse	☒	☐
Wetland formed on relatively gentle slopes (e.g., less than 3%)	☒	☐
Wetland is associated with a watercourse but lacks a defined outlet or contains a constricted outlet	☒	☐
Other evidence of groundwater recharge is present (i.e., local water supplies piezometer data, etc.)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☒ **SECONDARY FUNCTION?**

Comments:

GROUNDWATER DISCHARGE

Considerations/Qualifiers	**Yes**	**No**
Wetland is *not* underlain by stratified drift, gravel or sandy soils.	☒	☐
Wetland is underlain by hardpan; impervious, tight grained soils (high clay and/or silt content); or bedrock	☒	☐
Wetland formed as a result of seeps or springs	☒	☐
Wetland shows strong signs of variable water levels (e.g., well developed microtopography)	☐	☒
Wetland is associated with a watercourse and contains only an outlet, no defined inlet	☒	☐
Other evidence of groundwater discharge are present (i.e., water temperature, piezometer data, etc.)	☐	☐

☒ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: AW1 (inland wetland bordering Meadow Brook)

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

FLOODFLOW ALTERATION

Considerations/Qualifiers	**Yes**	**No**
Area of this wetland is large relative to its watershed	☐	☒
Wetland occurs in the upper portions of its watershed and the effective flood storage is small or non-existent upslope of or above the wetland	☐	☒
Wetland watershed contains a high percent of impervious surfaces	☐	☒
Wetland shows strong signs of variable water levels (e.g., well developed microtopography) or ponding (e.g. sediment deposits or lines)	☐	☒
Wetland formed on relatively gentle slopes (e.g., less than 3%).	☒	☐
Wetland located in a floodplain of an adjacent watercourse.	☐	☒
Wetland has a constricted outlet.	☒	☐
Wetland contains hydric soils which are able to absorb and detain water.	☒	☐
Watershed has a history of economic loss due to flooding.	☐	☒
Associated watercourse, if present, is sinuous or diffuse.	☐	☒
Other evidence of floodflow alteration (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

SEDIMENT, POLLUTANT & NUTRIENT REMOVAL

Considerations/Qualifiers	**Yes**	**No**
Wetland saturated for most of the season.	☒	☐
Ponded water (including deep water or open water habitat) is present in the wetland.	☒	☐
Wetland edge is broad and intermittently aerobic.	☒	☐
Deep organic/sediment deposits are present	☐	☒
Slowly drained fine grained mineral or organic soils are present.	☒	☐
Alluvial soils present in or immediately adjacent to wetland.	☒	☐
Wetland formed on relatively gentle slopes (e.g., less than 3%).	☒	☐
Water retention/detention time in this wetland is increased by constricted outlet.	☒	☐
Water retention/detention time in this wetland is increased by thick vegetation.	☒	☐
Emergent vegetation and/or dense woody stems are dominant.	☒	☐
Wetland shows strong signs of variable water levels (e.g., well developed microtopography)	☐	☒
Other evidence of sediment, pollutant and nutrient removal (Explain below)	☐	☐

☒ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

FUSS & O'NEILL

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: AW1 (inland wetland bordering Meadow Brook)

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

FISH AND SHELLFISH HABITAT (PONDS & LAKES) **Considerations/Qualifiers**	***N/A*** **Yes**	**No**
Land use adjacent to pond or lake dominated by forest, shrub and/or meadow community	☐	☐
Shallow littoral zone with emergent vegetation present	☐	☐
Pond or lake is are least 10 feet deep	☐	☐
Pond or lake is covered by more than 15 but less than 40 percent submerged or emergent vegetation	☐	☐
Direct stormwater discharge(s) are few to none and , if present, originate from smaller culverts/outfalls	☐	☐
Sand bars or evidence of stormwater runoff at inlet is absent	☐	☐
Water transparency is high	☐	☐
Significant sources of nutrient sources (e.g. fertilizers, over-abundant waterfowl) are absent	☐	☐
Pond or lake is greater than 0.5 acre	☐	☐
Dense algal blooms, nuisance aquatic vegetation or duckweed are not or have not historically been observed	☐	☐
Other evidence of finfish habitat (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

FISH AND SHELLFISH HABITAT (STREAMS & RIVERS) **Considerations/Qualifiers**	***N/A*** **Yes**	**No**
Land use adjacent to stream or river dominated by forest, shrub and/or meadow community	☐	☐
Channel is shaded by riparian trees or shrubs	☐	☐
Bank is predominantly vegetated with high cover (e.g. trees and shrubs)	☐	☐
Barriers to anadromous fish (i.e. dams, including beaver dams, waterfalls, road crossings, etc.) are absent from the stream reach associated with this wetland.	☐	☐
Dominant bottom substrate is gravel and/or cobbles	☐	☐
Bottom substrate is embedded with minimal sand and silt	☐	☐
Diversity of instream habitat (e.g. riffles, runs, shallow pools and deep pools) is high	☐	☐
Channel alteration (i.e. channelization, islands, point bars, etc.) are few to absent	☐	☐
Bank is stabilized; Little to no evidence of scour or erosion is present	☐	☐
Stream or river contains common to many cover objects (i.e, fallen logs, boulders, undercut banks)	☐	☐

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: AW1 (inland wetland bordering Meadow Brook)

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

FISH AND SHELLFISH HABITAT (STREAMS & RIVERS) (cont'd)

Stream or river is predominantly buffered from other land uses by a vegetated zone greater than 20 feet in width	☐	☐
Direct stormwater discharge(s) are few to none, and, if present, originate from smaller culverts/outfalls	☐	☐
Sand bars or evidence of stormwater runoff at inlet is absent	☐	☐
Significant sources of nutrient sources (e.g. fertilizers, over-abundant waterfowl) are absent	☐	☐
Quality of the watercourse associated with this wetland is able to support healthy fish/shellfish	☐	☐
Other evidence of finfish habitat (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

PRODUCTION EXPORT

Considerations/Qualifiers	**Yes**	**No**
Wildlife food sources growing within this wetland are abundant and diverse.	☐	☒
Emergent vegetation and/or dense woody stems are dominant.	☒	☐
Wetland exhibits high degree of plant community structure/species diversity	☐	☒
Evidence of wildlife use found within this wetland.	☒	☐
Fish or shellfish develop or occur in this wetland.	☐	☒
Nutrients exported or "flushed" from wetlands to watercourses (permanent outlet present).	☒	☐
Other evidence of production export (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☒ **SECONDARY FUNCTION?**

Comments:

WILDLIFE HABITAT

Considerations/Qualifiers	**Yes**	**No**
Wetland is not degraded or fragmented by human activity.	☐	☒
Wildlife overland access to other wetlands is present and relatively unfragmented or unimpeded.	☐	☒
More than 40% of this wetland edge is bordered by upland wildlife habitat (e.g., shrub thicket, woodland, farmland, or idle land) at least 500 feet in width.	☐	☒
Wetland is contiguous with other wetland systems connected by a watercourse or lake.	☒	☐
Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.	☐	☒

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: AW1 (inland wetland bordering Meadow Brook)

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

WILDLIFE HABITAT (cont'd)

Dominant wetland class includes deep or shallow marsh or wooded swamp.	☒	☐
Wildlife food sources growing within this wetland are abundant and diverse.	☐	☒
Wetland exhibits a high degree of interspersion of vegetation classes (e.g. forest, shrub, emergent marsh, wet meadow, open water).	☒	☐
Two or more islands or inclusions of upland within the wetland are present.	☐	☒
Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses).	☐	☒
Wetland or watercourse contains numerous and diverse habitat features (e.g., snags, downed woody debris, rocks, seeps/springs, well drained sandy soils).	☐	☒
Evidence of obligate or facultative vernal pool species have been observed in or near the wetland.	☐	☒
Wetland shows strong signs of variable water levels (e.g., well developed microtopography).	☐	☒
Dominant vegetation cover type is not composed of invasive or noxious species.	☒	☐
Other evidence wildlife habitat (Explain below).	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

EDUCATIONAL, SCIENTIFIC & RECREATION VALUE

Considerations/Qualifiers	**Yes**	**No**
Wetland contains state or federal listed species.	☐	☒
Wildlife habitat is a principal function of the wetland	☐	☒
Direct access is available to a perennial watercourse (e.g., stream pond or lake)	☒	☐
Wetland is part of a recreation area, park, forest, or refuge.	☐	☒
Hunting and/or fishing is available within or from the wetland.	☐	☒
Hiking occurs or has the potential to occur in the wetland	☐	☒
Off-road public parking available at or near the wetland or watercourse.	☐	☒
Wetland is within a short drive or safe walk from highly populated public and private areas.	☐	☒
Wetland currently used for educational or scientific purposes.	☐	☒
Access to water is available at this potential recreation site for boating, canoeing, or fishing.	☐	☒
No known safety hazards exist (If not, explain below).	☒	☐
Other evidence educational, scientific or recreation value (Explain below).	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: AW1 (inland wetland bordering Meadow Brook)

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

UNIQUENESS & HERITAGE VALUE

Considerations/Qualifiers	**Yes**	**No**
Wetland contains state or federal listed species.	☐	☒
Wetland identified as a whole or in part as an exemplary natural community (Explain below)	☐	☒
Wetland considered a locally and/or regionally significant (Explain below)	☐	☒
Other evidence of uniqueness or heritage values (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

SUMMARY OF FUNCTIONS & VALUES

Function/Value	**Principal Function**	**Secondary Function**
Groundwater Recharge & Discharge	X (*D*)	X (*R*)
Floodflow Alteration		
Sediment, Pollutant & Nutrient Removal	X	
Finfish Habitat (Ponds & Lakes)		
Finfish Habitat (Streams & Rivers)		
Production Export		X
Wildlife Habitat		
Educational, Scientific & Recreation Value		
Uniqueness & Heritage		

MISCELLANEOUS NOTES & COMMENTS:

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Deckers Brook, and Meadow Brook

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

GROUNDWATER RECHARGE

Considerations/Qualifiers	**Yes**	**No**
Wetland is underlain by stratified drift, gravel or sandy soils.	☐	☒
Wetland is *not* underlain by hardpan, impervious soils (e.g., clays and silts) or bedrock	☐	☒
Wetland is associated with a perennial or intermittent watercourse	☒	☐
Wetland formed on relatively gentle slopes (e.g., less than 3%)	☒	☐
Wetland is associated with a watercourse but lacks a defined outlet or contains a constricted outlet	☐	☒
Other evidence of groundwater recharge is present (i.e., local water supplies piezometer data, etc.)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

GROUNDWATER DISCHARGE

Considerations/Qualifiers	**Yes**	**No**
Wetland is *not* underlain by stratified drift, gravel or sandy soils.	☒	☐
Wetland is underlain by hardpan; impervious, tight grained soils (high clay and/or silt content); or bedrock	☒	☐
Wetland formed as a result of seeps or springs	☐	☒
Wetland shows strong signs of variable water levels (e.g., well developed microtopography)	☐	☒
Wetland is associated with a watercourse and contains only an outlet, no defined inlet	☐	☒
Other evidence of groundwater discharge are present (i.e., water temperature, piezometer data, etc.)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☒ **SECONDARY FUNCTION?**

Comments:

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Deckers Brook, and Meadow Brook

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

FLOODFLOW ALTERATION

Considerations/Qualifiers	**Yes**	**No**
Area of this wetland is large relative to its watershed	☐	☒
Wetland occurs in the upper portions of its watershed and the effective flood storage is small or non-existent upslope of or above the wetland	☐	☒
Wetland watershed contains a high percent of impervious surfaces	☐	☒
Wetland shows strong signs of variable water levels (e.g., well developed microtopography) or ponding (e.g. sediment deposits or lines)	☐	☒
Wetland formed on relatively gentle slopes (e.g., less than 3%).	☒	☐
Wetland located in a floodplain of an adjacent watercourse.	☐	☒
Wetland has a constricted outlet.	☐	☒
Wetland contains hydric soils which are able to absorb and detain water.	☒	☒
Watershed has a history of economic loss due to flooding.	☐	☒
Associated watercourse, if present, is sinuous or diffuse.	☐	☒
Other evidence of floodflow alteration (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

SEDIMENT, POLLUTANT & NUTRIENT REMOVAL

Considerations/Qualifiers	**Yes**	**No**
Wetland saturated for most of the season.	☒	☐
Ponded water (including deep water or open water habitat) is present in the wetland.	☐	☒
Wetland edge is broad and intermittently aerobic.	☐	☒
Deep organic/sediment deposits are present	☐	☒
Slowly drained fine grained mineral or organic soils are present.	☒	☐
Alluvial soils present in or immediately adjacent to wetland.	☒	☐
Wetland formed on relatively gentle slopes (e.g., less than 3%).	☒	☐
Water retention/detention time in this wetland is increased by constricted outlet.	☐	☒
Water retention/detention time in this wetland is increased by thick vegetation.	☐	☒
Emergent vegetation and/or dense woody stems are dominant.	☒	☐
Wetland shows strong signs of variable water levels (e.g., well developed microtopography)	☐	☒
Other evidence of sediment, pollutant and nutrient removal (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Deckers Brook, and Meadow Brook

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

FISH AND SHELLFISH HABITAT (PONDS & LAKES) ***N/A***

Considerations/Qualifiers	**Yes**	**No**
Land use adjacent to pond or lake dominated by forest, shrub and/or meadow community	☐	☐
Shallow littoral zone with emergent vegetation present	☐	☐
Pond or lake is are least 10 feet deep	☐	☐
Pond or lake is covered by more than 15 but less than 40 percent submerged or emergent vegetation	☐	☐
Direct stormwater discharge(s) are few to none and , if present, originate from smaller culverts/outfalls	☐	☐
Sand bars or evidence of stormwater runoff at inlet is absent	☐	☐
Water transparency is high	☐	☐
Significant sources of nutrient sources (e.g. fertilizers, over-abundant waterfowl) are absent	☐	☐
Pond or lake is greater than 0.5 acre	☐	☐
Dense algal blooms, nuisance aquatic vegetation or duckweed are not or have not historically been observed	☐	☐
Other evidence of finfish habitat (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

FISH AND SHELLFISH HABITAT (STREAMS & RIVERS)

Considerations/Qualifiers	**Yes**	**No**
Land use adjacent to stream or river dominated by forest, shrub and/or meadow community	☐	☒
Channel is shaded by riparian trees or shrubs	☒	☐
Bank is predominantly vegetated with high cover (e.g. trees and shrubs)	☒	☐
Barriers to anadromous fish (i.e. dams, including beaver dams, waterfalls, road crossings, etc.) are absent from the stream reach associated with this wetland.	☐	☒
Dominant bottom substrate is gravel and/or cobbles	☒	☐
Bottom substrate is embedded with minimal sand and silt	☐	☒
Diversity of instream habitat (e.g. riffles, runs, shallow pools and deep pools) is high	☐	☒
Channel alteration (i.e. channelization, islands, point bars, etc.) are few to absent	☐	☒
Bank is stabilized; Little to no evidence of scour or erosion is present	☐	☒
Stream or river contains common to many cover objects (i.e, fallen logs, boulders, undercut banks)	☒	☐

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Deckers Brook, and Meadow Brook

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

FISH AND SHELLFISH HABITAT (STREAMS & RIVERS) (cont'd)

Stream or river is predominantly buffered from other land uses by a vegetated zone greater than 20 feet in width	☒	☐
Direct stormwater discharge(s) are few to none, and, if present, originate from smaller culverts/outfalls	☒	☐
Sand bars or evidence of stormwater runoff at inlet is absent	☒	☐
Significant sources of nutrient sources (e.g. fertilizers, over-abundant waterfowl) are absent	☒	☐
Quality of the watercourse associated with this wetland is able to support healthy fish/shellfish	☐	☒
Other evidence of finfish habitat (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☒ **SECONDARY FUNCTION?**

Comments:

PRODUCTION EXPORT

Considerations/Qualifiers	**Yes**	**No**
Wildlife food sources growing within this wetland are abundant and diverse.	☐	☒
Emergent vegetation and/or dense woody stems are dominant.	☐	☒
Wetland exhibits high degree of plant community structure/species diversity	☒	☐
Evidence of wildlife use found within this wetland.	☒	☐
Fish or shellfish develop or occur in this wetland.	☐	☒
Nutrients exported or "flushed" from wetlands to watercourses (permanent outlet present).	☒	☐
Other evidence of production export (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☒ **SECONDARY FUNCTION?**

Comments:

WILDLIFE HABITAT

Considerations/Qualifiers	**Yes**	**No**
Wetland is not degraded or fragmented by human activity.	☐	☒
Wildlife overland access to other wetlands is present and relatively unfragmented or unimpeded.	☐	☒
More than 40% of this wetland edge is bordered by upland wildlife habitat (e.g., shrub thicket, woodland, farmland, or idle land) at least 500 feet in width.	☐	☒
Wetland is contiguous with other wetland systems connected by a watercourse or lake.	☒	☐
Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.	☐	☒

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Deckers Brook, and Meadow Brook

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

WILDLIFE HABITAT (cont'd)

Dominant wetland class includes deep or shallow marsh or wooded swamp.	☐	☒
Wildlife food sources growing within this wetland are abundant and diverse.	☒	☐
Wetland exhibits a high degree of interspersion of vegetation classes (e.g. forest, shrub, emergent marsh, wet meadow, open water).	☐	☒
Two or more islands or inclusions of upland within the wetland are present.	☐	☒
Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses).	☒	☒
Wetland or watercourse contains numerous and diverse habitat features (e.g., snags, downed woody debris, rocks, seeps/springs, well drained sandy soils).	☒	☐
Evidence of obligate or facultative vernal pool species have been observed in or near the wetland.	☐	☒
Wetland shows strong signs of variable water levels (e.g., well developed microtopography).	☐	☒
Dominant vegetation cover type is not composed of invasive or noxious species.	☒	☐
Other evidence wildlife habitat (Explain below).	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

EDUCATIONAL, SCIENTIFIC & RECREATION VALUE

Considerations/Qualifiers	**Yes**	**No**
Wetland contains state or federal listed species.	☐	☒
Wildlife habitat is a principal function of the wetland	☐	☒
Direct access is available to a perennial watercourse (e.g., stream pond or lake)	☒	☐
Wetland is part of a recreation area, park, forest, or refuge.	☐	☒
Hunting and/or fishing is available within or from the wetland.	☐	☒
Hiking occurs or has the potential to occur in the wetland	☐	☒
Off-road public parking available at or near the wetland or watercourse.	☐	☒
Wetland is within a short drive or safe walk from highly populated public and private areas.	☐	☒
Wetland currently used for educational or scientific purposes.	☐	☒
Access to water is available at this potential recreation site for boating, canoeing, or fishing.	☐	☒
No known safety hazards exist (If not, explain below).	☐	☒
Other evidence educational, scientific or recreation value (Explain below).	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments: *Safety hazards include high, steep banks.*

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Deckers Brook, and Meadow Brook

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

UNIQUENESS & HERITAGE VALUE

Considerations/Qualifiers	**Yes**	**No**
Wetland contains state or federal listed species.	☐	☒
Wetland identified as a whole or in part as an exemplary natural community (Explain below)	☐	☒
Wetland considered a locally and/or regionally significant (Explain below)	☐	☒
Other evidence of uniqueness or heritage values (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

SUMMARY OF FUNCTIONS & VALUES

Function/Value	**Principal Function**	**Secondary Function**
Groundwater Recharge & Discharge		X (*D*)
Floodflow Alteration		
Sediment, Pollutant & Nutrient Removal		
Finfish Habitat (Ponds & Lakes)		
Finfish Habitat (Streams & Rivers)		X
Production Export		X
Wildlife Habitat		
Educational, Scientific & Recreation Value		
Uniqueness & Heritage		

MISCELLANEOUS NOTES & COMMENTS:

FUSS & O'NEILL

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Connecticut River

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

GROUNDWATER RECHARGE

Considerations/Qualifiers	**Yes**	**No**
Wetland is underlain by stratified drift, gravel or sandy soils.	☒	☐
Wetland is *not* underlain by hardpan, impervious soils (e.g., clays and silts) or bedrock	☐	☒
Wetland is associated with a perennial or intermittent watercourse	☒	☐
Wetland formed on relatively gentle slopes (e.g., less than 3%)	☒	☐
Wetland is associated with a watercourse but lacks a defined outlet or contains a constricted outlet	☐	☒
Other evidence of groundwater recharge is present (i.e., local water supplies piezometer data, etc.)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☒ **SECONDARY FUNCTION?**

Comments:

GROUNDWATER DISCHARGE

Considerations/Qualifiers	**Yes**	**No**
Wetland is *not* underlain by stratified drift, gravel or sandy soils.	☐	☒
Wetland is underlain by hardpan; impervious, tight grained soils (high clay and/or silt content); or bedrock	☐	☒
Wetland formed as a result of seeps or springs	☐	☒
Wetland shows strong signs of variable water levels (e.g., well developed microtopography)	☐	☒
Wetland is associated with a watercourse and contains only an outlet, no defined inlet	☐	☒
Other evidence of groundwater discharge are present (i.e., water temperature, piezometer data, etc.)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

FUSS & O'NEILL

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Connecticut River

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

FLOODFLOW ALTERATION

Considerations/Qualifiers	**Yes**	**No**
Area of this wetland is large relative to its watershed	☐	☒
Wetland occurs in the upper portions of its watershed and the effective flood storage is small or non-existent upslope of or above the wetland	☐	☒
Wetland watershed contains a high percent of impervious surfaces	☐	☒
Wetland shows strong signs of variable water levels (e.g., well developed microtopography) or ponding (e.g. sediment deposits or lines)	☐	☒
Wetland formed on relatively gentle slopes (e.g., less than 3%).	☒	☐
Wetland located in a floodplain of an adjacent watercourse.	☒	☐
Wetland has a constricted outlet.	☐	☒
Wetland contains hydric soils which are able to absorb and detain water.	☐	☒
Watershed has a history of economic loss due to flooding.	☒	☐
Associated watercourse, if present, is sinuous or diffuse.	☐	☒
Other evidence of floodflow alteration (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

SEDIMENT, POLLUTANT & NUTRIENT REMOVAL

Considerations/Qualifiers	**Yes**	**No**
Wetland saturated for most of the season.	☒	☒
Ponded water (including deep water or open water habitat) is present in the wetland.	☐	☒
Wetland edge is broad and intermittently aerobic.	☐	☒
Deep organic/sediment deposits are present	☐	☒
Slowly drained fine grained mineral or organic soils are present.	☒	☐
Alluvial soils present in or immediately adjacent to wetland.	☒	☐
Wetland formed on relatively gentle slopes (e.g., less than 3%).	☒	☐
Water retention/detention time in this wetland is increased by constricted outlet.	☐	☒
Water retention/detention time in this wetland is increased by thick vegetation.	☐	☒
Emergent vegetation and/or dense woody stems are dominant.	☒	☐
Wetland shows strong signs of variable water levels (e.g., well developed microtopography)	☐	☒
Other evidence of sediment, pollutant and nutrient removal (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☒ **SECONDARY FUNCTION?**

Comments:

FUSS & O'NEILL

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Connecticut River

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

FISH AND SHELLFISH HABITAT (PONDS & LAKES) ***N/A***

Considerations/Qualifiers	**Yes**	**No**
Land use adjacent to pond or lake dominated by forest, shrub and/or meadow community	☐	☐
Shallow littoral zone with emergent vegetation present	☐	☐
Pond or lake is are least 10 feet deep	☐	☐
Pond or lake is covered by more than 15 but less than 40 percent submerged or emergent vegetation	☐	☐
Direct stormwater discharge(s) are few to none and , if present, originate from smaller culverts/outfalls	☐	☐
Sand bars or evidence of stormwater runoff at inlet is absent	☐	☐
Water transparency is high	☐	☐
Significant sources of nutrient sources (e.g. fertilizers, over-abundant waterfowl) are absent	☐	☐
Pond or lake is greater than 0.5 acre	☐	☐
Dense algal blooms, nuisance aquatic vegetation or duckweed are not or have not historically been observed	☐	☐
Other evidence of finfish habitat (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

FISH AND SHELLFISH HABITAT (STREAMS & RIVERS)

Considerations/Qualifiers	**Yes**	**No**
Land use adjacent to stream or river dominated by forest, shrub and/or meadow community	☒	☐
Channel is shaded by riparian trees or shrubs	☐	☒
Bank is predominantly vegetated with high cover (e.g. trees and shrubs)	☒	☐
Barriers to anadromous fish (i.e. dams, including beaver dams, waterfalls, road crossings, etc.) are absent from the stream reach associated with this wetland.	☒	☐
Dominant bottom substrate is gravel and/or cobbles	☐	☒
Bottom substrate is embedded with minimal sand and silt	☐	☒
Diversity of instream habitat (e.g. riffles, runs, shallow pools and deep pools) is high	☒	☐
Channel alteration (i.e. channelization, islands, point bars, etc.) are few to absent	☒	☐
Bank is stabilized; Little to no evidence of scour or erosion is present	☒	☐
Stream or river contains common to many cover objects (i.e, fallen logs, boulders, undercut banks)	☒	☐

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Connecticut River

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

FISH AND SHELLFISH HABITAT (STREAMS & RIVERS) (cont'd)

Stream or river is predominantly buffered from other land uses by a vegetated zone greater than 20 feet in width	☒	☐
Direct stormwater discharge(s) are few to none, and, if present, originate from smaller culverts/outfalls	☐	☒
Sand bars or evidence of stormwater runoff at inlet is absent	☒	☐
Significant sources of nutrient sources (e.g. fertilizers, over-abundant waterfowl) are absent	☐	☒
Quality of the watercourse associated with this wetland is able to support healthy fish/shellfish	☒	☐
Other evidence of finfish habitat (Explain below)	☐	☐

☒ **PRINCIPAL FUNCTION** **or** ☒ **SECONDARY FUNCTION?**

Comments:

PRODUCTION EXPORT

Considerations/Qualifiers	**Yes**	**No**
Wildlife food sources growing within this wetland are abundant and diverse.	☐	☒
Emergent vegetation and/or dense woody stems are dominant.	☐	☒
Wetland exhibits high degree of plant community structure/species diversity	☒	☐
Evidence of wildlife use found within this wetland.	☒	☐
Fish or shellfish develop or occur in this wetland.	☐	☒
Nutrients exported or "flushed" from wetlands to watercourses (permanent outlet present).	☒	☐
Other evidence of production export (Explain below)	☐	☐

☐ **PRINCIPAL FUNCTION** **or** ☒ **SECONDARY FUNCTION?**

Comments:

WILDLIFE HABITAT

Considerations/Qualifiers	**Yes**	**No**
Wetland is not degraded or fragmented by human activity.	☐	☒
Wildlife overland access to other wetlands is present and relatively unfragmented or unimpeded.	☐	☒
More than 40% of this wetland edge is bordered by upland wildlife habitat (e.g., shrub thicket, woodland, farmland, or idle land) at least 500 feet in width.	☐	☒
Wetland is contiguous with other wetland systems connected by a watercourse or lake.	☒	☐
Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.	☐	☒

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Connecticut River

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

WILDLIFE HABITAT (cont'd)

Dominant wetland class includes deep or shallow marsh or wooded swamp.	☐	☒
Wildlife food sources growing within this wetland are abundant and diverse.	☒	☐
Wetland exhibits a high degree of interspersion of vegetation classes (e.g. forest, shrub, emergent marsh, wet meadow, open water).	☒	☐
Two or more islands or inclusions of upland within the wetland are present.	☒	☐
Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses).	☒	☐
Wetland or watercourse contains numerous and diverse habitat features (e.g., snags, downed woody debris, rocks, seeps/springs, well drained sandy soils).	☒	☐
Evidence of obligate or facultative vernal pool species have been observed in or near the wetland.	☐	☒
Wetland shows strong signs of variable water levels (e.g., well developed microtopography).	☐	☒
Dominant vegetation cover type is not composed of invasive or noxious species.	☒	☐
Other evidence wildlife habitat (Explain below).	☐	☐

☒ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

EDUCATIONAL, SCIENTIFIC & RECREATION VALUE

Considerations/Qualifiers	**Yes**	**No**
Wetland contains state or federal listed species.	☐	☒
Wildlife habitat is a principal function of the wetland	☒	☒
Direct access is available to a perennial watercourse (e.g., stream pond or lake)	☒	☐
Wetland is part of a recreation area, park, forest, or refuge.	☒	☐
Hunting and/or fishing is available within or from the wetland.	☒	☐
Hiking occurs or has the potential to occur in the wetland	☒	☐
Off-road public parking available at or near the wetland or watercourse.	☒	☐
Wetland is within a short drive or safe walk from highly populated public and private areas.	☒	☐
Wetland currently used for educational or scientific purposes.	☐	☒
Access to water is available at this potential recreation site for boating, canoeing, or fishing.	☒	☐
No known safety hazards exist (If not, explain below).	☐	☒
Other evidence educational, scientific or recreation value (Explain below).	☐	☐

☒ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments: *Safety hazards include high, steep banks.*

FUSS & O'NEILL

Project Name: Hartford-Windsor Riverwalk Park North Extension Project #: 20170277.A30

Wetland Assessment Area: Connecticut River

Date: 03/09/20 Weather: sunny, 65°F Photographs Taken? Yes / No

UNIQUENESS & HERITAGE VALUE

Considerations/Qualifiers	**Yes**	**No**
Wetland contains state or federal listed species.	☐	☒
Wetland identified as a whole or in part as an exemplary natural community (Explain below)	☒	☐
Wetland considered a locally and/or regionally significant (Explain below)	☒	☐
Other evidence of uniqueness or heritage values (Explain below)	☐	☐

☒ **PRINCIPAL FUNCTION** **or** ☐ **SECONDARY FUNCTION?**

Comments:

SUMMARY OF FUNCTIONS & VALUES

Function/Value	**Principal Function**	**Secondary Function**
Groundwater Recharge & Discharge		X (*R*)
Floodflow Alteration		
Sediment, Pollutant & Nutrient Removal		X
Finfish Habitat (Ponds & Lakes)		
Finfish Habitat (Streams & Rivers)		X
Production Export		X
Wildlife Habitat	X	
Educational, Scientific & Recreation Value	X	
Uniqueness & Heritage	X	

MISCELLANEOUS NOTES & COMMENTS:

Drainage Class—State of Connecticut
(Hartford-Windsor Riverwalk Park)

Map Scale: 1:6,340 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Lines

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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
Survey Area Data: Version 19, Sep 13, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 15, 2019—Aug 29, 2019

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.

Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
101	Occum fine sandy loam	Well drained	25.6	18.4%
105	Hadley silt loam	Well drained	19.3	13.9%
106	Winooski silt loam	Moderately well drained	26.0	18.7%
107	Limerick and Lim soils	Poorly drained	12.1	8.7%
306	Udorthents-Urban land complex	Well drained	0.4	0.3%
308	Udorthents, smoothed	Moderately well drained	23.0	16.5%
309	Udorthents, flood control	Moderately well drained	7.8	5.6%
704A	Enfield silt loam, 0 to 3 percent slopes	Well drained	9.7	7.0%
704B	Enfield silt loam, 3 to 8 percent slopes	Well drained	0.8	0.6%
W	Water		14.2	10.2%
Totals for Area of Interest			**138.9**	**100.0%**

Description

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Wetlands Delineation: Riverwalk / Cove Park 20170860.A10

Site delineated on March 3, 2020
by Kristin Connell + Michael Soares (RSS)

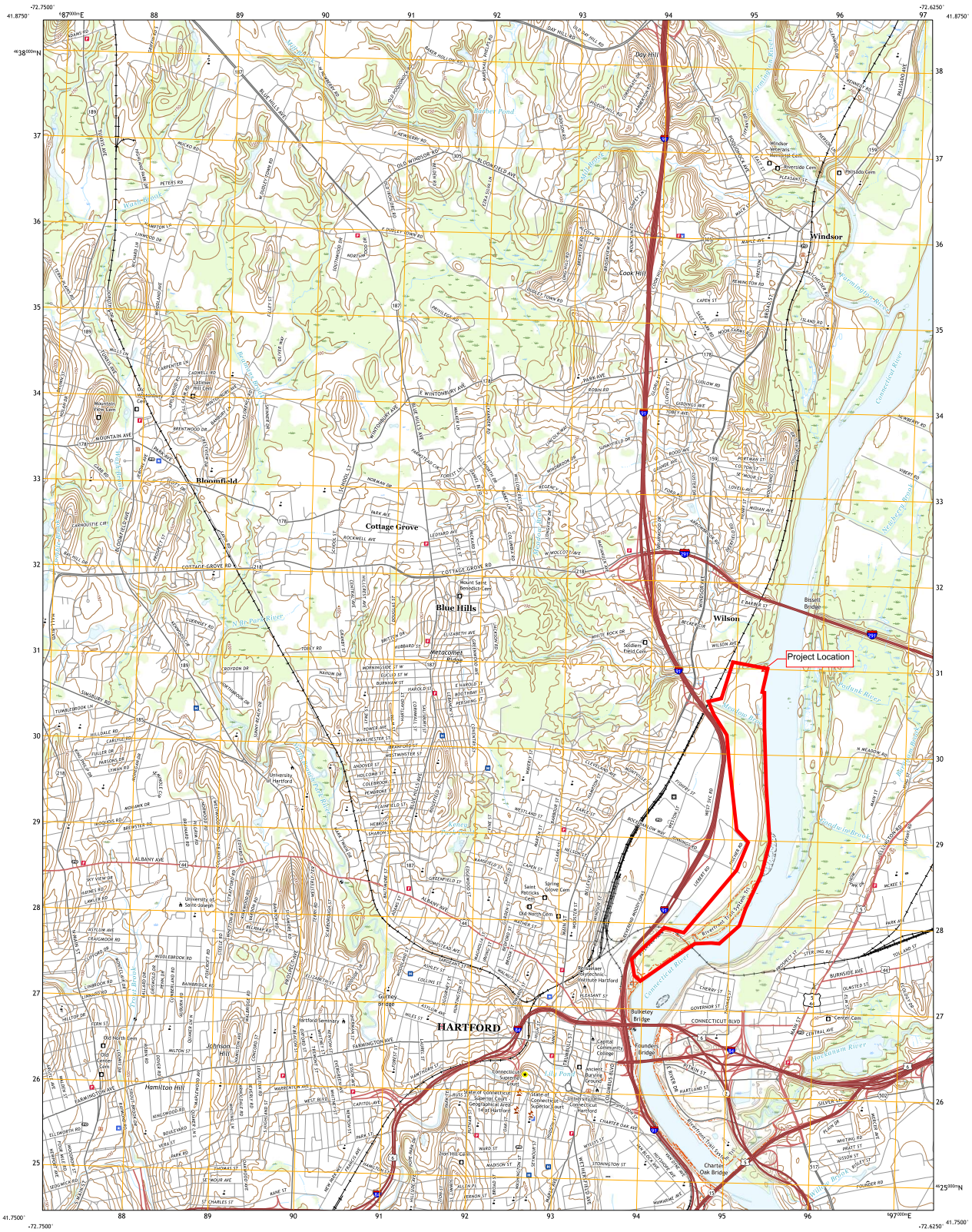
Flag lines: A100-A252
B200-B253
C300-C318

USGS Quadrangle Map

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

HARTFORD NORTH QUADRANGLE
CONNECTICUT - HARTFORD COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 18T
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery.....NAIP, July 2016 - September 2016
Roads.....U.S. Census Bureau, 2016
Names.....GNIS, 1979 - 2018
Hydrography.....National Hydrography Dataset, 2004
Contours.....National Elevation Dataset, 2012
Boundaries.....Multiple sources; see metadata file 2016 - 2017

Wetlands.....FWS National Wetlands Inventory 2010

UTM GRID AND 2019 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
0.5
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the
National Geospatial Program US Topo Product Standard.

CONNECTICUT
QUADRANGLE LOCATION

1 2 3
4 5
6 7 8
ADJOINING QUADRANGLES
1 Tariffville
2 Windsor Locks
3 Broad Brook
4 Avon
5 Manchester
6 New Britain
7 Hartford South
8 Glastonbury

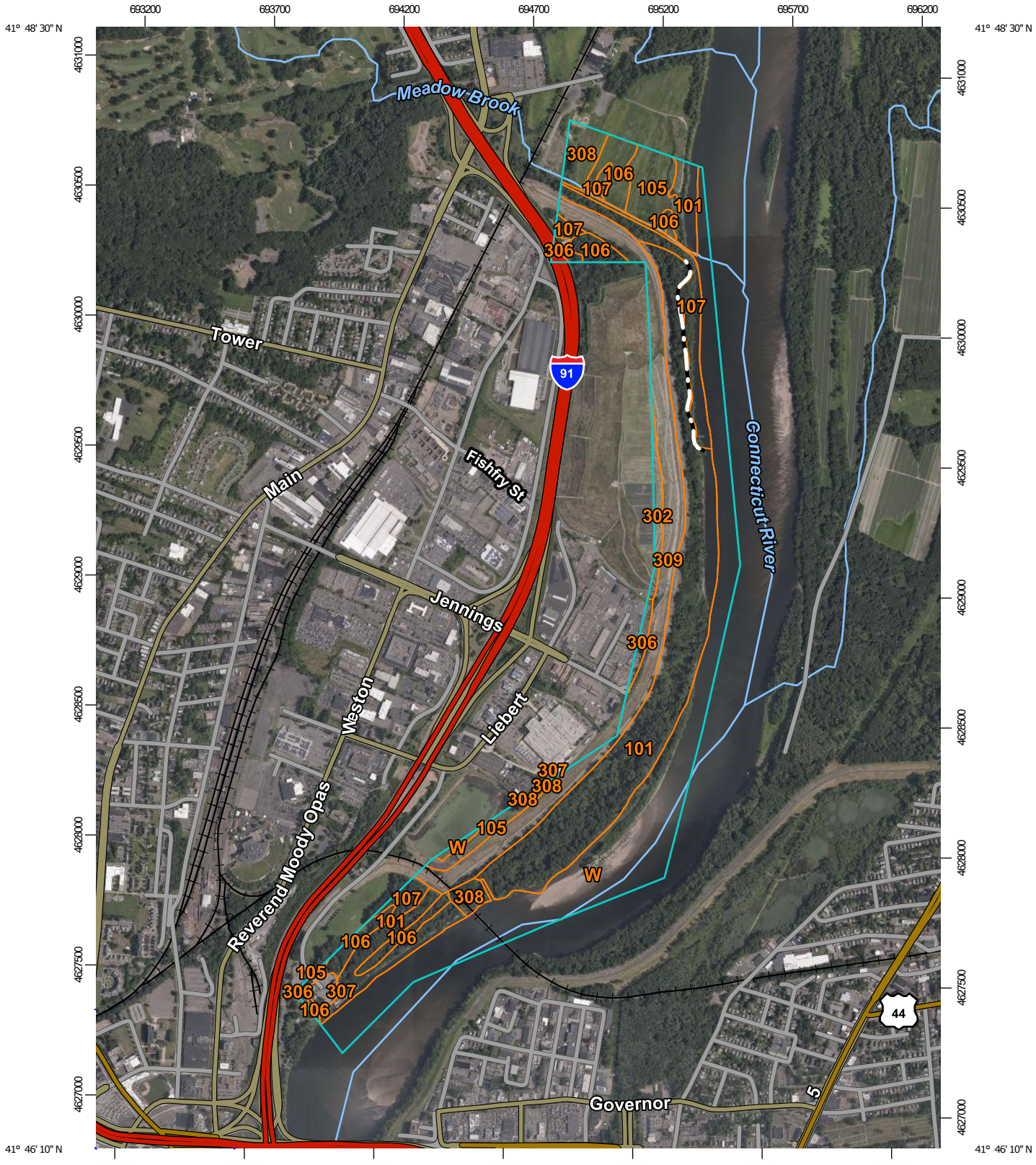
ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

HARTFORD NORTH, CT
2021

MN/GRID 14°40'
PRODUCED BY USGS
NGA REF NO. USGSX2K19512

NRCS Soil Map

Soil Map—State of Connecticut
(Riverwalk Trail)



Map Scale: 1:21,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 1000 2000 4000 6000

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
Survey Area Data: Version 21, Sep 7, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 15, 2019—Aug 29, 2019

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
101	Occum fine sandy loam	120.7	32.2%
105	Hadley silt loam	18.7	5.0%
106	Winooski silt loam	21.0	5.6%
107	Limerick and Lim soils	23.5	6.3%
302	Dumps	4.6	1.2%
306	Udorthents-Urban land complex	3.7	1.0%
307	Urban land	2.7	0.7%
308	Udorthents, smoothed	10.9	2.9%
309	Udorthents, flood control	55.1	14.7%
W	Water	114.1	30.4%
Totals for Area of Interest		**375.0**	**100.0%**

Adjacent Property Owners

Property Owners Within 150 ft. of Project Area

NATIONAL RAILROAD PASENGER CO
400 N CAPITOL ST NW
WASHINGTON, DC 20001-1511

STATE OF CONN HIGHWAY DEPT
2800 BERLIN TPKE
NEWINGTON, CT 06111-4113

STATE OF CONN DEPT OF TRANS
24 WOLCOTT HILL RD
WETHERSFIELD, CT 06109-1152

RIVERFRONT LAND INC
50 COLUMBUS BLVD 1ST FLOOR
HARTFORD , CT 06106

RIVERFRONT LAND INC
50 COLUMBUS BLVD 1ST FLOOR
HARTFORD, CT 06106

RIVERFRONT LAND INC
50 COLUMBUS BLVD
HARTFORD, CT 06106

CITY OF HARTFORD PUBLIC WORKS
550 MAIN ST
HARTFORD, CT 06103-2913

CITY OF HARTFORD BUILDING DIV
550 MAIN ST
HARTFORD, CT 06103

CITY OF HARTFORD
550 MAIN ST
HARTFORD, CT 06103-2913

CITY OF HARTFORD POLICE DEPT
550 MAIN ST
HARTFORD, CT 06103-2913

CITY OF HARTFORD
550 MAIN ST
HARTFORD, CT 06103-2913

CITY OF HARTFORD PARK DEPT
550 MAIN ST
HARTFORD, CT 06103-2913

CITY OF HARTFORD FLOOD COMMISSION
550 MAIN ST
HARTFORD, CT 06103-2913

Accessed: January 19, 2022

Source: https://gis1.hartford.gov/Html5Viewer/index.html?viewer=MailingLabelViewer

Site Plans

MARFUGGI RIVERWALK

HARTFORD · CONNECTICUT

STATE PROJECT NO. 63-721 & FEDERAL AID NO. PEDS (209)

MARCH 2022

REVISION DATE

PREPARED FOR

CITY OF HARTFORD
550 MAIN STREET
HARTFORD, CT 06103

RIVERFRONT RECAPTURE INC.
50 COLUMBUS BLVD., 1st FLOOR
HARTFORD, CT 06104

CT DEPARTMENT OF TRANSPORTATION
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

PROJECT TEAM

FREEMAN COMPANIES, LLC.
100 WELLS STREET, SUITE 2H
HARTFORD, CT 06103
(860) 986-7161

RICHTER & CEGAN, INC.
88 CANAL COURT
AVON, CT 06001
(860) 678-0669

ARCHAEOLOGICAL & HISTORICAL SERVICES, INC.
569 MIDDLE TURNPIKE
STORRS, CT 06268
(860) 429-2142

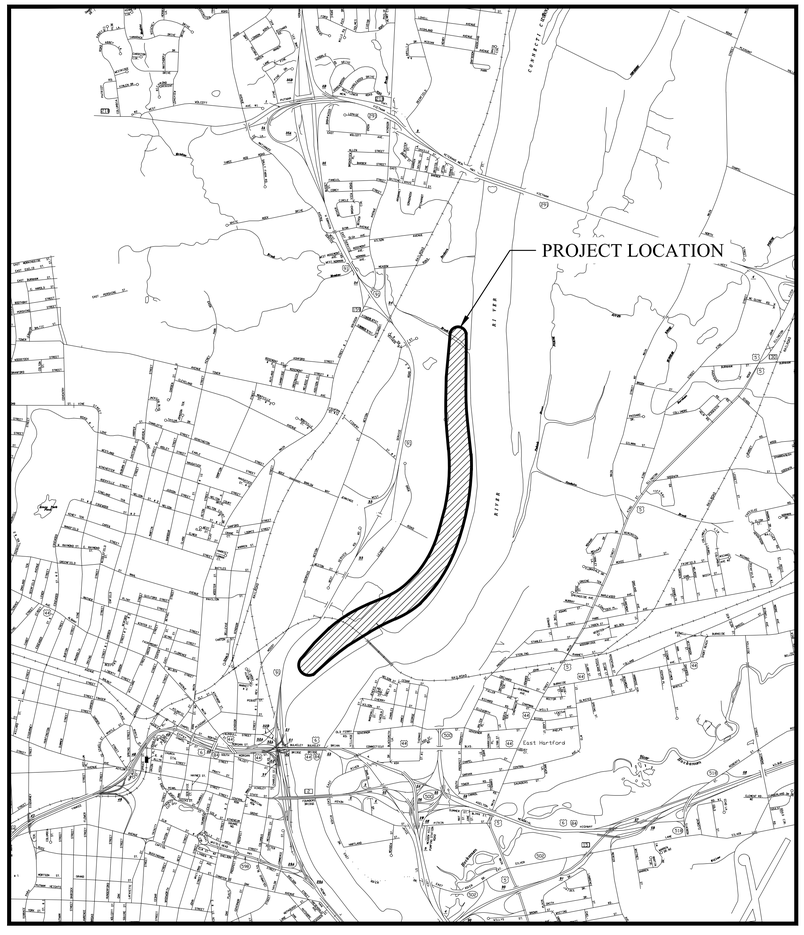
PREPARED BY

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

SHEET INDEX

GENERAL NOTES:

1. CONSTRUCTION SPECIFICATIONS:
   - Connecticut Department of Transportation, Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 818, dated 2020, Supplemental Specifications, dated July 2021 and Special Provisions
2. DESIGN:
   - Connecticut Department of Transportation Highway Design Manual, dated 2003
   - Guide for the Development of Bicycle Facilities by the American Association of State Highway and Transportation Officials, dated 2012
   - LRFD Bridge Design Specifications 9th Edition by the American Association of State Highway and Transportation Officials, dated 2020
3. SURVEY:
   - Original survey by Robinson Aerial (February 2019)
   - Supplemental survey by Fuss & O'Neill (August 2021)
   - Topographic Information based on NAD83 Horizontal and NAVD88 Vertical Datums.



