US Army Corps of Engineers®

PUBLIC NOTICE

Applicant:
Connecticut Department of Transportation

Published: March 19, 2025
Expires: April 18, 2025

New England District
Permit Application No. NAE-2024-01501

TO WHOM IT MAY CONCERN: The New England District of the U.S. Army Corps of Engineers (the Corps) has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344). The purpose of this public notice is to solicit comments from the public regarding the work described below:

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WATERWAY AND LOCATION: The project would affect waters of the United States consisting of Willow Brook, Spruce Glen Brook, Spoon Shop Brook, North Branch of Spoon Shop Brook, unnamed tributaries, and associated wetlands. The project area is at locations along Interstate 91 (I-91), Interstate 691 (I-691), and Route 15 southbound in Meriden and Middletown, Connecticut. All three highways in the project area consist of a complex system of mainline lanes, weave sections, and ramp connections that form the I-91/I-691/Route 15 Interchange. The improvements proposed as part of this project would encompass highway elements on I-91 southbound beginning approximately 0.5 miles north of Interchange 19 and extending southerly to the Meriden/Wallingford town line for approximately 4.26 miles; on Route 15 southbound beginning at the I-691 eastbound overpass extending southerly to south of the Miller Avenue overpass for approximately 2.34 miles; on I-691 eastbound from the Route 5 overpass, Interchange 2A, to approximately 130 feet prior to the Bee Street overpass for approximately 1.1

miles; and on I-691 westbound 0.5 miles west of Interchange No. 1A, the off-ramp to I-91 northbound, to just beyond the Interchange 1C ramp from I-91 southbound for approximately 1.1 miles. The approximate center of the project is located at Latitude 41.538140 and Longitude -72.769380.

EXISTING CONDITIONS: The project area, constructed primarily in the 1960s, is part of Connecticut's Interstate Highway System, connecting cities through I-91, I-691, and Route 15. I-91 provides access to Hartford, Springfield, and New Haven, running through Meriden. I-691, built between the 1960s and 1980s, connects I-91 to Interstate 84 (I-84). Route 15, also known as the Wilbur Cross Parkway, opened in the 1940s, connecting New Haven to Hartford, and eventually becoming the Merritt Parkway as it gets closer to New York City. The project area includes 23 bridges, mostly constructed in 1964-1965 and rehabilitated between 1984-1994, and 13 culverts, most built in the 1960s, with one with a construction date of 1942. Many of these structures require rehabilitation or replacement due to deterioration, particularly the corrugated metal culverts.

The project area spans an urban corridor with highway, residential, commercial, and light industrial development. It includes single-family and multi-family housing, commercial areas along I-91 and Route 15, and a high school near East Main Street. Several public parks are nearby, and there are pockets of undeveloped land, particularly near I-91. The project area lies within the South-Central Major Watershed Basin, with several watercourses flowing through or near the project, including Willow Brook, flowing south to north through the project corridor, and an unnamed tributary to Willow Brook; Spruce Glen Brook and its headwaters near Thomas Hooker School, flowing southwest; and the North Branch of Spoon Shop Brook, which flows south. Additionally, Spoon Shop Brook and an unnamed tributary to Harbor Brook flow through the area. These streams are generally small, with low to medium gradients, and many have been altered by urban development and channelization. Wetlands are associated with these waters, particularly near Willow Brook, Spoon Shop Brook, and their tributaries.

PROJECT PURPOSE:

Basic: The purpose of the project is to reduce congestion and improve safety and operational concerns associated with capacity, congestion, and weaving for the southbound movements on Route 15 and 1-91 within the 1-91, 1-691, and Route 15 Interchange.

Overall: State Project No. 0079-0240 focuses on improvements to I-91 Southbound, Route 15 Southbound, and I-691 in Meriden. The project includes constructing operational lanes, relocating ramps, and widening key segments to improve traffic flow and safety. It also involves milling and repaving, modifying a number of hydraulically inadequate crossings, maintaining existing structures, and improving drainage along the routes.

PROPOSED WORK: The Connecticut Department of Transportation (CTDOT), the applicant, requests authorization to discharge fill in freshwater wetlands and streams, including both permanent and temporary impacts. State Project No. 0079-0240 would impact 5.25 acres of federally regulated wetlands and other waters, including 1.26 miles of streams, within the approximately 200-acre project area. The work would permanently impact 2.15 acres of wetlands and 1.72 acres of other waters and would temporarily impact an additional 0.94 acre of wetlands and 0.44 acre of other waters. The project would impact 1,622 linear feet of Willow Brook, 774 linear feet of Spoon Shop Brook, 561 linear feet of the North Branch of Spoon Shop Brook, 224 linear feet of Spruce Glen Brook, 2,981 linear feet of a tributary to Willow Brook, 461 linear feet of a tributary to Harbor Brook, and 18 linear feet of a tributary to the North Branch of Spoon Shop Brook.

The proposed impacts in wetlands and other waters of the U.S. would occur primarily from the widening of Route 15 southbound and I-91 southbound and the reconfiguration of several southbound ramps. The single largest impact would be the construction of a new, 1,500-foot ramp (Ramp 5S9S) that would require the partial relocation of approximately 450 linear feet of the northern section of the unnamed tributary to Willow Brook. Ramp 5S9S would cross over the tributary and require a new 10-foot by 8-foot box culvert to carry the stream from its current location along the western edge of Route 15 southbound, under Ramp 5S9S and realign with the original stream before entering the existing 84-inch reinforced concrete pipe (RCP) that carries it under East Main Street. Ramp 5S9S would be constructed almost entirely within wetlands abutting the unnamed tributary to Willow Brook. A ditch along the west side of the retaining wall-supported ramp would convey water to a series of three proposed cross culverts that would allow surface water to pass under the ramp, maintaining hydrologic connectivity within the wetland system. Impacts to Willow Brook and the wetlands that surround it would be limited to upgrading the existing drainage systems, which require the reconstruction of existing drainage outlets and the installation of new outlet protection. Several large bridge/culvert structures require maintenance and would be repaired, requiring work within Willow Brook for water handling, and temporary access roads within the surrounding wetlands. Other structures that carry Spoon Shop Brook and the North Branch of Spoon Shop Brook would also require maintenance and would be repaired during this project, requiring temporary impacts to both the watercourses and surrounding wetlands, mostly for temporary access roads. Impacts to several unnamed perennial streams would occur from proposed drainage maintenance and improvements, including cleaning existing culverts and repairing or replacing inlet and outlet structures. Most of the impact associated with this work be temporary from water handling, installation of erosion and sediment controls, and access during construction.

AVOIDANCE AND MINIMIZATION: The applicant has provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

To avoid and minimize impacts to regulated areas, as well as fisheries and wildlife, the following Best Management Practices (BMPs) would be implemented during construction:

- Construction would be staged such that repeated impacts to regulated areas are avoided.
- Erosion and sediment controls, as stipulated in CTDOT's "Standard Specifications for Roads, Bridges, and Incidental Construction" (Form 818), would be utilized during construction.
- Temporary wetland and watercourse impacts would be restored to their pre-construction conditions once construction is complete. This would involve removing temporary fill and restoring topography to original grades. Wetland areas would be seeded with a native wetland seed mix.
- Time-of-year restrictions would limit work within waters to June 1 through September 30, inclusive.
- The BMPs would be implemented during construction to avoid impacts to threatened and endangered wildlife species.
- Invasive plant species would be managed during construction in accordance with CTDOT's standard invasive species control measures.

Five project alternatives are being considered for the overall project, as well as the design modifications that were made to the proposed project to avoid and minimize impacts. The project alternatives include a No Action (No Build) option, which would maintain the current interchange with no improvements but fail to address growing traffic congestion and safety concerns. Off-site alternatives have not been considered due to the significantly greater environmental impacts and need for property acquisition from relocating the interchange. Four additional on-site, full-build solutions have been proposed to address safety and congestion, but each would pose high costs, traffic disruptions, and environmental impacts. These proposals include reconfiguring interchanges, adding collector-distributor roads, and relocating ramps, all of which would result in substantial environmental and property impacts, similar to or greater than the proposed project.

COMPENSATORY MITIGATION: The applicant offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment:

To offset impacts to the aquatic environment, the applicant proposes to purchase mitigation credits from the Audubon Connecticut In-Lieu Fee (ILF) Program. This requirement will be a condition of the Corps permit.

CULTURAL RESOURCES: The Federal Highway Administration (FHWA) is the lead Federal agency for coordination pursuant to Section 106 of the National Historic Preservation Act for the proposed action. The Office of Environmental Planning (OEP) of CTDOT completed Section 106 consultation under the provisions of the Programmatic Agreement executed between CTDOT, the FHWA, the Connecticut State

Historic Preservation Officer (CT SHPO), and the Advisory Council on Historic Preservation (ACHP) regarding compliance with Section 106 for minor transportation projects. A conditional finding of No Adverse Effect was made in 2022; however, this finding is conditional upon the rehabilitation of State Bridge Number 797 in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. State Bridge Number 797 carries Miller Avenue over the Wilbur Cross Parkway. The Wilbur Cross Parkway is considered to be eligible for the National Register of Historic Places (NRHP) and Bridge Number 797 is presumed to be a contributing element to the resource. The CTDOT OEP's intention is to stipulate that all rehabilitation work on the bridge be carried out in accord with the Secretary of the Interior's Standards for Treatment of Historic Properties, in order to reach a determination of no adverse effect to the Parkway. Qualified cultural resource staff from OEP determined that the currently proposed work on the bridge can be accomplished within those Standards, given that the rehabilitation of State Bridge Number 797 would not involve any proposed impacts that would substantively compromise the distinctive architectural elements of the Bridge. The CT SHPO concurred with OEP's determination that there would be no adverse effect to historic properties in association with the proposed project. Additionally, WSP USA, Inc. conducted a Phase I Archaeological Assessment and Reconnaissance Survey; no archaeological resources were identified despite the excavation of 80 shovel tests across 16 separate areas of the project. No further work was recommended.

Because historic properties (i.e., properties listed in or eligible for inclusion in the National Register of Historic Places), are present within the Corps' permit area, but rehabilitation is proposed to occur in accord with the Secretary of the Interior's Standards for Treatment of Historic Properties; the Corps has made a preliminary determination that the proposed project would have no adverse effect on historic properties.

ENDANGERED SPECIES: The FHWA is the lead Federal agency for coordination pursuant to Section 7 of the Endangered Species Act (ESA) for the proposed action. CTDOT OEP's staff, as authorized by a programmatic agreement, completed the consultation for FHWA using the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website. An Official Species List identified the threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of the proposed project and/or may be affected by the proposed project. Based on this initial review, the Corps has made a preliminary determination that the proposed project may affect species and critical habitat listed in Table #1. No other ESA-listed species or critical habitat will be affected by the proposed action.

Table #1: ESA-listed species and/or critical habitat potentially present in the action area

Species Common Name and/or Critical Habitat Name	**Scientific Name**	**Federal Status**
Northern Long-eared Bat (NLEB)	*Myotis septentrionalis*	endangered
Tricolored Bat	*Perimyotis subflavus*	proposed endangered
Monarch Butterfly	*Danaus plexippus*	proposed threatened

CTDOT conducted the ESA review and consultation, including conducting a bat acoustic survey to determine if any state or federal listed bat species are present within the project area, and received a determination of Not Likely to Adversely Affect (NLAA) from the USFWS for the NLEB.

ESSENTIAL FISH HABITAT: Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act 1996, the Corps reviewed the project area, examined information provided by the applicant, and consulted available species information. The Corps has determined the proposal would have no effect on any Essential Fish Habitat (EFH) because no EFH has been identified within the project area. Therefore, no consultation with the National Marine Fisheries Service on EFH as required by the Magnuson-Stevens Fishery Conservation and Management Act 1996 is required.

NAVIGATION: The proposed structure or activity is not located in the vicinity of a federal navigation channel.

SECTION 408: The applicant will not require permission under Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408) because the activity, in whole or in part, would not alter, occupy, or use a Corps Civil Works project.

WATER QUALITY CERTIFICATION: An Individual Water Quality Certification will be required from the Connecticut Department of Energy and Environmental Protection (CTDEEP) to satisfy the requirements of Section 401 of the Clean Water Act.

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program. The geographic extent of aquatic resources within the proposed project area that either are, or are presumed to be, within the Corps jurisdiction has not been verified by Corps personnel.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and

utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

COMMENTS: The Corps is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

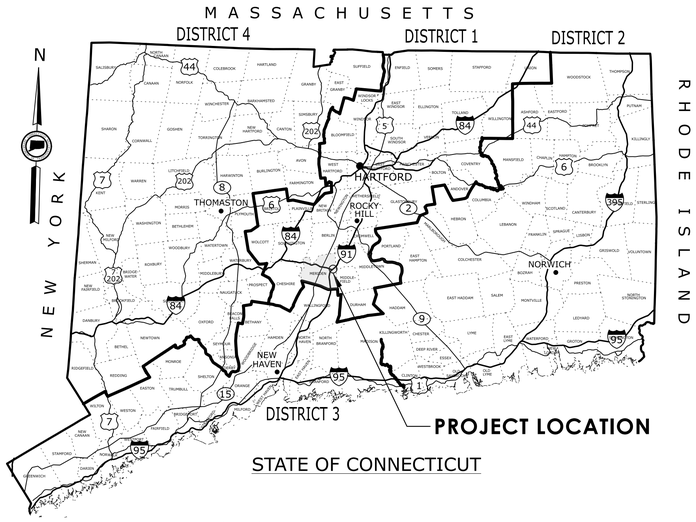
The New England District will receive written comments on the proposed work, as outlined above, until April 18, 2025. Comments should be submitted electronically via the Regulatory Request System (RRS) at https://rrs.usace.army.mil/rrs. Alternatively, you may submit comments in writing to the Commander, U.S. Army Corps of Engineers, New England District, Attention: Regulatory, 696 Virginia Road Concord, Massachusetts 01742-2751. Please refer to the permit application number (NAE-2024-01501) in your comments.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing will be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

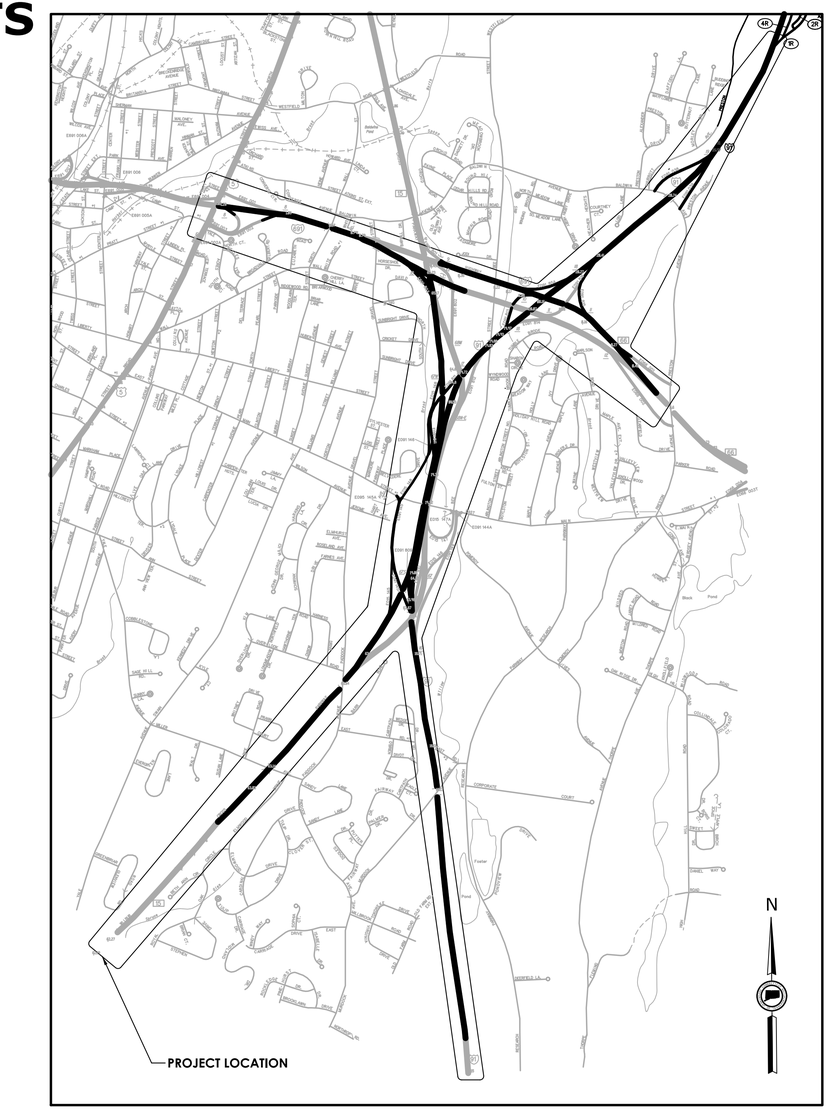
CONNECTICUT DEPARTMENT OF TRANSPORTATION

Plans For

ENVIRONMENTAL PERMIT PLANS
STATE PROJECT 0079-0240
I-91/ I-691/ ROUTE 15 INTERCHANGE
SOUTHBOUND IMPROVEMENTS
CITY OF MERIDEN



STATE OF CONNECTICUT



LOCATION PLAN
NOT TO SCALE

GENERAL NOTES:

1. THESE PLANS ARE NOT FOR CONSTRUCTION AND ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA. FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO CTDEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLAND, AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1983 VERTICAL DATUM BASED ON N.A.V.D. OF 1988.
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 819, SECTION 1.10 AND WILL ALSO FOLLOW REQUIRED BEST MANAGEMENT PRACTICES (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL AND THE CONNECTICUT STORMWATER QUALITY MANUAL.
6. FOR ANY WORK TAKING PLACE BENEATH THE ORDINARY HIGH WATER LINE, CTDEEP FISHERIES MUST BE CONTACTED TEN DAYS PRIOR TO THE COMMENCEMENT OF WORK.
7. ANY UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH THE CONSIDERATION OF THE FOLLOWING:
   - PROPOSED SCHEDULE FOR WORK OPERATIONS
   - ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
   - DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT.
   - BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM.
   - DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE.
   - IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.
8. THE FISHERIES DIVISION SHALL BE CONTACTED IF FISH BECOME TRAPPED DURING DEWATERING SO FISH CAN BE RELOCATED.
9. GRAVITY WATER MANAGEMENT IS RECOMMENDED AS AN ALTERNATIVE TO PUMPS. IF PUMPS ARE REQUIRED, THEY SHOULD BE OF APPROPRIATE SIZE TO PROVIDE CONSISTENT FLOW (MATCHING INFLOW) WITH NO INTERRUPTION OF OUTFLOW DOWNSTREAM OF THE PROJECT LOCATION. ADDITIONALLY, SCREENS (1/2 INCH OR SMALLER) SHOULD BE INSTALLED TO PREVENT FISH ENTRAINMENT, AND IMPINGEMENT SHOULD BE MONITORED. FISH KILLS SHOULD BE REPORTED TO FISHERIES STAFF IMMEDIATELY.

DESIGNED BY:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

DESIGNED BY:
PARSONS
330 Roberts Street
Suite 401
East Hartford, CT 06108

LIST OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
PMT-01	TITLE SHEET
PMT-02 TO 03	INDEX PLAN
PMT-04 TO 26	GENERAL SITE PLANS
PMT-27 TO 49	WETLAND IMPACT PLANS
PMT-50 TO 58	100 YEAR FLOODPLAIN IMPACT PLANS
PMT-59 TO 68	MITIGATION PLANS
PMT-69 TO 83	UNNAMED TRIBUTARY CHANNEL RECONSTRUCTION
PMT-84 TO 126	CULVERT PLANS
PMT-127 TO 137	PLANTING PLANS
PMT-138 TO 144	MISCELLANEOUS DETAILS

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

NOT TO SCALE

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

PARSONS
330 Roberts Street
Suite 401
East Hartford, CT 06108

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN
DRAWING TITLE: TITLE SHEET

DRAWING NO. PMT-01
SHEET NO.

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PLOTTED DATE: 7/24/2024

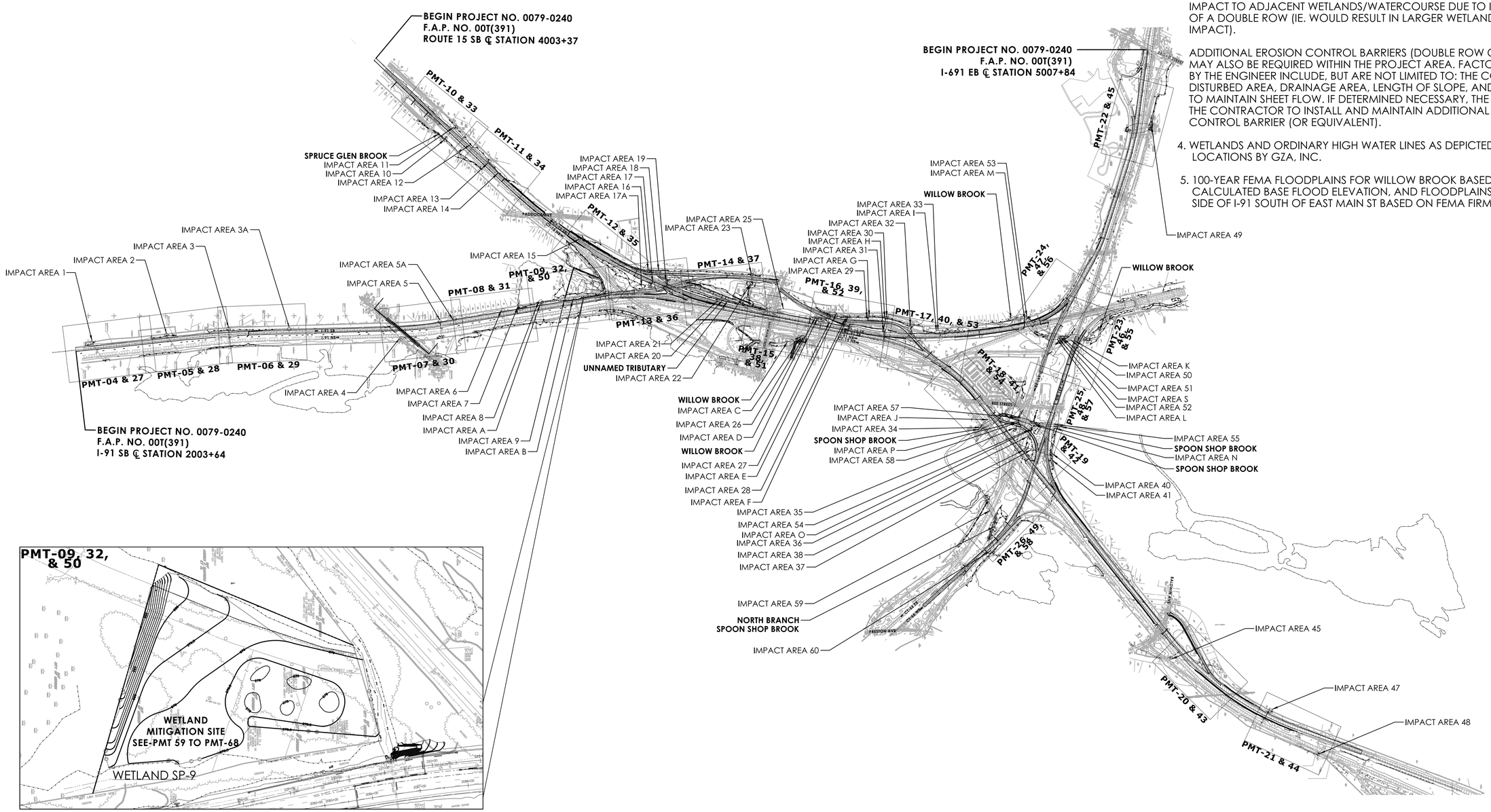
ABBREVIATIONS
CCMP - COATED CORRUGATED METAL PIPE
CMP - CORRUGATED METAL PIPE
CMPE - CORRUGATED METAL PIPE END
HDPE - HIGH-DENSITY POLYETHYLENE
RCP - REINFORCED CONCRETE PIPE
RCPE - REINFORCED CONCRETE PIPE END
SCS - SEDIMENTATION CONTROL SYSTEM

GENERAL NOTES

1. DISTURBED MEDIAN AREAS AND UPLAND AREAS WITHIN 10-FEET OF THE SHOULDER SHALL RECEIVE TURF ESTABLISHMENT. REMAINING UPLAND AREAS TO BE ESTABLISHED WITH TOPSOIL AND CONSERVATION SEEDING. DISTURBED WETLAND AREAS TO BE ESTABLISHED WITH WETLAND SEED MIX OR AS NOTED ON THE PLANS.
2. SEDIMENTATION CONTROL SYSTEM TO BE PLACED AT CATCH BASIN(S) AS NEEDED OR AS DIRECTED BY THE ENGINEER.
3. A DOUBLE ROW OF SEDIMENTATION CONTROL BARRIER SHALL BE UTILIZED BETWEEN ANY DISTURBED AREA AND DOWNGRADIENT WETLAND OR WATERCOURSE WITHIN 50 FEET, UNLESS THERE WOULD BE ADVERSE IMPACT TO ADJACENT WETLANDS/WATERCOURSE DUE TO INSTALLATION OF A DOUBLE ROW (IE. WOULD RESULT IN LARGER WETLAND/WATERCOURSE IMPACT).

ADDITIONAL EROSION CONTROL BARRIERS (DOUBLE ROW OF SCS) MAY ALSO BE REQUIRED WITHIN THE PROJECT AREA. FACTORS TO BE REVIEWED BY THE ENGINEER INCLUDE, BUT ARE NOT LIMITED TO: THE CONTRIBUTING DISTURBED AREA, DRAINAGE AREA, LENGTH OF SLOPE, AND FLOW CONDITIONS TO MAINTAIN SHEET FLOW. IF DETERMINED NECESSARY, THE ENGINEER WILL DIRECT THE CONTRACTOR TO INSTALL AND MAINTAIN ADDITIONAL ROWS OF EROSION CONTROL BARRIER (OR EQUIVALENT).

4. WETLANDS AND ORDINARY HIGH WATER LINES AS DEPICTED BASED ON FIELD LOCATIONS BY GZA, INC.
5. 100-YEAR FEMA FLOODPLAINS FOR WILLOW BROOK BASED ON ZONE AE CALCULATED BASE FLOOD ELEVATION, AND FLOODPLAINS ON THE WEST SIDE OF I-91 SOUTH OF EAST MAIN ST BASED ON FEMA FIRM ZONE A.



ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: NAB CHECKED BY: PMB

NOT TO SCALE

SIGNATURE/BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
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PARSONS
330 Roberts Street
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: INDEX MAP

DRAWING NO. PMT-02
SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_02.dgn
PLOTTED DATE: 7/9/2024

WETLANDS IMPACT TABLE

	TEMPORARY		PERMANENT		TOTAL	
IMPACT AREA #	AREA (SF)	AREA (Ac.)	AREA (SF)	AREA (Ac.)	AREA (SF)	AREA (Ac.)
1	700	0.016	0	0	700	0.016
2	720	0.017	0	0	720	0.017
3	475	0.011	0	0	475	0.011
3A	345	0.008	170	0.004	515	0.012
4	180	0.004	255	0.006	435	0.010
5	680	0.016	740	0.017	1420	0.033
5A	135	0.003	0	0	135	0.003
6	210	0.005	0	0	210	0.005
7	75	0.002	80	0.002	155	0.004
8	195	0.004	25	0.001	220	0.005
9	4100	0.094	1820	0.042	5920	0.136
10	100	0.002	80	0.002	180	0.004
11	470	0.011	0	0	470	0.011
12	375	0.009	465	0.011	840	0.019
13	390	0.009	65	0.001	455	0.010
14	3085	0.071	2345	0.054	5430	0.125
15	2685	0.062	22345	0.513	25030	0.575
16	195	0.004	0	0	195	0.004
17	25	0.001	10	0.0002	35	0.001
17A	120	0.003	0	0	120	0.003
18	1320	0.030	870	0.020	2190	0.050
19	0	0	485	0.011	485	0.011
20	12655	0.291	59275	1.361	71930	1.651
21	115	0.003	0	0	115	0.003
22	365	0.008	0	0	365	0.008
23	110	0.003	0	0	110	0.003
24	IMPACT ELIMINATED					
25	0	0	135	0.003	135	0.003
26	925914	0.021	210221	0.005	1135	0.026
27	35	0.001	0	0	35	0.001
28	100	0.002	0	0	100	0.002
29	90	0.002	0	0	90	0.002
30	85	0.002	40	0.001	125	0.003
31	0	0	660	0.015	660	0.015
32	100	0.002	55	0.001	155	0.004
33	3050	0.070	765	0.018	3815	0.088
34	315312	0.007	200203	0.005	515	0.012
35	250	0.006	0	0	250	0.006
36	175	0.004	0	0	175	0.004
37	255	0.006	35	0.001	290	0.007
38	70	0.002	280	0.006	350	0.008
39	IMPACT ELIMINATED					
40	190	0.004	0	0	190	0.004
41	165	0.004	70	0.002	235	0.005
42	IMPACT ELIMINATED					
44	IMPACT ELIMINATED					
47	95	0.002	120	0.003	215	0.005
48	195	0.004	0	0	195	0.004
50	95	0.002	0	0	95	0.002
53	90	0.002	35	0.001	125	0.003
54	125	0.003	140	0.003	265	0.006
55	915	0.021	585	0.013	1500	0.034
56	IMPACT ELIMINATED					
57	1385	0.032	455	0.010	1840	0.042
58	175	0.004	110	0.003	285	0.007
59	490	0.011	475	0.011	965	0.022
60	1805	0.041	410	0.009	2215	0.051
TOTAL	41000 40986	0.941	93810 93824	2.154	134810	3.095

WATERCOURSE IMPACT TABLE

	TEMPORARY		PERMANENT		TOTAL	
IMPACT AREA #	AREA (SF)	AREA (Ac.)	AREA (SF)	AREA (Ac.)	AREA (SF)	AREA (Ac.)
9	355	0.008	425	0.010	780	0.018
10	185	0.004	635	0.015	820	0.019
15	95	0.002	2115	0.049	2210	0.051
17	300	0.007	1340	0.031	1640	0.038
18	670	0.015	4945	0.114	5615	0.129
20	2230	0.051	9660	0.222	11890	0.273
22	80	0.002	0	0	80	0.002
23	580	0.013	0	0	580	0.013
25	5715	0.131	120	0.003	5835	0.134
26	210	0.005	7910	0.182	8120	0.186
27	585	0.013	6200	0.142	6785	0.156
28	130	0.003	0	0	130	0.003
34	515505	0.012	78007810	0.179	8315	0.191
43	IMPACT ELIMINATED					
45	195	0.004	0	0	195	0.004
46	IMPACT ELIMINATED					
49	1375	0.032	5900	0.135	7275	0.167
50	715	0.016	6335	0.145	7050	0.162
51	205	0.005	465	0.011	670	0.015
52	290	0.007	4795	0.110	5085	0.117
53	3165	0.073	2740	0.063	5905	0.136
55	500	0.011	4645	0.107	5145	0.118
57	200	0.005	4860	0.112	5060	0.116
59	390	0.009	2160	0.050	2550	0.059
60	290	0.007	1740	0.040	2030	0.047
TOTAL	18975 18965	0.436	74790 74800	1.717	93765	2.153

100-YEAR FLOODPLAIN AREA IMPACTS, CUT & FILL INFORMATION

VOLUME IMPACTS

IMPACT AREA #	EXCAVATION IN FEMA FLOODPLAIN (CY)	FILL IN FEMA FLOODPLAIN (CY)	NET (CY)
A	0	0	0
B	6520	2608	-3912
C	230	232 233	2 3
D	4	4	0
E	304	323	19
F	2	4	2
G	2	3	1
H	5	3	-2
I	0	50	50
J	128	129 130	1 2
K	200	202 137	2 -63
L	96	99	3
M	39	45	6
N	62	63	1
O	4	5	1
P	0	1	1
TOTAL			-3825 -3888

TOTAL IMPACT

WETLAND IMPACTS		WATERCOURSE IMPACTS		100-YR FLOODPLAIN AREA IMPACTS (NET)
(SF)	(Ac.)	(SF)	(Ac.)	(CY)
134810	3.095	93765	2.153	-3825 -3888

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION
1	02/06/2025	REVISED IMPACT AREAS

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: INDEX TABLES

DRAWING NO. PMT-03
SHEET NO.

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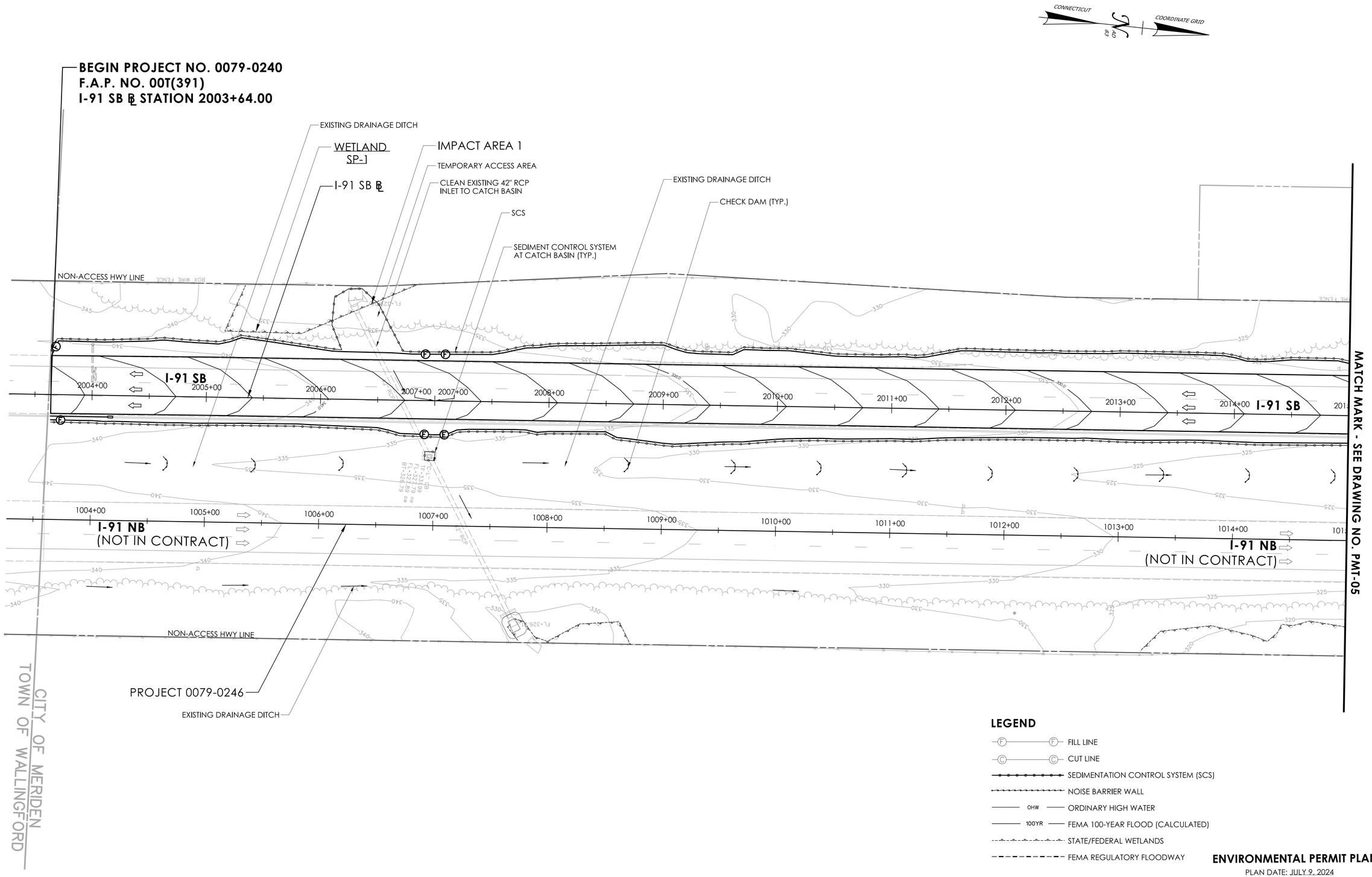

LEGEND

- FILL LINE
- CUT LINE
- SEDIMENTATION CONTROL SYSTEM (SCS)
- NOISE BARRIER WALL
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-04
SHEET NO.

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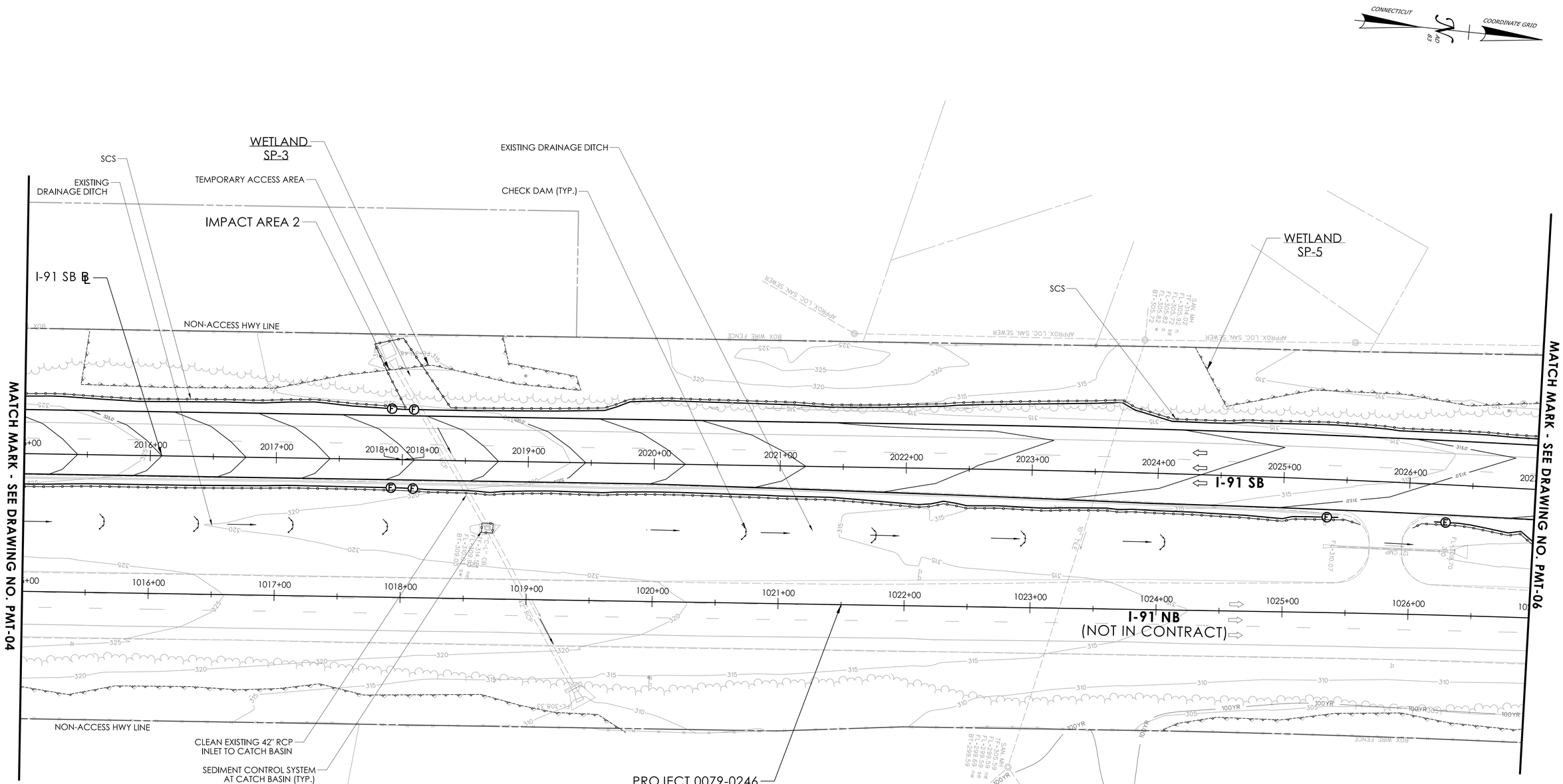

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
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SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
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TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

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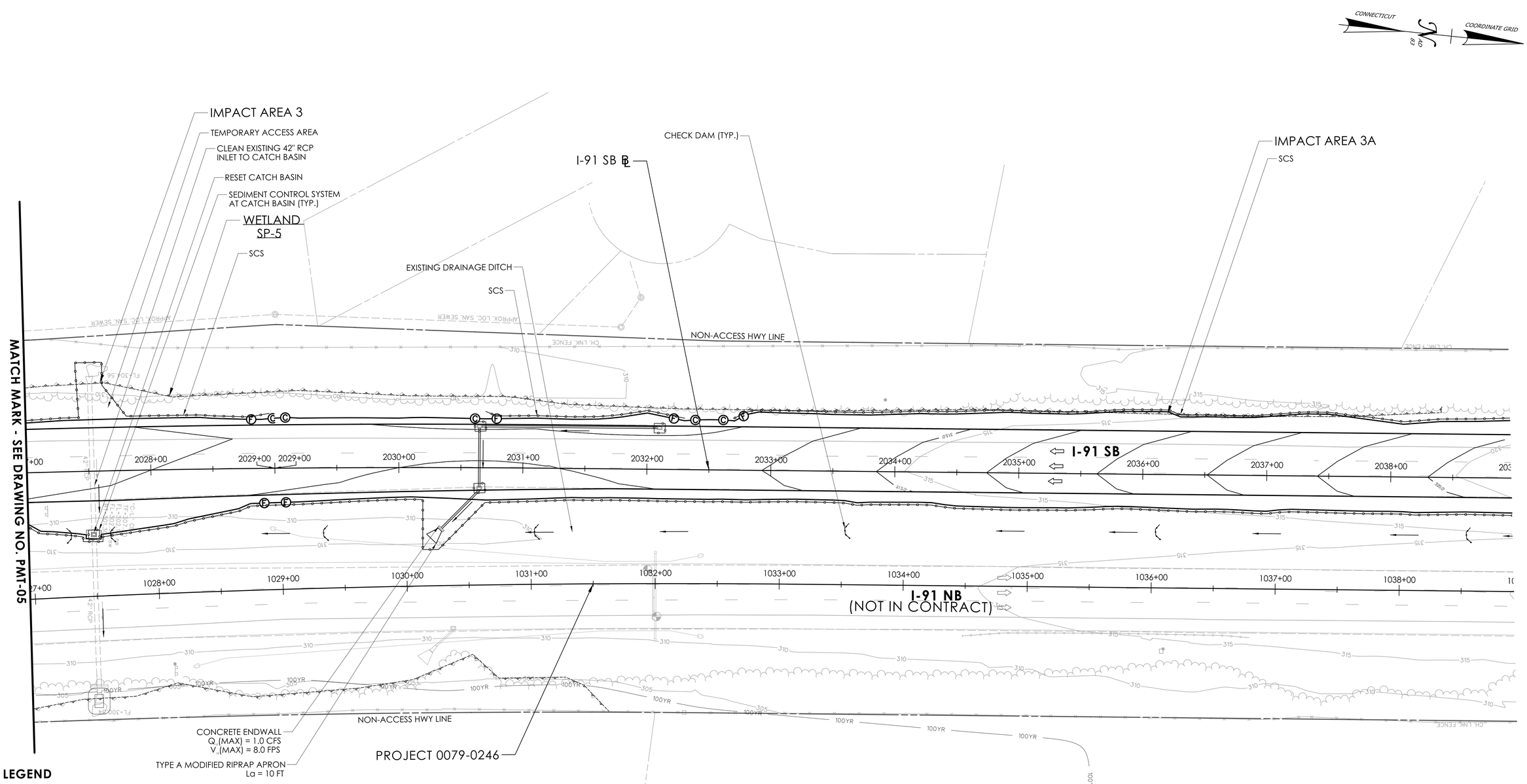

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

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STATE OF CONNECTICUT
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PROJECT NUMBER: 0079-0240
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TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-06
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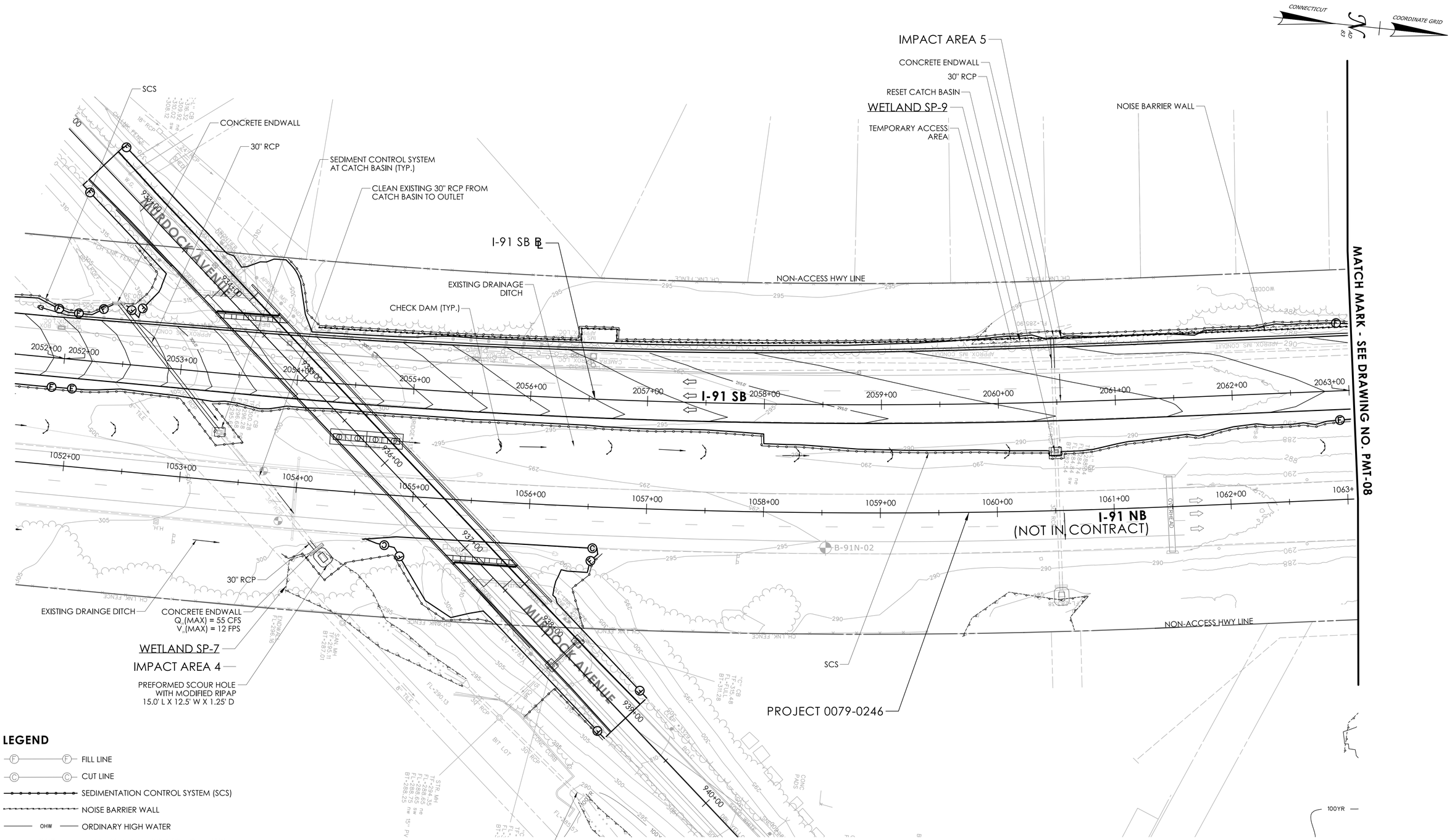

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

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GM2 ASSOCIATES, INC.
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GLASTONBURY, CT 06033

STATE OF CONNECTICUT
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PROJECT NUMBER: 0079-0240
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TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-07
SHEET NO.

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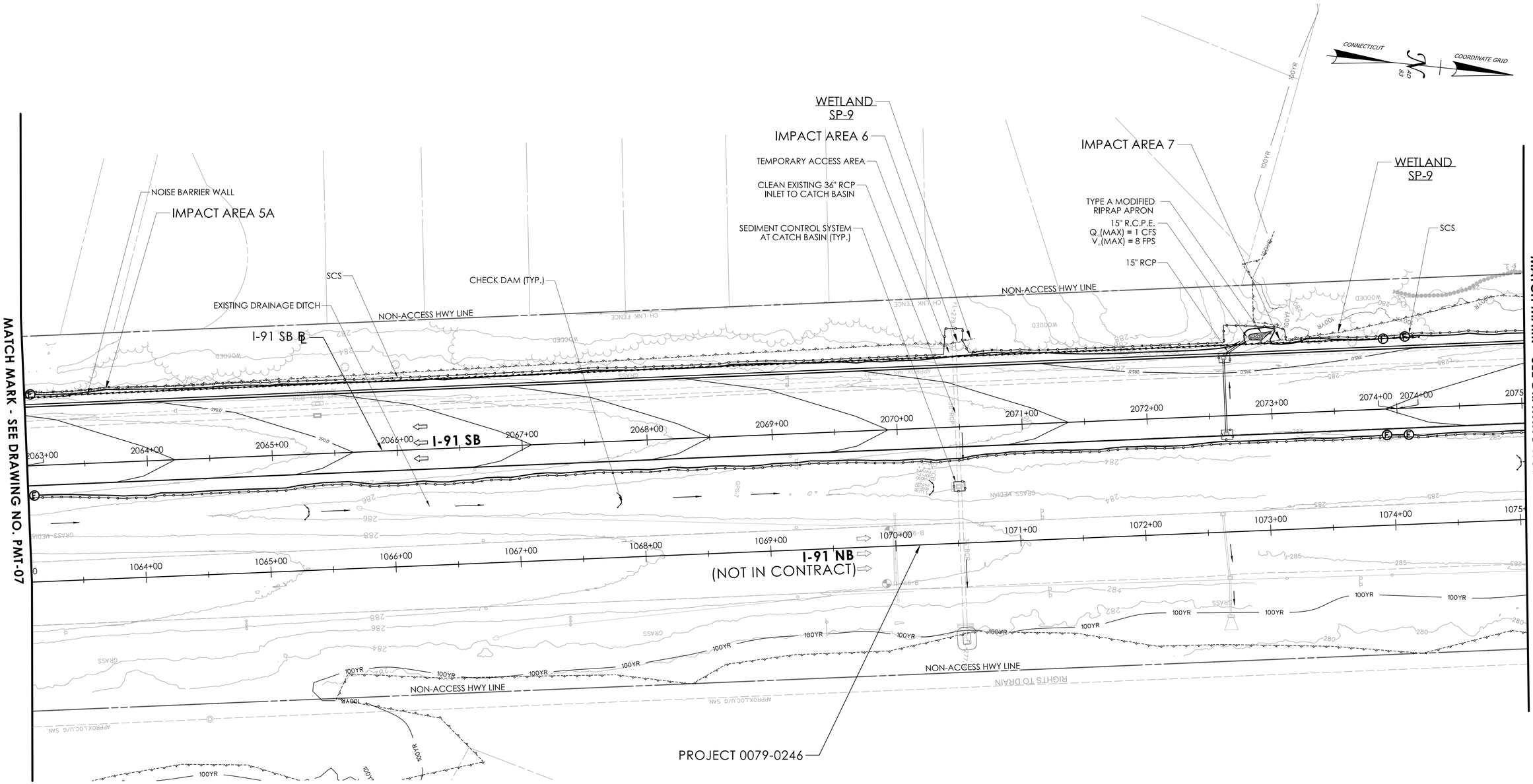

LEGEND

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

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PROJECT NUMBER: 0079-0240
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TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-08
SHEET NO.

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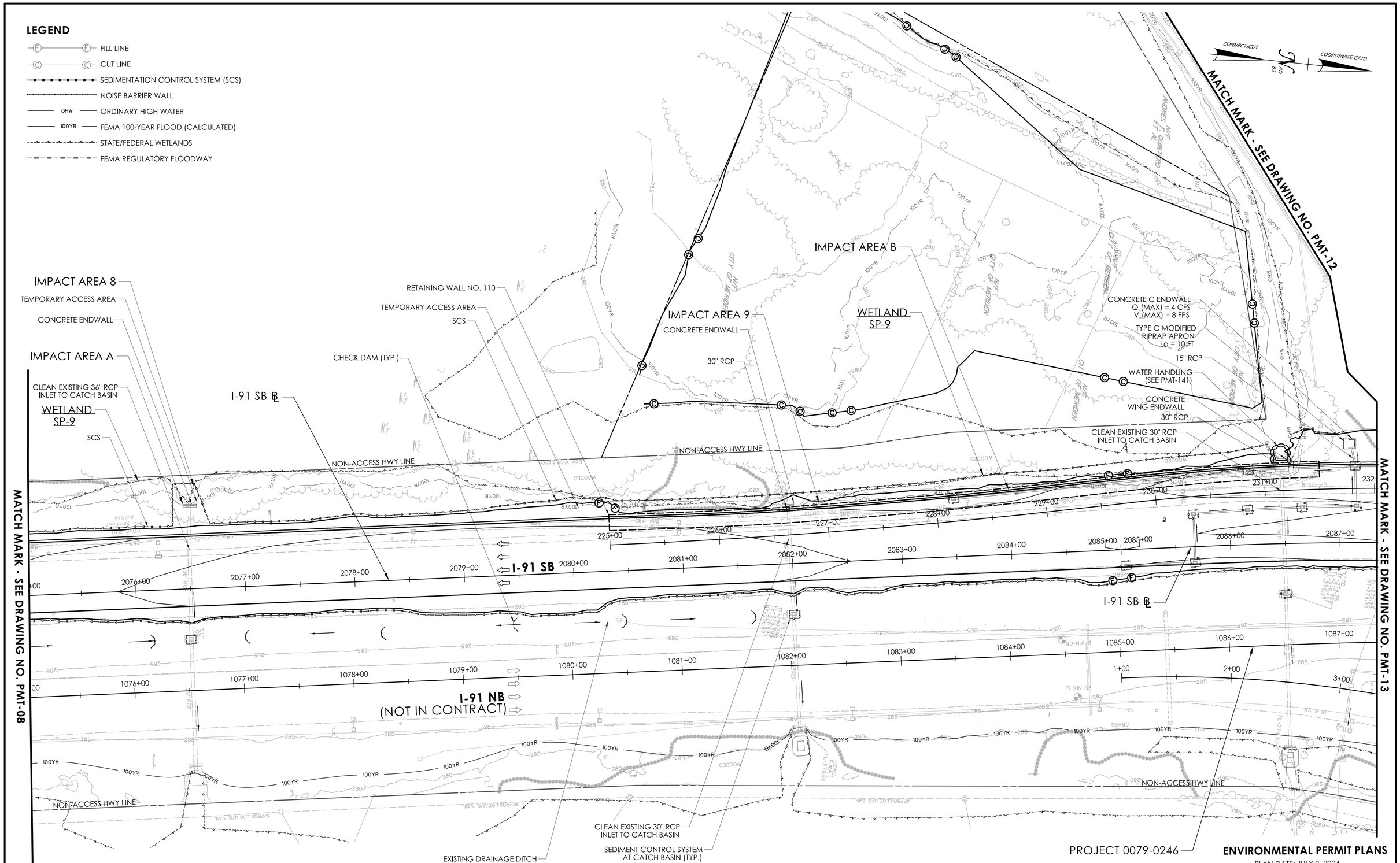

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STATE OF CONNECTICUT
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TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-09
SHEET NO.

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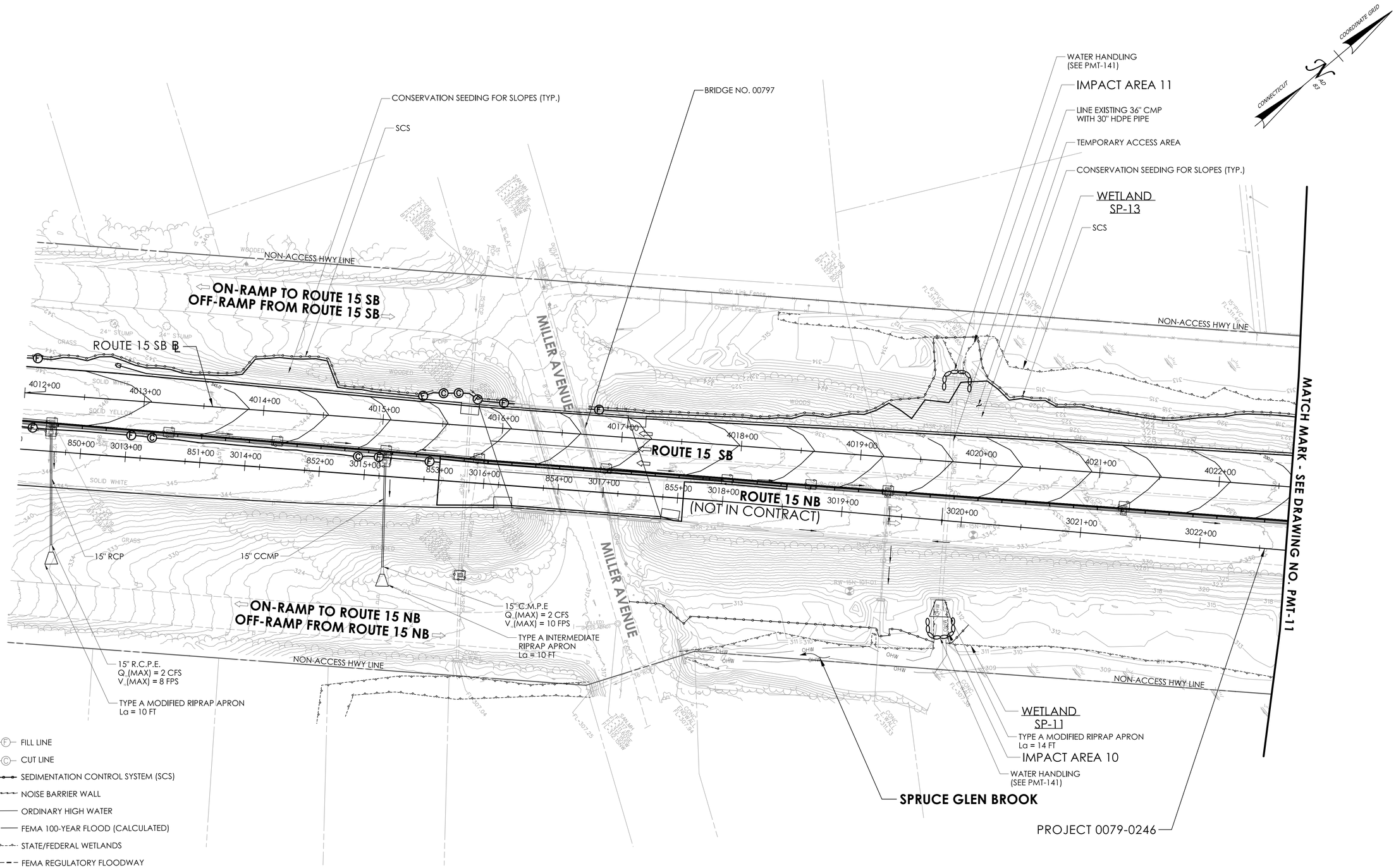
PLOTTED DATE: 7/9/2024



LEGEND

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

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STATE OF CONNECTICUT
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PROJECT NUMBER: 0079-0240
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TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-10
SHEET NO.

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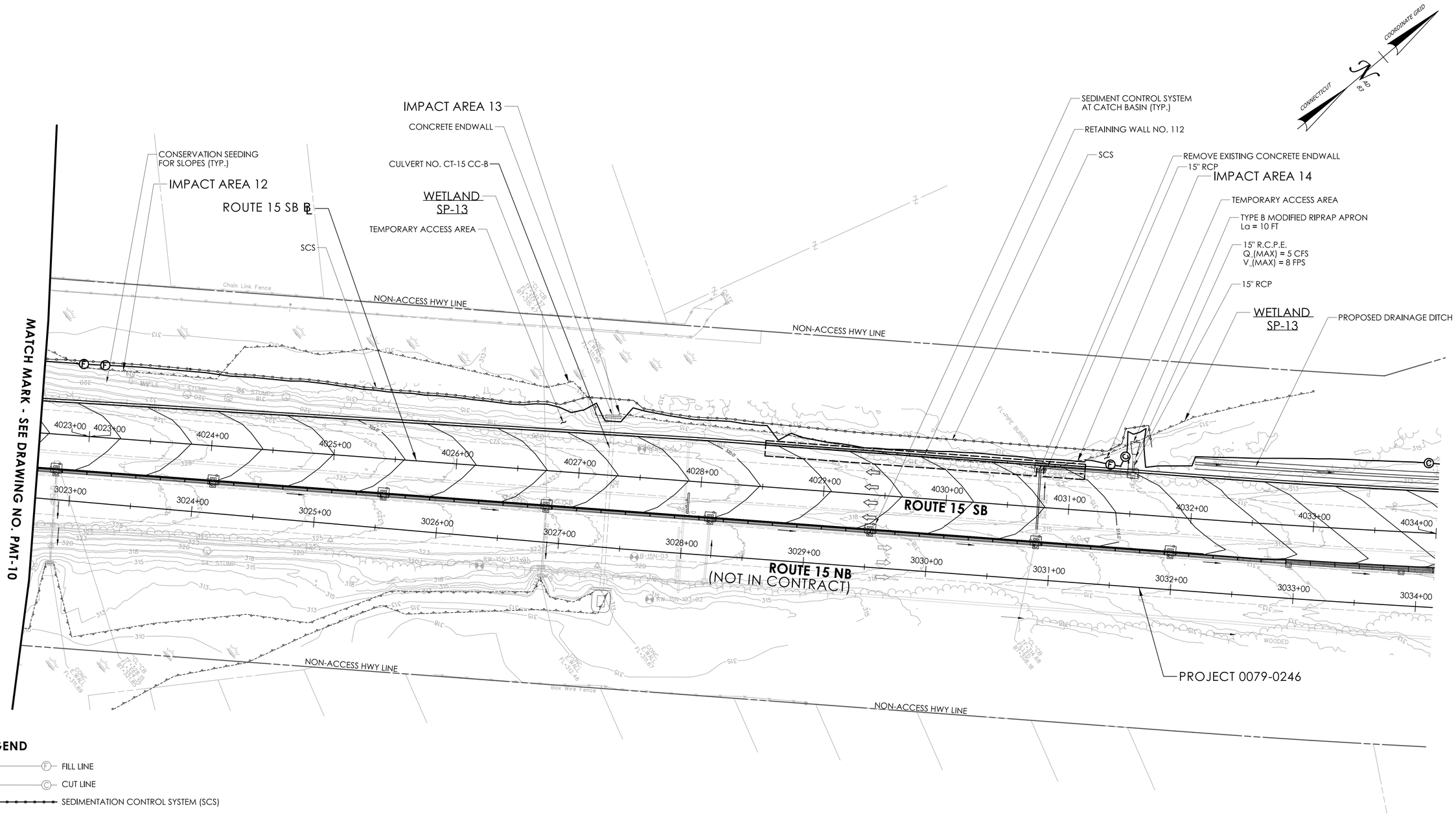

LEGEND

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

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GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-11
SHEET NO.