LOCATION MAP
SCALE: 1" = 2000'

Approved By:_____Date _____
Luke A. Bronin
Mayor - City of Hartford

Designed By:_____Date _____
Kristen E. Solloway
CT P.E. License No. 22072

PROJ. No.: 20170860.A10
DATE: MARCH 2022

COV-01

BEGIN STATE PROJECT NO. 63-721
BEGIN SHARED-USE PATH CONSTRUCTION
STA 7+48.19

END STATE PROJECT NO. 63-721
END SHARED-USE PATH CONSTRUCTION
STA 125+99.75

GREATER HARTFORD JAYCEES COMMUNITY BOATHOUSE
RIVERSIDE PARK
BOAT LAUNCH
RIVERSIDE PARK ACCESS DRIVE
CONNECTICUT RIVER
ALN-01
PLP-01
GRD-01
SHARED-USE PATH (TYP.)
NORTH MEADOWS DIKE
ALN-02
PLP-02
GRD-02
GENESEE & WYOMING INC. RAILROAD
VISTA AREA (SITE NO. 1)
HARTFORD PUBLIC WORKS DEPARTMENT
HARTFORD FIRE DEPARTMENT TRAINING ACADEMY
CT TRANSIT
JENNINGS ROAD
FISCHER ROAD
EXISTING SOLAR ARRAY
MEADOW BROOK BRIDGE
MEADOW BROOK CROSSING - TURNAROUND (SITE NO. 5)
NORTH MEADOWS DIKE
NORTH MEADOWS BIRD SANCTUARY
MEADOW BROOK
FUTURE RLI PARK
I-91 SB
I-91 NB
ALN-03
PLP-03
GRD-03
ALN-04
PLP-04
GRD-04
CONNECTICUT RIVER
ALN-05
PLP-05
GRD-05
ALN-06
PLP-06
GRD-06
VISTA AREA (SITE NO. 2)
ALN-07
PLP-07
GRD-07
VISTA AREA (SITE NO. 3)
ALN-08
PLP-08
GRD-08
ALN-09
PLP-09
GRD-09
VISTA AREA (SITE NO. 4)
ALN-10
PLP-10
GRD-10
CONNECTICUT RIVER

5+00 10+00 15+00 20+00 25+00 30+00 35+00 40+00 45+00 50+00 55+00 60+00 65+00 70+00 75+00 80+00 85+00 90+00 95+00 100+00 105+00 110+00 115+00 120+00 125+00

LEGEND

PROPERTY LINE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 400'
VERT.:
DATUM:
HORZ.: NAD83
VERT.: NAVD88
400 200 0 400
GRAPHIC SCALE

FUSS & O'NEILL
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CITY OF HARTFORD
INDEX PLAN
GRADING PLAN AND CROSS SECTION
MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721
HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

IND-01

CIVIL GENERAL NOTES

GENERAL

1. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SHOWN ON THE DRAWINGS TO SCALE OR TO THEIR ACTUAL DIMENSION OR LOCATION. COORDINATE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
2. DO NOT RELY SOLELY ON ELECTRONIC VERSIONS OF DRAWINGS, SPECIFICATIONS, AND DATA FILES THAT ARE PROVIDED BY THE ENGINEER. FIELD VERIFY LOCATION OF PROJECT FEATURES.
3. PERFORM NECESSARY CONSTRUCTION NOTIFICATIONS, APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK AS REQUIRED BY THE CONTRACT DOCUMENTS.
4. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDINGS AND ADJACENT SITE ELEMENTS INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
5. BASE PLAN: THE PROPERTY LINES SHOWN WERE DETERMINED CONDUCTED BY GIS MAPPING AND FROM PLANS OF RECORD. THE TOPOGRAPHY AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL FIELD SURVEY PERFORMED ON THE GROUND BY FUSS & O'NEILL AUGUST 2021 AND AERIAL SERVICES PERFORMED BY ROBINSON AERIAL FEBRUARY 2019
6. TOPOGRAPHIC ELEVATIONS ARE BASED ON NAD83 HORIZONTAL AND NAVD88 VERTICAL DATUMS.
7. GEOTECHNICAL DATA INCLUDING TEST PIT AND BORING LOCATIONS AND ELEVATIONS WERE OBTAINED FROM FREEMAN COMPANIES JULY 2, 2019 AND NOVEMBER 29, 2021.

8. WETLANDS WERE DELINEATED BY FUSS AND O'NEILL 2020.

WORK RESTRICTIONS

1. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, FIRE HYDRANTS, AND UTILITIES WITHOUT APPROPRIATE PERMITS.
2. WORK IS RESTRICTED TO THE HOURS OF TO THE HOURS (TIME) TO (TIME) ON (DAY) THROUGH (DAY)

REGULATORY REQUIREMENTS

1. WITHIN LOCAL RIGHTS-OF-WAY, PERFORM THE WORK IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS.
2. WITHIN STATE RIGHTS-OF-WAY, PERFORM THE WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS AND ISSUED REVISIONS/SUPPLEMENTS.
3. PROVIDE TRAFFIC SIGNAGE AND PAVEMENT MARKINGS IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
4. BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. PERFORM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
5. DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
6. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE CONNECTICUT DEP STORMWATER AND DEWATERING WASTEWATER FROM CONSTRUCTION ACTIVITIES GENERAL PERMIT PROCESS. (NAME OF APPLICANT) HAS SUBMITTED INFORMATION TO THE DEP TO SATISFY THIS GENERAL PERMIT. THE CONTRACTOR MUST HAVE A COPY OF THIS GENERAL PERMIT ON SITE AT ALL TIMES.

EROSION AND SEDIMENT CONTROL

1. INSTALL EROSION CONTROL MEASURES PRIOR TO STARTING ANY WORK ON THE SITE. REFER TO THE EROSION AND SEDIMENT CONTROL DRAWINGS.
2. IMPLEMENT ALL NECESSARY MEASURES REQUIRED TO CONTROL STORMWATER RUNOFF, DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE. PERFORM CORRECTIVE ACTION AS NEEDED FOR EROSION CLEANUP AND REPAIRS TO OFF SITE AREAS, IF ANY, AT NO COST TO OWNER.
3. INSPECT AND MAINTAIN EROSION CONTROL MEASURES PER THE SCHEDULE IN THE EROSION AND SEDIMENT CONTROL DRAWINGS. DISPOSE OF SEDIMENT IN AN UPLAND AREA. DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
4. PERFORM CONSTRUCTION SEQUENCING IN SUCH A MANNER TO CONTROL EROSION AND TO MINIMIZE THE TIME THAT EARTH MATERIALS ARE EXPOSED BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL MEASURES. CLEAN SEDIMENT AND DEBRIS FROM TEMPORARY MEASURES AND FROM PERMANENT STORM DRAIN AND SANITARY SEWER SYSTEMS.

DEMOLITION

1. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS, UNLESS OTHERWISE NOTED.
2. THE DEMOLITION PLAN IS PROVIDED FOR INFORMATION ONLY AND MAY NOT INDICATE ALL ITEMS REQUIRED TO BE DEMOLISHED. PERFORM A PRE-BID SITE INSPECTION. COORDINATE DEMOLITION OF UNIDENTIFIED UTILITIES OR STRUCTURES WITH OWNER. DEMOLISH STRUCTURES, SITE IMPROVEMENTS, UTILITIES, ETC. AS REQUIRED TO CONSTRUCT PROPOSED TO CONSTRUCT PROPOSED FACILITY AND UTILITY SERVICES.

CONSTRUCTION LAYOUT

1. PROVIDE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED SITE IMPROVEMENTS. FIELD VERIFY EXISTING PAVEMENT AND GROUND ELEVATIONS AT THE INTERFACE WITH PROPOSED PAVEMENTS AND DRAINAGE STRUCTURES BEFORE START OF CONSTRUCTION.
2. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, FIELD VERIFY PROPOSED UTILITY ROUTES AND IDENTIFY ANY INTERFERENCES OR OBSTRUCTIONS WITH EXISTING UTILITIES OR PUBLIC RIGHTS-OF-WAY.
3. IMMEDIATELY INFORM THE ENGINEER IN WRITING IF EXISTING UTILITY CONDITIONS CONFLICT OR DIFFER FROM THAT INDICATED AND IF THE WORK CANNOT BE COMPLETED AS INDICATED.
4. DIMENSIONS ARE FROM FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS NOTED OTHERWISE.
5. BOUNDS OR MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

EARTHWORK

1. NOTIFY UTILITY LOCATOR SERVICE AT LEAST 72 HOURS BEFORE STARTING EXCAVATION.
   - CT: "CALL BEFORE YOU DIG" AT 1-800-922-4455.
   - MA, RI: "DIG SAFE" AT 1-888-344-7233.
   - NY: "DIG SAFELY: NEW YORK" AT 811.
2. STOP WORK IN THE VICINITY OF SUSPECTED CONTAMINATED SOIL, GROUNDWATER OR OTHER MEDIA. IMMEDIATELY NOTIFY THE OWNER SO THAT APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN. RESUME WORK IN THE IMMEDIATE VICINITY ONLY UPON DIRECTION BY THE OWNER.
3. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, PERFORM EARTHWORK OPERATIONS TO SUBGRADE ELEVATIONS. SEE DRAWINGS BY OTHERS FOR WORK ABOVE SUBGRADE.

UTILITIES

1. TERMINATE EXISTING UTILITIES IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. COORDINATE UTILITY SERVICE DISCONNECTS WITH UTILITY REPRESENTATIVES.
2. THE TYPE, SIZE AND LOCATION OF DEPICTED UNDERGROUND UTILITIES ARE APPROXIMATE REPRESENTATIONS OF INFORMATION OBTAINED FROM FIELD LOCATIONS OF VISIBLE FEATURES, EXISTING MAPS AND PLANS OF RECORD, UTILITY MAPPING, AND OTHER SOURCES OF INFORMATION OBTAINED BY THE ENGINEER. ASSUME NO GUARANTEE AS TO THE COMPLETENESS, SERVICEABILITY, EXISTENCE, OR ACCURACY OF UNDERGROUND FACILITIES. FIELD VERIFY THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES.
3. PAY ALL FEES AND COSTS ASSOCIATED WITH UTILITY MODIFICATIONS AND CONNECTIONS, REGARDLESS OF THE ENTITY THAT PERFORMS THE WORK.
4. COORDINATE THE WORK AND WORK SCHEDULE WITH UTILITY COMPANIES. PROVIDE ADEQUATE NOTICE TO UTILITIES TO PREVENT DELAYS IN CONSTRUCTION.
5. INTERIOR DIAMETERS OF STORM DRAIN AND SANITARY SEWER STRUCTURES SHALL BE DETERMINED BY THE PRECAST MANUFACTURER, BASED ON THE INDICATED PIPE SYSTEM LAYOUT AND LOCAL MUNICIPAL STANDARDS.

   MINIMUM INTERIOR DIAMETERS:
   0 TO 20 FEET DEEP; 4 FEET.
   20 FEET OR GREATER; 5 FEET.
5. RIM ELEVATIONS FOR MANHOLES, VALVE COVERS, GATE AND PULL BOXES, AND OTHER STRUCTURES ARE APPROXIMATE. SET OR RESET RIM ELEVATIONS AS FOLLOWS:

   IN PAVEMENTS AND CONCRETE SURFACES: FLUSH
   IN SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
   IN LANDSCAPE, SEEDED, AND OTHER EARTH SURFACE AREAS:
   1 INCH ABOVE SURROUNDING AREA; TAPER EARTH TO RIM ELEVATION.
6. INSTALL PROPOSED PRIVATE UTILITY SERVICES ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY THE AUTHORITY HAVING JURISDICTION (WATER, SEWER, GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). COORDINATE FINAL DESIGN LOADS AND LOCATIONS WITH OWNER AND ARCHITECT.

PAVEMENT

1. AT A MINIMUM, CONSTRUCT ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).

SITE RESTORATION

1. PROVIDE 6 INCHES OF TOPSOIL AND SEED TO AREAS DISTURBED DURING CONSTRUCTION AND NOT DESIGNATED TO BE RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) UNLESS OTHERWISE NOTED.
2. REPAIR DAMAGES RESULTING FROM CONSTRUCTION LOADS, AT NO ADDITIONAL COST TO OWNER.
3. RESTORE AREAS DISTURBED BY CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITION OR BETTER, AT NO ADDITIONAL COST TO OWNER.

ABBREVIATIONS

A.C.	ASBESTOS CEMENT
ALUM., AL.	ALUMINUM
APPROX.	APPROXIMATE
ARV	AIR RELEASE/ VACUUM VALVE
B-2	BORING NO.
BIT.	BITUMINOUS
℄	BASELINE
BLDG.	BUILDING
BM	BENCH MARK
C.I.	CAST IRON
CLDIP	CEMENT LINED DUCTILE IRON PIPE
℄	CENTERLINE
CONC.	CONCRETE
CONN.	CONNECTION
CB	CATCH BASIN
CO	CLEANOUT
DBL CB	DOUBLE CATCH BASIN
D.I.	DUCTILE IRON
ø, DIA.	DIAMETER
DMH	DRAINAGE MANHOLE
E.C.L.	EROSION CONTROL LINING
ECO	END CLEANOUT
EL.	ELEVATION
EOB.	END OF BORING
EXIST.	EXISTING
EXP.	EXPANSION
FRP	FIBERGLASS REINFORCED POLYETHYLENE
G.W.O	GROUNDWATER OBSERVED
HDPE	HIGH DENSITY POLYETHYLENE
I.D.	INSIDE DIAMETER
INV.	INVERT
FF	FINISH FLOOR
G.V	GATE VALVE
H.P.	HIGH POINT
L.P.	LOW POINT
LPS	LOW PRESSURE SEWER
LW	LAB WASTE
MAX.	MAXIMUM
MIN.	MINIMUM
MJ	MECHANICAL JOINT
NTS	NOT TO SCALE
O.D.	OUTSIDE DIAMETER
OS	OUTDOOR SHOWER
P-3	PROBE NO.
PROP.	PROPOSED
PVC	POLYVINYL CHLORIDE
RC	REINFORCED CONCRETE
SCS	SEDIMENTATION CONTROL SYSTEM
RCP	REINFORCED CONCRETE PIPE
RGS	RIGID GALVANIZED STEEL
SCH.	SCHEDULE
SMH	SANITARY MANHOLE
STA.	STATION
DSMH	DROP SANITARY MANHOLE
TF	TOP OF FRAME
TYP.	TYPICAL
VCP	VITRIFIED CLAY PIPE
W/	WITH

LEGEND

- SANITARY MANHOLE
- STORM MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- CATCH BASIN
- FLAT TOP CATCHBASIN
- DOUBLE CATCHBASIN
- FLARED END
- SOIL BORING
- MONITOR WELL
- EXISTING IRON PIPE
- EXISTING I.ROD OR I.PIN
- EXISTING DRILL HOLE
- EXISTING MONUMENT
- IRON PIN TO BE SET
- MONUMENT TO BE SET
- MAIL BOX
- CONTROL POINT
- WATER VALVE
- FIRE HYDRANT
- UTILITY POLE
- GUY WIRE
- BOLLARD
- SIGN
- GAS GATE
- WELL
- BUSH
- DECIDUOUS TREE
- PINE TREE
- PEDESTRIAN WALK SIGNAL
- FLOOD LIGHT
- LIGHT
- WETLANDS FLAG
- PROPERTY LINE
- EASEMENT LINE
- EDGE OF WATER
- CURB
- TREELINE
- STONE WALL
- STATE WETLANDS
- FEDERAL WETLANDS
- EXISTING CONTOUR
- INDEX CONTOUR
- CHAIN LINK FENCE
- STOCKADE FENCE
- WIRE FENCE
- GUIDE RAIL
- STORM DRAINAGE PIPE
- SANITARY SEWER PIPE
- OVERHEAD WIRES
- WATER MAIN
- UNDERGROUND GAS
- UNDERGROUND TELEPHONE
- UNDERGROUND ELECTRIC
- LEDGE LINE
- RAILROAD TRACK

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: N.T.S.
VERT.:
DATUM:
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VERT.:
0
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
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CITY OF HARTFORD

GENERAL NOTES AND LEGEND

MAFUGGI RIVERWALK
STATE PROJECT N. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

GEN-01

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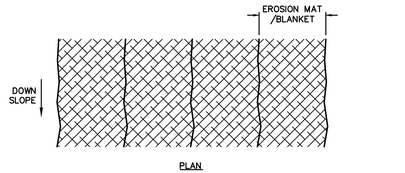

NOTES:

1. MATS AND BLANKETS SHALL BE STAPLED TO SLOPE. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR DETAILS OF STAPLING PATTERN.
2. REFER TO PLANS FOR LOCATIONS OF TEMPORARY EROSION CONTROL MATS AND PERMANENT EROSION CONTROL BLANKETS

TEMPORARY EROSION CONTROL MAT/PERMANENT EROSION CONTROL BLANKET

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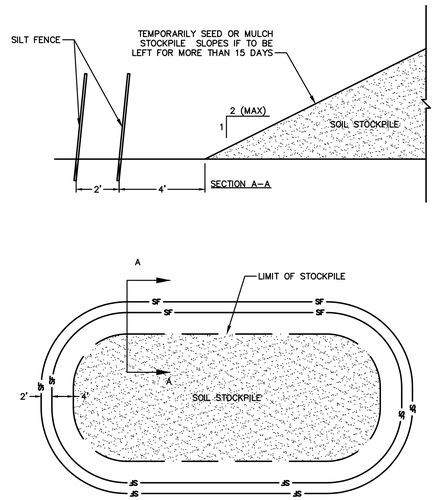


SOIL STOCKPILE AREA

NOT TO SCALE

1. CONSTRUCTION STANDARDS - CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MOST RECENT EDITION OF THE "CONNECTICUT 2002 GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" (CT DEP BULLETIN 34). ALL MEASURES SHALL BE MAINTAINED AND UPGRADED TO ACHIEVE PROPER SEDIMENT CONTROL DURING CONSTRUCTION.

2. PLAN IMPLEMENTATION - IMPLEMENT THIS EROSION AND SEDIMENT CONTROL PLAN. THIS IMPLEMENTATION INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES UNTIL PERMANENT STABILIZATION IS ACHIEVED, INFORMING ALL SUBCONTRACTORS OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, AND NOTIFYING THE PROPER MUNICIPAL AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY. THE OWNER SHALL BE RESPONSIBLE FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN TO THE NEW OWNER IF THE TITLE OF THE LAND IS TRANSFERRED PRIOR TO ACHIEVING PERMANENT STABILIZATION.

3. INSTALLATION SCHEDULE - INSTALL THE CONSTRUCTION ENTRANCE BEFORE CONSTRUCTION TRAFFIC INTO AND OUT OF THE PROJECT AREA BEGINS. INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO STUMP REMOVAL AND CONSTRUCTION. INSTALL ADDITIONAL CONTROL MEASURES DURING THE CONSTRUCTION PERIOD, IF DEEMED NECESSARY BY THE OWNER, HIS AGENTS OR AGENTS OF THE MUNICIPALITY.

4. FUGITIVE DUST - CONTROL FUGITIVE DUST USING WATER SPRAYS OR CALCIUM CHLORIDE ON SOIL SURFACES, SWEEPING PAVED AREAS, TEMPORARY WINDBREAKS OR NON-ASPHALTIC SOIL TACKIFIERS.

5. HAY BALE LIFE SPAN - INSTALL HAY BALES WHERE PROTECTION AND EFFECTIVENESS IS REQUIRED FOR LESS THAN 90 DAYS. OTHERWISE, INSTALL SILT FENCE.

6. CATCH BASINS - PROTECT CATCH BASINS WITH PROPER CONTROLS THROUGHOUT THE CONSTRUCTION PERIOD UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.

7. STOCKPILES - ENCIRCLE STOCKPILES OF ERODIBLE SOIL WITH A HAY BALE OR SILT FENCE BARRIER. THE SIDE SLOPES OF ERODIBLE STOCKPILED MATERIAL SHALL BE NO STEEPER THAN 2:1. STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER THEY ARE FORMED.

8. TOE OF SLOPE - ESTABLISH AN EROSION CONTROL BARRIER (SILT FENCE OR HAY BALE BARRIER) APPROXIMATELY 5 TO 10 FEET FROM THE PROPOSED TOE OF THE CUT OR FILL AREA PRIOR TO BEGINNING EARTHWORK.

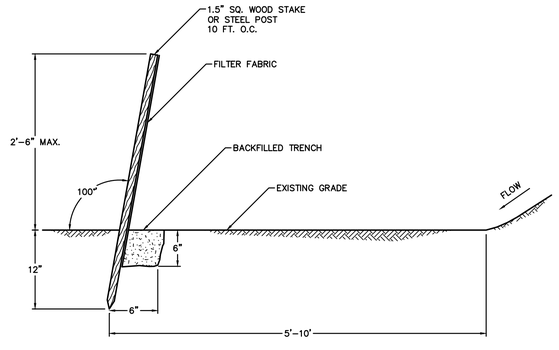
9. SEDIMENT REMOVAL - SEDIMENT REACHING ½ THE HEIGHT OF THE EROSION CONTROL BARRIER SHALL BE REMOVED. REMOVE AND DISPOSE OF SEDIMENT IN A MANNER CONSISTENT WITH THE INTENT OF THE PLAN.

10. SOIL STABILIZATION SCHEDULE - APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN 7 DAYS OF ESTABLISHING FINAL GRADE. APPLY TEMPORARY SOIL STABILIZATION MEASURES IF FINAL GRADING IS TO BE DELAYED MORE THAN 30 DAYS.

11. TEMPORARY TURF ESTABLISHMENT - TEMPORARILY SEED ERODIBLE SOILS THAT WILL BE EXPOSED GREATER THAN 1 BUT LESS THAN 12 MONTHS WITHIN THE FIRST 7 DAYS OF SUSPENDING GRADING OPERATIONS. APPLY LIME AT A RATE OF 90 LBS/1000 SQ. FT. APPLY 10-10-10 FERTILIZER AT A RATE OF 7 ½ LBS/1000 SQ. FT. APPLY PERENNIAL RYE GRASS AT A RATE OF 2 LBS/1000 SQ. FT. TO A DEPTH OF ½ INCH. OPTIMUM SEEDING DATES ARE MARCH 15 TO JULY 1 AND AUGUST 1 TO OCTOBER 15. MULCH FOR SEED APPLIED WITHIN THE OPTIMUM SEEDING DATES SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 80%-95% SOIL COVERAGE. MULCH FOR SEED APPLIED OUTSIDE OF THE OPTIMUM SEEDING DATES SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 95%-100% COVERAGE.

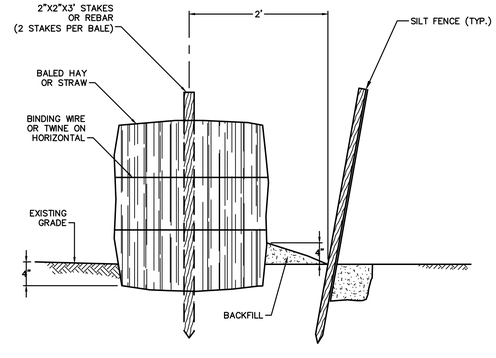
12. PERMANENT TURF ESTABLISHMENT - SEED PERMANENT LAWN AREAS IN ACCORDANCE WITH THE SPECIFICATIONS.

13. INSPECTION - THE OWNER SHALL SECURE THE SERVICES OF A SOIL SCIENTIST OR PROFESSIONAL ENGINEER TO VERIFY IN THE FIELD THAT THE CONTROLS REQUIRED BY THIS PLAN ARE PROPERLY INSTALLED AND MAINTAINED. THESE INSPECTIONS SHALL BE NOT LESS FREQUENTLY THAN WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM HAVING A RAINFALL AMOUNT OF 0.1 INCH OR GREATER. FOLLOWING THESE INSPECTIONS, A WRITTEN REPORT SHALL BE PREPARED, INFORMING THE OWNER OR HIS AGENT NOT LESS FREQUENTLY THAN WEEKLY AND THE MUNICIPALITY NOT LESS FREQUENTLY THAN MONTHLY OF OBSERVATIONS, MAINTENANCE, AND CORRECTIVE ACTIVITIES UNDERTAKEN.



SILT FENCE

NOT TO SCALE



SILT FENCE AND HAY BALE BARRIER

NOT TO SCALE

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE: HORZ.: N.T.S. VERT.:
DATUM: HORZ.: VERT.:
0
GRAPHIC SCALE

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CITY OF HARTFORD

MISCELLANEOUS DETAILS

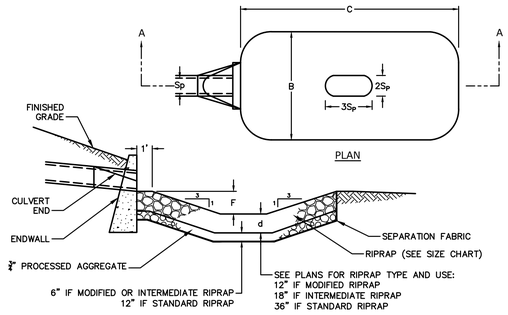
MAFUGGI RIVERWALK
STATE PROJECT N. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

MDS-01

File Path: J:\DWG\P2017\0860A10\Civil\Details\20170860A10_MDS01.dwg Layout: MDS-01 Plotted: Fri, March 18, 2022 - 1:18 PM User: sleamy
MS VIEW: LAYER STATE:
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB



PIPE SIZE	12" OR LESS	15"	18"	24"	30"	36"	42"	48"	54"	60"
TYPE 1										
B	5'	6'	8'	10'	13'	15'	18'	20'	23'	25'
C	6'	8'	9'	12'	15'	18'	21'	24'	27'	30'
d	DEPENDS ON RIPRAP TYPE (SEE PLANS)									
$2S_P$	2.0'	2.6'	3.0'	4.0'	5.0'	6.0'	7.0'	8.0'	9.0'	10.0'
$3S_P$	3.0'	3.9'	4.5'	6.0'	7.5'	9.0'	10.5'	12.0'	13.5'	15.0'
$F=0.5S_P$	0.5'	0.625'	0.75'	1.0'	1.25'	1.5'	1.75'	2.0'	2.25'	2.5'
TYPE 2										
B	8'	10'	12'	16'	20'	24'	28'	32'	36'	40'
C	9'	11'	14'	18'	23'	27'	32'	36'	41'	45'
d	DEPENDS ON RIPRAP TYPE (SEE PLANS)									
$2S_P$	2'	2.6'	3.0'	4.0'	5.0'	6.0'	7.0'	8.0'	9.0'	10.0'
$3S_P$	3'	3.9'	4.5'	6.0'	7.5'	9.0'	10.5'	12.0'	13.5'	15.0'
$F=S_P$	1'	1.3'	1.5'	2.0'	2.5'	3.0'	3.5'	4.0'	4.5'	5.0'

NOTES:

1. SEE DRAINAGE PLANS FOR STILLING BASIN DIMENSIONS AND RIPRAP TYPE.
2. BASED ON THE CONNECTICUT DOT DRAINAGE MANUAL, SECTION 11.13.

STILLING BASIN

NOT TO SCALE

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			xx/xx	xx

SEAL

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SCALE:
HORZ.: N.T.S.
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DATUM:
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CITY OF HARTFORD

MISCELLANEOUS DETAILS

MAFUGGI RIVERWALK
STATE PROJECT N. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
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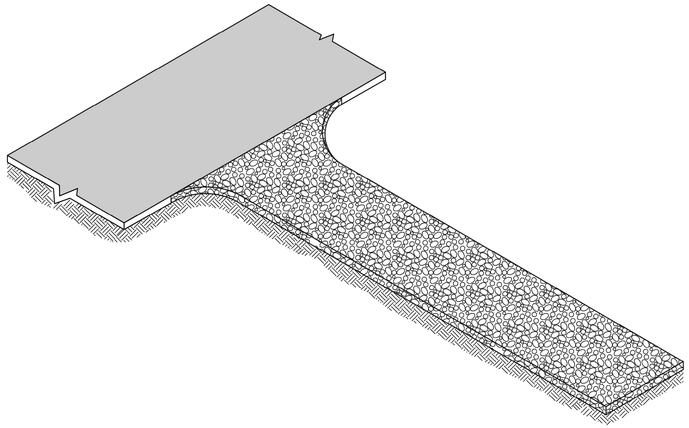
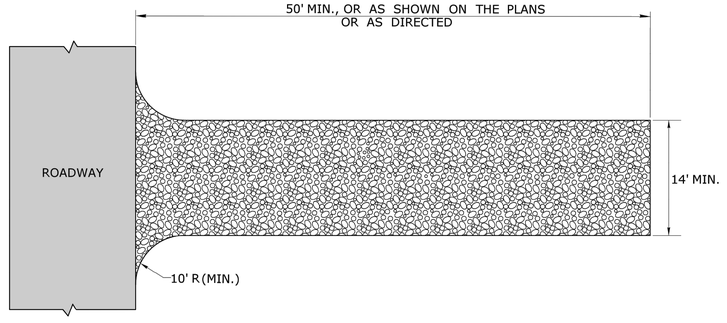
MDS-01

GENERAL NOTE:

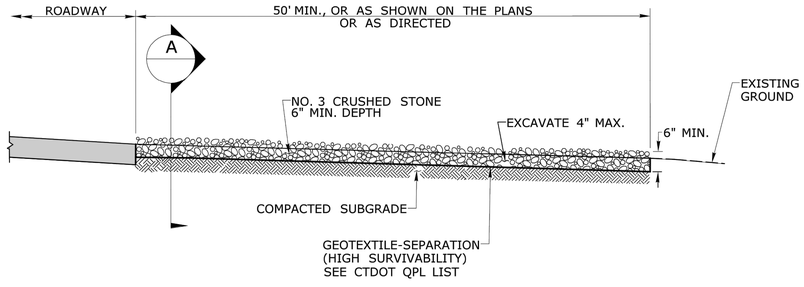
1. THE LENGTH OF THE ANTI-TRACKING PAD SHALL BE INCREASED AS DIRECTED FOR SITES COMPOSED OF CLAY OR SILTS.



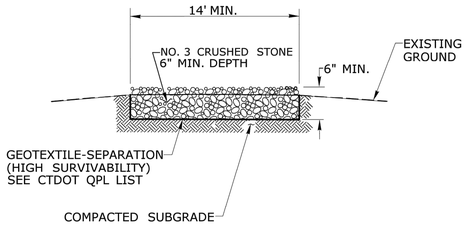
ANTI-TRACKING PAD



PLAN



ELEVATION



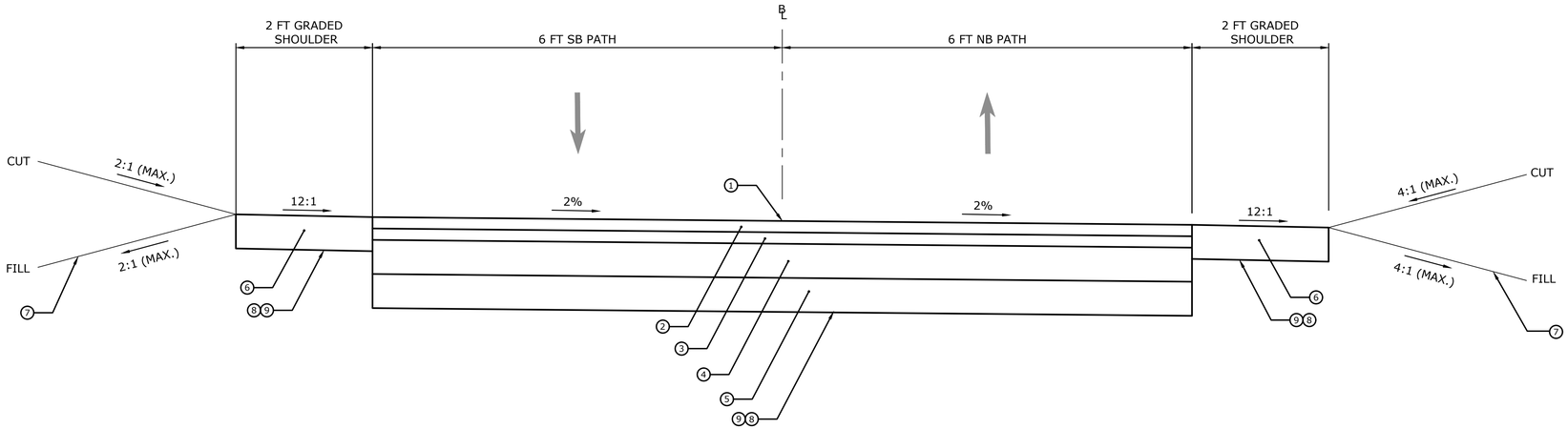
SECTION A

	NOT TO SCALE ####	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Digitally signed by Leo Fontaine, P.E. Date: 2021.11.02 09:25:37-04'00'	APPROVED BY: Digitally signed by Calabrese, Michael Date: 2021.11.09 07:44:14-05'00'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: **ANTI-TRACKING PAD**	STANDARD SHEET NO.: **HW-211_01**

PLOTTED DATE: 10/29/2021

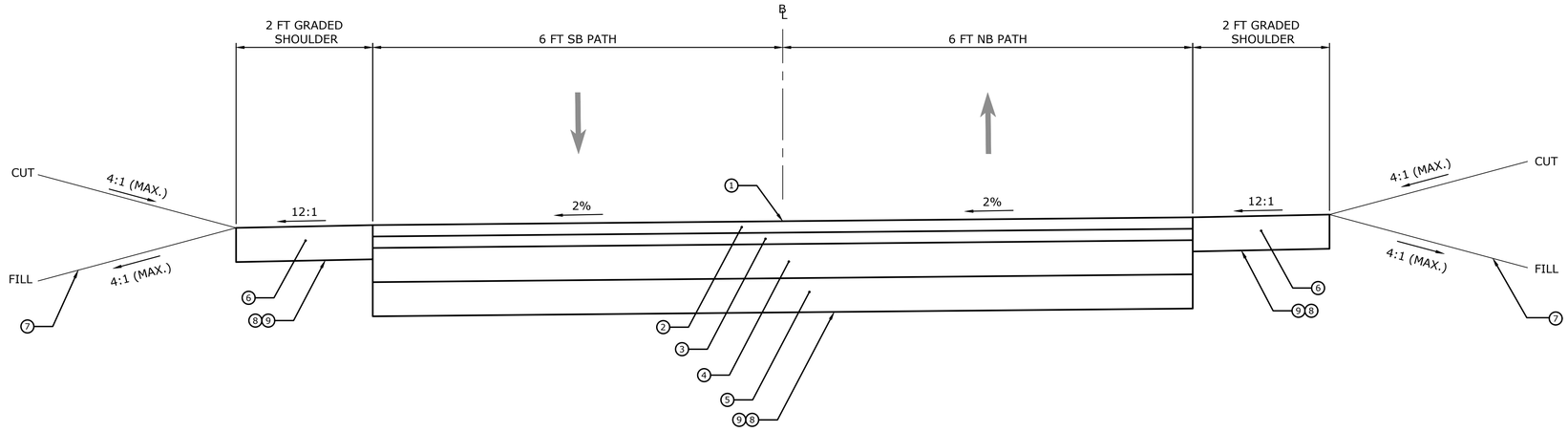
LEGEND:

1. POINT OF APPLICATION OF GRADE
2. 1.5" HMA S0.25 (TRAFFIC LEVEL 2)
3. 2" HMA S0.5 (TRAFFIC LEVEL 2)
4. 6" PROCESSED AGGREGATE BASE
5. 8" SUBBASE
6. 6" PROCESSED AGGREGATE
7. 6" TOPSOIL & WETLAND GRASS ESTABLISHMENT
8. FORMATION OF SUBGRADE
9. GEOTEXTILE (HIGH SURVIVABILITY)



SHARED-USE PATH

STA. 9+80 TO STA. 11+50
STA. 26+00 TO STA. 126+00



SHARED-USE PATH

STA. 11+50 TO STA. 26+00

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

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LANDSCAPE ARCHITECT
Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

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CITY OF HARTFORD

TYPICAL CROSS SECTIONS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

TXS-01

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-01
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 843254.45
Start Date: 5-28-19	Route No.:		Easting: 1023250.50
Finish Date: 5-28-19	Bridge No.:		Surface Elevation: 11
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4"	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @6.0' ATD			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill	Brown to light brown c-f SAND, little silt, trace m-f gravel	11
	S-1	7 5 2 2	24	18		Possible Fill or Alluvium	Brown f SAND, some silt	10
	S-2	2 1 2 1	24	18			Dark brown SILT and f-SAND	
5	S-3	1/12" 1/12"	24	16			Dark brown SILT and f-SAND, trace roots	5
	S-4	WOH/24"	24	18			Dark brown to brown SILT and f-SAND	
	S-5	WOH/12" 1 2	24	12		Alluvium	Brown SILT and f-SAND Gray SILT and f-SAND, stratified with brown f-sand, with roots	
10							END OF BORING 10ft	0

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 10ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-02
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 843535.97
Start Date: 5-28-19	Route No.:		Easting: 1023549.28
Finish Date: 5-28-19	Bridge No.:		Surface Elevation: 14
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4"	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @6.0' ATD			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill	Brown c-f SAND, some silt, with roots	14
	S-1	3 4 3 3	24	18		Possible Fill or Alluvium	Dark brown c-f SAND, some silt	
	S-2	2 2 2 2	24	20			Dark brown SILT and f-SAND	10
5	S-3	1/12" 1 1	24	24			Dark brown SILT and f-SAND, trace mica	
	S-4	1/24"	24	24			Dark brown SILT and f-SAND	
	S-5	WOH/12" 1/12"	24	24		Alluvium	Brown to gray SILT, trace f-sand, with roots	5
10							END OF BORING 10ft	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 10ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-03
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 843874.47
Start Date: 6-10-19	Route No.:		Easting: 1023917.68
Finish Date: 6-10-19	Bridge No.:		Surface Elevation: 15
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @9.0' ATD			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill	Gray to brown c-f SAND, some silt	15
	S-1	2 4 4 4	24	20		Possible Fill or Alluvium	Gray to brown SILT, some f-sand, with roots	
	S-2	3 3 2 2	24	18			Brown SILT, some f-sand	
5	S-3	1 1 1 1	24	20			Brown to light brown SILT, little f-sand, with roots	10
	S-4	2 1 2 3	24	22			Light brown f-SAND, trace silt	
	S-5	2 1 1 1	24	22		Alluvium	Light brown f-SAND, trace silt Brown and gray SILT, some f-sand	
10							END OF BORING 10ft	5

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 10ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: ---		SM-001-M REV. 1/02

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			xx/xx	xx

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Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

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CITY OF HARTFORD

BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-01

File Path: J:\DWG\P2017\0860\A10\Civil\Plan\20170860A10_BOR01.dwg Layout: BOR-01 Plotted: Fri, March 18, 2022 - 1:18 PM User: steamy
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB
MS VIEW: LAYER STATE:

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-04
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 844207.08
Start Date: 6-10-19	Route No.:		Easting: 1024291.40
Finish Date: 6-10-19	Bridge No.:		Surface Elevation: 13
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @7.0' ATD			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill	Gray SILT, some f-sand	
	S-1	3 3 3 3	24	20		Possible Fill or Alluvium	Brown and gray f SAND, some silt, bands of rust colored c-sand at bottom of spoon	
							Gray to brown SILT, some f-sand	
	S-2	2 2 3 2	24	20			Brown SILT, some f-sand	10
5	S-3	1 1 1 1	24	20			Brown SILT, some f-sand, with roots	
						Alluvium		
	S-4	1 1/12" 1	24	24			Brown and gray SILT, some f-sand	5
	S-5	WOH/18" 4	24	24			Brown and gray SILT, some f-sand	
10							END OF BORING 10ft	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 10ft Rock: ft No. of Soil Samples: 5 No. of Core Runs: ---	NOTES:	Sheet 1 of 1 SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-05
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 844464.77
Start Date: 6-10-19	Route No.:		Easting: 1024719.26
Finish Date: 6-10-19	Bridge No.:		Surface Elevation: 12
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL and c-f SAND, some silt	
							Fabric at 10"	
						Fill		
	S-1	7 7 6 7	24	18			Gray c-f SAND, trace f gravel, trace silt	
						Alluvium		10
							Gray SILT, some f-sand	
	S-2	5 5 5 6	24	22			Gray SILT, some f-sand	
5								
							END OF BORING 5ft	
								5
10								
								0

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 5ft Rock: ft No. of Soil Samples: 2 No. of Core Runs: ---	NOTES:	Sheet 1 of 1 SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-06
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 844740.20
Start Date: 5-30-19	Route No.:		Easting: 1025137.10
Finish Date: 5-30-19	Bridge No.:		Surface Elevation: 10
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL and c-f SAND, some silt	10
						Fill		
	S-1	5 6 8 7	24	16			Brown and gray SILT, little f-sand, (wet)	
						Alluvium		
	S-2	4 4 3 3	24	18			Gray SILT, some f-sand	
5								5
	S-3	2 1 1 1	24	10			Gray SILT, some f-sand	
	S-4	3 2 3 6	24	18			Gray SILT, some f-sand Gray c-f SAND, little silt	
10							END OF BORING 9ft	0

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 9ft Rock: ft No. of Soil Samples: 4 No. of Core Runs: ---	NOTES:	Sheet 1 of 1 SM-001-M REV. 1/02

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			xx/xx	xx

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AVON, CT 06001 PHONE: 860-678-0669

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CITY OF HARTFORD

BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-02

File Path: J:\DWG\P2017\0860\A10\Civil\Plan\20170860A10_BOR01.dwg Layout: BOR-02 Plotted: Fri, March 18, 2022 - 1:18 PM User: steamy
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB
LAYER STATE:
MS VIEW:

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-07
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 845076.94
Start Date: 5-30-19	Route No.:		Easting: 1025506.60
Finish Date: 5-30-19	Bridge No.:		Surface Elevation: 13
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL and c-f SAND, some silt	13
	S-1	6 13 15 19	24	0		Fill	No Recovery; Spoon went in on an angle due to a suspected boulder. Auger refusal from suspected boulder at 2ft. Boring offset 4ft south. The offset boring encountered same refusal depth. Boring was offset again 5ft east. See B-7A.	
								10
							END OF BORING 3ft	
5								
								5
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 3ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 1 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-07A
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 845400.78
Start Date: 5-30-19	Route No.:		Easting: 1025888.46
Finish Date: 5-30-19	Bridge No.:		Surface Elevation: 13
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL and c-f SAND, some silt	13
	S-1	10 7 4 5	24	18		Fill	Brown c-f SAND, some c-f gravel, little silt	
							Brown c-f SAND, little f gravel, little silt	
	S-2	5 4 4 4	24	12		Alluvium	Intermixed brown and gray SILT, little f-sand, (wet)	10
5							END OF BORING 5ft	
								5
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 5ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-08
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 845753.29
Start Date: 5-30-19	Route No.:		Easting: 1026243.68
Finish Date: 5-30-19	Bridge No.:		Surface Elevation: 14
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL and c-f SAND, some silt	14
	S-1	18 9 7 12	24	0		Fill	No recovery; auger cuttings resembled gray f-sand, some silt (water at 2.5ft seeping in)	
	S-2	2 2 2 2	24	18		Alluvium	Gray SILT, little f-sand, with roots	10
5	S-3	1 2 1 2	24	14			Gray SILT, little f-sand, with roots	
							Gray SILT, little f-sand	
	S-4	2 2 3 4	24	14			Intermixed brown and gray SILT, little f-sand	5
10							END OF BORING 9ft	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 9ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			xx/xx	xx

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CITY OF HARTFORD

BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-03

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-09
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: 846127.52
Start Date: 5-29-19	Route No.:	Easting: 1026575.61
Finish Date: 5-29-19	Bridge No.:	Surface Elevation: 13
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @Not Encountered		

Depth (ft)	SAMPLES: Sample Type/No.	SAMPLES: Blows on Sampler per 6 inches	SAMPLES: Pen. (in.)	SAMPLES: Rec. (in.)	SAMPLES: RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL and c-f SAND, some silt	
	S-1	2 4 48 50/2"	20	0		Fill	No recovery	
							Auger refusal at 2.7ft. Boring off set 4ft south. Auger refusal at 3ft. Boring offset 4ft further south. See boring B-9A	10
							END OF BORING 2.7ft	
5								5
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet
Earth: 2.7ft Rock: ft		1 of 1
No. of Soil Samples: 1 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-09A
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: 846609.81
Start Date: 5-30-19	Route No.:	Easting: 1026968.44
Finish Date: 5-30-19	Bridge No.:	Surface Elevation: 13
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @Not Encountered		

Depth (ft)	SAMPLES: Sample Type/No.	SAMPLES: Blows on Sampler per 6 inches	SAMPLES: Pen. (in.)	SAMPLES: Rec. (in.)	SAMPLES: RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL and c-f SAND, some silt	
	S-1	4 5 5 13	24	10		Fill	Brown to gray f SAND, some silt, little m-f gravel, (wet)	
	S-2	8 9 7 7	24	18		Alluvium	Brown SILT, some f-sand	10
5							END OF BORING 5ft	5
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet
Earth: 5ft Rock: ft		1 of 1
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-10
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: 847018.60
Start Date: 5-29-19	Route No.:	Easting: 1027178.84
Finish Date: 5-29-19	Bridge No.:	Surface Elevation: 14
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @Not Encountered		

Depth (ft)	SAMPLES: Sample Type/No.	SAMPLES: Blows on Sampler per 6 inches	SAMPLES: Pen. (in.)	SAMPLES: Rec. (in.)	SAMPLES: RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL and c-f SAND, some silt	
						Alluvium	Fabric at 10"	
	S-1	2 2 2 2	24	20			Gray brown SILT, some f-sand, with roots	
	S-2	2 1 2 1	24	22			Gray brown SILT, some f-sand	10
5	S-3	1 1 1/12"	24	22			Gray brown SILT, some f-sand, with roots	
	S-4	1 1/12" 2	24	22			Gray brown SILT, some f-sand, spotted rust color banding	
							END OF BORING 9ft	5
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet
Earth: 9ft Rock: ft		1 of 1
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

FINAL DESIGN FOR REVIEW

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CITY OF HARTFORD

BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-04

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-11
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 847423.98
Start Date: 5-29-19	Route No.:		Easting: 1027285.21
Finish Date: 5-29-19	Bridge No.:		Surface Elevation: 15
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL and c-f SAND, some silt	15
						Alluvium		
	S-1	1 2 1 2	24	20			Light brown SILT, little f-sand	
	S-2	2 2 2 2	24	22			Brown and gray SILT, some f-sand	
5								10
							END OF BORING 5ft	
10								5