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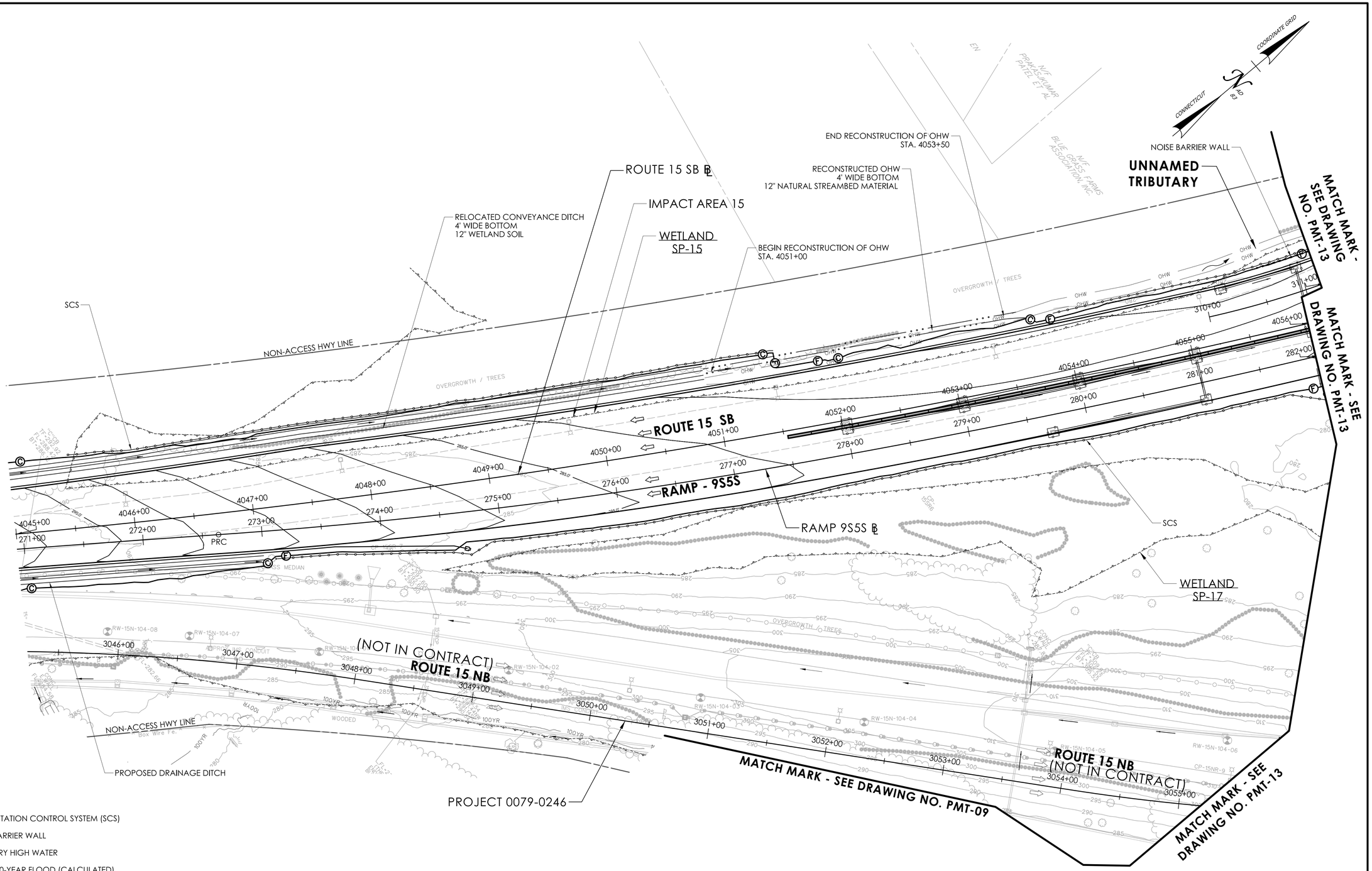
PLOTTED DATE: 7/9/2024



LEGEND

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
1"=40'

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GM2 ASSOCIATES, INC.
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GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-12
SHEET NO.

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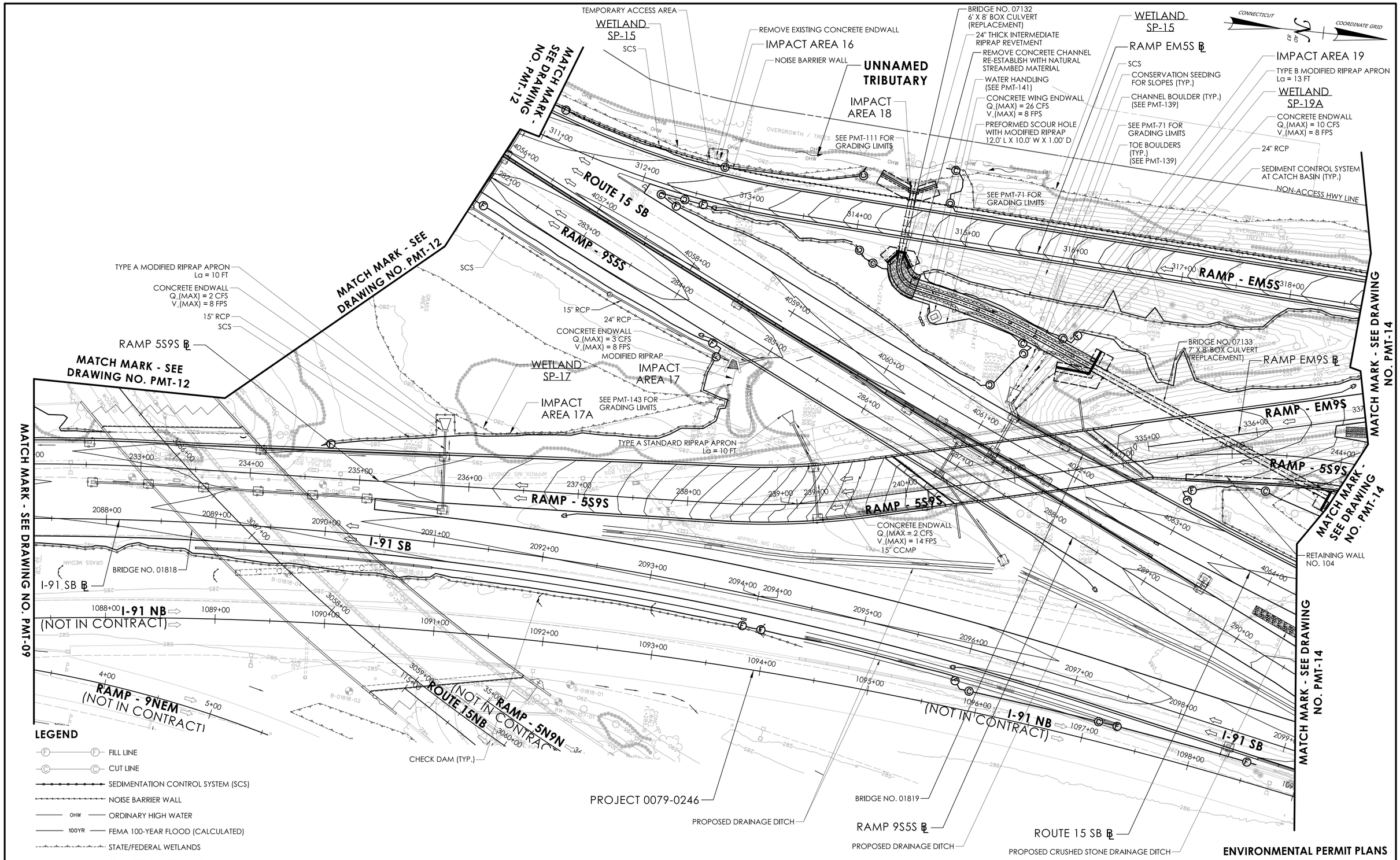

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

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HORIZONTAL SCALE 1"=40'

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STATE OF CONNECTICUT
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PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-13
SHEET NO.

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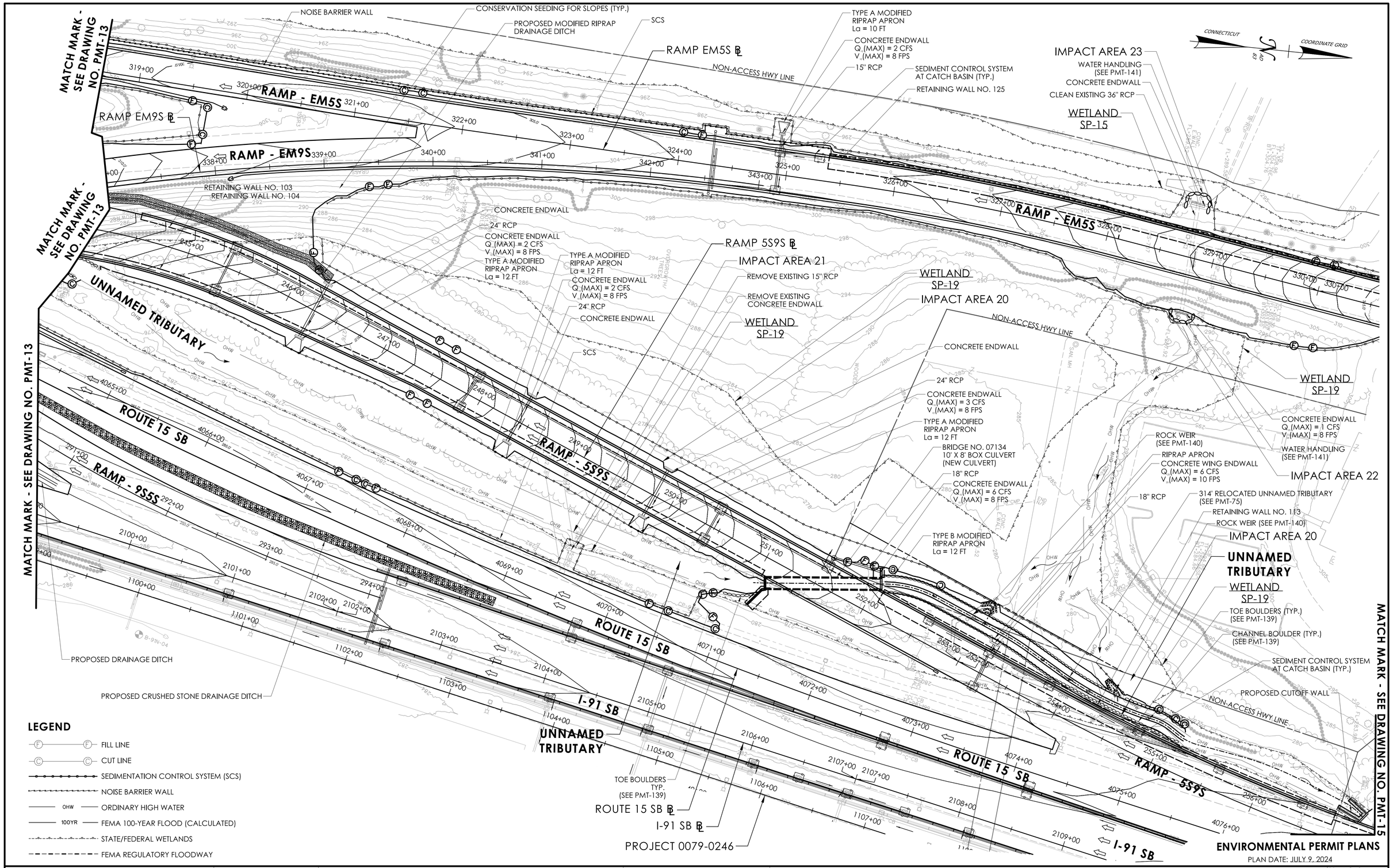

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
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TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-14
SHEET NO.

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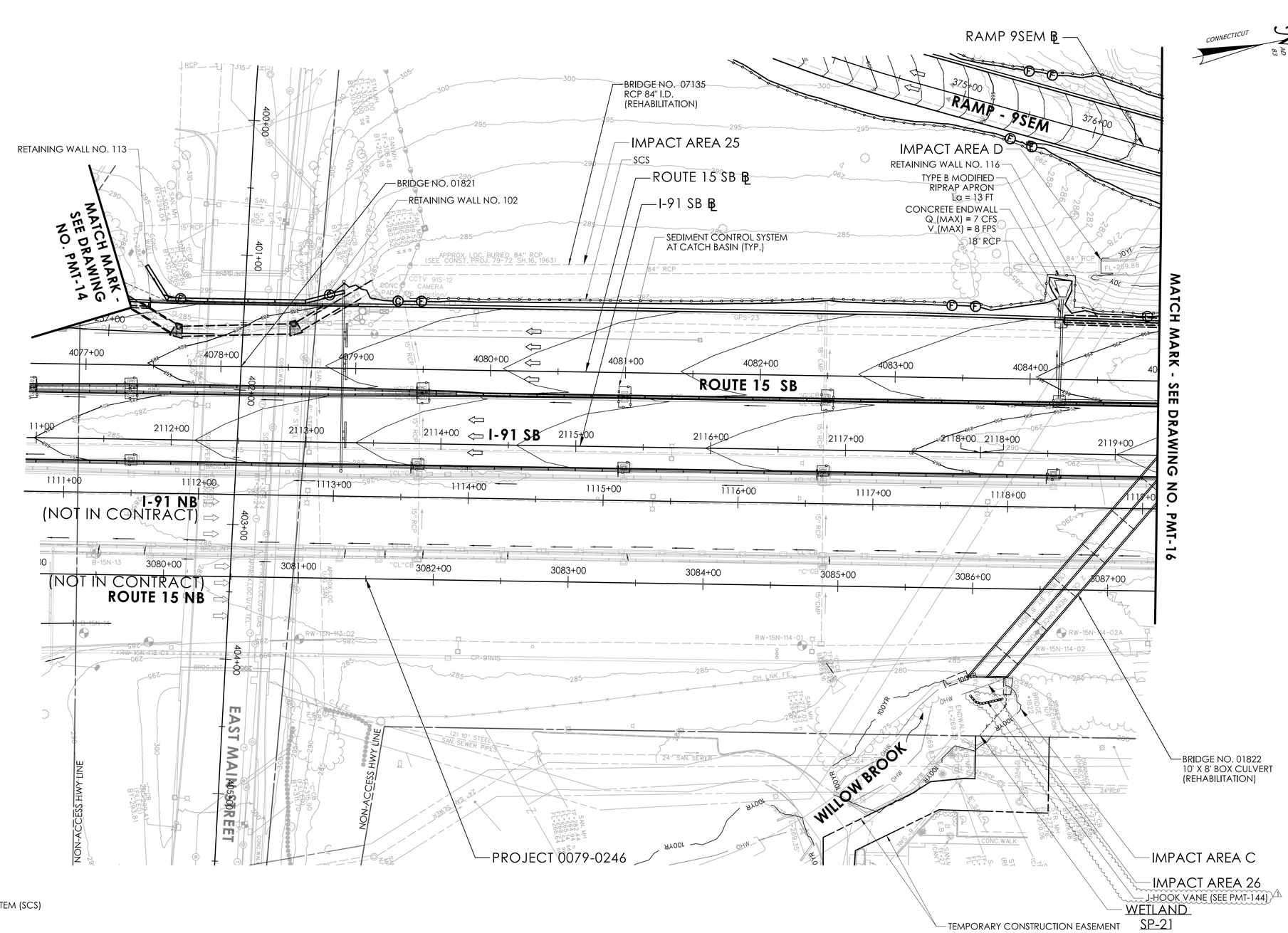
PLOTTED DATE: 7/25/2024



LEGEND

- FILL LINE
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- FEMA REGULATORY FLOODWAY

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	J-HOOK VANE ADDED

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
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PROJECT NUMBER: 0079-0240
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TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-15
SHEET NO.

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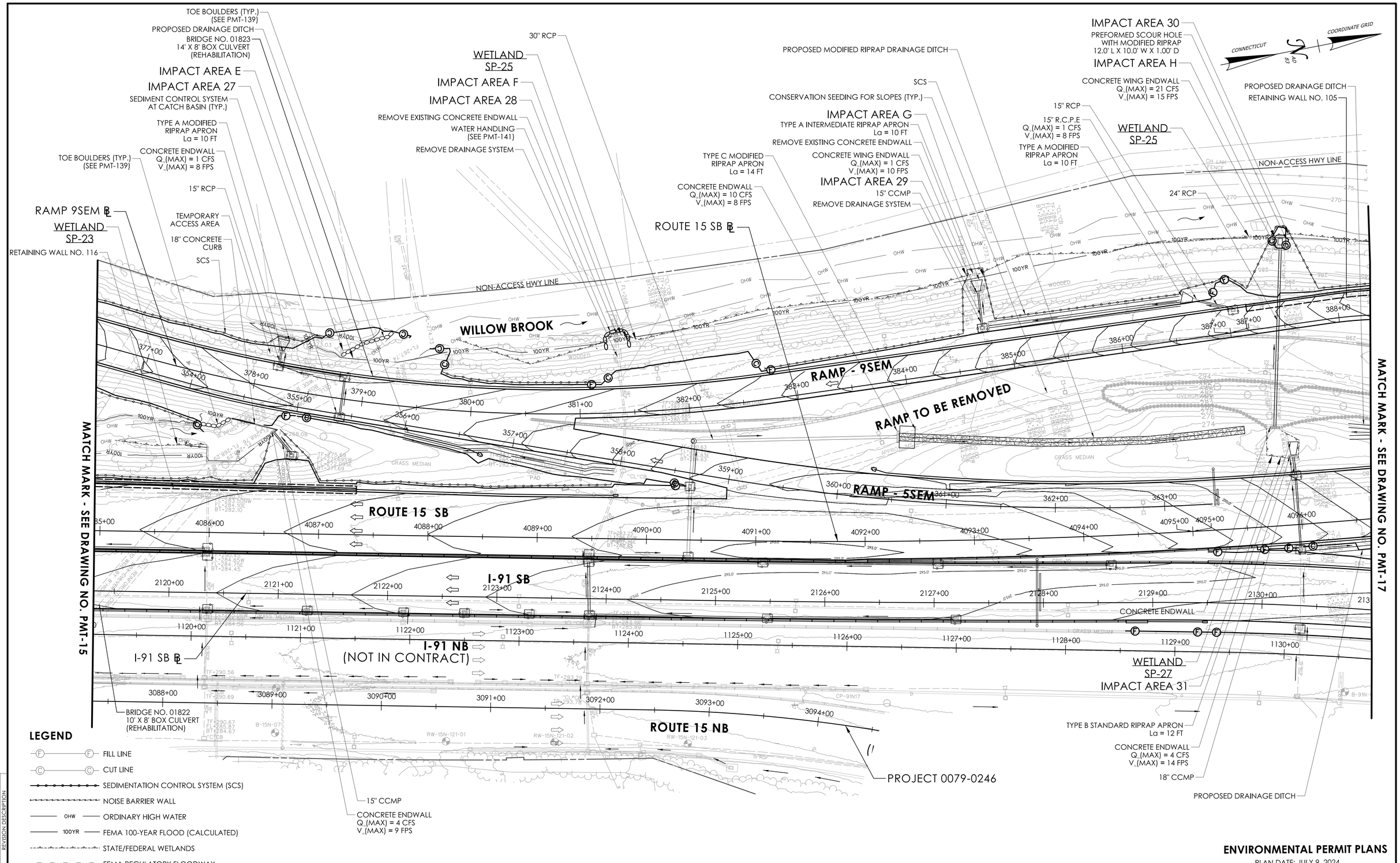

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

HORIZONTAL SCALE 1"=40' (0, 40', 80')

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-16
SHEET NO.

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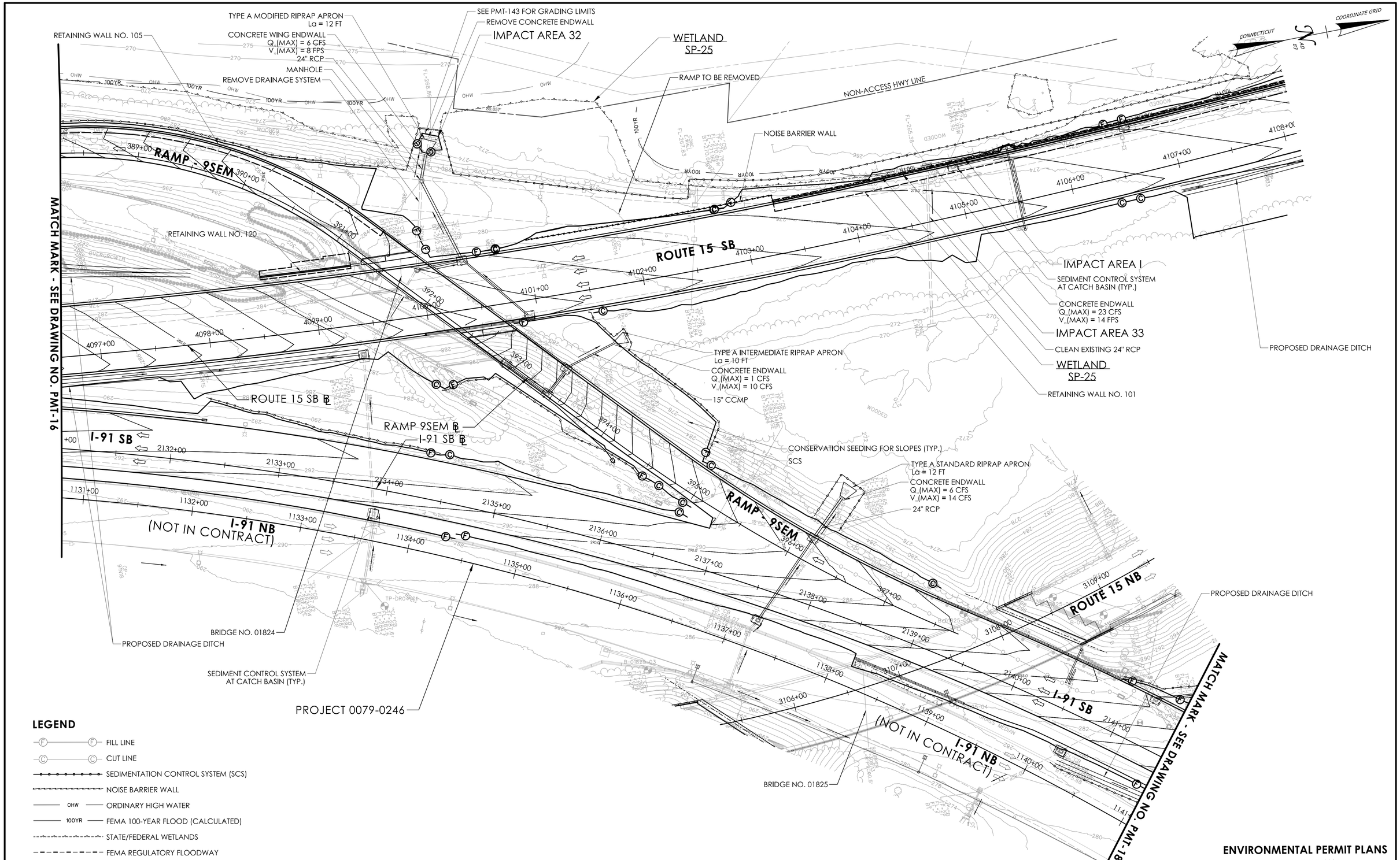
PLOTTED DATE: 7/9/2024



LEGEND

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- NOISE BARRIER WALL
- OHW — ORDINARY HIGH WATER
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- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-17
SHEET NO.

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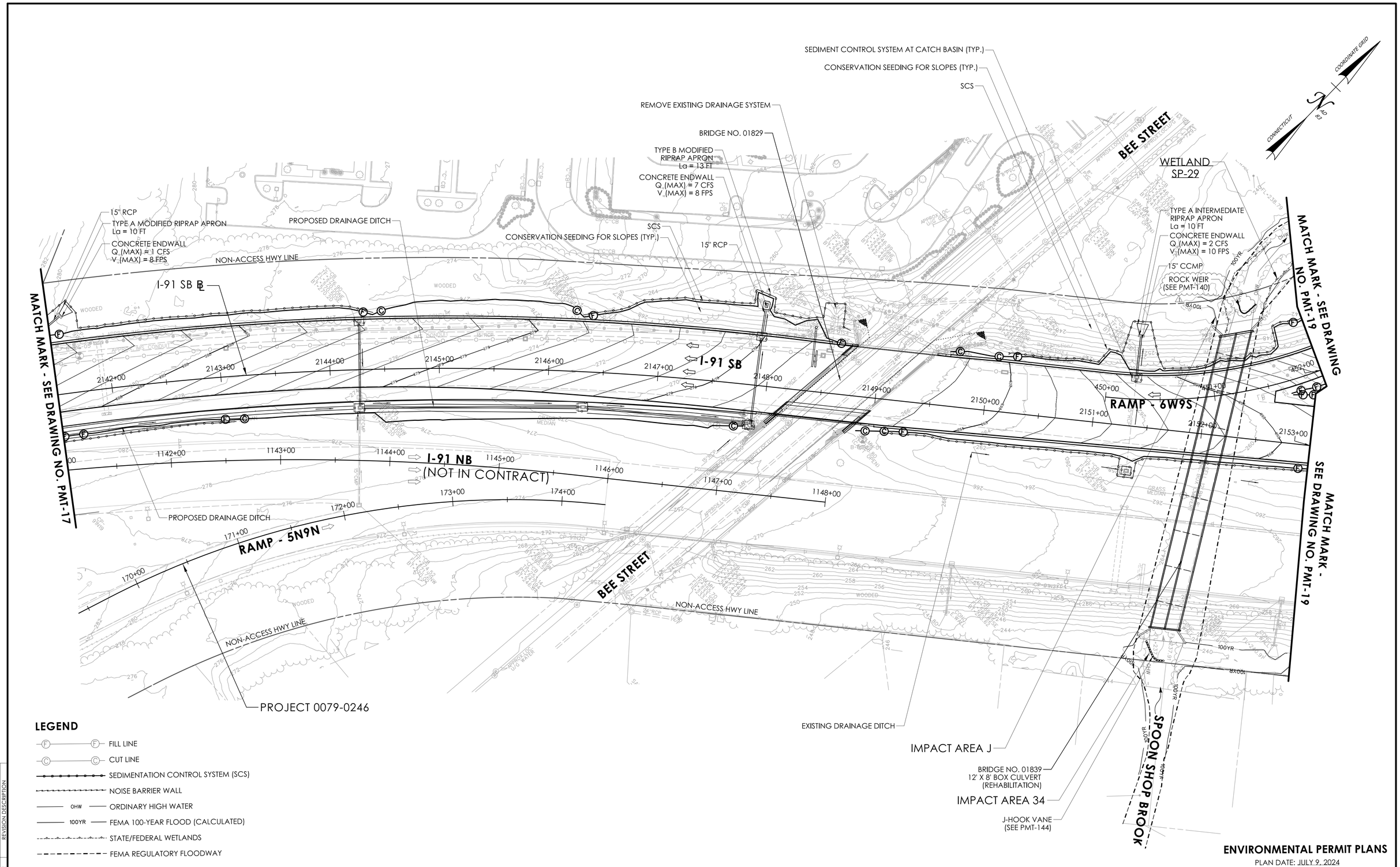
PLOTTED DATE: 7/9/2024



LEGEND

- FILL LINE
- CUT LINE
- SEDIMENTATION CONTROL SYSTEM (SCS)
- NOISE BARRIER WALL
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	ROCK WEIR ADDED

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-18
SHEET NO.

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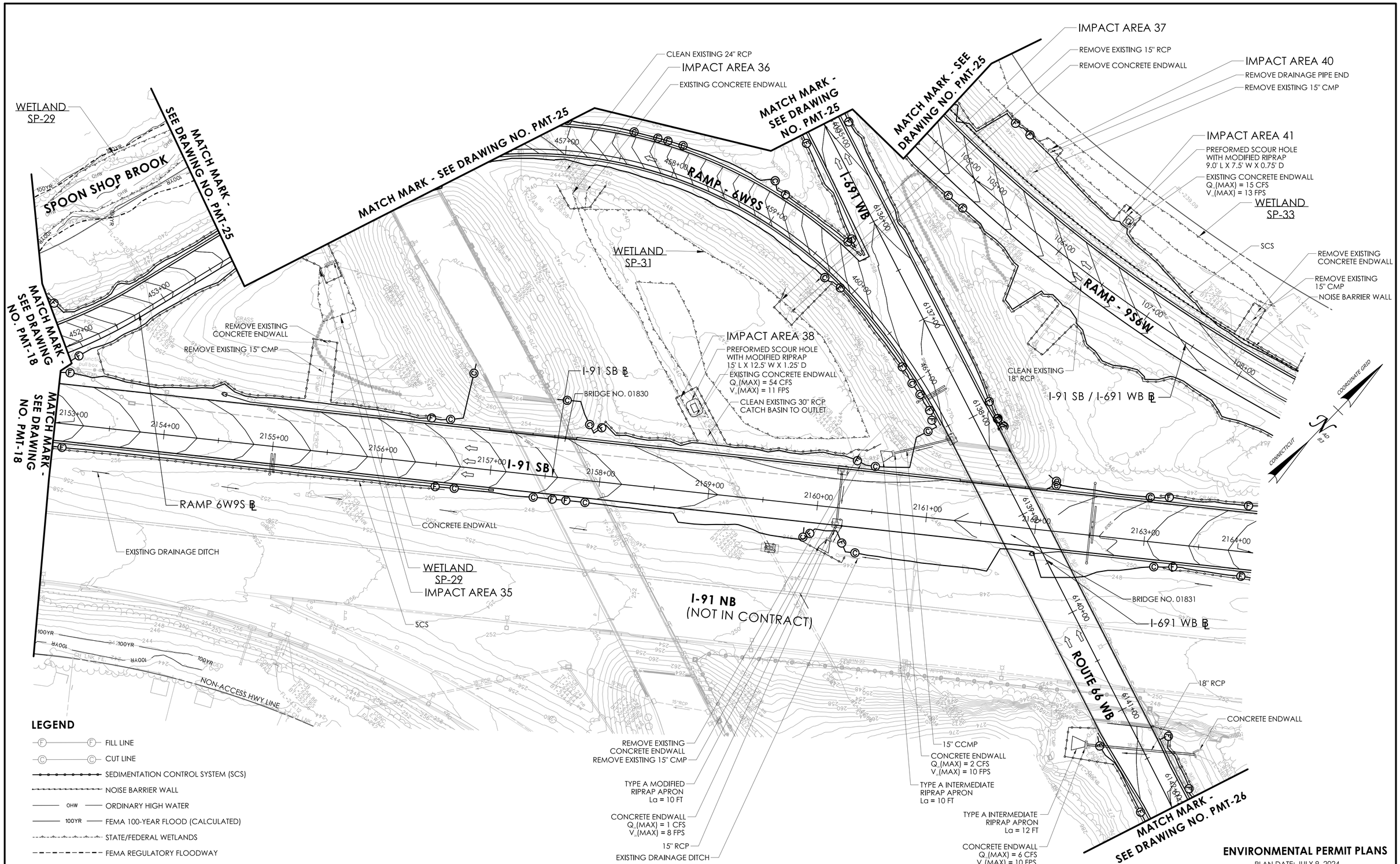

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-19
SHEET NO.

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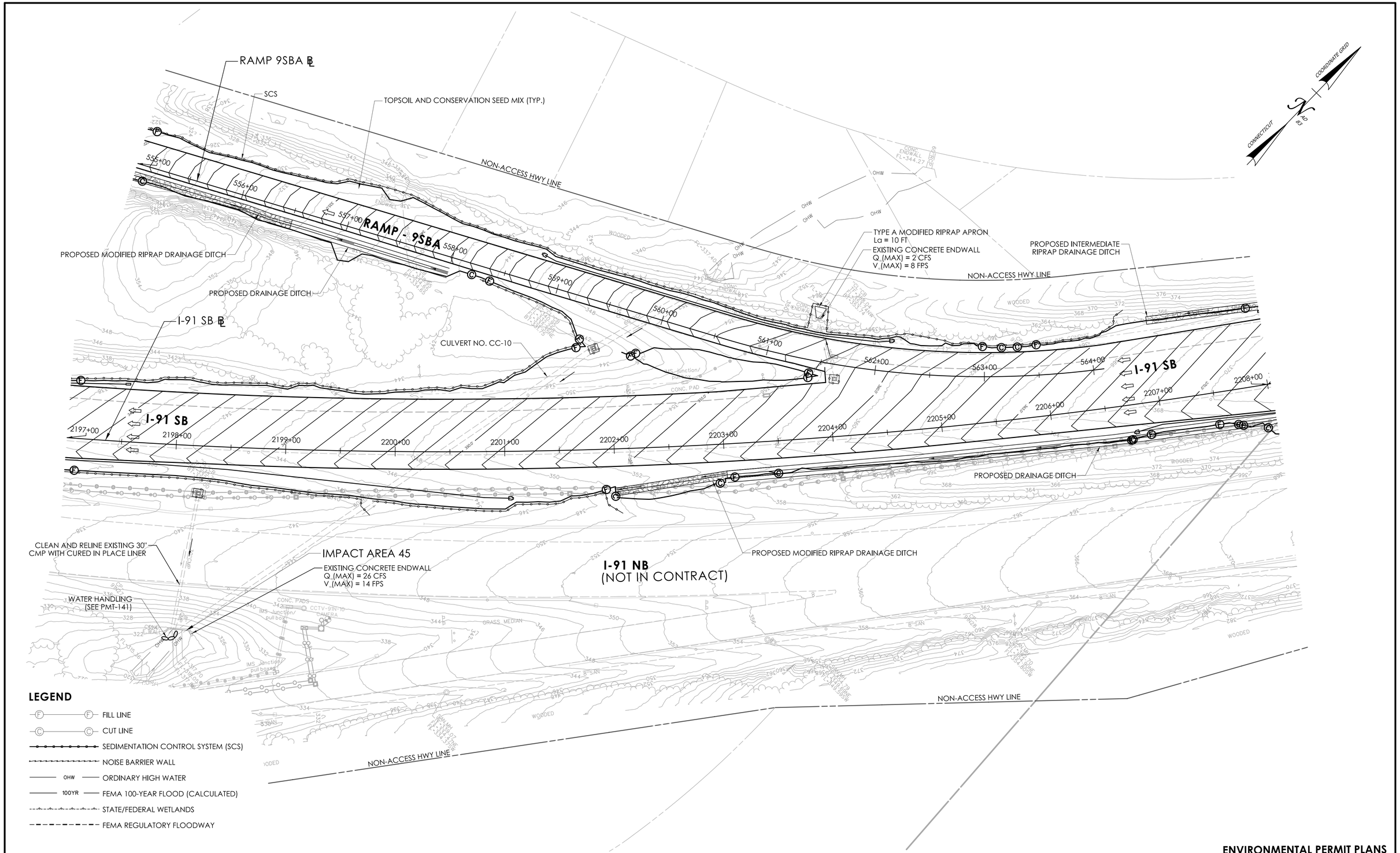
PLOTTED DATE: 7/9/2024



ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
1"=40'

SIGNATURE/ BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-20
SHEET NO.

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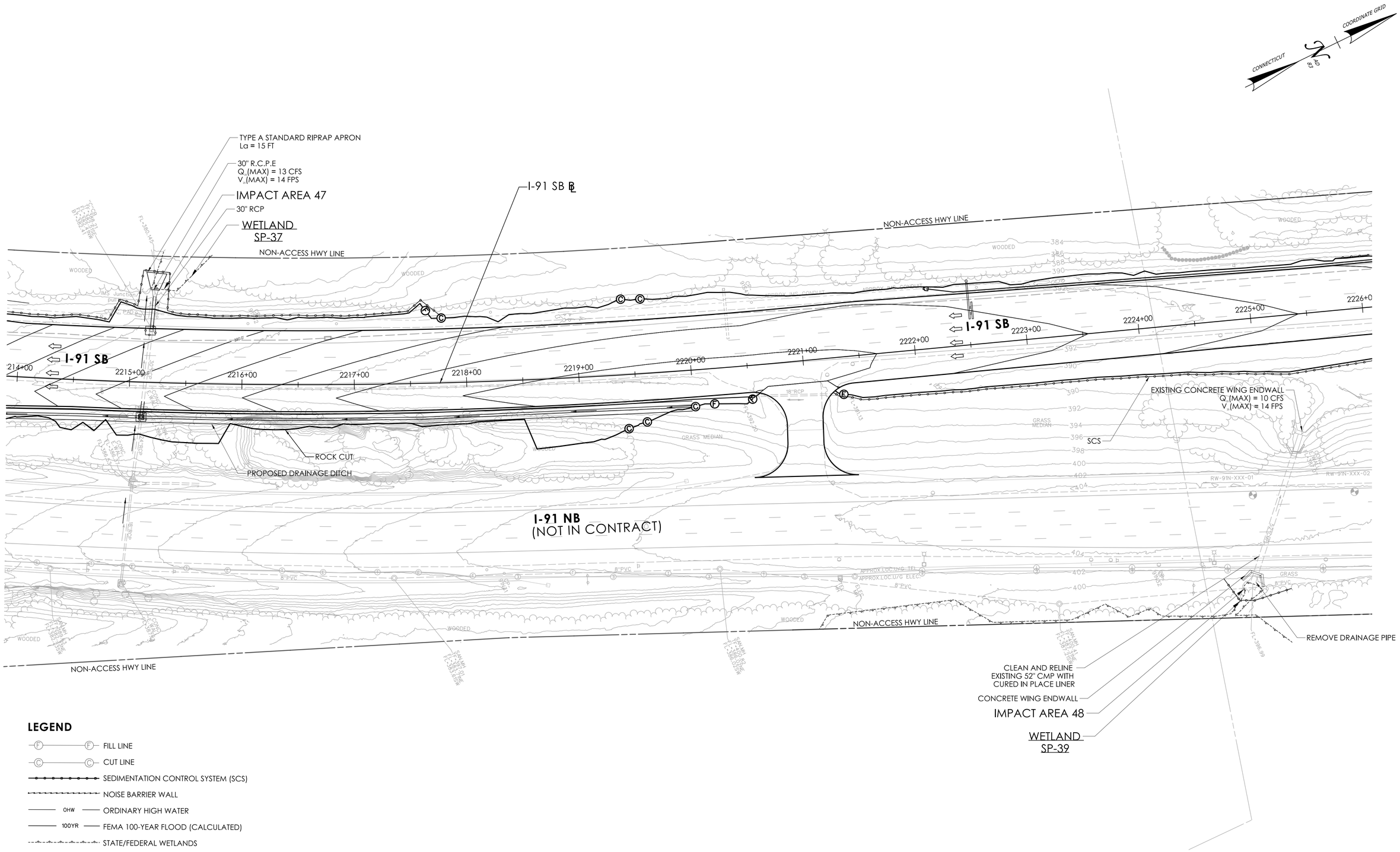
PLOTTED DATE: 7/9/2024



LEGEND

- FILL LINE
- CUT LINE
- SEDIMENTATION CONTROL SYSTEM (SCS)
- NOISE BARRIER WALL
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

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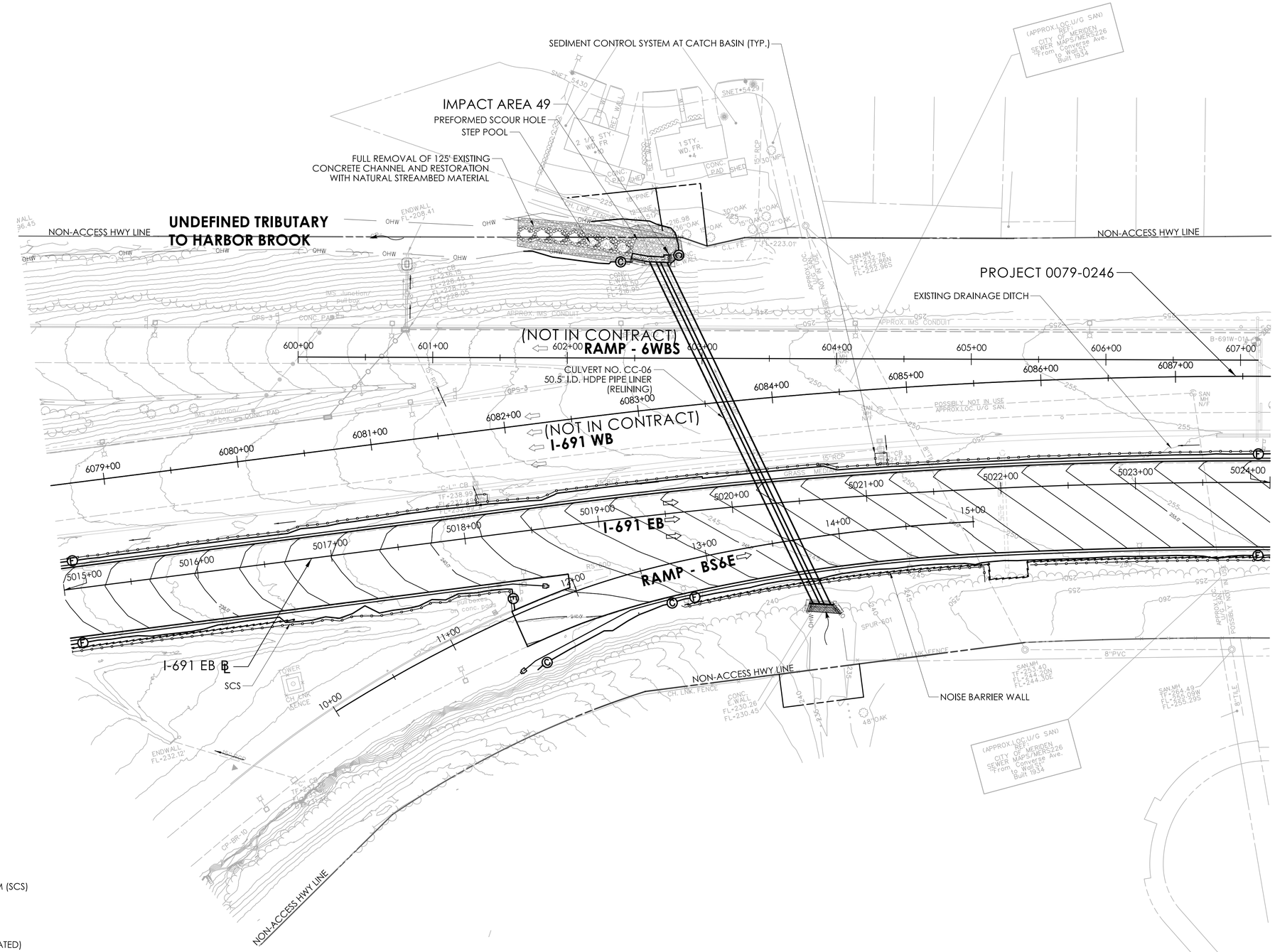
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-21
SHEET NO.

LASTED SAVED BY: NBibeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_21.dgn
PLOTTED DATE: 7/16/2024



LEGEND

- FILL LINE
- CUT LINE
- SEDIMENTATION CONTROL SYSTEM (SCS)
- NOISE BARRIER WALL
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

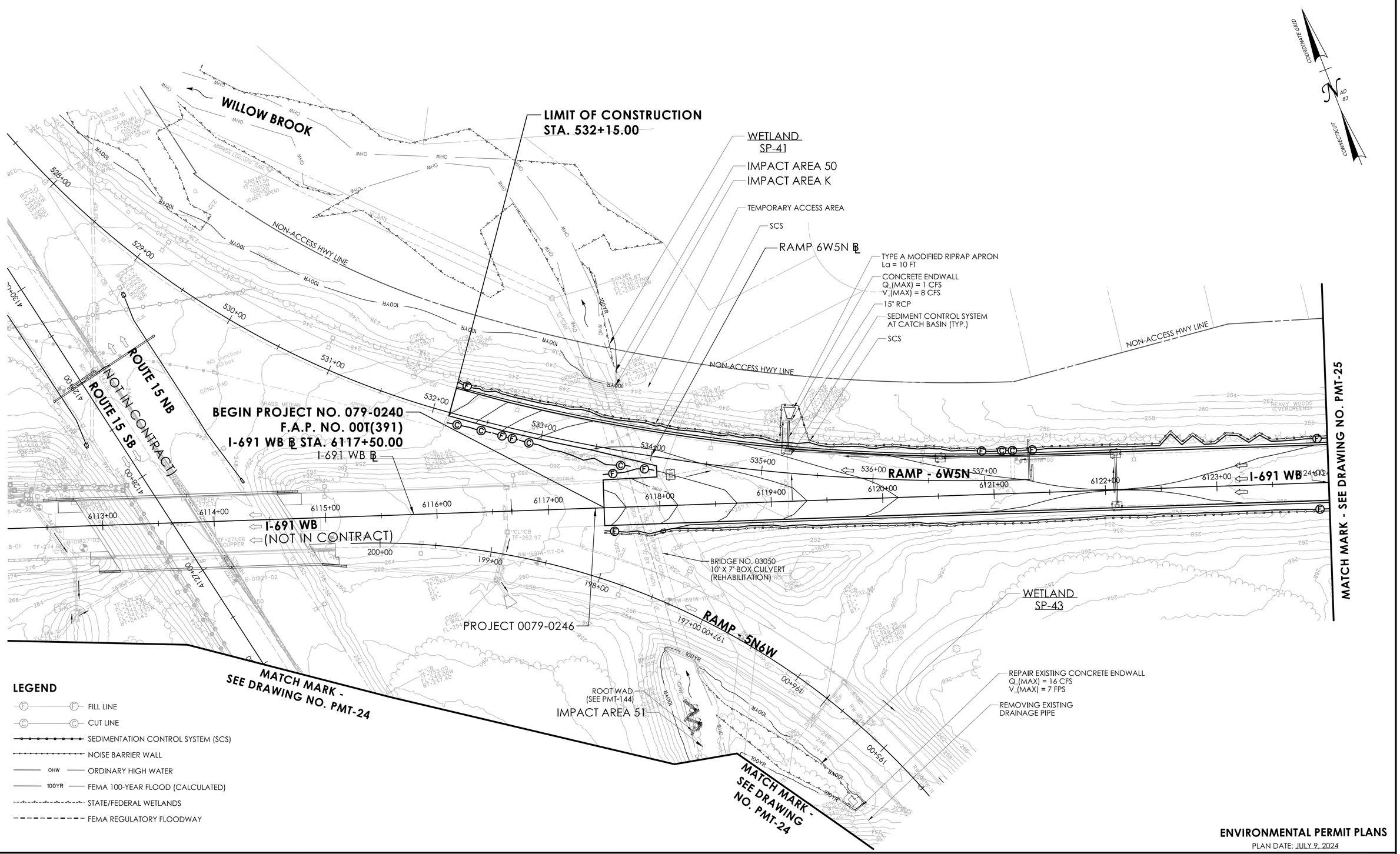
SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-22
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_22.dgn
PLOTTED DATE: 7/9/2024



LEGEND

- FILL LINE
- CUT LINE
- SEDIMENTATION CONTROL SYSTEM (SCS)
- NOISE BARRIER WALL
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
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SIGNATURE/BLOCK: GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-23
SHEET NO.

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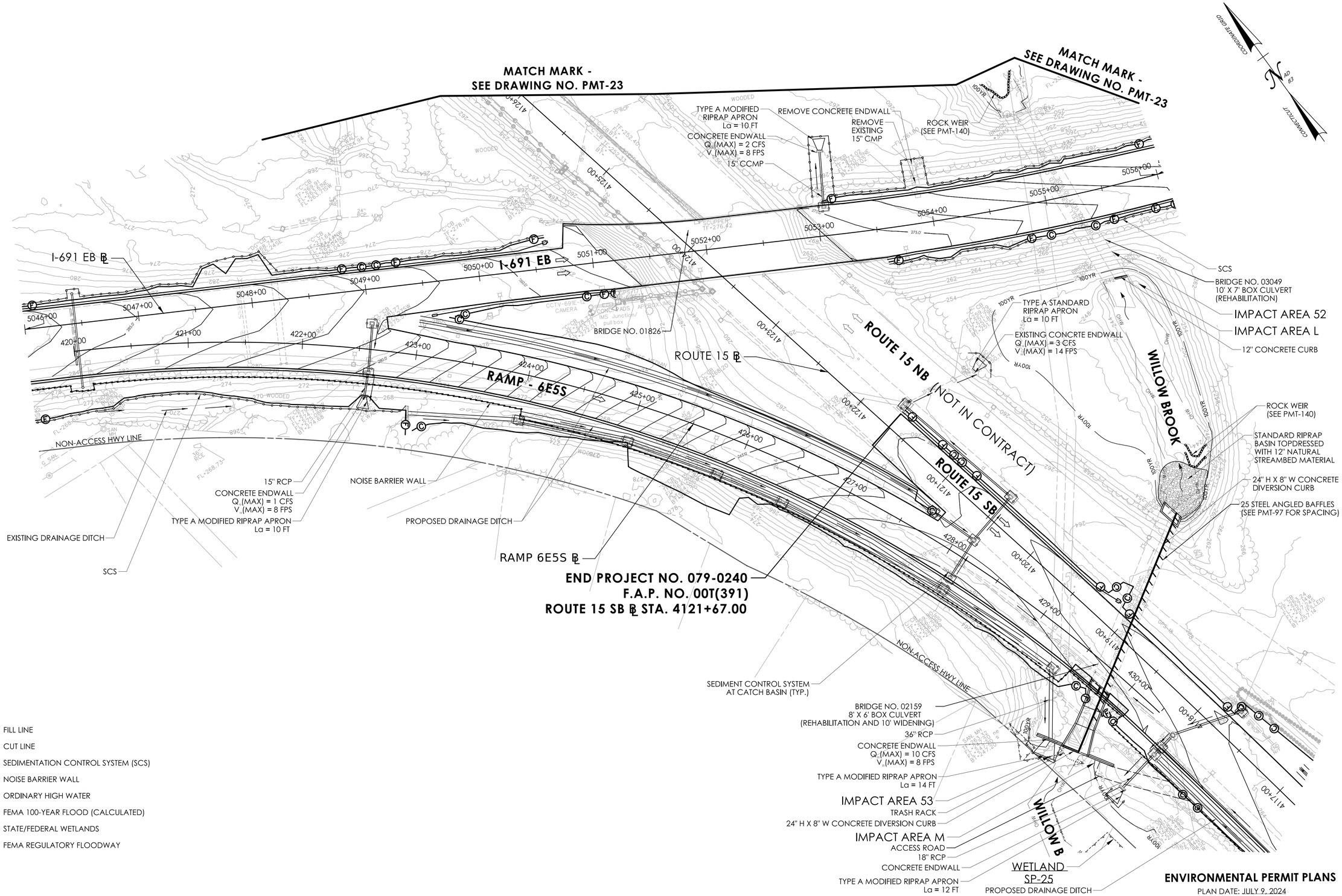
PLOTTED DATE: 7/9/2024



ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
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SIGNATURE/BLOCK:
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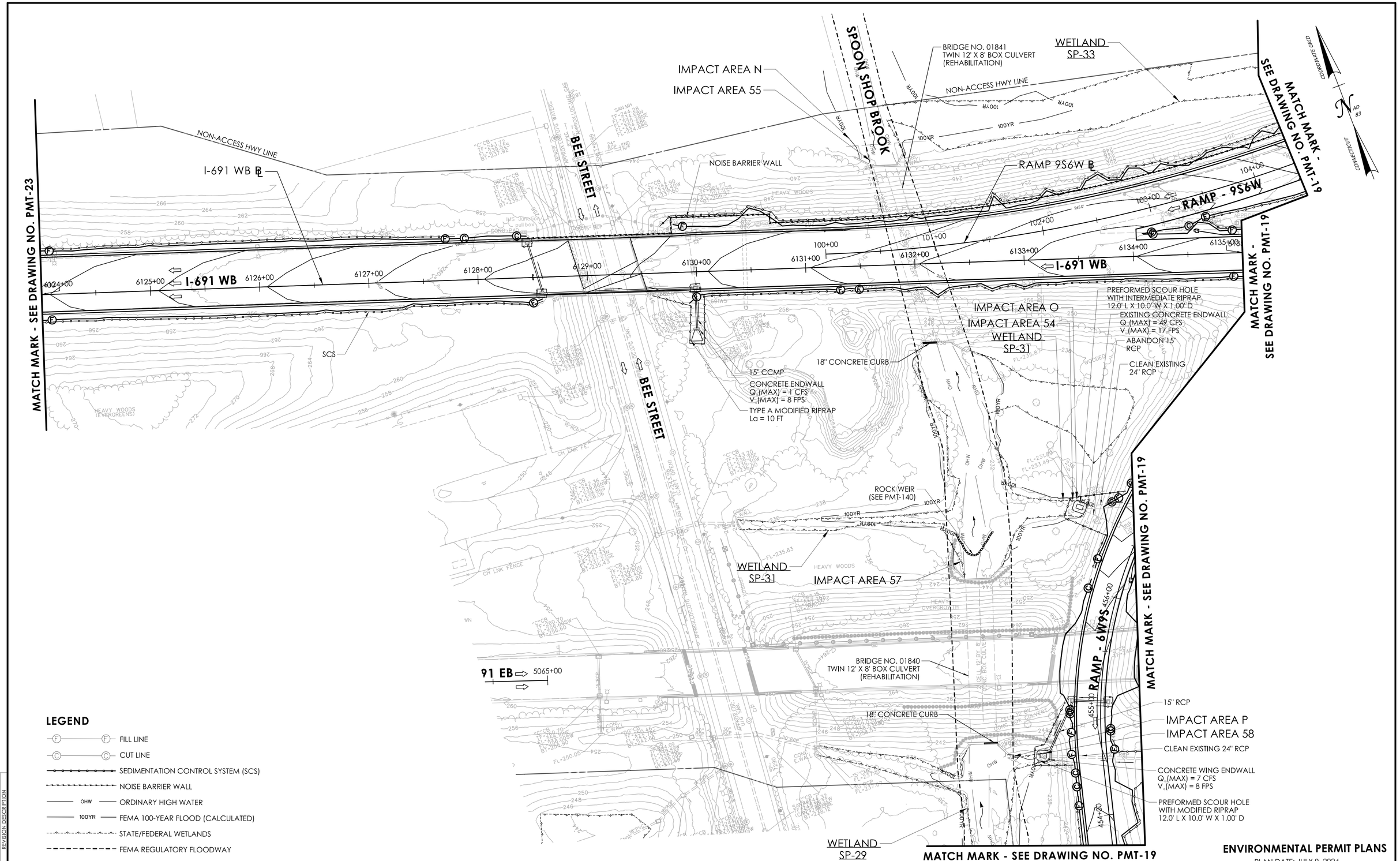
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-24
SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_24.dgn
PLOTTED DATE: 7/25/2024



LEGEND

- FILL LINE
- CUT LINE
- SEDIMENTATION CONTROL SYSTEM (SCS)
- NOISE BARRIER WALL
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
1"=40'

SIGNATURE/BLOCK:

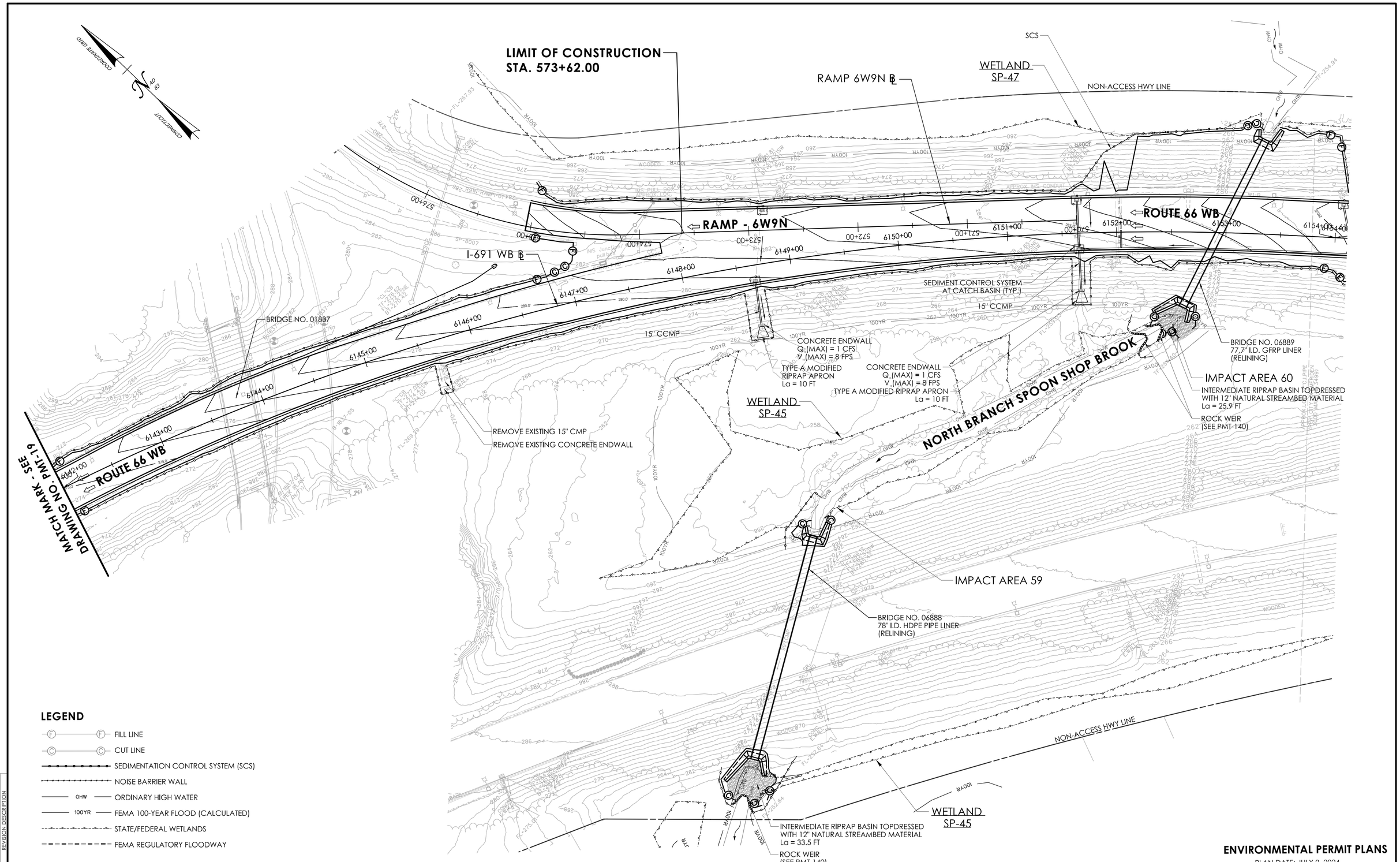
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-25
SHEET NO.

LASTED SAVED BY: Efchitas **FILE NAME:** c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_25.dgn
PLOTTED DATE: 7/9/2024



LEGEND

- FILL LINE
- CUT LINE
- SEDIMENTATION CONTROL SYSTEM (SCS)
- NOISE BARRIER WALL
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

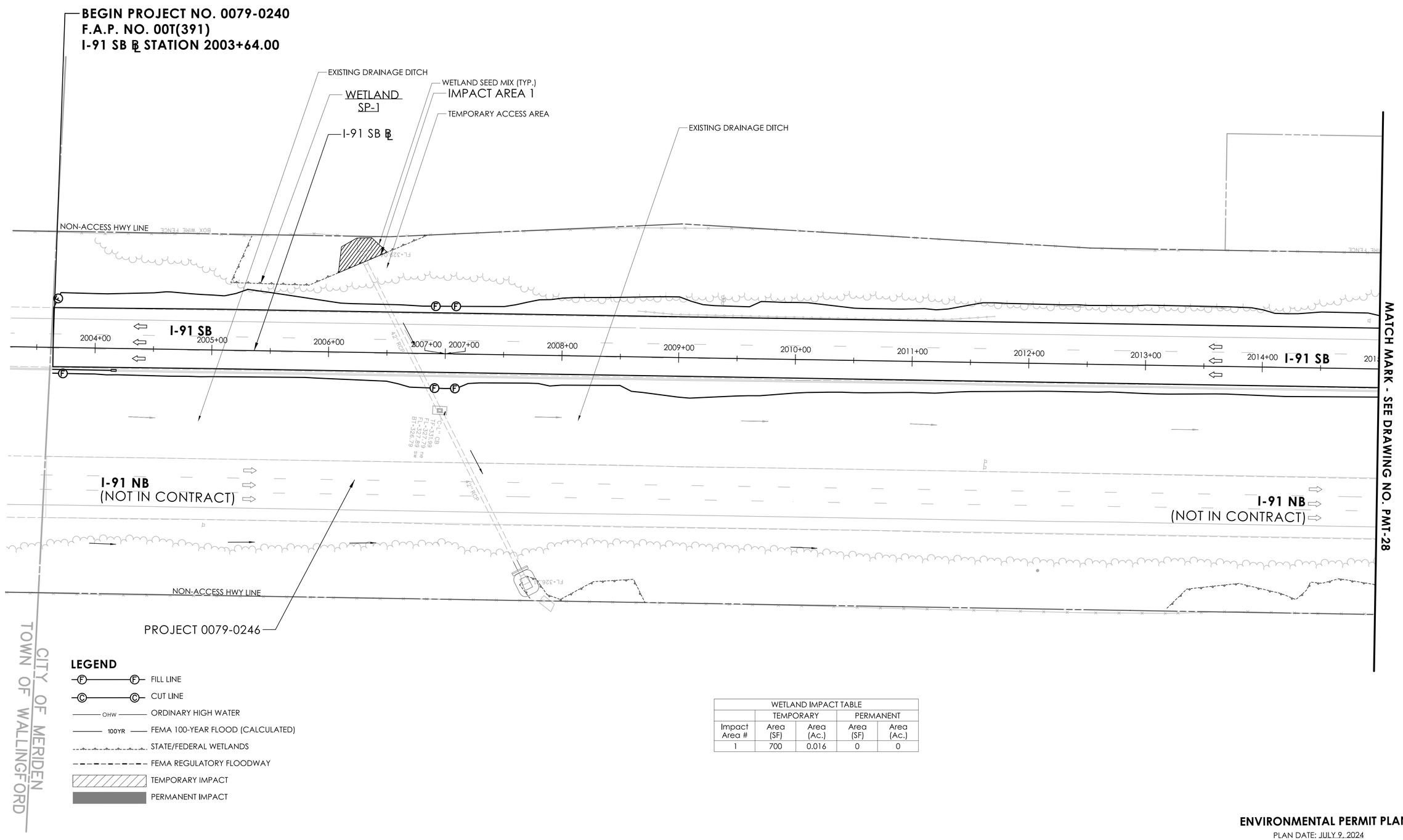
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-26
SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_26.dgn
PLOTTED DATE: 7/9/2024

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSES WITH THE EXCEPTION OF THOSE DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSES. ALL DISTURBED AREAS SHALL BE RESTORED.



LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
1	700	0.016	0	0

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
1"=40'

SIGNATURE/
BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO.
PMT-27
SHEET NO.

LASTED SAVED BY: Efchitas **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_03.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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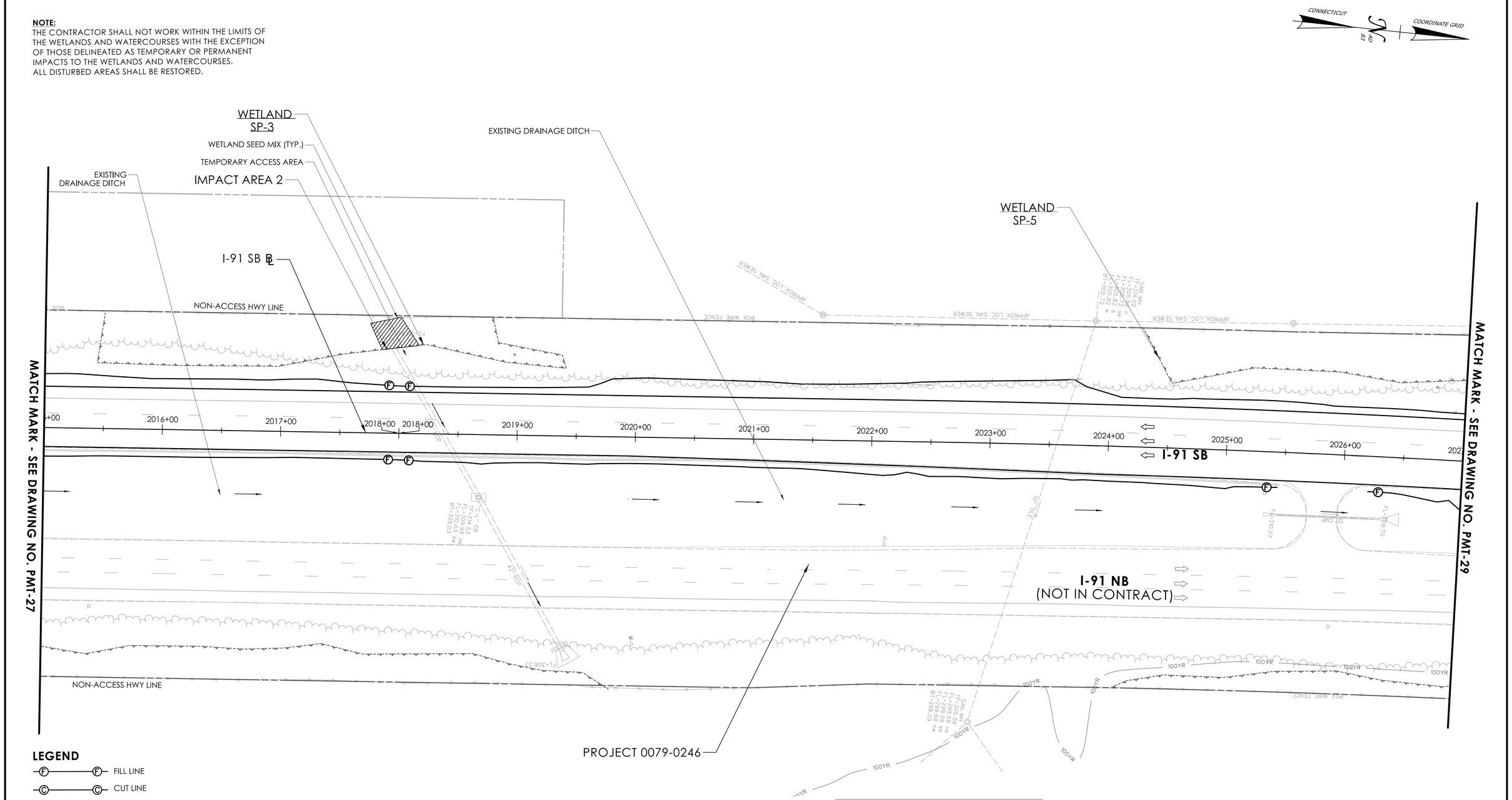

LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
2	720	0.017	0	0

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-28
SHEET NO.

LASTED SAVED BY: Efchiltas **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_04.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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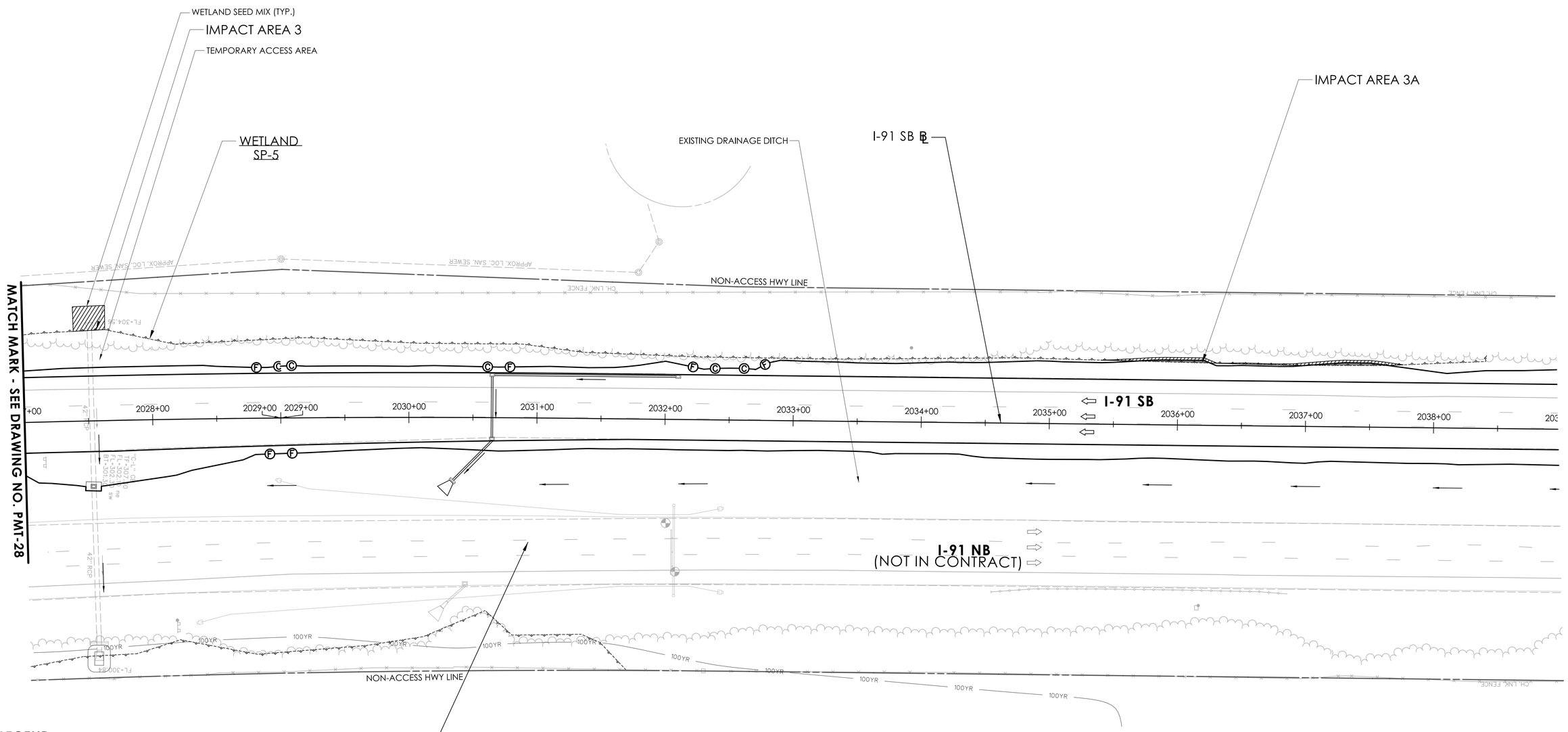

LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
3	475	0.011	0	0
3A	345	0.008	170	0.004

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
1"=40'

SIGNATURE/BLOCK:
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-29
SHEET NO.

LASTED SAVED BY: Efchitas **FILE NAME:** c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_29.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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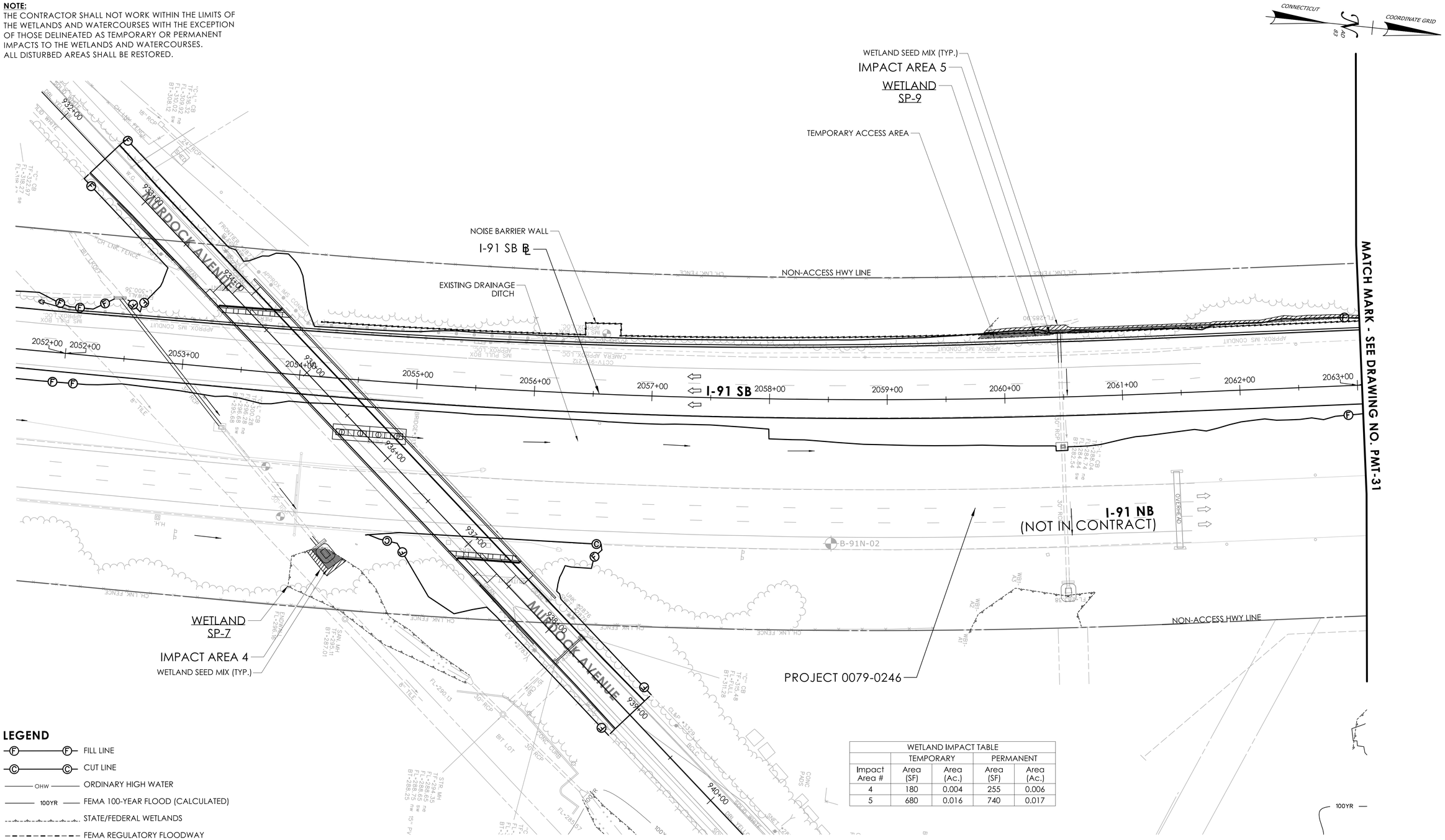

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
4	180	0.004	255	0.006
5	680	0.016	740	0.017

LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-30
SHEET NO.

LASTED SAVED BY: NBibeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_06.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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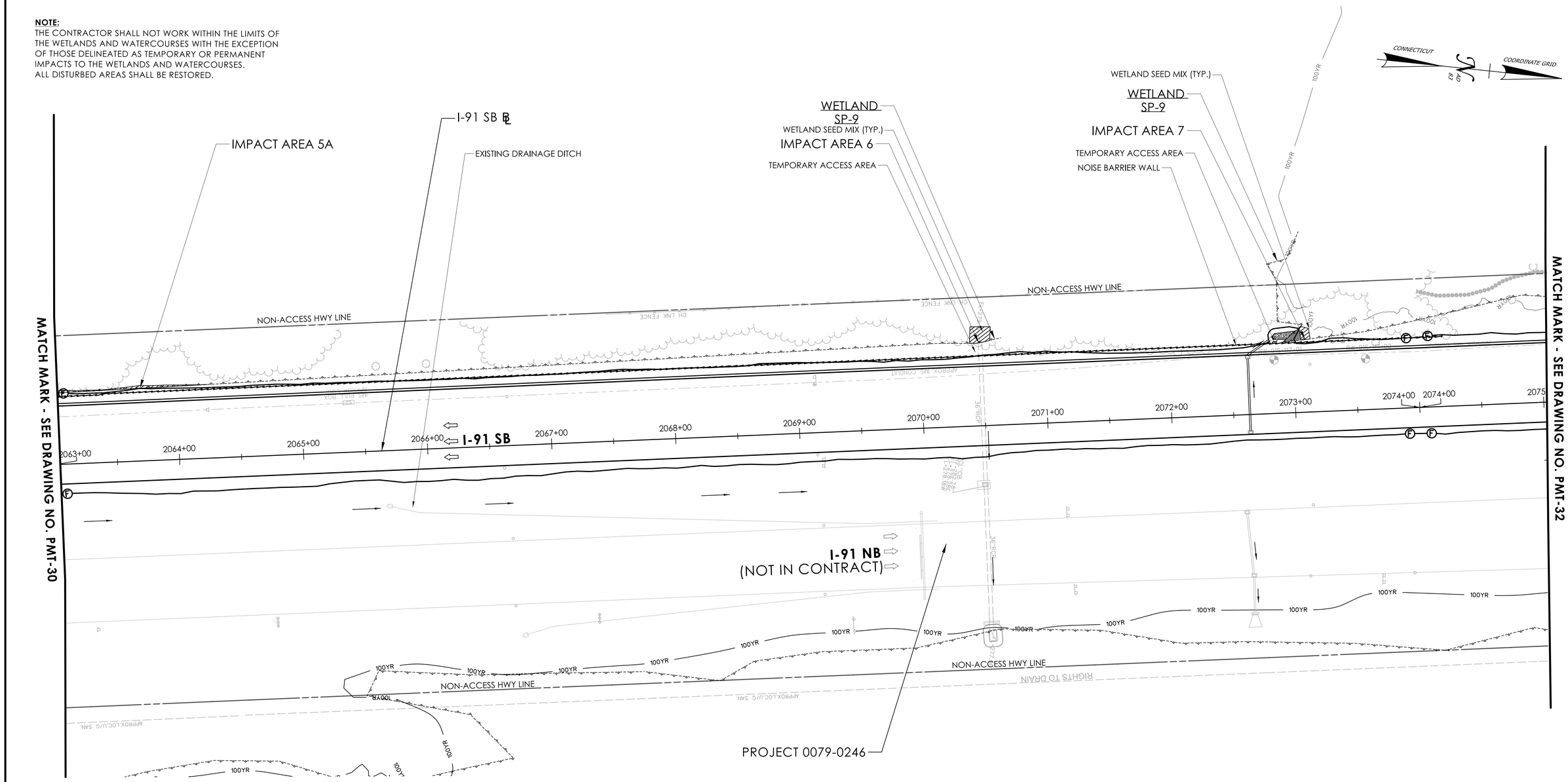


LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
5A	135	0.003	0	0
6	210	0.005	0	0
7	75	0.002	80	0.002

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS
DESIGNER/DRAFTER: EFC CHECKED BY: PMB
0 40' 80'
HORIZONTAL SCALE 1"=40'
SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN
DRAWING NO. PMT-31
SHEET NO.

LASTED SAVED BY: Efchitas **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_06.dgn
PLOTTED DATE: 7/9/2024

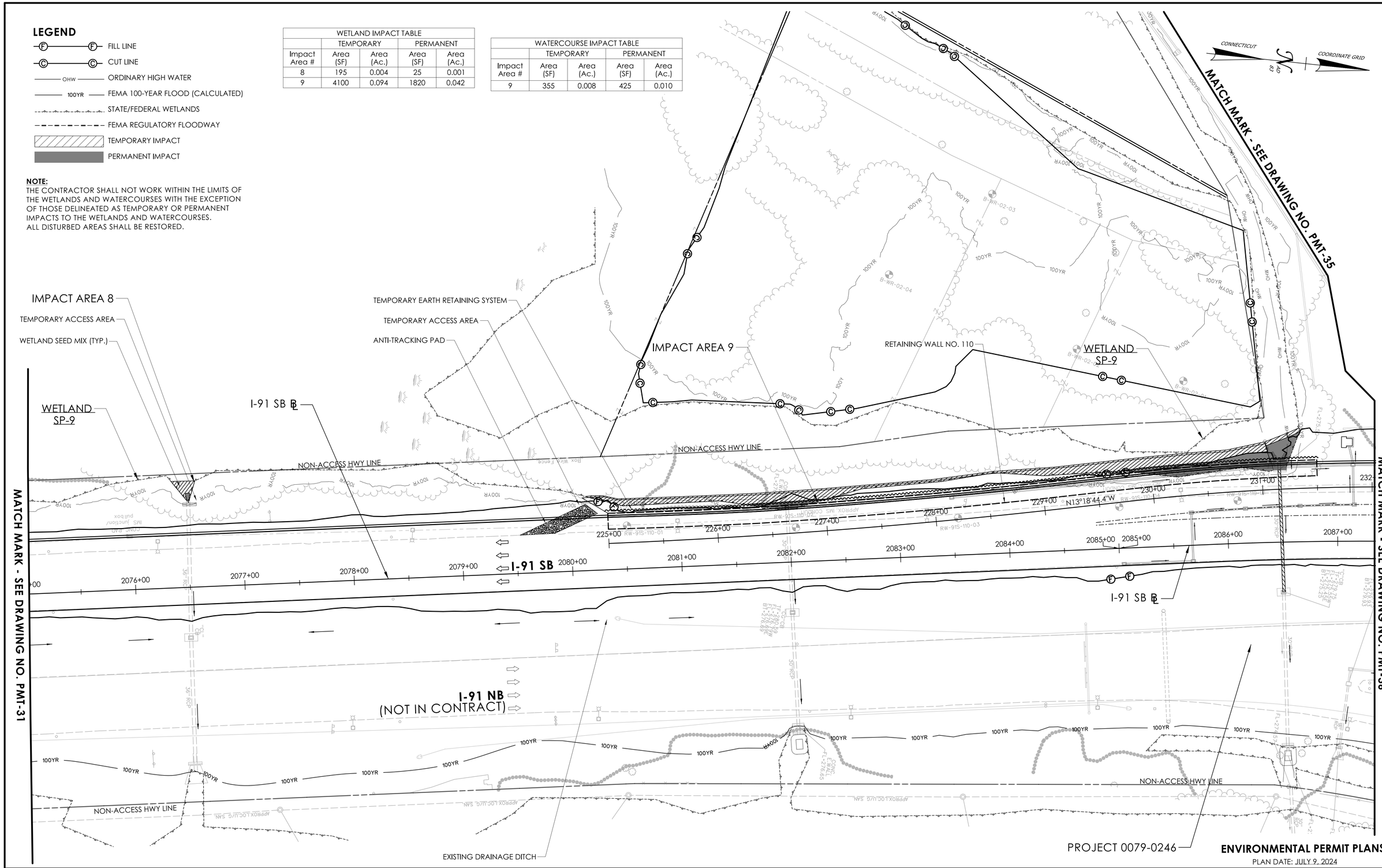
LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSES WITH THE EXCEPTION OF THOSE DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSES. ALL DISTURBED AREAS SHALL BE RESTORED.

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
8	195	0.004	25	0.001
9	4100	0.094	1820	0.042

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
9	355	0.008	425	0.010



ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
1"=40'

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-32
SHEET NO.

LASTED SAVED BY: NBibeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_11.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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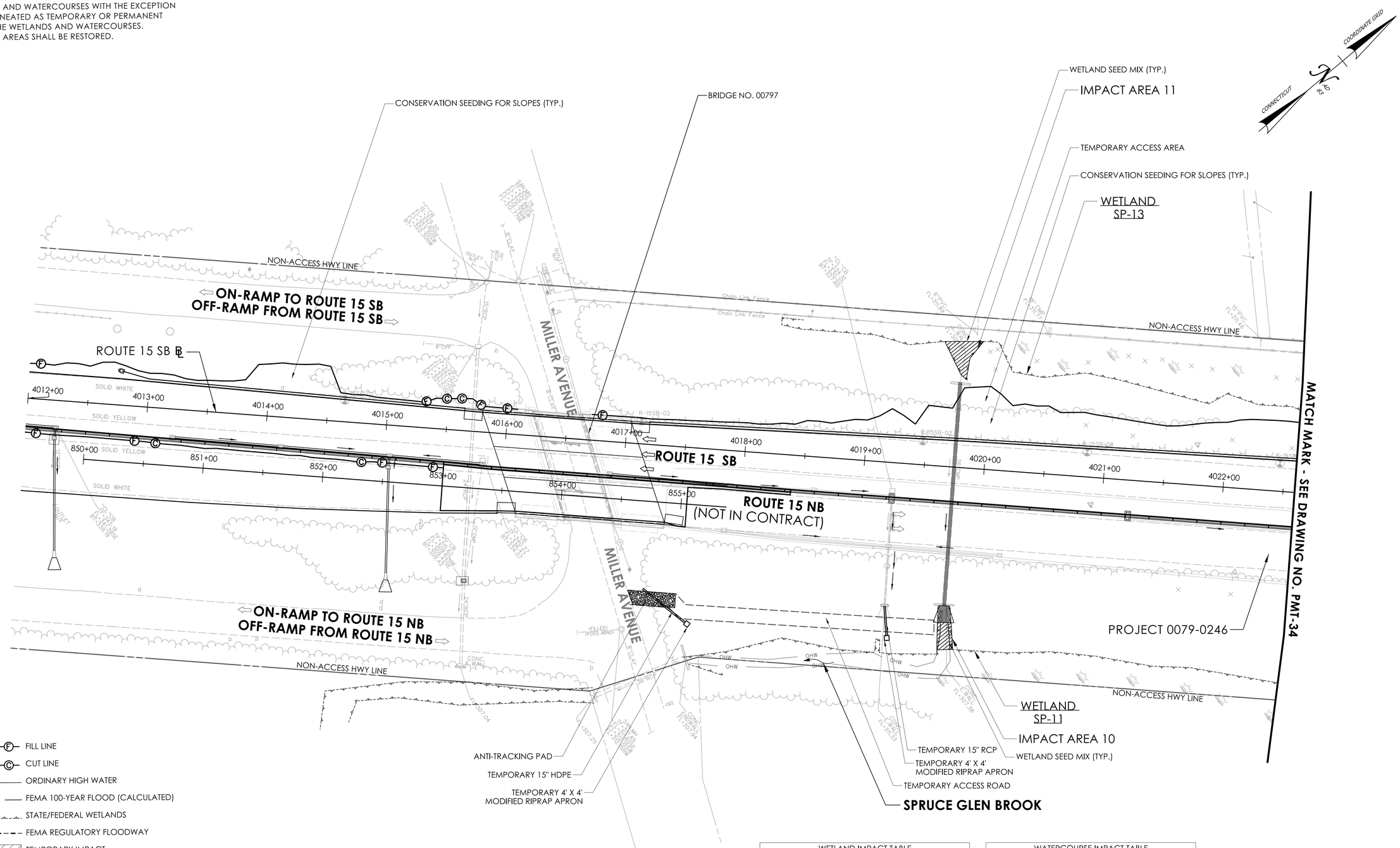
ALL DISTURBED AREAS SHALL BE RESTORED.



LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
10	100	0.002	80	0.002
11	470	0.011	0	0

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
10	185	0.004	635	0.015

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-33
SHEET NO.

LASTED SAVED BY: NBilbeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_33.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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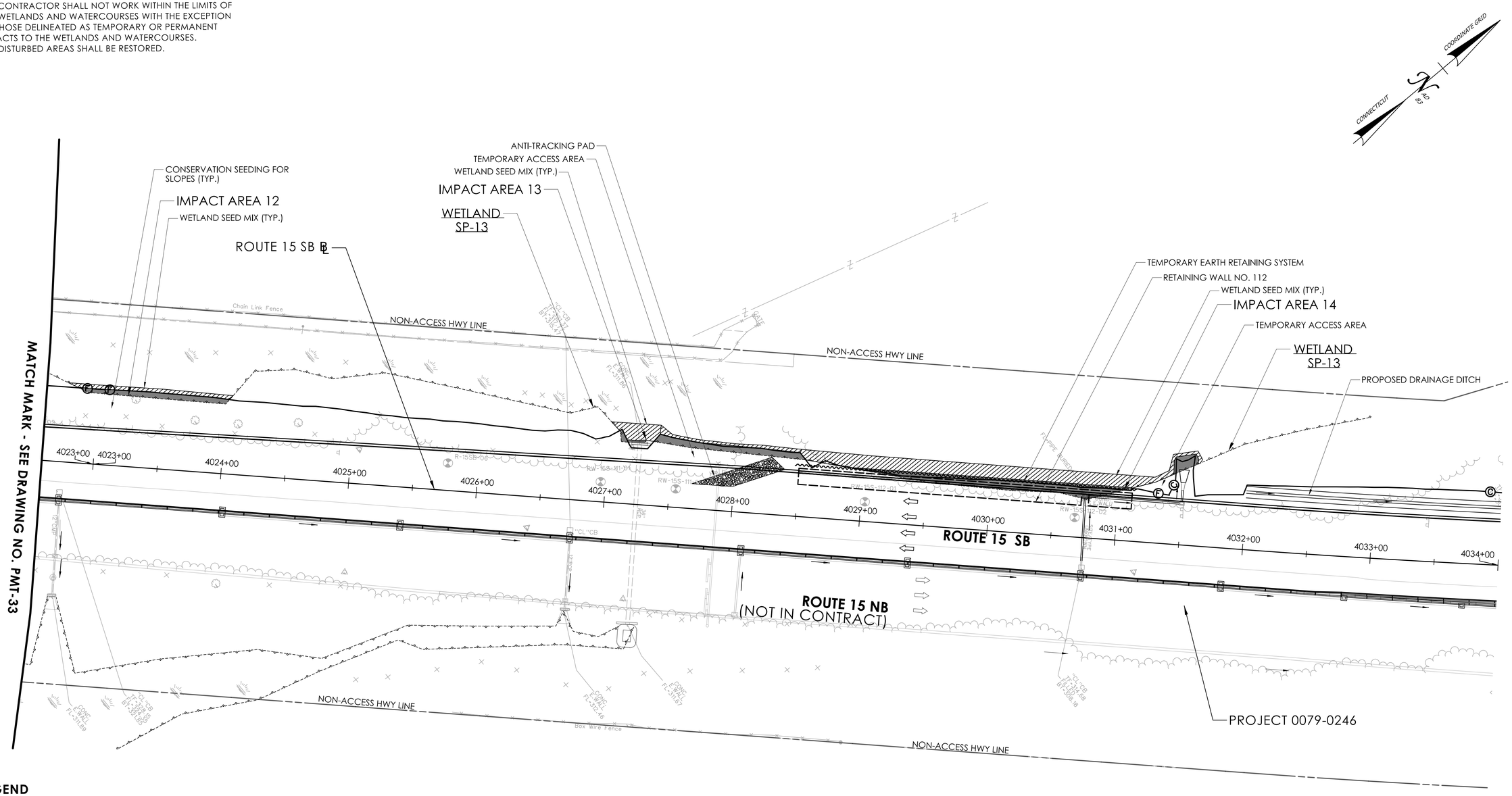

LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
12	375	0.009	465	0.011
13	390	0.009	65	0.001
14	3085	0.071	2345	0.054

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-34
SHEET NO.

LASTED SAVED BY: NBibeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_09.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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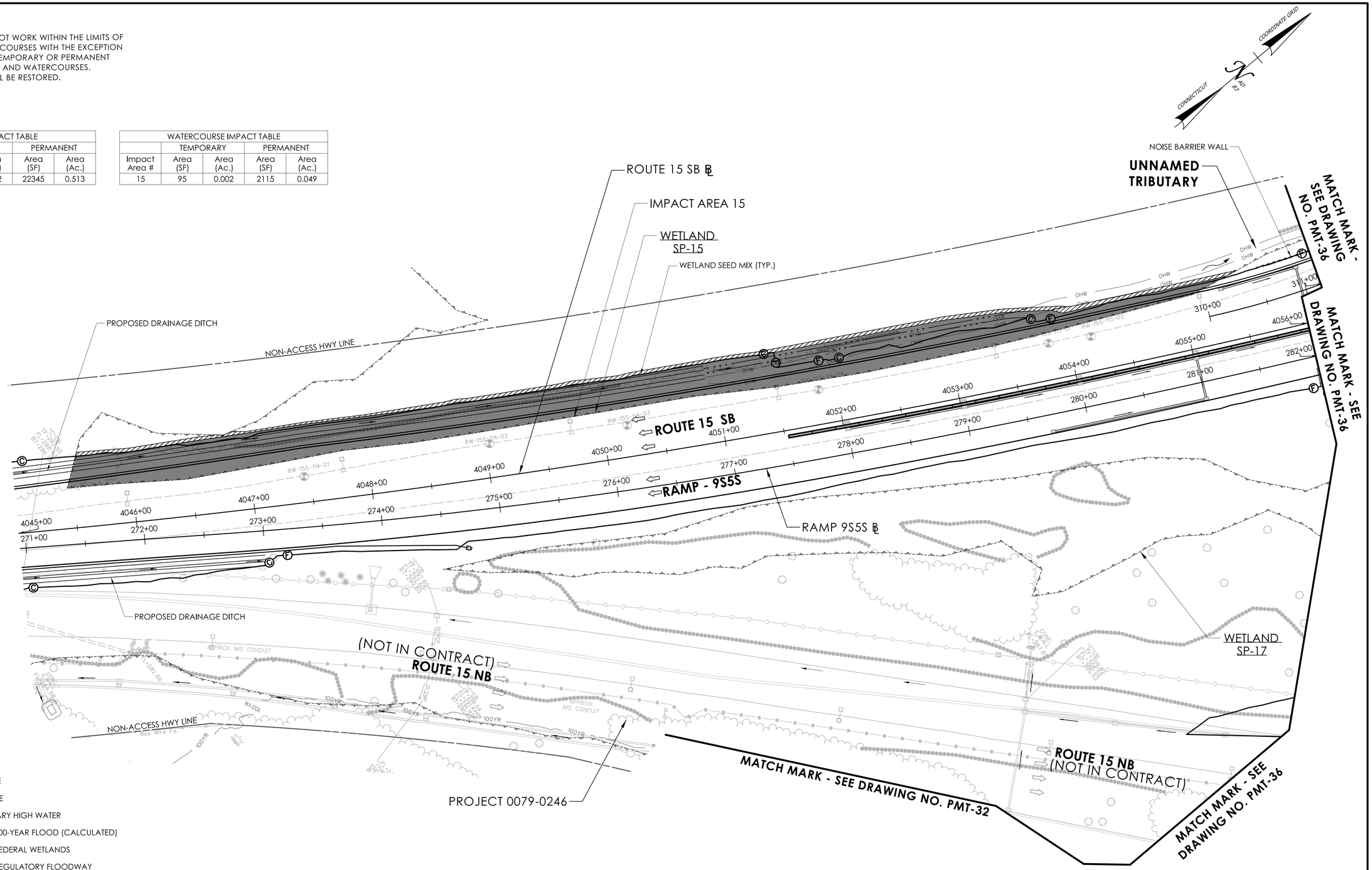
ALL DISTURBED AREAS SHALL BE RESTORED.

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
15	2685	0.062	22345	0.513

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
15	95	0.002	2115	0.049



LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-35
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_10.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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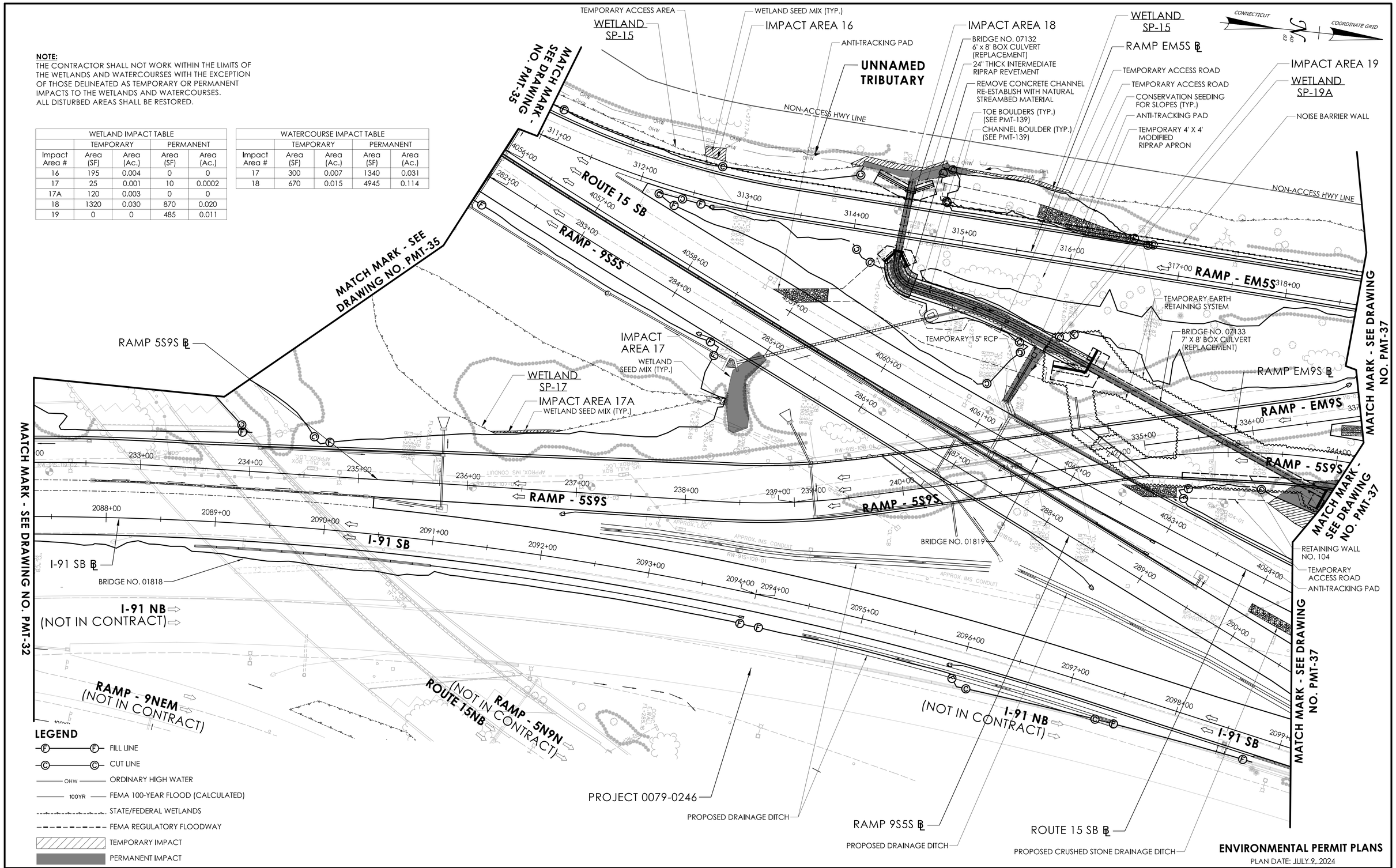
WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
16	195	0.004	0	0
17	25	0.001	10	0.0002
17A	120	0.003	0	0
18	1320	0.030	870	0.020
19	0	0	485	0.011

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
17	300	0.007	1340	0.031
18	670	0.015	4945	0.114



ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

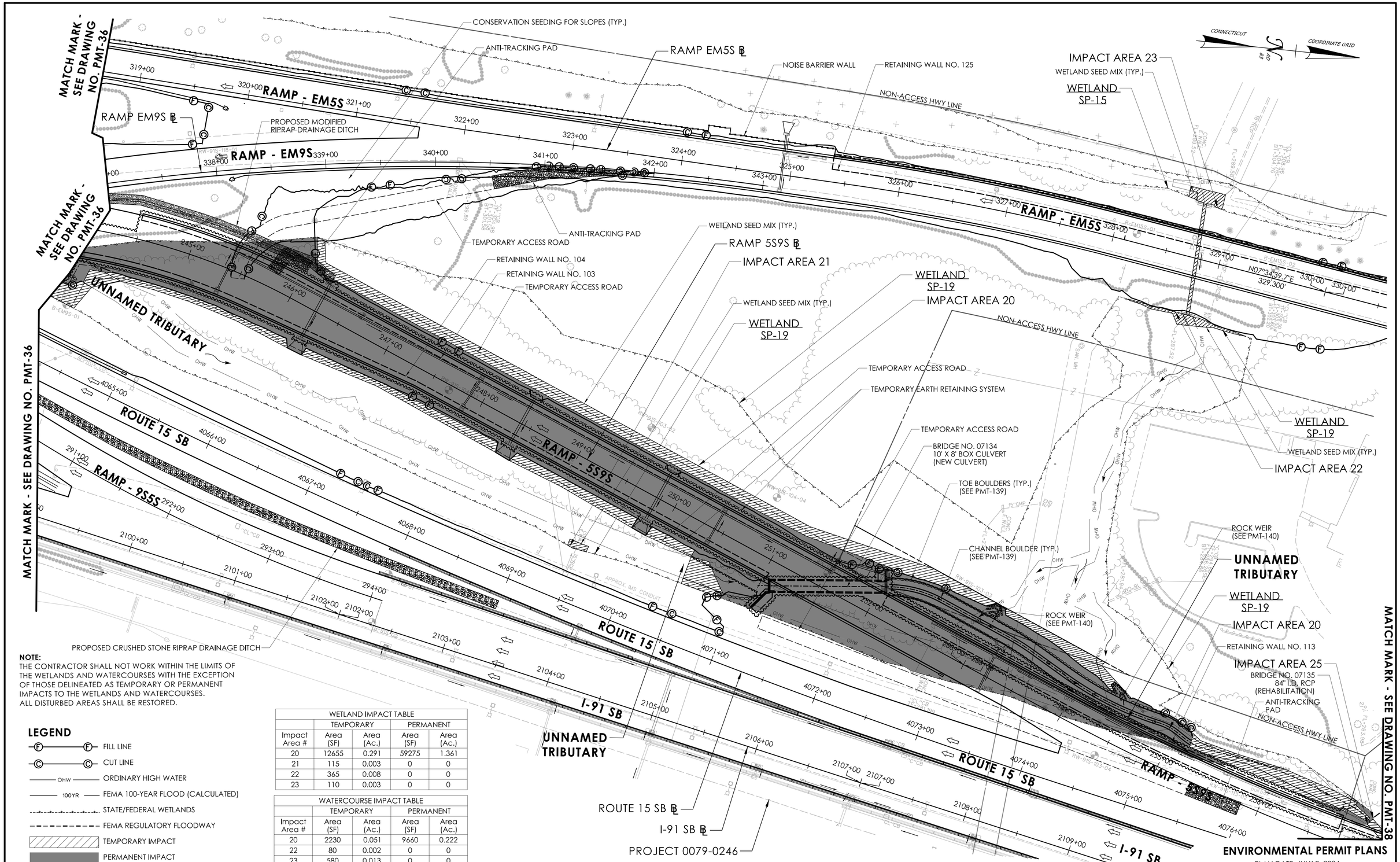
SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-36
SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_11.dgn
PLOTTED DATE: 7/9/2024



NOTE:
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LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE

	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
20	12655	0.291	59275	1.361
21	115	0.003	0	0
22	365	0.008	0	0
23	110	0.003	0	0

WATERCOURSE IMPACT TABLE

	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
20	2230	0.051	9660	0.222
22	80	0.002	0	0
23	580	0.013	0	0

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-37
SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_11.dgn
PLOTTED DATE: 7/16/2024

NOTE:
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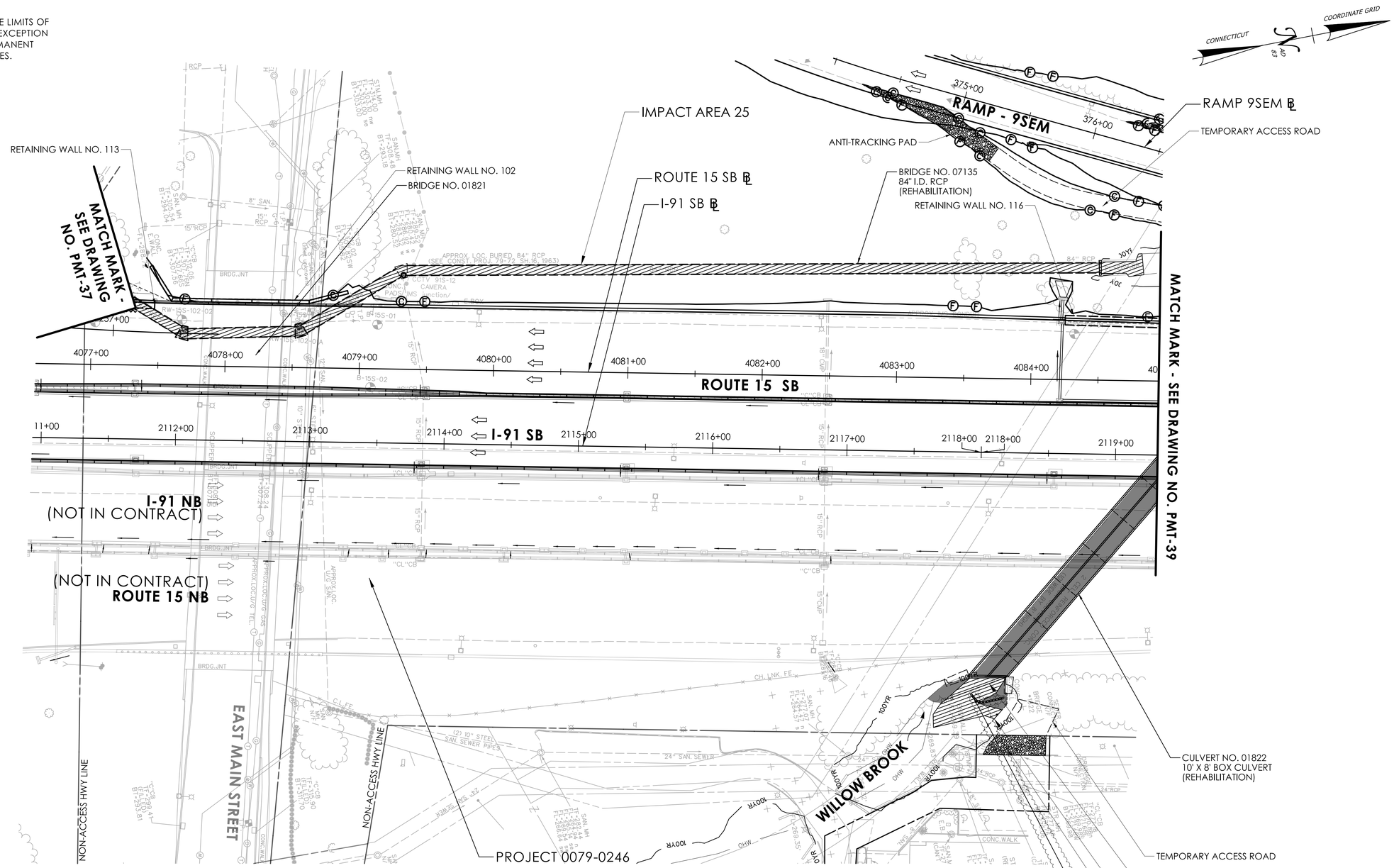

LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
25	0	0	135	0.003
26	925914	0.021	210221	0.005

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
25	5715	0.131	120	0.003
26	210	0.005	7910	0.182

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	J-HOOK VANE ADDED AND IMPACT AREAS REVISED

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-38
SHEET NO.

LASTED SAVED BY: NBilbeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_38_REV1.dgn
PLOTTED DATE: 2/13/2025

NOTE:
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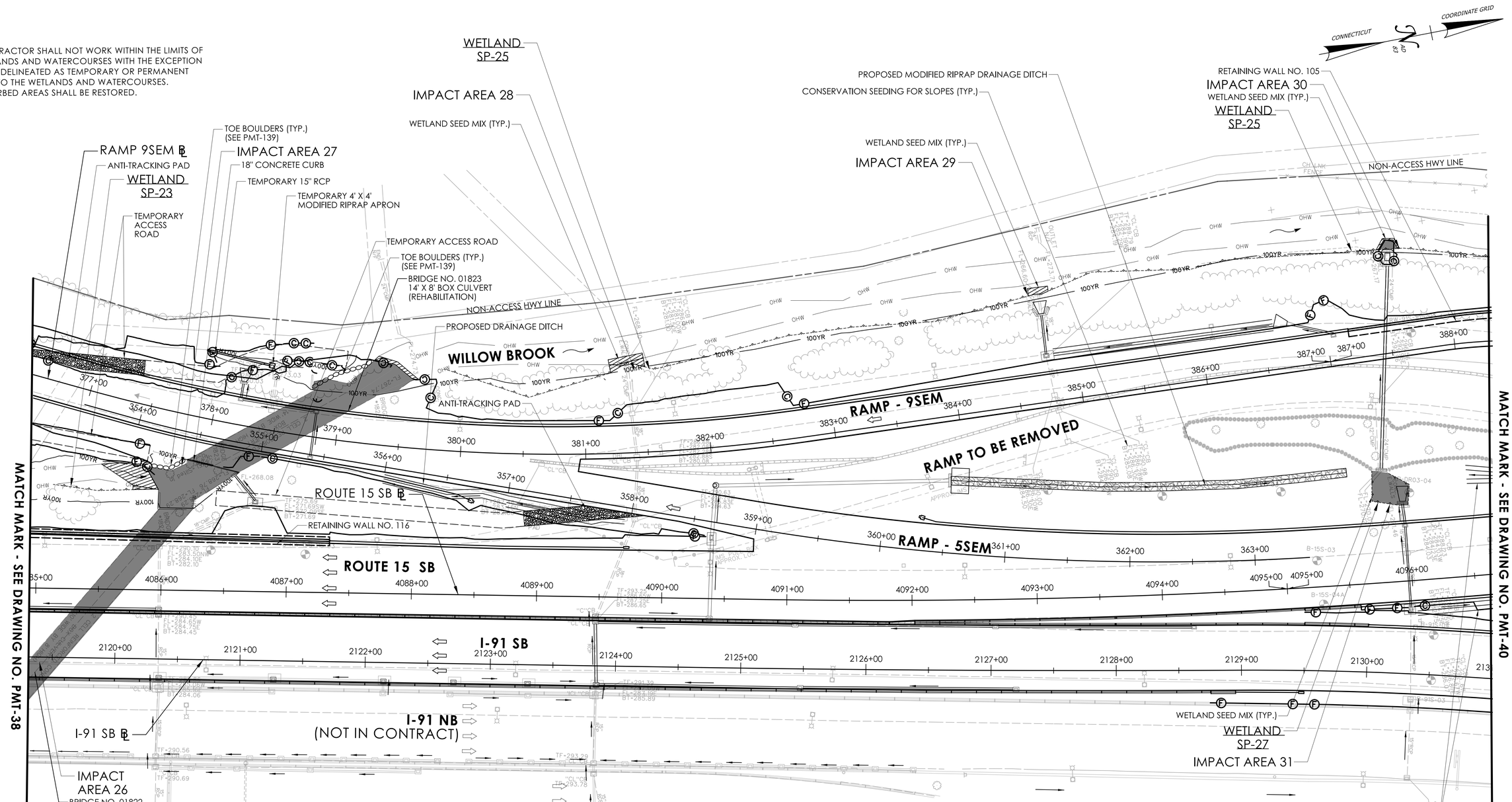

LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
27	35	0.001	0	0
28	100	0.002	0	0
29	90	0.002	0	0
30	85	0.002	40	0.001
31	0	0	660	0.015

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
27	585	0.013	6200	0.142
28	130	0.003	0	0

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS
DESIGNER/DRAFTER: EFC CHECKED BY: PMB
HORIZONTAL SCALE 1"=40' (0, 40', 80')
SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN
DRAWING NO. PMT-39
SHEET NO.

LASTED SAVED BY: Efchitas FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_39.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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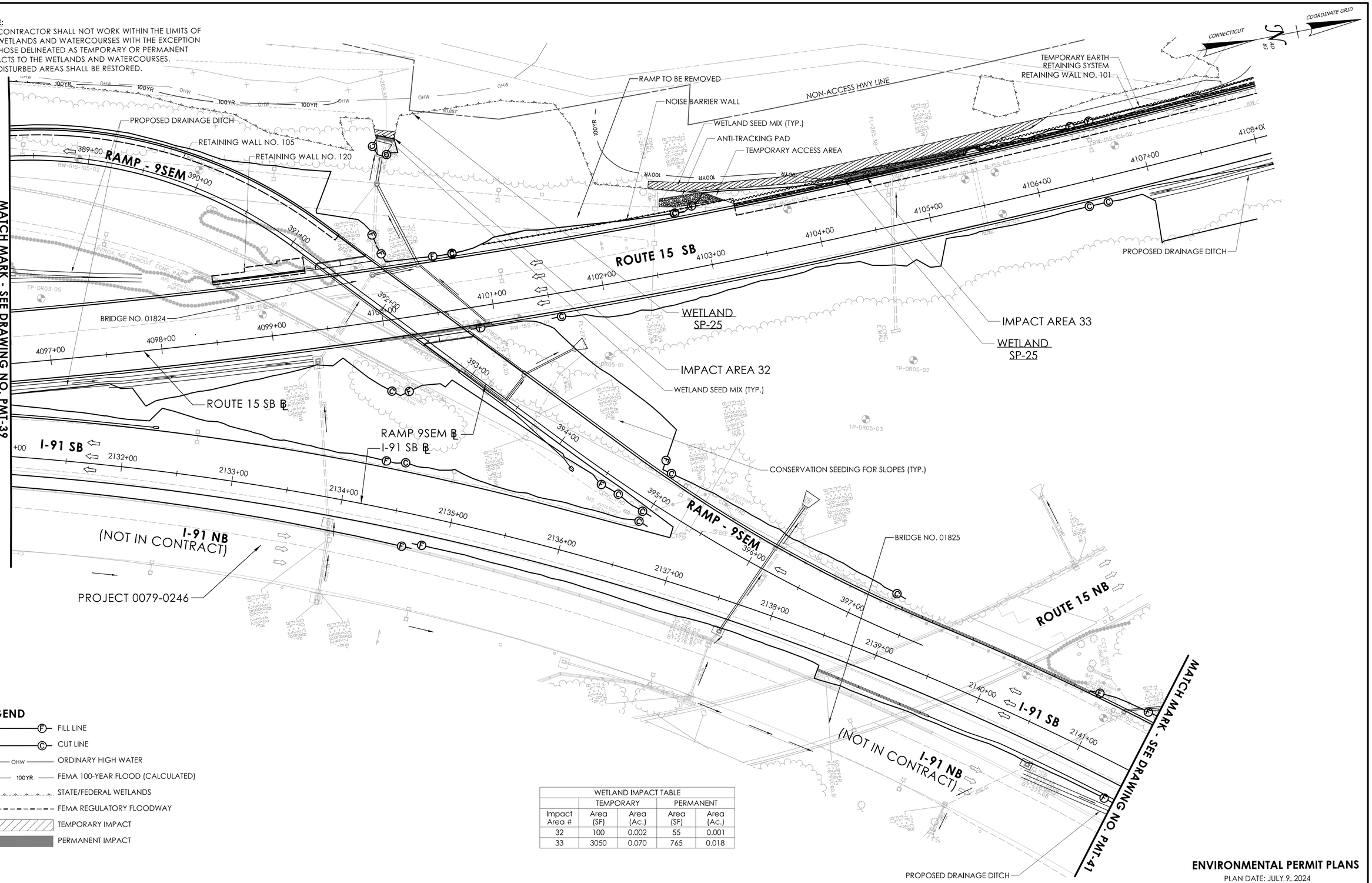

LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
32	100	0.002	55	0.001
33	3050	0.070	765	0.018

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-40
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_16.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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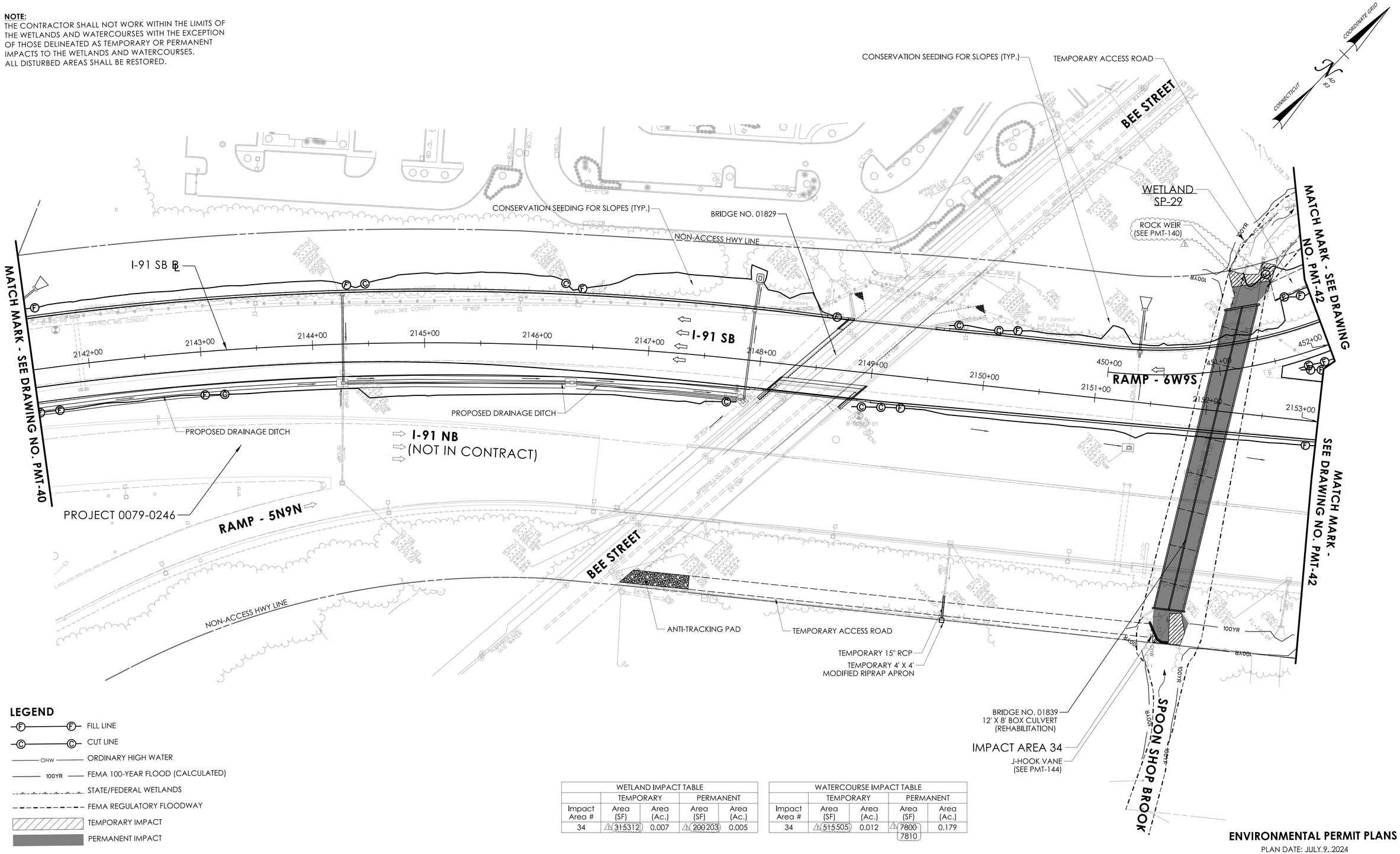

LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
34	315312	0.007	200203	0.005

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
34	515505	0.012	~~7800~~ 7810	0.179

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	ROCK WEIR ADDED AND IMPACT AREAS REVISED

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

HORIZONTAL SCALE 1"=40' (0, 40', 80')

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-41
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_41_REV1.dgn
PLOTTED DATE: 2/8/2025

NOTE:
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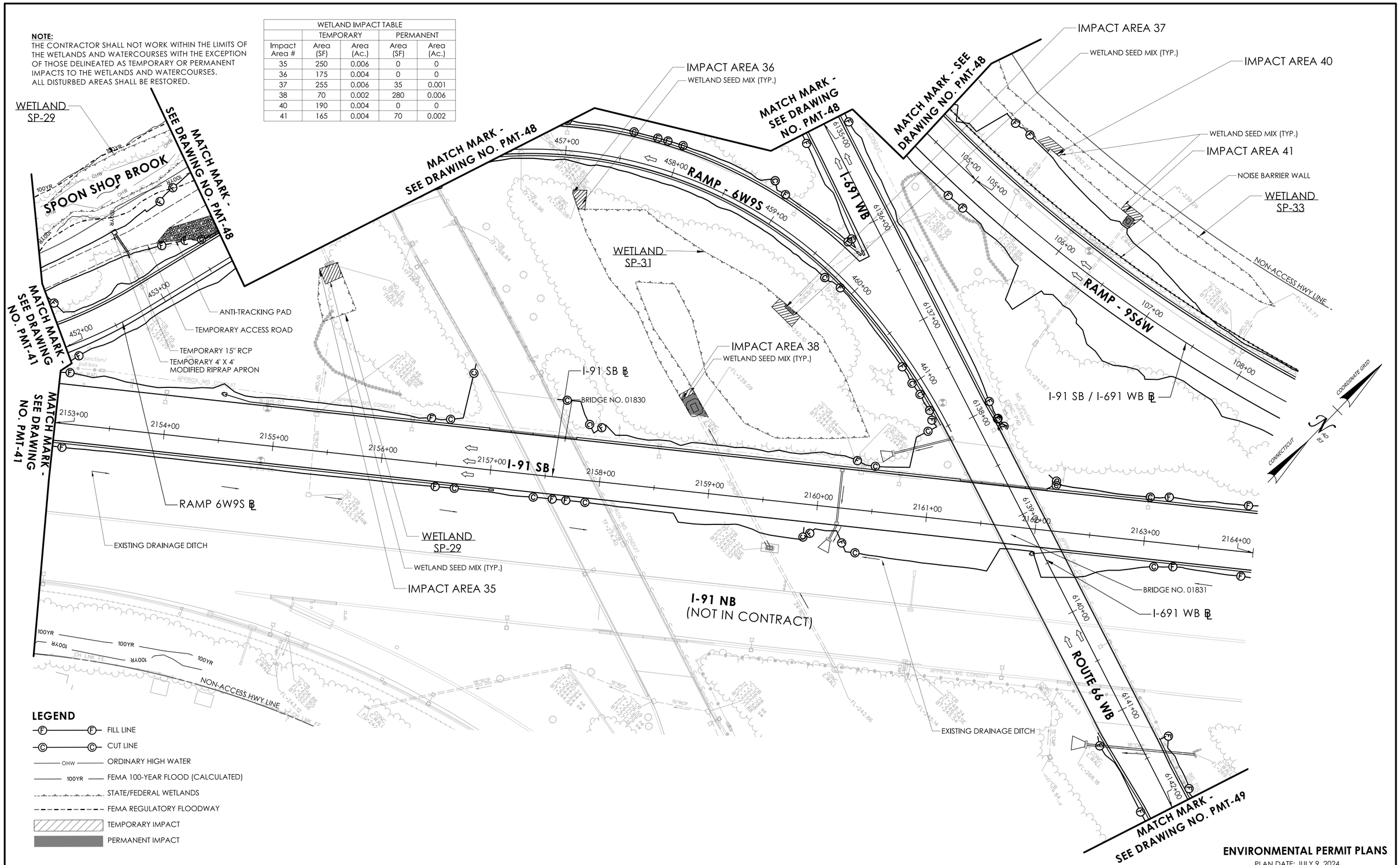
WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
35	250	0.006	0	0
36	175	0.004	0	0
37	255	0.006	35	0.001
38	70	0.002	280	0.006
40	190	0.004	0	0
41	165	0.004	70	0.002



LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

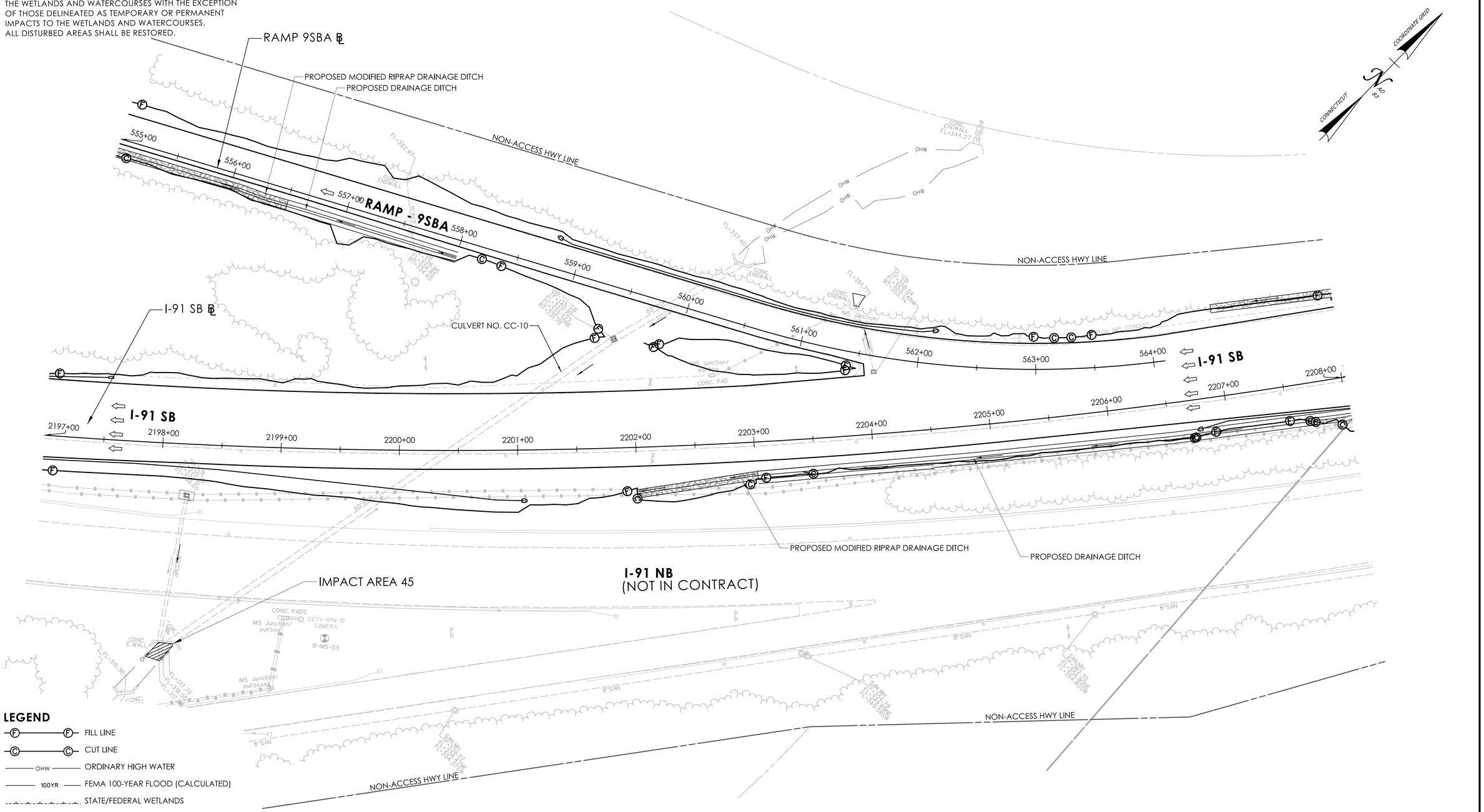
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-42
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_18.dgn
PLOTTED DATE: 7/9/2024

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSES WITH THE EXCEPTION OF THOSE DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSES. ALL DISTURBED AREAS SHALL BE RESTORED.



LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
45	195	0.004	0	0

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/ BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

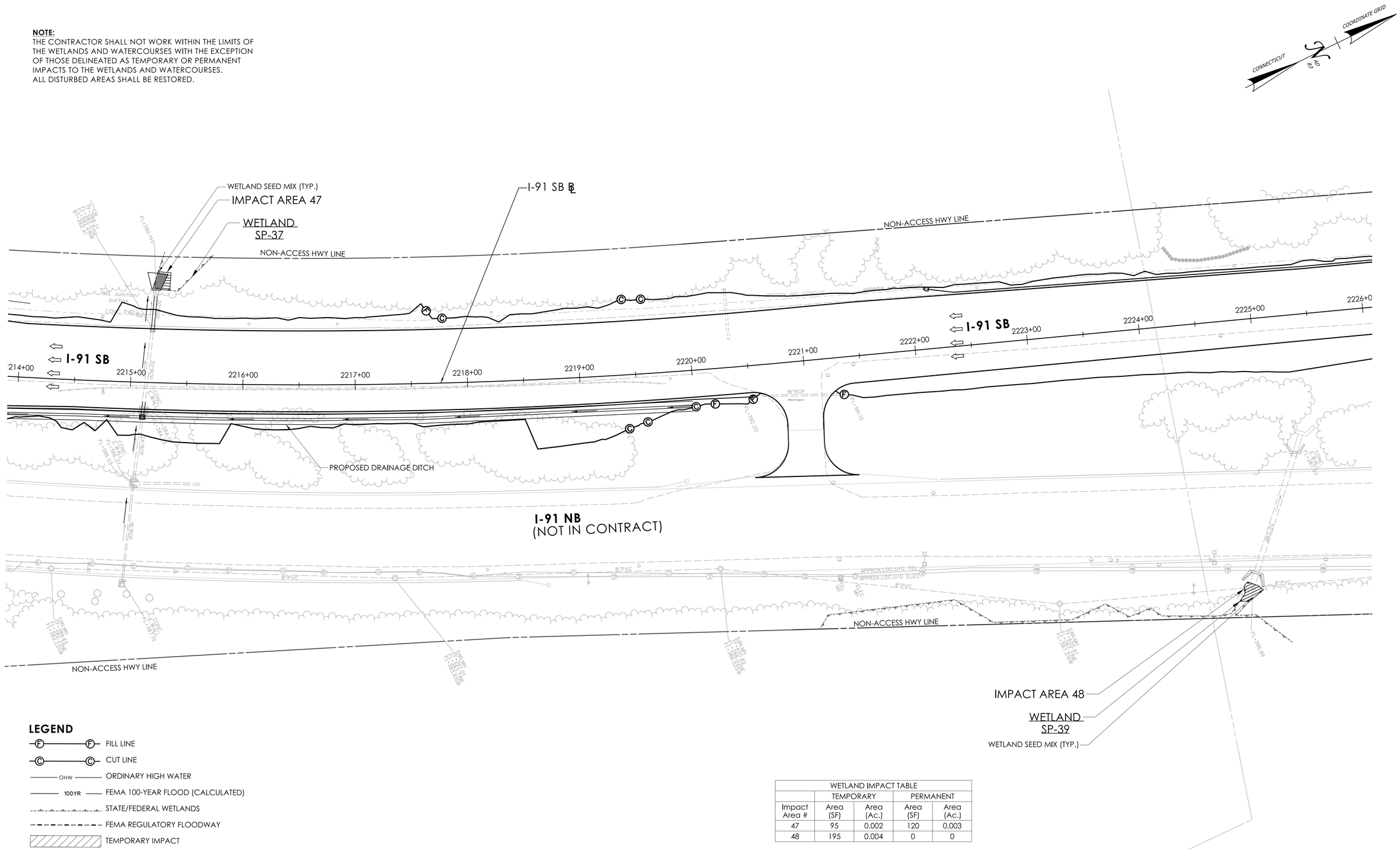
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-43
SHEET NO.

LASTED SAVED BY: NBilbeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_20.dgn
PLOTTED DATE: 7/25/2024

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSES WITH THE EXCEPTION OF THOSE DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSES. ALL DISTURBED AREAS SHALL BE RESTORED.



LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
47	95	0.002	120	0.003
48	195	0.004	0	0

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

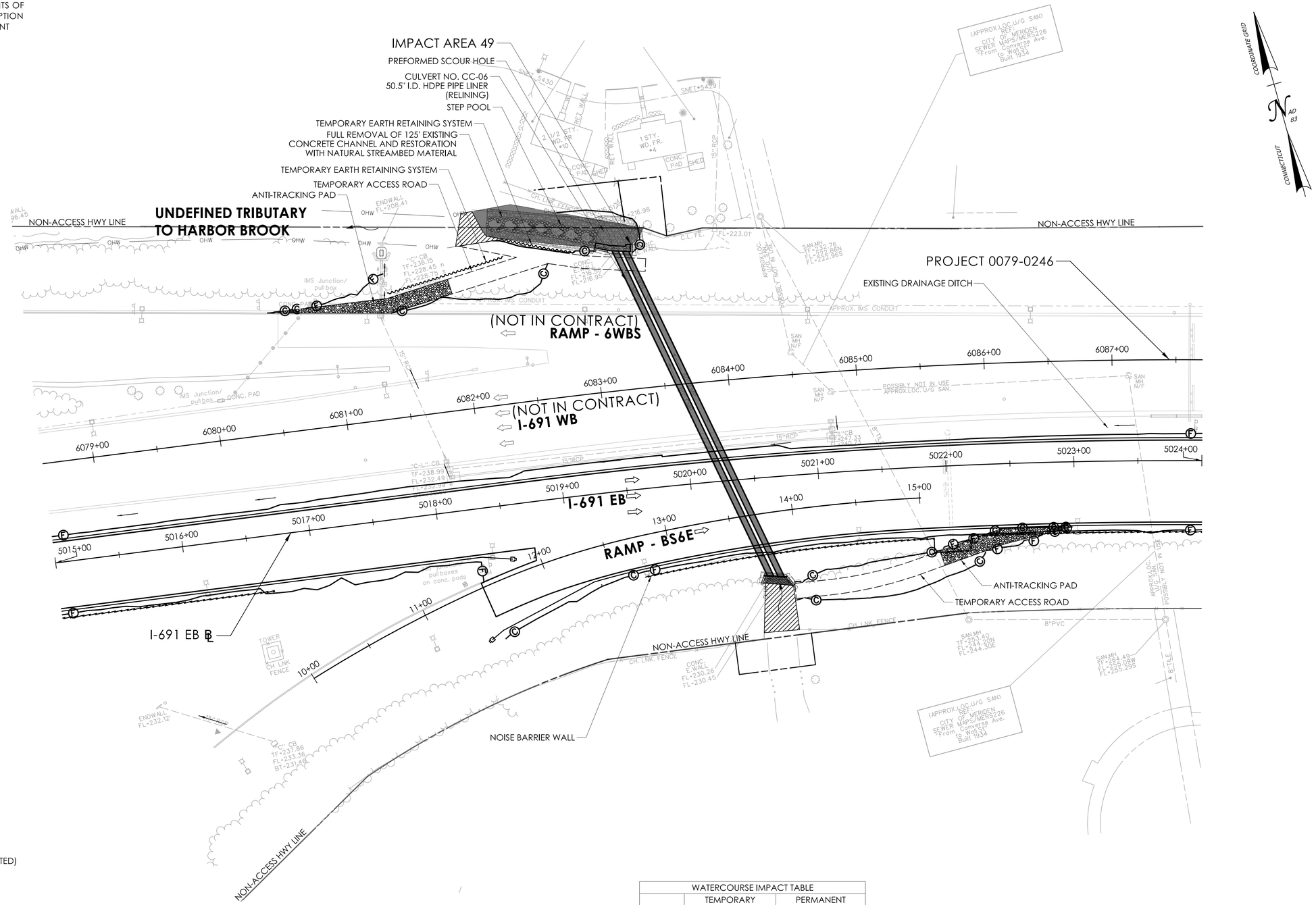
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-44
SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_21.dgn
PLOTTED DATE: 7/16/2024

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSES WITH THE EXCEPTION OF THOSE DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSES.
ALL DISTURBED AREAS SHALL BE RESTORED.



LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
49	1375	0.032	5900	0.135

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REVISION DESCRIPTION
DATE
REV.

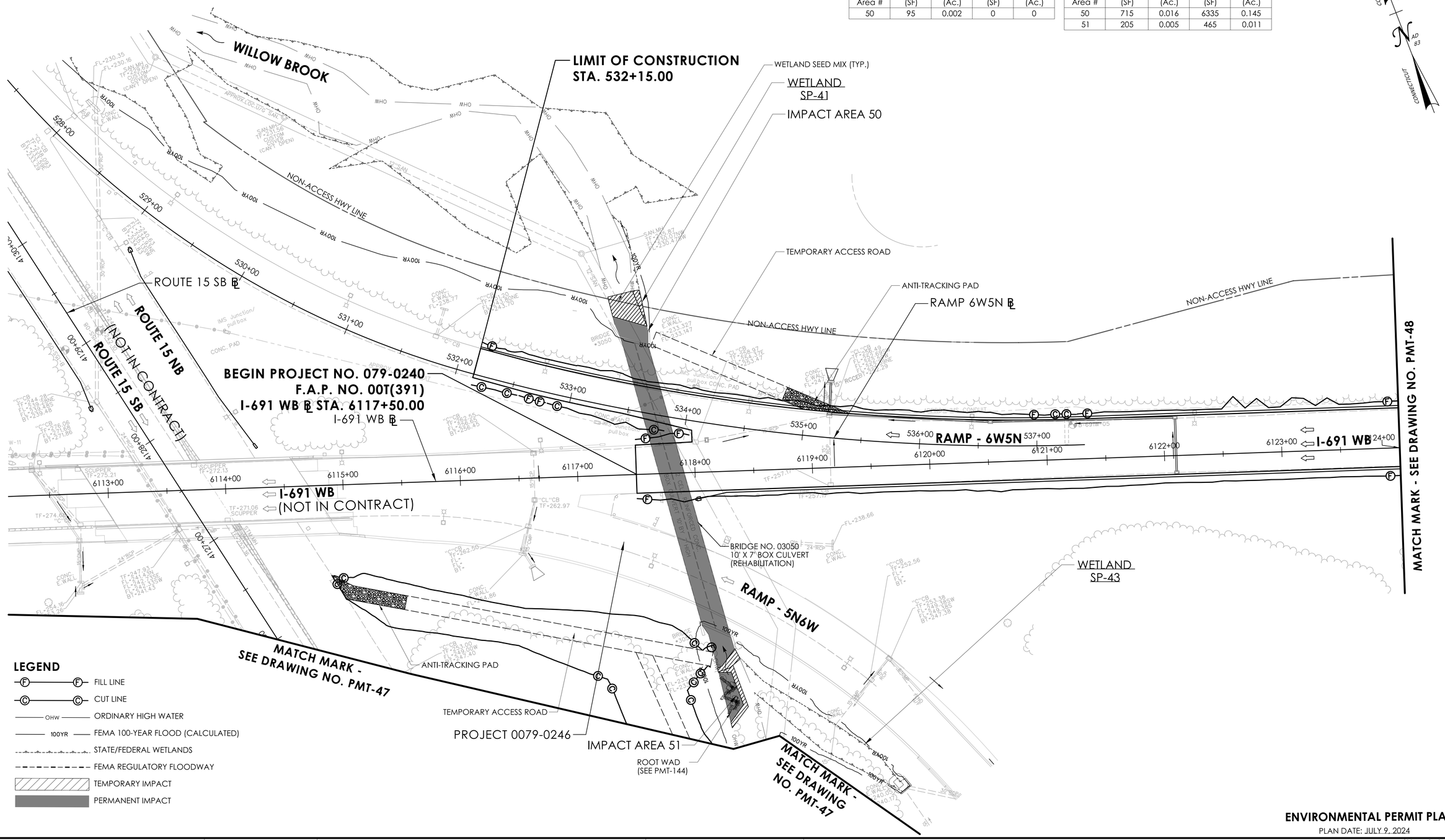
ENVIRONMENTAL PERMIT PLANS
DESIGNER/DRAFTER: EFC CHECKED BY: PMB
0 40' 80'
HORIZONTAL SCALE 1"=40'
SIGNATURE/ BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN
DRAWING NO. PMT-45
SHEET NO.

LASTED SAVED BY: Efchilas **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_45.dgn
PLOTTED DATE: 7/9/2024

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSES WITH THE EXCEPTION OF THOSE DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSES. ALL DISTURBED AREAS SHALL BE RESTORED.

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
50	95	0.002	0	0

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
50	715	0.016	6335	0.145
51	205	0.005	465	0.011



ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

HORIZONTAL SCALE 1"=40' (0, 40', 80')

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

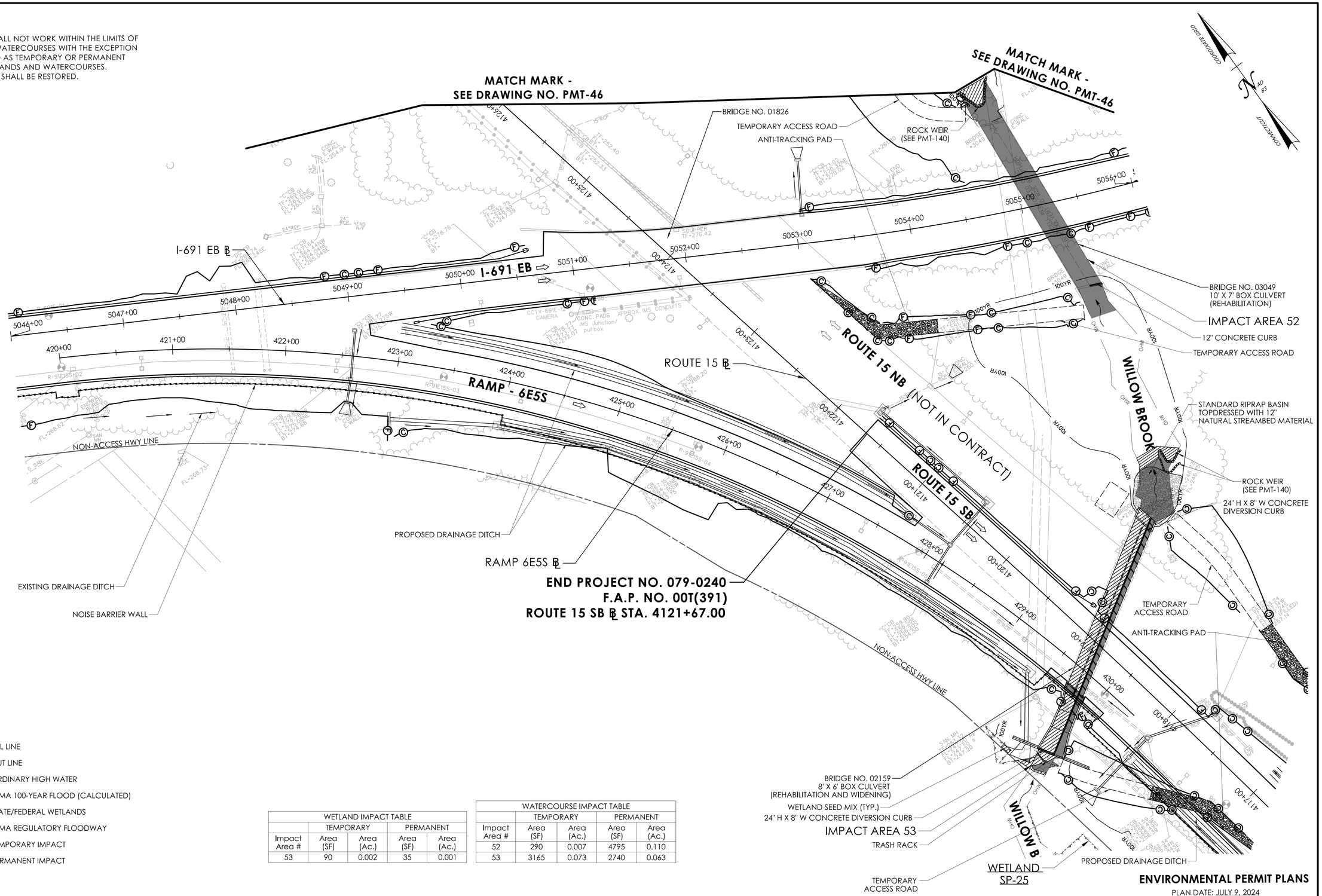
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-46
SHEET NO.

LASTED SAVED BY: Efchilas FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_46.dgn
PLOTTED DATE: 7/9/2024

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSES WITH THE EXCEPTION OF THOSE DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSES. ALL DISTURBED AREAS SHALL BE RESTORED.



LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
53	90	0.002	35	0.001

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
52	290	0.007	4795	0.110
53	3165	0.073	2740	0.063

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-47
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_24.dgn
PLOTTED DATE: 7/25/2024

NOTE:
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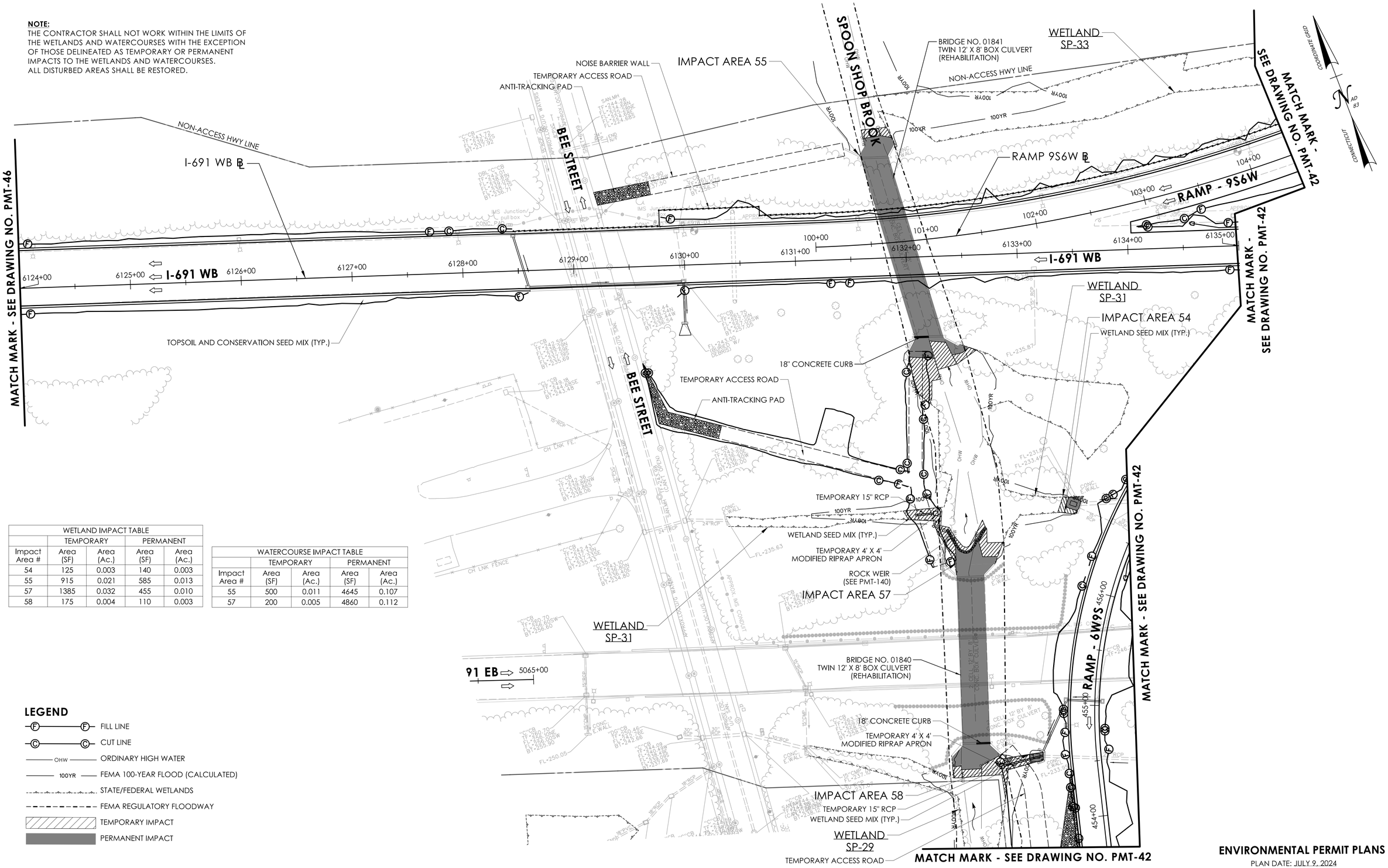

WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
54	125	0.003	140	0.003
55	915	0.021	585	0.013
57	1385	0.032	455	0.010
58	175	0.004	110	0.003

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
55	500	0.011	4645	0.107
57	200	0.005	4860	0.112

LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE
1"=40'

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

DRAWING NO. PMT-48
SHEET NO.

LASTED SAVED BY: Efchilas **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_48.dgn
PLOTTED DATE: 7/9/2024

NOTE:
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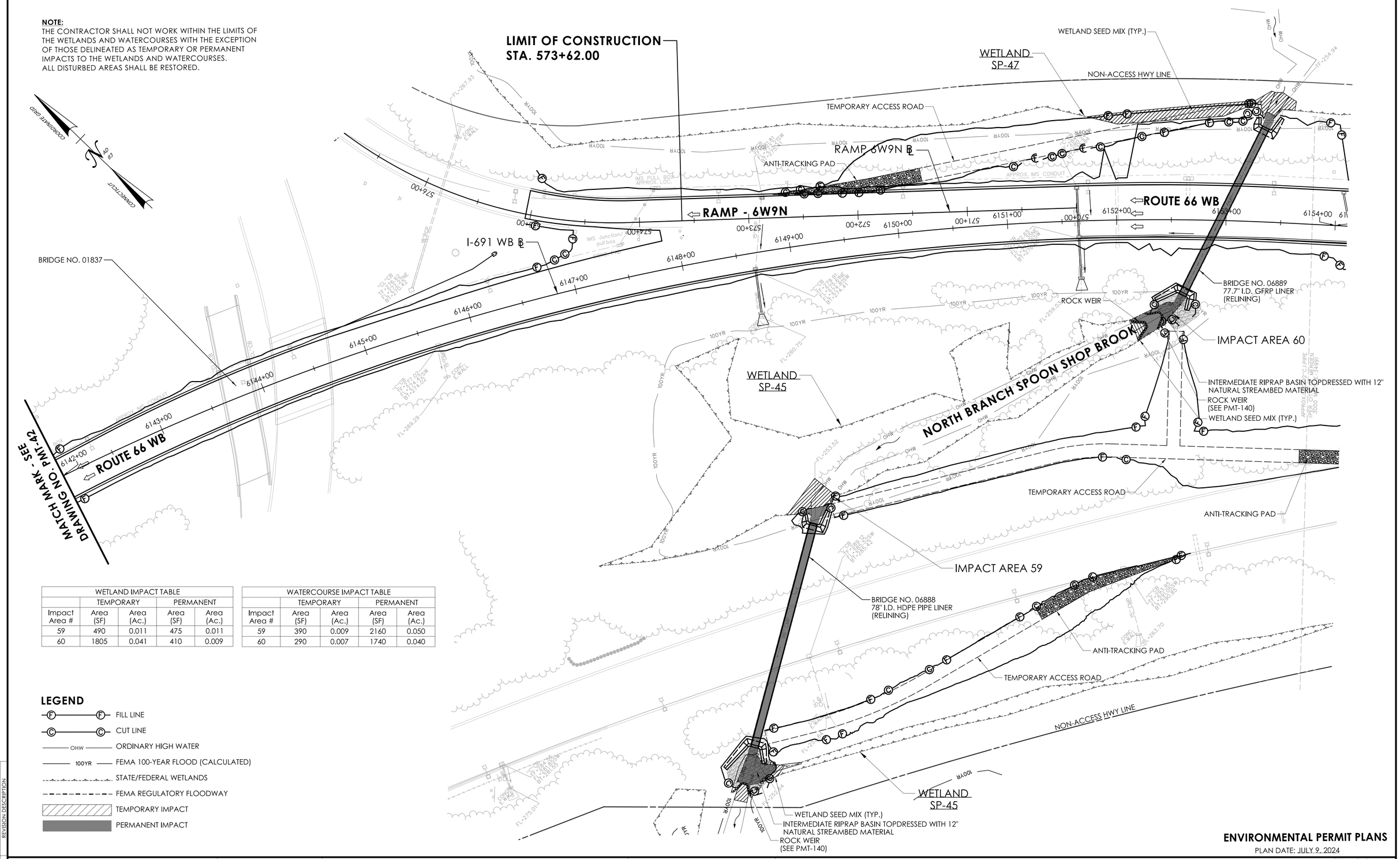
ALL DISTURBED AREAS SHALL BE RESTORED.



WETLAND IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
59	490	0.011	475	0.011
60	1805	0.041	410	0.009

WATERCOURSE IMPACT TABLE				
	TEMPORARY		PERMANENT	
Impact Area #	Area (SF)	Area (Ac.)	Area (SF)	Area (Ac.)
59	390	0.009	2160	0.050
60	290	0.007	1740	0.040

LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD, GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WETLAND IMPACT PLAN

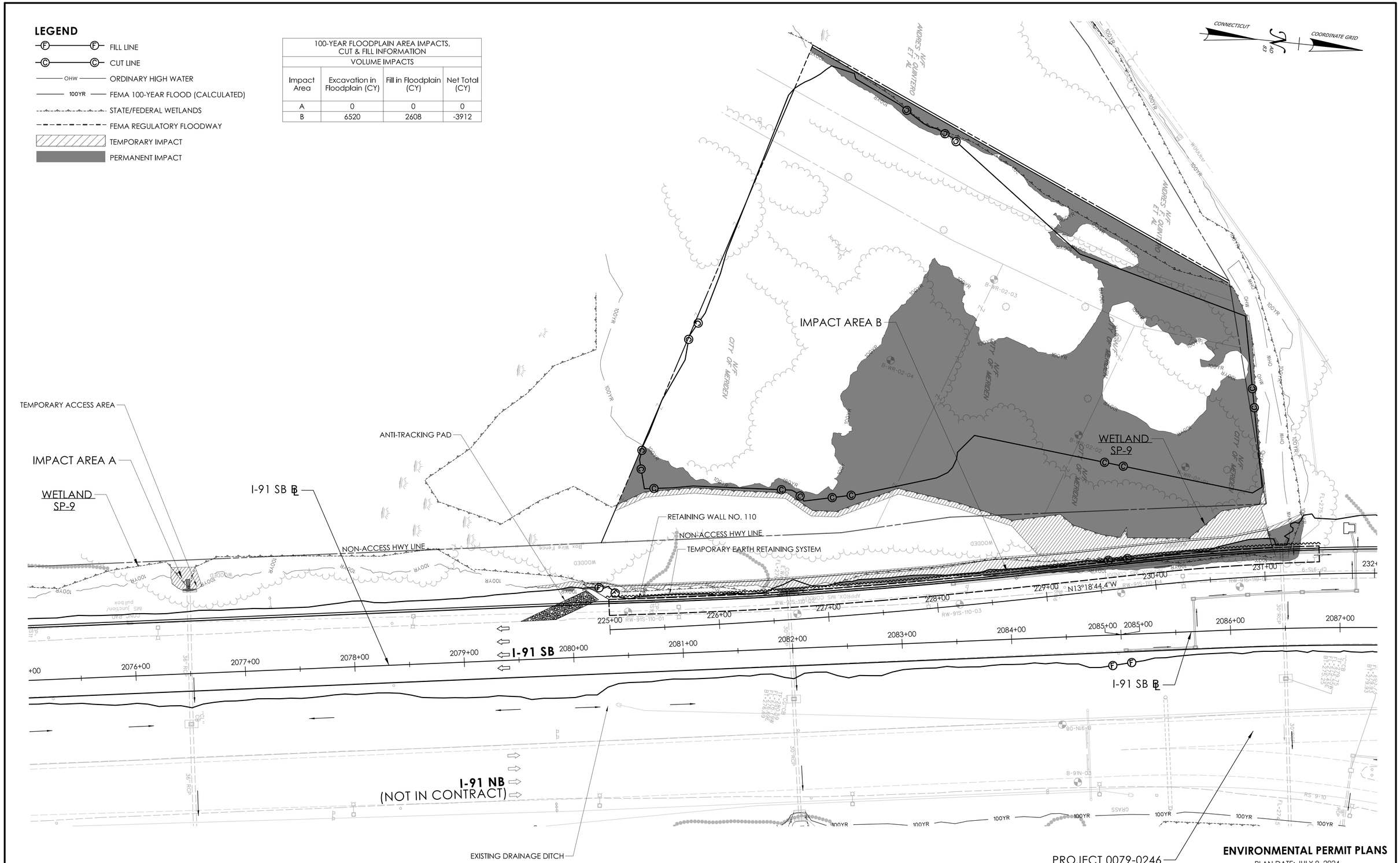
DRAWING NO. PMT-49
SHEET NO.

LASTED SAVED BY: Efchilas **FILE NAME:** c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_49.dgn
PLOTTED DATE: 7/9/2024

LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

100-YEAR FLOODPLAIN AREA IMPACTS, CUT & FILL INFORMATION			
VOLUME IMPACTS			
Impact Area	Excavation in Floodplain (CY)	Fill in Floodplain (CY)	Net Total (CY)
A	0	0	0
B	6520	2608	-3912



ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

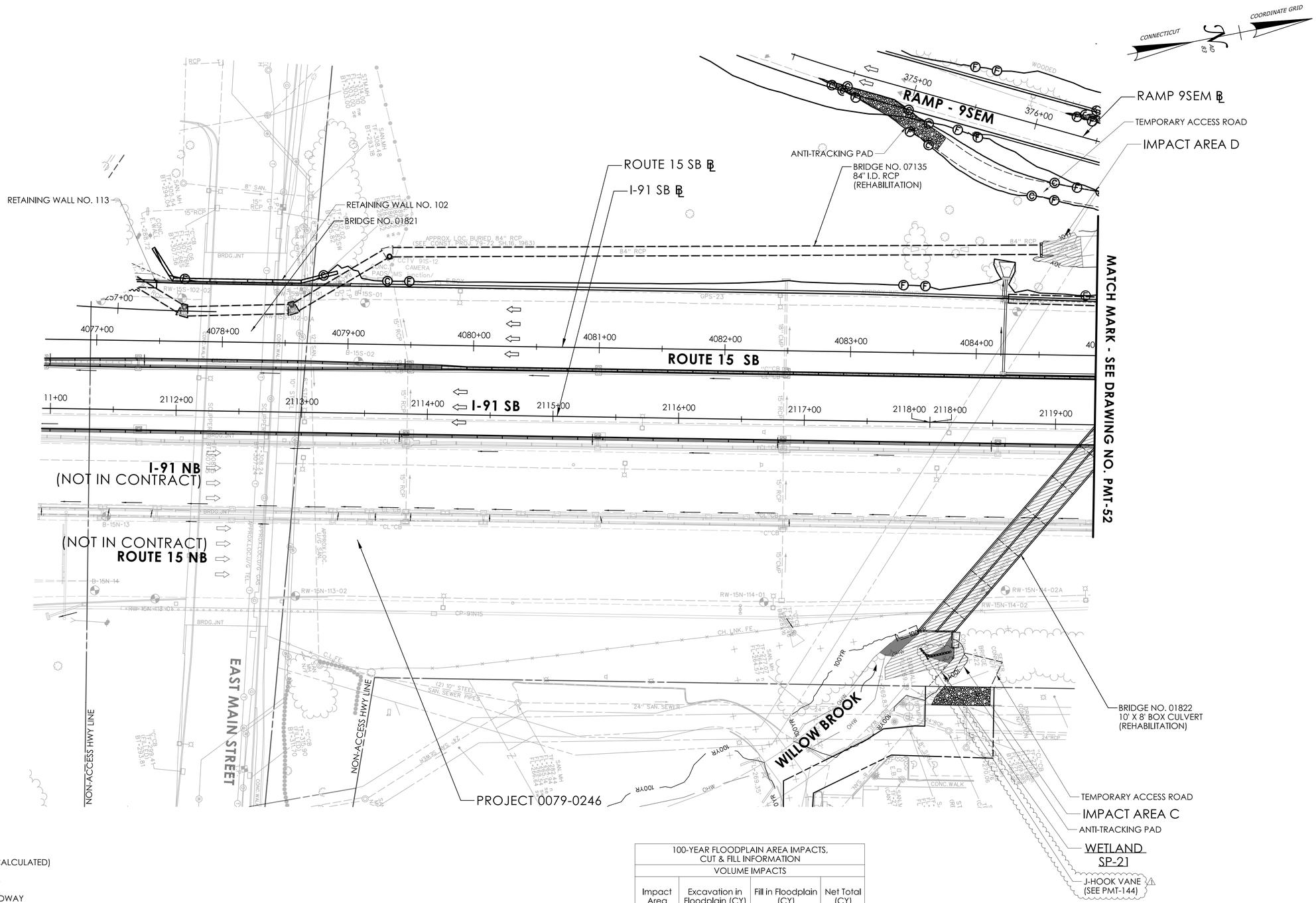
SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: 100-YEAR FLOODPLAIN IMPACT PLAN

DRAWING NO. PMT-50
SHEET NO.

LASTED SAVED BY: NBilbeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_11.dgn
PLOTTED DATE: 7/9/2024



LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

100-YEAR FLOODPLAIN AREA IMPACTS, CUT & FILL INFORMATION			
VOLUME IMPACTS			
Impact Area	Excavation in Floodplain (CY)	Fill in Floodplain (CY)	Net Total (CY)
C	230	232 233	2 3
D	4	4	0

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	J-HOOK VANE ADDED

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

HORIZONTAL SCALE 1"=40' (0 40' 80')

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240

PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS

TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN

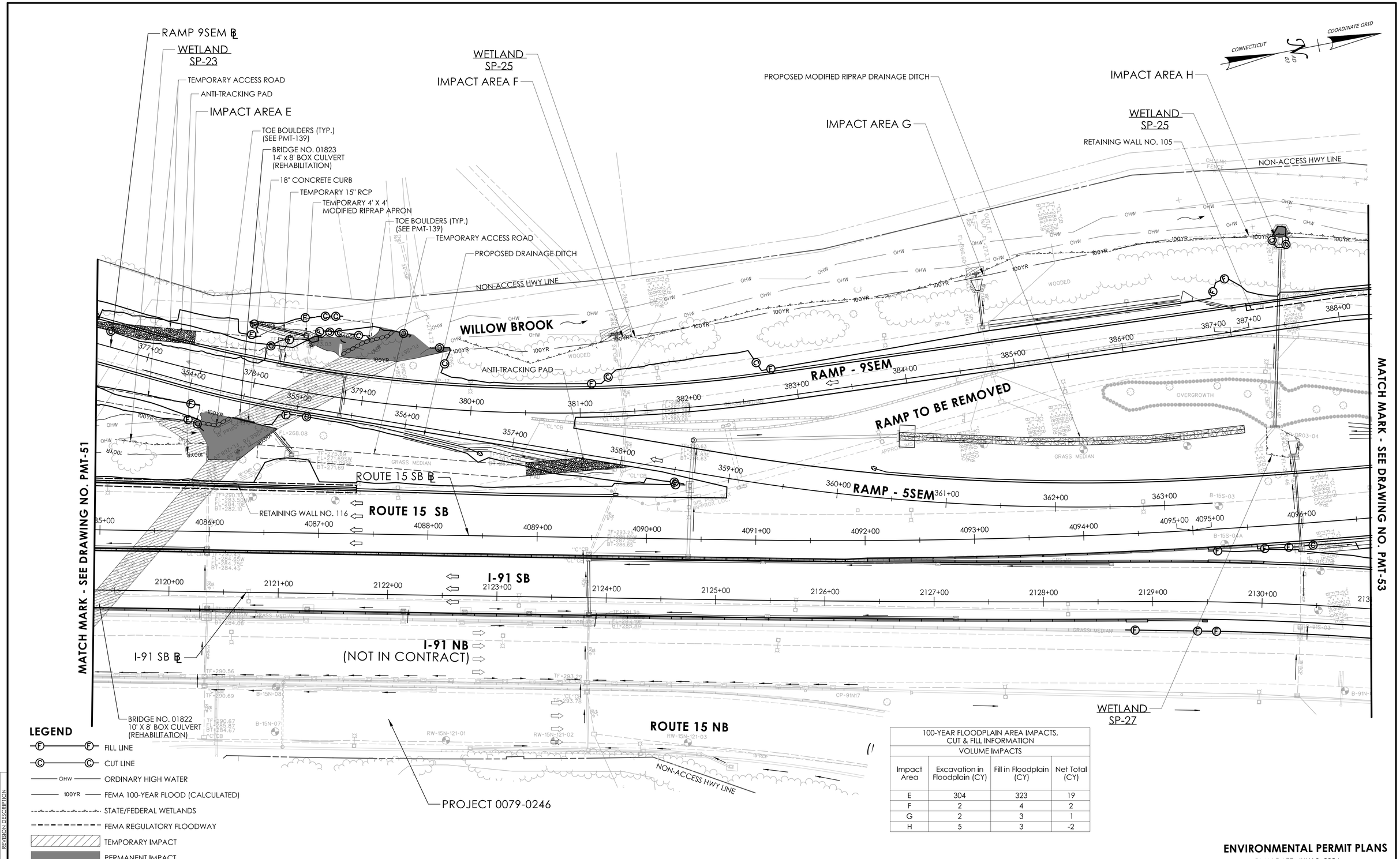
DRAWING TITLE: 100-YEAR FLOODPLAIN IMPACT PLAN

DRAWING NO. PMT-51

SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_51_REV1.dgn

PLOTTED DATE: 2/13/2025



100-YEAR FLOODPLAIN AREA IMPACTS, CUT & FILL INFORMATION			
VOLUME IMPACTS			
Impact Area	Excavation in Floodplain (CY)	Fill in Floodplain (CY)	Net Total (CY)
E	304	323	19
F	2	4	2
G	2	3	1
H	5	3	-2

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

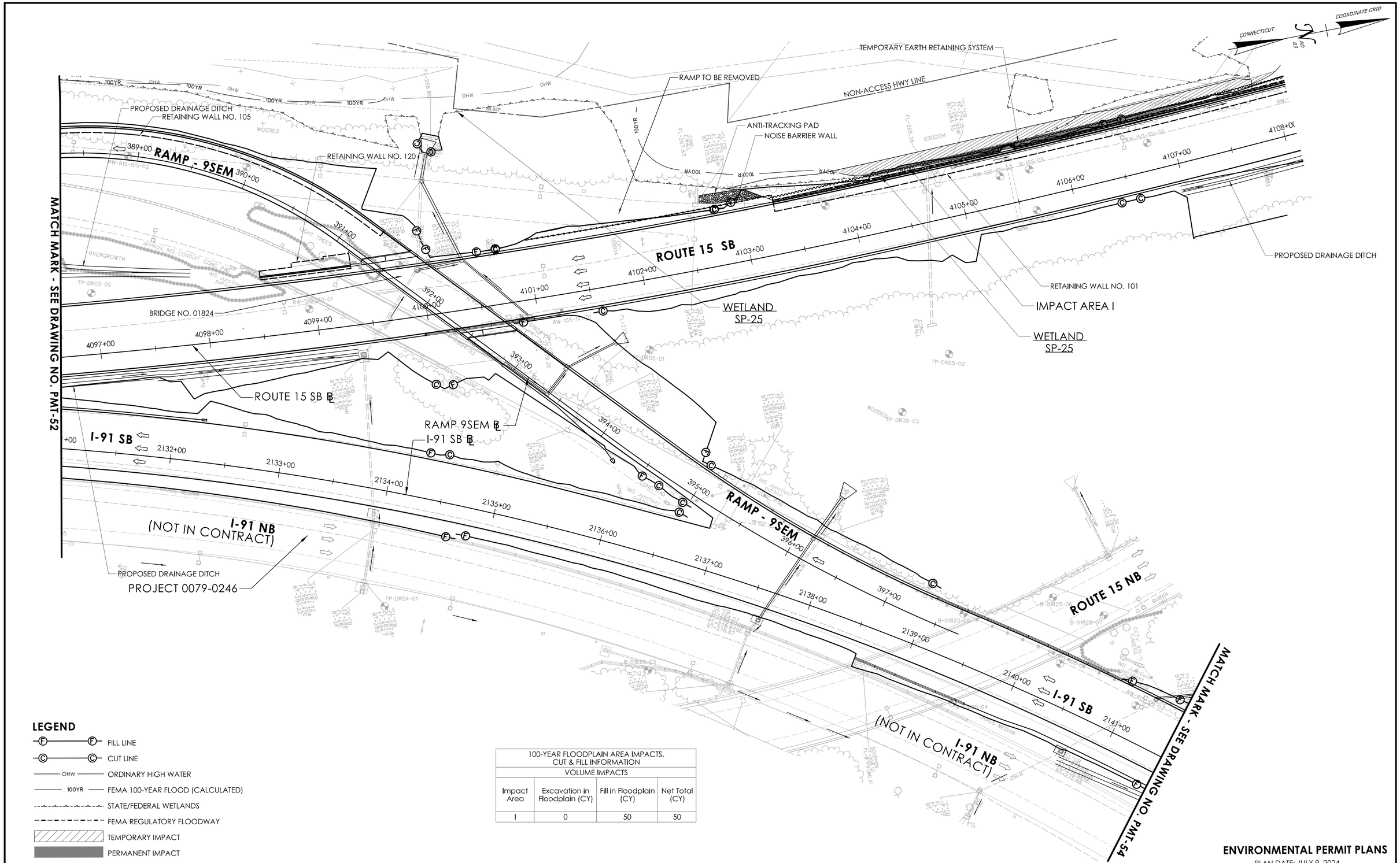
SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: 100-YEAR FLOODPLAIN IMPACT PLAN

DRAWING NO. PMT-52
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_52.dgn
PLOTTED DATE: 7/9/2024



LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

100-YEAR FLOODPLAIN AREA IMPACTS, CUT & FILL INFORMATION			
VOLUME IMPACTS			
Impact Area	Excavation in Floodplain (CY)	Fill in Floodplain (CY)	Net Total (CY)
I	0	50	50

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

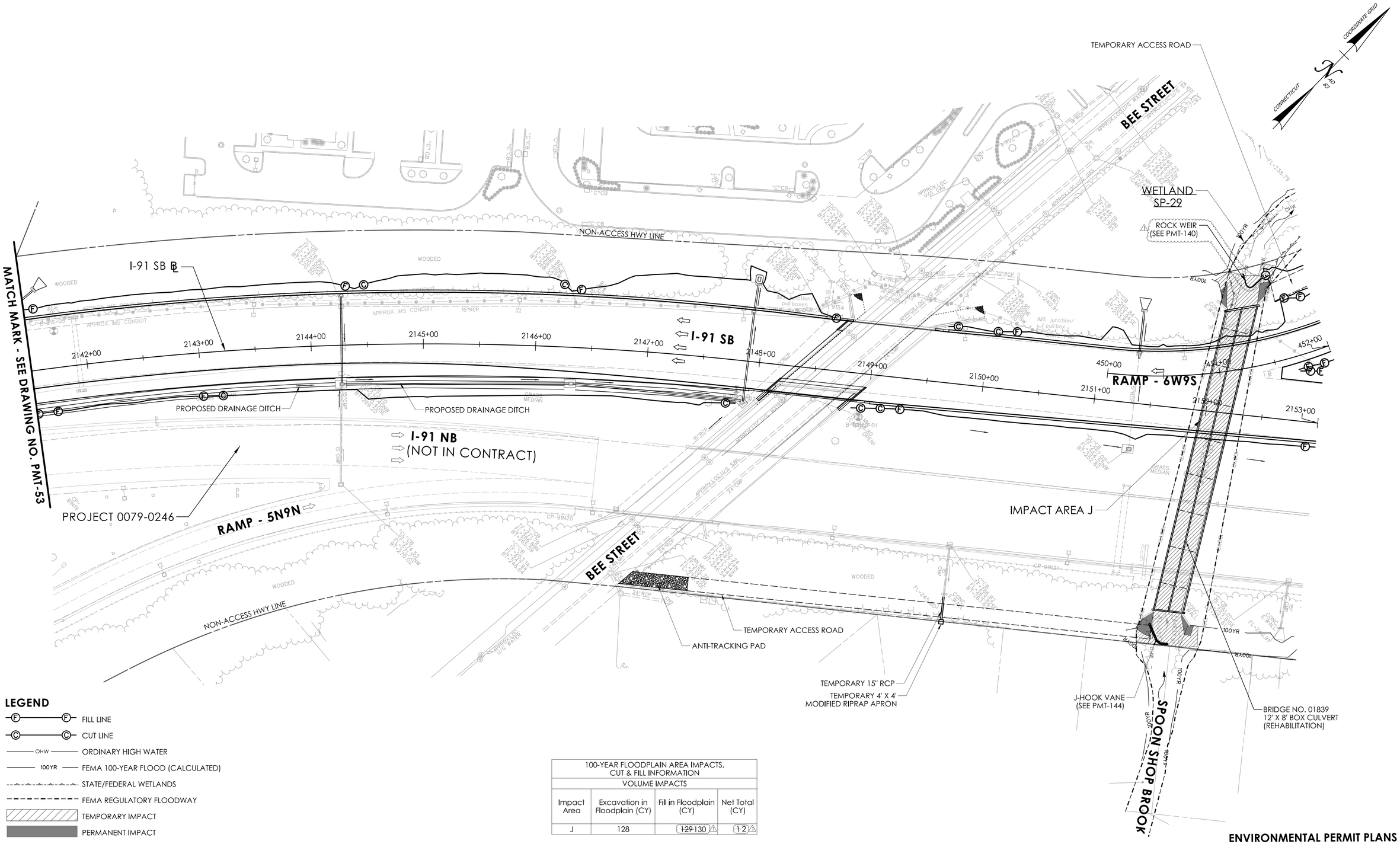
SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: 100-YEAR FLOODPLAIN IMPACT PLAN

DRAWING NO. PMT-53
SHEET NO.

LASTED SAVED BY: NBilbeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_16.dgn
PLOTTED DATE: 7/9/2024



LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

100-YEAR FLOODPLAIN AREA IMPACTS, CUT & FILL INFORMATION			
VOLUME IMPACTS			
Impact Area	Excavation in Floodplain (CY)	Fill in Floodplain (CY)	Net Total (CY)
J	128	~~129~~ 130 1	~~1~~ 2 1

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	ROCK WEIR ADDED

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

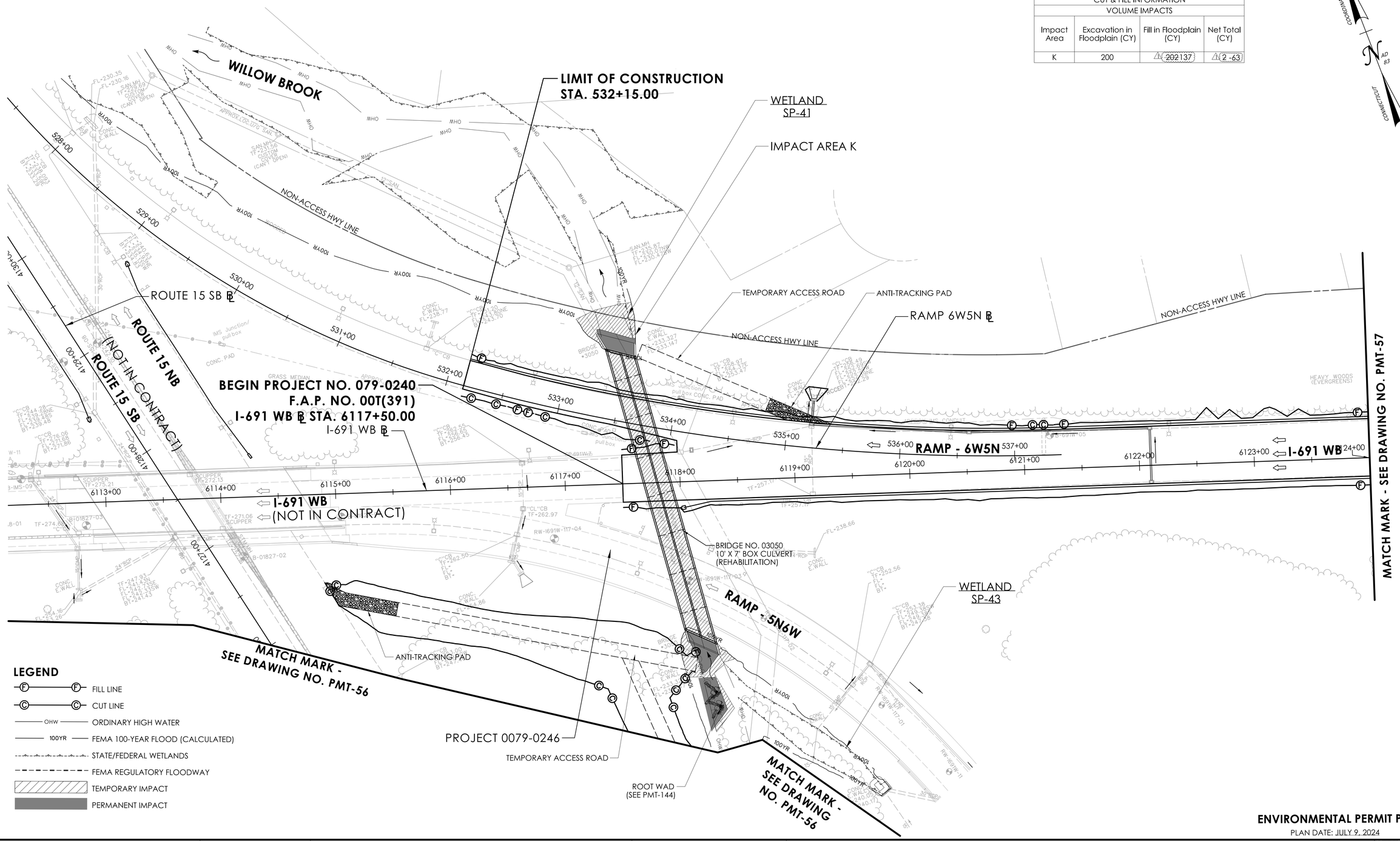
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: 100-YEAR FLOODPLAIN IMPACT PLAN

DRAWING NO. PMT-54
SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_54_REV1.dgn
PLOTTED DATE: 2/13/2025

100-YEAR FLOODPLAIN AREA IMPACTS, CUT & FILL INFORMATION			
VOLUME IMPACTS			
Impact Area	Excavation in Floodplain (CY)	Fill in Floodplain (CY)	Net Total (CY)
K	200	202137	2 -63



LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION
1	02/13/2025	REVISED IMPACT AREAS

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

HORIZONTAL SCALE 1"=40' (0, 40', 80')

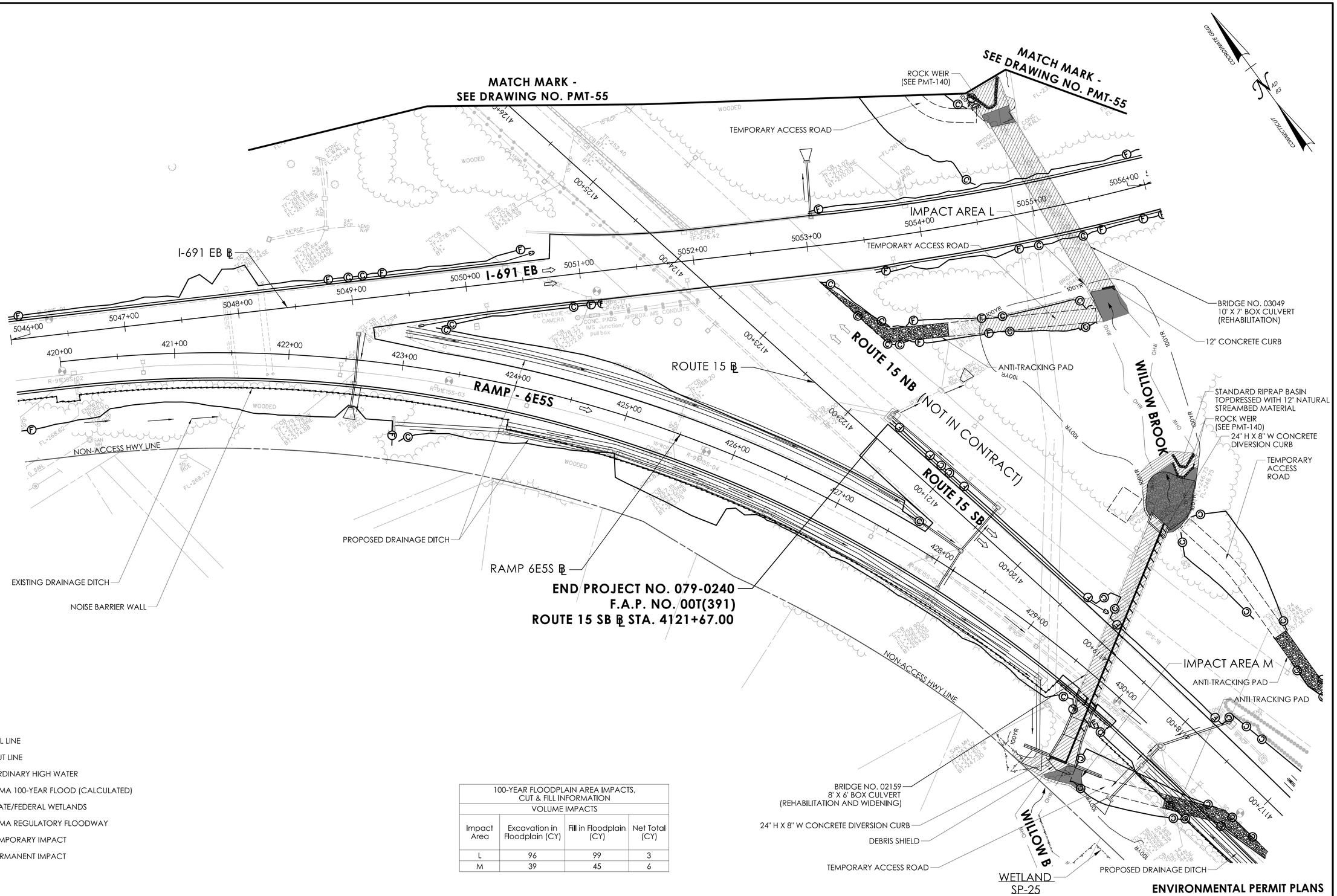
SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: 100-YEAR FLOODPLAIN IMPACT PLAN

DRAWING NO. PMT-55
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_55_REV1.dgn
PLOTTED DATE: 2/13/2025



LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

100-YEAR FLOODPLAIN AREA IMPACTS, CUT & FILL INFORMATION			
VOLUME IMPACTS			
Impact Area	Excavation in Floodplain (CY)	Fill in Floodplain (CY)	Net Total (CY)
L	96	99	3
M	39	45	6

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

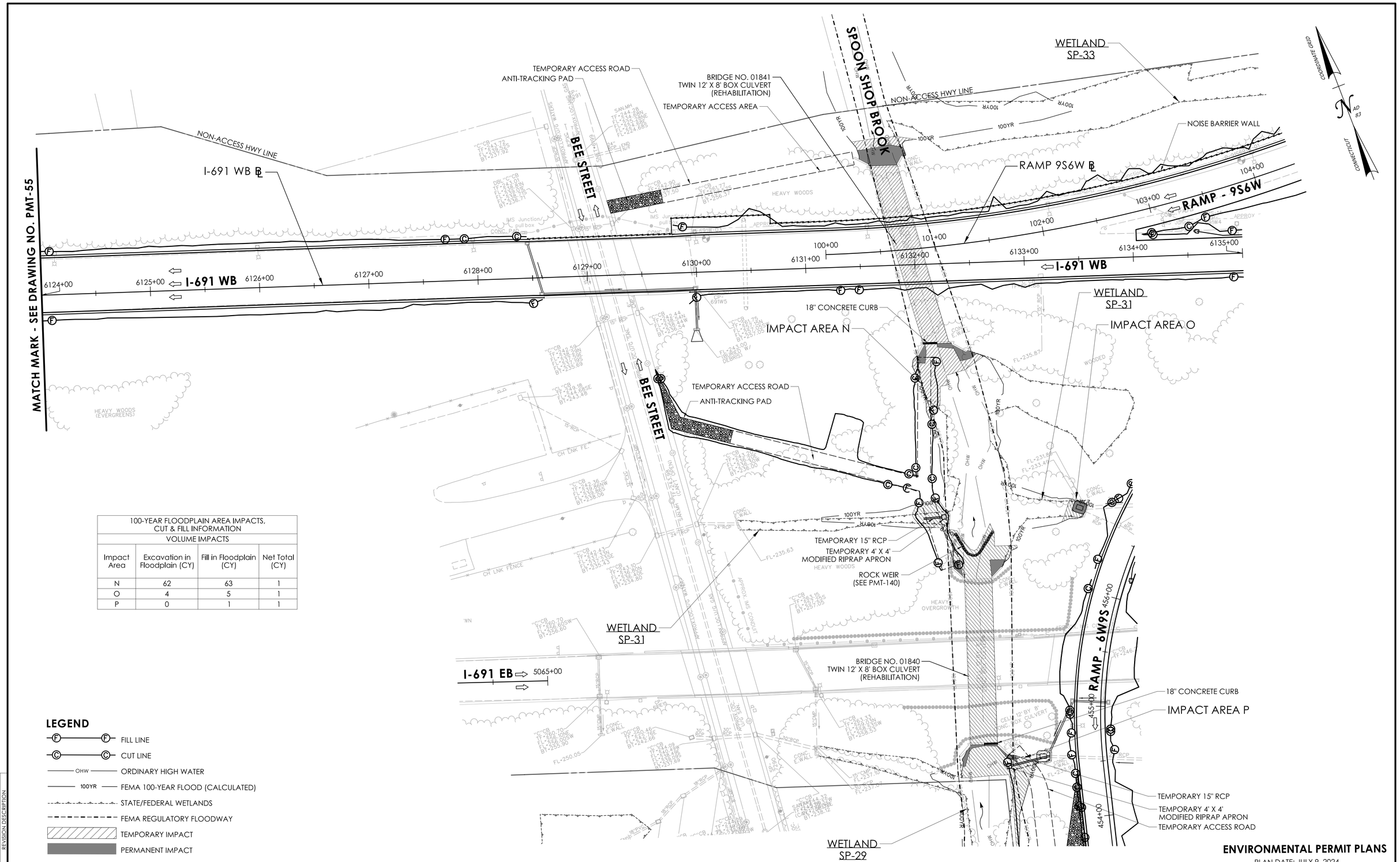
SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: 100-YEAR FLOODPLAIN IMPACT PLAN

DRAWING NO. PMT-56
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_24.dgn
PLOTTED DATE: 7/9/2024



100-YEAR FLOODPLAIN AREA IMPACTS, CUT & FILL INFORMATION			
VOLUME IMPACTS			
Impact Area	Excavation in Floodplain (CY)	Fill in Floodplain (CY)	Net Total (CY)
N	62	63	1
O	4	5	1
P	0	1	1

LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- TEMPORARY IMPACT
- PERMANENT IMPACT

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

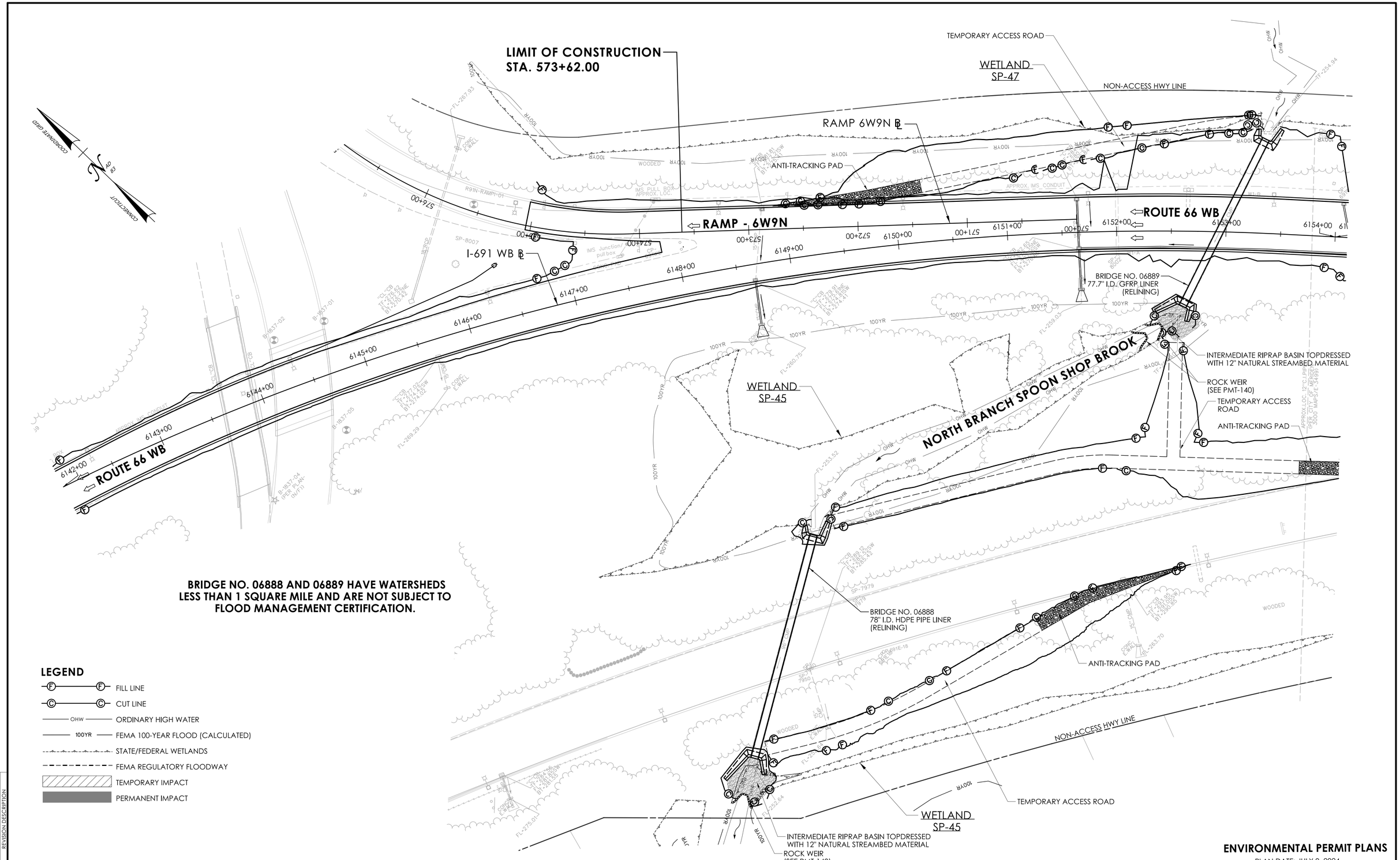
SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: 100-YEAR FLOODPLAIN IMPACT PLAN

DRAWING NO. PMT-57
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_57.dgn
PLOTTED DATE: 7/9/2024



ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

HORIZONTAL SCALE 1"=40' (0, 40', 80')

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240

PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS

TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN

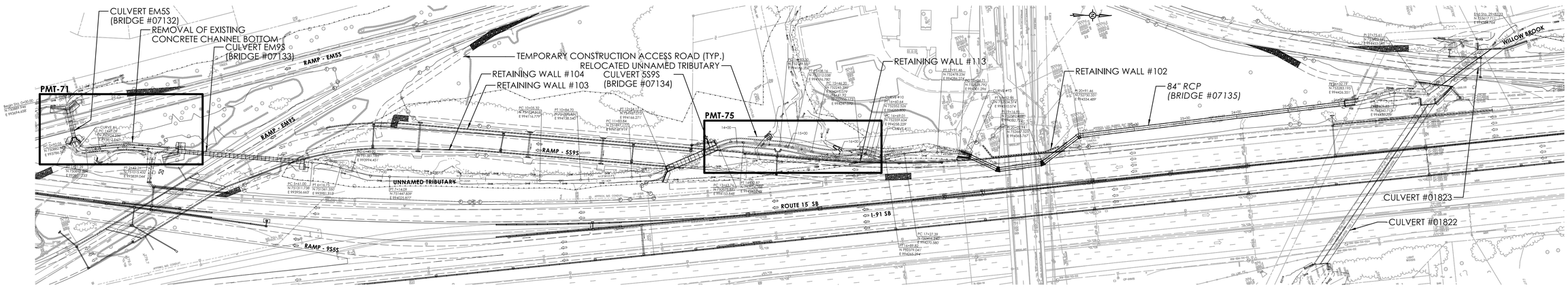
DRAWING TITLE: 100-YEAR FLOODPLAIN IMPACT PLAN

DRAWING NO. PMT-58

SHEET NO.