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 5ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-12
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 847981.24
Start Date: 5-29-19	Route No.:		Easting: 1027385.01
Finish Date: 5-29-19	Bridge No.:		Surface Elevation: 16
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f sand, some silt	
							Fabric at 12"	15
						Fill		
	S-1	3 5 4 5	24	22			Brown c-f SAND, little f gravel, trace silt	
						Alluvium		
							Gray brown SILT, some f-sand	
	S-2	6 5 4 4	24	4			Gray brown SILT, some f-sand	
5								
	S-3	3 2 3 3	24	18			Light brown to light gray SILT, some f-sand, with roots	10
							Gray brown SILT, some f-sand	
	S-4	2 1 2 3	24	24			Gray and brown SILT, some f-sand, stratified (moist)	
10								5
							END OF BORING 9ft	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 9ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-13
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 848561.99
Start Date: 5-29-19	Route No.:		Easting: 1027491.83
Finish Date: 5-29-19	Bridge No.:		Surface Elevation: 19
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f sand, some silt	
						Alluvium	Fabric at 11"	
	S-1	3 3 3 2	24	18			Light brown SILT, some f-sand	
	S-2	2 2 2 2	24	22			Light brown SILT, some f-sand	15
5								
							END OF BORING 5ft	
10								10

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 5ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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CITY OF HARTFORD

BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-05

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Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-14
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 849059.73
Start Date: 5-29-19	Route No.:		Easting: 1027555.32
Finish Date: 5-29-19	Bridge No.:		Surface Elevation: 18
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f sand, some silt	
							Fabric at 12"	
						Fill		
	S-1	4 5 3 3	24	22			Light brown c-f SAND, little silt, trace f gravel	
						Alluvium		
							Light brown SILT, some f-sand	15
	S-2	4 5 5 6	24	18			Light brown SILT, some f-sand	
5								
	S-3	3 2 3 2	24	16			Light brown to gray SILT, some f-sand, with roots	
								10
	S-4	3 4 3 3	24	0			No recovery, gravel lodged at tip of spoon	
10							END OF BORING 9ft	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 9ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-15
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: 849572.18
Start Date: 5-29-19	Route No.:		Easting: 1027533.97
Finish Date: 5-29-19	Bridge No.:		Surface Elevation: 16
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f sand, some silt	
						Alluvium	Fabric at 10"	15
	S-1	5 5 5 5	24	22			Brown SILT, little f-sand	
	S-2	4 5 5 6	24	0			No recovery	
5								
							END OF BORING 5ft	10
10								5

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 5ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-16
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: xxxxxxxxx
Start Date: 5-29-19	Route No.:		Easting: xxxxxxxxx
Finish Date: 5-29-19	Bridge No.:		Surface Elevation: 20
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f sand, some silt	20
						Fill	Fabric at 4"	
	S-1	1 3 2 2	24	22			Dark brown c-f SAND, some silt	
						Alluvium	Light brown SILT and f-SAND	
	S-2	4 3 4 3	24	16			Light brown SILT and f-SAND	
5								15
	S-3	2 2 2 2	24	18			Light brown SILT and f-SAND	
	S-4	2 2 3 3	24	24			Light brown SILT and f-SAND	
10							END OF BORING 9ft	10

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 9ft Rock: ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			xx/xx	xx

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CITY OF HARTFORD

BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-06

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-17
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: xxxxxxxxx
Start Date: 5-29-19	Route No.:	Easting: xxxxxxxxx
Finish Date: 5-29-19	Bridge No.:	Surface Elevation: 19
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @Not Encountered		

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f sand, some silt	
						Alluvium	Fabric at 9"	
	S-1	3 3 4 3	24	22			Brown SILT, some f-sand	
	S-2	4 4 3 4	24	0			No recovery	15
5							END OF BORING 5ft	
								10
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 1 of 1
Earth: 5ft Rock: ft		
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-18
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: xxxxxxxxx
Start Date: 5-29-19	Route No.:	Easting: xxxxxxxxx
Finish Date: 5-29-19	Bridge No.:	Surface Elevation: 19
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @8.5' ATD		

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f sand, some silt	
	S-1	2 4 4 3	24	22		Fill	Dark brown to gray f SAND and SILT, with wood	
						Alluvium	Light brown SILT, trace f-sand	
	S-2	3 3 3 3	24	18			Brown and gray SILT, trace f-sand	15
5	S-3	1 1 1 1	24	20			Brown and gray SILT, trace f-sand	
	S-4	1 1 1 1	24	24			Brown SILT and f-SAND	10
10							END OF BORING 9ft	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 1 of 1
Earth: 9ft Rock: ft		
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-19
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: xxxxxxxxx
Start Date: 5-29-19	Route No.:	Easting: xxxxxxxxx
Finish Date: 5-29-19	Bridge No.:	Surface Elevation: 20
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @Not Encountered		

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f SAND, little silt	20
						Alluvium	Fabric at 7"	
	S-1	2 2 2 3	24	18			Gray brown SILT, some f-sand	
	S-2	2 2 2 2	24	24			Light brown SILT, some f-sand	
5							END OF BORING 5ft	15
10								10

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 1 of 1
Earth: 5ft Rock: ft		
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

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CITY OF HARTFORD

BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-07

File Path: J:\DWG\P2017\0860A10\Civil\Plan\20170860A10_BOR01.dwg Layout: BOR-07 Plotted: Fri, March 18, 2022 - 1:19 PM User: steamy
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB
MS VIEW: LAYER STATE:

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-20
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: xxxxxxxxx
Start Date: 5-29-19	Route No.:		Easting: xxxxxxxxx
Finish Date: 5-29-19	Bridge No.:		Surface Elevation: 20
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @8.5' ATD			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f SAND, little silt	20
						Alluvium	Fabric at 4"	
	S-1	3 4 4 3	24	22			Light brown to gray SILT, some f-sand	
	S-2	3 2 2 3	24	20			S-2 Top: Light brown to gray SILT, some f-sand, with roots	
							S-2 Bottom: Dark brown SILT and f-SAND, with roots	
5								15
	S-3	1 1 2 3	24	24			S-3 Top: Dark brown and gray SILT and f-SAND, with roots	
							S-3 Bottom: Brown to gray SILT, some f-sand	
	S-4	2 2 2 2	24	22			Gray brown SILT and f-SAND, very moist at bottom	
10							END OF BORING 9ft	10

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet
Earth: 9ft Rock: ft		1 of 1
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-21
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: xxxxxxxxx
Start Date: 5-29-19	Route No.:		Easting: xxxxxxxxx
Finish Date: 5-29-19	Bridge No.:		Surface Elevation: 20
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f SAND, little silt	20
						FILL	Fabric at 12"	
	S-1	5 7 7 8	24	22			Light gray f SAND, some silt	
						Alluvium	S-2 Top: Gray and light gray SILT, some f-sand	
	S-2	4 4 4 3	24	24			S-2 Bottom: Dark gray SILT and f-SAND, with roots	
5								15
							END OF BORING 5ft	
10								10

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet
Earth: 5ft Rock: ft		1 of 1
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**		Hole No.: B-22
Inspector: T. Ta	Town: Hartford		Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721		Northing: xxxxxxxxx
Start Date: 5-29-19	Route No.:		Easting: xxxxxxxxx
Finish Date: 5-29-19	Bridge No.:		Surface Elevation: 20
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)			
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.		
Groundwater Observations: @Not Encountered			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f SAND, little silt	20
						Fill	S-1 Top: Brown to red c-f SAND, little c-f gravel, little silt	
	S-1	3 6 6 5	24	14			S-1 Bottom: Brown gray SILT, little f-sand	
						Alluvium	Fabric at 3ft	
	S-2	3 3 4 3	24	22			Brown graySILT and f-SAND, with roots	
5								15
	S-3	1 1 2 2	24	22			Brown and graySILT and f-SAND, with roots	
	S-4	4 4 5 4	24	22			Light brown SILT, some f-sand	
10							END OF BORING 9ft	10

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet
Earth: 9ft Rock: ft		1 of 1
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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CITY OF HARTFORD

BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-08

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-23
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: xxxxxxxxx
Start Date: 5-28-19	Route No.:	Easting: xxxxxxxxx
Finish Date: 5-28-19	Bridge No.:	Surface Elevation: 18
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @Not Encountered		

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVEL, some c-f SAND, little silt	15
						Fill		
	S-1	13 12 5 5	24	16			S-1 Top: Brown c-f SAND, some c-f gravel, little silt	
						Possible Fill or Alluvium	S-1 Bottom: Gray SILT, trace f-sand	
	S-2	4 4 5 6	24	18			Gray SILT, trace f-sand, with roots and decomposed small branches	
5							END OF BORING 5ft	10
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 1 of 1
Earth: 5ft Rock: ft		
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-25
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: xxxxxxxxx
Start Date: 5-28-19	Route No.:	Easting: xxxxxxxxx
Finish Date: 5-28-19	Bridge No.:	Surface Elevation: 18
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @Not Encountered		

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVE, some c-f sand, little silt	15
							Fabric at 10"	
						Fill		
	S-1	6 5 6 7	24	16			S-1 Top: Brown to dark brown c-f SAND, little m-f gravel, little silt, with glass	
						Alluvium	S-1 Bottom: Brown to gray f SAND, little silt	
	S-2	5 8 8 6	24	22			S-2 Top: Light gray f SAND, little silt	
							S-2 Bottom: Dark gray f SAND and SILT, with roots (organic odor)	
5							END OF BORING 5ft	10
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 1 of 1
Earth: 5ft Rock: ft		
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-26
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: xxxxxxxxx
Start Date: 5-28-19	Route No.:	Easting: xxxxxxxxx
Finish Date: 5-28-19	Bridge No.:	Surface Elevation: 25
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @6.5' ATD		

Depth (ft)	SAMPLES: Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Gravel Trail	c-f GRAVE, some c-f sand, little silt	25
						Fill		
	S-1	5 7 7 9	24	18			S-1 Top: Brown to red c-f SAND, some silt, little m-f gravel	
							S-1 Bottom: Light brown c-f SAND, trace silt, (at tip of spoon)	
						Alluvium		
	S-2	7 7 6 8	24	0			No recovery	
5								20
	S-3	4 3 3 4	24	16			Light brown to brown c-f SAND, trace silt	
	S-4	4 4 5 7	24	16			Brown c-f SAND, little silt	
10							END OF BORING 9ft	15

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 1 of 1
Earth: 9ft Rock: ft		
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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CITY OF HARTFORD

BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-09

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-27
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: xxxxxxxxx
Start Date: 6-10-19	Route No.:	Easting: xxxxxxxxx
Finish Date: 6-10-19	Bridge No.:	Surface Elevation: 19
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: 4	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: SSA
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @Not Encountered		

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Fill	Grass Surface	
	S-1	7 8 7 9	24	16			Brown to dark gray SILT, some f-sand, trace c-f gravel, with asphalt	
	S-2	7 7 6 7	24	14			Dark gray SILT and f-SAND	15
5						Alluvium		
	S-3	3 3 3 3	24	14			Brown and light brown SILT and f-SAND	
	S-4	3 4 4 5	24	20			Brown and light brown SILT and f-SAND	
							END OF BORING 9ft	10
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 1 of 1
Earth: 9ft Rock: ft		
No. of Soil Samples: 4 No. of Core Runs: ---		SM-001-M REV. 1/02

Driller: C. Johnston	**Connecticut DOT Boring Report**	Hole No.: B-29
Inspector: T. Ta	Town: Hartford	Stat./Offset: xxxxxxxxx
Engineer: C. Tonzi	Project No.: 63-721	Northing: xxxxxxxxx
Start Date: 5-30-19	Route No.:	Easting: xxxxxxxxx
Finish Date: 5-30-19	Bridge No.:	Surface Elevation: 17
Project Description: Extension of Multi-Use Trail (Hartford Riverwalk Trail)		
Casing Size/Type: --	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: --
Hammer Wt.: -- Fall: --in.	Hammer Wt.: 140 Fall: 30in.	
Groundwater Observations: @Not Encountered		

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Alluvium	Bare Ground	
	S-1	3 3 4 4	24	18			Light brown SILT, little f-sand	15
	S-1	2 2 3 2	24	22			Light brown SILT, little f-sand	
5							END OF BORING 5ft	
								10
10								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 1 of 1
Earth: 5ft Rock: ft		
No. of Soil Samples: 2 No. of Core Runs: ---		SM-001-M REV. 1/02

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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CITY OF HARTFORD

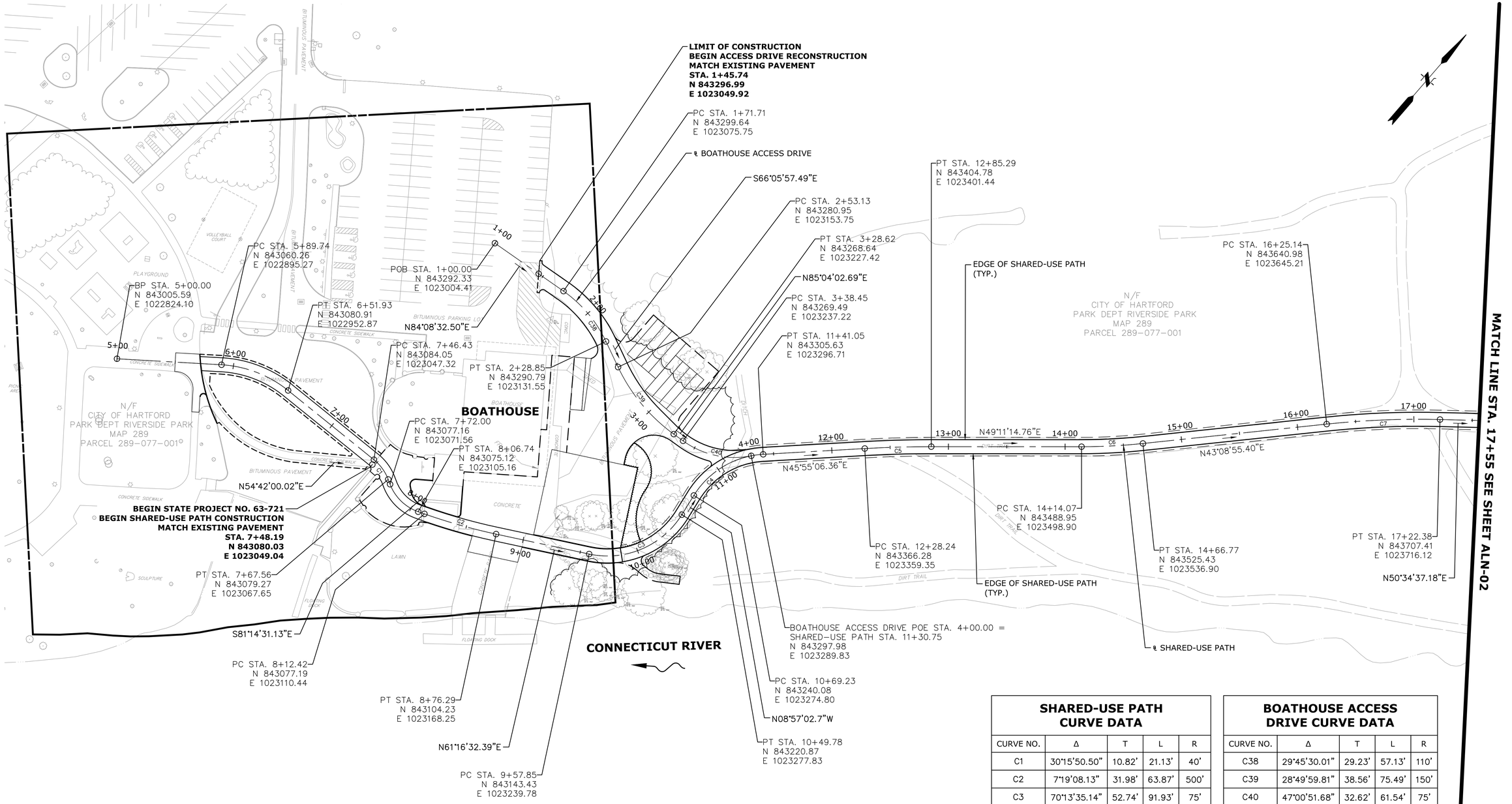
BORING LOGS

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

BOR-10



SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R
C1	30°15'50.50"	10.82'	21.13'	40'
C2	7°19'08.13"	31.98'	63.87'	500'
C3	70°13'35.14"	52.74'	91.93'	75'
C4	54°52'09.11"	38.93'	71.82'	75'
C5	3°16'08.40"	28.54'	57.05'	1000'
C6	6°02'19.36"	26.37'	52.70'	500'
C7	7°25'41.78"	48.69'	97.24'	750'

BOATHOUSE ACCESS DRIVE CURVE DATA

CURVE NO.	Δ	T	L	R
C38	29°45'30.01"	29.23'	57.13'	110'
C39	28°49'59.81"	38.56'	75.49'	150'
C40	47°00'51.68"	32.62'	61.54'	75'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

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CITY OF HARTFORD

ALIGNMENT LAYOUT PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

ALN-01

File Path: J:\DWG\P2017\0860\A10\Civil\Plan\20170860A10_ALN01.dwg Layout: ALN-01 Plotted: Fri, March 18, 2022 - 1:19 PM User: steamy
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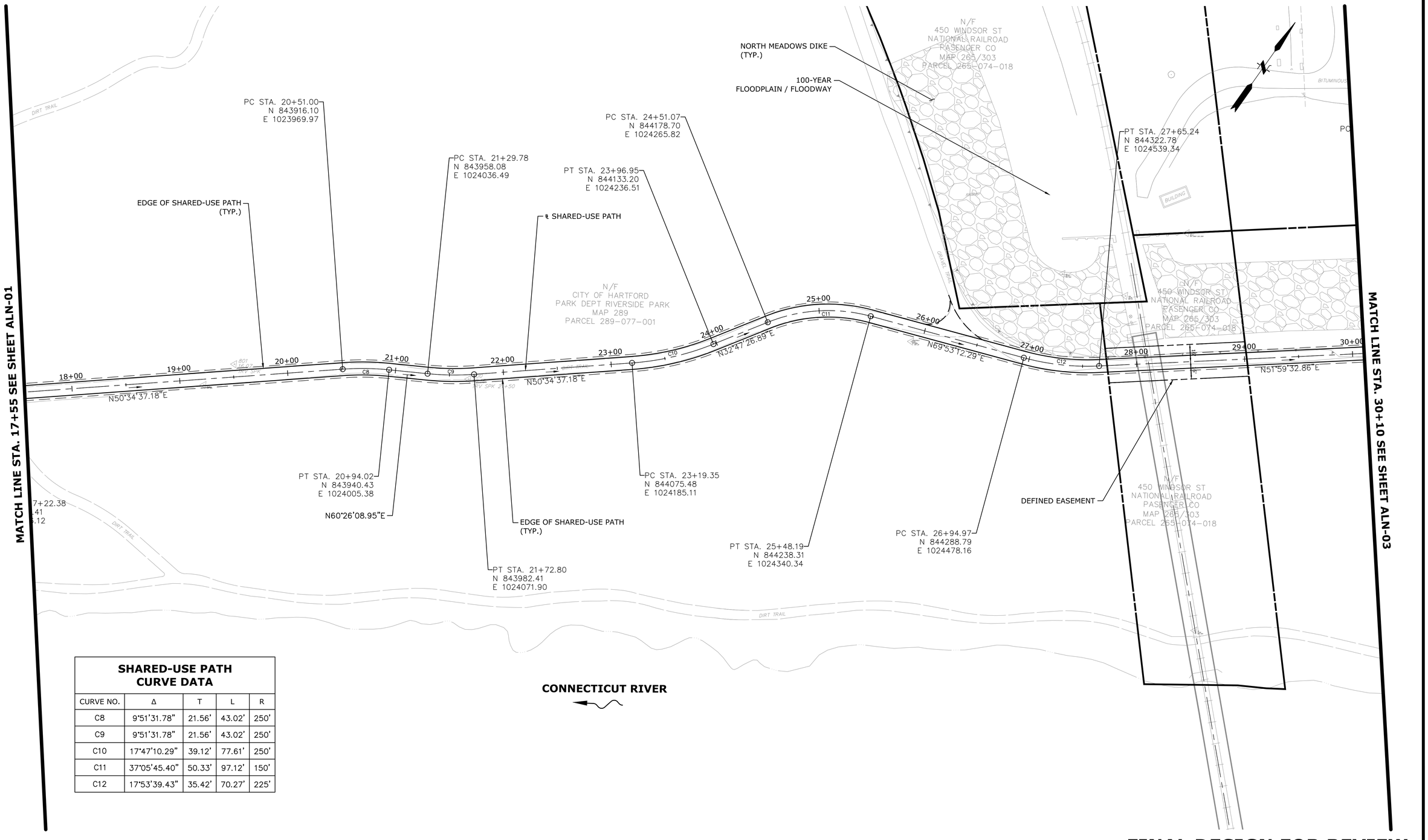
LAYER STATE:



SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R
C8	9°51'31.78"	21.56'	43.02'	250'
C9	9°51'31.78"	21.56'	43.02'	250'
C10	17°47'10.29"	39.12'	77.61'	250'
C11	37°05'45.40"	50.33'	97.12'	150'
C12	17°53'39.43"	35.42'	70.27'	225'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

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ALIGNMENT LAYOUT PLAN

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STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
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ALN-02

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_ALN01.dwg Layout: ALN-02 Plotted: Fri, March 18, 2022 - 1:19 PM User: sleamy
MS VIEW: LAYER STATE:
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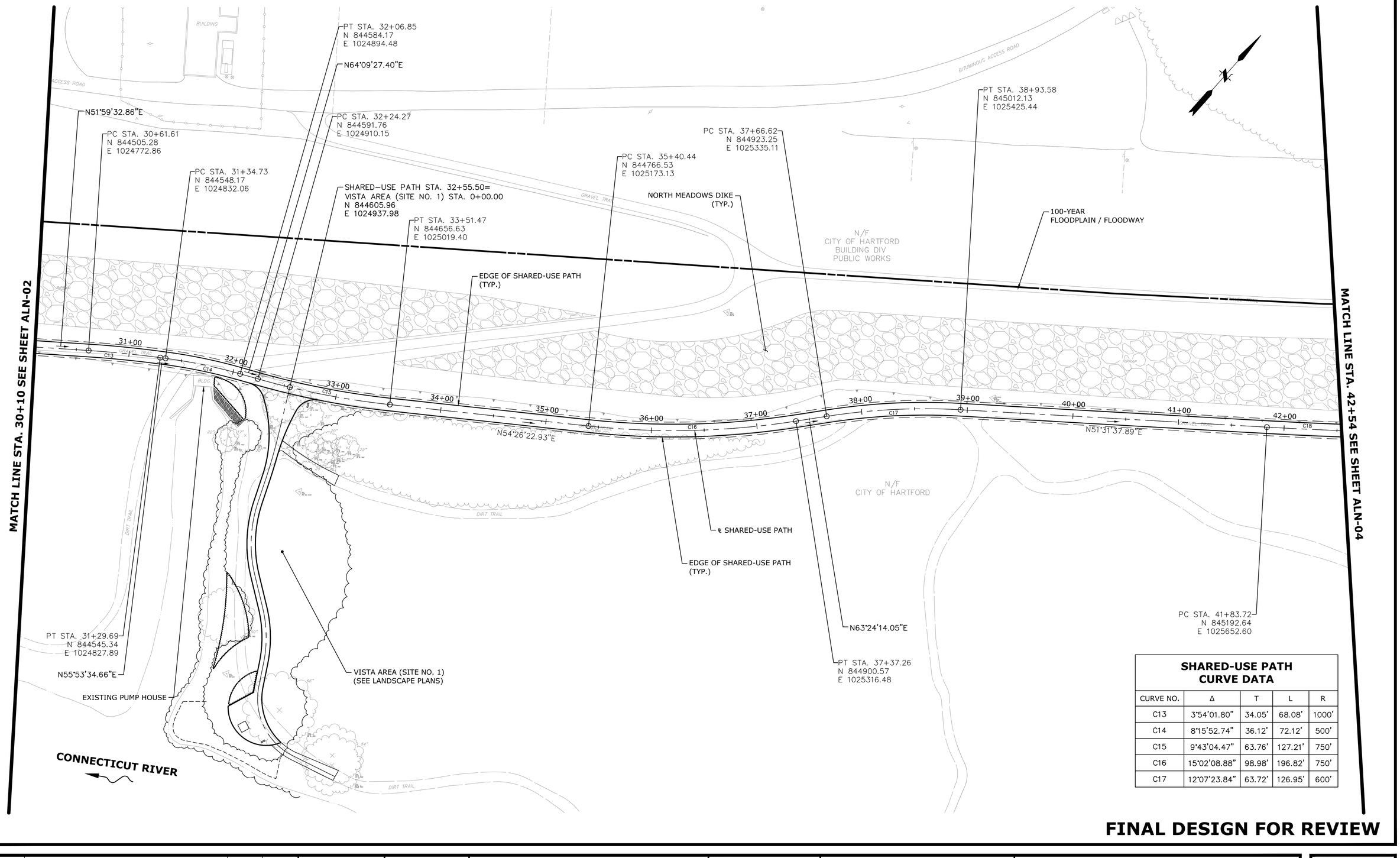

SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R
C13	3°54'01.80"	34.05'	68.08'	1000'
C14	8°15'52.74"	36.12'	72.12'	500'
C15	9°43'04.47"	63.76'	127.21'	750'
C16	15°02'08.88"	98.98'	196.82'	750'
C17	12°07'23.84"	63.72'	126.95'	600'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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ALIGNMENT LAYOUT PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

ALN-03

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_ALN01.dwg Layout: ALN-03 Plotted: Fri, March 18, 2022 - 1:19 PM User: sleamy
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB
MS VIEW: LAYER STATE:

MATCH LINE STA. 42+54 SEE SHEET ALN-03

MATCH LINE STA. 55+02 SEE SHEET ALN-05

N46°41'00.57"E

PC STA. 45+02.98
N 845402.32
E 1025893.20

NORTH MEADOWS DIKE (TYP.)

EDGE OF SHARED-USE PATH (TYP.)

100-YEAR FLOODPLAIN / FLOODWAY

N/F
CITY OF HARTFORD

BUILDING

BUILDING

RIPRAP

43+00 C18 44+00 45+00 46+00 47+00 48+00 49+00 50+00 C19 51+00 52+00 53+00 54+00 55

DIRT TRAIL

N/F
CITY OF HARTFORD

PT STA. 44+79.61
N 845386.29
E 1025876.19

EDGE OF SHARED-USE PATH (TYP.)

℄ SHARED-USE PATH

SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R
C18	4°50'37.31"	148.03'	295.88'	3500'
C19	6°53'10.82"	511.42'	1021.61'	8500'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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SCALE:
HORZ.: 1" = 40'
VERT.:
DATUM:
HORZ.: NAD83
VERT.: NAVD88
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CITY OF HARTFORD

ALIGNMENT LAYOUT PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

ALN-04

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_ALN01.dwg Layout: ALN-04 Plotted: Fri, March 18, 2022 - 1:19 PM User: sleamy
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MATCH LINE STA. 55+02 SEE SHEET ALN-04

MATCH LINE STA. 66+98 SEE SHEET ALN-06

JENNINGS ROAD

BUILDING

PT STA. 55+24.59
N 846146.10
E 1026592.64

PC STA. 55+78.02
N 846187.15
E 1026626.84

100-YEAR
FLOODPLAIN / FLOODWAY

PC STA. 57+70.07
N 846329.91
E 1026755.24

N/F
CITY OF HARTFORD

EDGE OF SHARED-USE PATH
(TYP.)

PT STA. 61+69.77
N 846648.74
E 1026995.68

PC STA. 63+35.13
N 846791.95
E 1027077.67

PT STA. 63+00.84
N 846761.82
E 1027061.30

NORTH MEADOWS DIKE
(TYP.)

56+00 57+00 58+00 59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00

C19 C20 C21 C22 C23 C24 C25

N39°47'49.76"E

N36°19'37.62"E

N34°11'37.04"E

N28°30'59.92"E

PT STA. 57+48.94
N 846314.63
E 1026740.64

N43°42'51.26"E

PT STA. 58+99.00
N 846428.57
E 1026838.10

PC STA. 59+83.59
N 846496.72
E 1026888.21

PC STA. 62+21.98
N 846691.92
E 1027025.02

PC STA. 62+80.89
N 846743.93
E 1027052.48

N23°56'40.62"E

PT STA. 62+66.70
N 846730.96
E 1027046.72

℄ SHARED-USE PATH

EDGE OF SHARED-USE PATH
(TYP.)

DIRT TRAIL

SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R
C20	3°55'01.50"	85.49'	170.91'	2500'
C21	7°23'13.64"	64.55'	128.93'	1000'
C22	2°08'00.58"	93.10'	186.18'	5000'
C23	10°14'56.42"	22.42'	44.72'	250'
C24	4°34'19.30"	9.98'	19.95'	250'
C25	13°10'51.70"	184.86'	368.08'	1600'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
VERT.:
DATUM:
HORZ.: NAD83
VERT.: NAVD88
40 20 0 40
GRAPHIC SCALE

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ALIGNMENT LAYOUT PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

ALN-05

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_ALN01.dwg Layout: ALN-05 Plotted: Fri, March 18, 2022 - 1:19 PM User: sleamy
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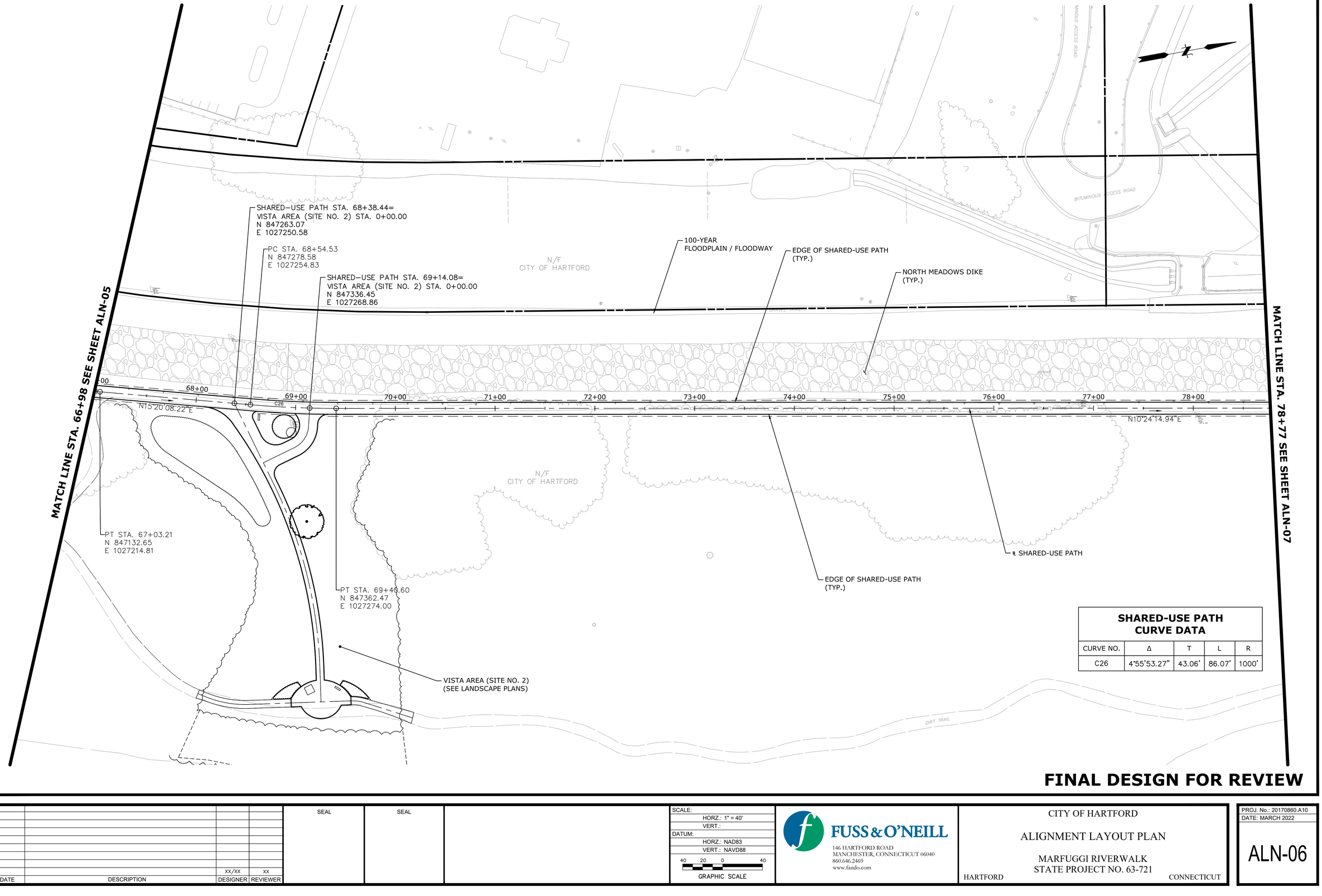
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB



SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R
C26	4°55'53.27"	43.06'	86.07'	1000'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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SCALE:
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HORZ.: NAD83
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PROJ. No.: 20170860.A10
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ALN-06

File Path: J:\DWG\P2017\20170860A10\Civil\Plan\20170860A10_ALN01.dwg Layout: ALN-06 Plotted: Fri, March 18, 2022 - 1:20 PM User: sleamy
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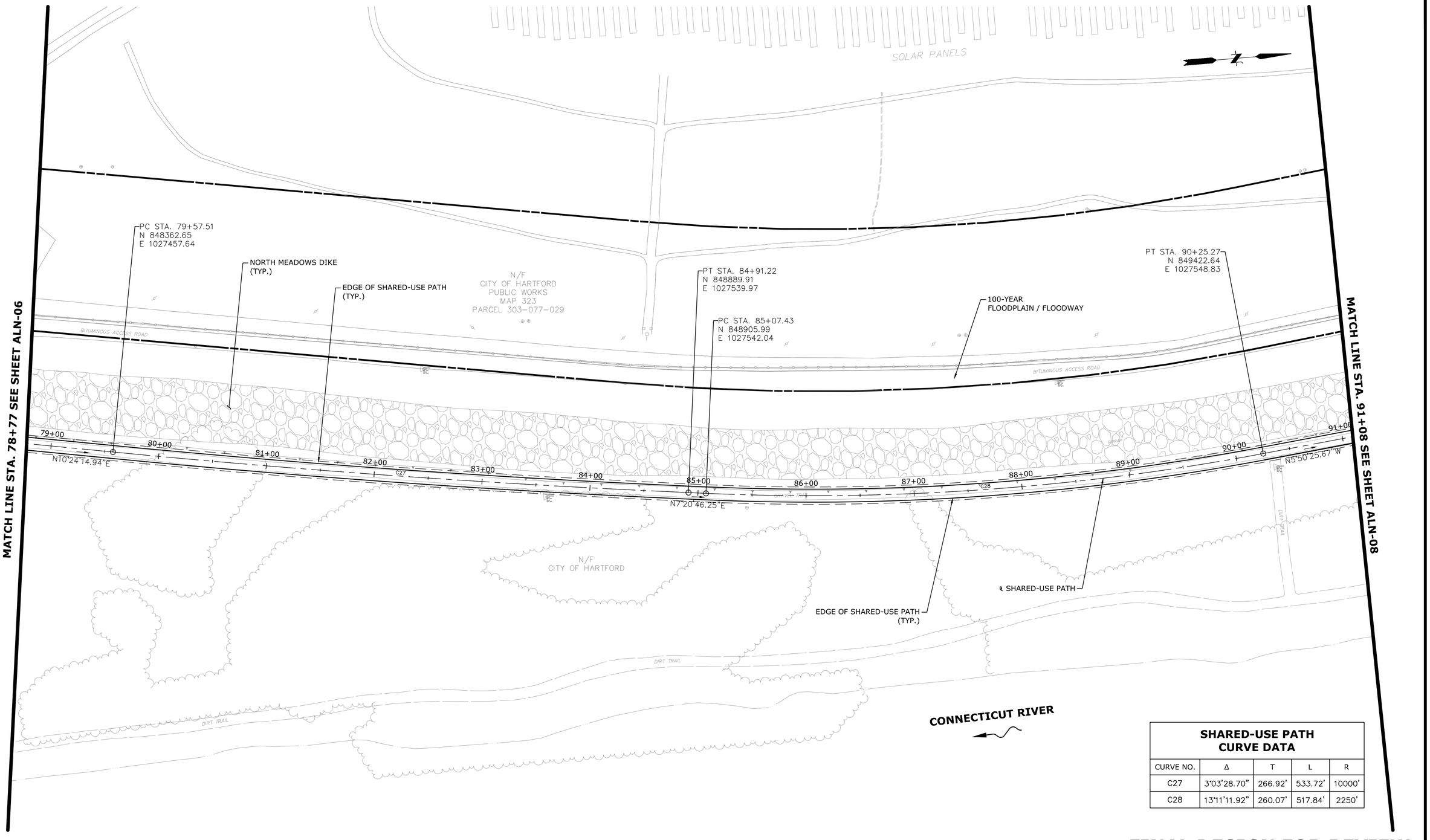

SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R
C27	3°03'28.70"	266.92'	533.72'	10000'
C28	13°11'11.92"	260.07'	517.84'	2250'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
VERT.:
DATUM:
HORZ.: NAD83
VERT.: NAVD88
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GRAPHIC SCALE

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PROJ. No.: 20170860.A10
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ALN-07

File Path: J:\DWG\P2017\0860\A10\Civil\Plan\20170860A10_ALN01.dwg Layout: ALN-07 Plotted: Fri, March 18, 2022 - 1:20 PM User: steamy
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB
MS VIEW: LAYER STATE:

MATCH LINE STA. 91+08 SEE SHEET ALN-07

MATCH LINE STA. 103+43 SEE SHEET ALN-09

SHARED-USE PATH STA. 93+17.44=
VISTA AREA (SITE NO. 3) STA. 0+00.00
N 849713.30
E 1027519.10

PC STA. 93+30.26
N 849726.04
E 1027517.80

NORTH MEADOWS DIKE
(TYP.)

EDGE OF SHARED-USE PATH
(TYP.)

N/F
CITY OF HARTFORD
PUBLIC WORKS
MAP 323
PARCEL 303-077-029

PT STA. 99+02.03
N 850293.70
E 1027449.70

100-YEAR
FLOODPLAIN / FLOODWAY

BITUMINOUS ACCESS ROAD

92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00

C29 C30 C31

N5°50'25.67"W

N6°45'45.88"W

N6°22'30.33"W

N/F
CITY OF HARTFORD

EDGE OF SHARED-USE PATH
(TYP.)

℄ SHARED-USE PATH

PT STA. 94+91.22
N 849886.04
E 1027500.13

DIRT TRAIL

DIRT TRAIL

VISTA AREA (SITE NO. 3)
(SEE LANDSCAPE PLANS)

PC STA. 98+37.61
N 850230.01
E 1027459.34

PC STA. 99+21.62
N 850312.96
E 1027446.15

N10°27'13.26"W

PT STA. 100+63.99
N 850453.77
E 1027425.32

CONNECTICUT RIVER

SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R
C29	0°55'20.21"	80.49'	160.97'	10000'
C30	3°41'27.37"	32.22'	64.42'	1000'
C31	4°04'42.93"	71.21'	142.37'	2000'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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SCALE:
HORZ.: 1" = 40'
VERT.:
DATUM:
HORZ.: NAD83
VERT.: NAVD88
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ALIGNMENT LAYOUT PLAN

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HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

ALN-08

File Path: J:\DWG\P2017\0860A10\Civil\Plan\20170860A10_ALN01.dwg Layout: ALN-08 Plotted: Fri, March 18, 2022 - 1:20 PM User: steamy
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LAYER STATE:
MS VIEW:

MATCH LINE STA. 103+43 SEE SHEET ALN-08

MATCH LINE STA. 116+18 SEE SHEET ALN-10

EDGE OF SHARED-USE PATH (TYP.)

100-YEAR FLOODPLAIN / FLOODWAY

NORTH MEADOWS DIKE (TYP.)

℄ SHARED-USE PATH

EDGE OF SHARED-USE PATH (TYP.)

PC STA. 109+29.08
N 851313.51
E 1027329.26

PT STA. 110+62.77
N 851447.00
E 1027324.90

PC STA. 111+27.31
N 851511.47
E 1027327.87

PT STA. 115+70.85
N 851950.38
E 1027269.48

PT STA. 112+18.12
N 851602.06
E 1027323.81

PC STA. 114+54.59
N 851836.35
E 1027291.85

N/F
CITY OF HARTFORD
PUBLIC WORKS
MAP 323
PARCEL 303-077-029

N/F
CITY OF HARTFORD

BITUMINOUS ACCESS ROAD

BITUMINOUS ACCESS ROAD

GRAVEL TRAIL

GRAVEL TRAIL

DIRT TRAIL

DIRT TRAIL

DIRT TRAIL

RIPRAP

104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00

N6°22'30.33"W

N2°38'13.00"E

N7°46'09.22"W

C32 C33 C34

CONNECTICUT RIVER

SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R
C32	9°00'43.33"	66.99'	133.70'	850'
C33	10°24'22.22"	45.53'	90.81'	500'
C34	6°39'40.93"	58.20'	116.26'	1000'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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SCALE:
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VERT.:
DATUM:
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ALIGNMENT LAYOUT PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

ALN-09

MATCH LINE STA. 116+18 SEE SHEET ALN-09

SHARED-USE PATH STA. 116+51.18=
VISTA AREA (SITE NO. 4) STA. 0+00.00
N 852028.17
E 1027249.46

N14°25'50.15"W

SHARED-USE PATH STA. 117+37.45=
VISTA AREA (SITE NO. 4) STA. 0+00.00
N 852111.72
E 1027227.96

100-YEAR FLOODPLAIN

NORTH MEADOWS DIKE (TYP.)

EDGE OF SHARED-USE PATH (TYP.)

PC STA. 117+79.44
N 852152.39
E 1027217.49

℄ SHARED-USE PATH

EDGE OF SHARED-USE PATH (TYP.)

FLOODWAY

VISTA AREA (SITE NO. 4)
(SEE LANDSCAPE PLANS)

N/F
CITY OF HARTFORD
PUBLIC WORKS
MAP 323
PARCEL 303-077-029

N/F
CITY OF HARTFORD

BITUMINOUS ACCESS ROAD

PRC STA. 123+03.10
N 852599.17
E 1026957.23

PT STA. 124+15.11
N 852698.64
E 1026911.64

SHARED-USE PATH STA. 124+34.32=
MEADOW BROOK TURNAROUND (SITE NO. 5) STA. 0+00.00
N 852714.22
E 1026902.75

MEADOW BROOK BRIDGE
(SEE DRAWING NO. STR-01)

MEADOW BROOK TURNAROUND (SITE NO. 5)
(SEE LANDSCAPE PLANS)

MEADOW BROOK

PC STA. 125+47.30
N 852830.62
E 1026904.20

PRC STA. 126+26.22
N 852902.93
E 1026875.98

EP STA. 128+00.00
N 853054.04
E 1026942.20

N31°13'45.38"W

N42°18'58.16"W

FUTURE RLI PARK

END STATE PROJECT NO. 63-721
END SHARED-USE PATH CONSTRUCTION
STA. 125+99.75
N 852878.35
E 1026885.64

117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00

SHARED-USE PATH CURVE DATA

CURVE NO.	Δ	T	L	R

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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SCALE:
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DATUM:
HORZ.: NAD83
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HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

ALN-10

File Path: J:\DWG\P2017\0860\A10\Civil\Plan\20170860A10_ALN01.dwg Layout: ALN-10 Plotted: Fri, March 18, 2022 - 1:20 PM User: steamy
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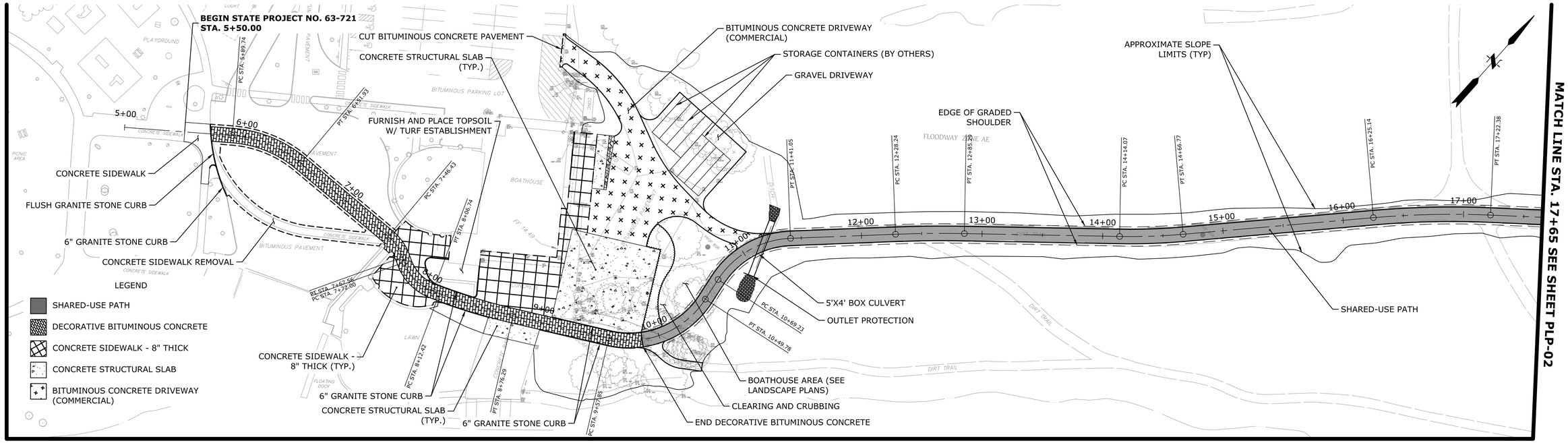

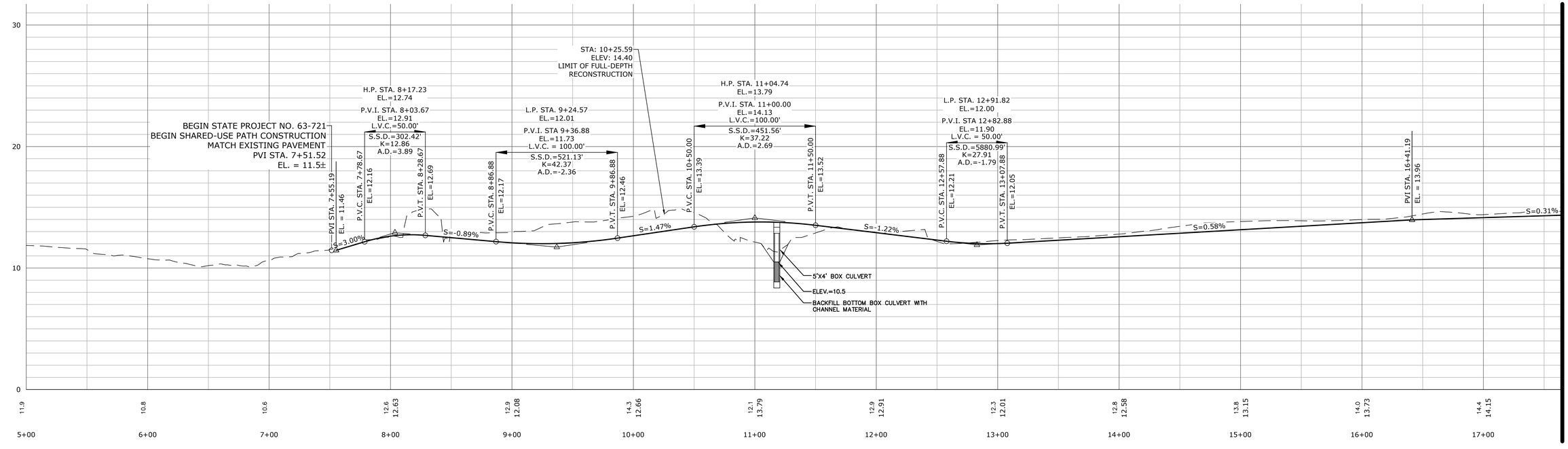

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
VERT.: 1" = 4'
DATUM:
HORZ.:
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GRAPHIC SCALE

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CONSTRUCTION PLAN & PROFILE

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

PLP-01

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_PLP01.dwg Layout: PLP-01 Plotted: Fri, March 18, 2022 - 1:21 PM User: steamy
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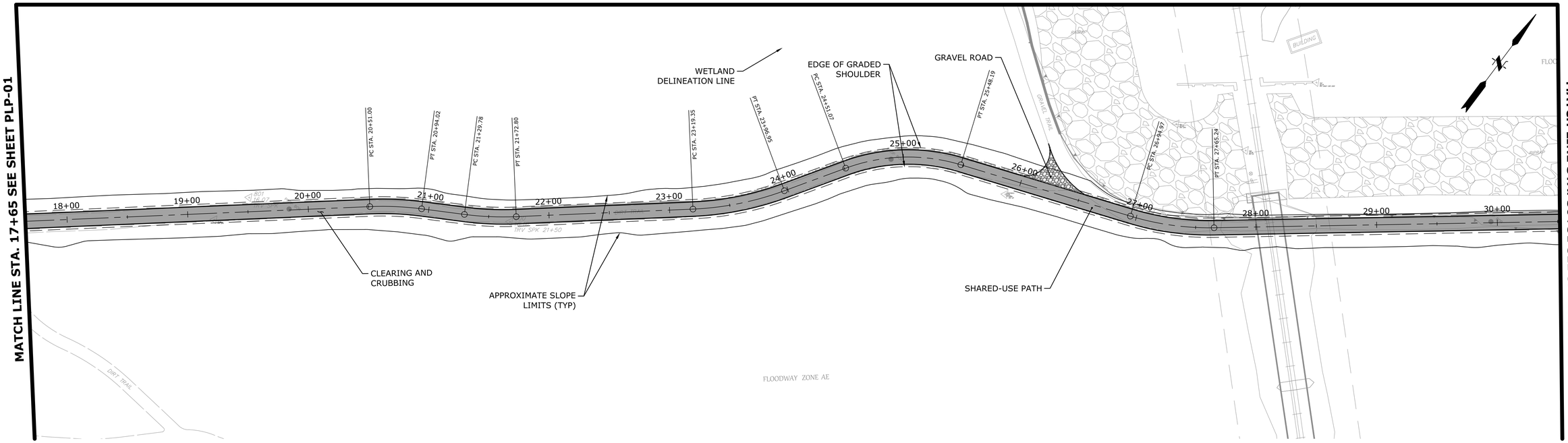
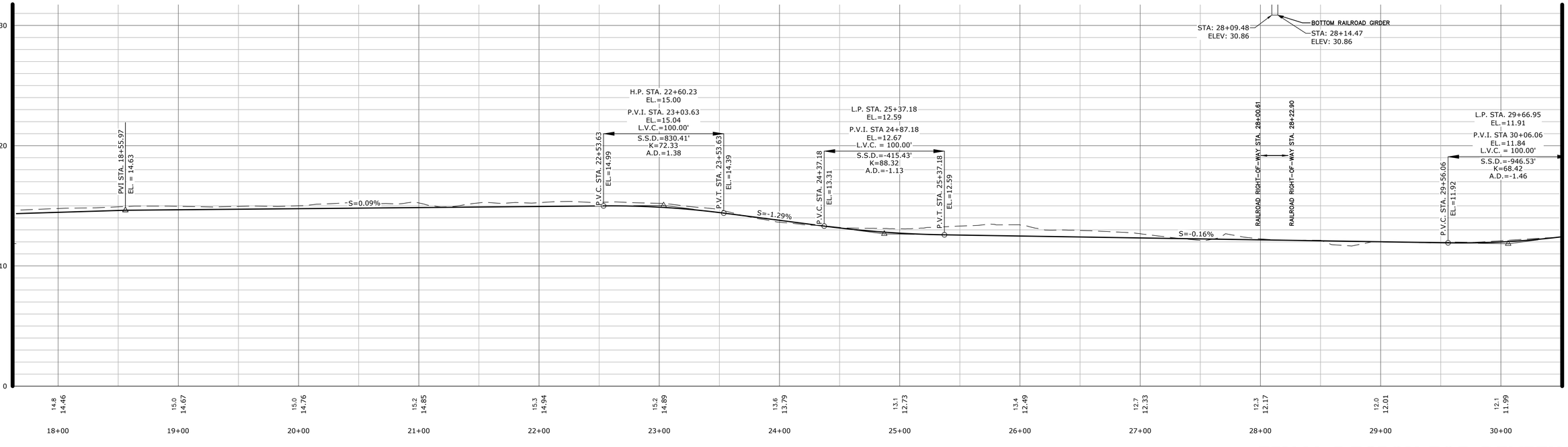


MATCH LINE STA. 30+51 SEE SHEET PLP-03

MATCH LINE STA. 17+65 SEE SHEET PLP-01



MATCH LINE STA. 30+51 SEE SHEET PLP-03

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEAL

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PLP-02

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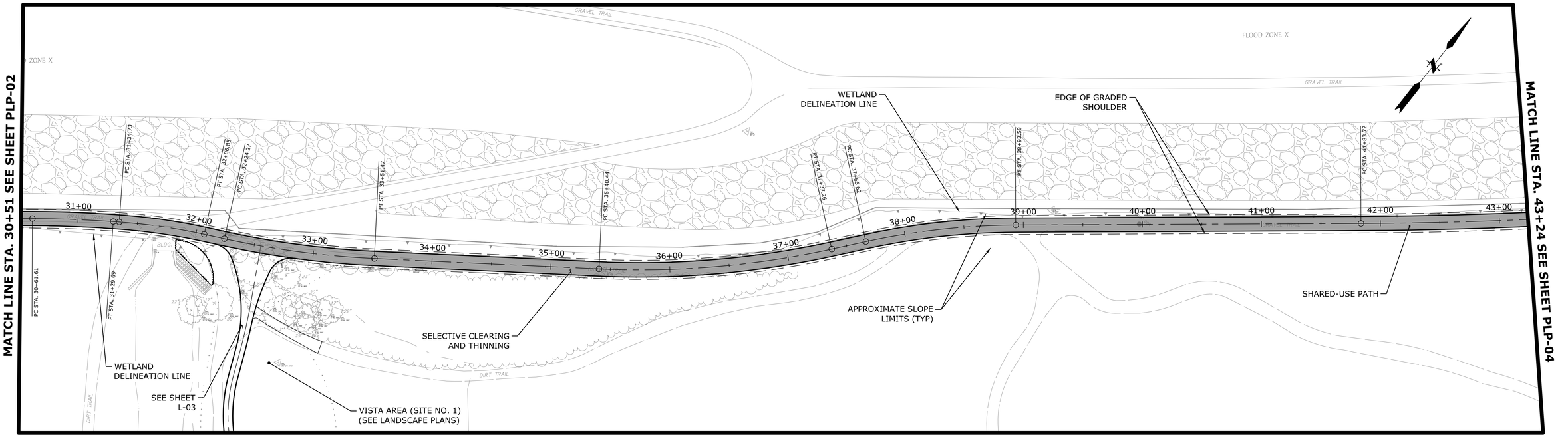

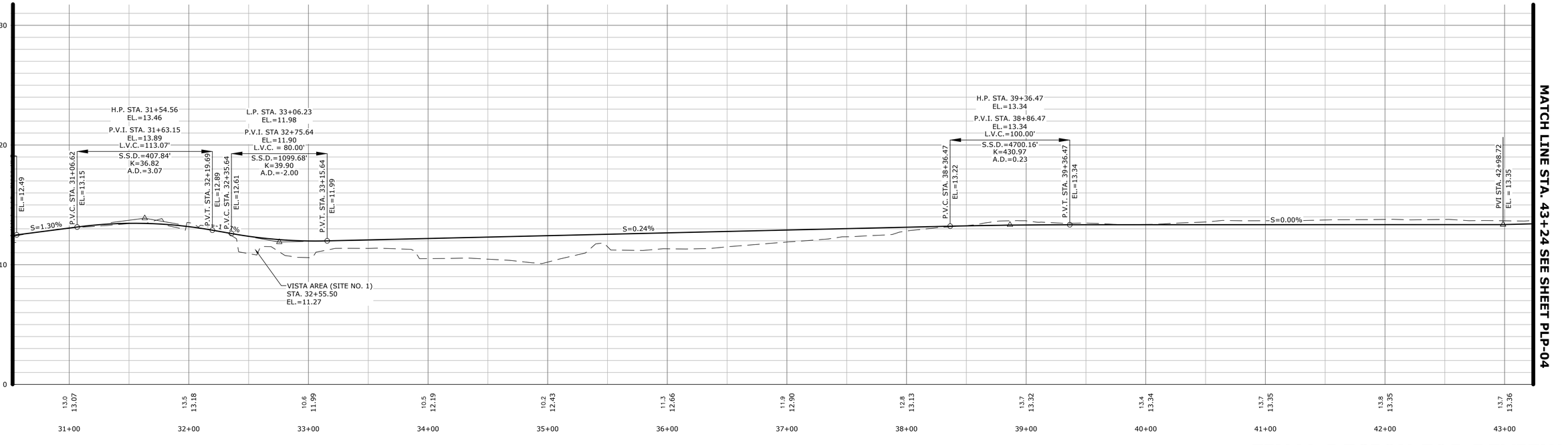

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PLP-03

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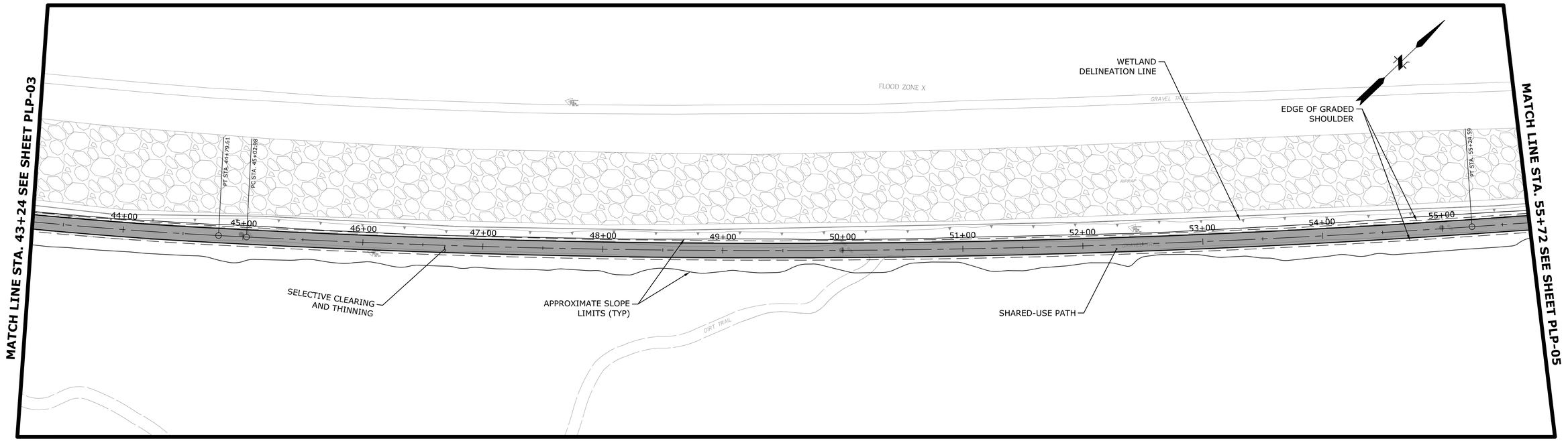

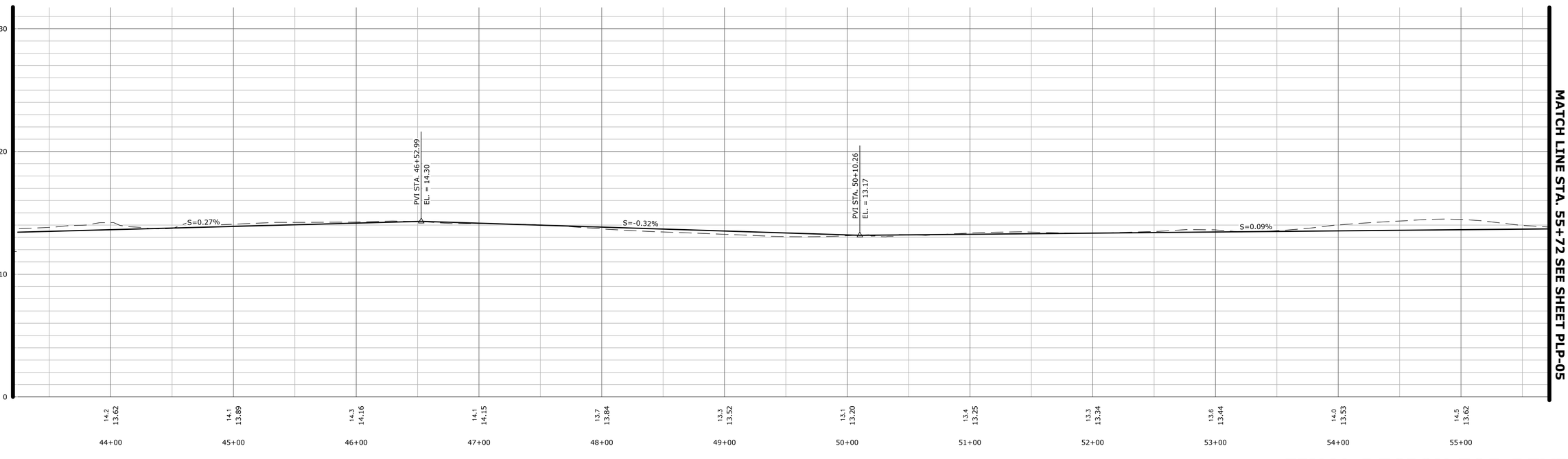

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PLP-04

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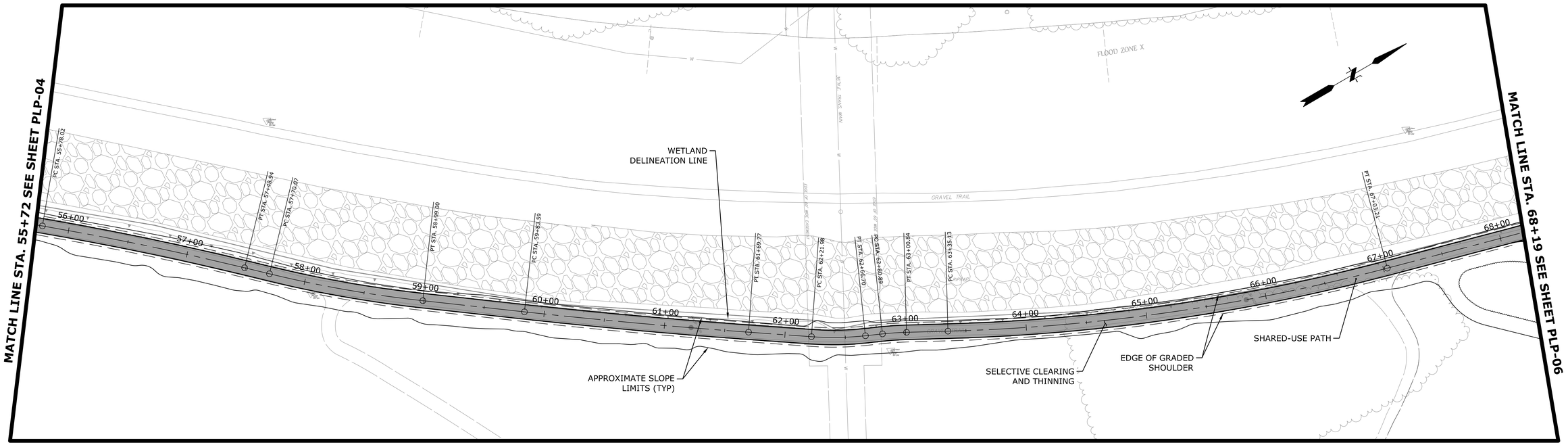

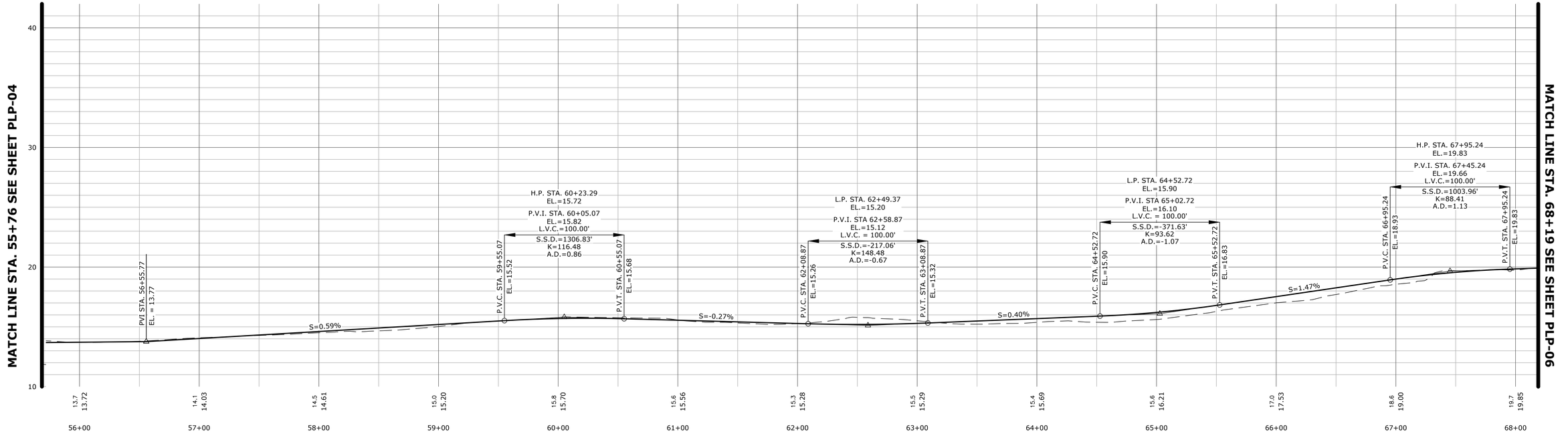

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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEAL

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PLP-05

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_PLP01.dwg Layout: PLP-05 Plotted: Fri, March 18, 2022 - 1:26 PM User: steamy
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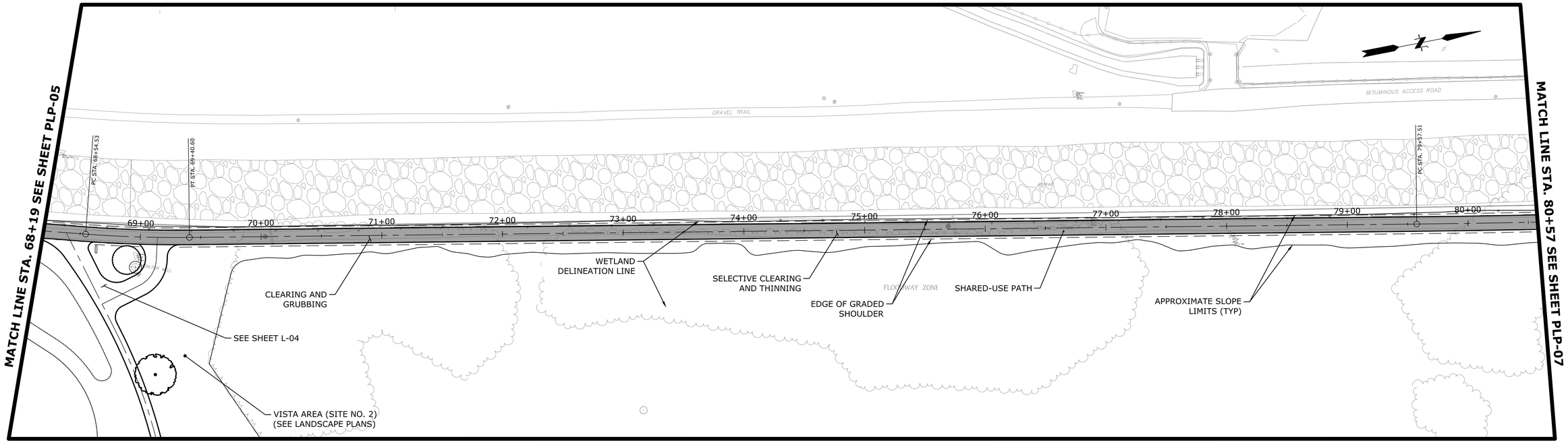

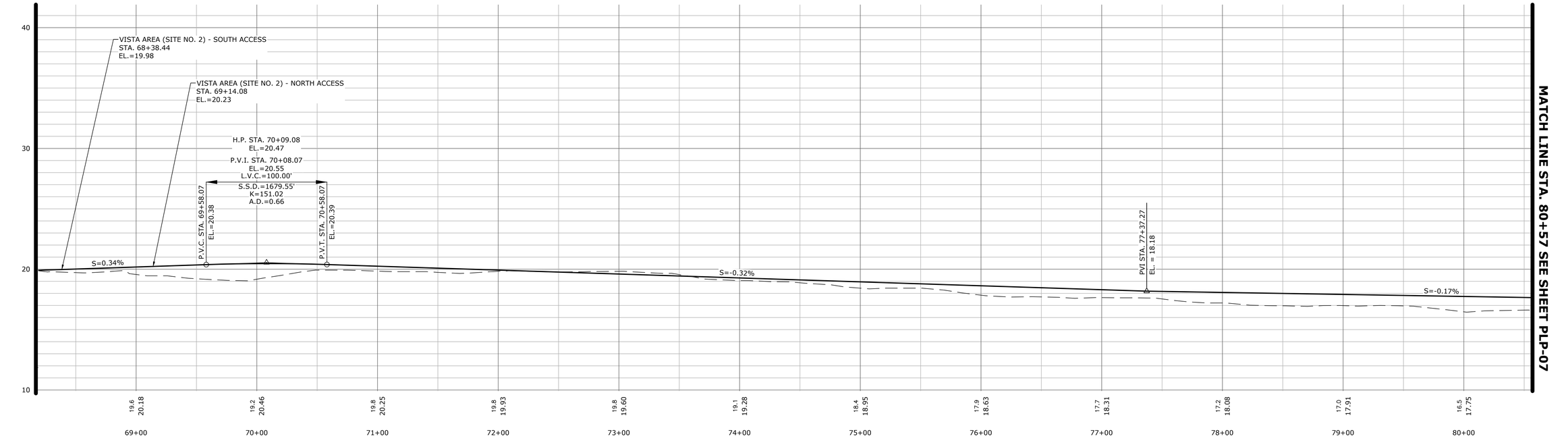

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PLP-06

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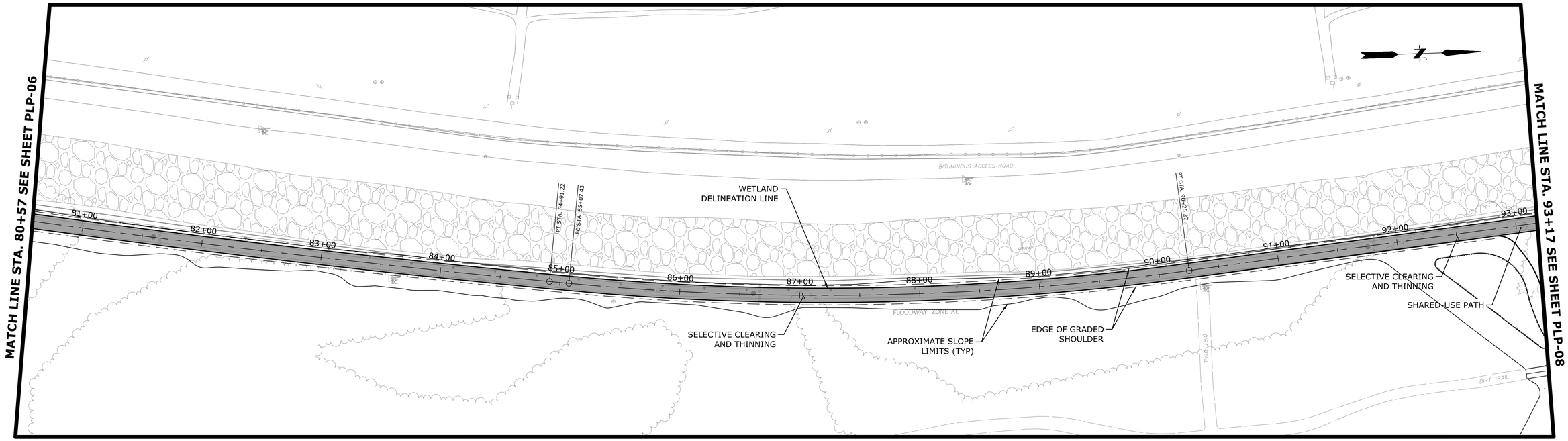

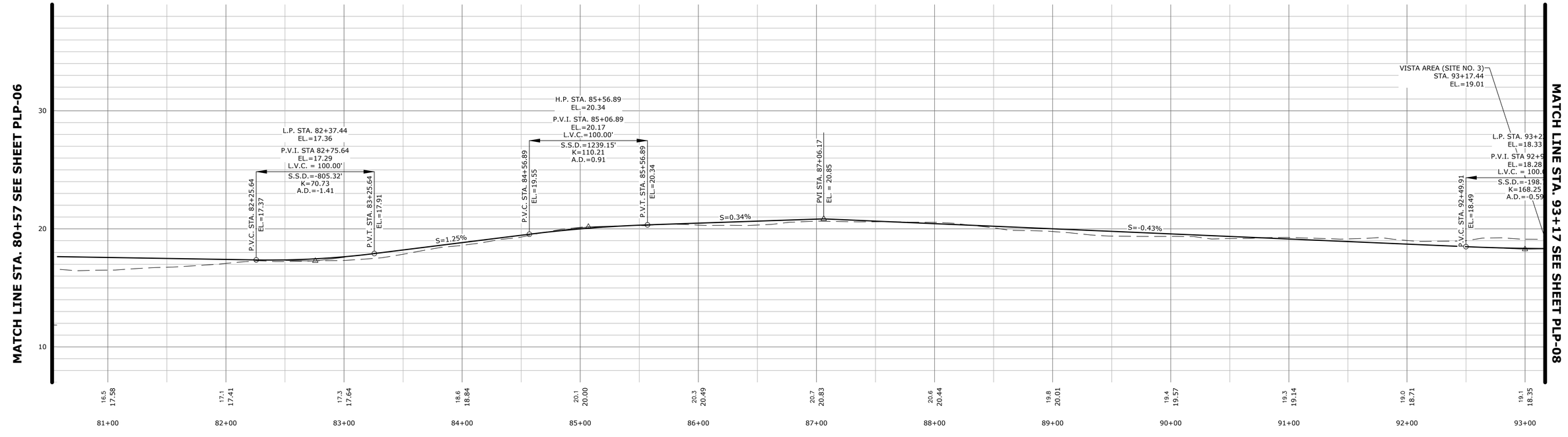

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
VERT.: 1" = 4'
DATUM:
HORZ.:
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40 20 0 40
GRAPHIC SCALE

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CITY OF HARTFORD

CONSTRUCTION PLAN & PROFILE

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

PLP-07

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_PLP01.dwg Layout: PLP-07 Plotted: Fri, March 18, 2022 - 1:27 PM User: steamy
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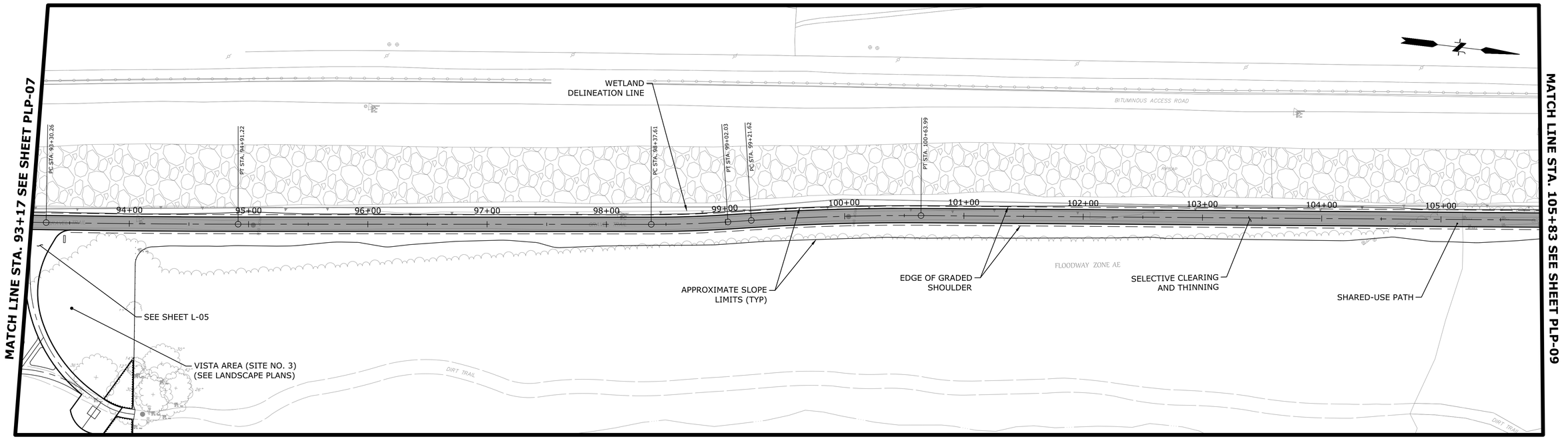

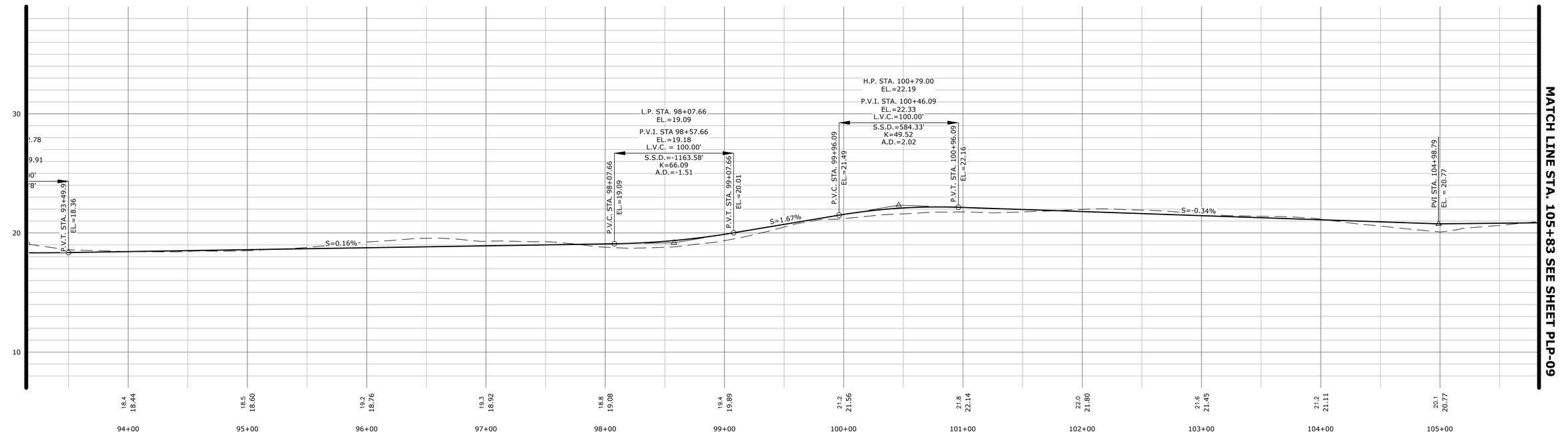

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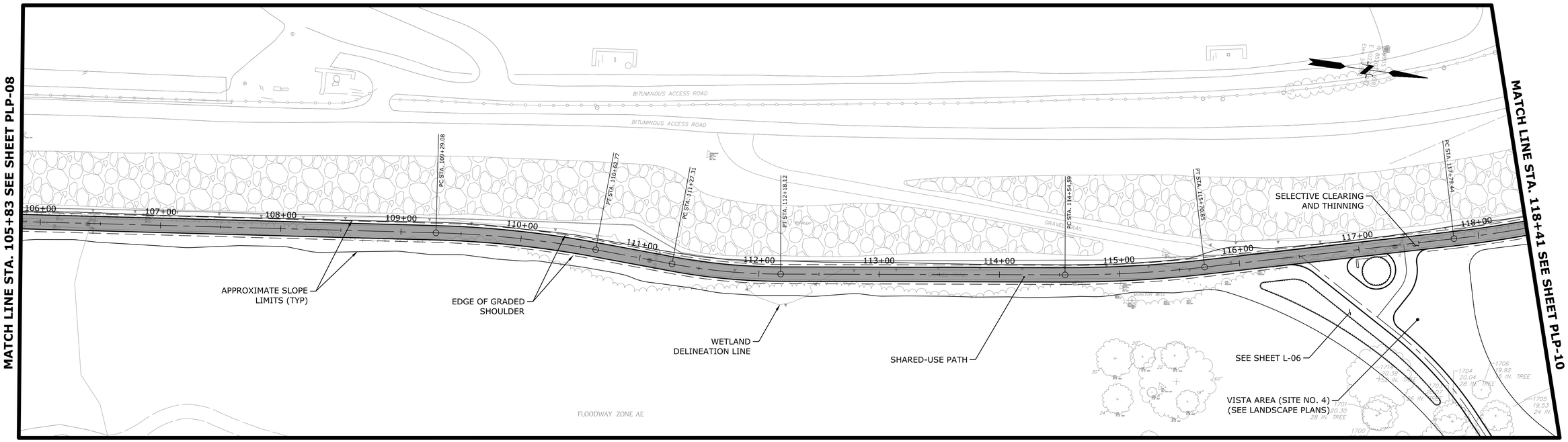
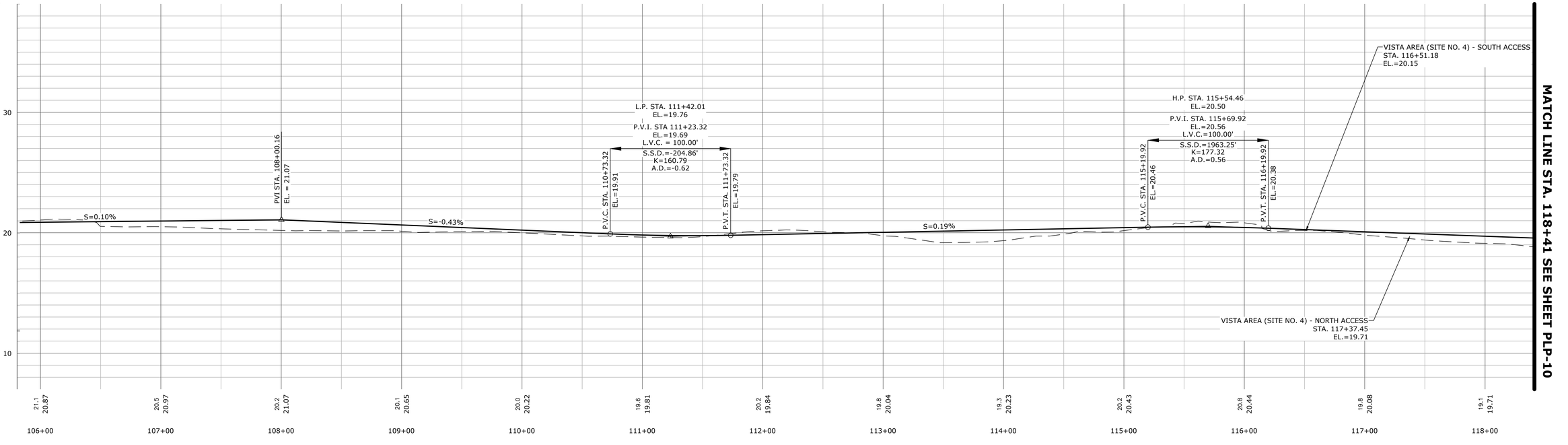
PLP-08





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MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

PLP-09

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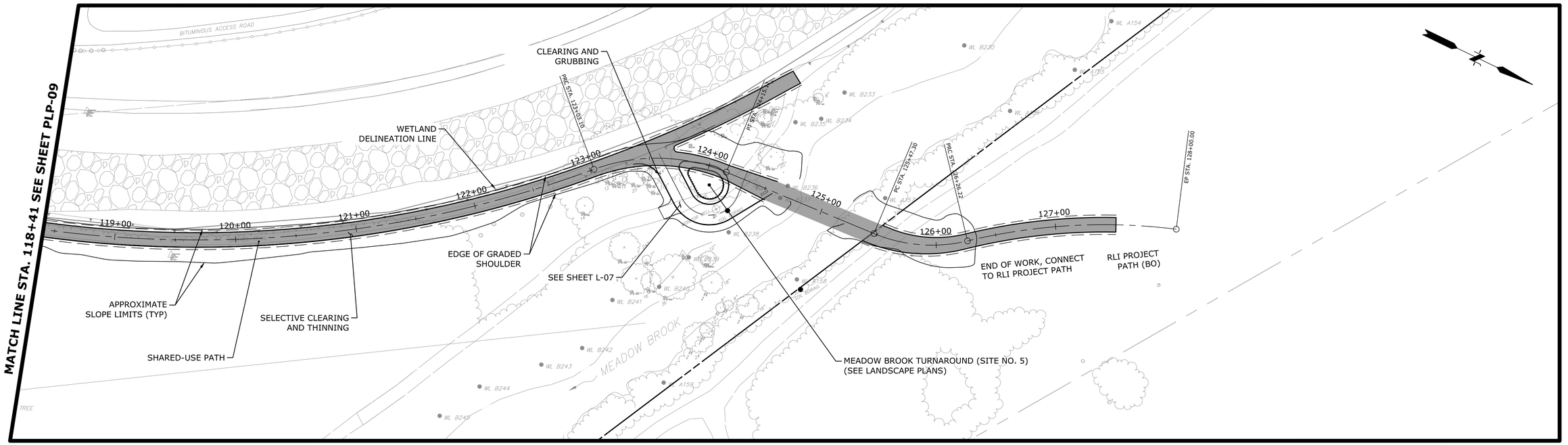

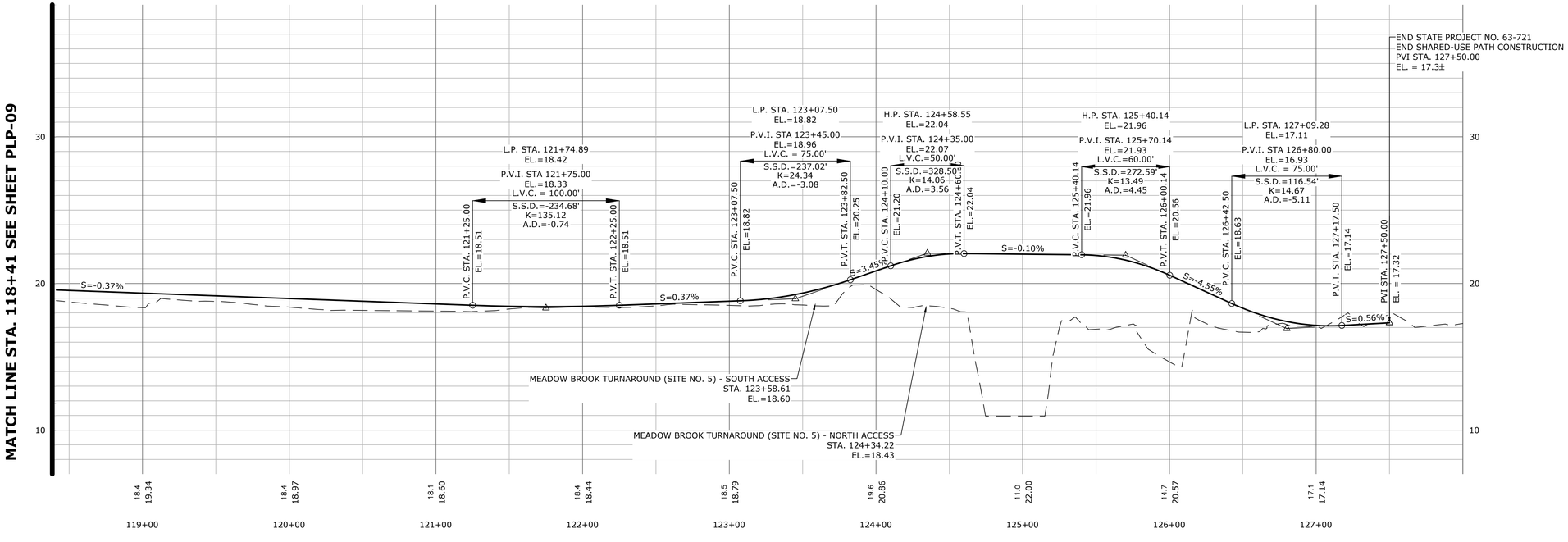

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PLP-10

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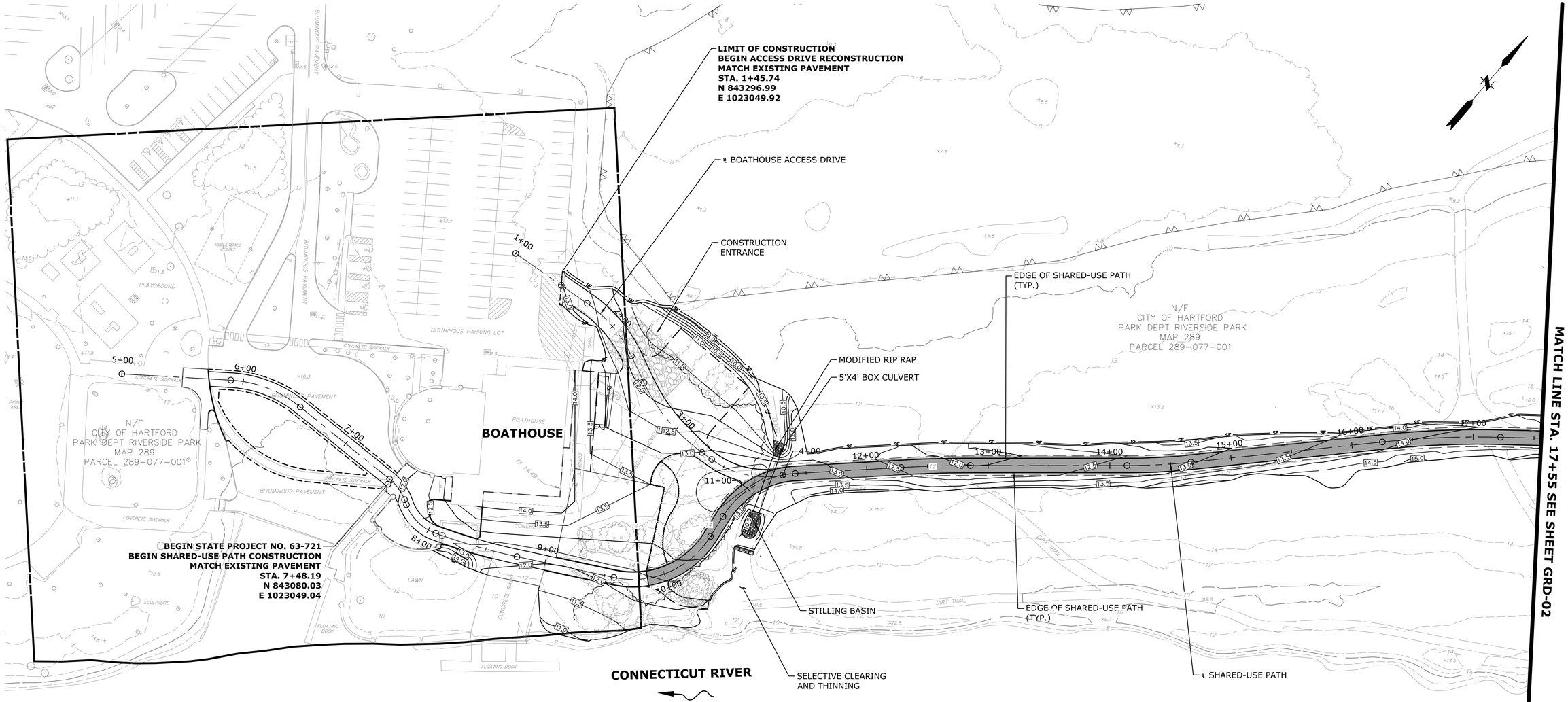

MATCH LINE STA. 17+55 SEE SHEET GRD-02

THE FOLLOWING TABLE PROVIDES THE JURISDICTIONAL ELEVATIONS FOR THE CONNECTICUT RIVER WITHIN THE PROJECT AREA. THE SURVEY WAS PERFORMED WHEN THE CONNECTICUT RIVER WAS HIGHER THAN THESE ELEVATIONS.