LASTED SAVED BY: Efchilas **FILE NAME:** c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_58.dgn
PLOTTED DATE: 7/9/2024

UNNAMED TRIBUTARY TO WILLOW BROOK

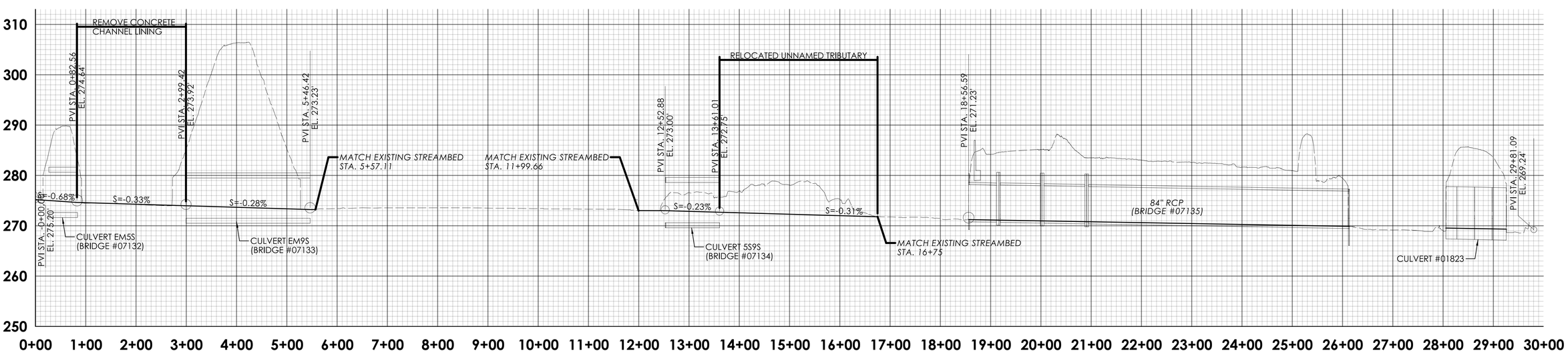


UNNAMED TRIBUTARY WATERSHED CURVE DATA

CURVE #1	CURVE #2	CURVE #3	CURVE #4	CURVE #5	CURVE #6	CURVE #7
PI 1+09.98	PI 1+94.79	PI 5+88.96	PI 6+77.34	PI 10+45.03	PI 12+19.37	PI 13+88.82
DELTA 82°44'22.8"	DELTA 10°53'56.2"	DELTA 10°58'49.7"	DELTA 14°06'34.4"	DELTA 0°47'32.53.5"	DELTA 20°08'56.2"	DELTA 28°08'20.1"
D 25°38'32.4"	D 14°35'29.6"	D 11°45'29.6"	D 11°35'29.6"	D 0°34'21.1"	D 25°38'32.4"	D 11°45'29.6"
T 17.984'	T 147.700'	T 127.950'	T 137.13"	T 39.71.5"	T 36.334'	T 126.062'
L 29.242'	L 95.111'	L 55.748'	L 73.877'	L 79.381'	L 70.333'	L 49.112'
R 20.000'	R 300.000'	R 300.000'	R 300.000'	R 1000.000'	R 200.000'	R 100.000'

CURVE #8	CURVE #9	CURVE #10	CURVE #11	CURVE #12	CURVE #13
PI 14+95.74	PI 15+94.47	PI 16+51.39	PI 16+79.57	PI 17+59.55	PI 18+43.93
DELTA 25°07'19.2"	DELTA 18°16'50.3"	DELTA 21°07'12.5"	DELTA 29°50'15.4"	DELTA 12°41'13.8"	DELTA 29°53'30.2"
D 28°38'32.4"	D 19°05'34.9"	D 11°45'29.6"	D 11°45'29.6"	D 19°05'34.9"	D 11°45'29.6"
T 12.446'	T 48.269'	T 9.472'	T 10.504	T 32.139'	T 19.237'
L 24.860'	L 95.717'	L 18.722'	L 20.802'	L 64.074'	L 18.236'
R 200.000'	R 300.000'	R 50.000'	R 50.000'	R 300.000'	R 50.000'

PLAN



PROFILE

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

HORIZONTAL SCALE 1" = 100' (0 – 100 – 200)

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240

PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS

TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN

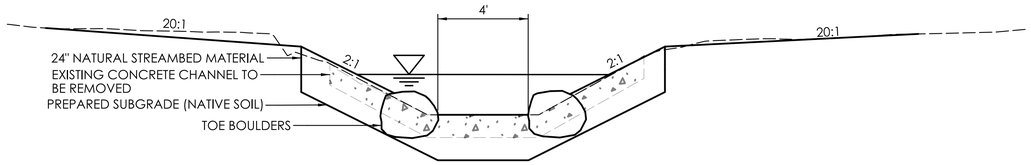
DRAWING TITLE: UNNAMED TRIBUTARY ALIGNMENT AND PROFILE

DRAWING NO. PMT-69

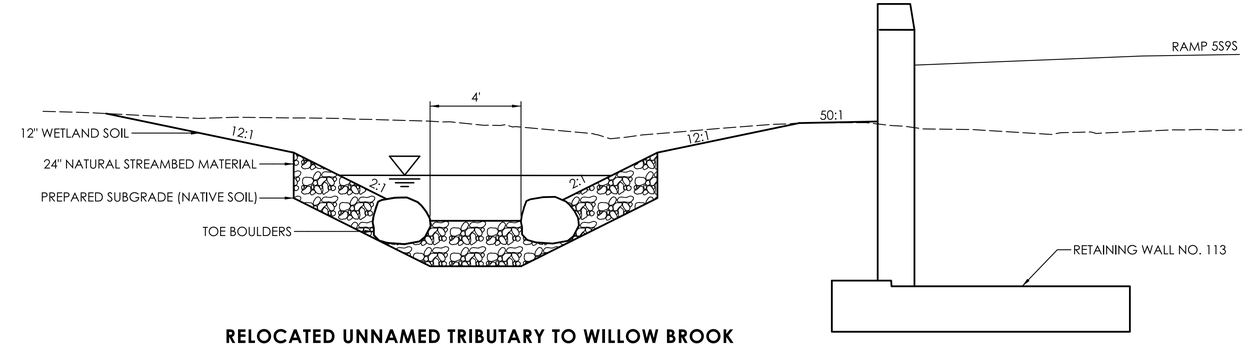
SHEET NO.

LASTED SAVED BY: DDixon FILE NAME: c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\0079-0240_WATERSHED_SHEETS.dgn

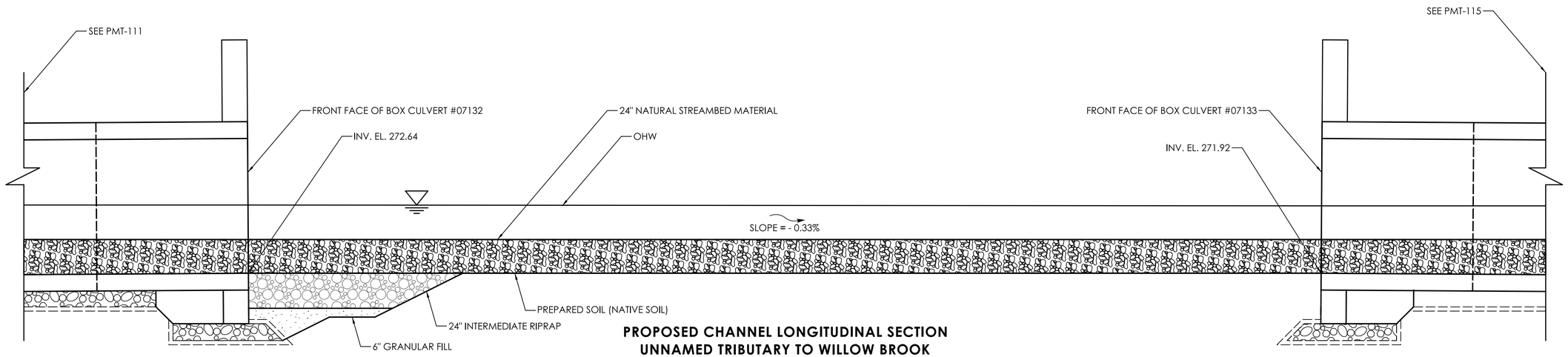
PLOTTED DATE: 7/9/2024



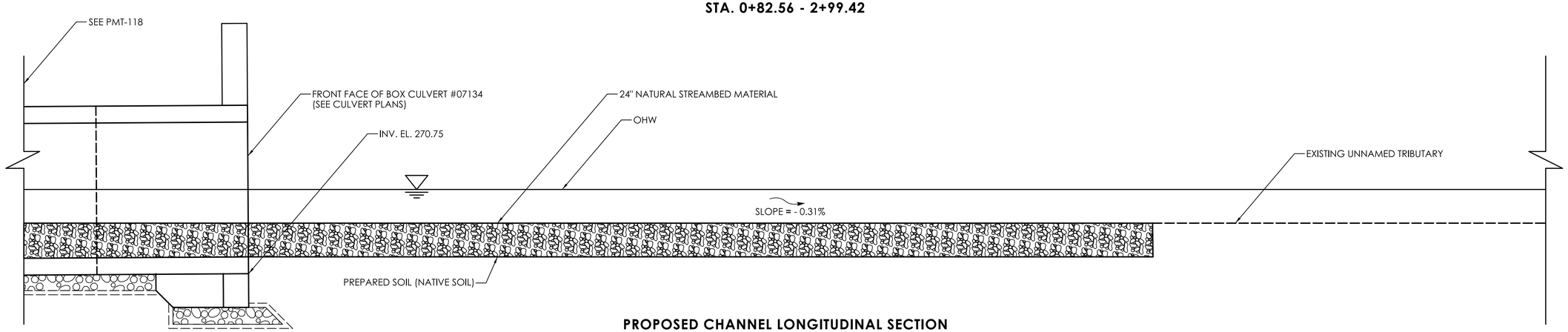
UNNAMED TRIBUTARY TO WILLOW BROOK
REMOVAL OF CONCRETE CHANNEL BOTTOM
STA. 0+83 TO STA. 3+00



RELOCATED UNNAMED TRIBUTARY TO WILLOW BROOK
STA. 13+61 TO STA. 16+75



PROPOSED CHANNEL LONGITUDINAL SECTION
UNNAMED TRIBUTARY TO WILLOW BROOK
REMOVAL OF CONCRETE CHANNEL BOTTOM
STA. 0+82.56 - 2+99.42



PROPOSED CHANNEL LONGITUDINAL SECTION
RELOCATED UNNAMED TRIBUTARY TO WILLOW BROOK
STA. 13+61.01 - 16+75

NOTE

1. SEE MISC. DETAIL AND PLAN SHEETS FOR CHANNEL BOULDERS LOCATIONS AND DETAILS.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: NAB CHECKED BY: PMB

NOT TO SCALE

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: STREAM CHANNEL REALIGNMENT PLANS

DRAWING NO. PMT-70
SHEET NO.

LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\HW_CP_0079_0240_WATERSHED_TYPICALS.dgn
PLOTTED DATE: 7/9/2024

FINAL CONDITIONS REMOVAL OF EXISTING CONCRETE CHANNEL BOTTOM PLAN

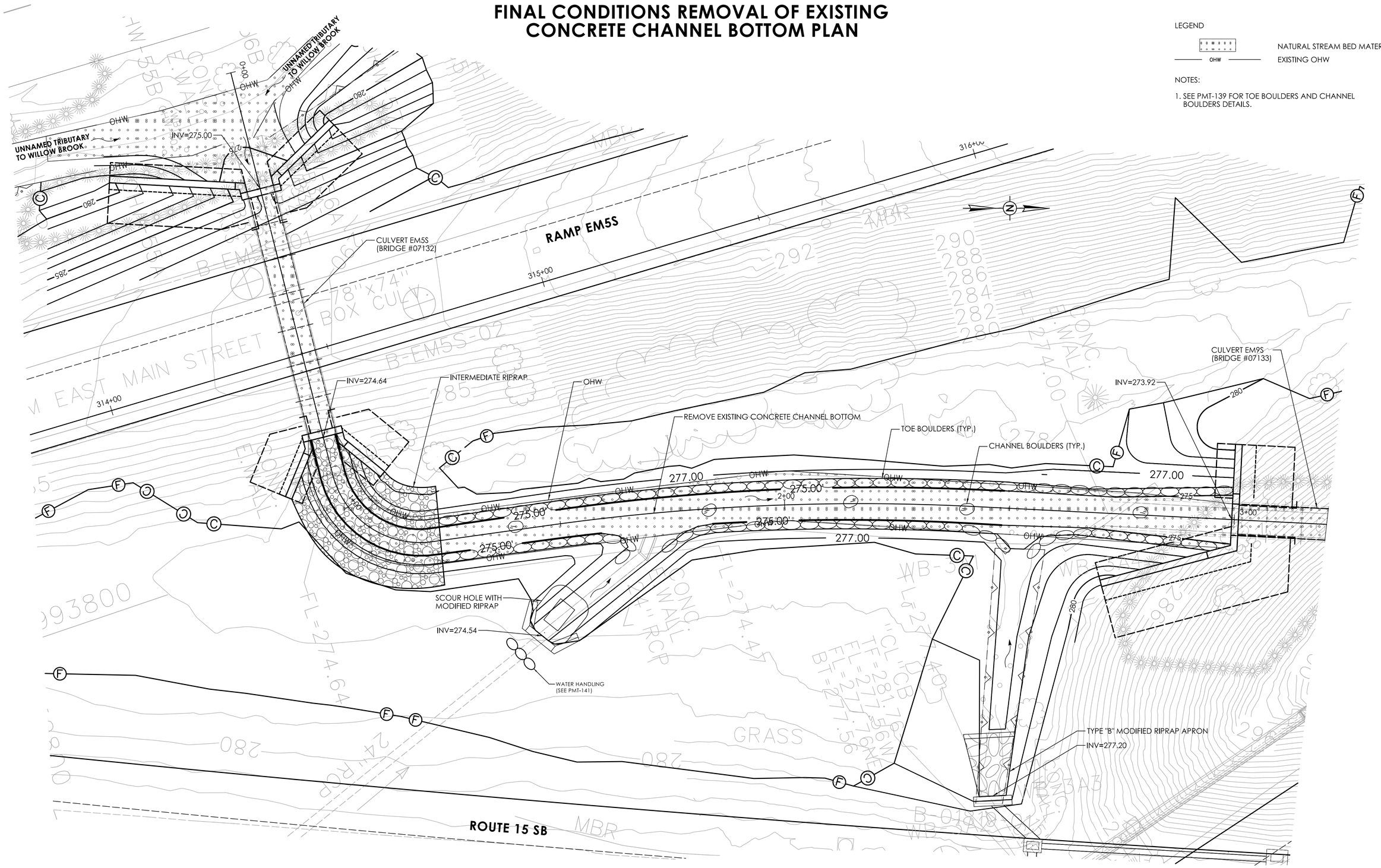
LEGEND

NATURAL STREAM BED MATERIAL

OHW — EXISTING OHW

NOTES:

1. SEE PMT-139 FOR TOE BOULDERS AND CHANNEL BOULDERS DETAILS.



REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

0 10 20
HORIZONTAL SCALE 1" = 10'

SIGNATURE/ BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

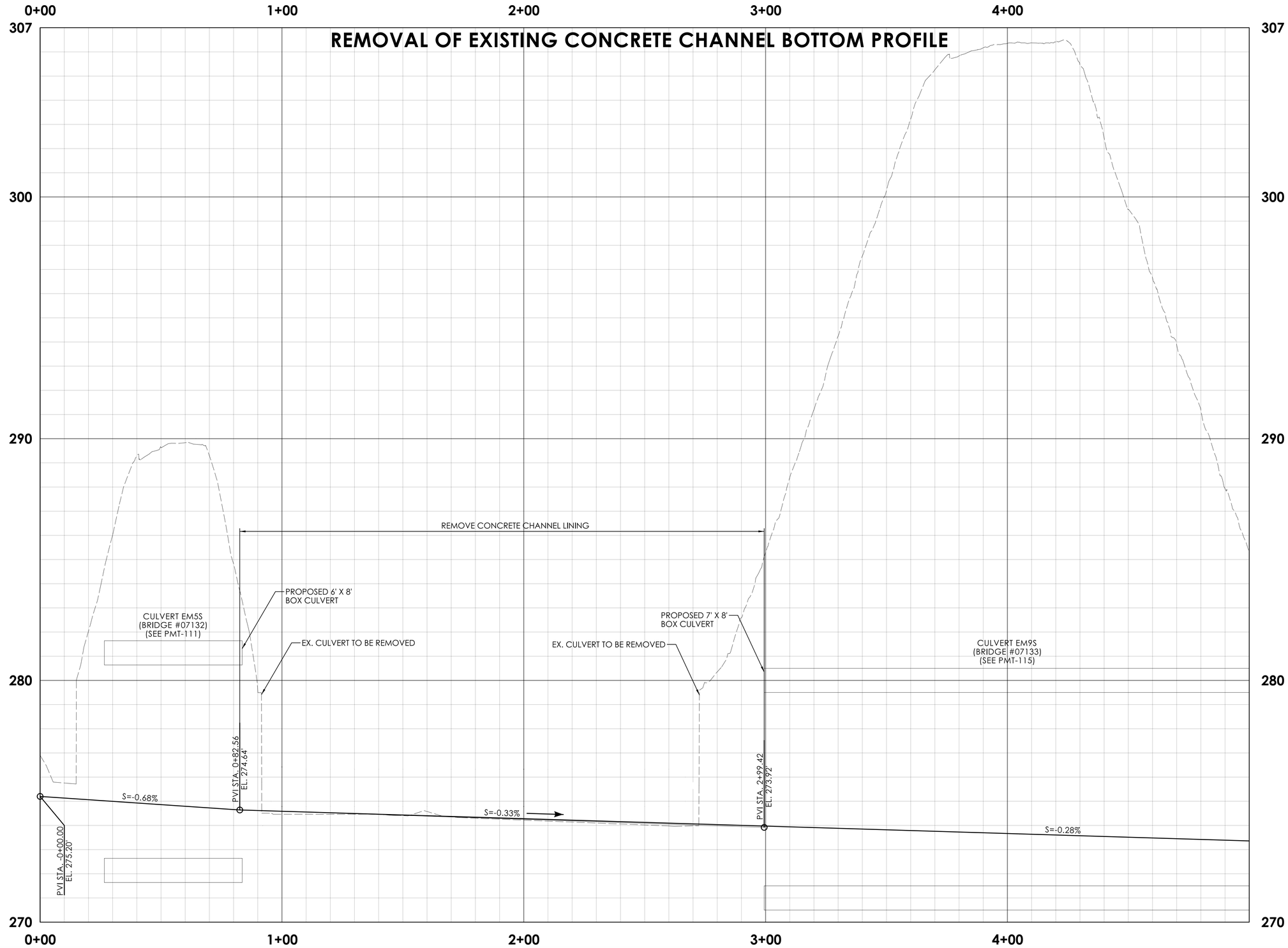
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: REMOVAL OF EXISTING CONCRETE CHANNEL BOTTOM PLAN

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-71
SHEET NO.

LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\0079-0240_WATERSHED_SHEETS.dgn
PLOTTED DATE: 7/9/2024



REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

HORIZONTAL SCALE IN FEET 0 20 40

VERTICAL SCALE IN FEET 0 2 4

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

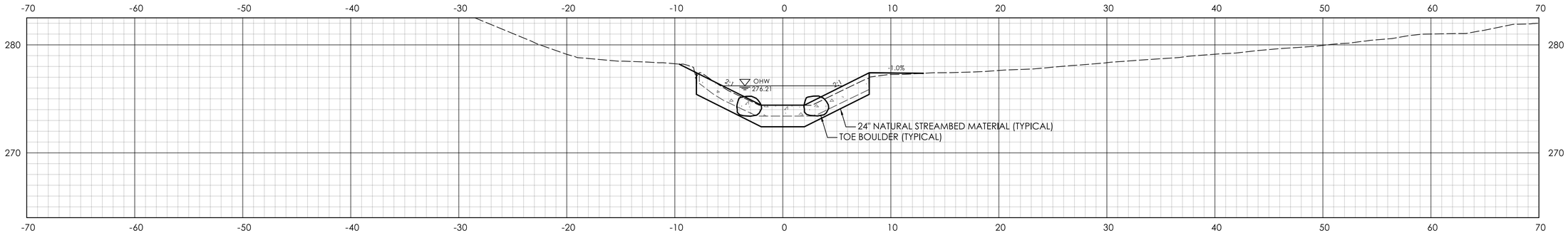
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: REMOVAL OF EXISTING CONCRETE CHANNEL BOTTOM PROFILE

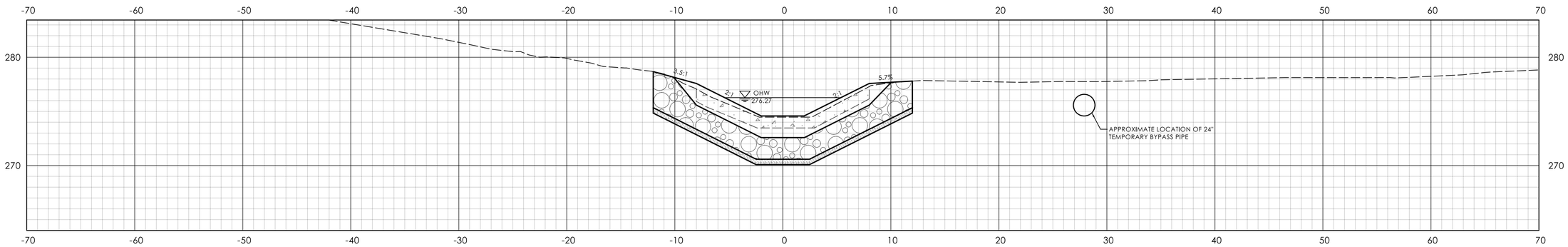
ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-72
SHEET NO.

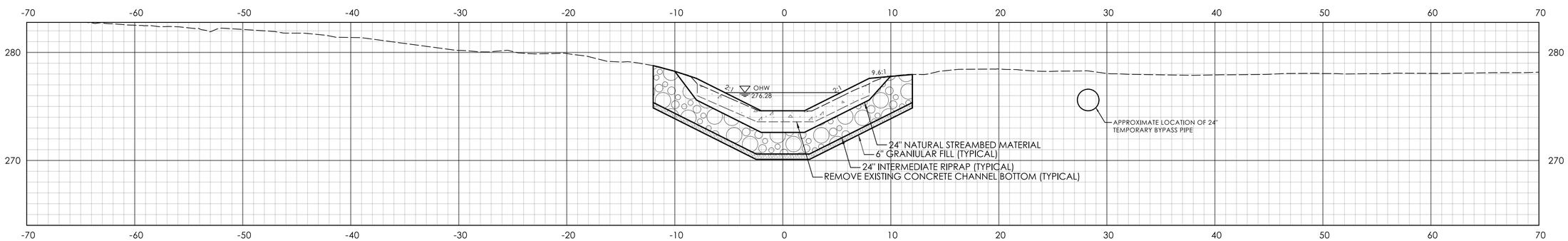
LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\0079-0240_WATERSHED_SHEETS.dgn
PLOTTED DATE: 7/9/2024



STA.1+50.00



STA.1+00.00



STA.0+95.00

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

0 5' 10'
HORIZONTAL SCALE
1" = 5'

SIGNATURE/ BLOCK:

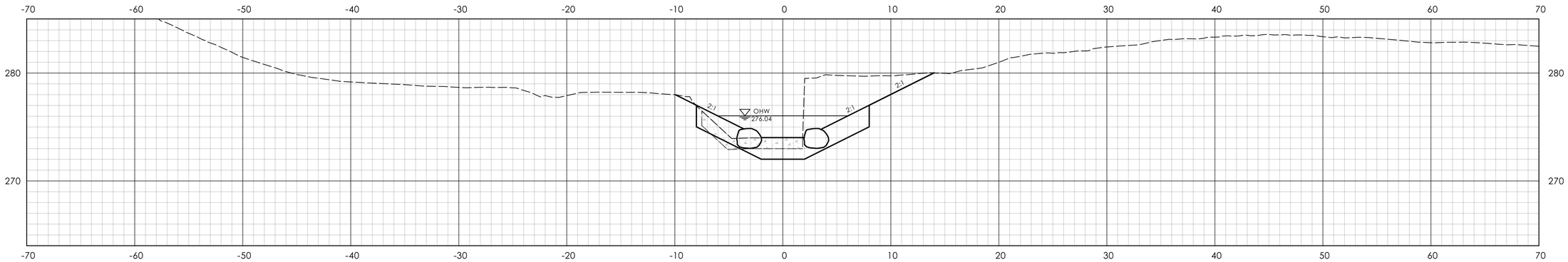
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

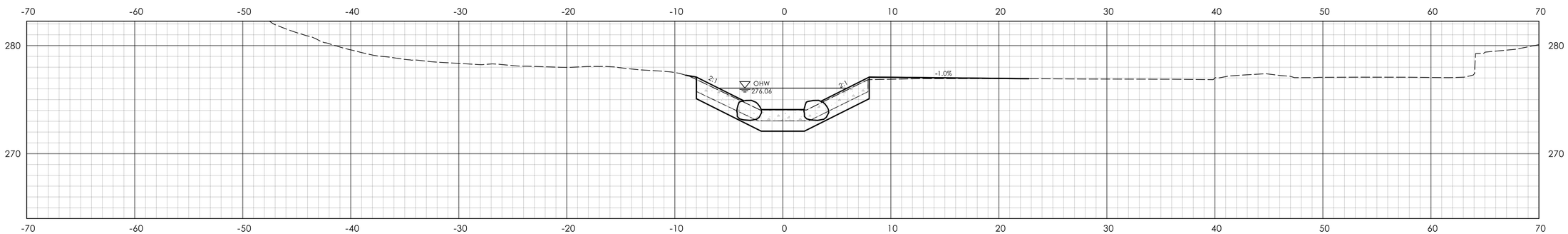
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: UNNAMED TRIBUTARY CROSS-SECTIONS

DRAWING NO. PMT-73
SHEET NO.

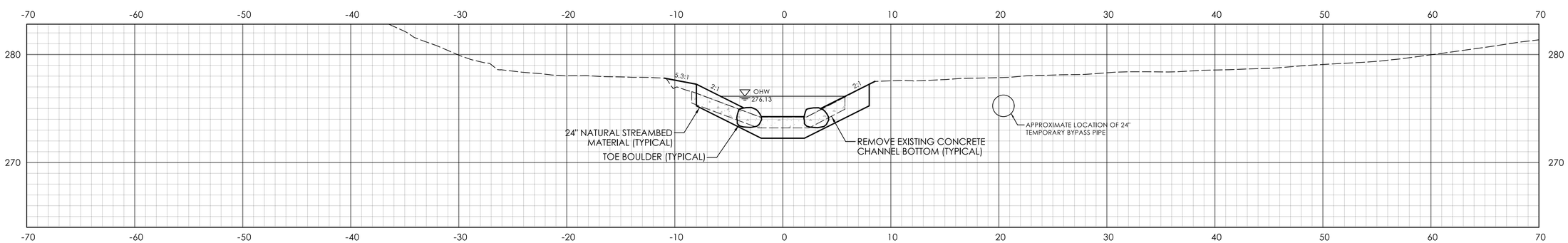
LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\HW_CB_0079-0240_Watershed_XSec.dgn
PLOTTED DATE: 7/9/2024



STA.2+70.00



STA.2+50.00



STA.2+00.00

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

0 5' 10'
HORIZONTAL SCALE
1" = 5'

SIGNATURE/ BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: UNNAMED TRIBUTARY CROSS-SECTIONS

DRAWING NO. PMT-74
SHEET NO.

LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\HW_CB_0079-0240_Watershed_XSec.dgn
PLOTTED DATE: 7/9/2024

FINAL CONDITIONS RELOCATED UNNAMED TRIBUTARY PLAN

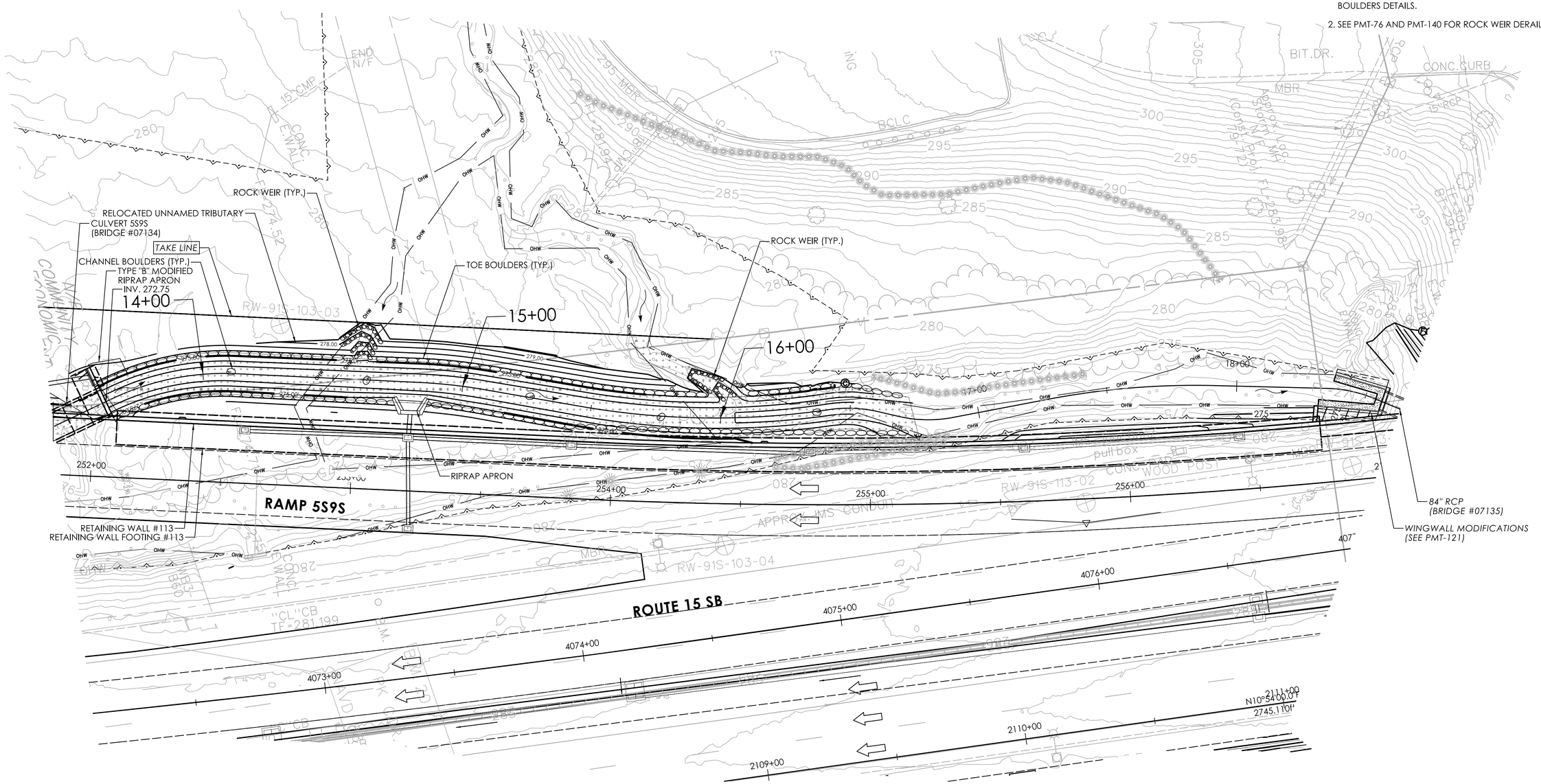
LEGEND

NATURAL STREAM BED MATERIAL

OHW — EXISTING OHW

NOTES:

1. SEE PMT-139 FOR TOE BOULDERS AND CHANNEL BOULDERS DETAILS.
2. SEE PMT-76 AND PMT-140 FOR ROCK WEIR DERAILS.



REV.	DATE	REVISION DESCRIPTION

DESIGNER/DRAFTER: CHECKED BY:

0 20 40
HORIZONTAL SCALE
1" = 20'

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

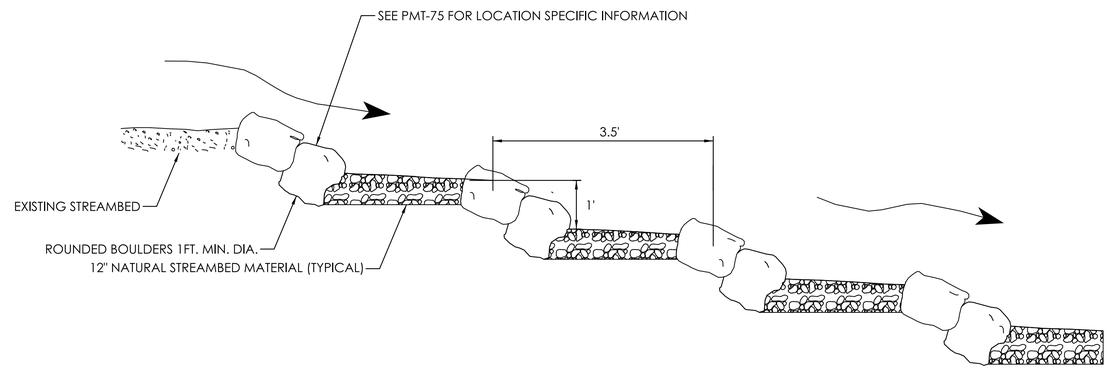
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: RELOCATED UNNAMED TRIBUTARY PLAN

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

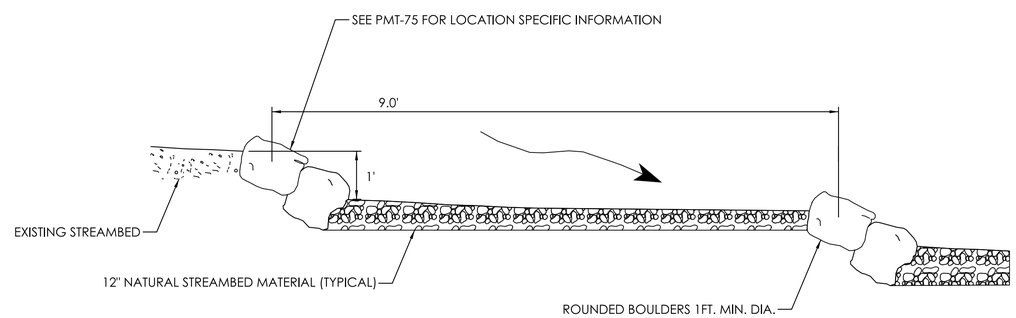
DRAWING NO. PMT-75
SHEET NO.

LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\0079-0240_WATERSHED_SHEETS.dgn
PLOTTED DATE: 7/25/2024



ROCK WEIR STA. 14+65LT - PROFILE VIEW

N.T.S.



ROCK WEIR STA. 16+00LT - PROFILE VIEW

N.T.S.

REVISION DESCRIPTION

GENERAL NOTE

1. SEE PMT-140 FOR ROCK WEIR PLAN VIEW, SECTION VIEW, AND NOTES.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DATE

REV.

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: NAB CHECKED BY: PMB

NOT TO SCALE

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

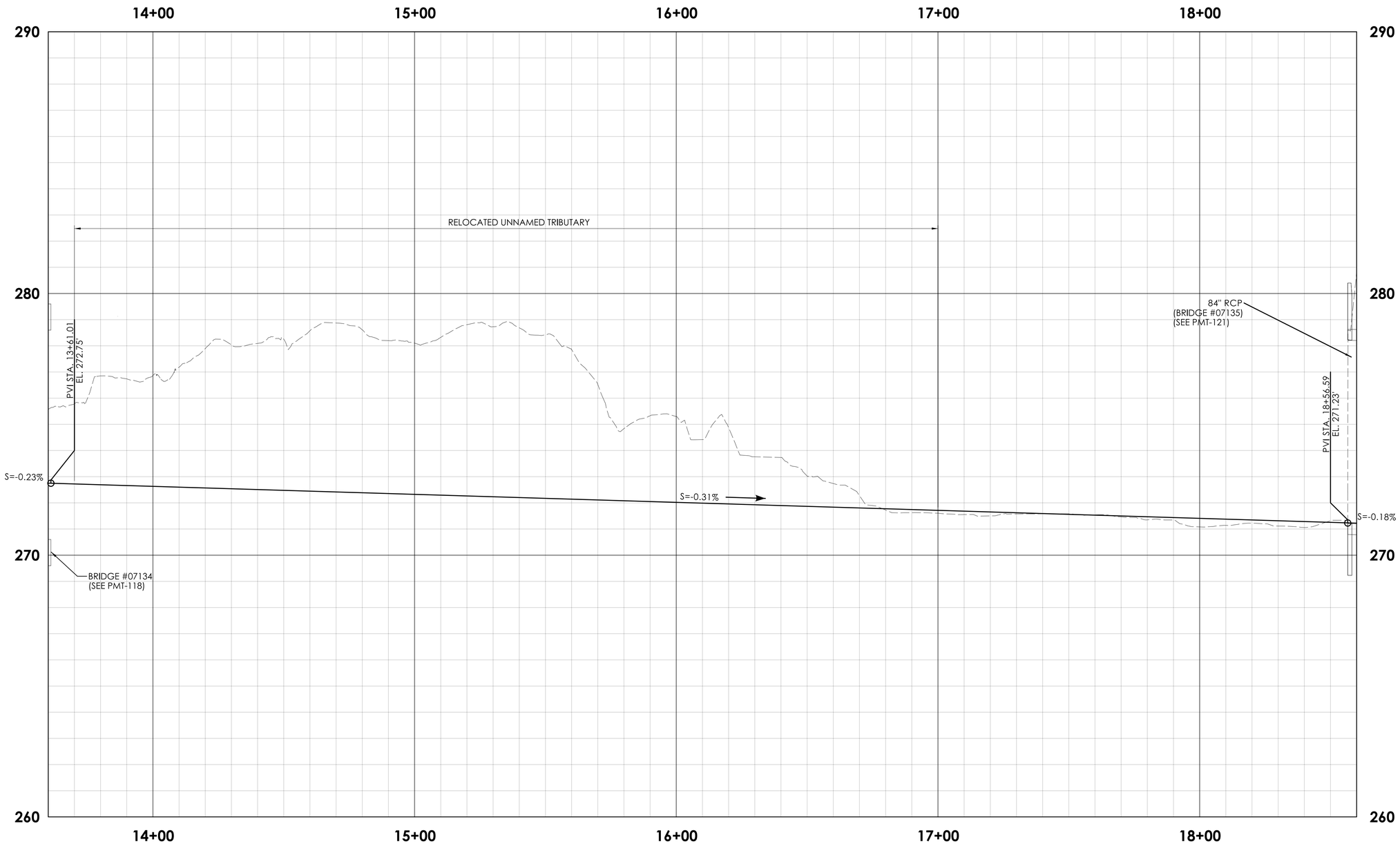
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: RELOCATED UNNAMED TRIBUTARY ROCK WEIR DETAILS

DRAWING NO. PMT-76

SHEET NO.

LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\HW_CP_0079_0240_WATERSHED_TYPICALS.dgn
PLOTTED DATE: 7/9/2024

RELOCATED UNNAMED TRIBUTARY PROFILE



ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

0 20 40 HORIZONTAL SCALE IN FEET

0 2 4 VERTICAL SCALE IN FEET

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: RELOCATED UNNAMED TRIBUTARY PROFILE

DRAWING NO. PMT-77

SHEET NO.

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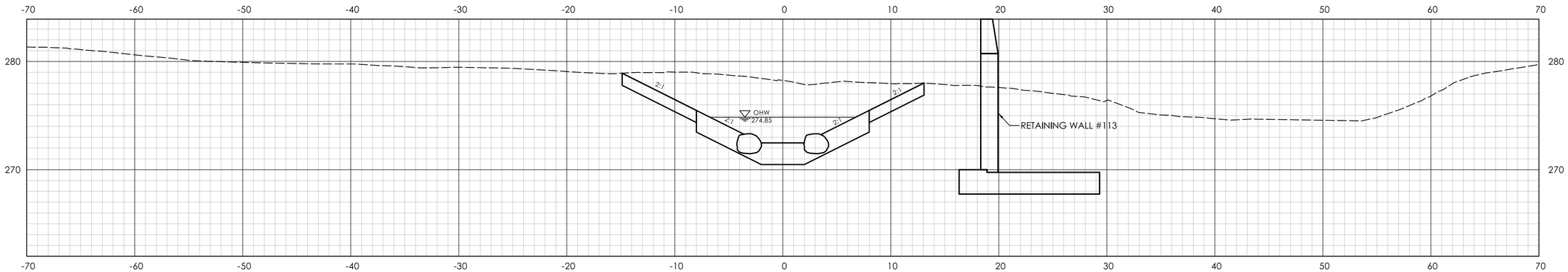
PLOTTED DATE: 7/9/2024



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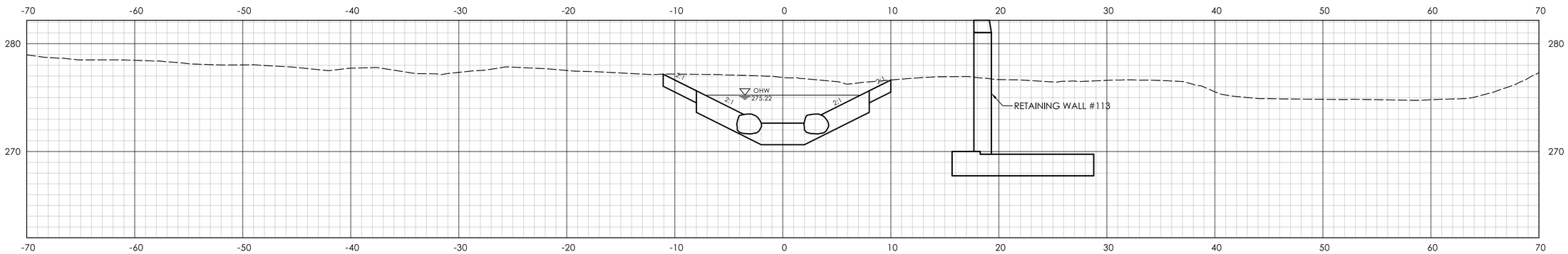

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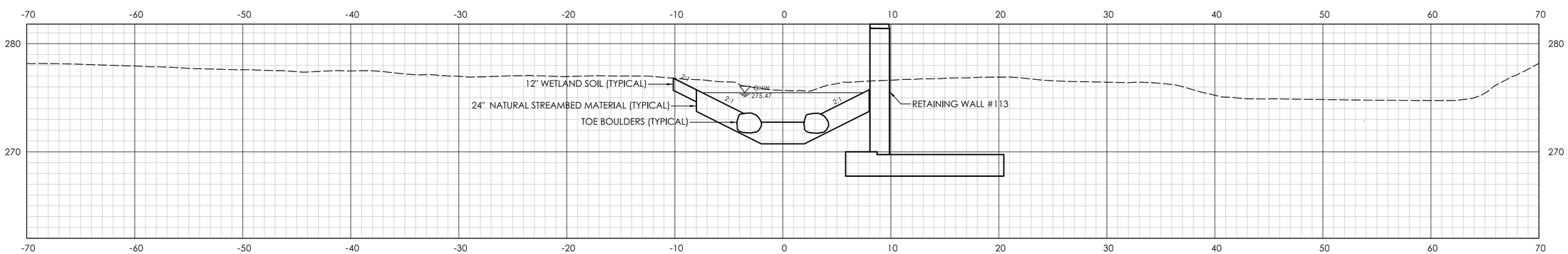

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

0 5' 10'
HORIZONTAL SCALE
1" = 5'

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: UNNAMED TRIBUTARY CROSS-SECTIONS

DRAWING NO. PMT-78
SHEET NO.

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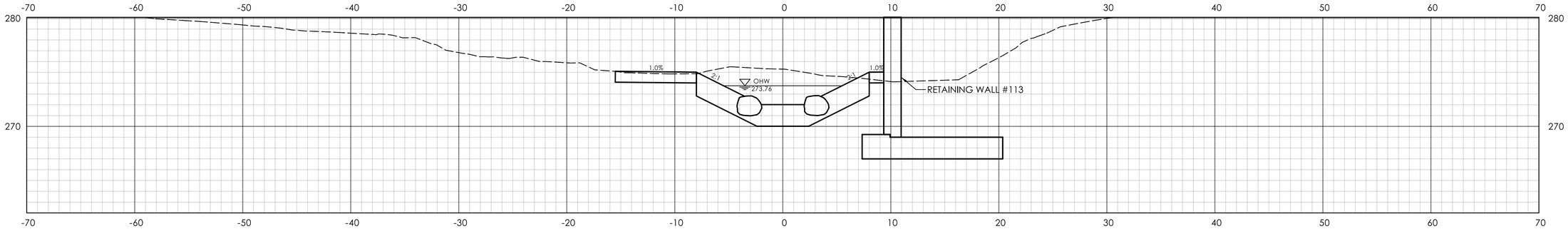
PLOTTED DATE: 7/9/2024



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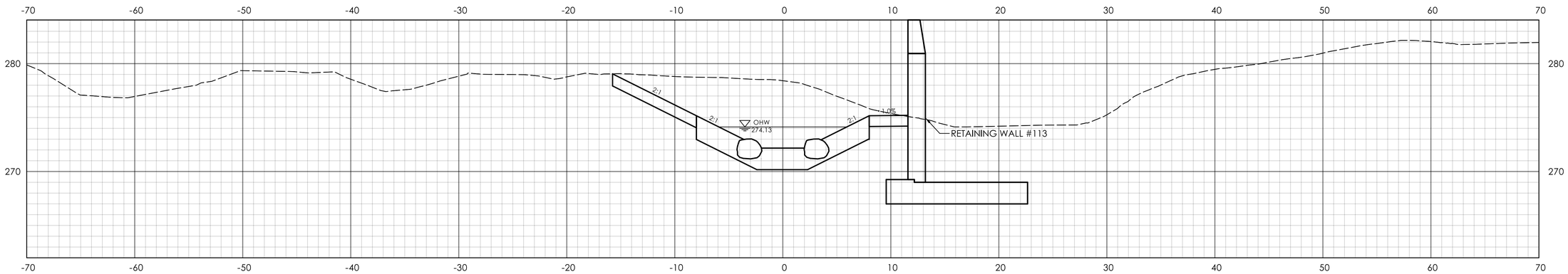

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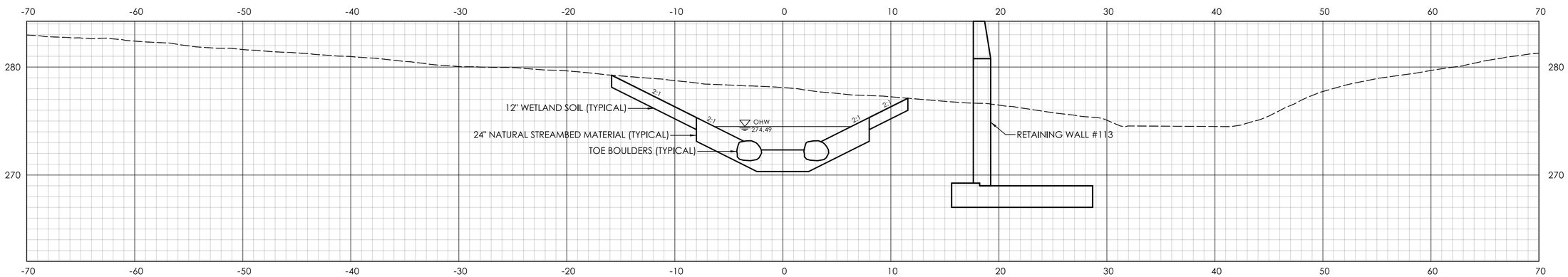

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

0 5' 10'
HORIZONTAL SCALE
1" = 5'

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: UNNAMED TRIBUTARY CROSS-SECTIONS

DRAWING NO. PMT-79
SHEET NO.

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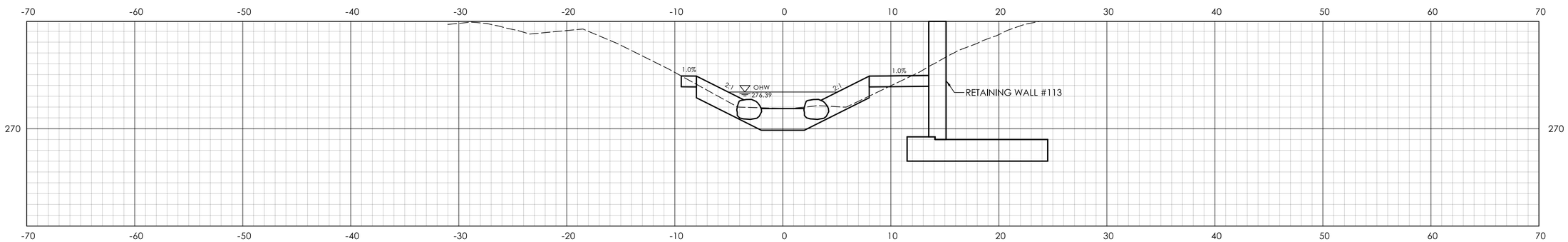
PLOTTED DATE: 7/9/2024



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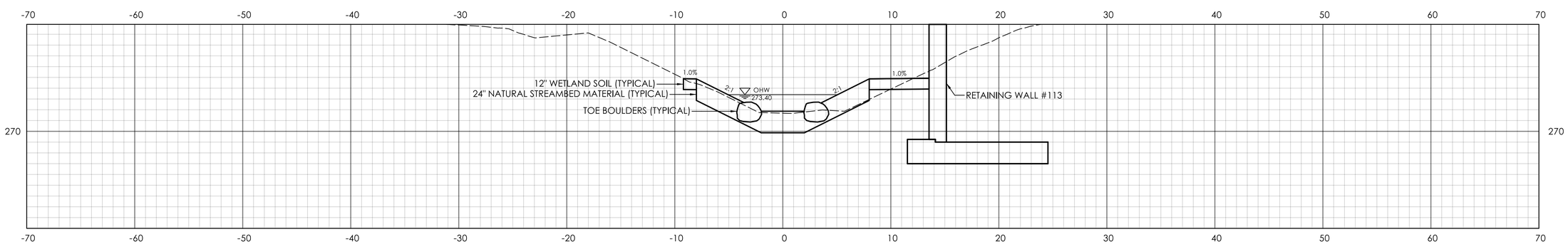

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ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

0 5' 10'
HORIZONTAL SCALE
1" = 5'

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

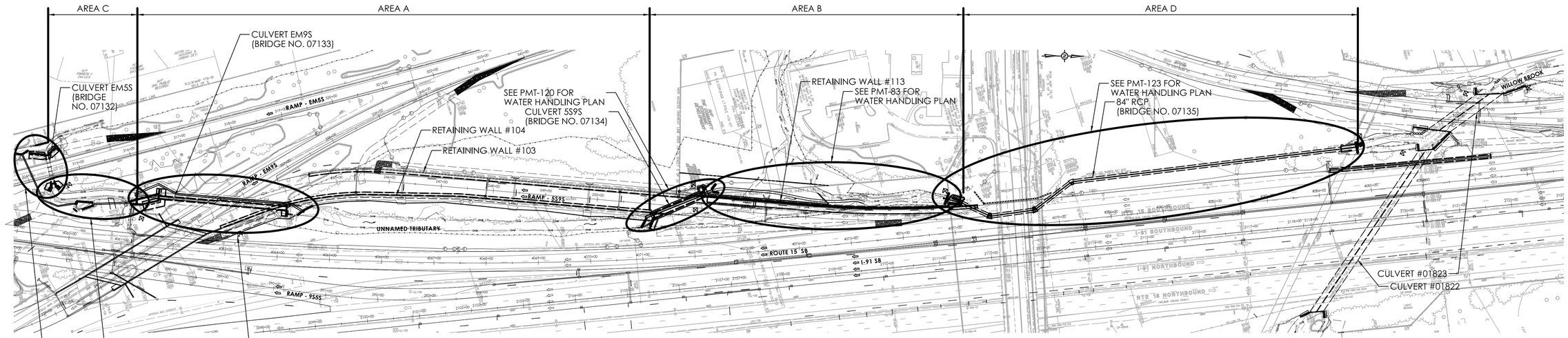
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: UNNAMED TRIBUTARY CROSS-SECTIONS

DRAWING NO. PMT-80
SHEET NO.

LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\HW_CB_0079-0240_Watershed_XSec.dgn
PLOTTED DATE: 7/9/2024

UNNAMED TRIBUTARY WATER-HANDLING



PLAN

SEASON ONE	WATER HANDLING LAYOUT 1 (AREAS A AND B)	BRIDGE NO. 07133 STAGE 1 (REFER TO PMT-117)
		BRIDGE NO. 07134 STAGE 1 (REFER TO PMT-120)
		RELOCATED TRIBUTARY STA. 12+50.00 TO STA. 16+75.00 (REFER TO PMT-83)
		RETAINING WALLS NO. 103, 104 AND 113 (PARTIAL)
	WATER HANDLING LAYOUT 2 (AREAS A AND B)	BRIDGE NO. 07133 STAGE 1 (REFER TO PMT-117)
		BRIDGE NO. 07134 STAGE 2 (REFER TO PMT-120)
		RETAINING WALLS NO. 103, 104 AND 113 (PARTIAL)
		FILL EXISTING TRIBUTARY AND CONSTRUCT PROPOSED ROADWAY FOR RAMP 5S9S (STAGE 1) (REFER TO PMT-120) BRIDGE NO. 07135 STAGE 1 (REFER TO PMT-123)
SEASON TWO	WATER HANDLING LAYOUT 3 (AREAS A)	BRIDGE NO. 07133 STAGE 2 (REFER TO PMT-117) CONSTRUCT PROPOSED ROADWAY FOR RAMP 5S9S (STAGE 2) (REFER TO PMT -120)
SEASON THREE	WATER HANDLING LAYOUT 4 (AREAS C)	BRIDGE NO. 07132 (REFER TO PMT-82 AND PMT-113)
		RECONSTRUCT CONCRETE LINDED CHANNEL STA. 0+92.05 TO STA. 2+72.42 (REFER TO PMT-71)
	WATER HANDLING LAYOUT 5 (AREAS D)	BRIDGE NO. 07135 STAGE 2 (REFER TO PMT-123)

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

0 100 200
HORIZONTAL SCALE
1" = 100'

SIGNATURE/ BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: UNNAMED TRIBUTARY WATER-HANDLING

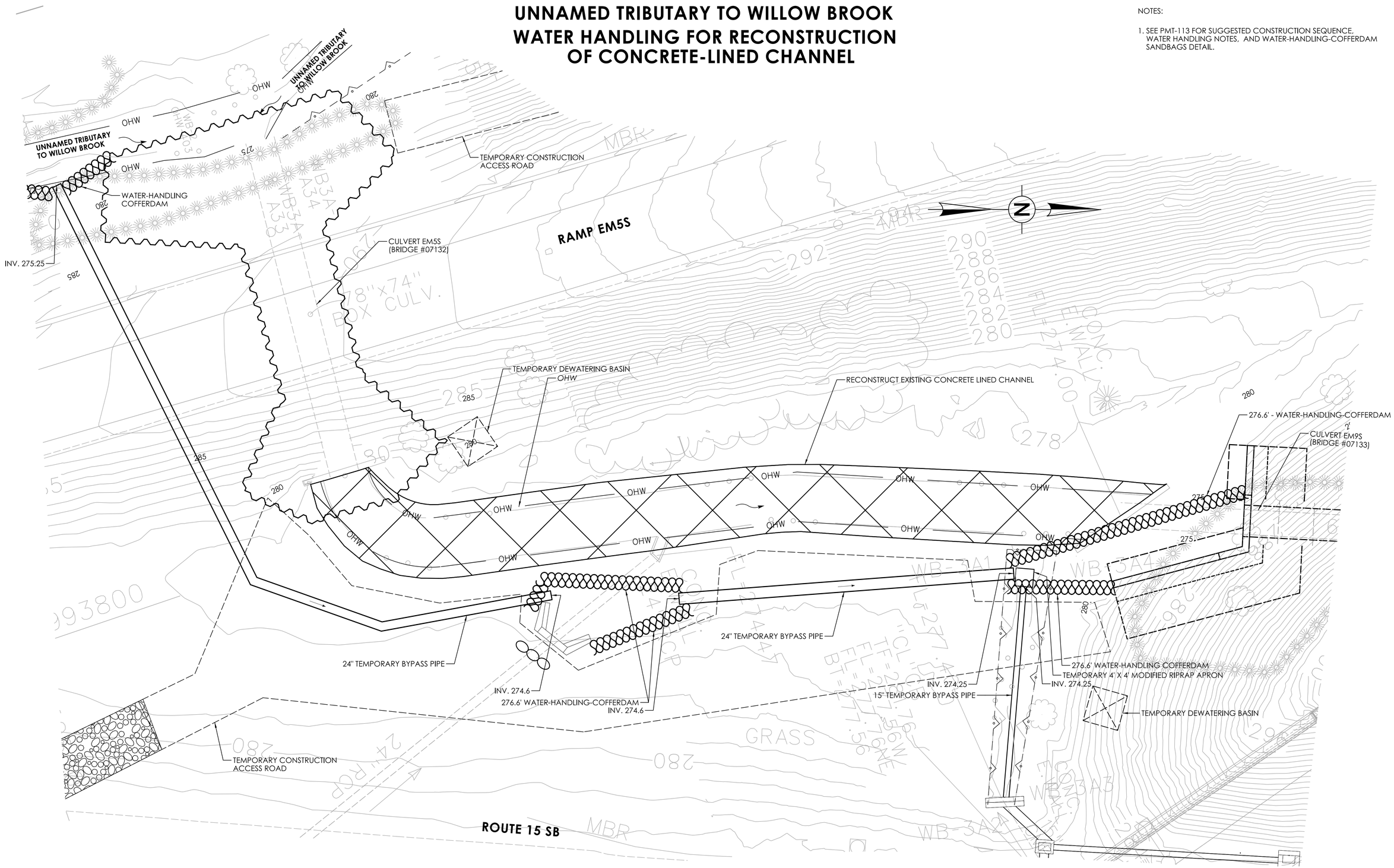
DRAWING NO. PMT-81
SHEET NO.

LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\0079-0240_WATERHANDLING.dgn
PLOTTED DATE: 7/9/2024

UNNAMED TRIBUTARY TO WILLOW BROOK
WATER HANDLING FOR RECONSTRUCTION OF CONCRETE-LINED CHANNEL

NOTES:

1. SEE PMT-113 FOR SUGGESTED CONSTRUCTION SEQUENCE, WATER HANDLING NOTES, AND WATER-HANDLING-COFFERDAM SANDBAGS DETAIL.



REV.	DATE	REVISION DESCRIPTION

DESIGNER/DRAFTER: CHECKED BY:

HORIZONTAL SCALE 1" = 10' (0 10 20)

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

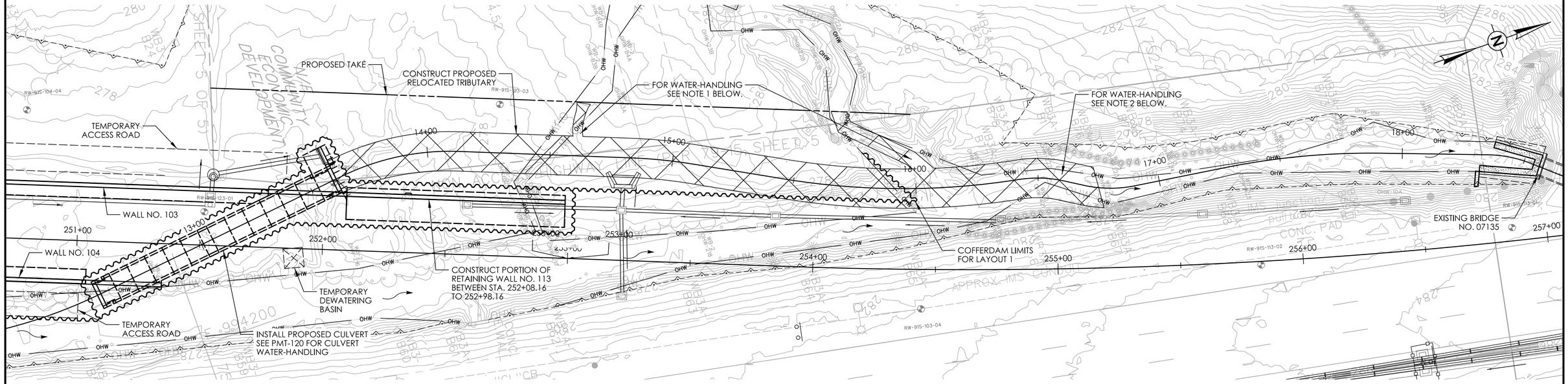
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING FOR RECONSTRUCTION OF CONCRETE-LINED CHANNEL

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

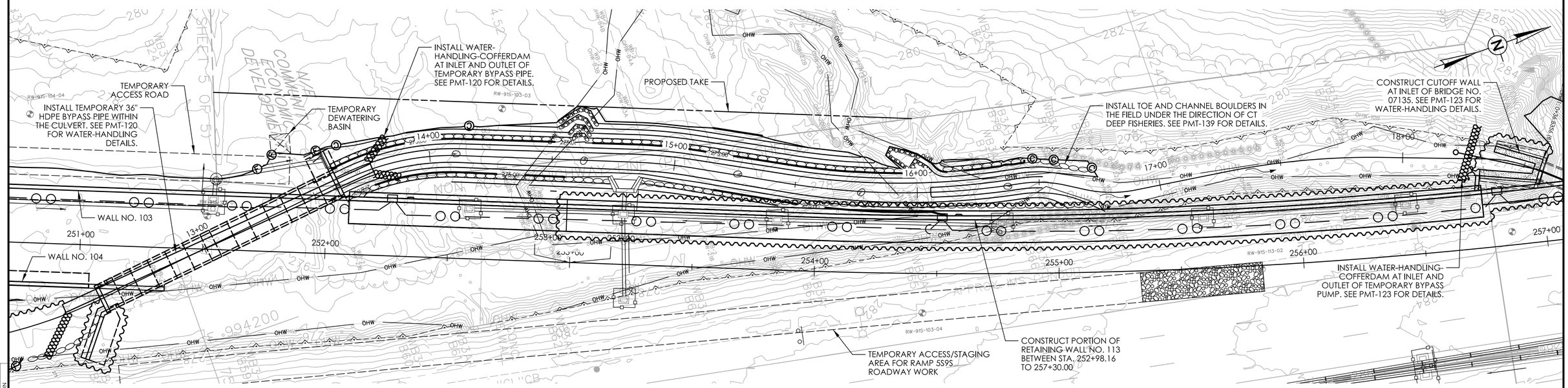
DRAWING NO. PMT-82
SHEET NO.

LASTED SAVED BY: DDixon **FILE NAME:** c:\pw_working\connecticut\ddixon@gm2inc.com\dms02126\0079-0240_WATERSHED_SHEETS.dgn
PLOTTED DATE: 7/11/2024

UNNAMED TRIBUTARY TO WILLOW BROOK
WATER-HANDLING FOR RELOCATED CHANNEL



WATER HANDLING LAYOUT 1



WATER HANDLING LAYOUT 2

NOTES:
1. PERENNIAL STREAMS AT 14+50 LT AND 16+00 LT WILL BE TEMPORARILY DAMMED AND PUMPED DOWNSTREAM DURING THE SHORT TERM INSTALLATION OF ROCK WEIRS FOR CONNECTION TO THE RELOCATED TRIBUTARY.
2. WORK TO TIE RELOCATED TRIBUTARY TO THE EXISTING STREAM WILL BE COMPLETED AT THE END OF LAYOUT 1. PUMPING WATER TO BYPASS WORK AREA WILL BE REQUIRED.

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE: 1" = 20'-0"

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

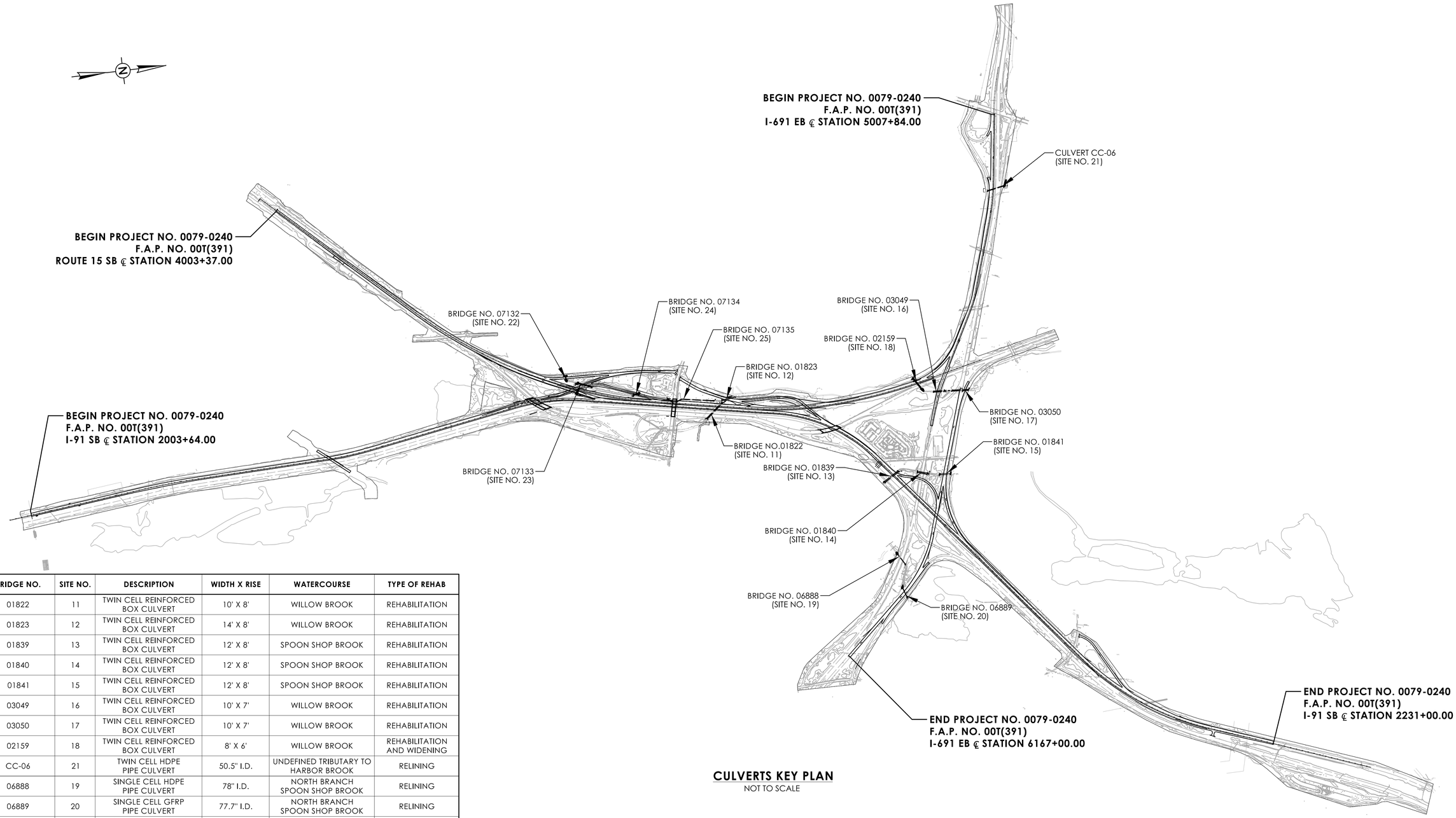
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN FOR RELOCATED TRIBUTARY

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-83
SHEET NO.

LASTED SAVED BY: PBarbosa **FILE NAME:** c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04804\SB_CP_0079-0240_UTB_Relocation_WaterHandling.dgn
PLOTTED DATE: 7/9/2024



CULVERTS KEY PLAN

NOT TO SCALE

BRIDGE NO.	SITE NO.	DESCRIPTION	WIDTH X RISE	WATERCOURSE	TYPE OF REHAB
01822	11	TWIN CELL REINFORCED BOX CULVERT	10' X 8'	WILLOW BROOK	REHABILITATION
01823	12	TWIN CELL REINFORCED BOX CULVERT	14' X 8'	WILLOW BROOK	REHABILITATION
01839	13	TWIN CELL REINFORCED BOX CULVERT	12' X 8'	SPOON SHOP BROOK	REHABILITATION
01840	14	TWIN CELL REINFORCED BOX CULVERT	12' X 8'	SPOON SHOP BROOK	REHABILITATION
01841	15	TWIN CELL REINFORCED BOX CULVERT	12' X 8'	SPOON SHOP BROOK	REHABILITATION
03049	16	TWIN CELL REINFORCED BOX CULVERT	10' X 7'	WILLOW BROOK	REHABILITATION
03050	17	TWIN CELL REINFORCED BOX CULVERT	10' X 7'	WILLOW BROOK	REHABILITATION
02159	18	TWIN CELL REINFORCED BOX CULVERT	8' X 6'	WILLOW BROOK	REHABILITATION AND WIDENING
CC-06	21	TWIN CELL HDPE PIPE CULVERT	50.5" I.D.	UNDEFINED TRIBUTARY TO HARBOR BROOK	RELINING
06888	19	SINGLE CELL HDPE PIPE CULVERT	78" I.D.	NORTH BRANCH SPOON SHOP BROOK	RELINING
06889	20	SINGLE CELL GFRP PIPE CULVERT	77.7" I.D.	NORTH BRANCH SPOON SHOP BROOK	RELINING
07132	22	SINGLE CELL REINFORCED BOX CULVERT	6' X 8'	UNNAMED TRIBUTARY TO WILLOW BROOK	REPLACEMENT
07133	23	SINGLE CELL REINFORCED BOX CULVERT	7' X 8'	UNNAMED TRIBUTARY TO WILLOW BROOK	REPLACEMENT
07134	24	SINGLE CELL REINFORCED BOX CULVERT	10' X 8'	UNNAMED TRIBUTARY TO WILLOW BROOK	NEW CULVERT
07135	25	SINGLE CELL REINFORCED CONCRETE PIPE CULVERT	84" I.D.	UNNAMED TRIBUTARY TO WILLOW BROOK	REHABILITATION

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: KR CHECKED BY: DK

NOT TO SCALE

SIGNATURE/ BLOCK:

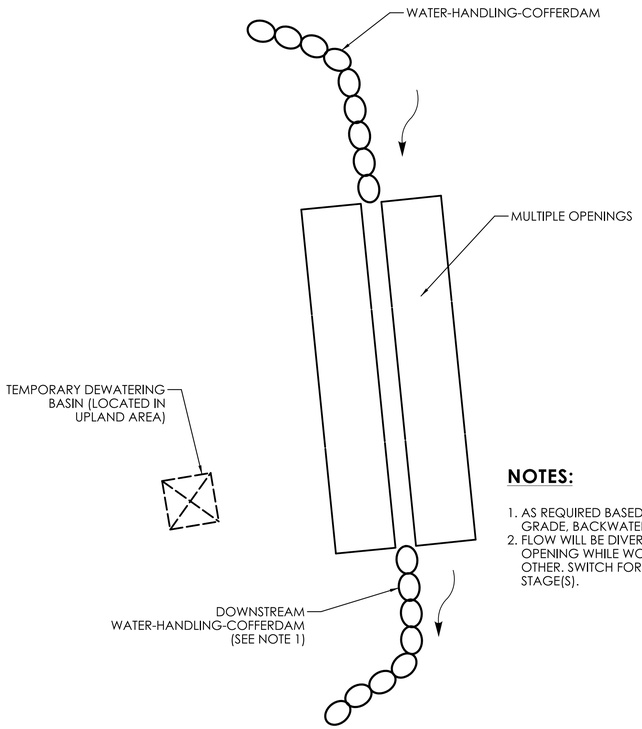
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: CULVERTS KEY PLAN

DRAWING NO. PMT-84
SHEET NO.

LASTED SAVED BY: PBarbosa **FILE NAME:** c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04831\SB_CP_0079_0240_Culvert_General_Key_Plan_Permit.dgn
PLOTTED DATE: 7/9/2024



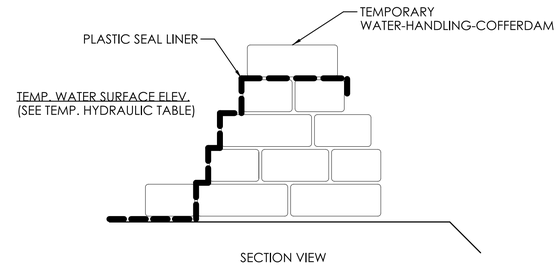
NOTES:

1. AS REQUIRED BASED ON CHANNEL GRADE, BACKWATER, OR EXCAVATION.
2. FLOW WILL BE DIVERTED TO ONE OPENING WHILE WORKING ON THE OTHER. SWITCH FOR SUBSEQUENT STAGE(S).

HANDLING WATER MULTIPLE OPENINGS

(NOT TO SCALE)

NOTE: THIS DETAIL IS TO APPLY TO ALL CULVERTS LISTED IN "TABLE A".



WATER-HANDLING-COFFERDAM

(NOT TO SCALE)

WATER-HANDLING-COFFERDAM SANDBAGS

1. CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY WATER HANDLING SYSTEM AS REQUIRED DURING CONSTRUCTION OF THE NEW STRUCTURE.

2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.

3. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.

4. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS.

5. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGED TO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.

6. BASED UPON FIELD CONDITIONS, WORK DURATION, AND EXPECTED WEATHER CONDITIONS, THE ENGINEER MAY APPROVE A CONSTRUCTION WATER HANDLING PLAN WITH LOWER PUMPING FLOWS, PROVIDED THAT THIS INCLUDES A CONTINGENCY PLAN, WHICH MINIMIZES NEGATIVE IMPACTS AND SAFELY CONVEYS LARGER FLOWS THROUGH THE WORK AREA.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY CONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENTS POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALATION OF THE STRUCTURE SHAL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."

2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."

3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

TABLE A

BRIDGE NO.	SITE NO.	DESCRIPTION	WIDTH X RISE	WATERCOURSE	TYPE OF REHAB	US COFFERDAM EL.	DS COFFERDAM EL.
01822	11	TWIN CELL REINFORCED BOX CULVERT	10' X 8'	WILLOW BROOK	REHABILITATION	276.0 FT	274.0 FT
01823	12	TWIN CELL REINFORCED BOX CULVERT	14' X 8'	WILLOW BROOK	REHABILITATION	274.0 FT	273.5 FT
01839	13	TWIN CELL REINFORCED BOX CULVERT	12' X 8'	SPOON SHOP BROOK	REHABILITATION	243.0 FT	239.0 FT
01840	14	TWIN CELL REINFORCED BOX CULVERT	12' X 8'	SPOON SHOP BROOK	REHABILITATION	237.0 FT	235.0 FT
01841	15	TWIN CELL REINFORCED BOX CULVERT	12' X 8'	SPOON SHOP BROOK	REHABILITATION	235.0 FT	233.0 FT
03049	16	TWIN CELL REINFORCED BOX CULVERT	10' X 7'	WILLOW BROOK	REHABILITATION	246.0 FT	243.0 FT
03050	17	TWIN CELL REINFORCED BOX CULVERT	10' X 7'	WILLOW BROOK	REHABILITATION	242.5 FT	239.0 FT
02159	18	TWIN CELL REINFORCED BOX CULVERT	8' X 6'	WILLOW BROOK	REHABILITATION AND WIDENING	SEE PMT-98	SEE PMT-98
CC-06	21	TWIN CELL HDPE PIPE CULVERT	50.5" I.D.	UNDEFINED TRIBUTARY TO HARBOR BROOK	RELINING	SEE PMT-126	SEE PMT-126

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

NOT TO SCALE

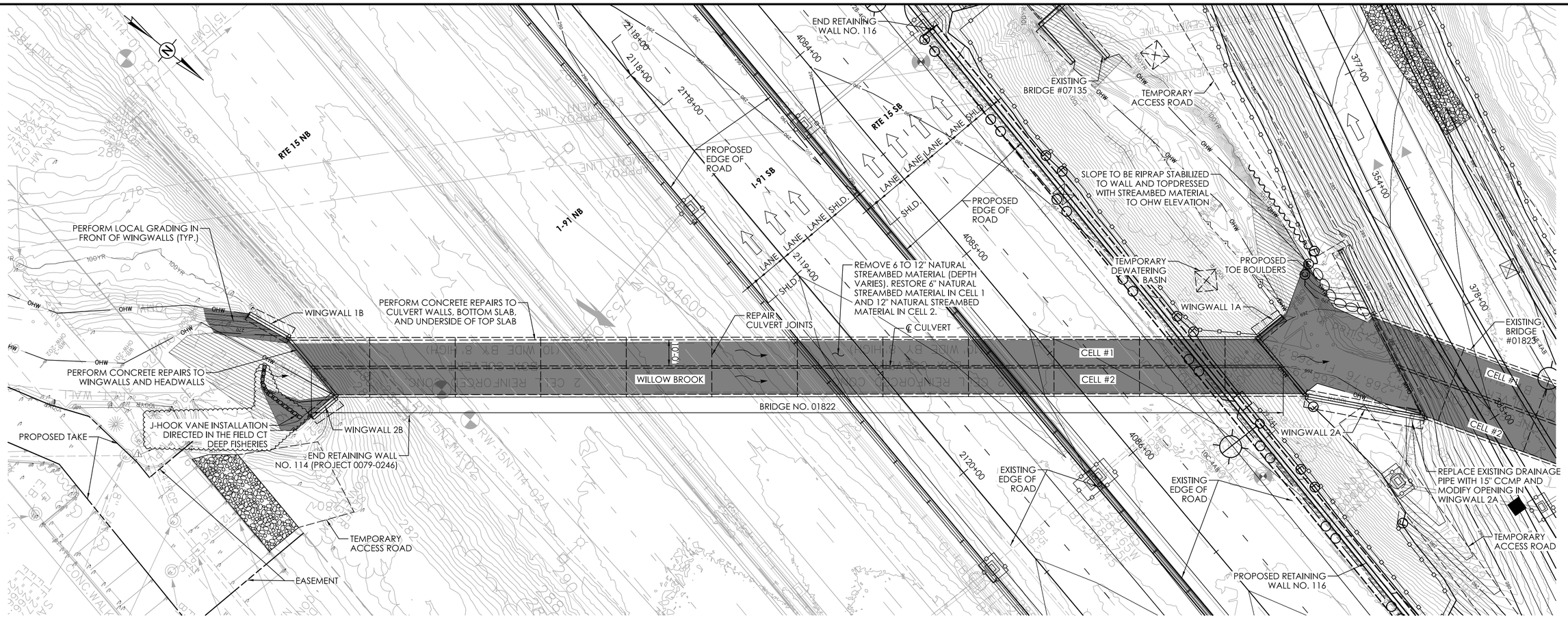
SIGNATURE/ BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - 1

DRAWING NO. PMT-85
SHEET NO.

LASTED SAVED BY: PBarbosa **FILE NAME:** c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04831\SB_CP_0079_0240_Water-Handling_1.dgn
PLOTTED DATE: 7/8/2024



SCOPE OF WORK:

1. REMOVE EXISTING STREAMBED MATERIAL INSIDE THE CULVERT.
2. PERFORM CONCRETE REPAIRS TO CULVERT WALLS, BOTTOM SLAB, UNDERSIDE OF TOP SLAB, WINGWALLS, AND HEADWALLS.
3. REPAIR JOINTS BETWEEN CULVERT CELLS.
4. REPLACE EXISTING DRAINAGE PIPE AND MODIFY OPENING IN WINGWALL 2A.
5. INSTALL 6" OF NATURAL STREAMBED MATERIAL IN CELL 1 AND 12" IN CELL 2.
6. INSTALL J-HOOK VANE AT UPSTREAM END.

SUGGESTED SEQUENCE OF CONSTRUCTION:

WATER HANDLING AND REPAIRS FOR BRIDGES 01822 AND 01823 SHALL BE PERFORMED SIMULTANEOUSLY.

STAGE 1 (CELL #1 CLOSURE):

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS), INCLUDING SCS AT CATCH BASINS.
2. CONSTRUCT ACCESS ROADS FOR BRIDGE NOS. 01822 AND 01823.
3. INSTALL WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #1.
4. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
5. PERFORM CONCRETE REPAIRS TO INTERIOR OF CELL #1 AND WINGWALLS 1B AND 1A.
6. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AND PERFORM CHANNEL GRADING UPSTREAM AND DOWNSTREAM AFTER REPAIRS TO CELL #1 INTERIOR HAVE BEEN COMPLETED.

LEGEND

- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

STAGE 2 (CELL #2 CLOSURE) :

1. RELOCATE WATER-HANDLING-COFFERDAMS AND SCS AT INLET AND OUTLET OF CELL #1 TO CELL #2.
2. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
3. PERFORM CONCRETE REPAIRS TO INTERIOR OF CELL #2 AND WINGWALLS 2B AND 2A.
4. REMOVE EXISTING DRAINAGE PIPE BEHIND WINGWALL 2A AND FILL THE OPENING IN THE WALL
5. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AND PERFORM CHANNEL GRADING UPSTREAM AND DOWNSTREAM AFTER REPAIRS TO CELL #2 INTERIOR ARE COMPLETE.
6. REMOVE WATER-HANDLING COFFERDAMS AT INLET AND OUTLET.
7. INSTALL J-HOOK VANE AT UPSTREAM END IN WET CONDITION.
8. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
9. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

GENERAL PLAN - BRIDGE NO. 01822

SCALE 1" = 20'

SEE PMT-85 FOR GENERAL WATER HANDLING NOTES.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATURAL STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 70 S.F. / 375 FT. = 0.19 FT.
0.19 FT. < 0.82 FT. (RECOMMENDED MINIMIUM)

BANKFULL WIDTH (BFW):

BFW = 36 FT.
1.2 x BFW = 43.2 FT.
43.2 FT. > 10 FT. EXISTING CULVERT SPAN

TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	4.0 CFS
AVERAGE SPRING FLOW	7.8 CFS
TEMPORARY DESIGN DISCHARGE	207 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
STAGE 1 - CELL #1 CLOSURE	
TEMPORARY WSEL UPSTREAM	274.95 FT.
TEMPORARY WSEL DOWNSTREAM	272.55 FT.
STAGE 2 - CELL #2 CLOSURE	
TEMPORARY WSEL UPSTREAM	274.19 FT.
TEMPORARY WSEL DOWNSTREAM	273.24 FT.

HYDRAULIC DATA	
DRAINAGE AREA	2.16 SQ. MILE
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	632 CFS
AVERAGE DAILY FLOW ELEVATION	270.46 FT.
UPSTREAM DESIGN WATER SURFACE ELEVATION	276.27 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	275.24 FT.

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	ADDED J-HOOK VANE

BRIDGE NO. 01822

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 01822

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-86
SHEET NO.

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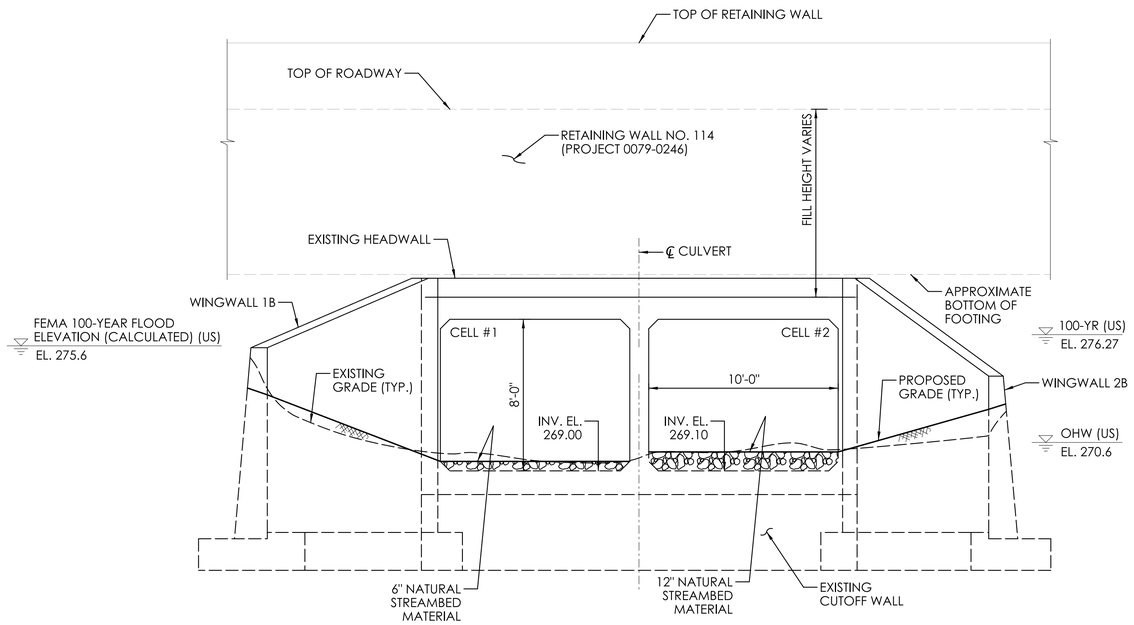
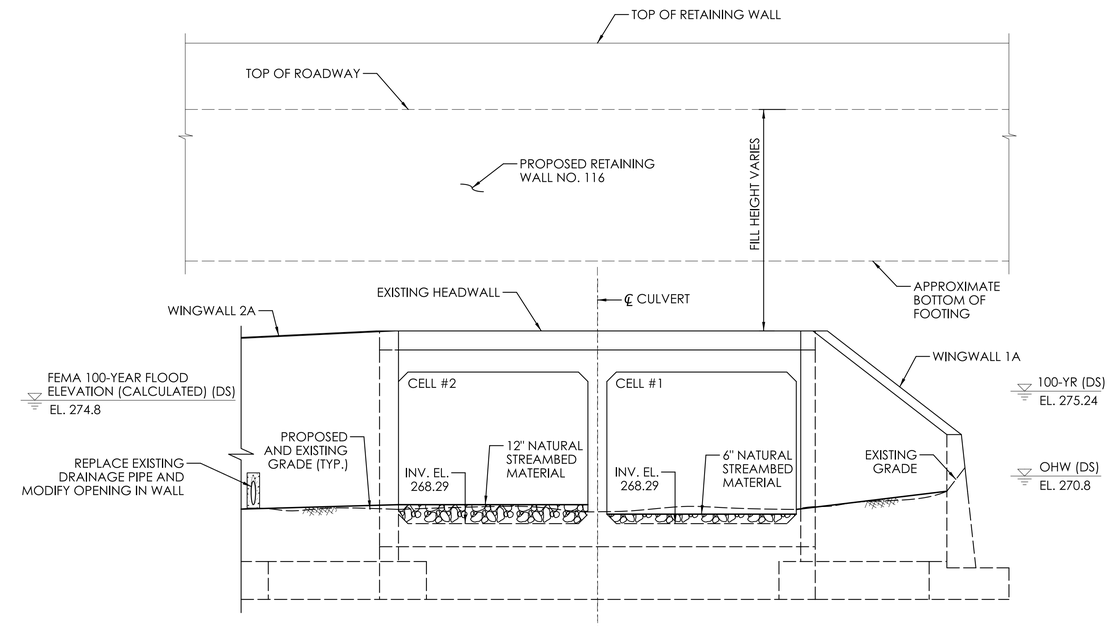
PLOTTED DATE: 2/13/2025



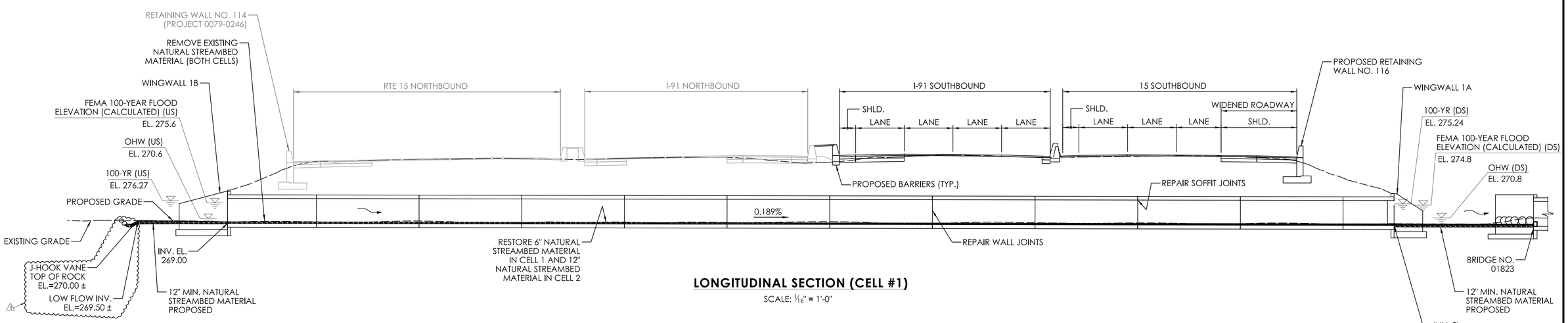
INLET ELEVATION

SCALE: ¼" = 1'-0"



OUTLET ELEVATION

SCALE: ¼" = 1'-0"



LONGITUDINAL SECTION (CELL #1)

SCALE: 1/16" = 1'-0"

BRIDGE NO. 01822

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	ADDED J-HOOK VANE

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 01822

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-87

SHEET NO.

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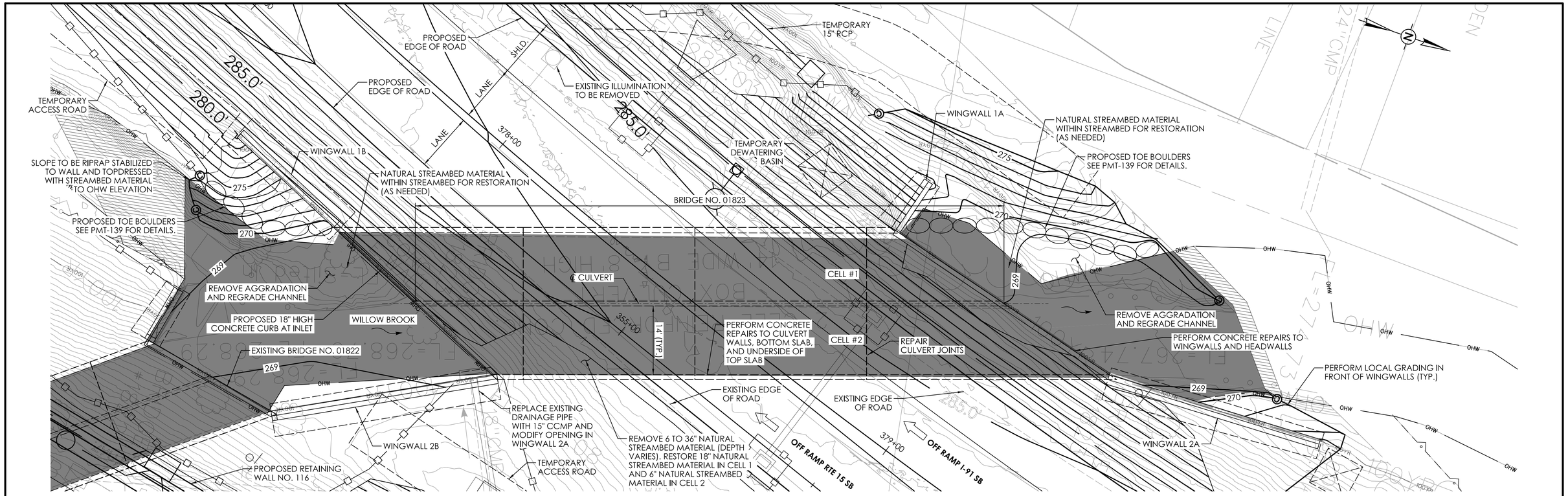
PLOTTED DATE: 7/8/2024



GENERAL PLAN - BRIDGE NO. 01823

SCALE 1" = 10'-0"

SUGGESTED SEQUENCE OF CONSTRUCTION:

WATER HANDLING FOR BRIDGES 01822 AND 01823 SHALL BE PERFORMED SIMULATANEOUSLY.

STAGE 1:

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS).
2. CONSTRUCT ACCESS ROADS.
3. INSTALL WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #1.
4. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
5. PERFORM CONCRETE REPAIRS TO INTERIOR OF CELL #1 AND WINGWALLS 1B AND 1A.

STAGE 2:

1. RELOCATE WATER-HANDLING-COFFERDAMS AND SCS AT INLET AND OUTLET OF CELL #1 TO CELL #2.
2. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
3. PERFORM CONCRETE REPAIRS TO INTERIOR OF CELL #2 AND WINGWALLS 2B AND 2A.
4. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AND PERFORM CHANNEL GRADING BETWEEN BRIDGE NOS. 01822 AND 01823 AFTER REPAIRS TO CELL #2 INTERIOR HAVE BEEN COMPLETED.

STAGE 3:

1. RELOCATE WATER HANDLING AND SCS SIMILAR TO STAGE 1.
2. CONSTRUCT PROPOSED CONCRETE CURB AT INLET IN CELL #1.
3. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB OF CELL #1.
4. PERFORM CHANNEL GRADING UPSTREAM AND DOWNSTREAM, AND INSTALL TOE BOULDERS AT INLET AND OUTLET.
5. REMOVE WATER-HANDLING COFFERDAMS AT INLET AND OUTLET.
6. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
7. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

SCOPE OF WORK:

1. REMOVE EXISTING STREAMBED MATERIAL INSIDE THE CULVERT.
2. PERFORM CONCRETE REPAIRS TO CULVERT WALLS, BOTTOM SLAB, UNDERSIDE OF TOP SLAB, WINGWALLS, AND HEADWALLS.
3. REPAIR JOINTS BETWEEN CULVERT CELLS.
4. CONSTRUCT PROPOSED CONCRETE CURB AT INLET IN CELL #1.
5. INSTALL 18" OF NATURAL STREAMBED MATERIAL IN CELL #1 AND 6" IN CELL #2.
6. REMOVE AGGRADATION IN CHANNEL UPSTREAM AND DONWSTREAM OF CELL #1.
7. PERFORM GRADING AND INSTALL TOE BOULDERS.

LEGEND

- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

SEE PMT-85 FOR GENERAL WATER HANDLING NOTES.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATURAL STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	4.7 CFS
AVERAGE SPRING FLOW	9.1 CFS
TEMPORARY DESIGN DISCHARGE	251 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
STAGE 1 - CELL #1 CLOSURE	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	272.55 FT.
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	272.02 FT.
STAGE 2 - CELL #2 CLOSURE	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	273.24 FT.
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	272.58 FT.
STAGE 3 - CELL # 1 CLOSURE	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	272.49 FT.
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	272.02 FT

HYDRAULIC DATA	
DRAINAGE AREA	2.54 SQ. MILE
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	809 CFS
AVERAGE DAILY FLOW ELEVATION	268.82 FT.
UPSTREAM DESIGN WATER SURFACE ELEVATION	275.24 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	274.85 FT.

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 91 S.F. / 120 FT. = 0.76 FT.
0.76 FT. < 0.82 FT. (RECOMMENDED MINIMIUM)

BANKFULL WIDTH (BFW):

BFW = 32 FT.
1.2 x BFW = 38.4 FT.
38.4 FT. > 14 FT. EXISTING CULVERT SPAN

REV.	DATE	REVISION DESCRIPTION

BRIDGE NO. 01823

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 01823

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-88
SHEET NO.

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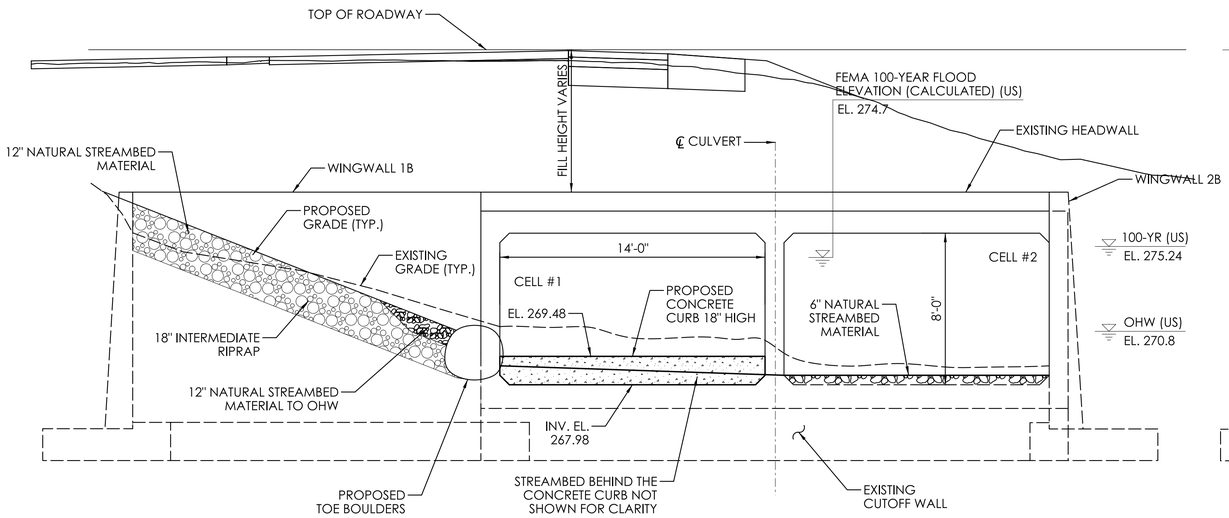
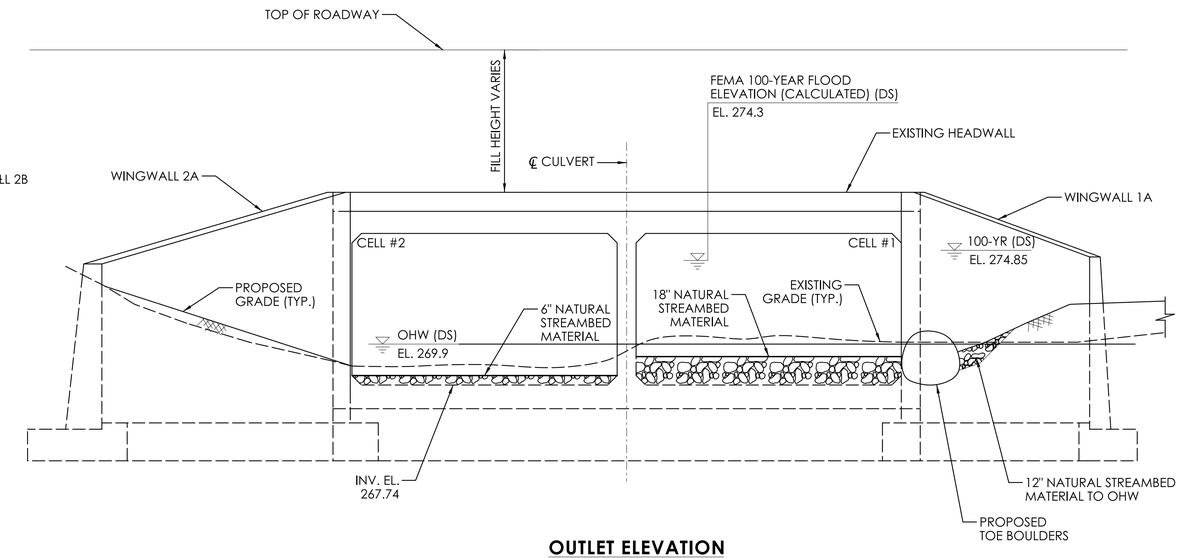


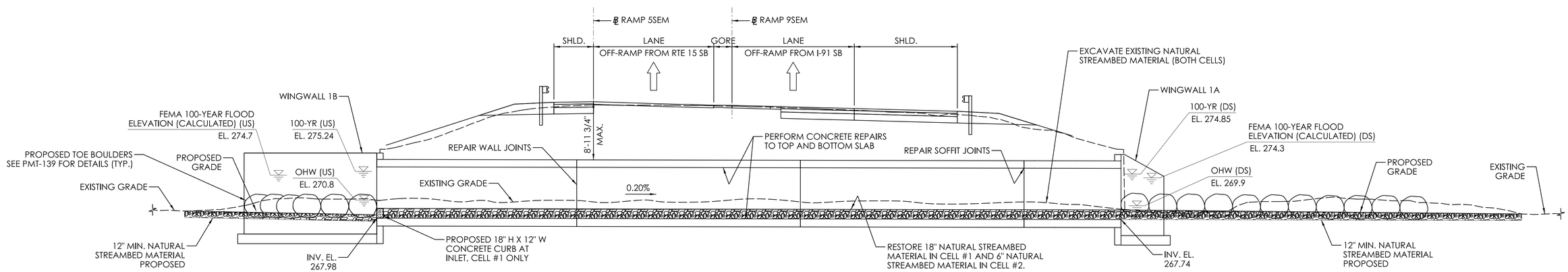
INLET ELEVATION

SCALE: ¼" = 1'-0"



OUTLET ELEVATION

SCALE: ¼" = 1'-0"



LONGITUDINAL SECTION (CELL #1)

SCALE: ⅛" = 1'-0"

BRIDGE NO. 01823

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 01823

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-89

SHEET NO.

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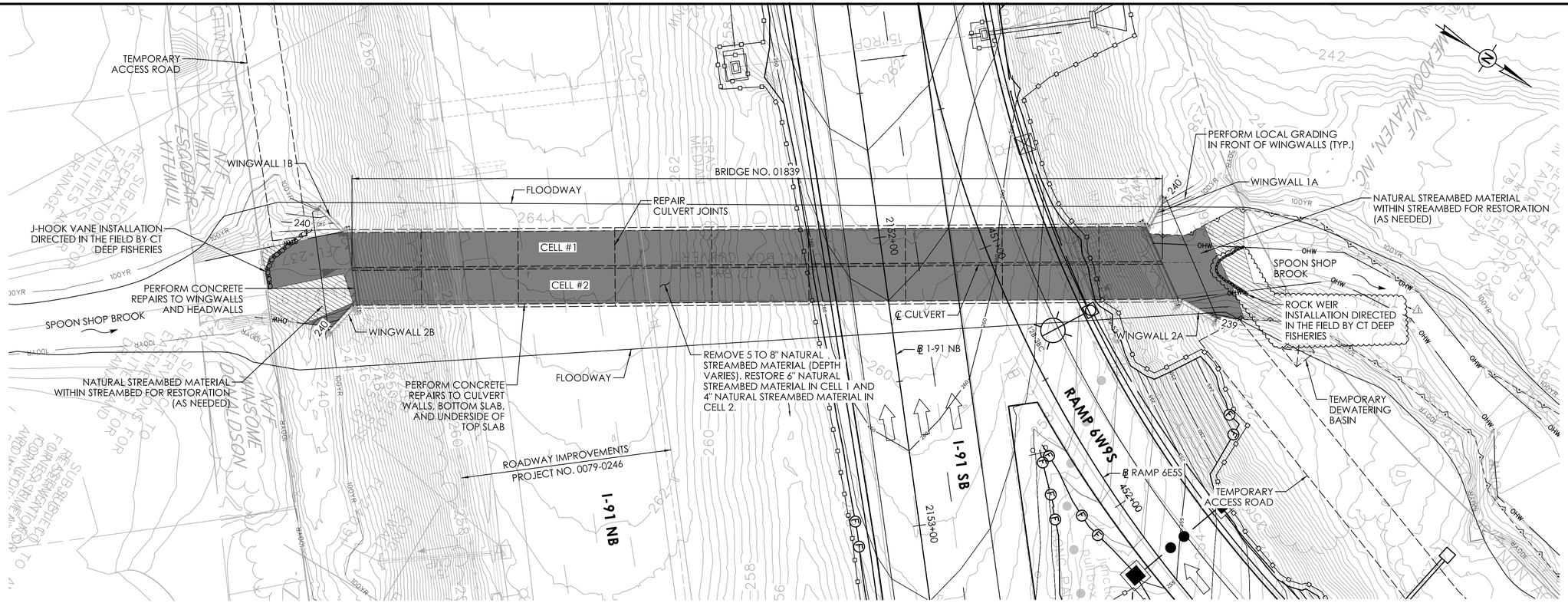
PLOTTED DATE: 7/8/2024



GENERAL PLAN - BRIDGE NO. 01839

SCALE 1" = 20'-0"

SUGGESTED SEQUENCE OF CONSTRUCTION:

STAGE 1:

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS), INCLUDING SCS AT CATCH BASINS.
2. CONSTRUCT ACCESS ROADS AT INLET AND OUTLET.
3. INSTALL WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #2.
4. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
5. PERFORM CONCRETE REPAIRS TO INTERIOR OF CELL #2 AND WINGWALLS 2B AND 2A.
6. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AND PERFORM CHANNEL GRADING UPSTREAM AND DOWNSTREAM AFTER REPAIRS TO CELL #2 INTERIOR HAVE BEEN COMPLETED.

STAGE 2:

1. RELOCATE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #2 TO CELL #1.
2. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
3. PERFORM CONCRETE REPAIRS TO INTERIOR OF CELL #1 AND WINGWALLS 1B AND 1A.
4. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AND PERFORM CHANNEL GRADING UPSTREAM AND DOWNSTREAM AFTER REPAIRS TO CELL #1 INTERIOR ARE COMPLETE.
5. REMOVE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET.
6. INSTALL J-HOOK VANE UPSTREAM IN THE WET CONDITION AND ROCK WEIR DOWNSTREAM. 1
7. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
8. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

SCOPE OF WORK:

1. REMOVE EXISTING STREAMBED MATERIAL INSIDE THE CULVERT.
2. PERFORM CONCRETE REPAIRS TO CULVERT WALLS, BOTTOM SLAB, UNDERSIDE OF TOP SLAB, WINGWALLS, AND HEADWALLS.
3. REPAIR JOINTS BETWEEN CULVERT CELLS.
4. INSTALL 6" OF NATURAL STREAMBED MATERIAL IN CELL #1 AND 4" IN CELL #2.
5. INSTALL J-HOOK VANE IN CHANNEL UPSTREAM AND ROCK WEIR DOWNSTREAM. 1

LEGEND

- FLOODWAY
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

HYDRAULIC DATA	
DRAINAGE AREA	2.55 SQ. MILE
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	889 CFS
AVERAGE DAILY FLOW ELEVATION	238.52 FT.
UPSTREAM DESIGN WATER SURFACE ELEVATION	244.00 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	239.40 FT.

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 90 S.F. / 278.5 FT. = 0.32 FT.
0.32 FT. < 0.82 FT. (RECOMMENDED MINIMIUM)

BANKFULL WIDTH (BFW):

BFW = 24 FT.
1.2 x BFW = 28.8 FT.
28.8 FT. > 12 FT. EXISTING CULVERT SPAN

TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	4.7 CFS
AVERAGE SPRING FLOW	9.2 CFS
TEMPORARY DESIGN DISCHARGE	261 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
STAGE 1 - CELL #2 CLOSURE	
TEMPORARY WSEL UPSTREAM	242.44 FT.
TEMPORARY WSEL DOWNSTREAM	237.30 FT.
STAGE 2 - CELL #1 CLOSURE	
TEMPORARY WSEL UPSTREAM	242.35 FT.
TEMPORARY WSEL DOWNSTREAM	237.32 FT.

SEE PMT-85 FOR GENERAL WATER HANDLING NOTES.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATURAL STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	ADDED ROCK WEIR

BRIDGE NO. 01839

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: MF CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

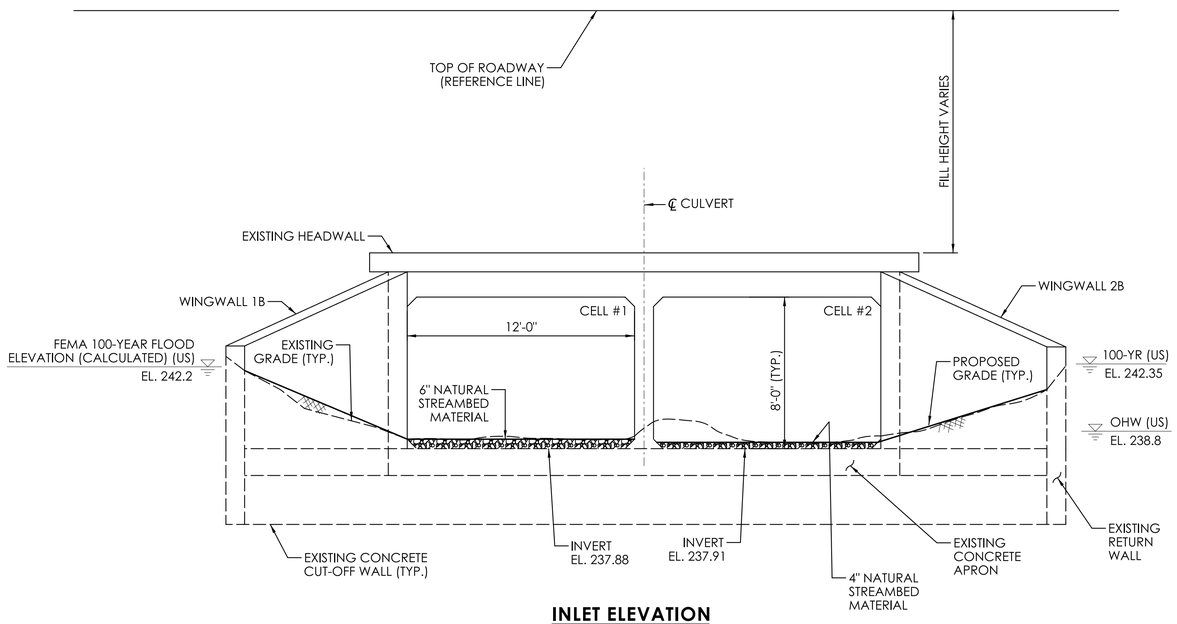
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 01839

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

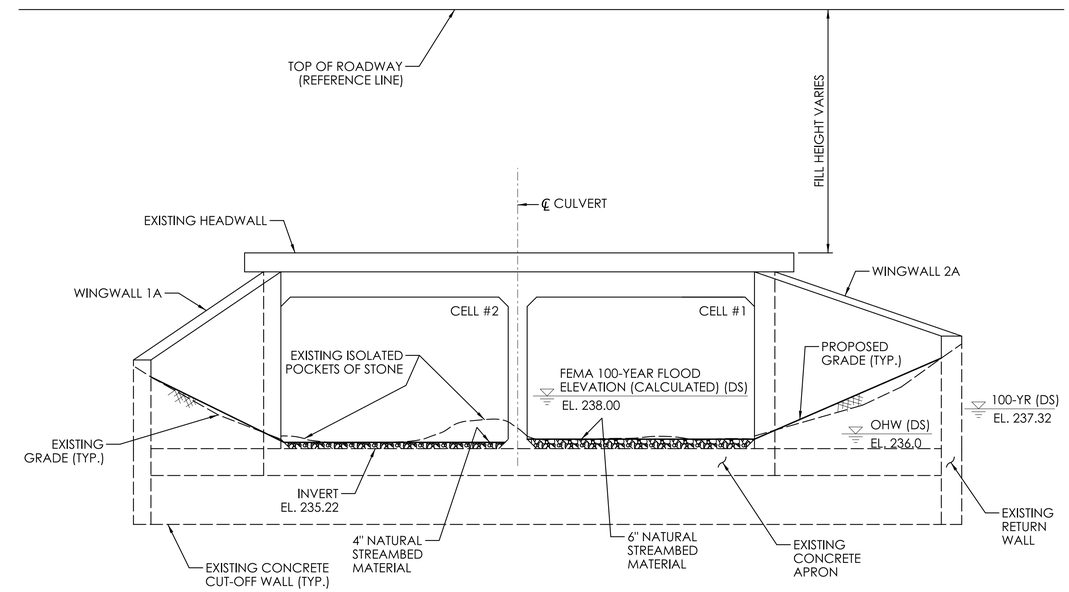
DRAWING NO. PMT-90
SHEET NO.

LASTED SAVED BY: DKanigolla FILE NAME: c:\pw_working\connecticut\epw16197\dms04797\SB_CP_0079-0240_Culvert#01839_GPN_Permit.dgn
PLOTTED DATE: 2/14/2025



INLET ELEVATION

SCALE: ¼" = 1'-0"



OUTLET ELEVATION

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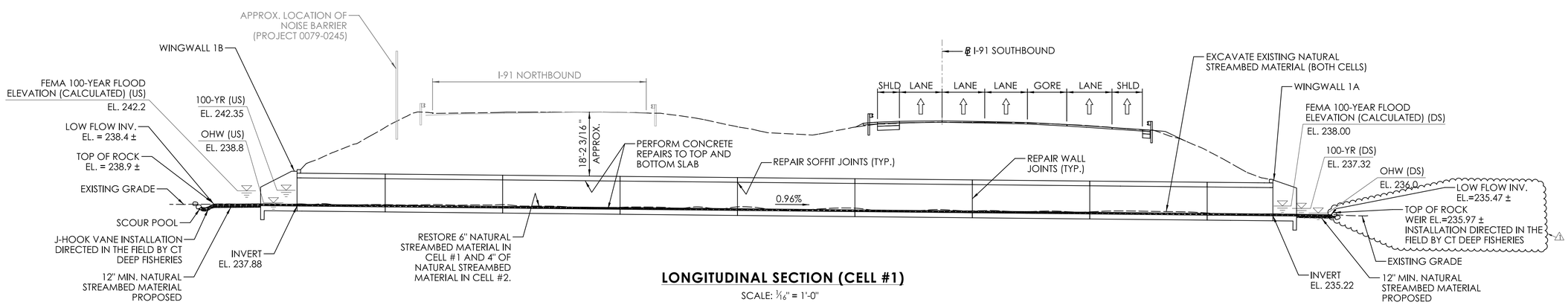

LONGITUDINAL SECTION (CELL #1)

SCALE: 1/16" = 1'-0"

BRIDGE NO. 01839

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	ADDED ROCK WEIR

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: DD CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 01839

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-91

SHEET NO.

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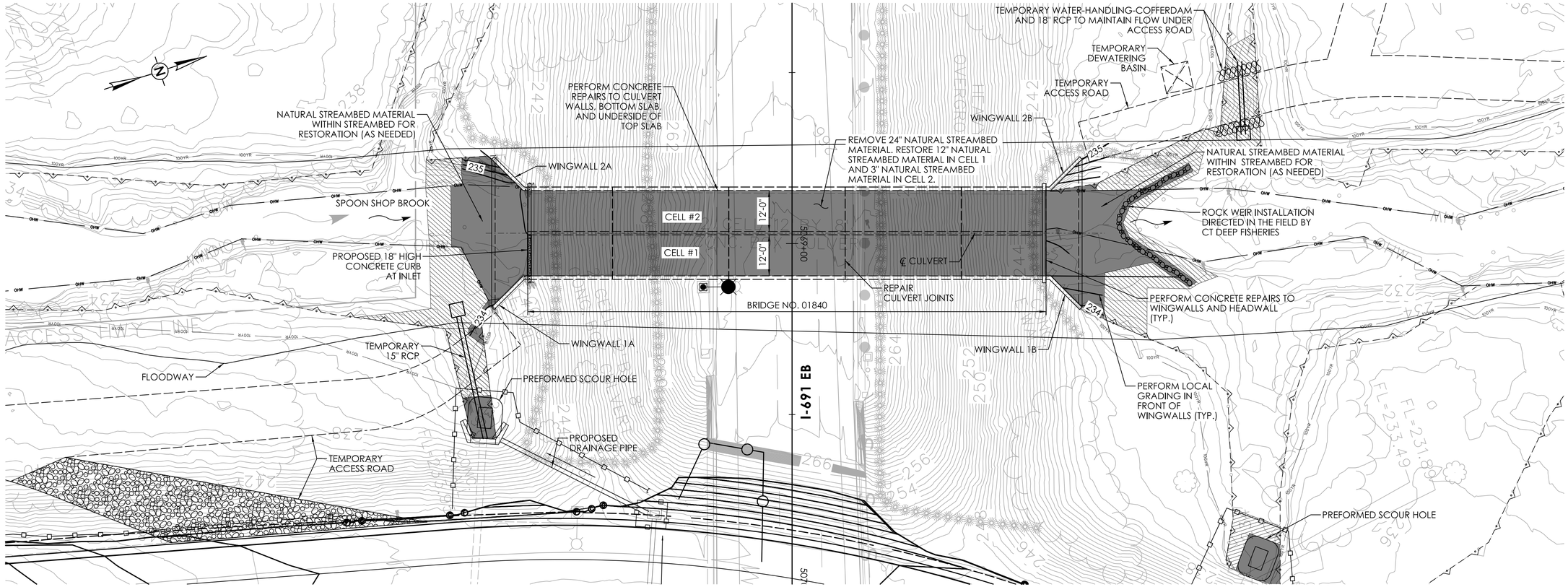
PLOTTED DATE: 7/9/2024



GENERAL PLAN - BRIDGE NO. 01840

SCALE 1/16" = 1'-0"

SEE PMT-85 FOR GENERAL WATER HANDLING NOTES.

SUGGESTED SEQUENCE OF CONSTRUCTION:

STAGE 1:

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS), INCLUDING SCS AT CATCH BASINS.
2. CONSTRUCT ACCESS ROADS AT BOTH INLET AND OUTLET.
3. INSTALL WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #1.
4. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
5. PERFORM CONCRETE REPAIRS TO INTERIOR OF CELL #1 AND WINGWALLS 1B AND 1A.

STAGE 2:

1. RELOCATE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #1 TO CELL #2.
2. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
3. PERFORM CONCRETE REPAIRS TO INTERIOR OF CELL #1 AND WINGWALLS 2A AND 2B.
4. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AND PERFORM CHANNEL GRADING UPSTREAM AND DOWNSTREAM AFTER REPAIRS TO CELL #2 INTERIOR ARE COMPLETE.

STAGE 3:

1. RELOCATE WATER-HANDLING-COFFERDAMS AND CLOSE CELL #1 SIMILAR TO STAGE 1.
2. CONSTRUCT PROPOSED CONCRETE CURB AT INLET OF CELL #1.
3. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AND PERFORM CHANNEL GRADING UPSTREAM AND DOWNSTREAM.
4. REMOVE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET.
5. INSTALL DOWNSTREAM ROCK WEIR IN THE WET CONDITION.
6. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
7. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	5.1 CFS
AVERAGE SPRING FLOW	9.9 CFS
TEMPORARY DESIGN DISCHARGE	276 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
STAGE 1 - CELL #1 CLOSURE	
TEMPORARY WSEL UPSTREAM	235.84 FT.
TEMPORARY WSEL DOWNSTREAM	234.42 FT.
STAGE 2 - CELL #2 CLOSURE	
TEMPORARY WSEL UPSTREAM	236.22 FT.
TEMPORARY WSEL DOWNSTREAM	232.92 FT.
STAGE 3 - CELL #1 CLOSURE	
TEMPORARY WSEL UPSTREAM	236.65 FT.
TEMPORARY WSEL DOWNSTREAM	234.42 FT.