COASTAL JURISDICTION LINE (CJL): 3.8' HARTFORD / 3.9' WINDSOR
ORDINARY HIGH WATER (OHW): 9.0' HARTFORD / 9.1' WINDSOR
MEAN HIGH WATER LINE (MHW): 2.3'
MEAN LOW WATER LINE (MLW): 0.4'
HIGH TIDE LINE (HTL=CJL): 3.8' HARTFORD / 3.9' WINDSOR

MHW, MLW, AND HTL VALUES ARE FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION. THE CJL IS FROM THE CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION. ALL VALUES ARE IN NAVD88

Railroad General notes:
a.Contractor to notify G&W Public Projects Department 30 days prior to starting construction.

b.G&W flagging services will be required for all work within G&W right-of-way or any work that has a "potential to foul".

c.The contractor must not use the railroad right of way for storage of materials or equipment during construction. The railroad right of way must remain clear at all times. The contractor must plan and perform the work in a manner such that the railroad tracks at the project location remain fully capable of operating rail traffic throughout the work period and rail traffic is not delayed or otherwise impacted due to the work being performed.

d.All work performed on, above, under or adjacent to railroad property shall be in accordance with to the Public Project Manual, current edition. Work plans shall be submitted for review to the Railroad for excavation, access, soil and water management, and all other work that presents the potential to affect railroad property or operations. All work plans shall be prepared and submitted to the Railroad in adherence with the Public Project Manual, Section 1.11 Construction Submission Criteria.

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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SCALE:
HORZ.: 1" = 40'
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DATUM:
HORZ.: NAD83
VERT.: NAVD88
40 20 0 40
GRAPHIC SCALE

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CITY OF HARTFORD

GRADING, DRAINAGE AND EROSION CONTROL PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

GRD-01

File Path: J:\DWG\P20\20170860A10\Civil\Plan\20170860A10_GRD01.dwg Layout: GRD-01 Plotted: Mon, March 21, 2022 - 8:50 AM User: steamy
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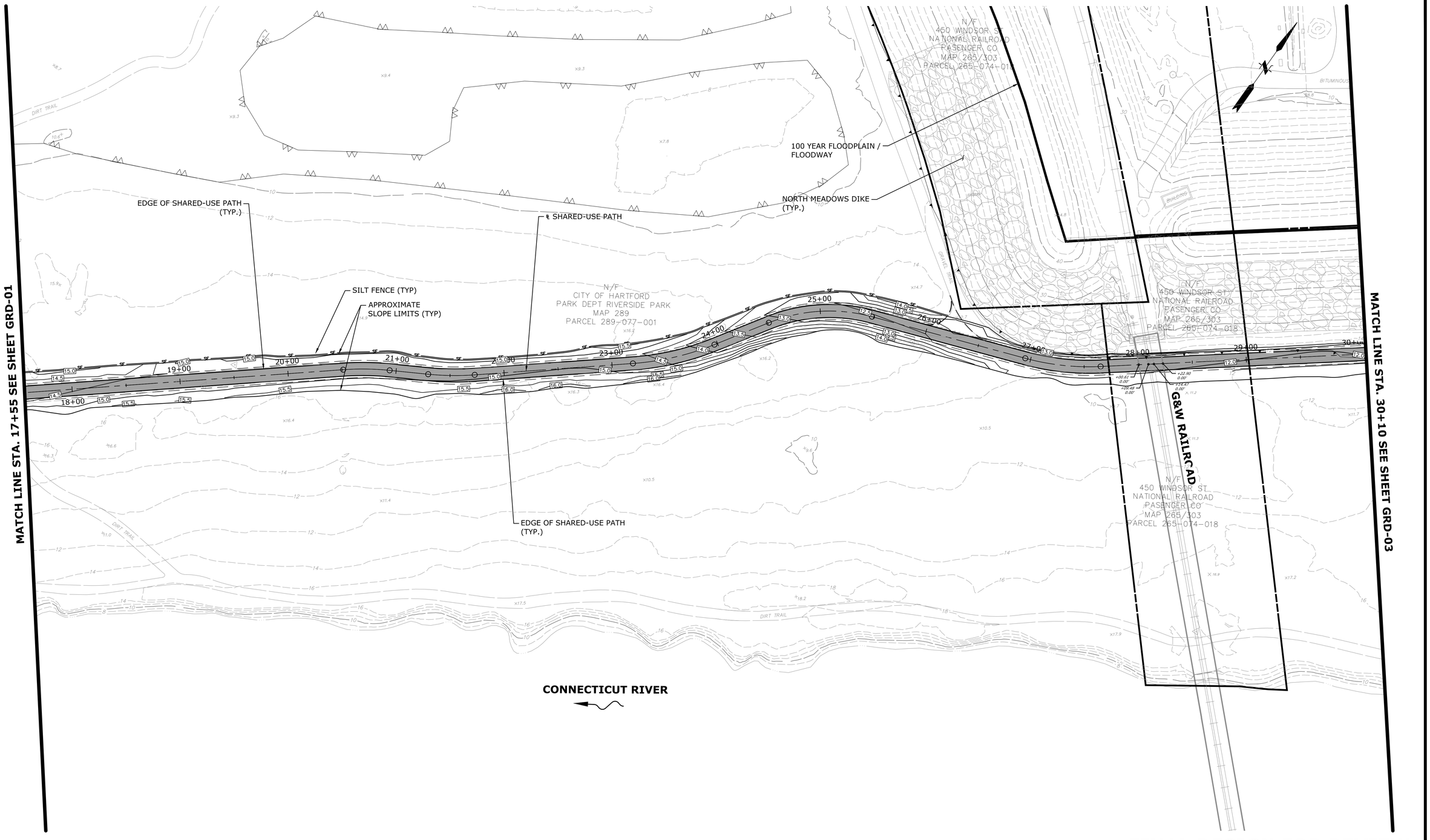

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GRAPHIC SCALE

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GRADING, DRAINAGE AND EROSION CONTROL PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

GRD-02

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MATCH LINE STA. 30+10 SEE SHEET GRD-02

MATCH LINE STA. 42+54 SEE SHEET GRD-04

NORTH MEADOWS DIKE (TYP.)

100 YEAR FLOODPLAIN / FLOODWAY

N/F CITY OF HARTFORD BUILDING DIV PUBLIC WORKS

EDGE OF SHARED-USE PATH (TYP.)

SILT FENCE (TYP)

APPROXIMATE SLOPE LIMITS (TYP)

℄ SHARED-USE PATH

EDGE OF SHARED-USE PATH (TYP.)

STOCK PILE AREA

VISTA AREA (SITE NO. 1) (SEE LANDSCAPE PLANS)

EXISTING PUMP HOUSE

CONNECTICUT RIVER

N/F CITY OF HARTFORD

BITUMINOUS ACCESS ROAD

GRAVEL TRAIL

DIRT TRAIL

BUILDING

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
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HORZ.: NAD83
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GRAPHIC SCALE

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CITY OF HARTFORD

GRADING, DRAINAGE AND EROSION CONTROL PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

GRD-03

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_GRD01.dwg Layout: GRD-03 Plotted: Mon, March 21, 2022 - 8:52 AM User: sleamy
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB
MS VIEW: LAYER STATE:

MATCH LINE STA. 42+54 SEE SHEET GRD-03

MATCH LINE STA. 55+02 SEE SHEET GRD-05

NORTH MEADOWS DIKE (TYP.)

EDGE OF SHARED-USE PATH (TYP.)

100 YEAR FLOODPLAIN / FLOODWAY

APPROXIMATE SLOPE LIMITS (TYP)

EDGE OF SHARED-USE PATH (TYP.)

℄ SHARED-USE PATH

N/F CITY OF HARTFORD

N/F CITY OF HARTFORD

DIRT TRAIL

BUILDING

RIPRAP

43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEAL

SEAL

SCALE:
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VERT.:
DATUM:
HORZ.: NAD83
VERT.: NAVD88
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GRAPHIC SCALE

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CITY OF HARTFORD

GRADING, DRAINAGE AND EROSION CONTROL PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

GRD-04

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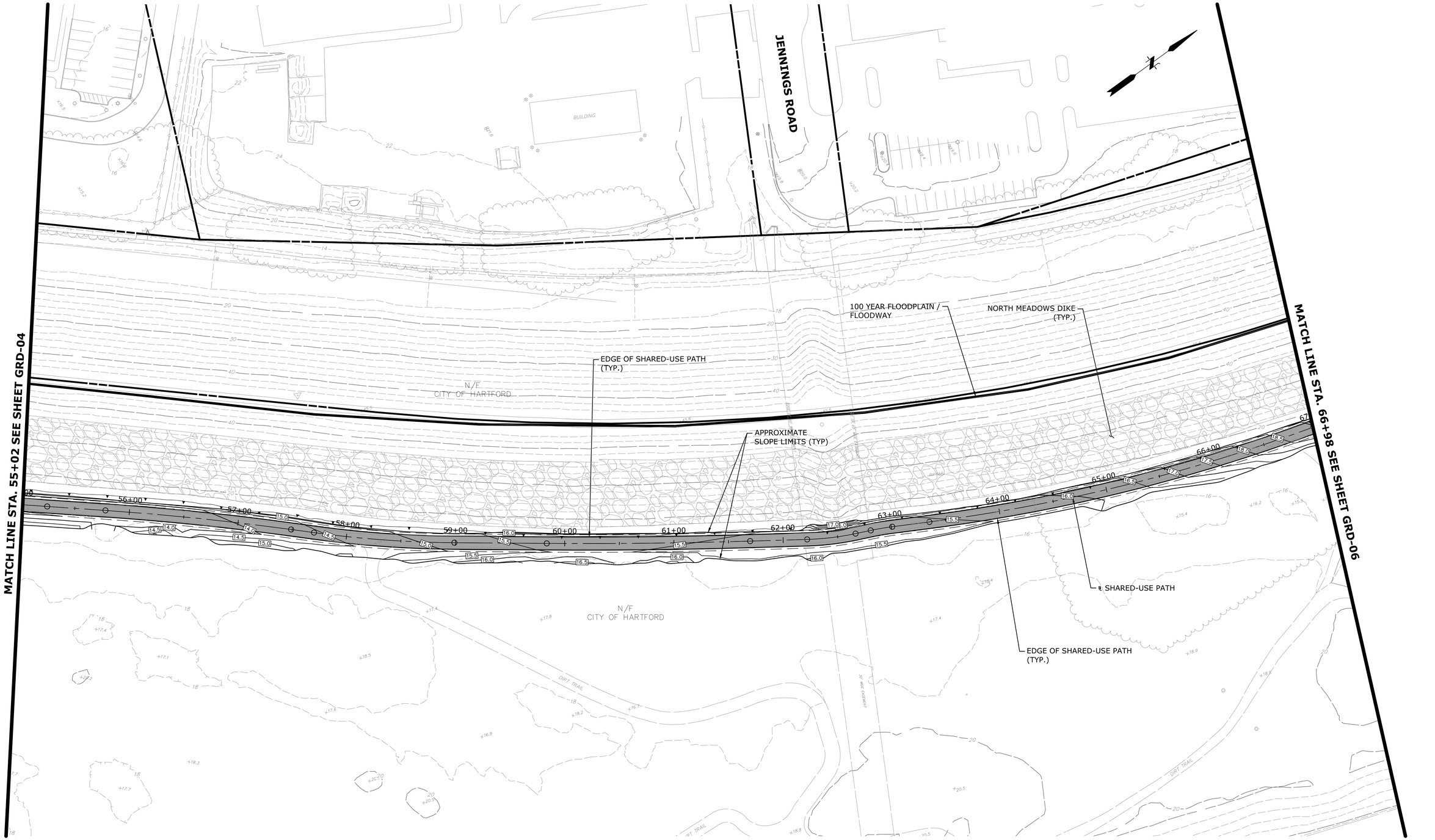

FINAL DESIGN FOR REVIEW

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SEAL

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HORZ.: NAD83
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GRAPHIC SCALE

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CITY OF HARTFORD

GRADING, DRAINAGE AND EROSION CONTROL PLAN

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

GRD-05

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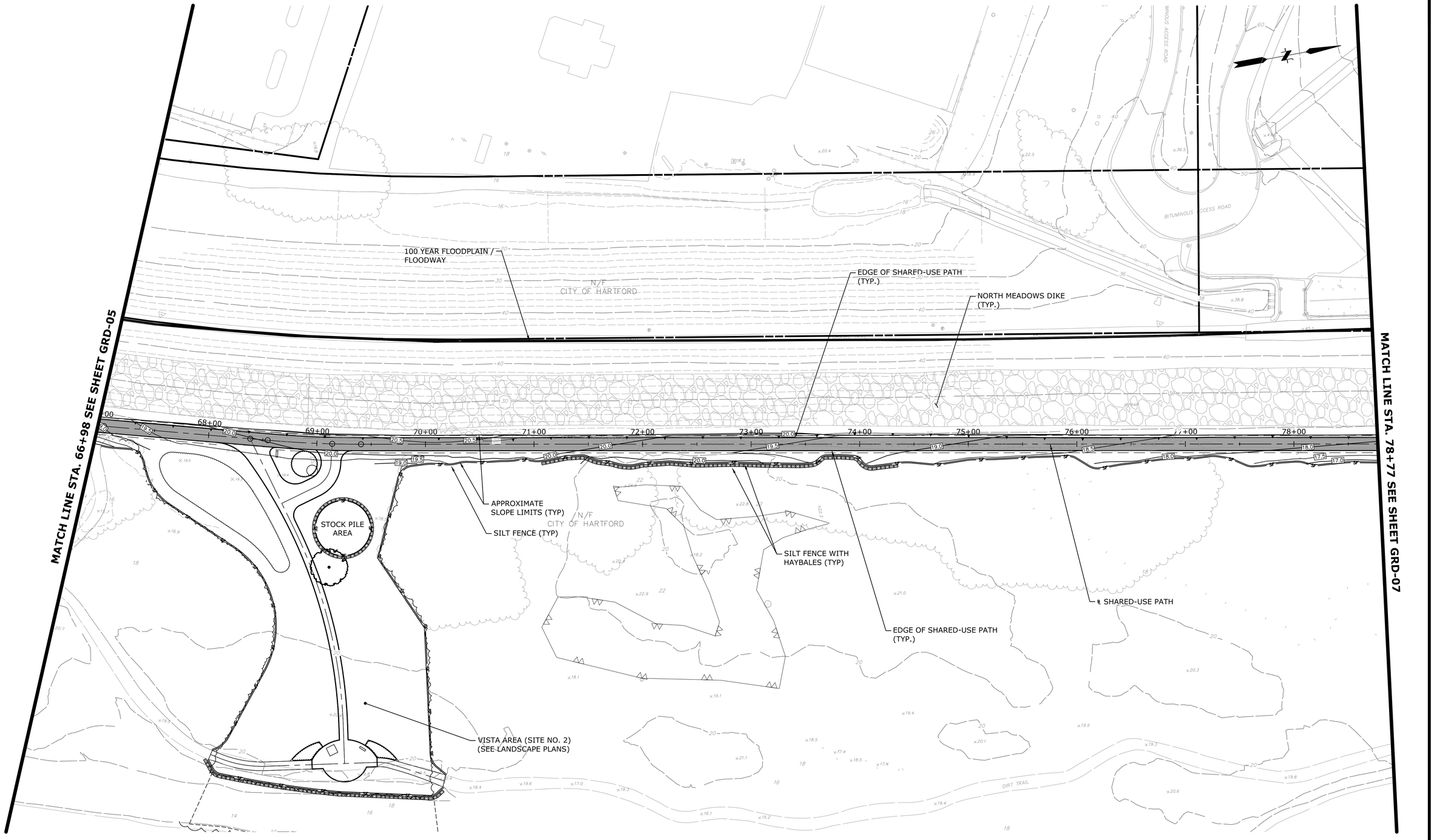

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEAL

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SCALE:
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HORZ.: NAD83
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GRAPHIC SCALE

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HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

GRD-06

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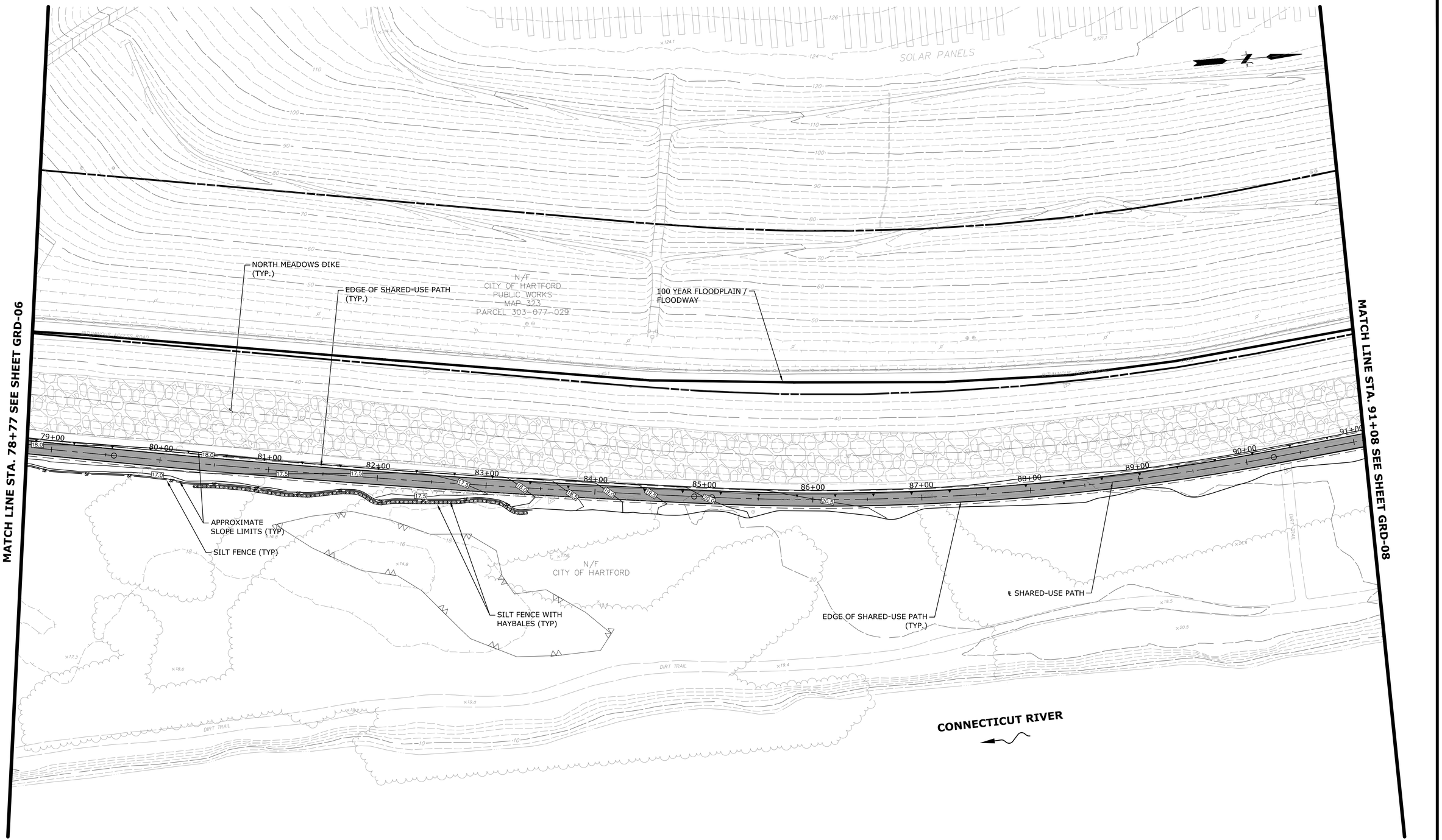

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SCALE:
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GRADING, DRAINAGE AND EROSION CONTROL PLAN

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STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

GRD-07

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_GRD01.dwg Layout: GRD-07 Plotted: Mon, March 21, 2022 - 8:53 AM User: sleamy
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LAYER STATE:
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MATCH LINE STA. 91+08 SEE SHEET GRD-07

MATCH LINE STA. 103+43 SEE SHEET GRD-09

100 YEAR FLOODPLAIN / FLOODWAY

NORTH MEADOWS DIKE (TYP.)

EDGE OF SHARED-USE PATH (TYP.)

N/F
CITY OF HARTFORD
PUBLIC WORKS
MAP 323
PARCEL 303-077-029

92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00

STOCK PILE AREA

APPROXIMATE SLOPE LIMITS (TYP)

N/F
CITY OF HARTFORD

EDGE OF SHARED-USE PATH (TYP.)

℄ SHARED-USE PATH

DIRT TRAIL

VISTA AREA (SITE NO. 3)
(SEE LANDSCAPE PLANS)

CONNECTICUT RIVER

SILT FENCE WITH HAYBALES (TYP)

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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HARTFORD CONNECTICUT

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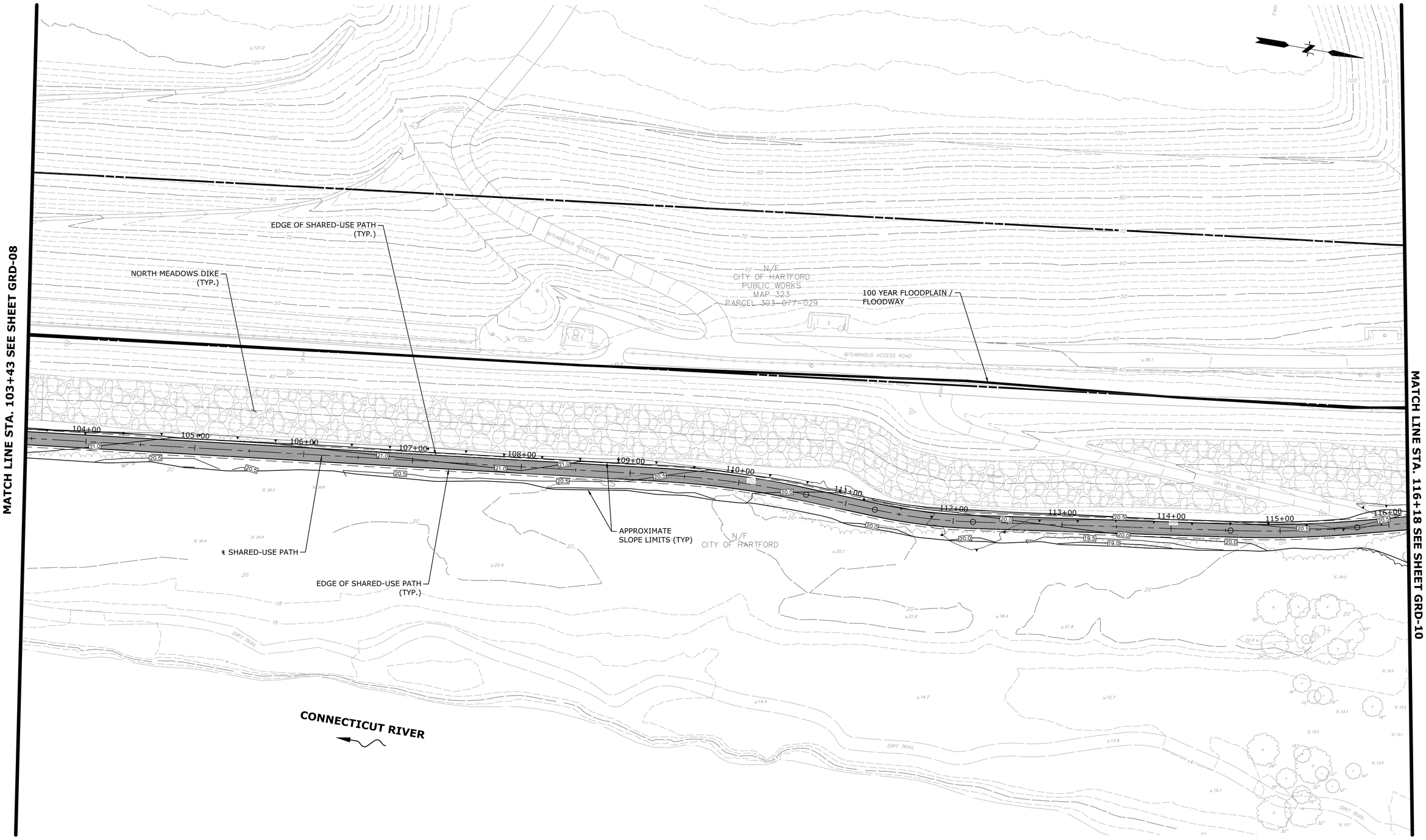
GRD-08



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GRD-09

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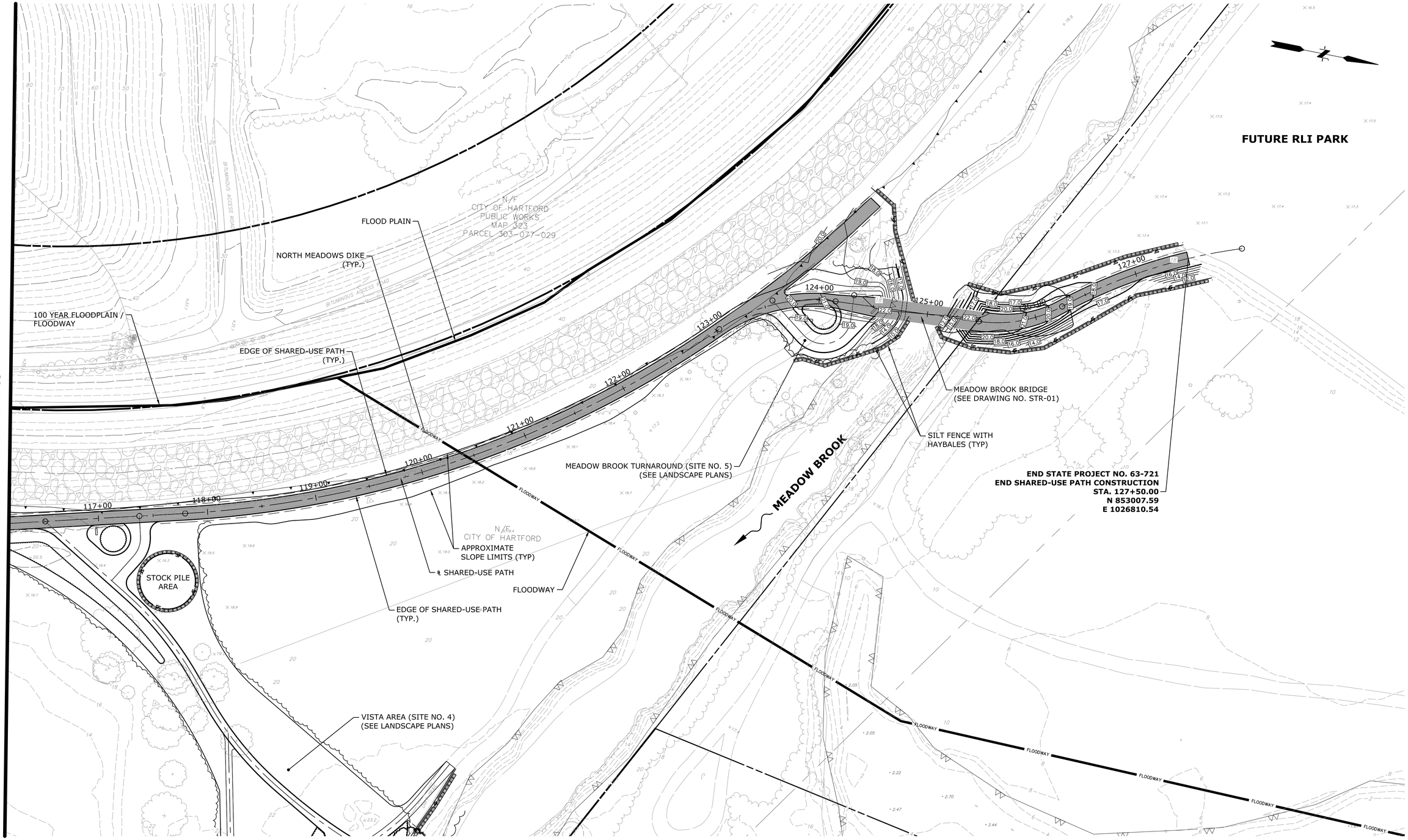

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HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

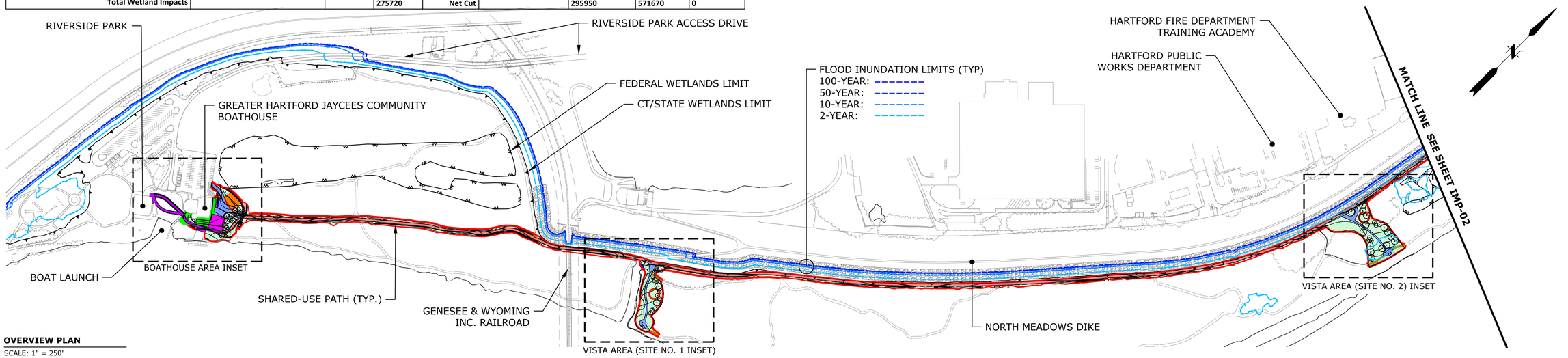
GRD-10

Inland Water Resource Impact Table
CT Department of Energy and Environmental Protection

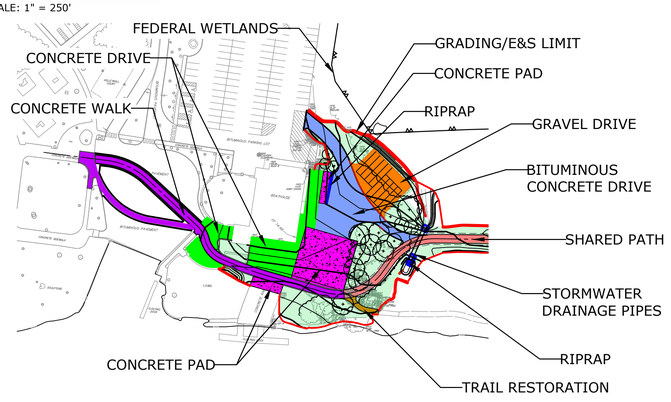
Wetlands		Direct Fill Impact			Additional Impact		Total Impact	
Wetland Name (Field ID)	Activity	Temporary or Permanent (T / P)	Impact Area (square feet)	Fill Volume (cubic yards)	Activity	Impact Area (square feet)	CT/STATE Wetlands (square feet)	FEDERAL Wetlands (square feet)
CT/STATE Inland Wetlands	**General Site Grading**	**P.1**	30350	Net Cut	Excavation; Grading	Included in P.1 Impact Area	**30350**	**0**
(continued)	**Construct Bituminous Concrete Drive (Boathouse)**	**P.2**	7410	+120 (-120)	Excavation	Included in P.2 Impact Area	**7410**	**0**
(continued)	**Construct Concrete Drive (Boathouse)**	**P.3**	6890	+180 (-180)	Excavation	Included in P.3 Impact Area	**6890**	**0**
(continued)	**Construct Concrete Path (Boathouse)**	**P.4**	5670	+110 (-110)	Excavation	Included in P.4 Impact Area	**5670**	**0**
(continued)	**Construct Concrete Pad (Boathouse)**	**P.5**	6650	+130 (-130)	Excavation	Included in P.5 Impact Area	**6650**	**0**
(continued)	**Install Riprap & Drainage Pipes (Boathouse; Vista Site #1)**	**P.6**	470	+30	Excavation; Grading	Included in P.6 Impact Area	**470**	**0**
(continued)	**Construct Gravel Drive (Boathouse; Site)**	**P.7**	4470	+90 (-90)	Excavation; Grading	Included in P.7 Impact Area	**4470**	**0**
(continued)	**Construct Bituminous Concrete Paths (Vistas)**	**P.8**	20810	+340 (-340)	Excavation	Included in P.8 Impact Area	**20810**	**0**
(continued)	**Trail Restoration (Site)**	**P.9**	6330	+150 (-150)	Excavation; Grading	Included in P.9 Impact Area	**6330**	**0**
(continued)	**Shared Path (Site)**	**P.10**	143670	+7770 (-7770)	Selective vegetation thinning/clearing; Excavation; Grading	295950	**439620**	**0**
(continued)	**Site Erosion & Sedimentation Control Measures**	**T.1**	43000	N/A	N/A	N/A	**43000**	**0**
Total Wetland Impacts			**275720**	**Net Cut**		**295950**	**571670**	**0**

Inland Water Resource Impact Table
CT Department of Energy and Environmental Protection

Watercourses and Waterbodies					Direct Fill Impact				Additional Impact		Total Impact	
Water Name (Field ID)	Water Name (USGS Name, if applicable)	Water Type	Water Quality Class	Drainage Area (square miles)	Activity	Temporary or Permanent (T / P)	Impact Area (square feet)	Fill Volume (cubic yards)	Activity	Impact Area (square feet)	CT/STATE Waters (square feet)	FEDERAL Waters (square feet)
Meadow Brook	Meadow Brook	Perennial	SB	3.26	**Construct Bridge Crossing Abutments**	**P.11**	1400	175	Excavation; Grading	Included in P.11 Impact Area	**1400**	**400**
				Total Watercourse Impacts (all watercourses/waterbodies)			**1400**	**175**			**1400**	**400**



OVERVIEW PLAN
SCALE: 1" = 250'



BOATHOUSE AREA INSET
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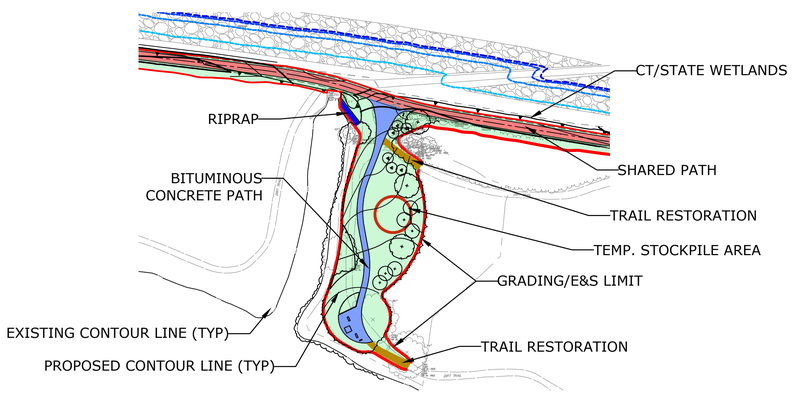
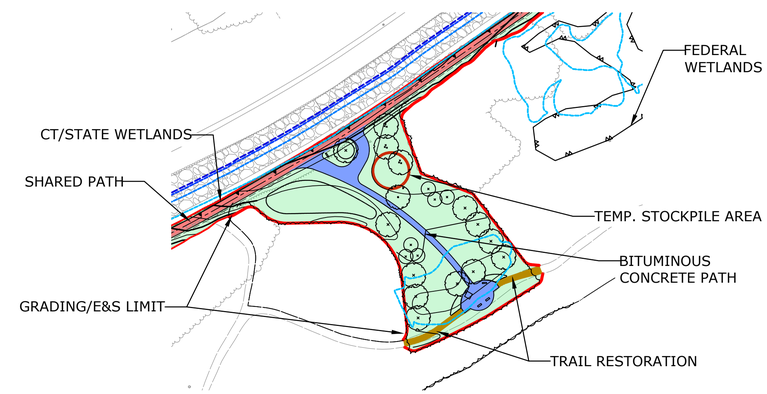


VISTA AREA - SITE NO. 1 INSET
SCALE: 1" = 100'



VISTA AREA - SITE NO. 2 INSET
SCALE: 1" = 100'

FINAL DESIGN FOR REVIEW

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MS VIEW:

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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LANDSCAPE ARCHITECT
Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: AS NOTED
VERT.:
DATUM:
HORZ.: NAD83
VERT.: NAVD88
0
GRAPHIC SCALE

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CITY OF HARTFORD
PERMANENT AND TEMPORARY FLOODPLAIN IMPACTS
MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721
HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

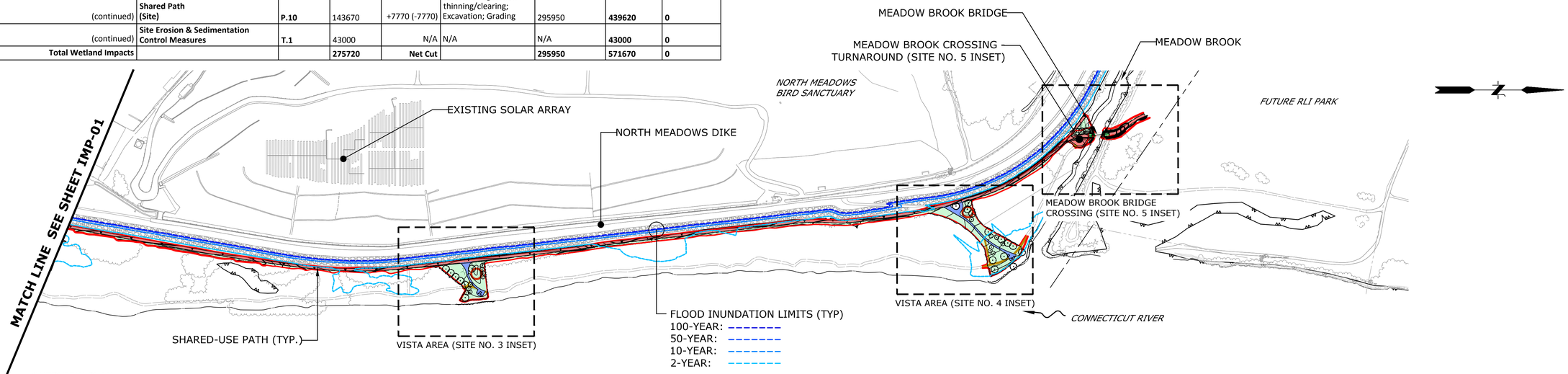
IMP-01

Inland Water Resource Impact Table
CT Department of Energy and Environmental Protection

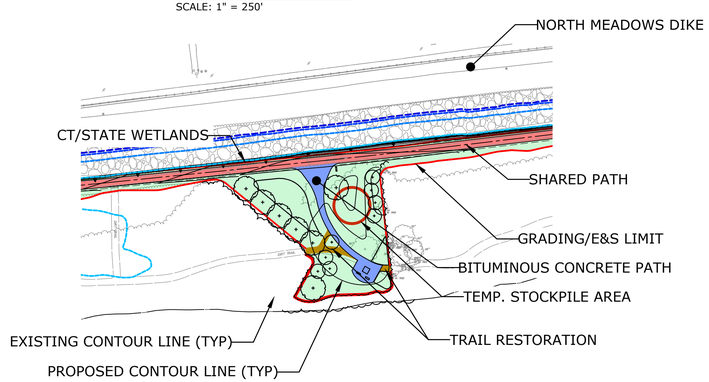
Wetlands		Direct Fill Impact			Additional Impact		Total Impact	
Wetland Name (Field ID)	Activity	Temporary or Permanent (T / P)	Impact Area (square feet)	Fill Volume (cubic yards)	Activity	Impact Area (square feet)	CT/STATE Wetlands (square feet)	FEDERAL Wetlands (square feet)
CT/STATE Inland Wetlands	**General Site Grading**	**P.1**	30350	Net Cut	Excavation; Grading	Included in P.1 Impact Area	**30350**	**0**
(continued)	**Construct Bituminous Concrete Drive (Boathouse)**	**P.2**	7410	+120 (-120)	Excavation	Included in P.2 Impact Area	**7410**	**0**
(continued)	**Construct Concrete Drive (Boathouse)**	**P.3**	6890	+180 (-180)	Excavation	Included in P.3 Impact Area	**6890**	**0**
(continued)	**Construct Concrete Path (Boathouse)**	**P.4**	5670	+110 (-110)	Excavation	Included in P.4 Impact Area	**5670**	**0**
(continued)	**Construct Concrete Pad (Boathouse)**	**P.5**	6650	+130 (-130)	Excavation	Included in P.5 Impact Area	**6650**	**0**
(continued)	**Install Riprap & Drainage Pipes (Boathouse; Vista Site #1)**	**P.6**	470	+30	Excavation; Grading	Included in P.6 Impact Area	**470**	**0**
(continued)	**Construct Gravel Drive (Boathouse; Site)**	**P.7**	4470	+90 (-90)	Excavation; Grading	Included in P.7 Impact Area	**4470**	**0**
(continued)	**Construct Bituminous Concrete Paths (Vistas)**	**P.8**	20810	+340 (-340)	Excavation	Included in P.8 Impact Area	**20810**	**0**
(continued)	**Trail Restoration (Site)**	**P.9**	6330	+150 (-150)	Excavation; Grading	Included in P.9 Impact Area	**6330**	**0**
(continued)	**Shared Path (Site)**	**P.10**	143670	+7770 (-7770)	Selective vegetation thinning/clearing; Excavation; Grading	295950	**439620**	**0**
(continued)	**Site Erosion & Sedimentation Control Measures**	**T.1**	43000	N/A	N/A	N/A	**43000**	**0**
Total Wetland Impacts			**275720**	**Net Cut**		**295950**	**571670**	**0**

Inland Water Resource Impact Table
CT Department of Energy and Environmental Protection

Watercourses and Waterbodies					Direct Fill Impact				Additional Impact		Total Impact	
Water Name (Field ID)	Water Name (USGS Name, if applicable)	Water Type	Water Quality Class	Drainage Area (square miles)	Activity	Temporary or Permanent (T / P)	Impact Area (square feet)	Fill Volume (cubic yards)	Activity	Impact Area (square feet)	CT/STATE Waters (square feet)	FEDERAL Waters (square feet)
Meadow Brook	Meadow Brook	Perennial	SB	3.26	**Construct Bridge Crossing Abutments**	**P.11**	1400	175	Excavation; Grading	Included in P.11 Impact Area	**1400**	**400**
				Total Watercourse Impacts (all watercourses/waterbodies)			**1400**	**175**			**1400**	**400**



OVERVIEW PLAN
SCALE: 1" = 250'



VISTA AREA - SITE NO. 3 INSET
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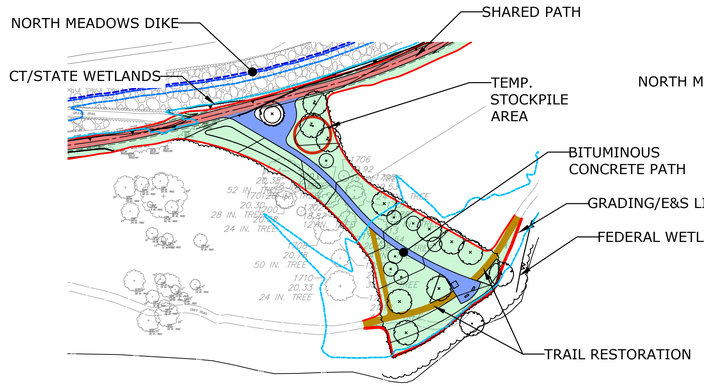

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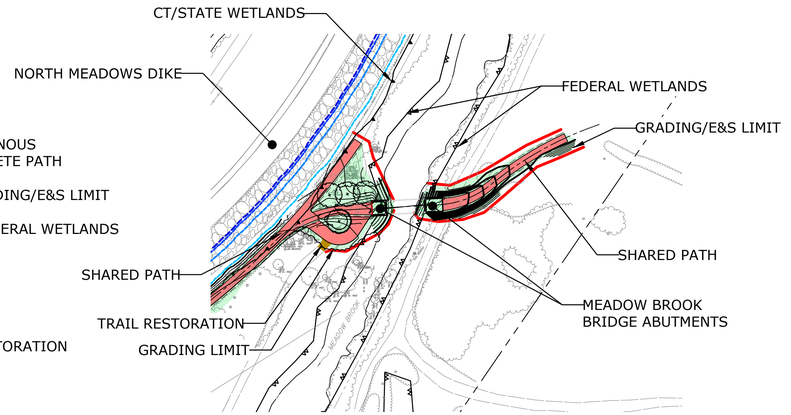

MEADOW BROOK BRIDGE CROSSING - SITE NO. 5 INSET
SCALE: 1" = 100'

FINAL DESIGN FOR REVIEW

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
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IMP-02

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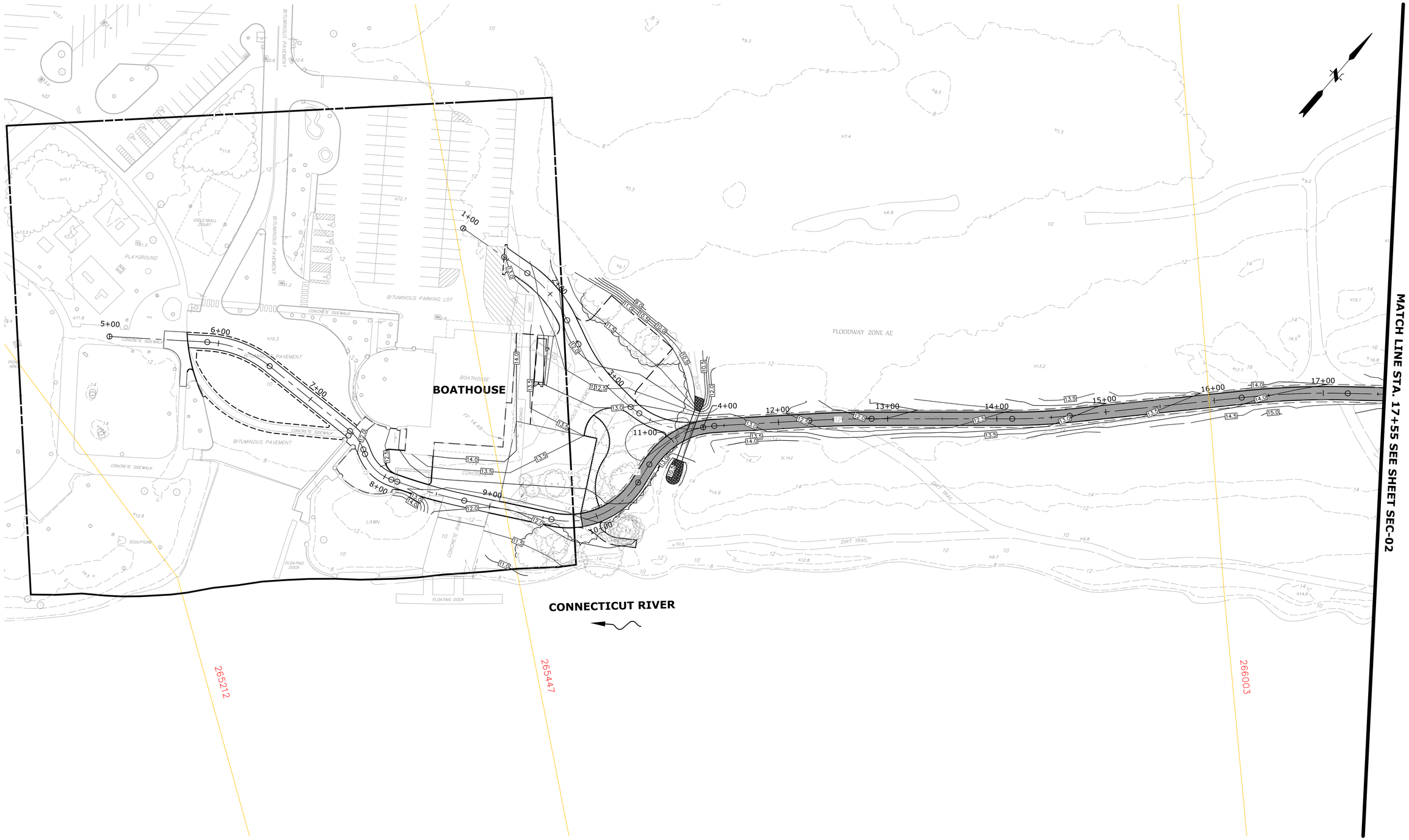

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SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
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HORZ.:
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40 20 0 40
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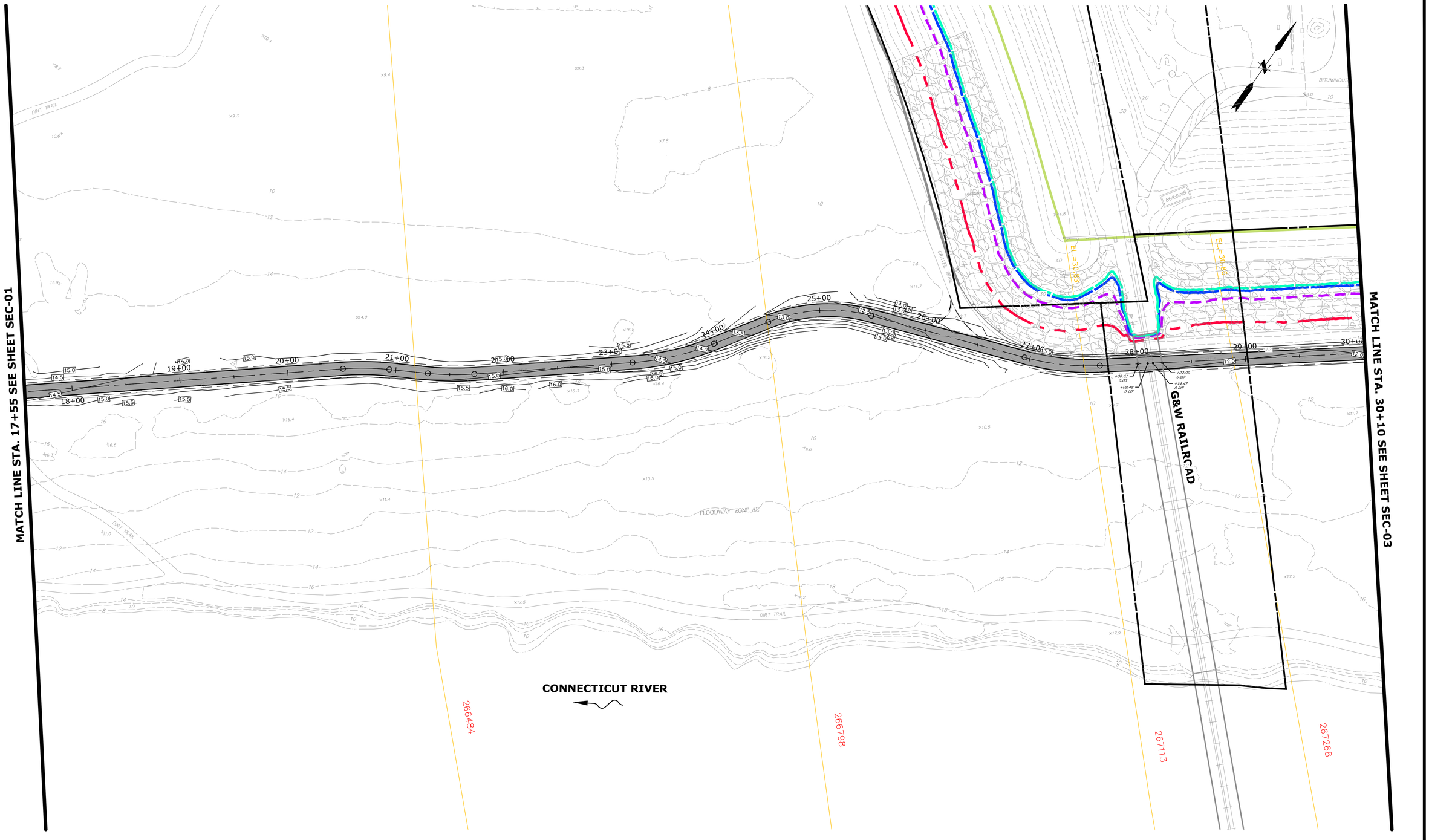
MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

SEC-01



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DATE: MARCH 2022

SEC-02

File Path: J:\DWG\P20170860A10\Civil\Plan\20170860A10_GRD01.dwg Layout: SEC-02 DEEP Plotted: Fri, March 18, 2022 - 1:54 PM User: steamy
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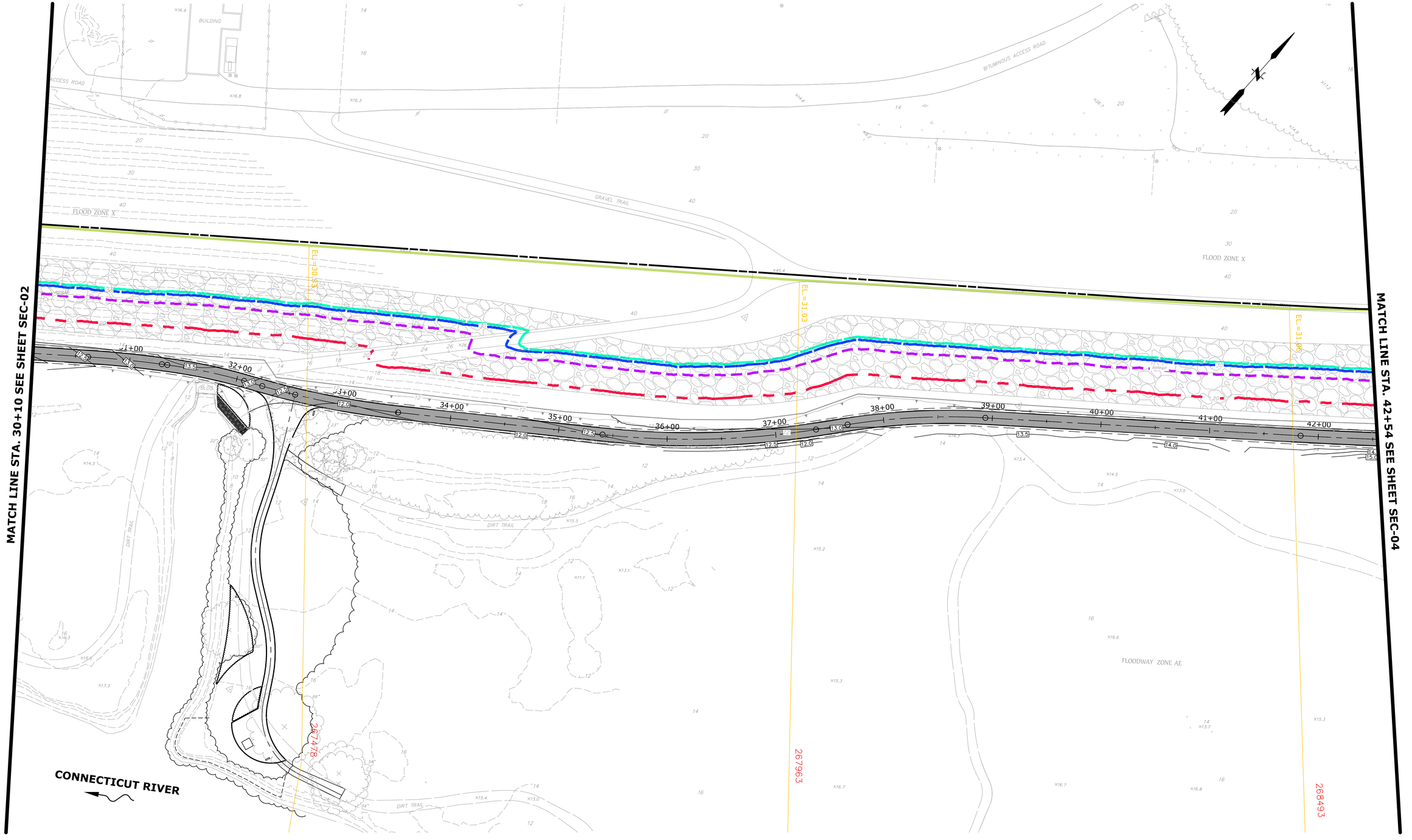
Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB

MATCH LINE STA. 30+10 SEE SHEET SEC-02

MATCH LINE STA. 42+54 SEE SHEET SEC-04



No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEC-03

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Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB
MS VIEW: LAYER STATE:

MATCH LINE STA. 42+54 SEE SHEET SEC-03

MATCH LINE STA. 55+02 SEE SHEET SEC-05

FLOOD ZONE X

DIRT TRAIL

BUILDING

EL=31.47

EL=31.18

EL=31.36

43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55

268964

269463

269984

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
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HORZ.:
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40 20 0 40
GRAPHIC SCALE

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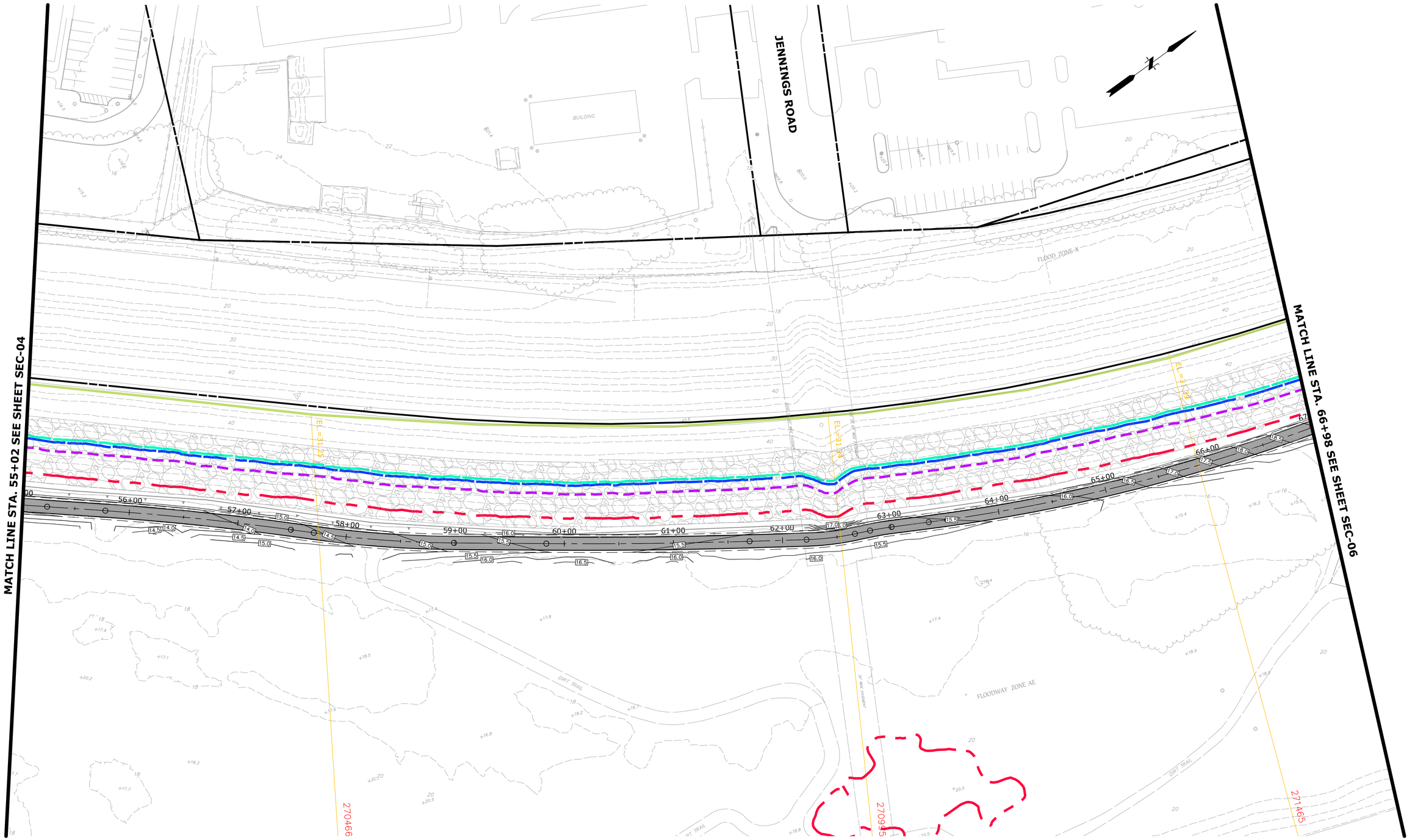
HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

SEC-04



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SEAL

SEAL

SCALE:
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VERT.:
DATUM:
HORZ.:
VERT.:
40 20 0 40
GRAPHIC SCALE

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HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

SEC-05

MATCH LINE STA. 66+98 SEE SHEET SEC-05

MATCH LINE STA. 78+77 SEE SHEET SEC-07

FLOOD ZONE X

FLOODWAY ZONE AE

BITUMINOUS ACCESS ROAD

DIRT TRAIL

EL. = 31.48

EL. = 31.32

EL. = 31.55

68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00 78+00

271849

271974

272501

272749

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
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HORZ.:
VERT.:
40 20 0 40
GRAPHIC SCALE

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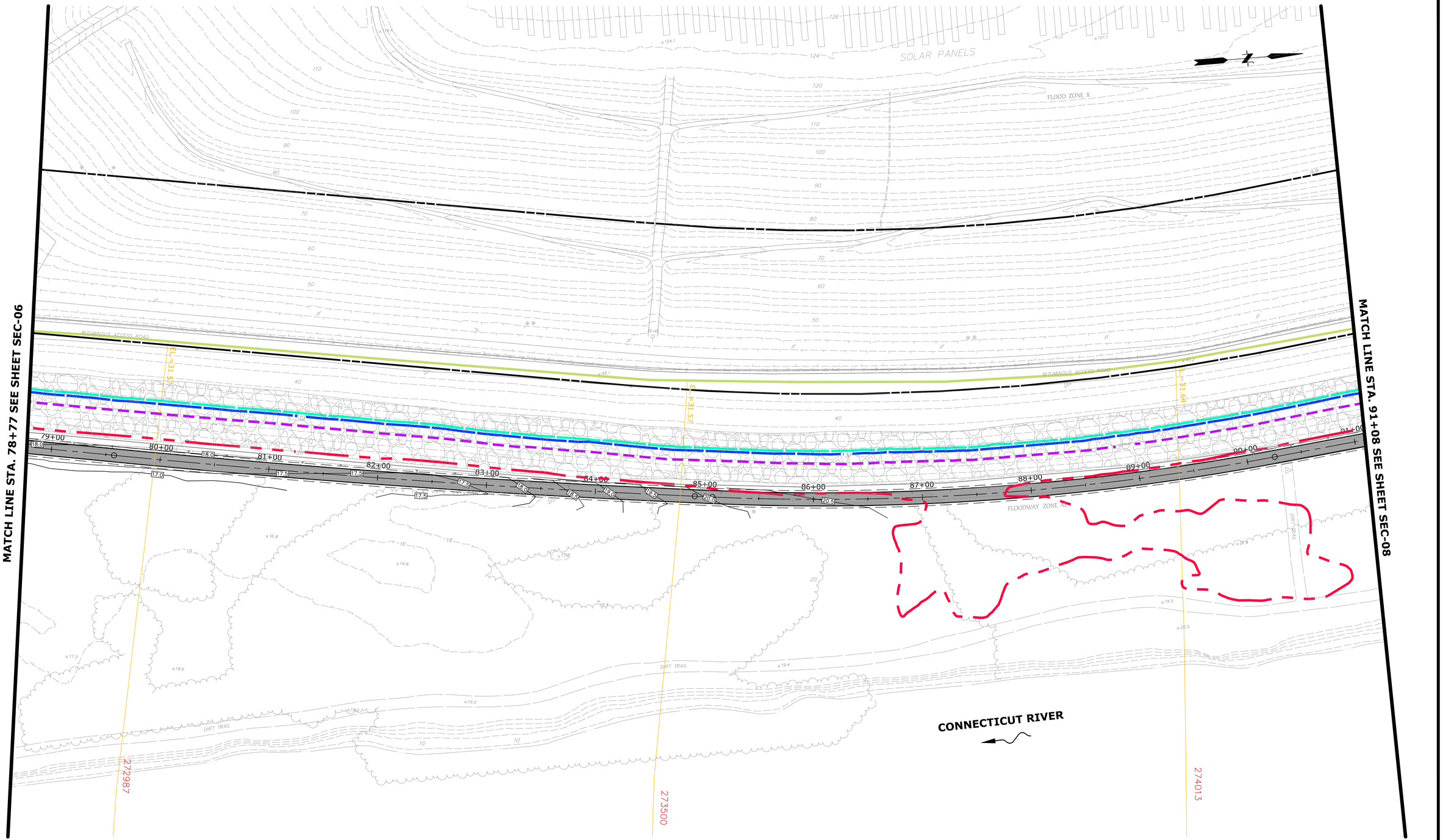
PROJ. No.: 20170860.A10
DATE: MARCH 2022

SEC-07



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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
VERT.:
DATUM:
HORZ.:
VERT.:
40 20 0 40
GRAPHIC SCALE

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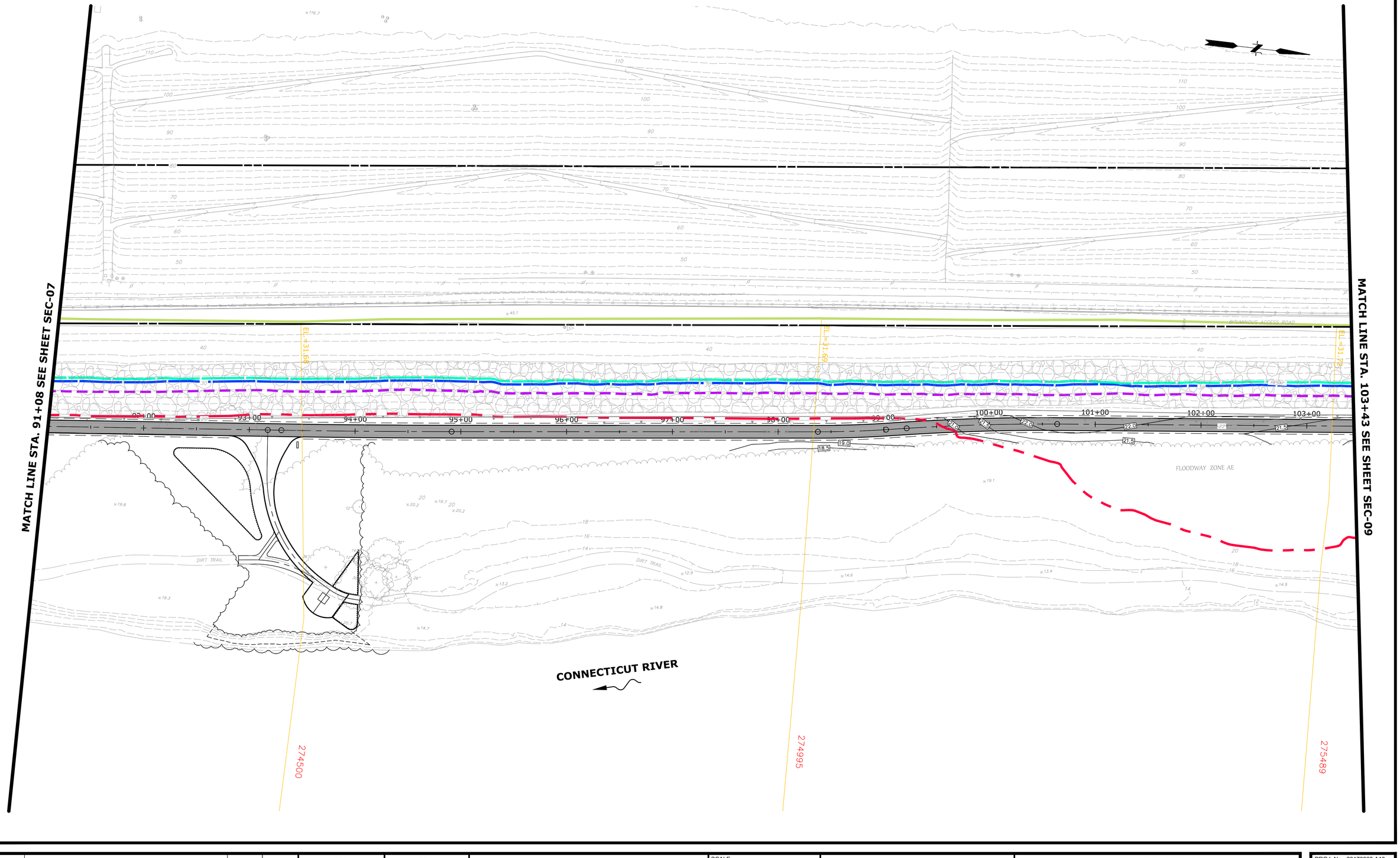
HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

SEC-07



No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEAL

SEAL

SCALE:
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DATUM:
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GRAPHIC SCALE

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DATE: MARCH 2022

SEC-08

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MATCH LINE STA. 103+43 SEE SHEET GRD-08

MATCH LINE STA. 116+18 SEE SHEET GRD-10

FLOOD ZONE X

BITUMINOUS ACCESS ROAD

EFFECTIVE 100 YEAR FLOOD PLAIN

FLOOD WAY / FLOOD PLAIN

EL.=31.73

EL.=31.78

104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00

GRAVEL TRAIL

DIRT TRAIL

FLOODWAY ZONE AE

CONNECTICUT RIVER

275999

276502

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
VERT.:
DATUM:
HORZ.:
VERT.:
40 20 0 40
GRAPHIC SCALE

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CITY OF HARTFORD

GRADING PLAN AND CROSS SECTION

MARFUGGI RIVERWALK
STATE PROJECT NO. 63-721

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: MARCH 2022

SEC-09

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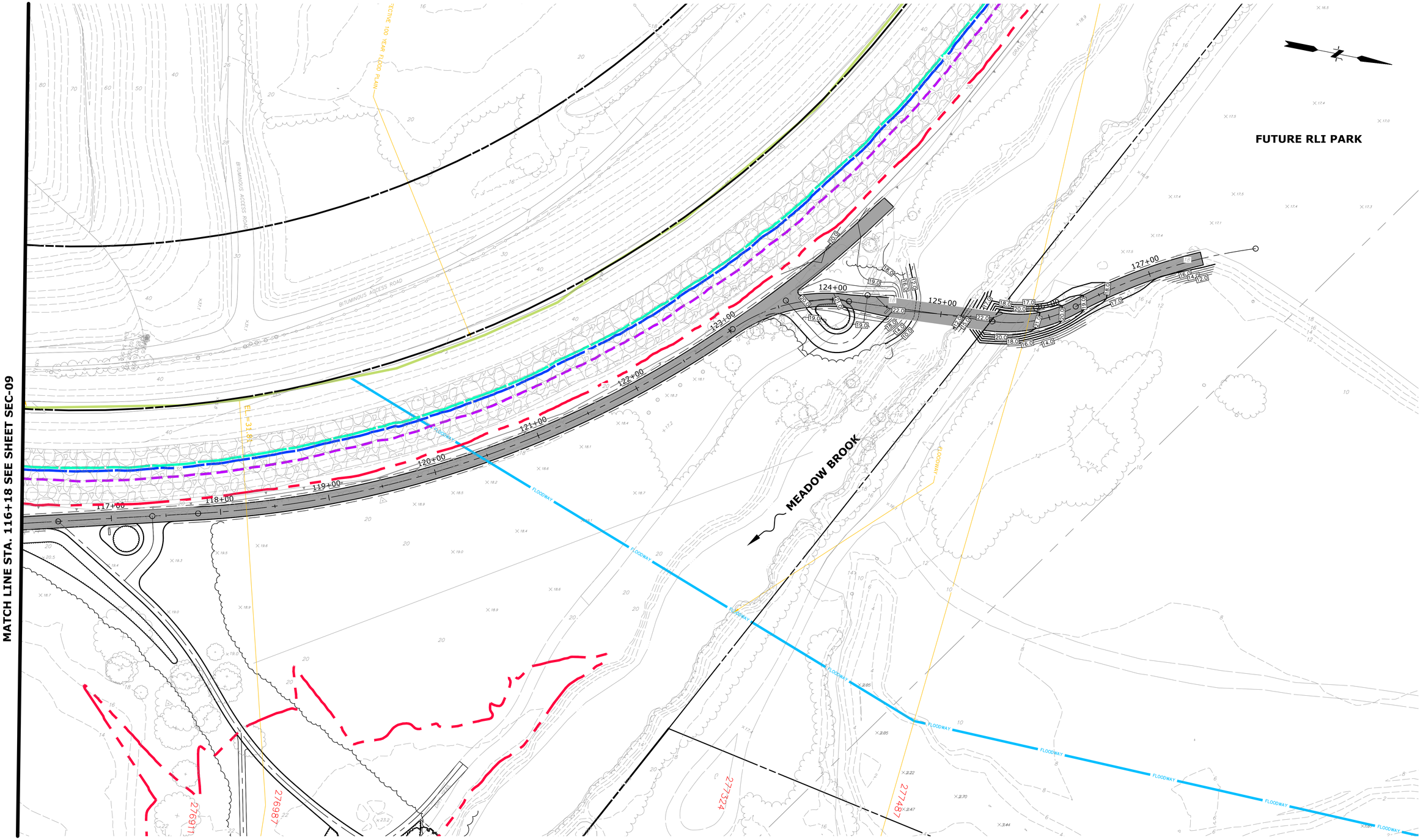

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: 1" = 40'
VERT.:
DATUM:
HORZ.:
VERT.:
40 20 0 40
GRAPHIC SCALE

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GRADING PLAN AND CROSS SECTION

MARFUGGI RIVERWALK
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SEC-10

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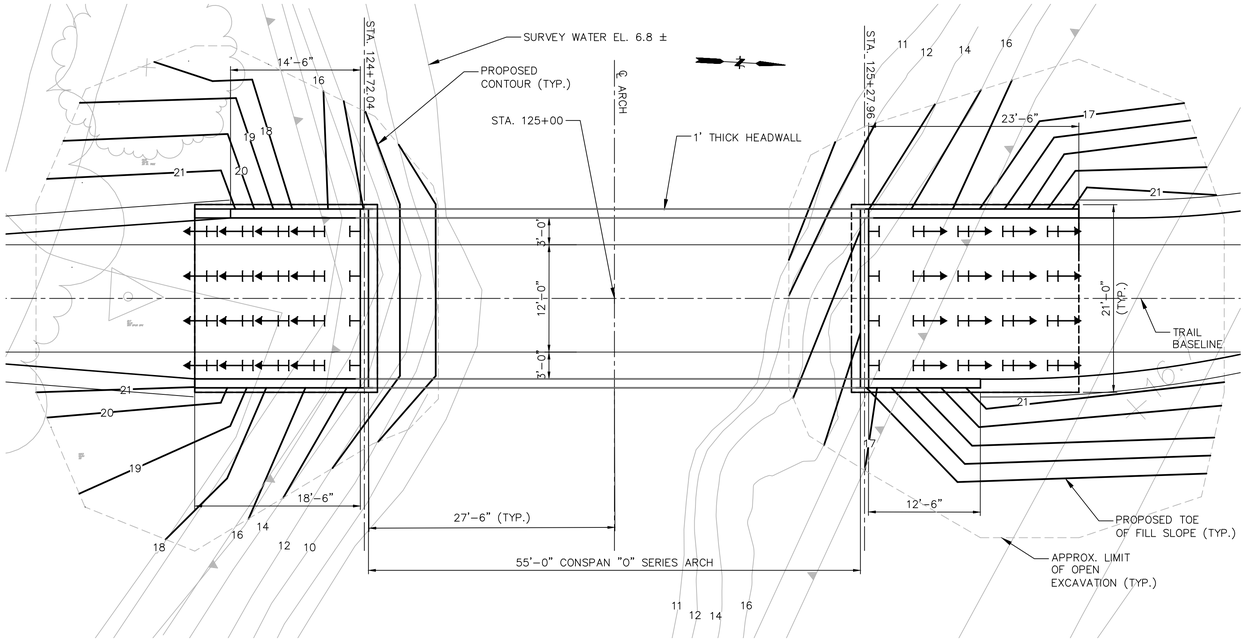
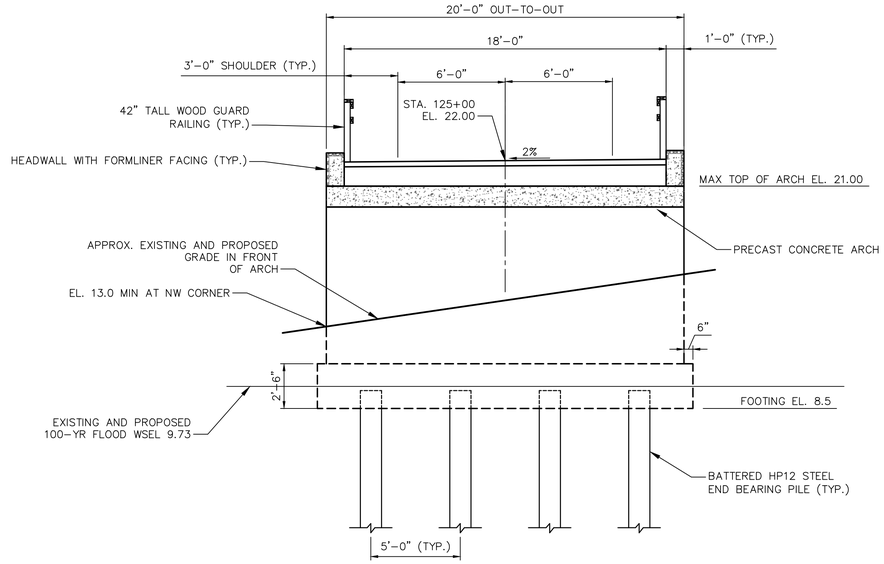
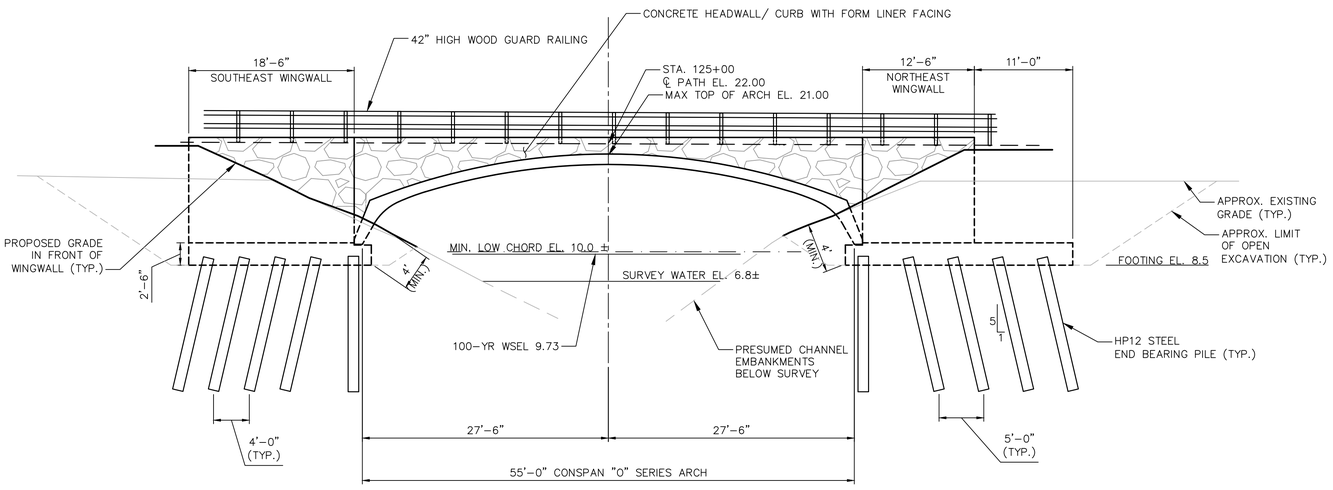


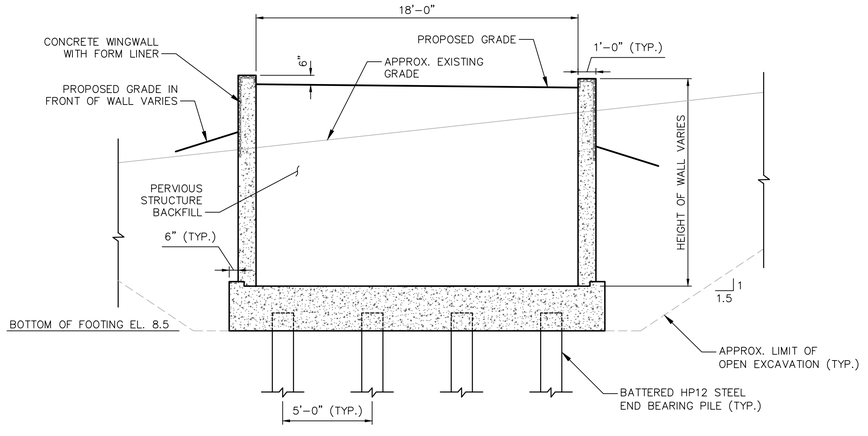
PLAN
1/8" = 1'-0"



SECTION
1/4" = 1'-0"



ELEVATION
1/8" = 1'-0"



WING WALL SECTION
1/4" = 1'-0"

File: J:\DWG\P20170860\A10\Structural\20170860.A10_STR.dwg Layout: STR-01 Plotted: 2022-03-18 1:41 PM Saved: 2022-03-17 4:25 PM User: ECofrancesco
PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB
LAYER STATE:
MS VIEW:

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SEAL

SEAL

SCALE:
HORZ.: AS SHOWN
VERT.:
DATUM:
HORZ.:
VERT.:
0
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
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CITY OF HARTFORD

MEADOW BROOK BRIDGE PLAN

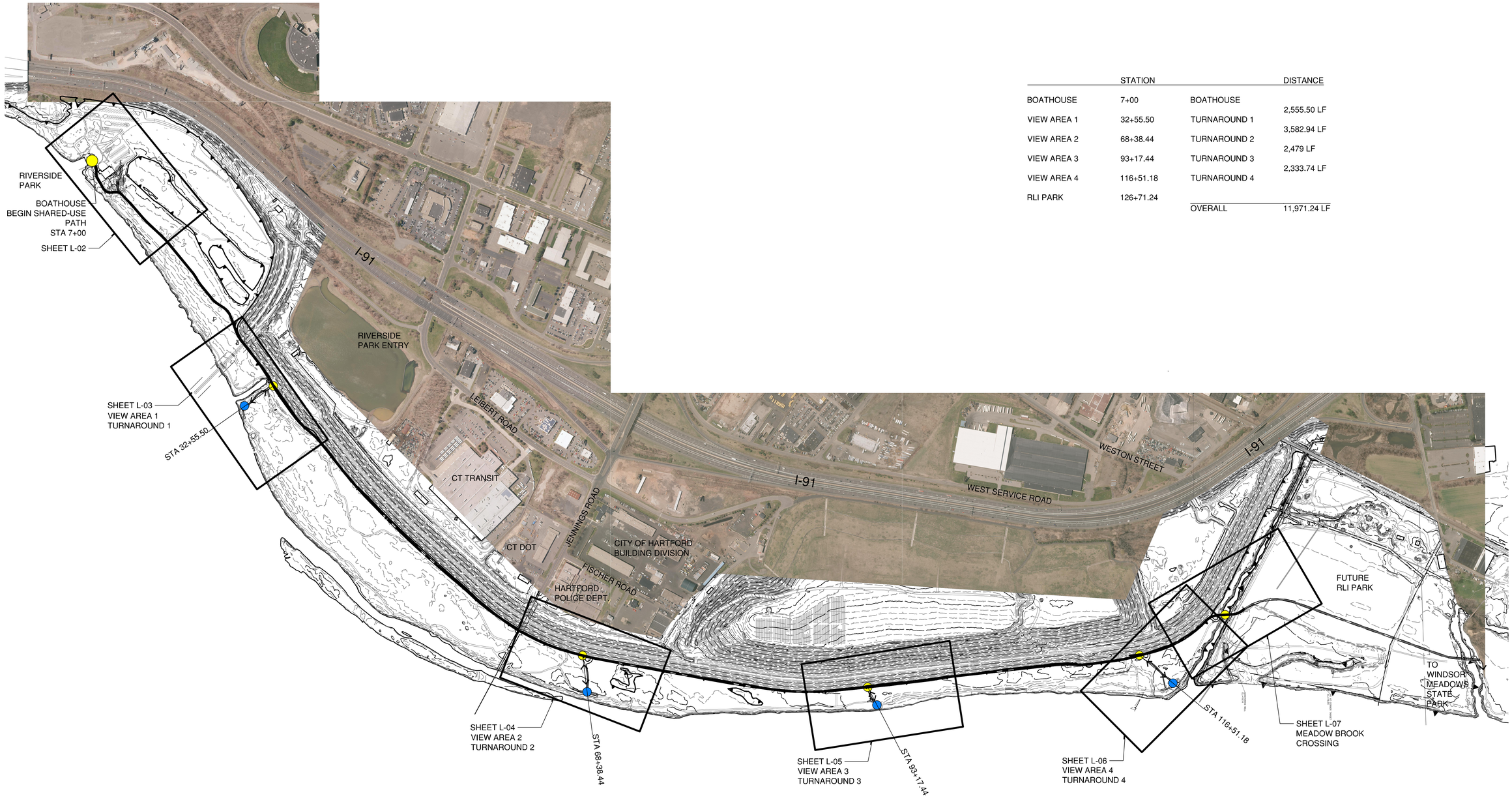
HARTFORD-WINDSOR COVE PARK PROJECT

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: FEBRUARY 2022

STR-01

	STATION		DISTANCE
BOATHOUSE	7+00	BOATHOUSE	
			2,555.50 LF
VIEW AREA 1	32+55.50	TURNAROUND 1	
			3,582.94 LF
VIEW AREA 2	68+38.44	TURNAROUND 2	
			2,479 LF
VIEW AREA 3	93+17.44	TURNAROUND 3	
			2,333.74 LF
VIEW AREA 4	116+51.18	TURNAROUND 4	
RLI PARK	126+71.24		
		OVERALL	11,971.24 LF



No.	DATE	DESCRIPTION		
1.			XX/XX	XX
			DESIGNER	REVIEWER

SEAL

SEAL

LANDSCAPE ARCHITECT
Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: 1" = 400'
VERT.:
DATUM:
HORZ.:
VERT.:
400 200 0 400
GRAPHIC SCALE

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CITY OF HARTFORD
LANDSCAPE PLAN -
OVERALL PLAN
MARFUGGI RIVERWALK PROJECT
HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

L-01

File Path: W:\20190034\CONDOC\Main\19003L-01.dwg Layout: L-01 Plotted: Tue, November 23, 2021 - 11:17 AM User: jperacchio
Plotter: NONE CTB File: R&C.CTB
LAYER STATE:
MS VIEW:

LAYOUT LEGEND (VIEW AREAS)	
⌒	ALIGN OBJECTS
⌒ 00.00'	ARC LENGTH DIMENSION
▼ CP	CONTROL POINT
Δ	DELTA DEGREES
E	EASTING
EP	END POINT
— —	EXPANSION JOINT
PI	INTERSECTION POINT
L	LENGTH
N	NORTHING
BP	POINT OF BEGINNING
PCC	POINT OF COMPOUND CURVE
PC	POINT OF CURVE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
R	RADIUS
STA	STATION POINT
— —	TOOLED JOINT
VIF	VERIFY IN FIELD

MATERIALS LEGEND (VIEW AREAS)	
	BITUMINOUS CONCRETE PAVEMENT
	STONEDUST PATHWAY

NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS FROM STATE AND LOCAL AUTHORITIES.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY IN THE FIELD ALL ELEVATIONS, UTILITY LOCATIONS AND SITE CONDITIONS. IF AN UNFORESEEN INTERFERENCE EXISTS BETWEEN AN EXISTING AND PROPOSED UTILITY OR STRUCTURE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE APPROPRIATE REVISIONS CAN BE MADE PRIOR TO CONSTRUCTION.
3. ANY PAVEMENTS, CURBS, DRAINAGE STRUCTURES, LAWN AND PLANT BED AREAS, AND OTHER IMPROVEMENTS SCHEDULED TO REMAIN THAT ARE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
4. ALL BASELINES AND DIMENSION LINES ARE PARALLEL OR PERPENDICULAR TO THE TIES FROM WHICH THEY ARE MEASURED UNLESS INDICATED OTHERWISE.
5. ALL BUILDING TIES ARE TO OUTSIDE FACE OF FOUNDATION WALL.
6. DIMENSIONS SHOWN ON DRAWINGS ARE TO FACE OF CURB.
7. SEE CIVIL PLANS FOR TRAFFIC MARKINGS AND SIGNAGE INFORMATION.
8. STAKE OUT VIEW AREA PATH AND STONEDUST PATHWAY CENTERLINES, VIEW AREA PAVEMENT LIMITS AND STONEDUST PATHWAY END LOCATIONS FOR REVIEW AND APPROVAL PRIOR TO EXECUTING WORK.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

LANDSCAPE ARCHITECT
Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: 1" = 20'
VERT.:
DATUM:
HORZ.:
VERT.:
20 10 0 20
GRAPHIC SCALE

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CITY OF HARTFORD

LANDSCAPE PLAN - BOATHOUSE AREA LAYOUT AND MATERIALS MARFUGGI RIVERWALK PROJECT

HARTFORD CONNECTICUT

STATE PROJ. No.:	63-721
PROJ. No.:	20170860.A10
DATE:	NOVEMBER 2021

L-02a

File Path: W:\20190034\CONDOC\Main\19003L-02a.dwg Layout: L-02A Plotted: Tue, November 23, 2021 - 11:18 AM User: jpracchio
Plotter: _DWG TO PDF.PC3 CTB File: R&C.CTB
LAYER STATE:
MS-VIEW:

GRADING LEGEND (VIEW AREAS)	
●—●	FLUSH
←W—	DIRECTION OF PITCH
EX	EXISTING ELEVATION TO REMAIN
BC	BOTTOM OF CURB
BW	BOTTOM OF WALL (FINISH GRADE)
GRND	GROUND
HP	HIGH POINT
LP	LOW POINT
TW	TOP OF WALL
TC	TOP OF CURB
WLK	WALK
TF	TOP OF FRAME
V.I.F.	VERIFY IN FIELD
• • • • • •	GRADING LIMIT LINE

GRADING NOTES (VIEW AREAS)

1. SEE CIVIL DRAWING SERIES FOR STORMWATER MANAGEMENT SYSTEM INFORMATION AND EROSION AND SEDIMENT CONTROL.
2. SMOOTHLY BLEND ALL PROPOSED GRADES TO EXISTING CONDITIONS. ROUND OFF TOE AND TOP OF SLOPE.
3. MAINTAIN DRAINAGE PATTERNS TO EXISTING DRAINAGE SYSTEMS.
4. ALL WALKWAYS NOT TO EXCEED 5% MAXIMUM LONGITUDINAL SLOPE.
5. SIDEWALK PITCH (PERPENDICULAR TO TRAVEL) SHALL BE 1% (1/8"/FT.) MINIMUM TO 2% (1/4"/FT.) MAXIMUM CROSS PITCH, UNLESS OTHERWISE INDICATED.

PLANTING LEGEND

EXISTING TREES TO REMAIN

DECIDUOUS TREES

GROUNDCOVER/PERENNIAL

SEEDED LAWN

MEADOW SEED MIX

MULCH BED

SELECTIVE CLEARING AND THINNING

PLANTING NOTES

1. SEE DRAWING MDS-04 FOR PLANT SCHEDULE AND PLANTING DETAILS.
2. ALL EXTERIOR GROUND AREAS DISTURBED BY CONSTRUCTION AND NOT COVERED BY BUILDINGS, STRUCTURES, PAVING, CONTINUOUS PLANTING BEDS OR OTHER SITE IMPROVEMENTS SHALL BE GRADED, TOP SOILED TO A DEPTH OF 6" AND LAWN SEEDED.
3. MULCH ALL NEW PLANT BEDS TO ACHIEVE A 3" DEPTH (AFTER SETTLEMENT) FOR TREES AND SHRUBS, AND A 2" DEPTH (AFTER SETTLEMENT) FOR PERENNIAL AND GROUNDCOVER BEDS. MULCH FOR SAUCERS AND PLANTING AREAS TO BE DOUBLE SHREDDED BARK MULCH.
4. ALL LAWN AND PLANTING AREA SOIL PREPARATION SHALL BE FERTILIZED (EXCEPT MEADOW SEED/FESCUE MIX AREAS) AND AMENDED ACCORDING TO THE RECOMMENDATIONS OF A SOIL ANALYSIS PROVIDED BY AN APPROVED SOIL TESTING LABORATORY AND APPROVED BY THE LANDSCAPE ARCHITECT.