LEGEND

- FLOODWAY
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

SCOPE OF WORK:

1. REMOVE EXISTING STREAMBED MATERIAL INSIDE THE CULVERT.
2. PERFORM CONCRETE REPAIRS TO CULVERT WALLS, BOTTOM SLAB, UNDERSIDE OF TOP SLAB, WINGWALLS, AND HEADWALLS.
3. REPAIR JOINTS BETWEEN CULVERT CELLS.
4. CONSTRUCT PROPOSED CONCRETE CURB AT INLET IN CELL #1.
5. INSTALL NATURAL STREAMBED MATERIAL INSIDE THE CULVERT.
6. INSTALL ROCK WEIR DOWNSTREAM.

HYDRAULIC DATA	
DRAINAGE AREA	2.76 SQ. MILE
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	941 CFS
AVERAGE DAILY FLOW ELEVATION	232.69 FT.
UPSTREAM DESIGN WATER SURFACE ELEVATION	238.91 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	236.56 FT.

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 84 S.F. / 150.9 FT. = 0.56 FT.
0.56 FT. < 0.82 FT. (RECOMMENDED MINIMIUM)

BANKFULL WIDTH (BFW):

BFW = 24 FT.
1.2 x BFW = 28.8 FT.
28.8 FT. > 12 FT. EXISTING CULVERT SPAN

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATURAL STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

BRIDGE NO. 01840

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: JM CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 01840

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-92
SHEET NO.

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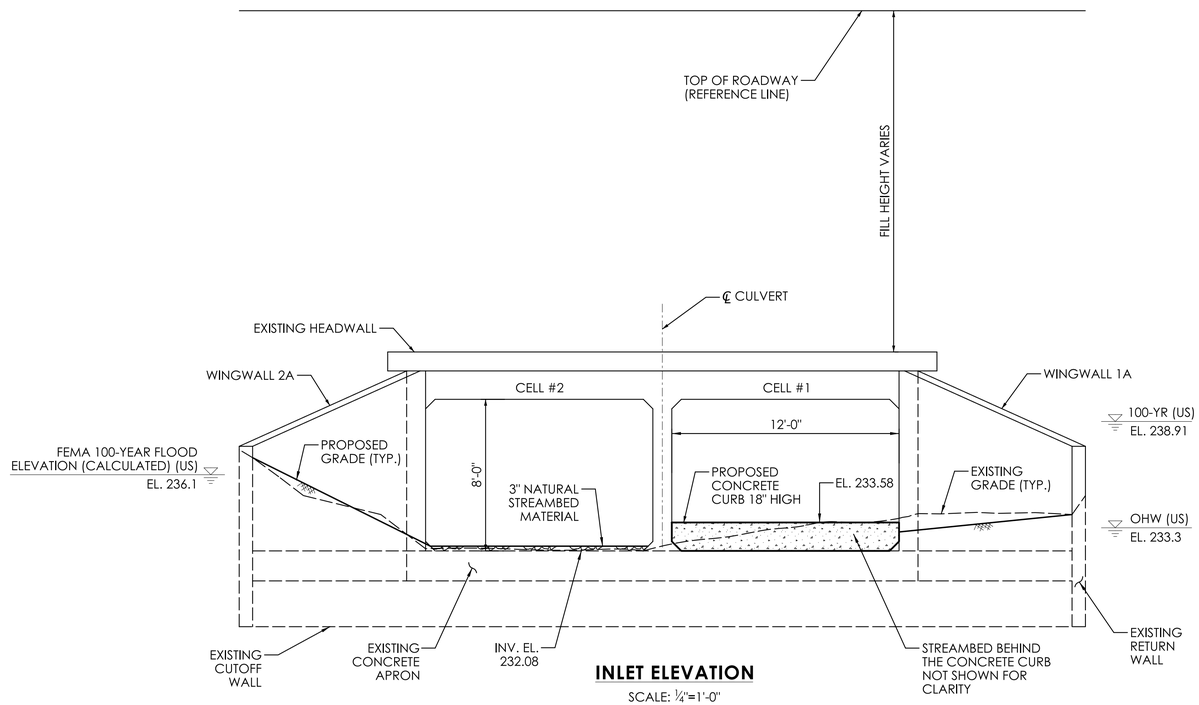
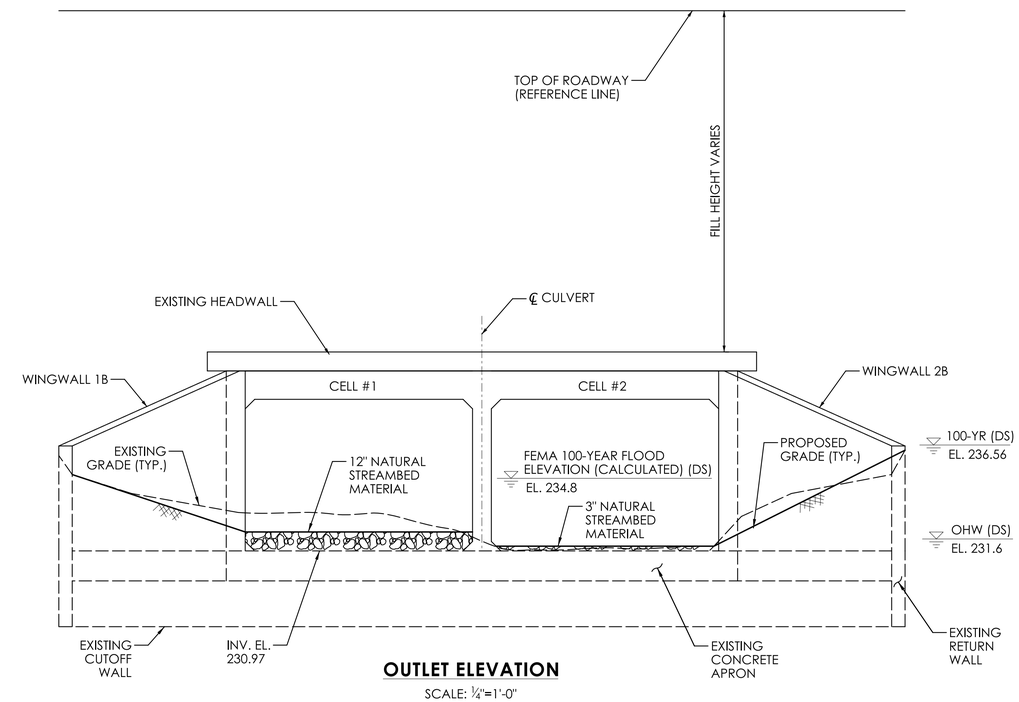


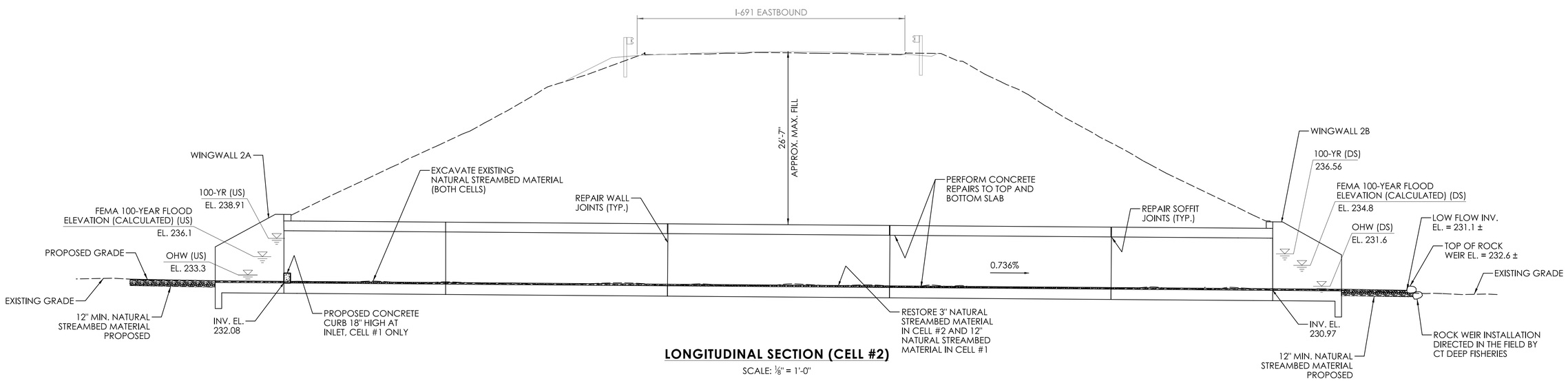
INLET ELEVATION

SCALE: ¼"=1'-0"



OUTLET ELEVATION

SCALE: ¼"=1'-0"



LONGITUDINAL SECTION (CELL #2)

SCALE: ⅛" = 1'-0"

BRIDGE NO. 01840

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: JM CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 01840

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-93

SHEET NO.

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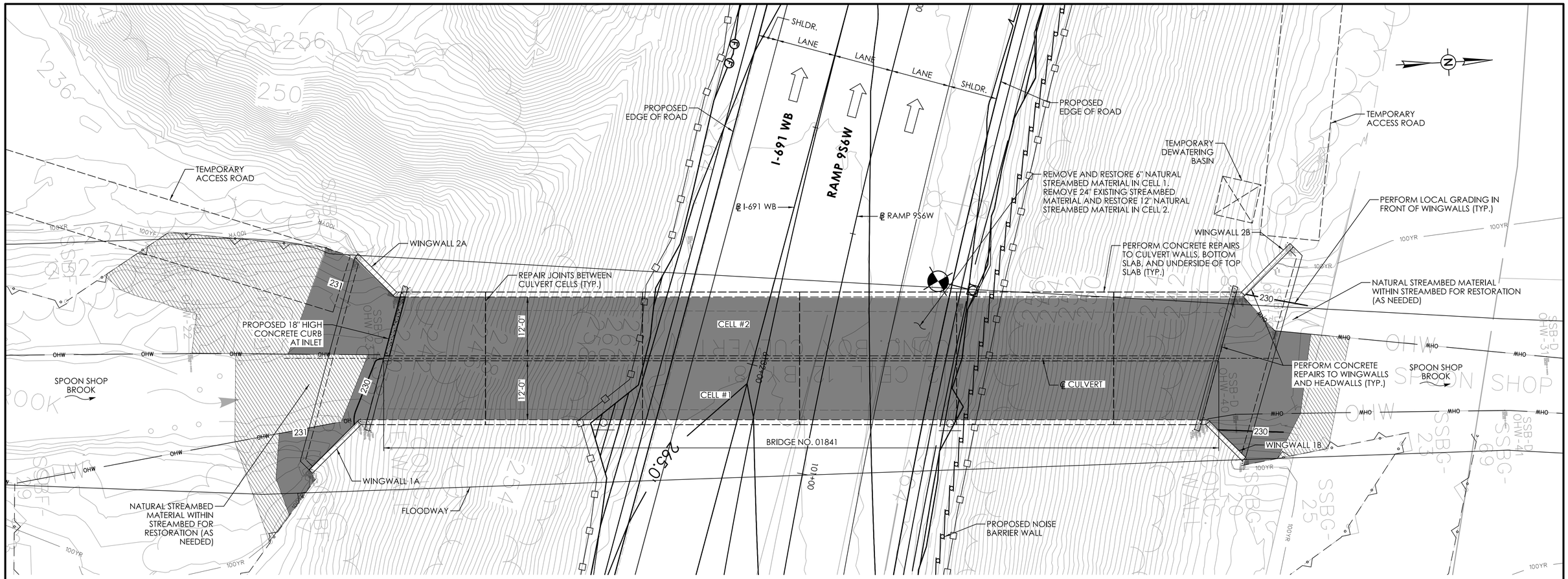

GENERAL PLAN - BRIDGE NO. 01841

SCALE 1" = 10'-0"

SEE PMT-85 FOR GENERAL WATER HANDLING NOTES.

SUGGESTED SEQUENCE OF CONSTRUCTION

STAGE 1:

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS), INCLUDING SCS AT CATCH BASINS.
2. CONSTRUCT ACCESS ROADS AT BOTH INLET AND OUTLET.
3. INSTALL WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #2.
4. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
5. PERFORM CONCRETE REPAIRS TO INTERIORS OF CELL #2 AND WINGWALLS 2A AND 2B.

STAGE 2:

1. RELOCATE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #2 TO CELL #1.
2. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
3. PERFORM CONCRETE REPAIRS TO INTERIORS OF CELL #1 AND WINGWALLS 1A AND 1B.
4. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AND PERFORM CHANNEL GRADING UPSTREAM AND DOWNSTREAM AFTER REPAIRS TO CELL #1 INTERIOR ARE COMPLETE.

STAGE 3:

1. RELOCATE WATER-HANDLING-COFFERDAMS AND CLOSE CELL #2 SIMILAR TO STAGE 1.
2. CONSTRUCT PROPOSED CONCRETE CURB AT INLET OF CELL #2.
3. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AND PERFORM CHANNEL GRADING UPSTREAM AND DOWNSTREAM.
4. REMOVE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET.
5. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
6. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	5.1 CFS
AVERAGE SPRING FLOW	9.9 CFS
TEMPORARY DESIGN DISCHARGE	276 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
STAGE 1 - CELL #2 CLOSURE	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	234.04 FT.
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	232.12 FT.
STAGE 2 - CELL #1 CLOSURE	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	232.70 FT.
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	232.11 FT.
STAGE 3 - CELL #2 CLOSURE	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	234.02 FT.
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	232.12 FT.

LEGEND

- FLOODWAY
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 84 S.F. / 169.5 FT. = 0.50 FT.
0.50 FT. < 0.82 FT. (RECOMMENDED MINIMIUM)

BANKFULL WIDTH (BFW):

BFW = 24 FT.
1.2 x BFW = 28.8 FT.
28.8 FT. > 12 FT. EXISTING CULVERT SPAN

HYDRAULIC DATA	
DRAINAGE AREA	2.76 SQ. MILE
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	941 CFS
AVERAGE DAILY FLOW ELEVATION	230.16 FT.
UPSTREAM DESIGN WATER SURFACE ELEVATION	236.39 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	234.11 FT.

SCOPE OF WORK:

1. REMOVE EXISTING STREAMBED MATERIAL INSIDE THE CULVERT.
2. PERFORM CONCRETE REPAIRS TO CULVERT WALLS, BOTTOM SLAB, UNDERSIDE OF TOP SLAB, WINGWALLS, AND HEADWALLS.
3. REPAIR JOINTS BETWEEN CULVERT CELLS.
4. CONSTRUCT PROPOSED CONCRETE CURB AT INLET IN CELL #2.
5. INSTALL NATURAL STREAMBED MATERIAL INSIDE THE CULVERT.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATURAL STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

BRIDGE NO. 01841

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: MF CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 01841

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-94
SHEET NO.

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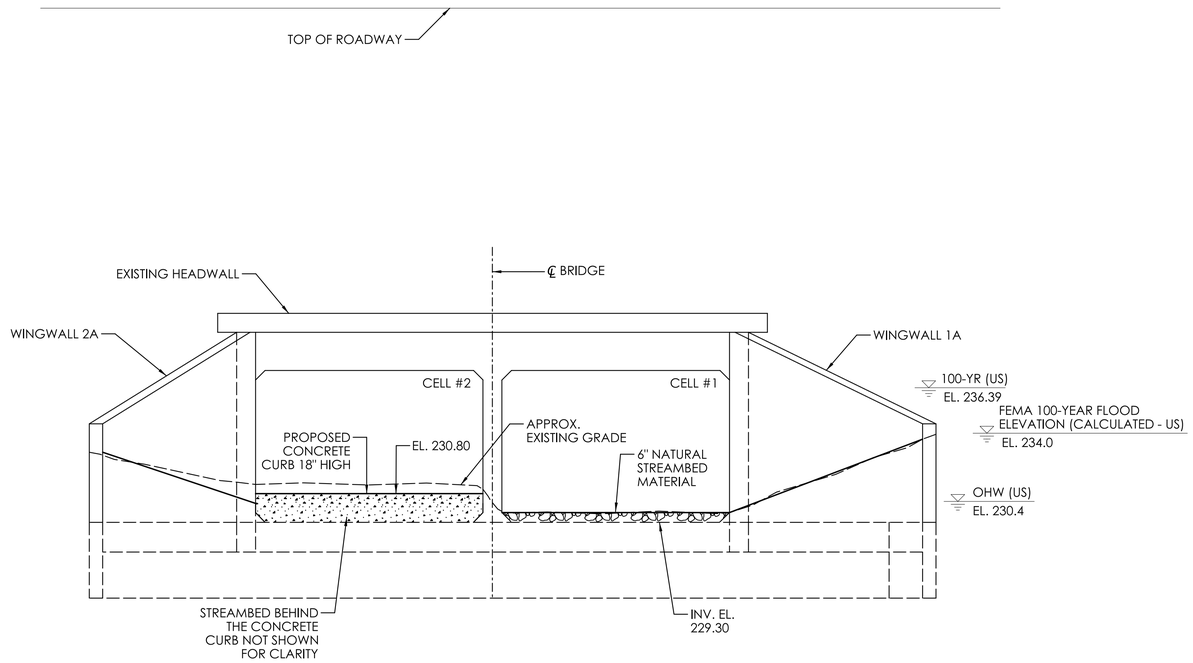
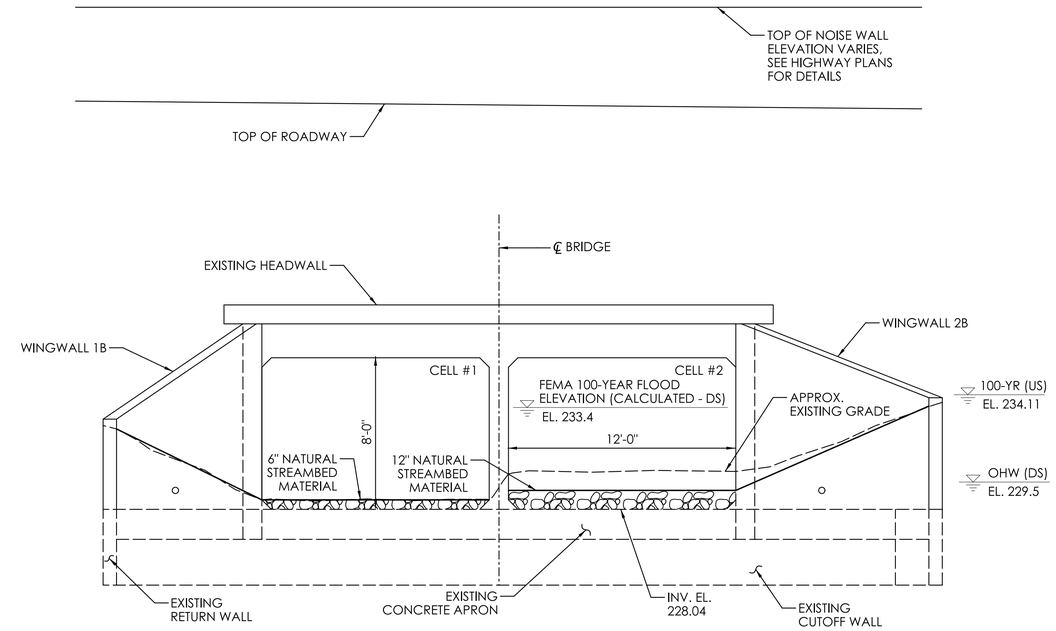


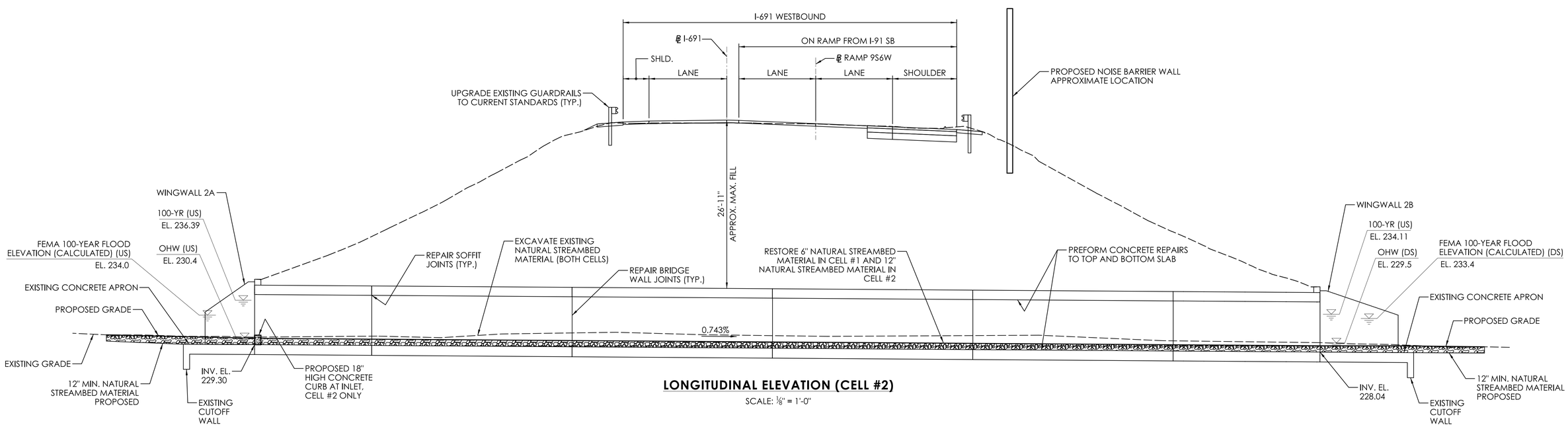
INLET ELEVATION

SCALE: ¼"=1'-0"



OUTLET ELEVATION

SCALE: ¼"=1'-0"



LONGITUDINAL ELEVATION (CELL #2)

SCALE: ⅛" = 1'-0"

BRIDGE NO. 01841

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: MF CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 01841

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-95

SHEET NO.

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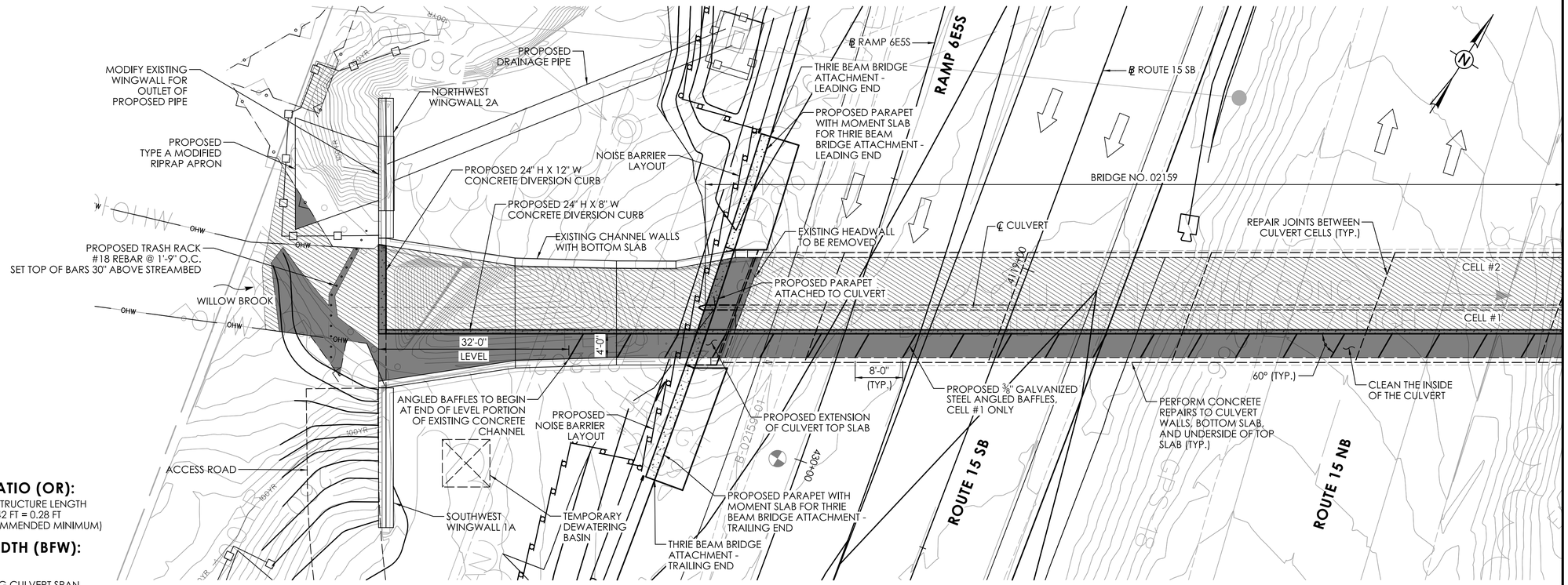
PLOTTED DATE: 7/9/2024



OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 46.67 SF / 164.42 FT = 0.28 FT
0.28 < 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 24 FT
1.2 X BFW = 28.8 FT
28.8 FT > 8 FT EXISTING CULVERT SPAN

GENERAL PLAN - BRIDGE NO. 02159

SCALE 1" = 10'-0"

HYDRAULIC DATA	
DRAINAGE AREA	2.90 SQ. MILE
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	1160 CFS
AVERAGE DAILY FLOW ELEVATION	252.91 FT.
UPSTREAM DESIGN WATER SURFACE ELEVATION	260.81 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	250.06 FT.

SEE PMT-85 FOR GENERAL WATER HANDLING NOTES.

LEGEND

- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

SCOPE OF WORK:

1. CLEAN THE INSIDE OF THE CULVERT.
2. PERFORM CONCRETE REPAIRS TO CULVERT WALLS, BOTTOM SLAB, UNDERSIDE OF TOP SLAB, WINGWALLS, AND HEADWALL.
3. REPAIR JOINTS BETWEEN CULVERT CELLS.
4. REMOVE EXISTING HEADWALL AT INLET, PORTIONS OF EXISTING UPSTREAM CHANNEL WALLS, AND EXISTING WROUGHT IRON NOSING.
5. CONSTRUCT WIDENED PORTION OF CENTER WALL AND TOP SLAB, PROPOSED NOSING AND CONCRETE PARAPET.
6. INSTALL PROPOSED NOISE WALL TO THE NEW CONCRETE PARAPET.
7. CONSTRUCT CONCRETE DIVERSION CURBS AT CHANNEL ENTRANCE AND ALONG LENGTH OF UPSTREAM CHANNEL AND CELL #1 OF CULVERT.
8. INSTALL GALVANIZED STEEL ANGLED BAFFLES BETWEEN CONCRETE CURB AND CHANNEL/CULVERT WALL IN CELL #1.
9. INSTALL TRASH RACK UPSTREAM OF EXISTING CONCRETE CHANNEL.
10. INSTALL STANDARD RIPRAP BASIN AND ROCK WEIRS DOWNSTREAM.

UNCONFINED IN-STREAM WORK BMP NOTE:

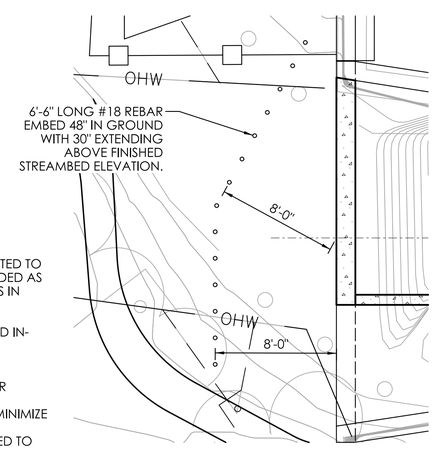
ANY UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATURAL STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

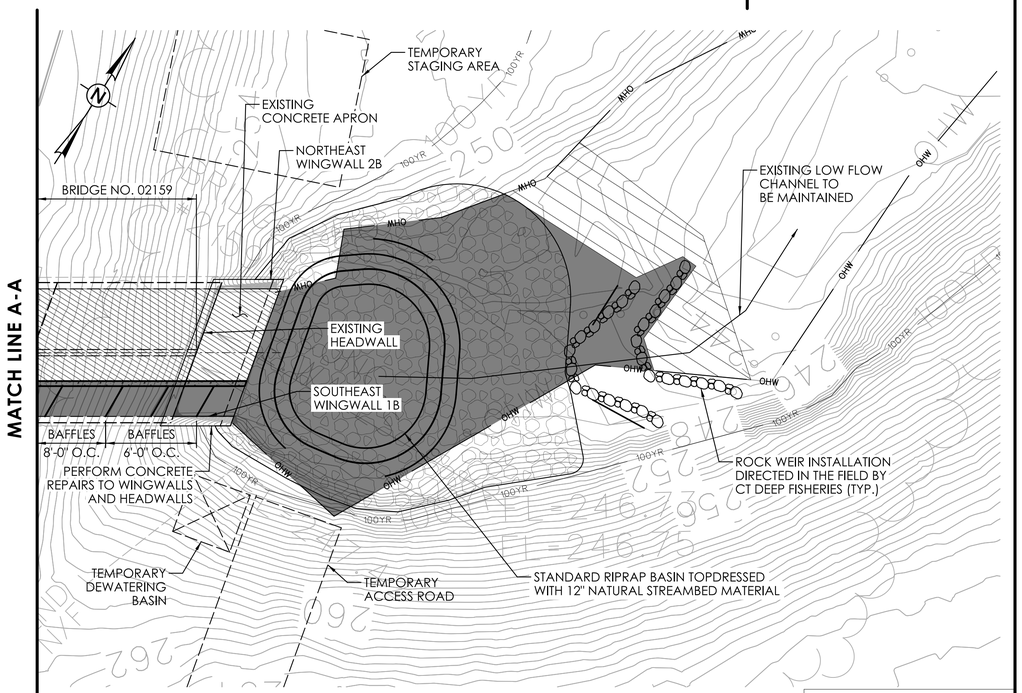


TRASH RACK NOTES:

1. THE TOP OF THE #18 REBAR MUST BE 30" ABOVE FINISHED GRADE.
2. REBAR MUST BE GALVANIZED.
3. SEE LONGITUDINAL SECTION FOR ELEVATION OF TRASH RACK.

INLET TRASH RACK DETAIL

SCALE: 1" = 5'



BRIDGE NO. 02159

REVISION DESCRIPTION | DATE | REV.

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: AC CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 02159

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-96
SHEET NO.

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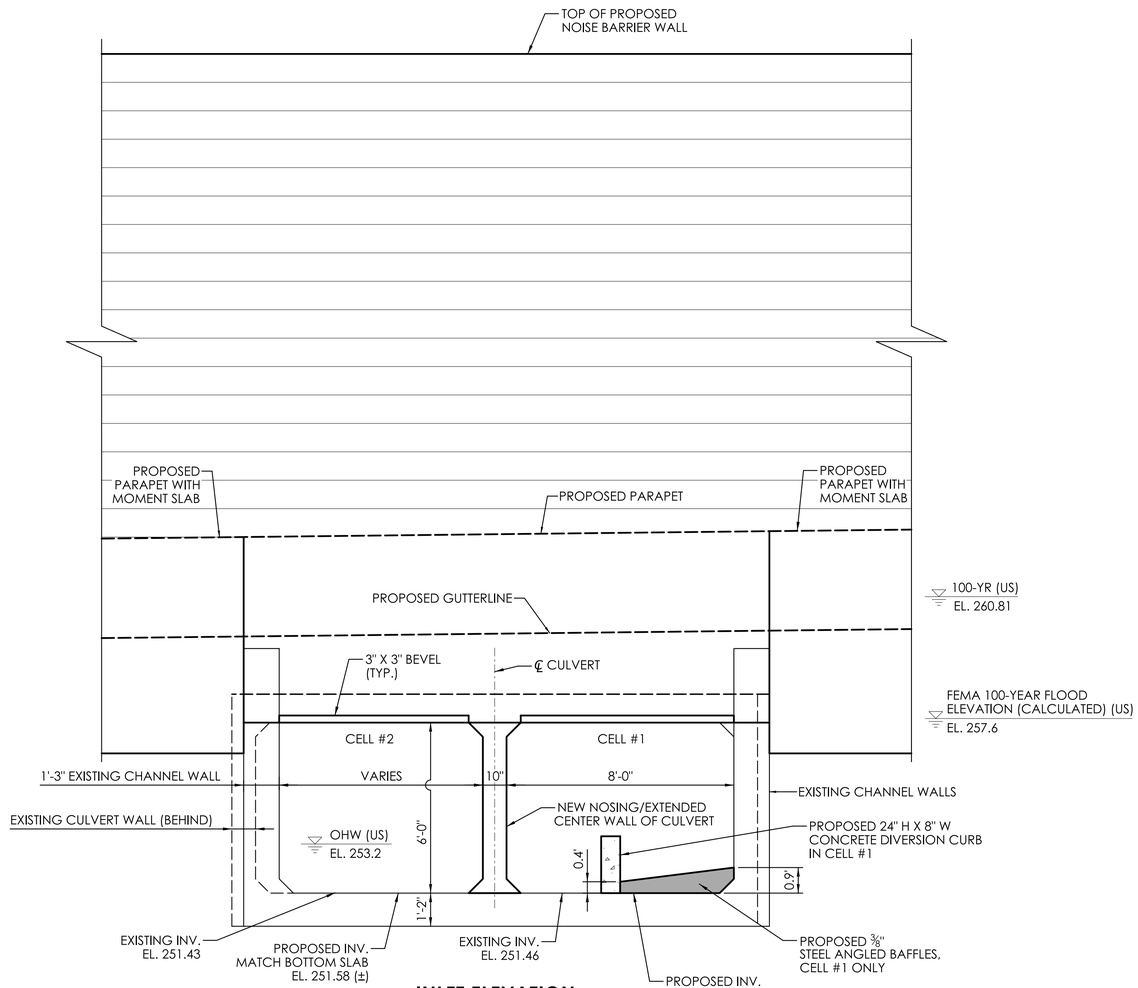
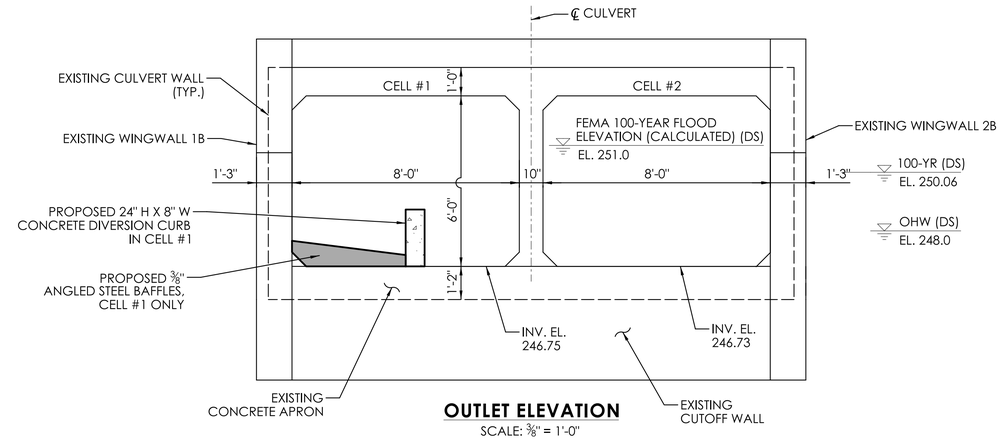


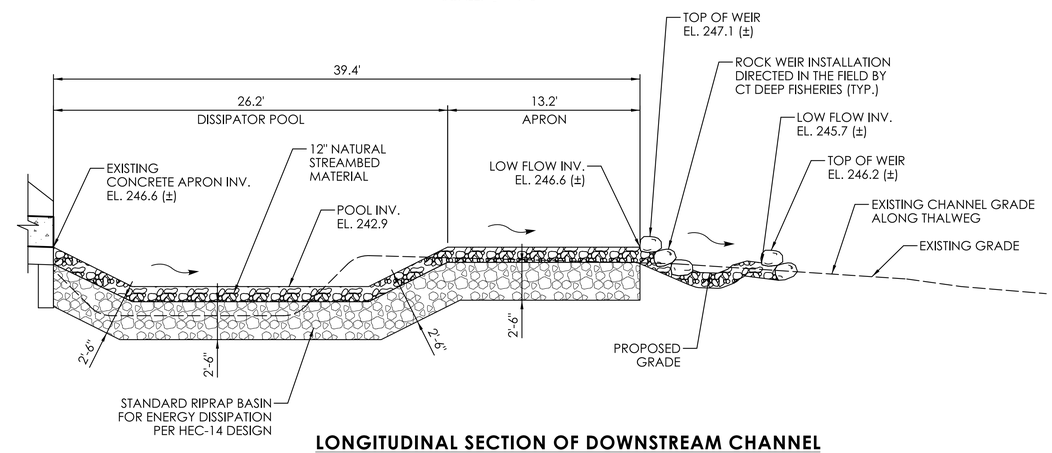
INLET ELEVATION

SCALE: 3/8" = 1'-0"



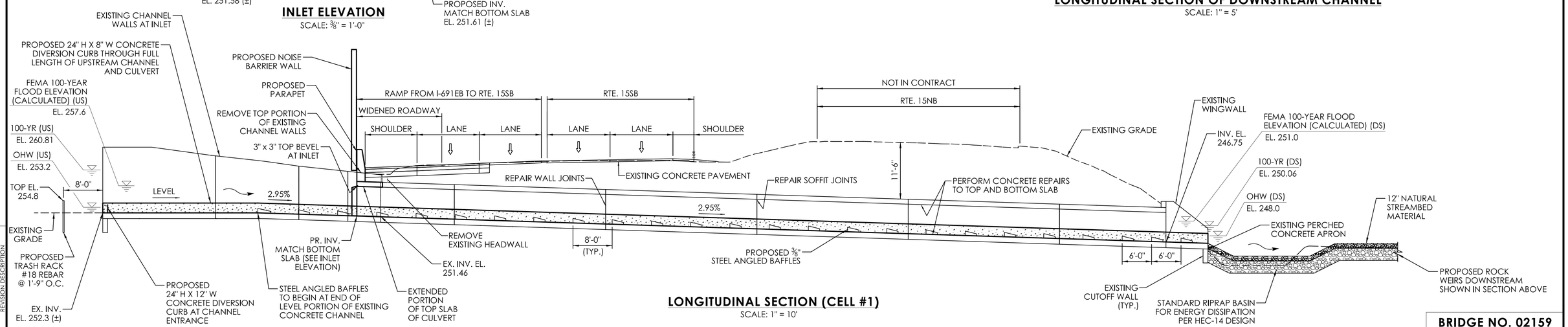
OUTLET ELEVATION

SCALE: 3/8" = 1'-0"



LONGITUDINAL SECTION OF DOWNSTREAM CHANNEL

SCALE: 1" = 5'



LONGITUDINAL SECTION (CELL #1)

SCALE: 1" = 10'

BRIDGE NO. 02159

REV.	DATE	REVISION DESCRIPTION

DESIGNER/DRAFTER: AC | CHECKED BY: DK | SCALE AS NOTED | SIGNATURE/BLOCK:

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 02159

DRAWING NO. PMT-97
SHEET NO.

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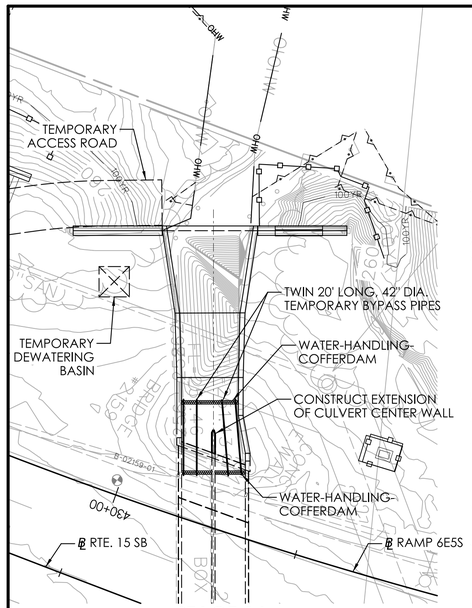
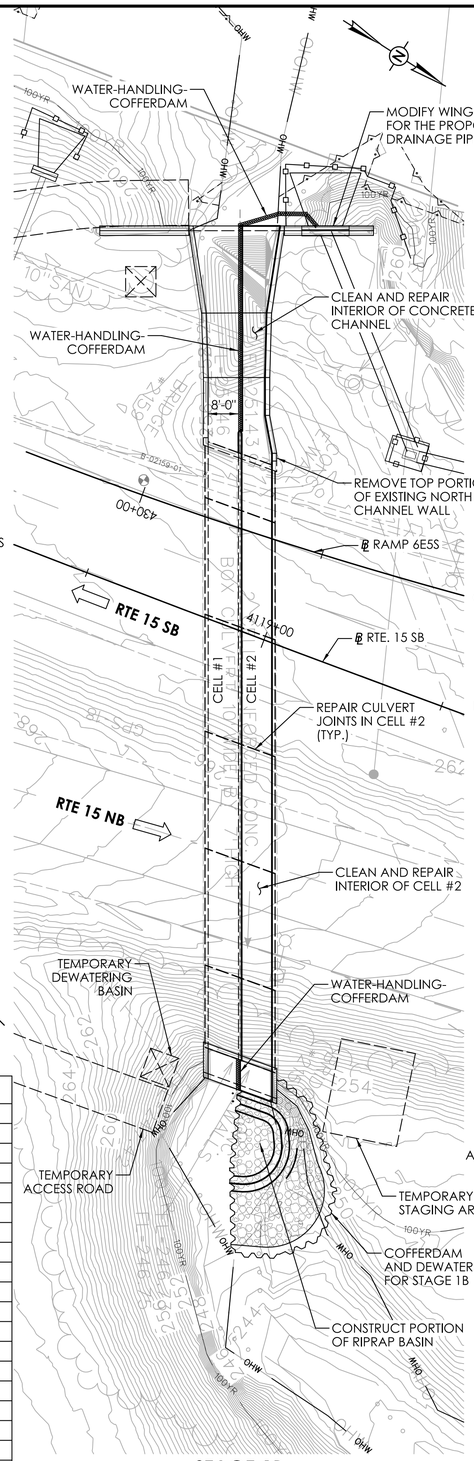
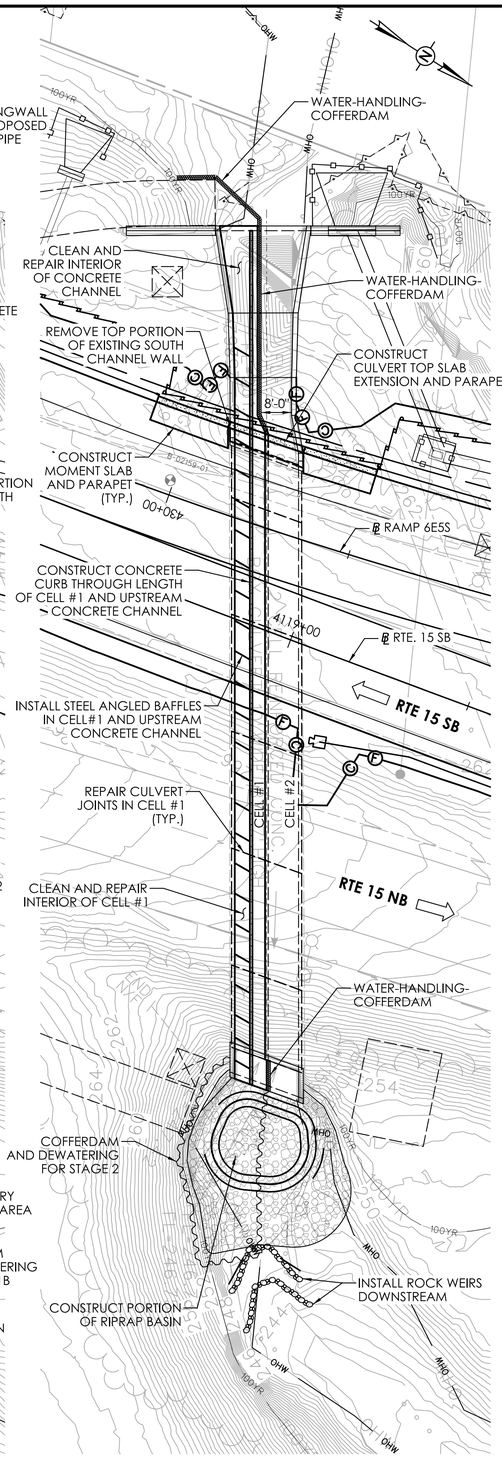
PLOTTED DATE: 7/25/2024



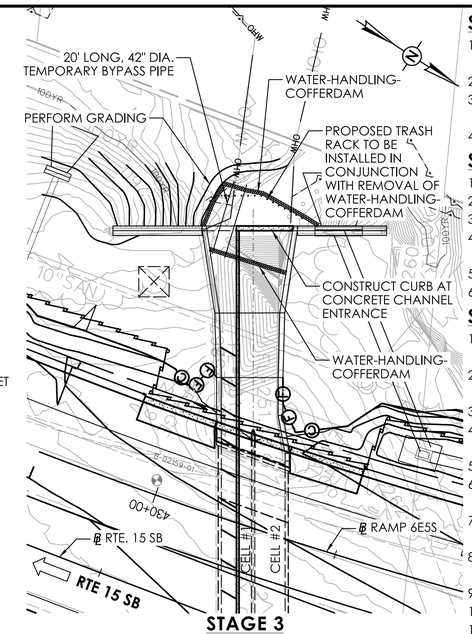
STAGE 1A
SCALE: 1" = 20'



STAGE 1B
SCALE: 1" = 20'

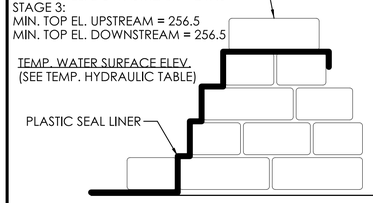


STAGE 2
SCALE: 1" = 20'



STAGE 3
SCALE: 1" = 20'

TEMPORARY WATER-HANDLING-COFFERDAM
STAGE 1A:
MIN. TOP EL. UPSTREAM = 256.0
MIN. TOP EL. DOWNSTREAM = 256.0
STAGE 1B:
MIN. TOP EL. UPSTREAM = 258.0
MIN. TOP EL. DOWNSTREAM = 249.0
STAGE 2:
MIN. TOP EL. UPSTREAM = 259.0
MIN. TOP EL. DOWNSTREAM = 249.0
STAGE 3:
MIN. TOP EL. UPSTREAM = 256.5
MIN. TOP EL. DOWNSTREAM = 256.5



SECTION VIEW

WATER-HANDLING-COFFERDAM
(NOT TO SCALE)

TEMPORARY HYDRAULIC DATA

AVERAGE DAILY FLOW	5.3 CFS
AVERAGE SPRING FLOW	10.4 CFS
STAGE 1A	
GRAVITY FLOW BYPASS PIPE DISCHARGE = 10 X ASF	104 CFS
2-YEAR WATER SURFACE ELEVATION UPSTREAM	255.18 FT
2-YEAR WATER SURFACE ELEVATION DOWNSTREAM	255.11 FT
STAGE 1B	
TEMPORARY DESIGN DISCHARGE	275 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
2-YEAR WATER SURFACE ELEVATION UPSTREAM	257.23 FT
2-YEAR WATER SURFACE ELEVATION DOWNSTREAM	248.45 FT
STAGE 2	
TEMPORARY DESIGN DISCHARGE	275 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
2-YEAR WATER SURFACE ELEVATION UPSTREAM	257.41 FT
2-YEAR WATER SURFACE ELEVATION DOWNSTREAM	248.53 FT
STAGE 3	
GRAVITY FLOW BYPASS PIPE DISCHARGE = 4 X ASF	41.6 CFS
2-YEAR WATER SURFACE ELEVATION UPSTREAM	255.82 FT
2-YEAR WATER SURFACE ELEVATION DOWNSTREAM	254.64 FT

STAGE 1A SUGGESTED SEQUENCE OF CONSTRUCTION:

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS), INCLUDING SCS AT CATCH BASINS.
2. CONSTRUCT STAGING AREA AND ACCESS ROADS AT BOTH INLET AND OUTLET.
3. INSTALL WATER-HANDLING-COFFERDAMS ACROSS CHANNEL UPSTREAM AND DOWNSTREAM OF PROPOSED CULVERT CENTER WALL EXTENSION.
4. CONSTRUCT PROPOSED EXTENSION OF CULVERT CENTER WALL.

STAGE 1B SUGGESTED SEQUENCE OF CONSTRUCTION:

1. RELOCATE WATER-HANDLING-COFFERDAMS TO INLET AND OUTLET OF CELL #2.
2. REMOVE TOP PORTION OF EXISTING NORTH CHANNEL WALL.
3. CLEAN INTERIOR OF CELL #2 AND UPSTREAM CONCRETE CHANNEL.
4. PERFORM CONCRETE REPAIRS TO INTERIORS OF CELL #2 AND WINGWALLS 2A AND 2B.
5. INSTALL COFFERDAM AND DEWATERING DOWNSTREAM OF CELL #2.
6. CONSTRUCT PORTION OF PROPOSED RIPRAP BASIN DOWNSTREAM OF CELL #2.

STAGE 2 SUGGESTED SEQUENCE OF CONSTRUCTION:

1. RELOCATE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #2 TO CELL #1.
2. RELOCATE COFFERDAM AND DEWATERING DOWNSTREAM OF CELL #2 TO CELL #1.
3. REMOVE TOP PORTION OF EXISTING SOUTH CHANNEL WALL.
4. PERFORM CULVERT WIDENING WORK OVERHEAD, INCLUDING CONSTRUCTION OF PROPOSED CULVERT TOP SLAB EXTENSION, MOMENT SLABS, AND PARAPETS.
5. CLEAN INTERIOR OF CELL #1 AND UPSTREAM CONCRETE CHANNEL.
6. PERFORM CONCRETE REPAIRS TO INTERIORS OF CELL #1 AND WINGWALLS 1A AND 1B, AND MODIFY WINGWALL 2A FOR PROPOSED DRAINAGE PIPE.
7. CONSTRUCT PROPOSED CONCRETE CURB ALONG LENGTH OF CELL#1 AND UPSTREAM CONCRETE CHANNEL.
8. INSTALL STEEL ANGLED BAFFLES IN CELL #1 BETWEEN NEW CONCRETE CURB AND SOUTH CULVERT WALL/UPSPTREAM CHANNEL WALL.
9. CONSTRUCT PORTION OF PROPOSED RIPRAP BASIN DOWNSTREAM OF CELL #2.
10. INSTALL PROPOSED ROCK WEIRS DOWNSTREAM OF RIPRAP BASIN.
11. REMOVE COFFERDAM AND DEWATERING DOWNSTREAM.
12. REMOVE WATER-HANDLING-COFFERDAM AT OUTLET.

STAGE 3 SUGGESTED SEQUENCE OF CONSTRUCTION:

1. RELOCATE WATER-HANDLING-COFFERDAMS AT INLET TO CROSS THE FULL OPENING OF THE CONCRETE CHANNEL UPSTREAM AND DOWNSTREAM OF THE CHANNEL ENTRANCE.
2. PERFORM LOCAL GRADING UPSTREAM AND INSTALL TEMPORARY BYPASS PIPE.
3. CONSTRUCT PROPOSED CONCRETE CURB AT ENTRANCE OF CONCRETE CHANNEL.
4. REMOVE WATER-HANDLING-COFFERDAMS. INSTALL PROPOSED TRASH RACK WHILE REMOVING WATER-HANDLING-COFFERDAMS AT INLET.
5. REMOVE TEMPORARY BYPASS PIPE AND OPEN CULVERT TO FLOWS.
6. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
7. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

WATER-HANDLING-COFFERDAM NOTES:

1. CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY WATER HANDLING SYSTEM AS REQUIRED DURING CONSTRUCTION OF THE NEW STRUCTURE.

2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.

3. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.

4. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS PMT-47 AND PMT-56.

5. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGEDTO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.

6. BASED UPON FIELD CONDITIONS, WORK DURATION. AND EXPECTED WEATHER CONDITIONS, THE ENGINEER MAY APPROVE A CONSTRUCTION WATER HANDLING PLAN WITH LOWER PUMPING FLOWS, PROVIDED THAT THIS INCONCLUDES A CONTINGENCY PLAN, WHICH MINIMIZES NEGATIVE IMPACTS AND SAFELY CONVEYS LARGER FLOWS THROUGH THE WORK AREA.

NATURAL STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."

2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."

3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY CONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENTS POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

BRIDGE NO. 02159

REVISION DESCRIPTION | DATE | REV

ENVIRONMENTAL PERMIT PLANS

SCALE AS NOTED

SIGNATURE/ BLOCK:

DESIGNER/DRAFTER: RSA CHECKED BY: DK

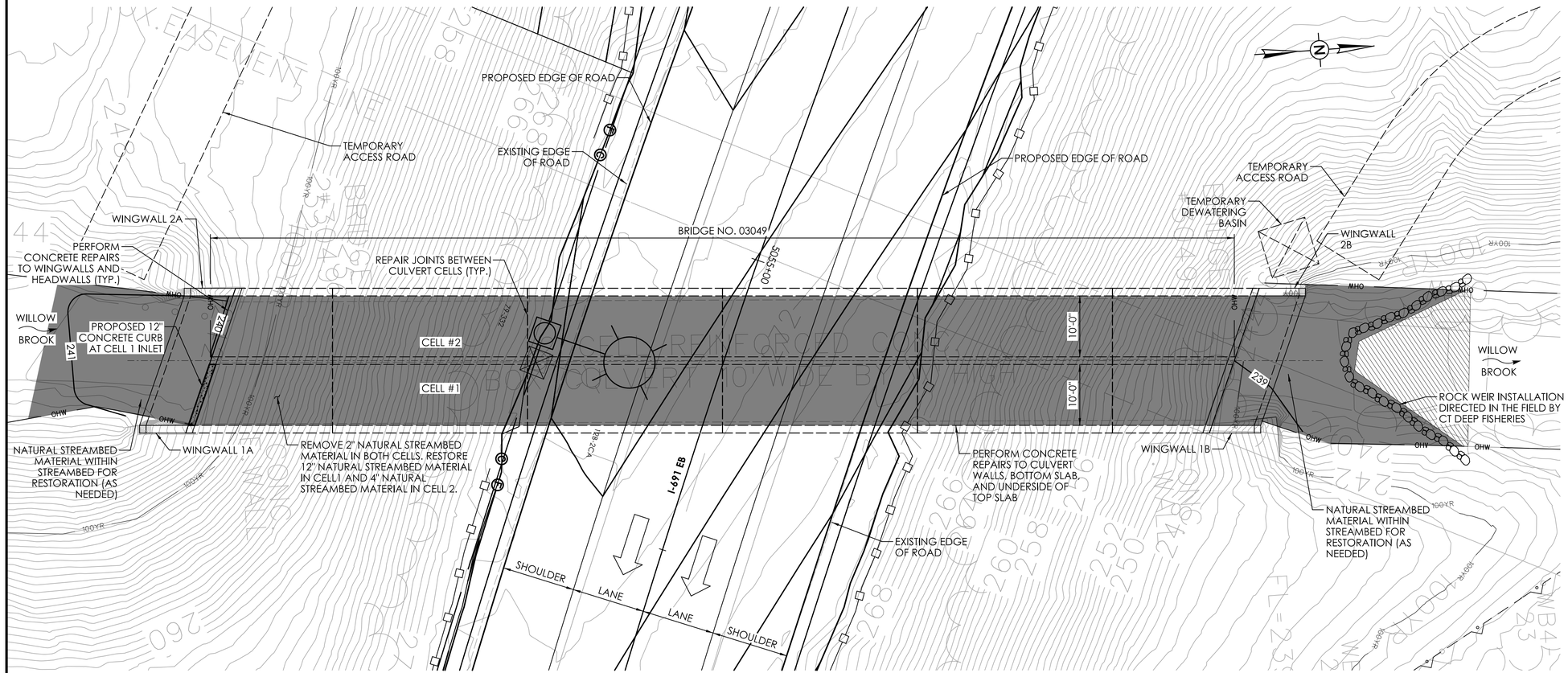
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - BRIDGE NO. 02159

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-98
SHEET NO.

LASTED SAVED BY: RAlBakri **FILE NAME:** c:\pw_working\connecticut\ral-bakri@gm2inc.com\dms04800\SB_CP_0079-0240_Culvert#02159_Water_Handling_Permit.dgn
PLOTTED DATE: 7/25/2024



GENERAL PLAN - BRIDGE NO. 03049

SCALE 1" = 10'-0"

HYDRAULIC DATA

DRAINAGE AREA	2.90 SQ. MILE
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	1160 CFS
AVERAGE DAILY FLOW ELEVATION	240.39 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	247.79 FT
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	244.11 FT

SCOPE OF WORK:

1. REMOVE EXISTING STREAMBED MATERIAL INSIDE THE CULVERT.
2. PERFORM CONCRETE REPAIRS TO CULVERT WALLS, BOTTOM SLAB, UNDERSIDE OF TOP SLAB, WINGWALLS, AND HEADWALLS.
3. REPAIR JOINTS BETWEEN CULVERT CELLS.
4. CONSTRUCT PROPOSED CONCRETE CURB AT INLET CELL #1.
5. INSTALL 12" OF NATURAL STREAMBED MATERIAL IN CELL #1 AND 4" IN CELL #2.
6. INSTALL PROPOSED ROCK WEIR AT OUTLET.

SUGGESTED SEQUENCE OF CONSTRUCTION

STAGE 1:

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS), INCLUDING SCS AT CATCH BASINS.
2. CONSTRUCT ACCESS ROADS AT BOTH INLET AND OUTLET.
3. INSTALL WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #2.
4. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
5. PERFORM CONCRETE REPAIRS TO INTERIORS OF CELL #2 AND WINGWALL 2B AND WINGWALL 2A.
6. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AFTER REPAIRS TO THE CELL #2 INTERIOR HAVE BEEN COMPLETE.

STAGE 2:

1. RELOCATE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #2 TO CELL #1.
2. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY
3. PERFORM CONCRETE REPAIRS TO INTERIORS OF CELL #1 AND WINGWALL 1B AND WINGWALL 1A
4. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AFTER REPAIRS TO CELL #1 INTERIOR ARE COMPLETE.
5. CONSTRUCT PROPOSED CURB AT INLET OF CELL #1.
6. REMOVE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET.
7. INSTALL DOWNSTREAM ROCK WEIR IN THE WET CONDITION.
8. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
9. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

LEGEND

- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

SEE PMT-85 FOR GENERAL WATER HANDLING NOTES.

UNCONFINED IN-STREAM WORK BMP NOTE:

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THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

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* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATURAL STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

TEMPORARY HYDRAULIC DATA

AVERAGE DAILY FLOW	5.3 CFS
AVERAGE SPRING FLOW	10.4 CFS
TEMPORARY DESIGN DISCHARGE	274 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
STAGE 1	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	243.85 FT
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	241.04 FT
STAGE 2	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	244.51 FT
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	241.41 FT

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 60 SF / 168 FT = 0.36 FT
0.36 FT < 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 26 FT
1.2 x BFW = 31.2 FT
31.2 FT > 10 FT EXISTING CULVERT SPAN

BRIDGE NO. 03049

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: MF CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 03049

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-99
SHEET NO.