File Path: W:\20190034\CONDOC\Main\19003L-02b.dwg Layout: L-02B Plotted: Tue, November 23, 2021 - 11:19 AM User: jpiracchio
MS VIEW: LAYER STATE: Plotter: _DWG TO PDF.PC3 CTB File: R&C.CTB

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

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LANDSCAPE ARCHITECT
Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: 1" = 20'
VERT.:
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VERT.:
20 10 0 20
GRAPHIC SCALE

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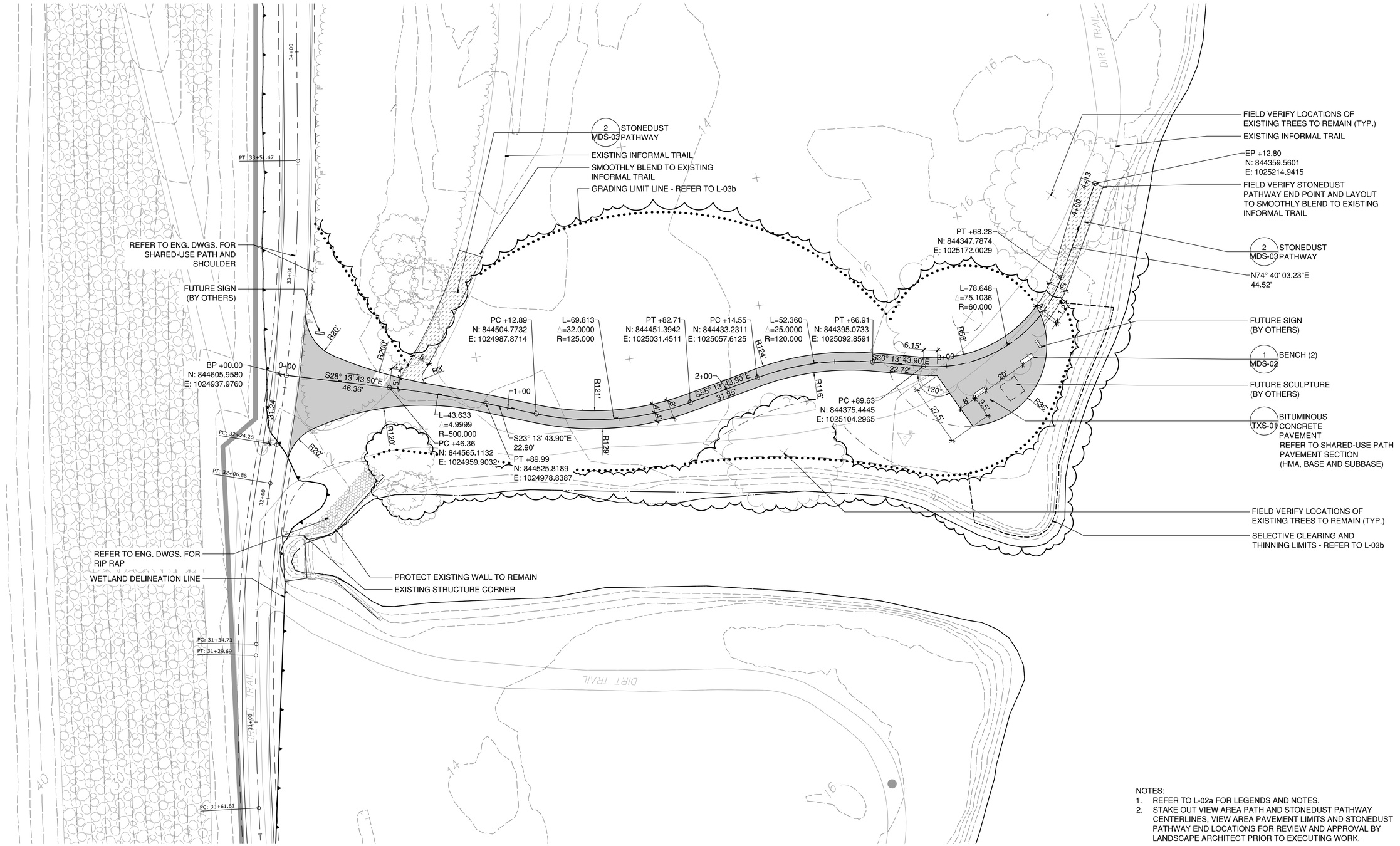
CITY OF HARTFORD

LANDSCAPE PLAN - BOATHOUSE AREA PLANTING
MARFUGGI RIVERWALK PROJECT

HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

L-02b



NOTES:
1. REFER TO L-02a FOR LEGENDS AND NOTES.
2. STAKE OUT VIEW AREA PATH AND STONEDUST PATHWAY CENTERLINES, VIEW AREA PAVEMENT LIMITS AND STONEDUST PATHWAY END LOCATIONS FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO EXECUTING WORK.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: 1" = 20'
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HORZ.:
VERT.:
20 10 0 20
GRAPHIC SCALE

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CITY OF HARTFORD

LANDSCAPE PLAN - VIEW AREA 1 LAYOUT AND MATERIALS MARFUGGI RIVERWALK PROJECT

HARTFORD CONNECTICUT

STATE PROJ. No.:	63-721
PROJ. No.:	20170860.A10
DATE:	NOVEMBER 2021

L-03a

File Path: W:\20190034CONDOC\Main\190031-03a.dwg Layout: L-03A Plotted: Tue, November 23, 2021 - 11:19 AM User: jperacchio
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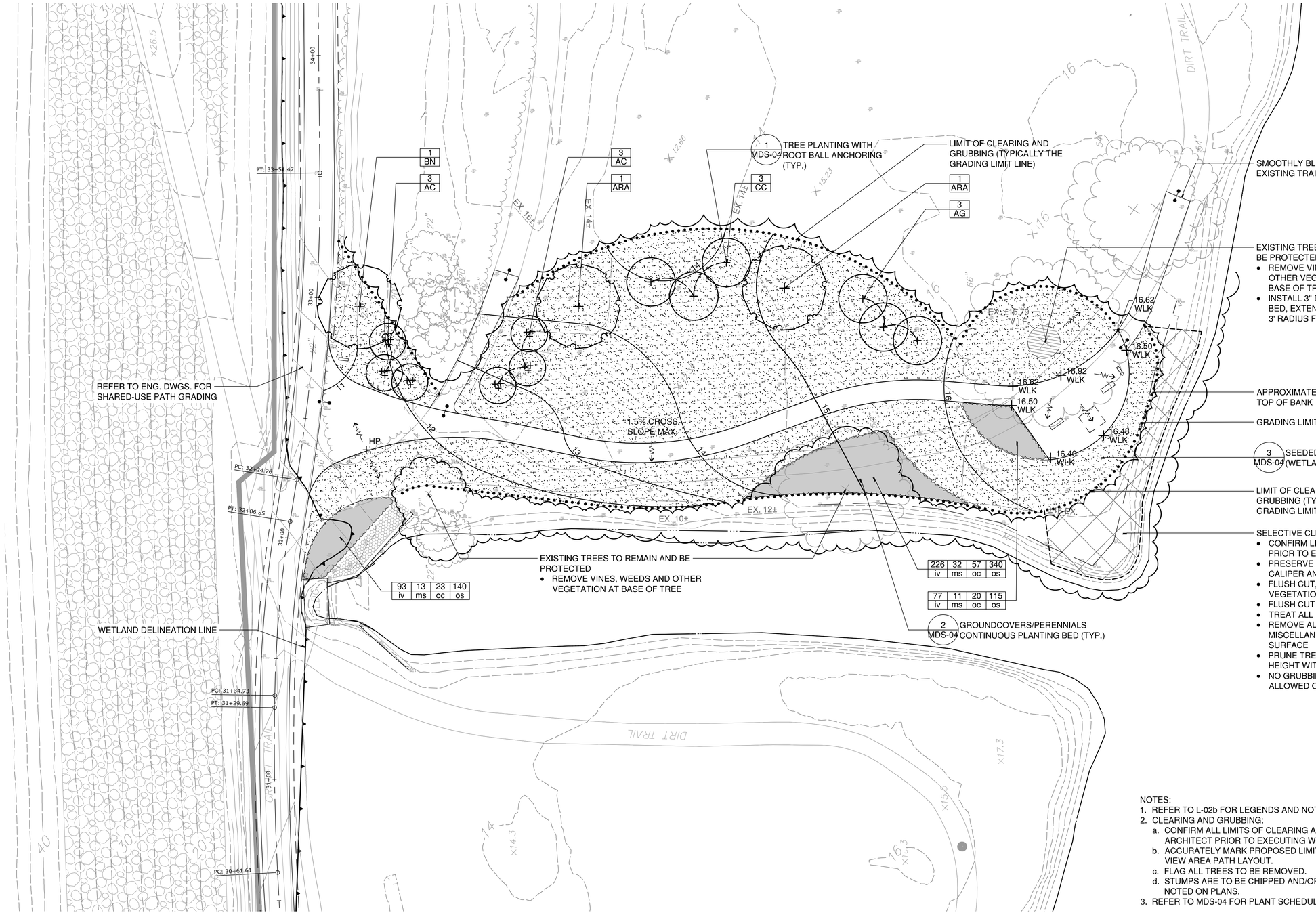
MS VIEW:



NOTES:
1. REFER TO L-02b FOR LEGENDS AND NOTES.
2. CLEARING AND GRUBBING:
   a. CONFIRM ALL LIMITS OF CLEARING AND GRUBBING WITH THE LANDSCAPE ARCHITECT PRIOR TO EXECUTING WORK.
   b. ACCURATELY MARK PROPOSED LIMITS IN THE FIELD IN CONJUNCTION WITH THE VIEW AREA PATH LAYOUT.
   c. FLAG ALL TREES TO BE REMOVED.
   d. STUMPS ARE TO BE CHIPPED AND/OR REMOVED FROM SITE UNLESS OTHERWISE NOTED ON PLANS.
3. REFER TO MDS-04 FOR PLANT SCHEDULE AND DETAILS.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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LANDSCAPE ARCHITECT
Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: 1" = 20'
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HORZ.:
VERT.:
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GRAPHIC SCALE

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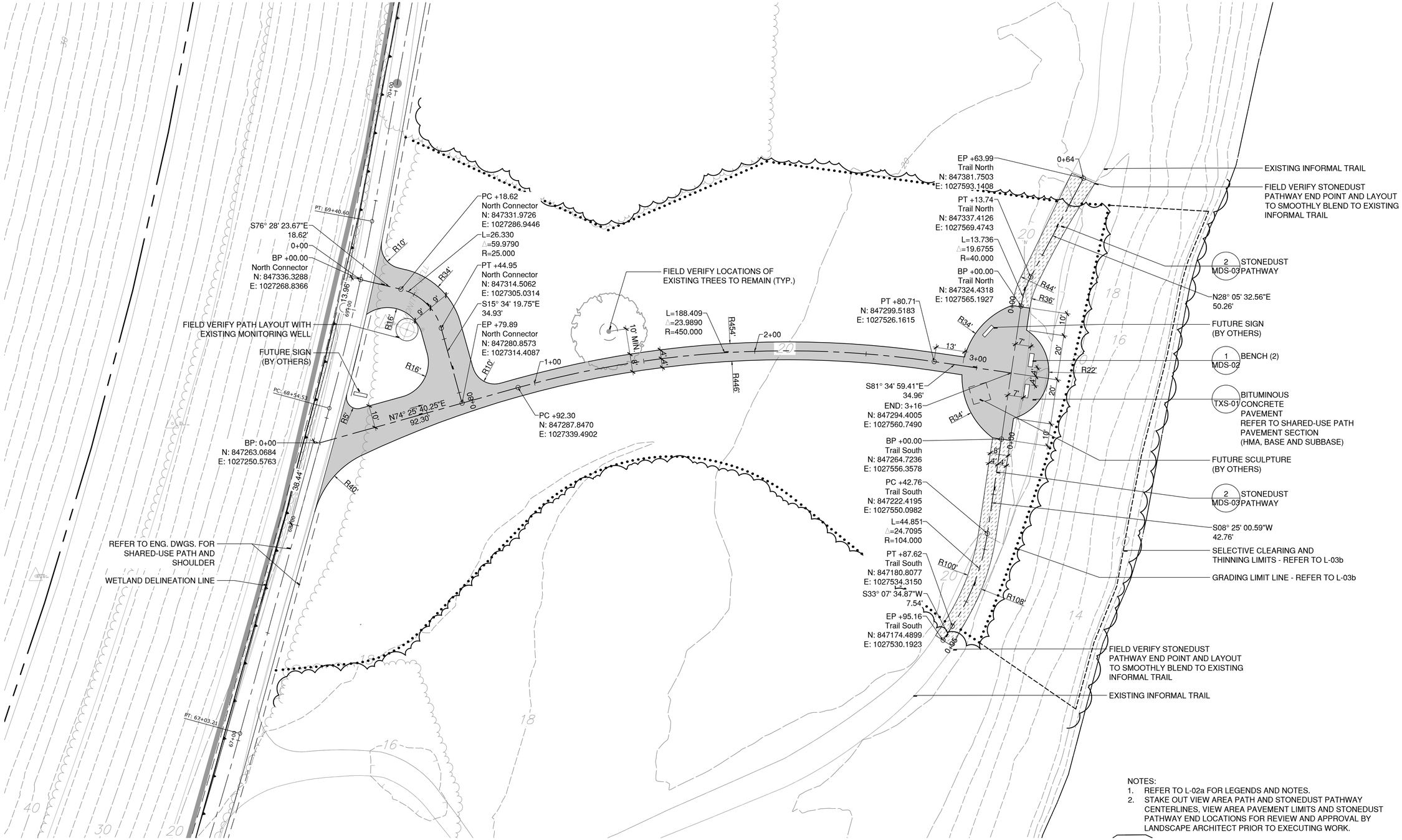
CITY OF HARTFORD
LANDSCAPE PLAN - VIEW AREA 1
GRADING AND PLANTING
MARFUGGI RIVERWALK PROJECT
HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

L-03b

File Path: W:\20190034\CONDOC\Main\19003L-03b.dwg Layout: L-03B Plotted: Tue, November 23, 2021 - 11:20 AM User: jperacchio
Plotter: _DWG TO PDF.PC3 CTB File: R&C.CTB
LAYER STATE:
MS VIEW:



NOTES:
1. REFER TO L-02a FOR LEGENDS AND NOTES.
2. STAKE OUT VIEW AREA PATH AND STONEDUST PATHWAY CENTERLINES, VIEW AREA PAVEMENT LIMITS AND STONEDUST PATHWAY END LOCATIONS FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO EXECUTING WORK.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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LANDSCAPE ARCHITECT

Richter & Cegan Inc.

8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: 1" = 20'
VERT.:
DATUM:
HORZ.:
VERT.:
20 10 0 20
GRAPHIC SCALE

FUSS & O'NEILL

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CITY OF HARTFORD

LANDSCAPE PLAN - VIEW AREA 2
LAYOUT AND MATERIALS
MARFUGGI RIVERWALK PROJECT

HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

L-04a

File Path: W:\20190034\CONDOC\Main\19003L-04a.dwg Layout: L-04A Plotted: Tue, November 23, 2021 - 11:20 AM User: jpieracchio
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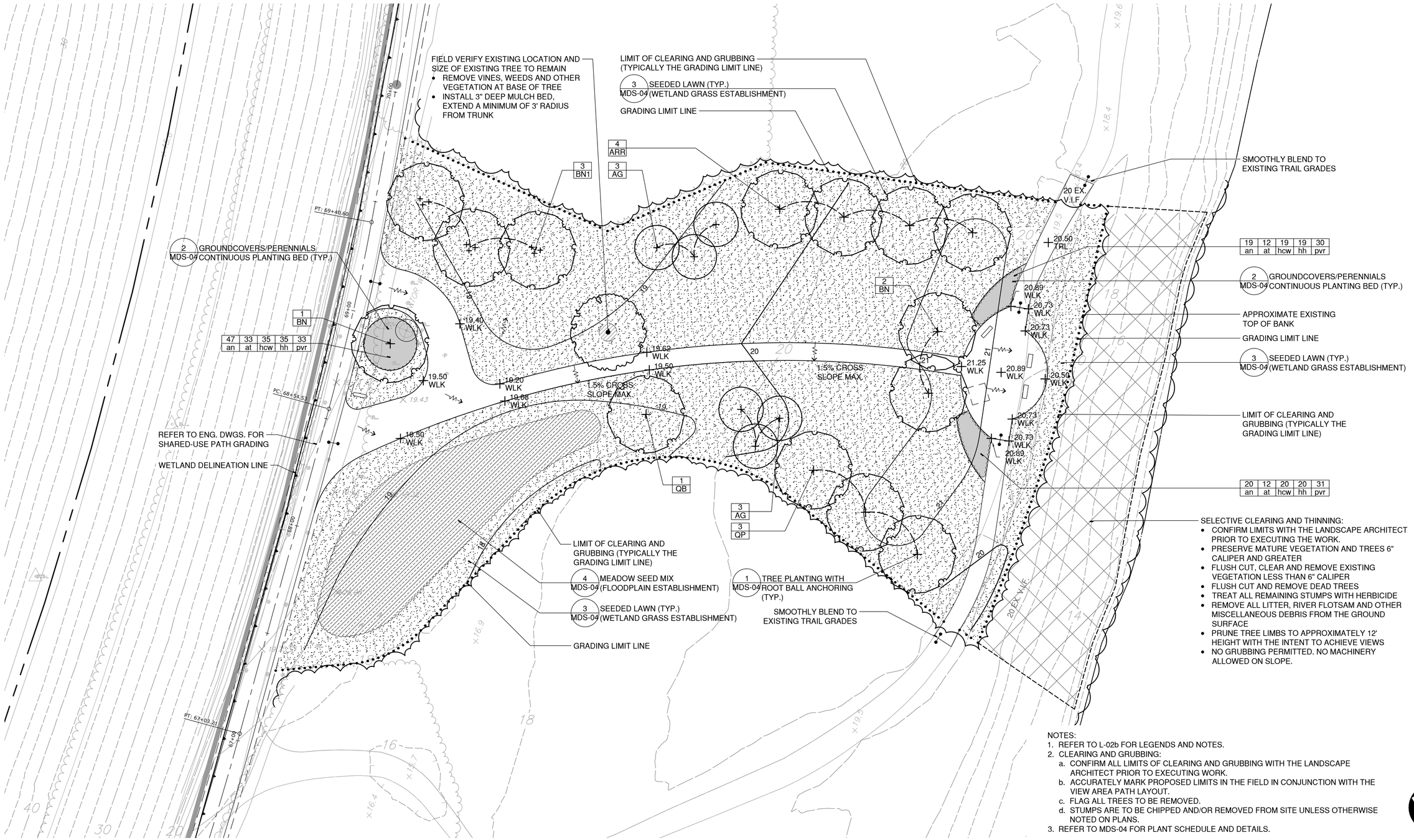

NOTES:
1. REFER TO L-02b FOR LEGENDS AND NOTES.
2. CLEARING AND GRUBBING:
   a. CONFIRM ALL LIMITS OF CLEARING AND GRUBBING WITH THE LANDSCAPE ARCHITECT PRIOR TO EXECUTING WORK.
   b. ACCURATELY MARK PROPOSED LIMITS IN THE FIELD IN CONJUNCTION WITH THE VIEW AREA PATH LAYOUT.
   c. FLAG ALL TREES TO BE REMOVED.
   d. STUMPS ARE TO BE CHIPPED AND/OR REMOVED FROM SITE UNLESS OTHERWISE NOTED ON PLANS.
3. REFER TO MDS-04 FOR PLANT SCHEDULE AND DETAILS.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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LANDSCAPE ARCHITECT
Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: 1" = 20'
VERT.:
DATUM:
HORZ.:
VERT.:
20 10 0 20
GRAPHIC SCALE

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CITY OF HARTFORD

LANDSCAPE PLAN - VIEW AREA 2 GRADING AND PLANTING MARFUGGI RIVERWALK PROJECT

HARTFORD CONNECTICUT

STATE PROJ. No.:	63-721
PROJ. No.:	20170860.A10
DATE:	NOVEMBER 2021

L-04b

File Path: W:\20190034CONDOC\Main\190034-04b.dwg Layout: L-04B Plotted: Tue, November 23, 2021 - 11:21 AM User: jperacchio
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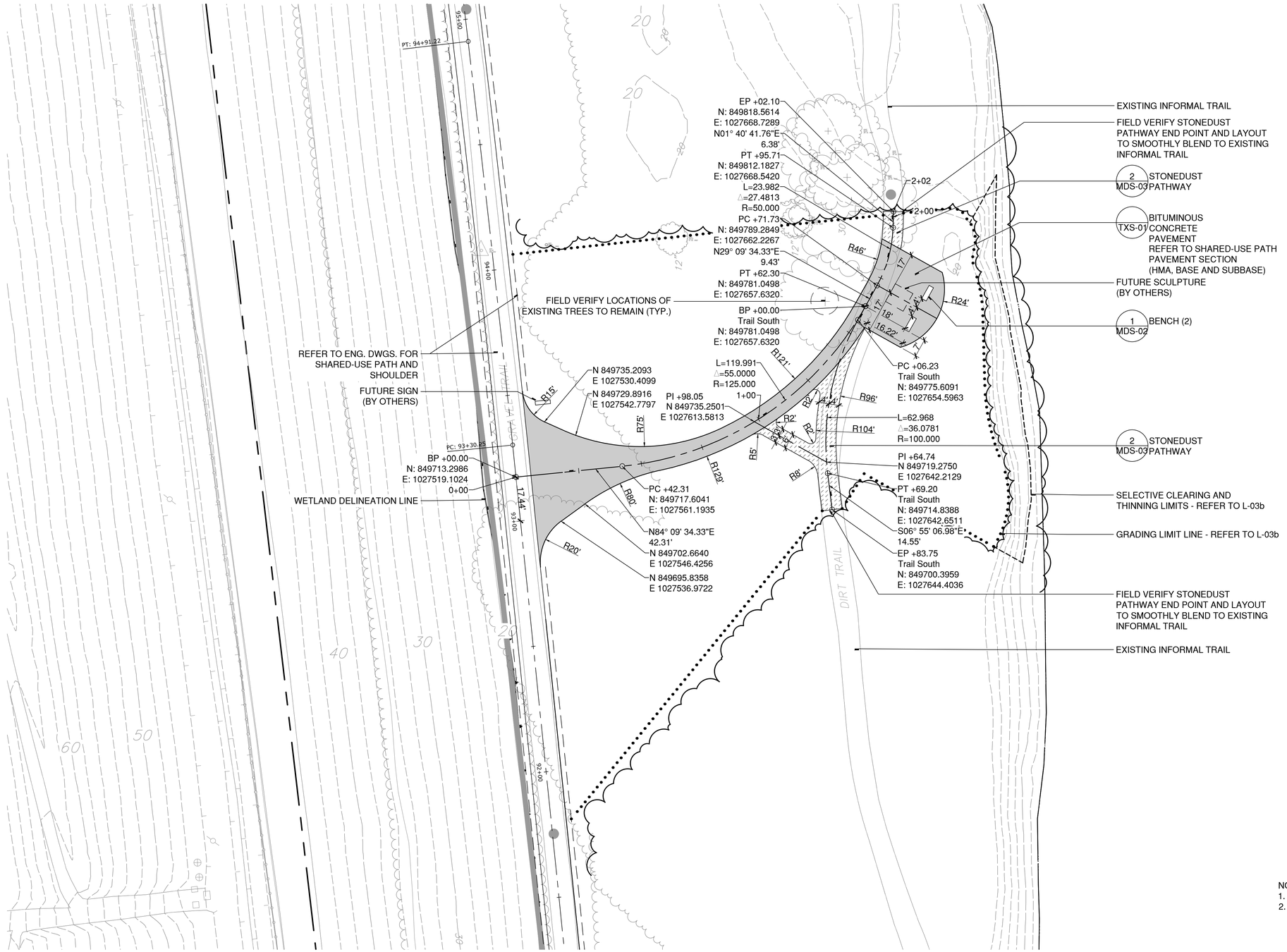
MS VIEW:



NOTES:
1. REFER TO L-02a FOR LEGENDS AND NOTES.
2. STAKE OUT VIEW AREA PATH AND STONEDUST PATHWAY CENTERLINES, VIEW AREA PAVEMENT LIMITS AND STONEDUST PATHWAY END LOCATIONS FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO EXECUTING WORK.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: 1" = 20'
VERT.:
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VERT.:
20 10 0 20
GRAPHIC SCALE

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CITY OF HARTFORD

LANDSCAPE PLAN - VIEW AREA 3
LAYOUT AND MATERIALS
MARFUGGI RIVERWALK PROJECT

HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

L-05a

File Path: W:\20190034\CONDOC\Main\19003L-05a.dwg Layout: L-05A Plotted: Tue, November 23, 2021 - 11:21 AM User: jperacchio
Plotter: _DWG TO PDF.PC3 CTB File: R&C.CTB
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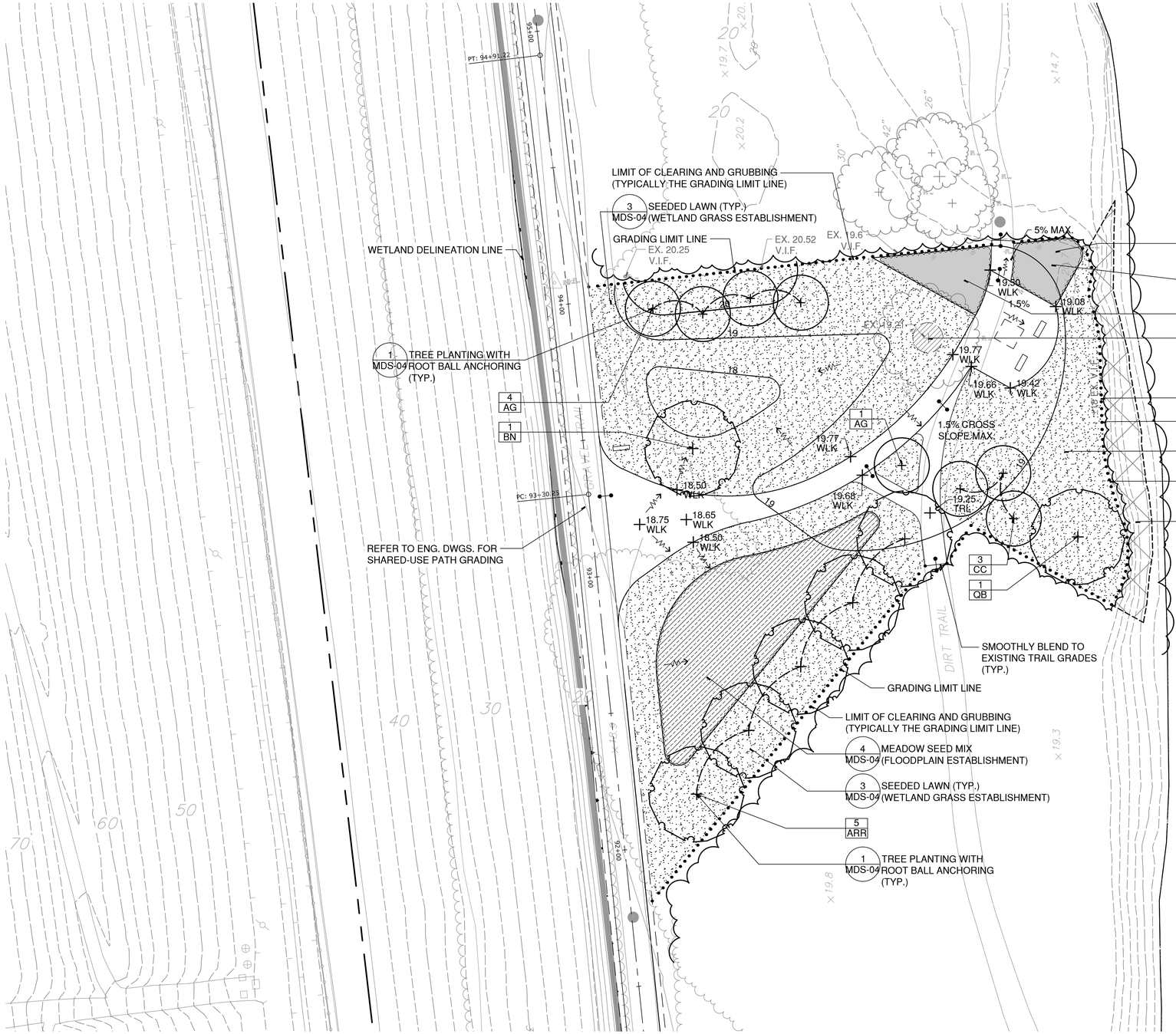
MS VIEW:



NOTES:
1. REFER TO L-02b FOR LEGENDS AND NOTES.
2. CLEARING AND GRUBBING:
   a. CONFIRM ALL LIMITS OF CLEARING AND GRUBBING WITH THE LANDSCAPE ARCHITECT PRIOR TO EXECUTING WORK.
   b. ACCURATELY MARK PROPOSED LIMITS IN THE FIELD IN CONJUNCTION WITH THE VIEW AREA PATH LAYOUT.
   c. FLAG ALL TREES TO BE REMOVED.
   d. STUMPS ARE TO BE CHIPPED AND/OR REMOVED FROM SITE UNLESS OTHERWISE NOTED ON PLANS.
3. REFER TO MDS-04 FOR PLANT SCHEDULE AND DETAILS.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

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LANDSCAPE ARCHITECT
Richter & Cegan Inc.
8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
HORZ.: 1" = 20'
VERT.:
DATUM:
HORZ.:
VERT.:
20 10 0 20
GRAPHIC SCALE

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CITY OF HARTFORD

LANDSCAPE PLAN - VIEW AREA 3 GRADING AND PLANTING MARFUGGI RIVERWALK PROJECT

HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

L-05b

File Path: W:\20190304CONDOC\Main\190031-L-05b.dwg Layout: L-05B Plotted: Tue, November 23, 2021 - 11:22 AM User: jperacchio
Plotter: _DWG TO PDF.PC3 CTB File: R&C.CTB
LAYER STATE:
MS VIEW:

REFER TO ENG. DWGS. FOR SHARED-USE PATH AND SHOULDER

BP +00.00
North Connector
N: 852111.7211
E: 1027227.9590

N75° 34' 09.85"E
18.50'
PC +18.50
North Connector
N: 852116.3314
E: 1027245.8753
L=19.635
Δ=45.0000
R=25.000
PT +38.13
North Connector
N: 852113.6455
E: 1027264.8200
S59° 25' 50.15"E
30.24'

FUTURE SIGN (BY OTHERS)

WETLAND DELINEATION LINE

PC +00.54
N: 852114.7426
E: 1027300.5911

EP +68.38
North Connector
N: 852098.2653
E: 1027290.8583
N30° 34' 09.85"E
100.54'

BP +00.00
N: 852028.1750
E: 1027249.4575

FIELD VERIFY LOCATIONS OF EXISTING TREES TO REMAIN (TYP.)

PT +95.97
N: 852187.8719
E: 1027361.2647
N48° 47' 38.37"E
30.68'
PC +26.65
N: 852208.0845
E: 1027384.3485
PI + 58.14
N 852230.0314
E 1027406.9069
L=95.424
Δ=18.2246
R=300.000

L=100.674
Δ=19.2272
R=300.000

FIELD VERIFY LOCATIONS OF EXISTING TREES TO REMAIN (TYP.)

EP +07.93
Trail North
N: 852434.4475
E: 1027395.5315
N61° 21' 55.67"W
39.52'
PT +68.41
Trail North
N: 852415.5065
E: 1027430.2220
L=68.408
Δ=19.2515
R=204.000
BP +00.00
Trail North
N: 852373.3535
E: 1027483.6915

EXISTING INFORMAL TRAIL

FIELD VERIFY LOCATION OF STONEDUST PATHWAY END POINT AND LAYOUT TO SMOOTHLY BLEND TO EXISTING INFORMAL TRAIL

FIELD VERIFY LOCATIONS OF EXISTING TREES TO REMAIN (TYP.)

EP +20.29
N: 852369.9436
E: 1027486.7246
N19° 34' 00.34"E
4.15'
PT +16.14
N: 852366.0368
E: 1027485.3361

L=78.540
Δ=10.0000
R=450.000
PC +37.60
N: 852294.6973
E: 1027452.7243
N29° 34' 00.34"E
10.28'
PT +27.32
N: 852285.7570
E: 1027447.6524

N 852283.7833
E 1027451.1315
BEGIN PAVEMENT EDGE FLAIR AT PT

BP +-00.00
Trail South
N: 852347.8479
E: 1027503.3644

L=73.526
Δ=20.6510
R=204.000
PT +73.53
Trail South
N: 852280.4181
E: 1027531.6679
S12° 26' 40.72"E
62.03'
PI + 95.84
Trail South
N 852258.6251
E 1027536.4772
EP +35.56
Trail South
N: 852219.8421
E: 1027545.0359

2 MDS-03 STONEDUST PATHWAY

TXS-01 BITUMINOUS CONCRETE PAVEMENT
REFER TO SHARED-USE PATH PAVEMENT SECTION
(HMA, BASE AND SUBBASE)

1 MDS-02 BENCH (2)

FUTURE SCULPTURE (BY OTHERS)

FIELD VERIFY LOCATIONS OF EXISTING TREES TO REMAIN (TYP.)

2 MDS-03 STONEDUST PATHWAY

SELECTIVE CLEARING AND THINNING LIMITS - REFER TO L-03b

GRADING LIMIT LINE - REFER TO L-03b

FIELD VERIFY STONEDUST PATHWAY END POINT AND LAYOUT TO SMOOTHLY BLEND TO EXISTING INFORMAL TRAIL

EXISTING INFORMAL TRAIL

NOTES:
1. REFER TO L-02a FOR LEGENDS AND NOTES.
2. STAKE OUT VIEW AREA PATH AND STONEDUST PATHWAY CENTERLINES, VIEW AREA PAVEMENT LIMITS AND STONEDUST PATHWAY END LOCATIONS FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO EXECUTING WORK.

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LAYER STATE:
MS VIEW:

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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8B CANAL COURT P.O. BOX 567
AVON, CT 06001 PHONE: 860-678-0669

SCALE:
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VERT.:
DATUM:
HORZ.:
VERT.:
20 10 0 20
GRAPHIC SCALE

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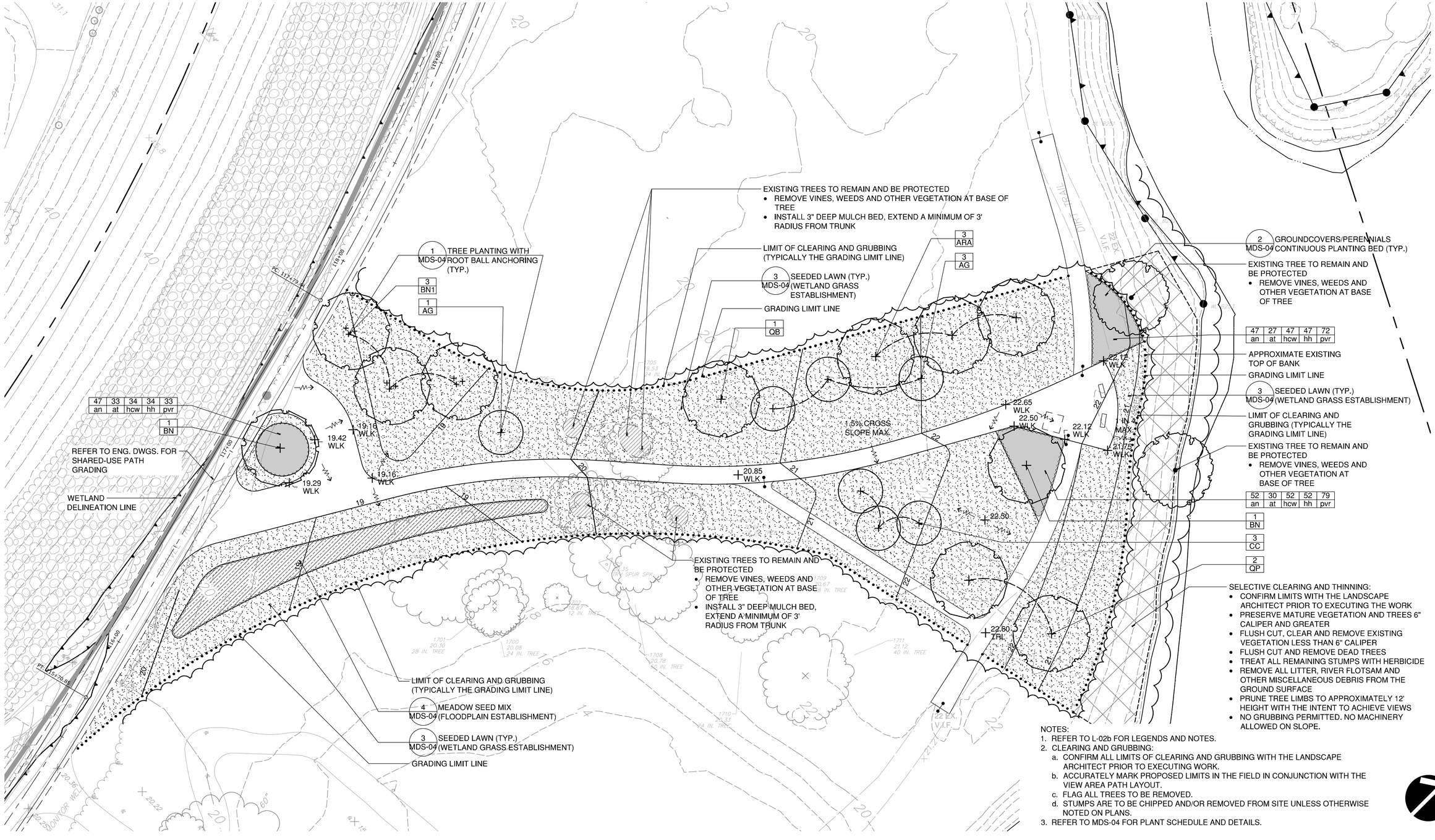
CITY OF HARTFORD
LANDSCAPE PLAN - VIEW AREA 4
LAYOUT AND MATERIALS
MARFUGGI RIVERWALK PROJECT
HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

L-06a



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CITY OF HARTFORD
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MARFUGGI RIVERWALK PROJECT
HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

L-06b

File Path: W:\20190034\CONDOC\Main\19003L-06b.dwg Layout: L-06B Plotted: Tue, November 23, 2021 - 11:23 AM User: jpracchio
MS VIEW: LAYER STATE: Plotter: _DWG TO PDF.PC3 CTB File: R&C.CTB

REFER TO ENG. DWGS. FOR SHARED-USE PATH AND SHOULDER

WETLAND DELINEATION LINE

BP +00.00
N: 852641.8154
E: 1026922.1043
N36° 46' 14.62"E
42.18'

PC +42.18
N: 852675.6015
E: 1026947.3527

2 STONEDUST MDS-03 PATHWAY

FIELD VERIFY LOCATION OF STONEDUST PATHWAY END POINT AND LAYOUT TO SMOOTHLY BLEND TO EXISTING INFORMAL TRAIL

EXISTING INFORMAL TRAIL

BITUMINOUS CONCRETE PAVEMENT TXS-01
REFER TO SHARED-USE PATH PAVEMENT SECTION (HMA, BASE AND SUBBASE)

PT +00.10
N: 852715.4306
E: 1026924.7200

BEGIN FLARED PAVEMENT EDGE

EP +22.10
N: 852714.2202
E: 1026902.7533
S86° 50' 45.67"W
22.00'

REFER TO ENG. DWGS. FOR BRIDGE

FUTURE SIGN (BY OTHERS)

ALIGN WITH WALL CORNER

PC: 125+53.62

PT: 126+53.62

EP: 126+71.24

SOIL BORING

NOTES:
1. REFER TO L-02a FOR LEGENDS AND NOTES.
2. STAKE OUT VIEW AREA PATH AND STONEDUST PATHWAY CENTERLINES, VIEW AREA PAVEMENT LIMITS AND STONEDUST PATHWAY END LOCATIONS FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO EXECUTING WORK.

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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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DATUM:
HORZ.:
VERT.:
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GRAPHIC SCALE

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CITY OF HARTFORD
LANDSCAPE PLAN - MEADOW BROOK CROSSING
LAYOUT AND MATERIALS
MARFUGGI RIVERWALK PROJECT
HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

L-07a

58	42	44	44	42
an	at	hcw	hh	pvr
				1 BN

REFER TO ENG. DWGS. FOR SHARED-USE PATH GRADING

WETLAND DELINEATION LINE

LIMIT OF CLEARING AND GRUBBING (TYPICALLY THE GRADING LIMIT LINE)

3 SEEDED LAWN (TYP.) MDS-04 (WETLAND GRASS ESTABLISHMENT)

GRADING LIMIT LINE

1 MDS-04 TREE PLANTING WITH ROOT BALL ANCHORING (TYP.)

3 ARR

REFER TO ENG. DWGS. FOR BRIDGE AND BANK SLOPE GRADING AND RESTORATION (TYP.)

19.44 WLK

19.70 WLK

3 SEEDED LAWN (TYP.) MDS-04 (WETLAND GRASS ESTABLISHMENT)

2 GROUNDCOVERS/PERENNIALS MDS-04 CONTINUOUS PLANTING BED (TYP.)

NOTES:
1. REFER TO L-02b FOR LEGENDS AND NOTES.
2. REFER TO MDS-04 FOR PLANT SCHEDULE AND DETAILS.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

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CITY OF HARTFORD

LANDSCAPE PLAN - MEADOW BROOK CROSSING GRADING AND PLANTING MARFUGGI RIVERWALK PROJECT

HARTFORD CONNECTICUT

STATE PROJ. No.:	63-721
PROJ. No.:	20170860.A10
DATE:	NOVEMBER 2021

L-07b

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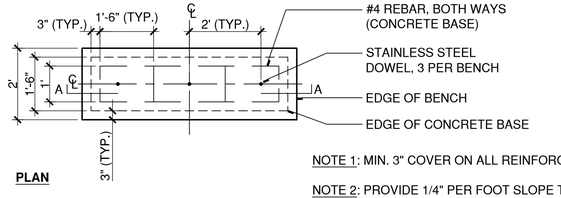
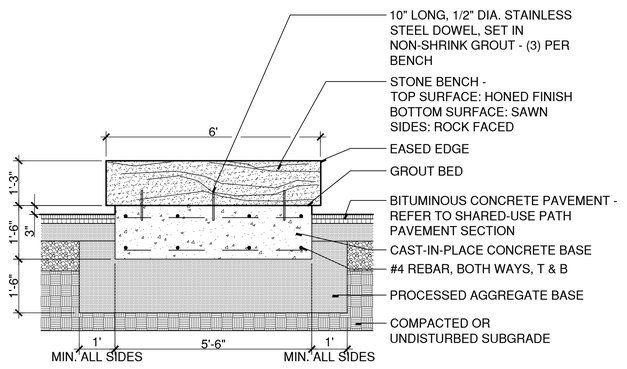


PLAN

NOTE 1: MIN. 3" COVER ON ALL REINFORCING

NOTE 2: PROVIDE 1/4" PER FOOT SLOPE TO PATH SIDE ON CONCRETE SLAB

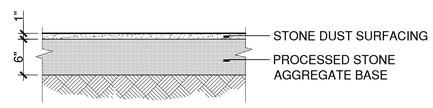


SECTION A-A

1 STONE BENCH

SCALE: 1/2"=1'

W:\2019003\1PREDES\DETAILS\129343-C.DWG



2 STONEDUST PATHWAY

SCALE: 1"=1'

X:\CADSTANDARD\DETAILS\321500-B.DWG

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CITY OF HARTFORD

CRITICAL DETAILS

MARFUGGI RIVERWALK PROJECT

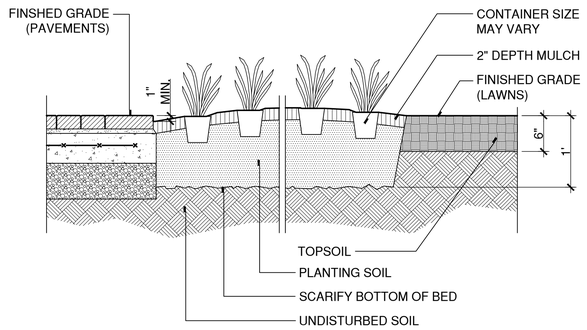
HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

MDS-03

File Path: W:\2019003\4CONDOC\Details\MDS-03.dwg Layout: MDS-03 Plotted: Tue, November 23, 2021 - 11:24 AM User: jperacchio
MS VIEW: LAYER STATE: Plotter: _DWG TO PDF.PC3 CTB File: R&C.CTB

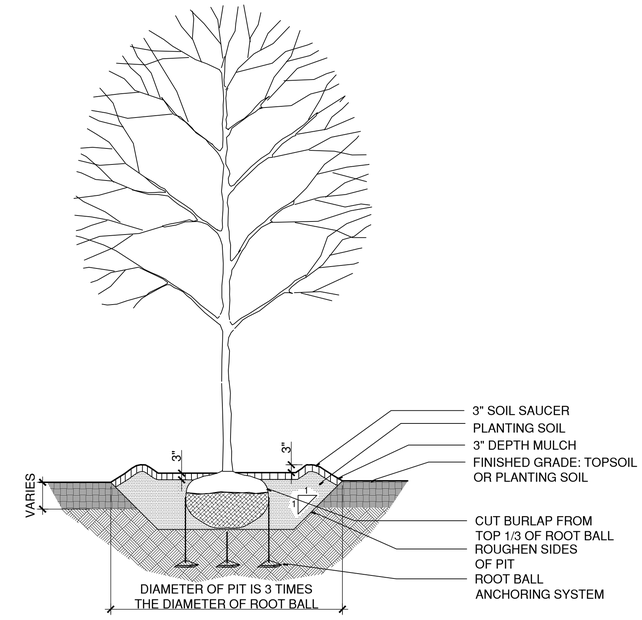
PLANT SCHEDULE							
CATEGORY	SYM	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	COMMENTS	ITEM #
DECIDUOUS TREES	ARA	ACER RUBRUM 'AUTUMN FLAME'	AUTUMN FLAME RED MAPLE	5	3-3 1/2" CAL.	B&B	0949834A
	ARR	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	13	3-3 1/2" CAL.	B&B	0949838A
	BN	BETULA NIGRA 'DURA HEAT'	DURA HEAT RIVER BIRCH	17	3-3 1/2 CAL.	B&B, SINGLE STEM	0949913A
	BN1	BETULA NIGRA 'DURA HEAT'	DURA HEAT RIVER BIRCH	6	14'-16' HT.	B&B, CLUMP, MIN 5 STEM	0949039A
	CC	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	12	2 1/2 - 3" CAL.	B&B	0949129A
	QB	QUERCUS BICOLOR	SWAMP WHITE OAK	3	3 - 3 1/2" CAL.	B&B	0949090A
	QP	QUERCUS PALUSTRIS 'PACIFIC BRILLIANCE'	PIN OAK	5	3-3 1/2" CAL.	B&B	0949954A
ORNAMENTAL FLOWERING TREE	AC	AMELANCHIER CANADENSIS	SERVICEBERRY	9	8'-10' HT	B&B, CLUMP, MIN. 5 STEM	0949712
	AG	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	18	2 1/2-3" CAL.	B&B, SINGLE STEM	0949369A
PERENNIAL/ GROUNDCOVER	at	AMSONIA TABERNAEMONTANA	BLUE STAR	189	#1 CONTAINER	2' O.C.	
	an	ASTER NOVAE-ANGLIAE 'PURPLE DOME'	NEW ENGLAND ASTER	290	#1 CONTAINER	18" O.C.	0949564
	cg	CAREX GLAUCODEA	BLUE SEDGE	176	#1 CONTAINER	12" O.C.	0949413A
	hcw	HEMEROCALLIS 'CATHERINE WOODBURY'	DAYLILY	319	#1 CONTAINER	18" O.C.	0949012A
	hh	HEMEROCALLIS 'HYPERION'	DAYLILY	319	#1 CONTAINER	18" O.C.	0949068A
	iv	IRIS VERSICOLOR	BLUE FLAG IRIS	475	#1 CONTAINER	18" O.C.	0949076A
	ms	MATTEUCCIA STRUTHIOPTERIS	OSTRICH FERN	85	#2 CONTAINER	2' O.C.	
	oc	OSMUNDA CINNAMOMEA	CINNAMON FERN	152	#1 CONTAINER	18" O.C.	
	os	ONOCLEA SENSIBILIS	SENSITIVE FERN	856	#1 CONTAINER	18" O.C.	
	pvr	PANICUM VIRGATUM 'RUBY RIBBONS'	SWITCHGRASS	551	#1 CONTAINER	2' O.C.	0949585A



NOTES:
1. SET CROWN OF ROOT BALL LEVEL WITH FINISH GRADE.
2. MAINTAIN MINIMUM OF 4" PLANTING SOIL BELOW EACH INDIVIDUAL PLANT.
3. MULCH ENTIRE AREA OF GROUNDCOVER, PERENNIALS OR ANNUALS.
4. MULCH CAREFULLY AROUND EACH PLANT. DO NOT COVER CROWNS OF PLANTS WITH MULCH.

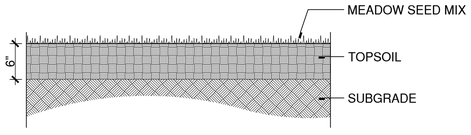
2 GROUNDCOVERS / PERENNIALS CONTINUOUS PLANTING BED

SCALE: 1"=1' X:\CADSTANDARD\DETAILS\329300-C.DWG



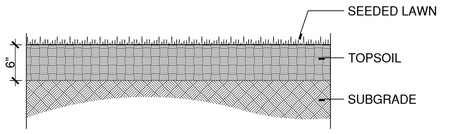
1 TREE PLANTING WITH ROOT BALL ANCHORING

SCALE: NTS W:\2019003\1PREDES\DETAILS\PLANTTREESTAKING.DWG



4 MEADOW SEED MIX

SCALE: 1"=1' W:\2019003\1PREDES\DETAILS\329200-Ca.DWG



3 SEEDED LAWN

SCALE: 1"=1' W:\2019003\1PREDES\DETAILS\329200-C.DWG

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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CITY OF HARTFORD

CRITICAL DETAILS

MARFUGGI RIVERWALK PROJECT

HARTFORD CONNECTICUT

STATE PROJ. No.: 63-721
PROJ. No.: 20170860.A10
DATE: NOVEMBER 2021

MDS-04

Engineering Reports

RLI Park / Meadow Brook
Hydraulic Analysis Report

Riverfront Recapture, Inc.
50 Columbus Boulevard, 1st Floor
Hartford, CT 06106

State Project No. 63-721

December 2021

FUSS & O'NEILL

146 Hartford Road
Manchester, CT 06040

FUSS & O'NEILL

Table of Contents

Hydraulic Analysis Report
Meadow Brook

Table of Contents

Hydraulic Analysis Report
Meadow Brook

1 Executive Summary

This Hydraulic Analysis Report has been prepared for the proposed development of a community park, linear trail, and public cove in conjunction with extension of the existing Riverwalk Trail system. The project site extends from the southern side of Meadow Brook northerly to Decker's Brook (see Site Location Map provided as Figure 1). This report discusses the hydraulic analyses performed to assess potential impacts to regulatory FEMA floodplain on Meadow Brook. There is no regulatory floodway on the reach of Meadow Brook within the project area; therefore, encroachment analyses are not applicable to this project.

Riverfront Recapture, Inc. (RRI) has purchased 60 acres of riverfront land on the Hartford-Windsor town line to build a new community park. This acquisition will allow RRI to complete a regional trail connection between the Hartford and Windsor Riverwalks. The existing site is primarily undeveloped and unmaintained open space. The master project includes development of a trail system south of Meadow Brook, installation of a new pedestrian bridge across Meadow Brook, development of a public park, trail, a new 9-acre cove between Meadow Brook and Decker's Brook, and installation of a new pedestrian bridge across Decker's Brook. The project funding sources vary, such that the project has been split into three sections for permitting purposes, as follows:

1. The trail system to just south of Meadow Brook;
2. The park, trail system, and new cove, located north of Meadow Brook and south of Decker's Brook;
3. Installation of the new pedestrian bridge over Meadow Brook, which will connect the north and south trail systems; and
4. Installation of the new pedestrian bridge over Decker's Brook.

The analyses discussed herein pertain to the new pedestrian bridge over Meadow Brook. The hydraulic analyses pertaining to the activities proposed as items #1, #2, and #4 above do not impact Meadow Brook and are discussed in separate reports.

Analyses for the existing and proposed conditions were performed to assess the potential impacts to the regulatory floodplain for the 10-, 50-, 100- and 500-year floods. The results of the analyses indicate that the proposed bridge is hydraulically adequate to pass the 100 and 500-year floods without causing adverse impacts to the regulatory floodplain. Increases to the proposed flood elevations are limited to 0.01 feet or less in the reach upstream of the proposed bridge.

The floodplain analyses were performed using the same flood discharges in Meadow Brook and tailwater elevations on the Connecticut River as were applied in the effective FEMA flood study. The effective flood study assumes the return frequency of the flood events on Meadow Brook and the Connecticut River are the same, and does not take joint flooding probability into account. For example, the tailwater applied to the 100-year flood on Meadow Brook is equal to the 100-year flood elevation on the Connecticut River. Along the project reach of Meadow Brook, this results in the channel and overbank areas being inundated by the flooding on the Connecticut River for the 10-, 50-, 100- and 500-year floods.

Separate hydraulic design analyses were also performed with lower tailwater elevations on the Connecticut River to evaluate the potential impacts on water surface elevations in scenarios where greater flooding occurs on Meadow Brook. These analyses were performed with the FEMA flood discharges on Meadow Brook and a 1-year tailwater elevation on the Connecticut River. The proposed bridge results in minimal impacts to flood elevations. Increases to the proposed flood elevations are limited to 0.01 feet or less upstream of the proposed bridge.

2 Hydrology

2.1 Drainage Basin

The drainage area of Meadow Brook at the proposed bridge location is approximately 3.26 square miles, and is part of Connecticut River Basin No. 4000-24 as identified by the Connecticut Department of Energy & Environmental Protection (DEEP) in "Natural Drainage Basins in Connecticut"[1]. The watershed is generally comprised of wooded, residential, and commercially developed areas. The entire drainage area is contained within Hartford County.

2.2 FEMA Flood Insurance Study

The effective detailed FEMA flood study for Meadow Brook was completed in June 1977[2]. The results of the flood study were originally published in the FEMA Flood Insurance Study (FIS) for the Town of Windsor, dated September 29, 1986. The flood studies for Hartford County have since been combined into a county-wide FIS. The most recent FIS for Hartford County is dated May 16, 2017[3]. The detailed flood study on Meadow Brook, however, has not been updated since it was completed in June 1977. Information provided in the Hartford County FIS indicates the peak discharges for Meadow Brook were calculated using regression equations published by L.A. Weiss in 1975[4].

The published FEMA discharges listed in the FIS were used to analyze Meadow Brook, as given in Table 1.

[1] Department of Environmental Protection, State of Connecticut. (Revised 1991). "Natural Drainage Basins in Connecticut". Hartford, CT.

[2] Federal Emergency Management Agency, U.S. Department of Homeland Security. (May 16, 2017). "Flood Insurance Study, Hartford County, Connecticut". Washington, D.C. Vol 2, Page 113.

[3] Federal Emergency Management Agency, U.S. Department of Homeland Security. (May 16, 2017). "Flood Insurance Study, Hartford County, Connecticut". Washington, D.C.

[4] Federal Emergency Management Agency, U.S. Department of Homeland Security. (May 16, 2017). "Flood Insurance Study, Hartford County, Connecticut". Washington, D.C. Vol. 5, Page 380.

Table 1: FEMA Flood Discharges
Meadow Brook

Return Frequency	Discharge (cfs)
10-year	330
50-year	700
100-year	1,100
500-year	1,600

Copies of pertinent sections of the FEMA FIS and copies of the HEC-2 model data are provided in Appendix A.

3 Hydraulics

3.1 Hydraulic Model

The analyses presented in this report have been performed in accordance with the CTDEEP Hydraulic Analysis Guidance Document. Analyses were completed using HEC-RAS, Version 6.0 using the published FEMA discharges.

3.2 Model Data

A detailed FEMA study was completed for this portion of Meadow Brook using the HEC-2 hydraulic modeling software. As a starting point, the HEC-2 model was recreated in HEC-RAS using hydraulic back-up (input) data obtained from FEMA. This input data was provided by FEMA in hard copy and was hand entered into the HEC-RAS model to recreate the effective FEMA FIS model. The existing and proposed models were developed by modifying the recreated FEMA model based on the proposed project. The data and assumptions applied to the models are discussed below.

3.2.1 FEMA Cross Sections

Although a detailed FEMA flood study was completed for Meadow Brook, there are no lettered cross sections in the reach subject to this project. The first cross section shown on the FIRM (lettered Section A) is located approximately 5,000 feet upstream from the project site.

The back-up data for the original FEMA HEC-2 analysis indicates there are three unlettered cross sections within the project reach. The precise locations/alignments of these cross sections are not available. For the purposes of the analyses discussed in this report, the locations were determined using reach lengths listed in the HEC-2 data. Cross-section designations and stationing used in the original FEMA HEC-2 analysis were maintained in the recreated HEC-RAS model. Refer to Section 3.3.1 for additional discussion.

3.2.2 Elevation Datum

The 2017 FEMA FIS and the project survey/design plans are referenced to the NAVD 1988 vertical datum. The original FEMA HEC-2 analyses were performed using topographic mapping from the Metropolitan District Commission (MDC). All elevations in the original 1986 FEMA FIS and the HEC-2 analyses were referenced to the Metropolitan District Datum (MDD)[5].

The 1986 FEMA FIS lists the conversion from the MDD to NGVD 1929 datum as -2.08 feet. The 2017 FEMA FIS lists the conversion from NGVD 1929 to NAVD 1988 as -0.81 feet[6]. Therefore, the conversion from the MDD to NAVD 1988 datum is -2.89 feet. The HEC-2 models have been recreated in HEC-RAS using both the MDD and NAVD 1988 datums (see Section 3.3). All other elevations listed in this report are referenced to NAVD 1988 unless otherwise noted.

3.2.3 Contraction and Expansion Coefficients

Contraction and expansion coefficients applied to the original FEMA HEC-2 analysis were 0.25 and 0.5 in the vicinity of the bridge crossings and 0.1 and 0.3 for locations without significant changes in cross-sectional area. These values were used in the HEC-2 Model Recreation. The coefficients applied to the existing and proposed condition models have been updated to be 0.3 and 0.5 at bridge crossings, and 0.1 and 0.3 at other cross sections. These updated coefficients are in accordance with the current guidance provided in the HEC-RAS Hydraulic Reference Manual.

3.2.4 Roughness (n) Values

The roughness (n) values applied to the FEMA HEC-2 analysis were 0.04 in the channel and 0.1 in the overbank areas. These values were used in the HEC-2 Model Recreate. The overbank roughness value of 0.1 was maintained in the existing and proposed conditions models. The channel roughness values have been updated to range between 0.035 – 0.045 based on observed field conditions.

3.2.5 Bridge Modeling Approach

The bridge modeling approach used for high flows (i.e., the upstream water surface elevation is greater than the low chord) was pressure/weir flow for both the existing and proposed conditions. The bridge modeling approach for low flows was based on the energy equation.

3.3 FEMA HEC-2 Model Recreation

Guidelines provided by DEEP in the Hydraulic Analysis Guidance Document require that the FEMA hydraulic model be used as the starting point for any analysis on a watercourse that has been mapped as

[5] Federal Emergency Management Agency, U.S. Department of Homeland Security. (September 29, 1986). "Flood Insurance Study, Town of Windsor, Connecticut". Washington, DC. Page 10.

[6] Federal Emergency Management Agency, U.S. Department of Homeland Security. (May 16, 2017). "Flood Insurance Study, Hartford County, Connecticut". Washington, D.C. Volume 2, page 141.

part of the National Flood Insurance Program. Therefore, the effective FEMA HEC-2 model used in the detailed flood study was recreated based upon hydraulic back-up data provided by FEMA.

3.3.1 Effective FEMA Cross Section Locations

Although the detailed FEMA flood study extends through the Meadow Brook project reach, the first cross section shown on the FIRM (lettered Section A) is located approximately 5,000 feet upstream from the project site. Since cross section coordinates are not provided in HEC-2 documentation, the locations of the effective sections were determined using the river stationing listed in the back-up data.

Based on the HEC-2 back-up data, the starting cross section in the effective FEMA model is located 0.100 miles (528 feet) upstream of the confluence with the Connecticut River. However, due to the potential for shifting channel alignments and variable water levels in the Connecticut River, the precise location to which the 0.100 mile distance was referenced is not known. Therefore, the location of the effective starting cross section was determined using the upstream railroad bridge as a reference point. For consistency with the effective FEMA study, the river stationing in the HEC-2 model was maintained for all analyses performed for this project.

3.3.2 Starting Floodplain WSEs

A known water surface elevation (WSE) was used as the downstream boundary condition in the HEC-RAS model. For the Recreated Effective FEMA flood study these WSEs were based on tailwater from the Connecticut River, as presented in the 1986 FIS.

The starting WSEs are listed in Table 2, and have been converted to both MDC and NAVD 88 datums. These WSEs have been applied to the Recreated Effective FEMA flood study for this project.

Table 2: Meadow Brook – 1986 FIS Starting WSEs
Metropolitan District & NAVD 1988 Datums

Return Frequency	WSE (ft MDD)	WSE (ft NAVD 88)
10-year	26.33	23.44
50-year	31.18	28.29
100-year	33.11	30.22
500-year	38.11	35.22

A restudy of the Connecticut River was completed in 2008, which increased the tailwater elevations on the project reach of Meadow Brook. As a result, the floodplain on Meadow Brook was re-delineated to reflect the increased tailwater[7]. In 2008, the individual FEMA FISs for all the communities in Hartford

[7] Federal Emergency Management Agency, U.S. Department of Homeland Security. (September 26, 2008). "Flood Insurance Study, Hartford County, Connecticut". Washington, D.C. Volume 1, pages 13 & 14.

County were combined into a single county-wide FIS. The flood elevations in the 2008 FIS were converted to NAVD 88. The corresponding starting WSEs are listed below in Table 3. These WSEs have been applied to the existing and proposed regulatory floodplain analyses performed for this project.

Table 3: Meadow Brook – 2008 FIS Starting WSEs
Metropolitan District & NAVD 1988 Datums

Return Frequency	WSE (ft MDD)	WSE (ft NAVD88)
10-year	28.08	25.1
50-year	32.79	29.9
100-year	34.63	31.8
500-year	39.39	36.5

3.3.3 Recreated Effective FEMA Flood Study Results

The effective FEMA HEC-2 model on the Meadow Brook project reach includes three cross sections and does not include any bridge or culvert crossings, nor inline structures. For the "as-is" Recreated Effective flood study analysis, the conveyance calculations used in HEC-RAS were set to be performed using the HEC-2 method, which subdivides the cross-section at every coordinate point.

For consistency with the original FEMA flood study and 1986 FIS, the recreated floodplain analyses were performed using geometry data referenced to the MDD vertical datum. Similarly, the starting WSEs are based on the 1986 FIS (see Table 2, above). The floodplain analysis results are summarized below in Table 4. Detailed results and documentation are provided in Appendix B.

Table 4 - Effective 100-year Floodplain Analysis Results
Effective FEMA HEC-2 & Recreated "As-Is" HEC-RAS Models
Elevations Referenced to the Metropolitan District Datum (MDD)

HEC-RAS River Station (ft)	HEC-2 River Station (mi)	100-yr WSE HEC-2 (ft - MDD)	100-yr WSE HEC-RAS (ft - MDD)	Δ WSE (ft)
528	0.100	33.11	33.11	0
2378	0.450	33.11	33.11	0
2428	0.460	33.11	33.11	0

3.4 Existing Conditions Model

The existing conditions model was developed by modifying the Recreated Effective FEMA HEC-2 model as follows:

- Modifications included adding new cross sections along the project reach. Updates to the effective FEMA cross sections included revising the channel/overbank geometry based on the project survey data, as well as revisions to the channel bank locations and roughness values based on field observations.

- For consistency with the current FEMA FIS and the revised floodplain elevations related to the 2008 restudy of the Connecticut River, the elevations in the existing conditions model are referenced to the NAVD 88 vertical datum. The starting WSEs are based on the 2008 Connecticut River restudy.

- The conveyance calculations for the recreated FEMA model were set to be performed using the HEC-2 method which subdivides the cross-section at every coordinate point. Conveyance calculations for the existing conditions model have been set to be calculated only at breaks in roughness values, which currently is the recommended method in the HEC-RAS User's Manual.

A comparison of the 100-year WSEs calculated using the Recreated Effective FEMA model and the existing conditions model is provided in Table 5. Differences in the analysis results can be attributed to differences in the computational methods used in the HEC-2 and HEC-RAS software.

Table 5 - Comparison of Calibrated "As-Is" FEMA Model & Existing Cond. Model – 100-year Profile

HEC-RAS River Station (ft)	HEC-2 River Station (mi)	Eff. Recreated Model (ft – NAVD 88)	Existing Cond. Model (ft – NAVD 88)	Δ WSE (ft)
528	0.100	31.80	31.80	0
2378	0.450	31.80	31.83	+0.03
2428	0.460	31.63	31.84	+0.21

4 FEMA Floodplain Analysis

Federal and State regulatory requirements prohibit adverse hydraulic impacts to regulatory floodplains based on the published FEMA discharge for the base flood (100-year flood). As such, both existing and proposed conditions were analyzed using the FEMA published 100-year discharge. The existing conditions geometry data discussed in Section 3.4 was applied to this analysis. The proposed condition HEC-RAS model geometry is the same as existing conditions, with addition of the proposed bridge. Starting WSEs are based on the 2008 Connecticut River restudy and published in the current effective FIS. These analyses were run using a sub-critical flow regime, which is consistent with FEMA requirements for flood studies.

Results of the HEC-RAS analyses indicate no increases in flood elevations over 0.01 feet. WSE increases at only two cross-section locations: RS 2261 and RS 1899. This increase is negligible and is below the maximum allowable increase of 1.0 foot. No adverse impacts are anticipated due to the minor increase and the undeveloped nature of the overbank areas. The existing and proposed analysis results are summarized below in Table 6. Back-up documentation for these analyses is provided in Appendix C.

Table 6 - Comparison of Existing & Proposed Conditions
FEMA Floodplain Analyses - 100-year Flood Discharge

HEC-RAS River Station (ft)	Existing Cond. (ft–NAVD 88)	Proposed Cond. (ft–NAVD 88)	Δ WSE (ft)
2428	31.84	31.84	0
2378	31.83	31.83	0
2261	31.81	31.82	0.01
2095	31.81	31.81	0
1929	31.81	31.81	0
1899	31.81	31.82	0.01
1855	31.81	31.81	0
1795	31.81	31.81	0
1704	31.81	31.81	0
1657	31.81	31.81	0
1597	31.81	31.81	0
1522	31.81	31.81	0
1459	31.81	31.81	0
1337	31.81	31.81	0
1213	31.8	31.8	0
1116	31.8	31.8	0
1026	31.8	31.8	0
920	31.8	31.8	0
880	31.8	31.8	0
849	31.8	31.8	0
765	31.8	31.8	0
709	31.8	31.8	0

HEC-RAS River Station (ft)	Existing Cond. (ft–NAVD 88)	Proposed Cond. (ft–NAVD 88)	Δ WSE (ft)
624	31.8	31.8	0
576	31.8	31.8	0

5 Design Analysis

The Connecticut River tailwater elevation overtops the proposed Meadow Brook bridge by several feet. Therefore, analyses for the hydraulic design of the proposed bridge were performed using the FEMA FIS flood discharges, but with a reduced tailwater elevation on the Connecticut River. This allows the hydraulic impacts of the proposed bridge to be evaluated for scenarios in which higher magnitude flooding occurs on Meadow Brook than on the Connecticut River. A design tailwater elevation of 9 feet was selected based on an analysis of historic flow data recorded at USGS Station 01190070; this corresponds to a 1-year flood on the Connecticut River. This is discussed in more detail in Section 5.1.

Existing and proposed conditions were analyzed and compared to evaluate the potential impacts of the proposed bridge. These scenarios were run using a mixed flow regime. Documentation of these analyses is provided Appendix D.

5.1 Assessment of Design Tailwater Elevation

The CT Department of Transportation Drainage Manual provides design guidance for joint flooding probabilities where one watercourse flows into another. Guidance for joint probability analyses is provided in Table 8-3 in the Drainage Manual. Based on the drainage area sizes of Meadow Brook (3.26 sq mi) and the Connecticut River (10,487 sq mi), a 10-year tailwater on the Connecticut River should be used for a 100-year flood on Meadow Brook.

The FEMA FIS assumed a 100-year tailwater elevation of 31.8 feet on the Connecticut River coincident with a 100-year flood on Meadow Brook. In comparison, the 10-year tailwater elevation is 27.3 feet, which still results in the Meadow Brook overbanks being inundated along the entire modeled reach.

To analyze a more conservative condition, a lesser tailwater elevation that does not inundate the Meadow Brook overbanks was used. Since the lowest flood magnitude in the FEMA FIS is the 10-year event, tailwater elevations for smaller events on the Connecticut River – including the 1-, 2- and 5-year floods - were evaluated using data recorded at USGS Station 01190070 in Hartford. This station is located on the Bulkeley Bridge, which is approximately 2.5 miles downstream of the confluence of Meadow Brook with the Connecticut River.

The peak discharges for the 1-, 2- and 5-year floods on the Connecticut River were estimated based on data provided in USGS Open File Report 2005-1369 Estimates of the Magnitude and Frequency of Flood Flows in the Connecticut River in Connecticut. The corresponding peak flood elevations for each of these events was then evaluated using a stage-discharge rating curve for the Connecticut River that was developed based

on data recorded at USGS Station 01190070. Since the 10-year flood profile published in the FEMA FIS show the water surface between Bulkeley Bridge and the Meadow Brook to be nearly flat, the flood elevations at the USGS station were applied to the Connecticut River at the Meadow Brook confluence without transformation or scaling.

Using this approach, the 1-, 2- and 5-year flood elevations on the Connecticut River at the confluence with Meadow Brook were estimated to be 9 feet, 20 feet and 24 feet, respectively. In comparison, the top-of-bank elevations along Meadow Brook vary from 15' to 19'. As such, the 1-year Connecticut River tailwater elevation was applied to the Meadow Brook hydraulic design analyses, as the 2-year and 5-year floods on the Connecticut River also inundate the overbank areas. Documenation of this tailwater assessment is provided in Appendix D.

5.2 Existing & Proposed Condition Analysis Results

The existing conditions geometry data discussed in Section 3.4 was applied to this analysis. The proposed condition HEC-RAS model incorporates the proposed bridge.

The results of the HEC-RAS model indicate that the proposed bridge can pass the 100-year flood with a maximum of 6 feet of under-clearance. The existing and proposed water surface elevations predicted for the 100-year design flood are listed in Table 7. Since the proposed bridge is an arch style bridge, the under-clearance varies; the analysis results show that the 100-year water surface is below the low-chord at all points along the structure. Furthermore, the proposed bridge will not be overtopped by the 500-year flood.

The proposed water surface profile upstream of the bridge is shown to minimally increase by 0.01 feet between RS 1337 and RS 880. This increase is limited to a 460-foot reach upstream of the proposed bridge and is fully contained within the banks.

Table 7 - Comparison of Existing & Proposed Conditions
Hydraulic Design Analyses - 100-year Flood Discharge

HEC-RAS River Station (ft)	Existing Cond. (ft–NAVD 88)	Proposed Cond. (ft–NAVD 88)	Δ WSE (ft)
2428	21.26	21.26	0
2378	21.13	21.13	0
2261	19.92	19.92	0
2095	18.55	18.55	0
1929	15.87	15.87	0
1899	16.32	16.32	0
1855	14.93	14.93	0

HEC-RAS River Station (ft)	Existing Cond. (ft–NAVD 88)	Proposed Cond. (ft–NAVD 88)	Δ WSE (ft)
1795	14.92	14.92	0
1704	13.1	13.1	0
1657	13.77	13.77	0
1597	12.74	12.74	0
1522	13.12	13.12	0
1459	12.51	12.51	0
1337	10.33	10.34	0.01
1213	10.33	10.34	0.01
1116	10.46	10.47	0.01
1026	10.48	10.49	0.01
920	10.45	10.46	0.01
880	10.37	10.38	0.01
862	Proposed Bridge Location		
849	9.61	9.61	0
765	9.35	9.35	0
709	9.41	9.41	0
624	8.43	8.43	0
576	8.8	8.8	0

5.3 Temporary Hydraulic Facilities

Temporary hydraulic facilities will be used for water control during construction of the proposed bridge. These include cofferdams (sheet piles) to divert water around construction areas and water handling devices such as pumps to remove groundwater seepage in areas of excavation. Temporary water controls are shown on the proposed bridge plans provided as Figure 3.

5.3.1 Temporary Design Discharge

Guidance for selecting the design discharge for temporary water control devices is provided in Chapter 6, Appendix F, "Temporary Hydraulic Facilities," of the ConnDOT Drainage Manual. In accordance with these guidelines, the design discharge should be the 2-year peak flow, as calculated and documented

in Appendix E. This discharge was approximated based on flood flows from the FEMA FIS. The 2-year design flow applied to this analysis was estimated to be 150 cfs.

5.3.2 Temporary Facility Hydraulic Analysis

The temporary conditions hydraulic analysis was performed in HEC-RAS. The proposed conditions geometry file was modified to reflect the installation of the coffer dams (sheet piles). The results of the analysis indicate the increases in water surface elevations in the upstream reach will be 0.01 feet or less during this temporary condition. Documentation of these analyses is provided Appendix E.

6 Natural Conditions

The CTDEEP Hydraulic Analysis Guidance Document requires a "natural conditions" scenario. The intent of this requirement is to demonstrate the difference in the WSEs within the Brook between proposed conditions (with the proposed structure in-place) and the "natural conditions", which assumes no structure or other artificial encroachments are located within the Brook at that location.

To eliminate any impacts related to tailwater on the Connecticut River, for the natural conditions the existing and proposed analyses were run assuming normal depth as the downstream boundary condition. The results of the analyses show the greatest increase in upstream water surface elevations to be 0.01 feet. This satisfies the design criteria of no greater than a 1.0-foot increase. Documentation of these analyses is provided Appendix F.

7 HEC-RAS Data Files

The HEC-RAS files are provided in Appendix G. The HEC-RAS plan file names are summarized in Table 8.

Table 8 – Naming of HEC-RAS Plan Files

Scenario	HEC-RAS Plan File Name	HEC-RAS File Name
Effective FEMA Model - 1986	1986 Effect FEMA – MDD Datum	MeadowBrook.p10
Effective FEMA Model - 2008	2008 Effect FEMA – NAVD 88	MeadowBrook.p13
Floodplain Analysis – Existing	FEMA Floodplain – Existing Cond – FIS TW	MeadowBrook.p01
Floodplain Analysis – Proposed	FEMA Floodplain – Proposed Cond – FIS TW	MeadowBrook.p04
Hydraulic Design Analysis - Existing	Hydraulic Design – Existing – 1yr TW	MeadowBrook.p02
Hydraulic Design Analysis - Proposed	Hydraulic Design – Proposed – 1yr TW	MeadowBrook.p22
Natural Conditions - Existing	Natural – Existing – No TW	MeadowBrook.p03
Natural Conditions - Proposed	Natural – Proposed – No TW	MeadowBrook.p07

Scenario	HEC-RAS Plan File Name	HEC-RAS File Name
Temporary Hydraulics - Existing	Temporary 2 yr Flow – Existing – 1 yr TW	MeadowBrook.p06
Temporary Hydraulics - Proposed	Temporary 2 yr Flow – Proposed – 1 yr TW	MeadowBrook.p05

8 Conclusions & Recommendations

The proposed bridge over Meadow Brook results in minimal impacts of 0.01 feet or less to the regulatory flood elevation. The proposed bridge is hydraulically adequate to pass the 100- and 500-year floods.

This report discusses the hydraulic analyses performed to assess potential impacts to regulatory FEMA floodplain on Meadow Brook. There is no regulatory floodway on the reach of Meadow Brook within the project area; therefore, encroachment analyses are not applicable to this project. Analyses for the existing and proposed conditions were performed to assess the potential floodplain impacts for the 10-, 50-, 100- and 500-year floods. The results of the analyses indicate that the proposed bridge is hydraulically adequate to pass the 100 and 500-year floods without causing adverse impacts to the regulatory floodplain.

Separate hydraulic design analyses were also performed with lower tailwater elevations to evaluate the potential impacts in scenarios where higher magnitude flooding occurs on Meadow Brook than on the Connecticut River. These analyses were performed with the FEMA flood discharges on Meadow Brook and a 1-year tailwater elevation on the Connecticut River. As with the regulatory floodplain analyses, construction of the bridge results in minimal impacts to flood elevations. Increases to the proposed flood elevations are limited to 0.01 feet or less upstream of the proposed bridge.

The analyses discussed herein pertain to the bridge crossing proposed over Meadow Brook. Hydraulic analyses pertaining to other proposed activities, including improvements to the trail system south of Meadow Brook, construction of a trail system north of Meadow Brook, and a pedestrian bridge over Decker's Brook, are discussed in separate reports.

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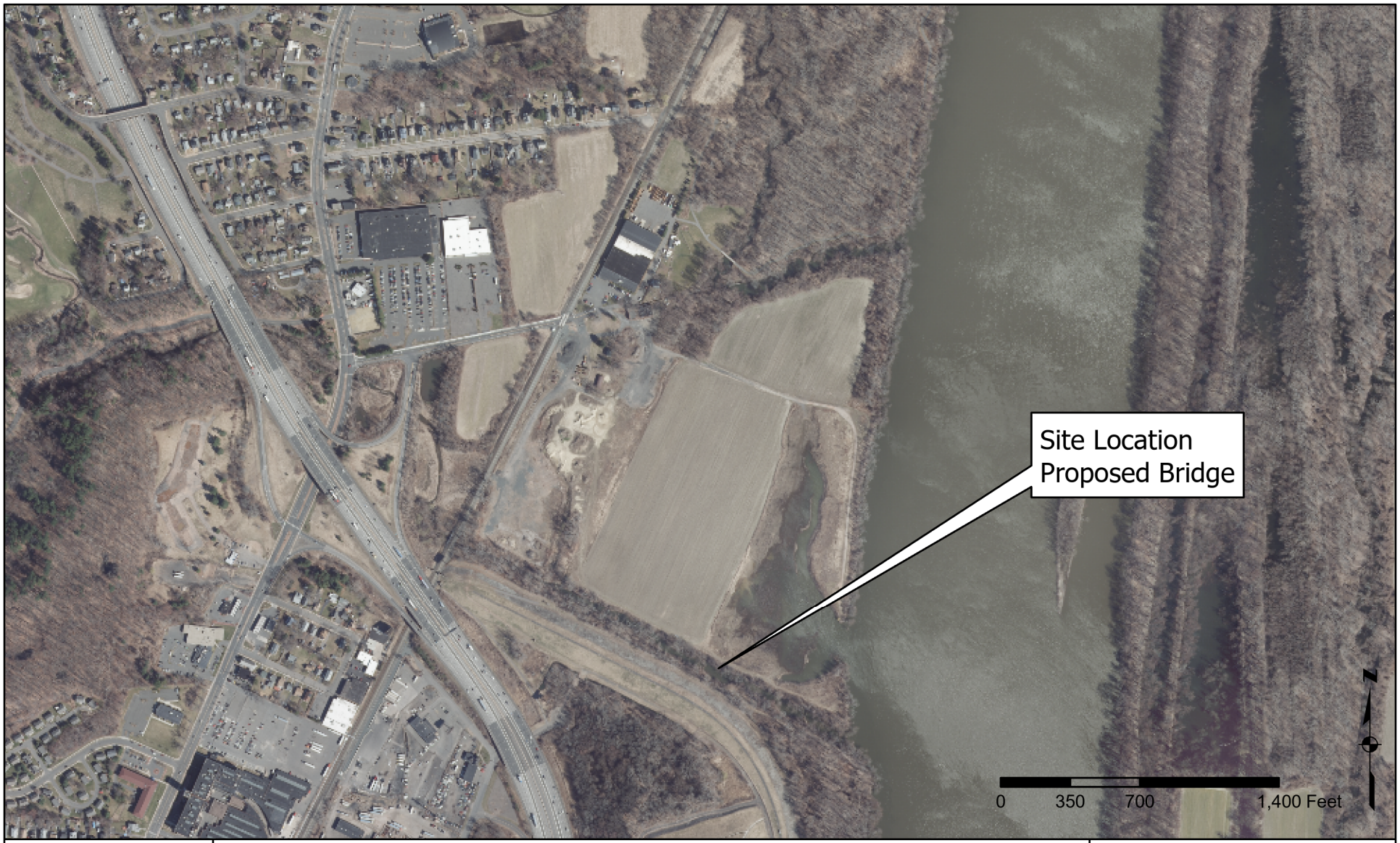
Figure 1

Site Location Map

100%



Site Location Plan

Meadow Brook Bridge

Hartford Connecticut

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146 Hartford Road
Manchester, CT 06040
860.646.2469 | www.fando.com

Figure #1

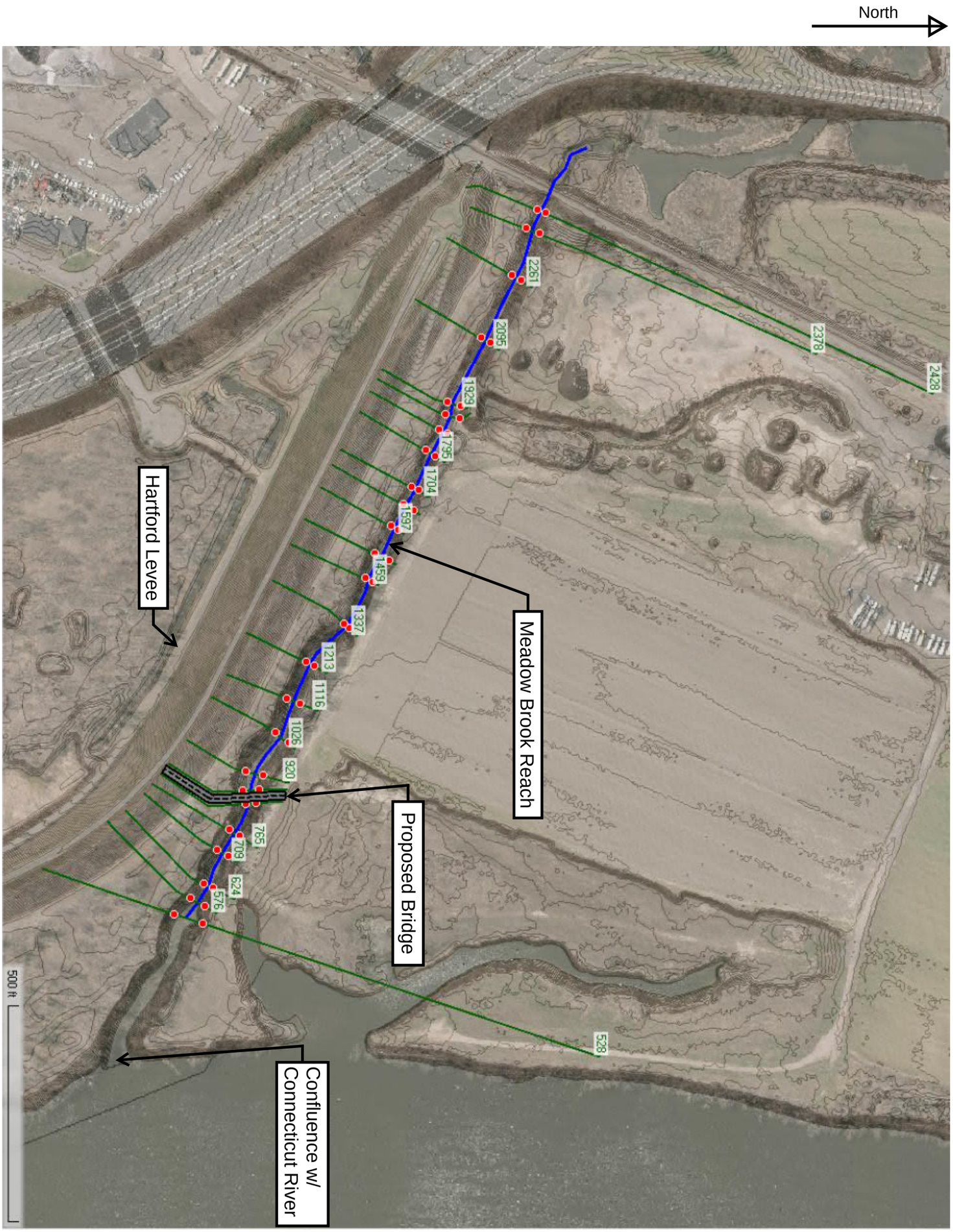
K:\P2017\0277\A30\MXD\Deckers Brook\Deckers Brook\Deckers Brook.aprx

FUSS & O'NEILL

Figure 2

Cross-Section Location Map

100%



Hydraulic Analysis Report
Meadow Brook

Cross-Section Location Plan

Figure 2

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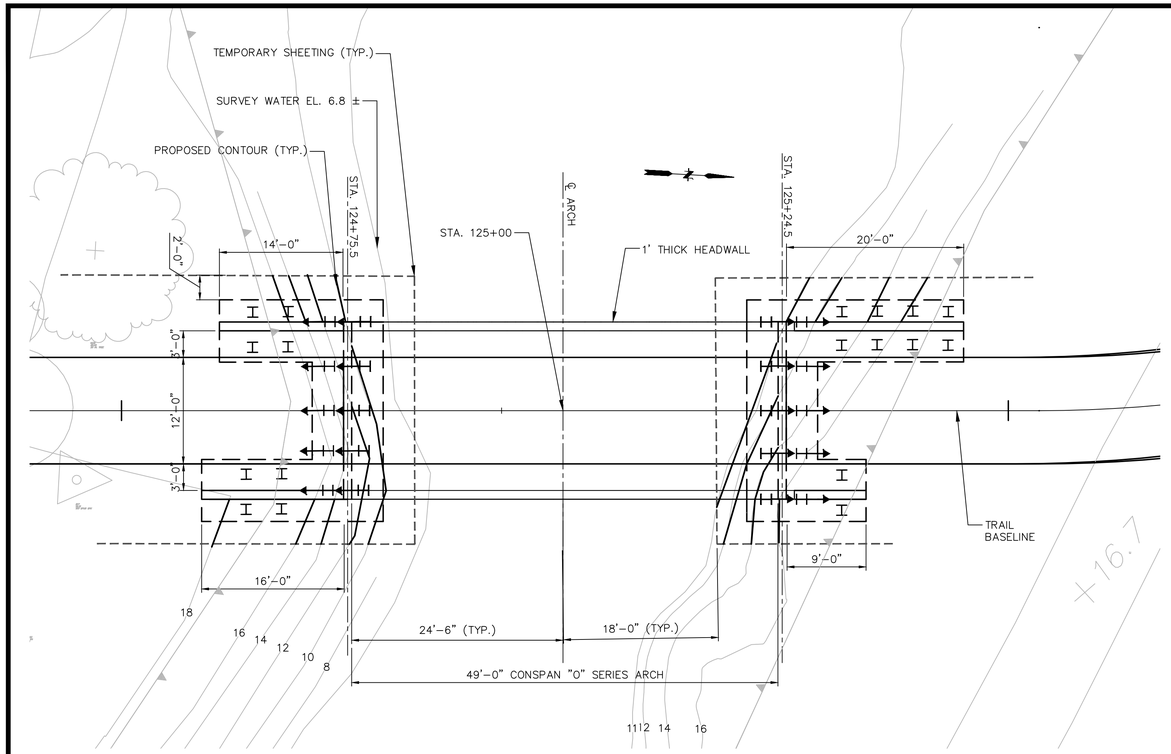
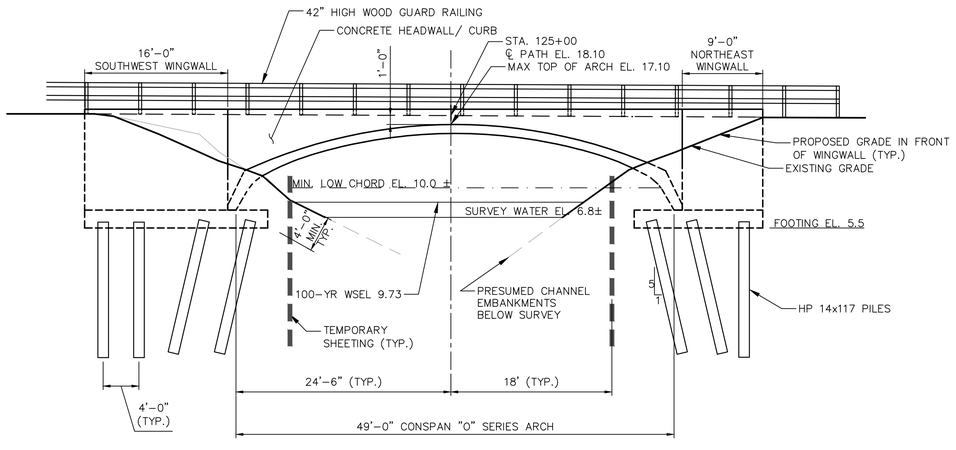
Figure 3

Site Plan

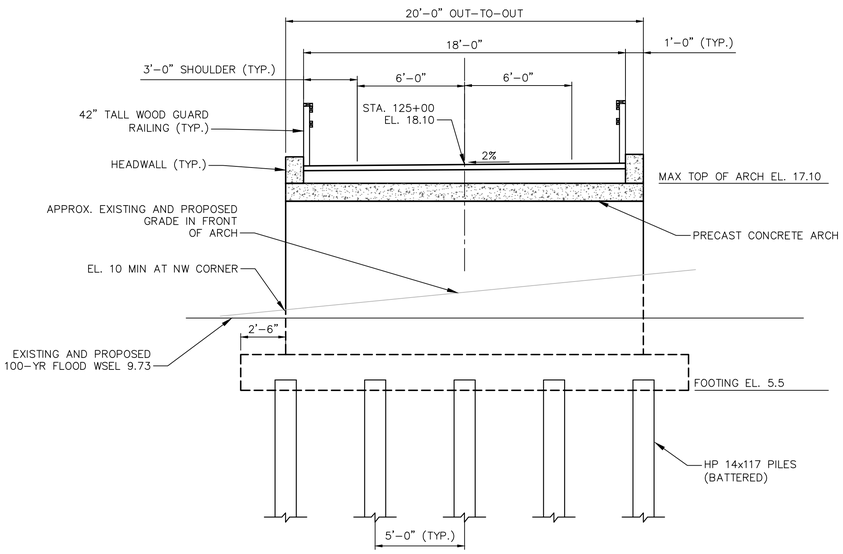
100%



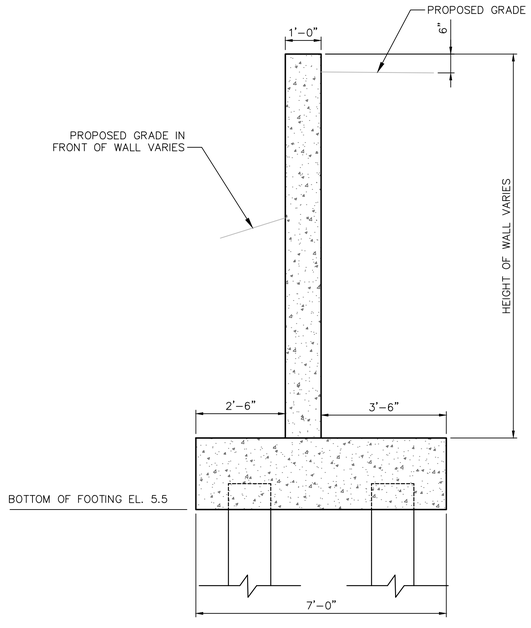
PLAN
1/8" = 1'–0"



ELEVATION
1/8" = 1'–0"



SECTION
1/4" = 1'–0"



WING WALL SECTION
1/2" = 1'–0"

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SEAL

SEAL

SCALE:
HORZ.: AS SHOWN
VERT.:
DATUM:
HORZ.:
VERT.:
0
GRAPHIC SCALE

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CITY OF HARTFORD

MEADOW BROOK BRIDGE PLAN

HARTFORD-WINDSOR COVE PARK PROJECT

HARTFORD CONNECTICUT

PROJ. No.: 20170860.A10
DATE: SEPTEMBER 2021

STR-01

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Appendix A

FEMA FIS & HEC-2 Data

Available Upon Request