LASTED SAVED BY: RAlBakri **FILE NAME:** c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04801\SB_CP_0079-0240_Culvert#03049_GPN_Permit.dgn
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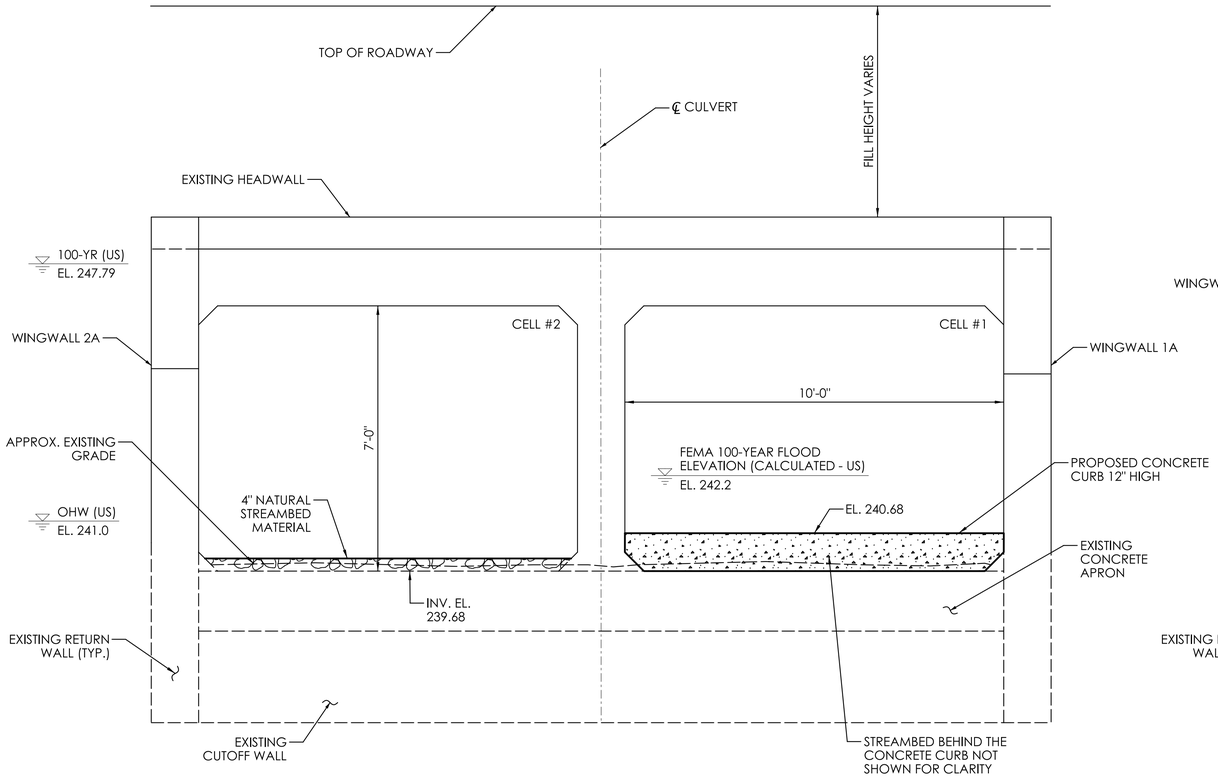
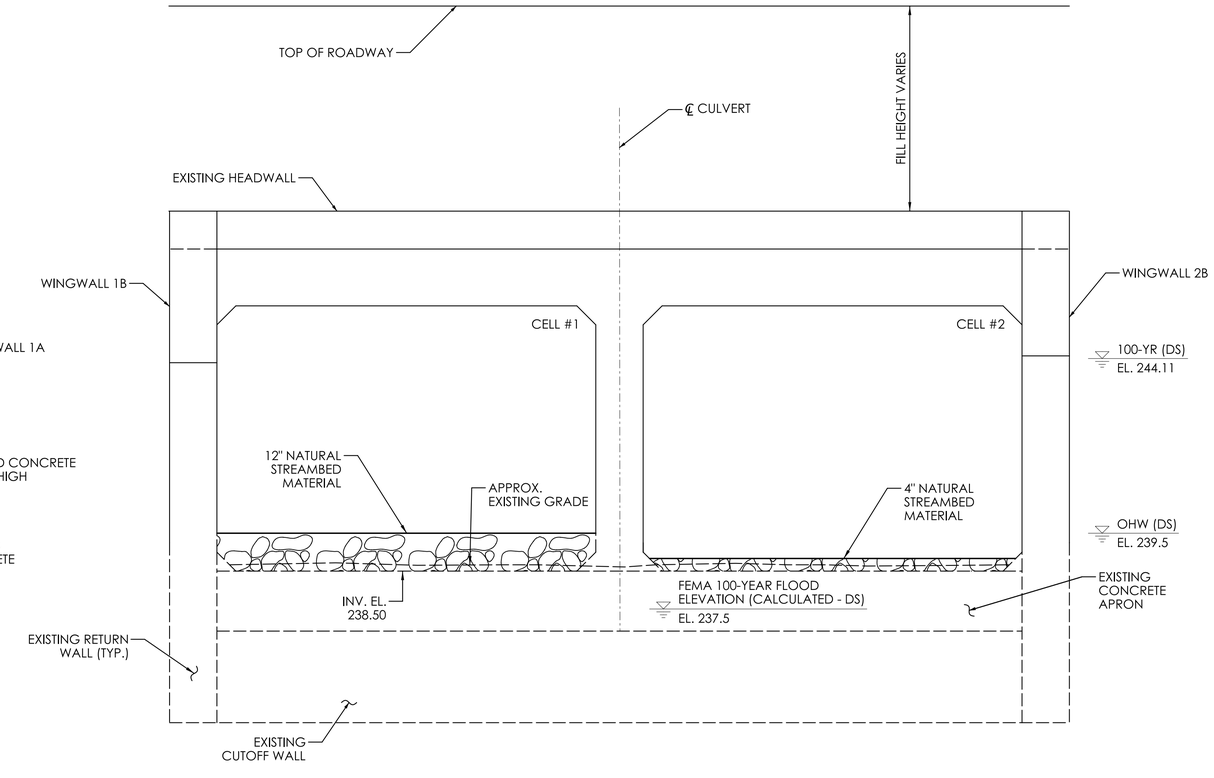


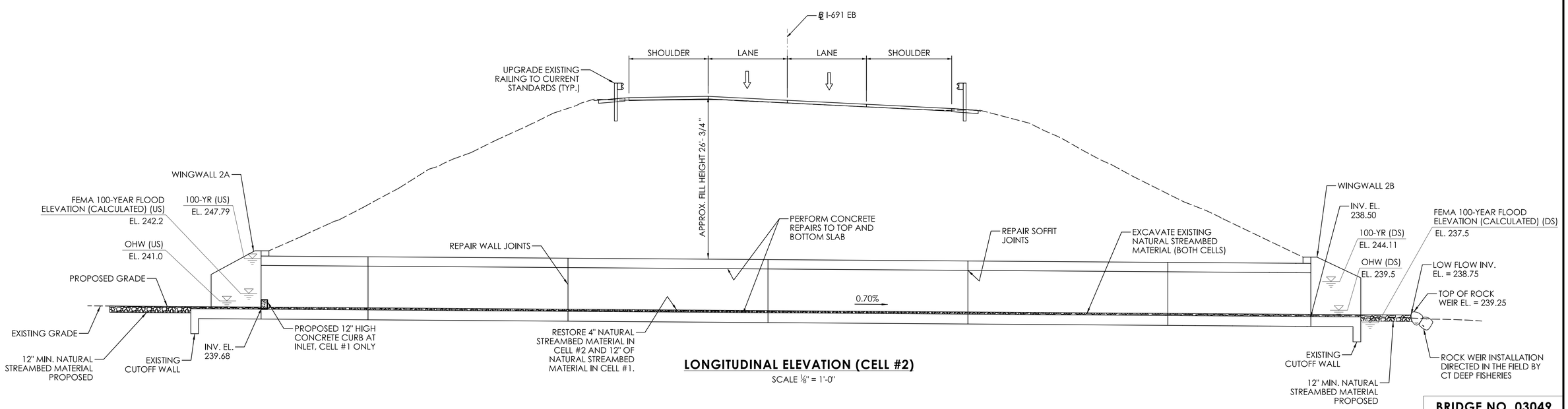
INLET ELEVATION

SCALE ½" = 1'-0"



OUTLET ELEVATION

SCALE ½" = 1'-0"



LONGITUDINAL ELEVATION (CELL #2)

SCALE ⅛" = 1'-0"

BRIDGE NO. 03049

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: MF CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION & ELEVATION - BRIDGE NO. 03049

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-100
SHEET NO.

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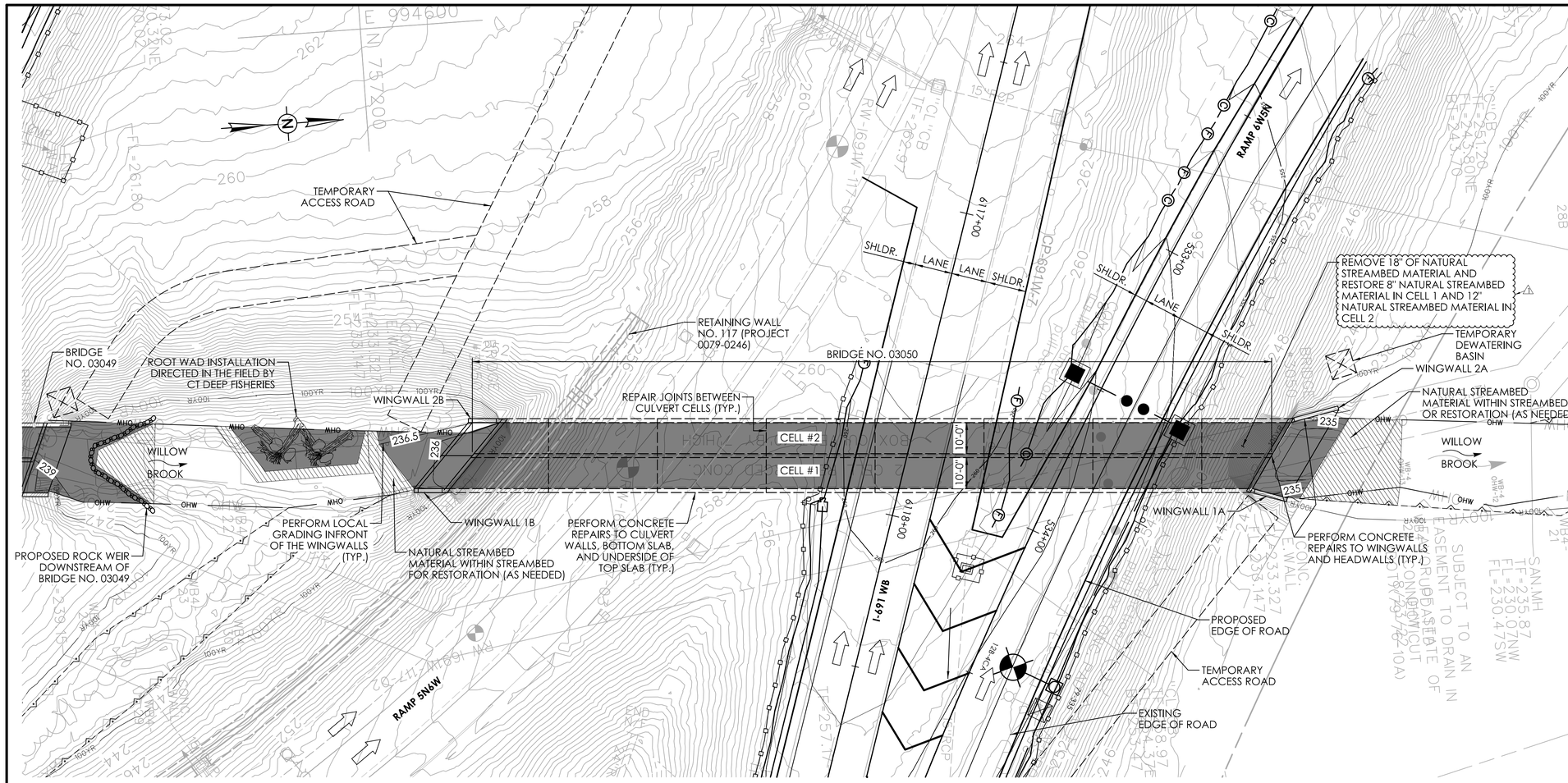

GENERAL PLAN - BRIDGE NO. 03050

SCALE: 1" = 20'

HYDRAULIC DATA

DRAINAGE AREA	2.90 SQ. MILE
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	1160 CFS
AVERAGE DAILY FLOW ELEVATION	236.68 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	244.19 FT
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	238.40 FT

SCOPE OF WORK:

1. REMOVE EXISTING STREAMBED MATERIAL INSIDE THE CULVERT.
2. PERFORM CONCRETE REPAIRS TO CULVERT WALLS, BOTTOM SLAB, UNDERSIDE OF TOP SLAB, WINGWALLS, AND HEADWALLS.
3. REPAIR JOINTS BETWEEN CULVERT CELLS.
4. INSTALL NATURAL STREAMBED MATERIAL INSIDE CULVERT.
5. INSTALL PROPOSED ROOT WAD UPSTREAM.

SUGGESTED SEQUENCE OF CONSTRUCTION

STAGE 1:

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS).
2. CONSTRUCT ACCESS ROADS AT INLET.
3. INSTALL WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #1.
4. REMOVE EXISTING STREAMBED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
5. PERFORM CONCRETE REPAIRS TO INTERIORS OF CELL #1 AND NE WINGWALL 1B AND NW WINGWALL 1A.
6. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AFTER REPAIRS TO THE CELL #1 INTERIOR HAVE BEEN COMPLETE.

STAGE 2:

1. RELOCATE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #1 TO CELL #2.
2. REMOVE EXISTING STREAMED MATERIAL FROM THE BOTTOM SLAB AND STORE IT TEMPORARILY.
3. PERFORM CONCRETE REPAIRS TO INTERIORS OF CELL #2 AND SE WINGWALL 2B AND SW WINGWALL 2A.
4. PLACE STREAMBED MATERIAL ON THE BOTTOM SLAB AFTER REPAIRS TO CELL #2 INTERIOR ARE COMPLETE.
5. INSTALL ROOT WAD UPSTREAM.
6. REMOVE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET.
7. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
8. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

SEE PMT-85 FOR GENERAL WATER HANDLING NOTES.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATURAL STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

LEGEND

- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

TEMPORARY HYDRAULIC DATA

AVERAGE DAILY FLOW	5.3 CFS
AVERAGE SPRING FLOW	10.4 CFS
TEMPORARY DESIGN DISCHARGE	274 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
STAGE 1	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	240.99 FT.
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	236.19 FT.
STAGE 2	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	240.43 FT.
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	235.03 FT.

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 60 SF / 256 FT = 0.23
0.23 FT < 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 26 FT
1.2 X BFW = 31.2 FT
31.2 FT > 10 FT EXISTING CULVERT SPAN

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	REVISED STREAMBED MATERIAL DEPTH

BRIDGE NO. 03050

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 03050

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-101
SHEET NO.

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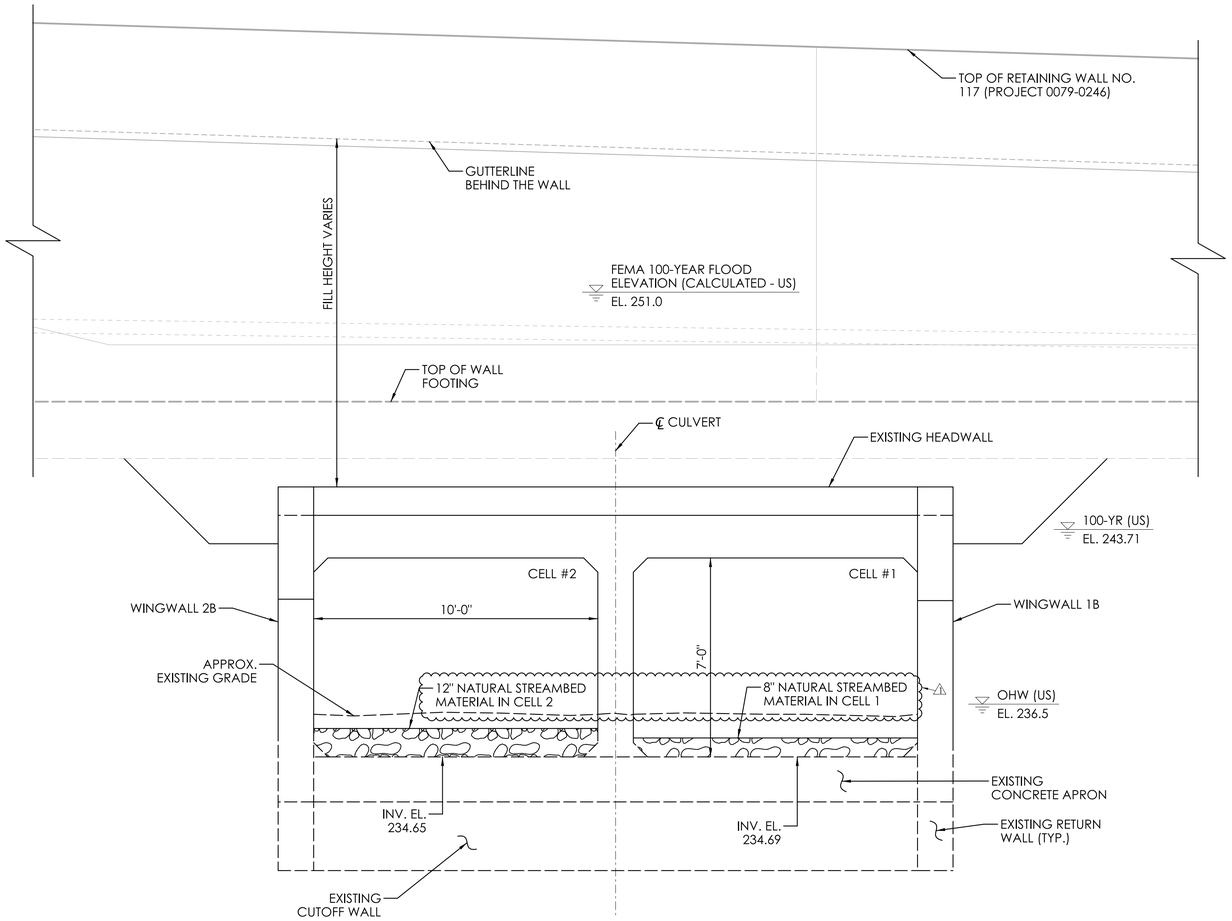
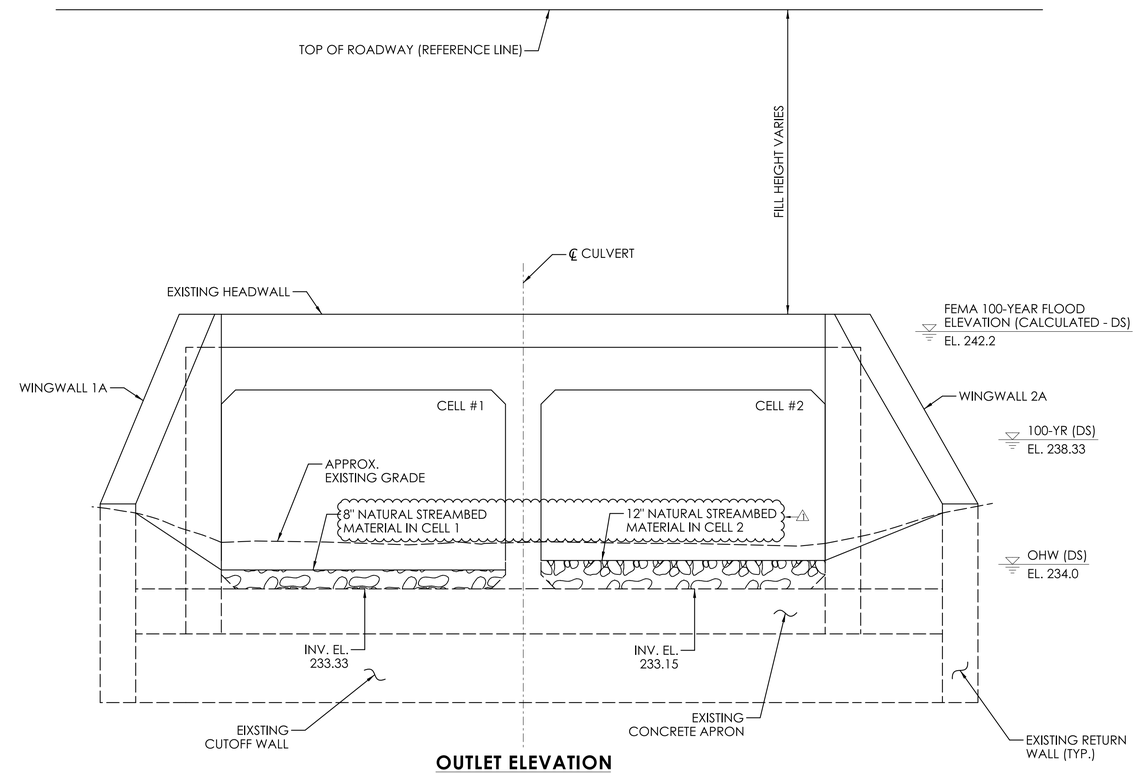


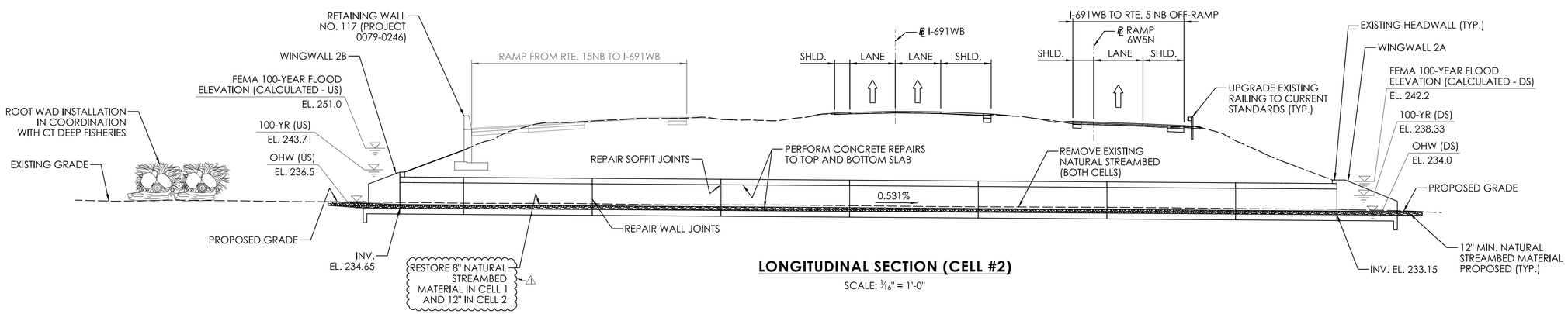
INLET ELEVATION

SCALE: 3/8" = 1'-0"



OUTLET ELEVATION

SCALE: 3/8" = 1'-0"



LONGITUDINAL SECTION (CELL #2)

SCALE: 1/16" = 1'-0"

BRIDGE NO. 03050

REV.	DATE	REVISION DESCRIPTION
1	02/08/2022	REVISED STREAMBED MATERIAL DEPTH

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION & ELEVATION - BRIDGE NO. 03050

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-102

SHEET NO.

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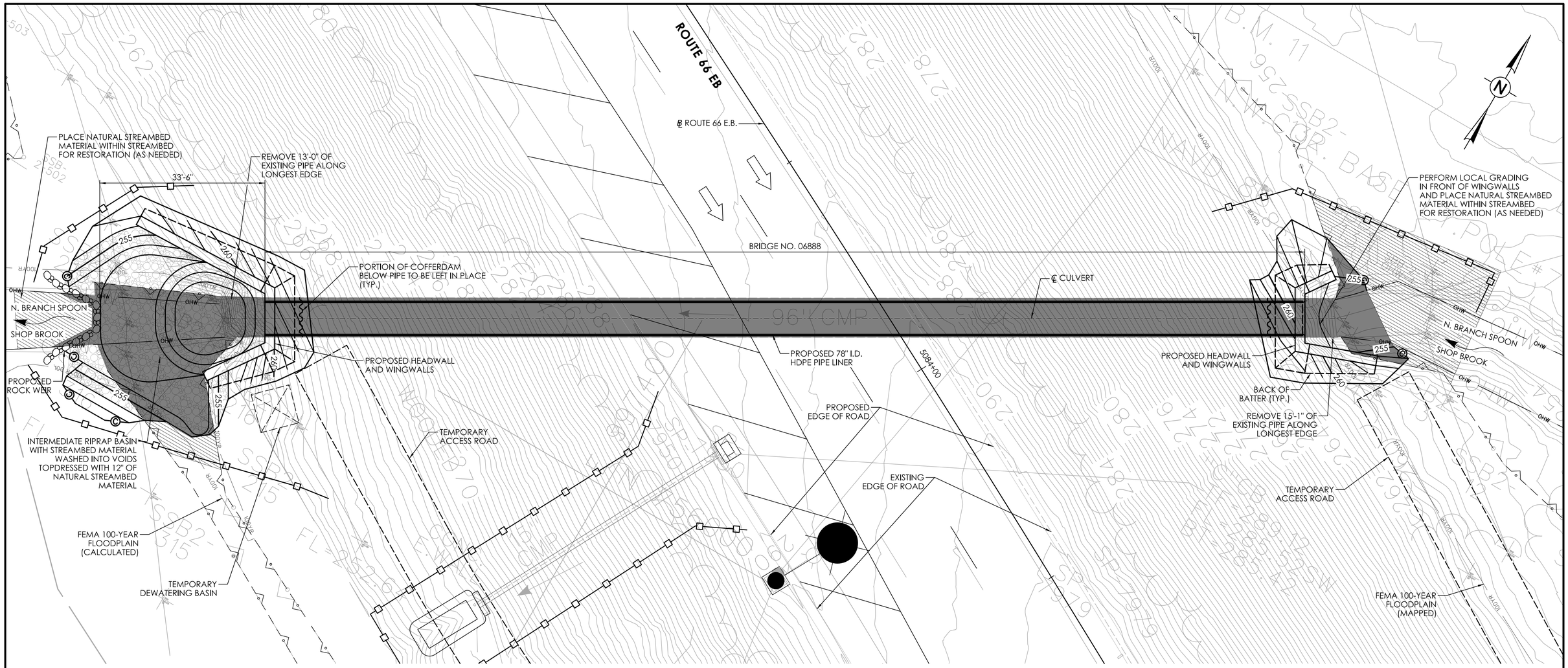

GENERAL PLAN - BRIDGE NO. 06888

SCALE: 1" = 10'

SCOPE OF WORK:

1. CLEAN EXISTING CORRUGATED METAL PIPE.
2. FILL VOIDS BEHIND EXISTING CORRUGATED METAL PIPE.
3. INSTALL NEW 78" I.D. PIPE LINER. PIPE LINER SHALL BE THERMOPLASTIC LINER (SNAP-TITE ISCO AQUATIC LIFE PASSAGE HDPE LINER).
4. REMOVE PORTION OF EXISTING PIPE AT BOTH INLET AND OUTLET. REMOVE EXISTING CUTOFF WALLS.
5. CONSTRUCT PROPOSED HEADWALLS AND WINGWALLS AT BOTH INLET AND OUTLET.
6. FILL ANNULAR SPACE BETWEEN EXISTING AND PROPOSED PIPE.
7. INSTALL PROPOSED RIPRAP BASIN, NATURAL STREAMBED MATERIAL, AND ROCK WEIR AT OUTLET.

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 33.18 SF / 212 FT = 0.16 FT
0.16 FT < 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 16 FT
1.2 X BFW = 19.2 FT
19.2 FT > 6.50 FT PROPOSED CULVERT SPAN

LEGEND

- 100YR — FEMA 100-YEAR FLOODPLAIN (MAPPED/CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

HYDRAULIC DATA

DRAINAGE AREA	0.71 SQ. MILE
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	290 CFS
AVERAGE DAILY FLOW ELEVATION	254.51 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	261.99 FT
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	256.52 FT

BRIDGE NO. 06888

REVISION DESCRIPTION
DATE
REV.

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 06888

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-103
SHEET NO.

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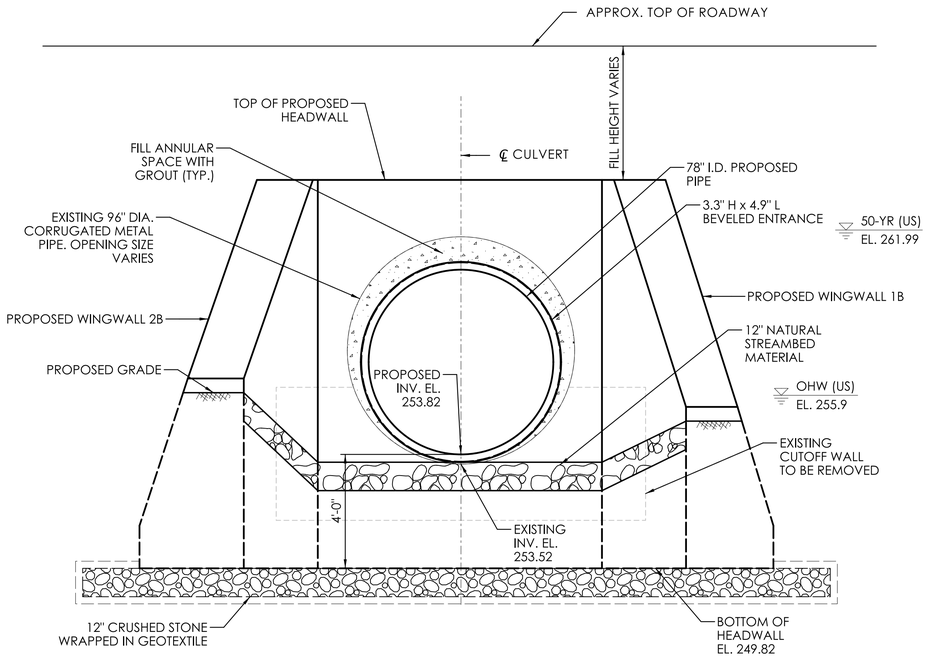
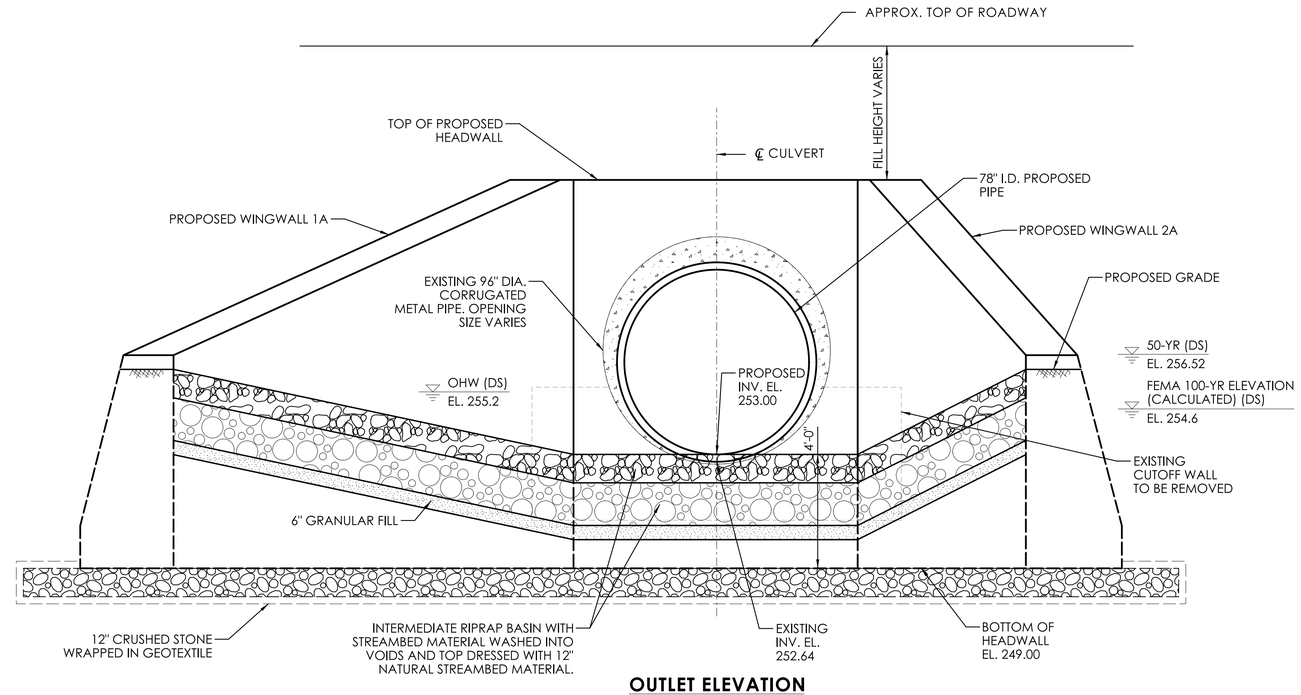
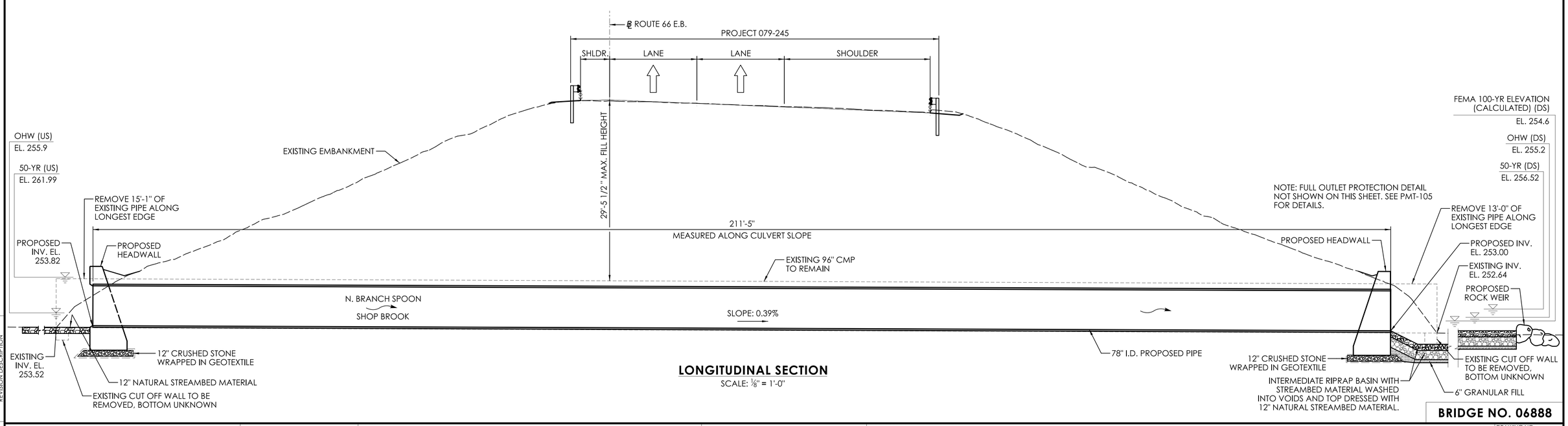


INLET ELEVATION
SCALE: ⅜" = 1'-0"



OUTLET ELEVATION
SCALE: ⅜" = 1'-0"



LONGITUDINAL SECTION
SCALE: ⅛" = 1'-0"

BRIDGE NO. 06888

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 06888

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-104
SHEET NO.

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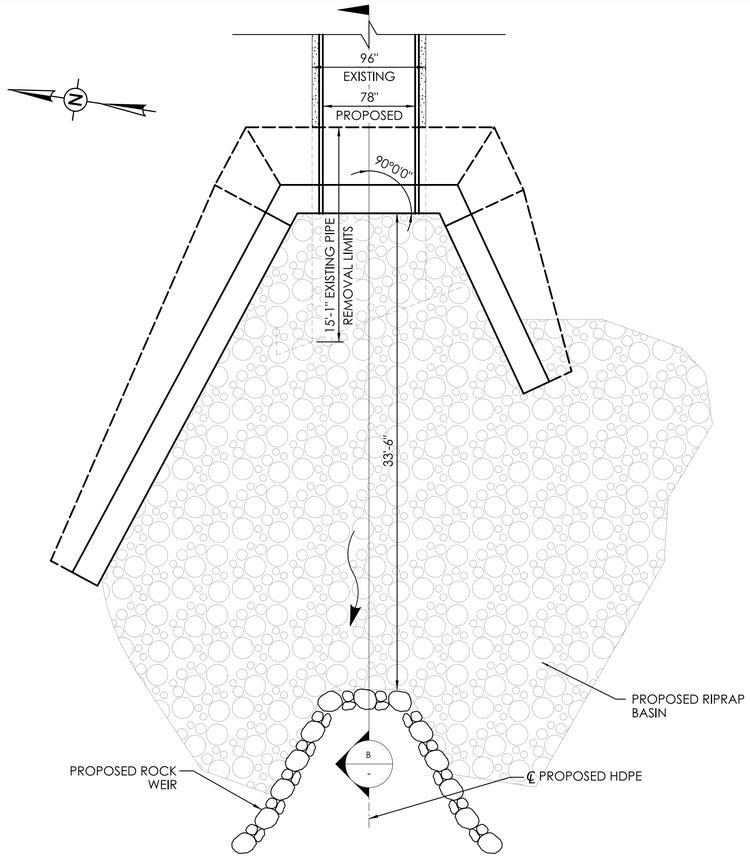
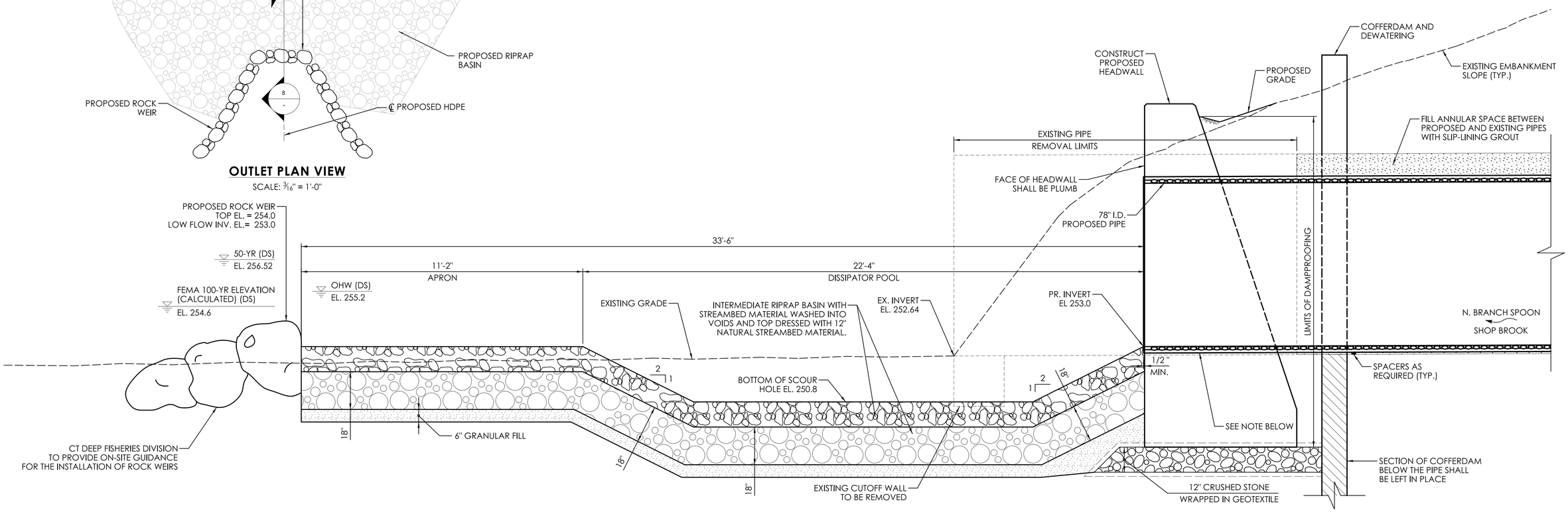


OUTLET PLAN VIEW

SCALE: 3/16" = 1'-0"



NOTE: AFTER THE EXISTING CUTOFF WALL AND PORTION OF EXISTING PIPE ARE REMOVED, PROPOSED PIPE MAY NEED TO BE SUPPORTED TEMPORARILY AT INLET AND OUTLET DURING CONSTRUCTION UNTIL THE HEADWALL IS CONSTRUCTED.

SECTION B

SCALE 1/2" = 1'-0"

BRIDGE NO. 06888

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: OUTLET DETAILS - BRIDGE NO. 06888

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-105
SHEET NO.

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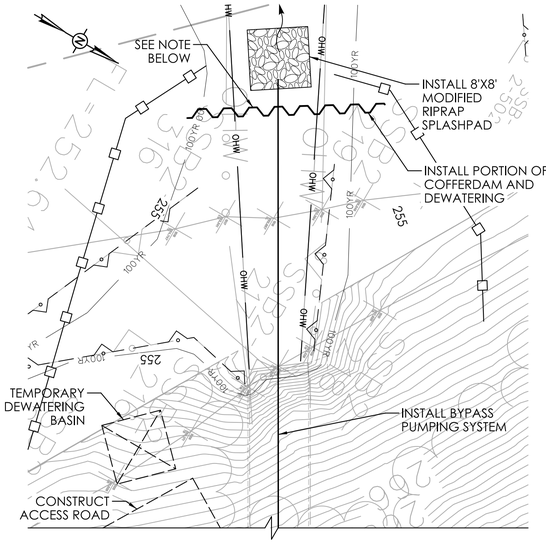
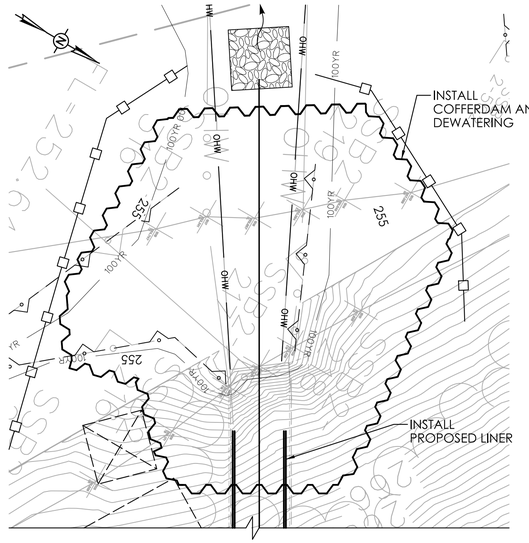
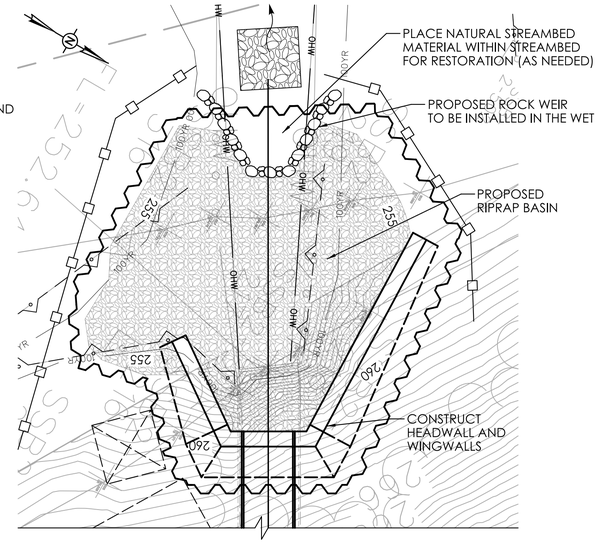
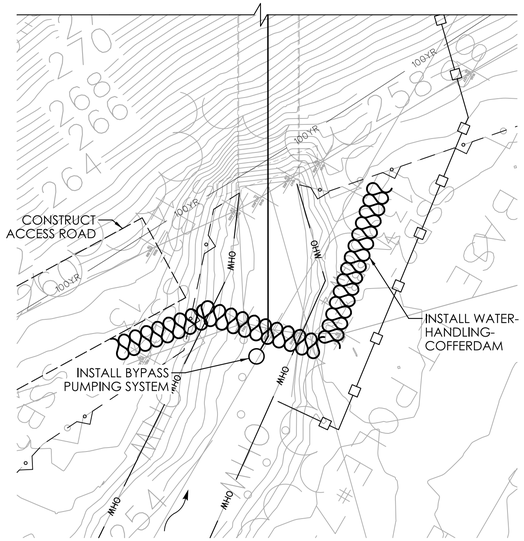
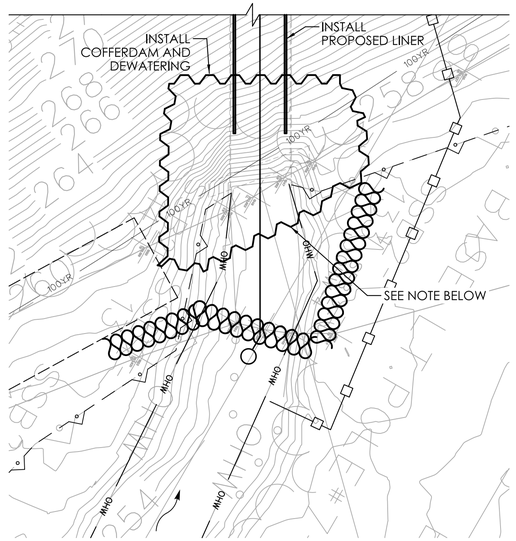
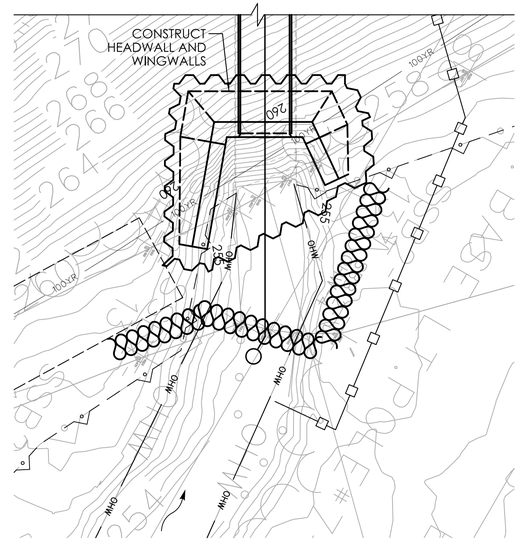












STAGE 1: SUGGESTED SEQUENCE OF CONSTRUCTION

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS).
2. CONSTRUCT ACCESS ROADS AT BOTH INLET AND OUTLET.
3. INSTALL WATER-HANDLING-COFFERDAM AT INLET.
4. INSTALL PORTION OF COFFERDAM AND DEWATERING AT OUTLET.
5. INSTALL STREAM BYPASS PUMPING SYSTEM THROUGH CULVERT.
6. CLEAN EXISTING PIPE. ALL WORK SHALL BE PERFORMED IN THE DRY.
7. FILL VOIDS BEHIND THE CULVERT AND REPAIR EXISTING PIPE.

NOTE: THE ELEVATION OF THE TOP OF "COFFERDAM AND DEWATERING" WITHIN THE OHW SHALL BE EQUAL TO THAT OF THE "WATER-HANDLING-COFFERDAM." ALL OTHER TOP ELEVATIONS OF "COFFERDAM AND DEWATERING" SHALL BE 1 FT HIGHER THAN RETAINED EARTH ELEVATION.

STAGE 2: SUGGESTED SEQUENCE OF CONSTRUCTION

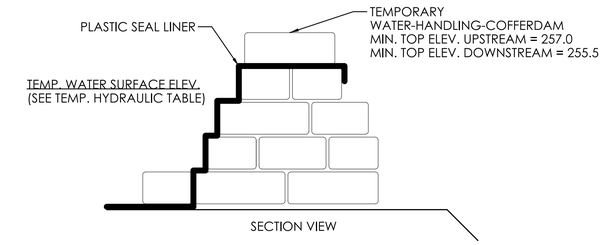
1. INSTALL COFFERDAM AND DEWATERING AT INLET AND OUTLET.
2. EXCAVATE AND REMOVE EXISTING CUTOFF WALLS AND PORTIONS OF EXISTING PIPE AT INLET AND OUTLET.
3. PERFORM SLIP LINING OPERATION IN THE DRY.
4. INSTALL SPACERS FOR PROPOSED PIPE.
5. INSTALL NEW 78" I.D. PIPE TO COMPLETE STAGE 2 CONSTRUCTION.

STAGE 3: SUGGESTED SEQUENCE OF CONSTRUCTION

1. EXCAVATE AND INSTALL HEADWALLS AND WINGWALLS.
2. PERFORM GROUTING OF ANNULAR SPACE IN LIFTS PER SPECIFICATIONS.
3. PREPARE SUBGRADE OF INLET AND OUTLET AREAS.
4. INSTALL STREAMBED MATERIAL AT INLET AND RIPRAP APRON AT OUTLET.
5. REMOVE COFFERDAM AND DEWATERING AT INLET AND OUTLET EXCEPT FOR PORTION BELOW EXISTING PIPE TO REMAIN.
6. REMOVE WATER HANDLING COFFERDAM AT INLET.
7. REMOVE BYPASS OPERATION AND OPEN NEW CULVERT TO STREAM FLOWS.
8. INSTALL PROPOSED ROCK WEIR DOWNSTREAM IN THE WET CONDITION.
9. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
10. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

TEMPORARY HYDRAULIC DATA

AVERAGE DAILY FLOW	1.3 CFS
AVERAGE SPRING FLOW	2.6 CFS
2-YEAR DESIGN FLOW	108 CFS
LOW FLOW PUMPING DISCHARGE = 10 x ASF	26 CFS
DESIGN 10 X ASF WSEL UPSTREAM	255.76 FT
DESIGN 10 X ASF WSEL DOWNSTREAM	254.65 FT



WATER-HANDLING-COFFERDAM

(NOT TO SCALE)

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY CONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENTS POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

WATER-HANDLING-COFFERDAM NOTES

1. CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY WATER HANDLING SYSTEM AS REQUIRED DURING CONSTRUCTION OF THE NEW STRUCTURE.
2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.
3. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

   ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.

5. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS PMT-49 AND PMT-58.
6. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGED TO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.
7. BASED UPON FIELD CONDITIONS, WORK DURATION, AND EXPECTED WEATHER CONDITIONS, THE ENGINEER MAY APPROVE A CONSTRUCTION WATER HANDLING PLAN WITH LOWER PUMPING FLOWS, PROVIDED THAT THIS INCONCLUDES A CONTINGENCY PLAN, WHICH MINIMIZES NEGATIVE IMPACTS AND SAFELY CONVEYS LARGER FLOWS THROUGH THE WORK AREA.

BRIDGE NO. 06888

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE: 1" = 10'-0"

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - BRIDGE NO. 06888

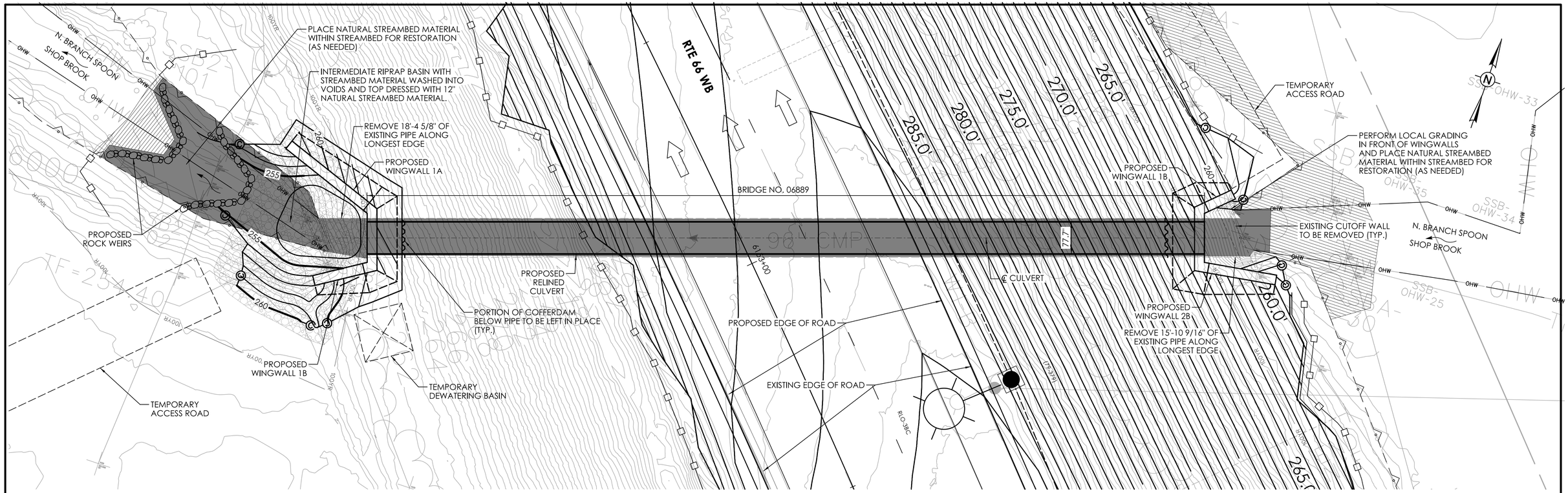
ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-106

SHEET NO.

LASTED SAVED BY: PBarbosa FILE NAME: c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04807\SB_CP_0079-0240_Culvert#06888_Water_Handling_Staging_Permit.dgn
PLOTTED DATE: 7/8/2024



GENERAL PLAN - BRIDGE NO. 06889

SCALE: 1" = 10'

LEGEND

- 100YR — MAPPED FEMA 100-YEAR FLOOD LIMIT
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

SCOPE OF WORK:

1. CLEAN EXISTING CORRUGATED METAL PIPE.
2. FILL VOIDS BEHIND EXISTING CORRUGATED METAL PIPE.
3. INSTALL NEW 77.7" I.D. PIPE LINER. PIPE LINER SHALL BE GLASS FIBERREINFORCED PLASTIC (GFRP).
4. REMOVE PORTION OF EXISTING PIPE AT BOTH INLET AND OUTLET. REMOVE EXISTING CUTOFF WALLS.
5. CONSTRUCT PROPOSED HEADWALLS AND WINGWALLS AT BOTH INLET AND OUTLET.
6. FILL ANNULAR SPACE BETWEEN EXISTING AND PROPOSED PIPE.
7. INSTALL PROPOSED RIPRAP BASIN, NATURAL STREAMBED, AND ROCK WEIRS AT OUTLET.

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 32.93 SF / 171 FT = 0.19
0.19 FT < 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 16 FT
1.2 X BFW = 19.2 FT
19.2 FT > 6.48 FT PROPOSED CULVERT SPAN

HYDRAULIC DATA	
DRAINAGE AREA	0.69 SQ. MILE
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	290 CFS
AVERAGE DAILY FLOW ELEVATION	256.36 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	264.25 FT
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	261.98 FT

BRIDGE NO. 06889

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

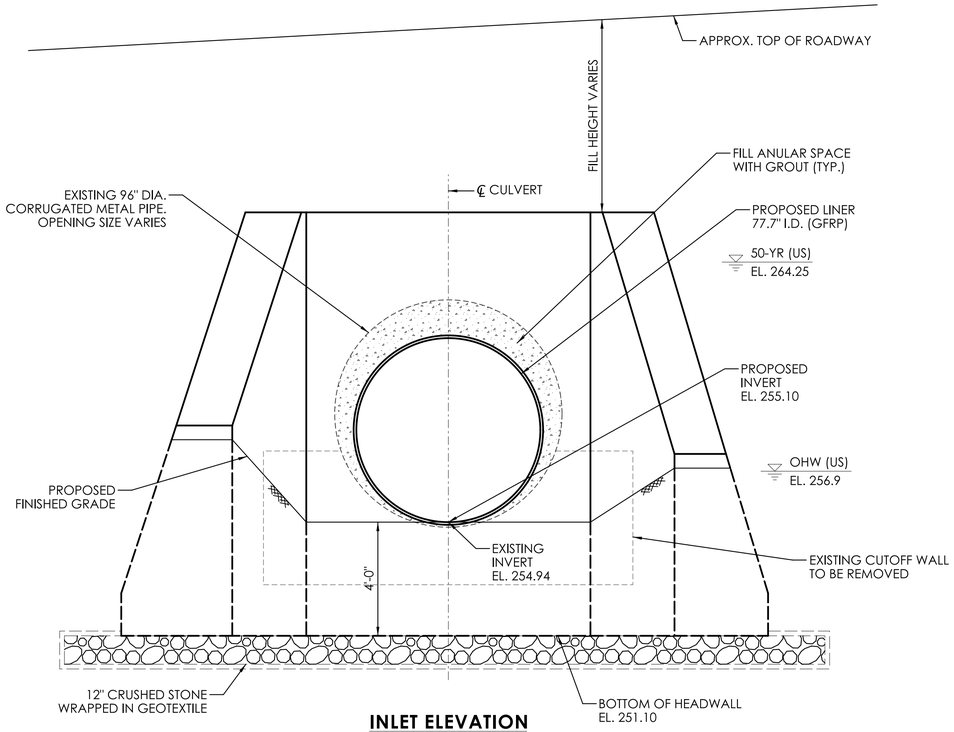
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 06889

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

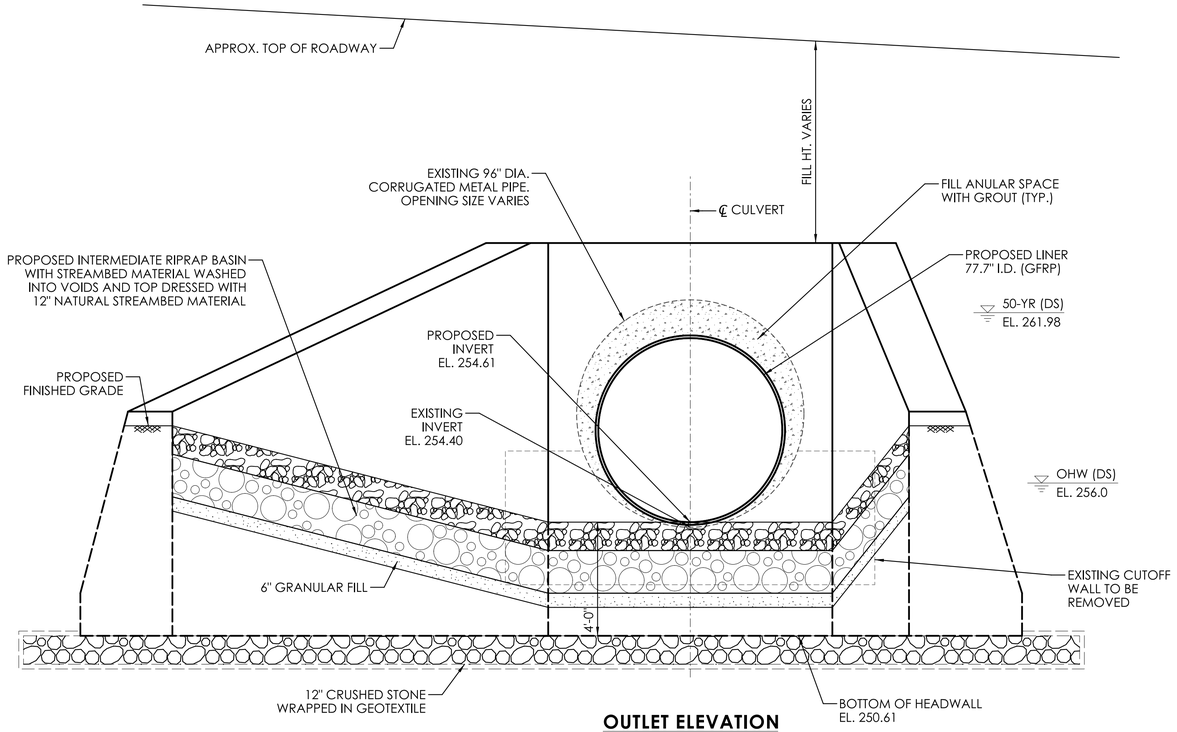
DRAWING NO. PMT-107
SHEET NO.

LASTED SAVED BY: PBarbosa **FILE NAME:** c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04808\SB_CP_0079-0240_Culvert#06889_GPN_Permit.dgn
PLOTTED DATE: 7/9/2024



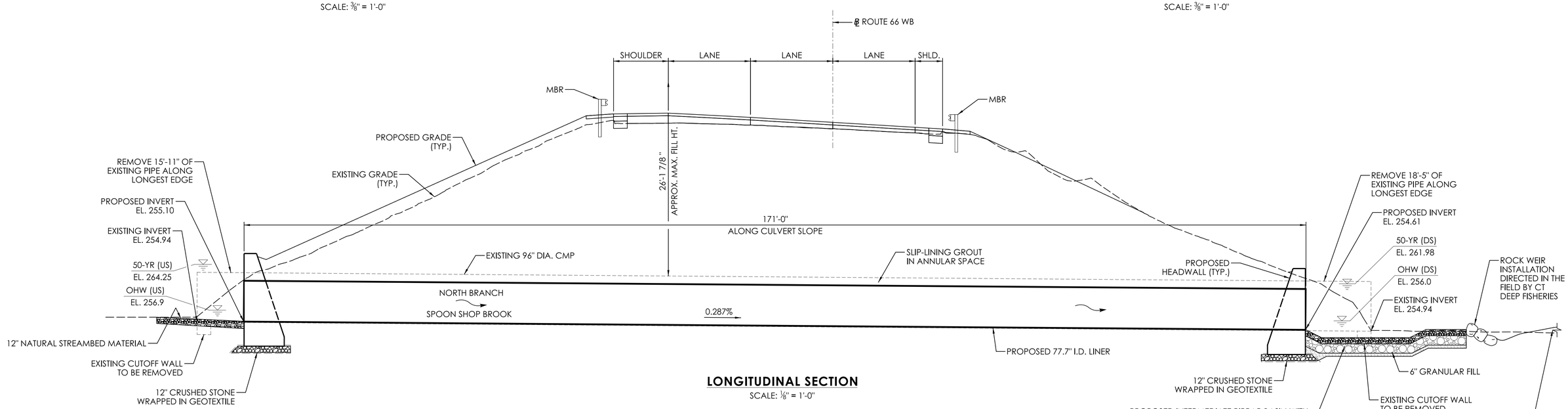
INLET ELEVATION

SCALE: 3/8" = 1'-0"



OUTLET ELEVATION

SCALE: 3/8" = 1'-0"



LONGITUDINAL SECTION

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

BRIDGE NO. 06889

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 06889

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-108

SHEET NO.

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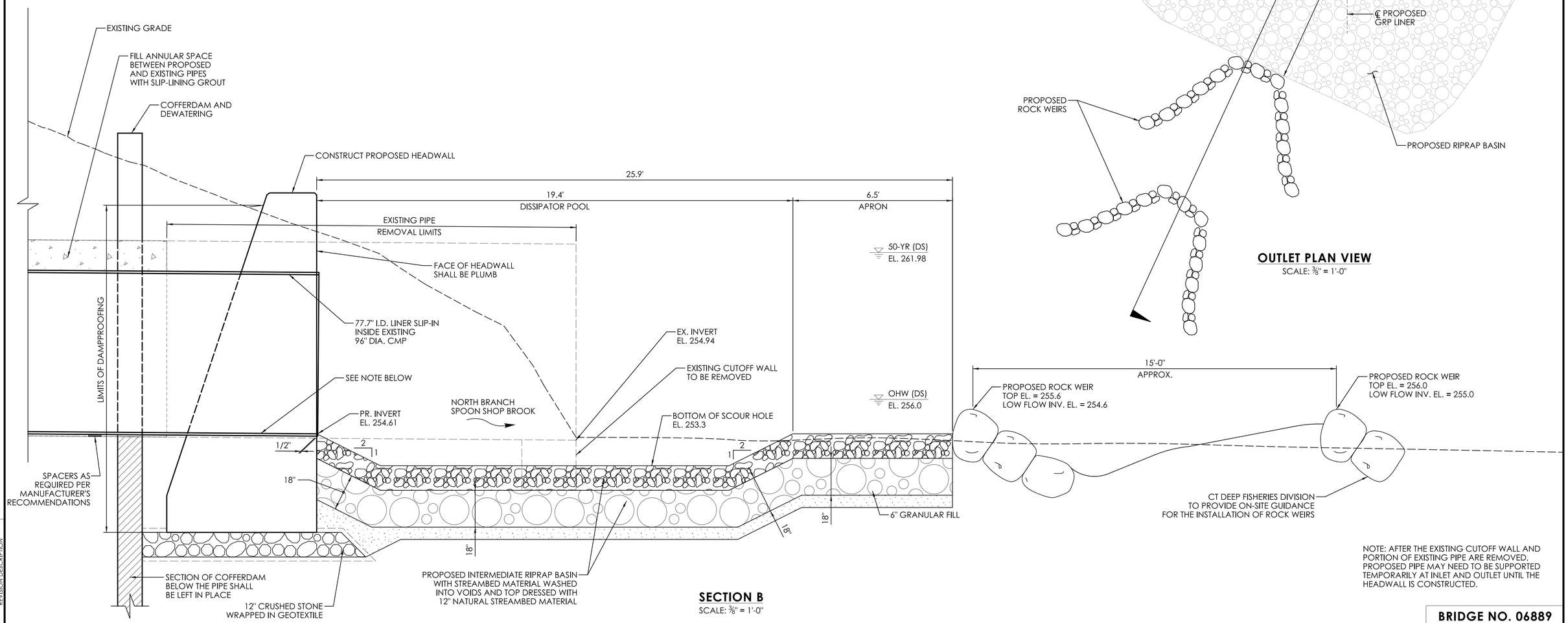
PLOTTED DATE: 7/9/2024



NOTE: AFTER THE EXISTING CUTOFF WALL AND PORTION OF EXISTING PIPE ARE REMOVED, PROPOSED PIPE MAY NEED TO BE SUPPORTED TEMPORARILY AT INLET AND OUTLET UNTIL THE HEADWALL IS CONSTRUCTED.

BRIDGE NO. 06889

REVISION DESCRIPTION | DATE | REV.

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

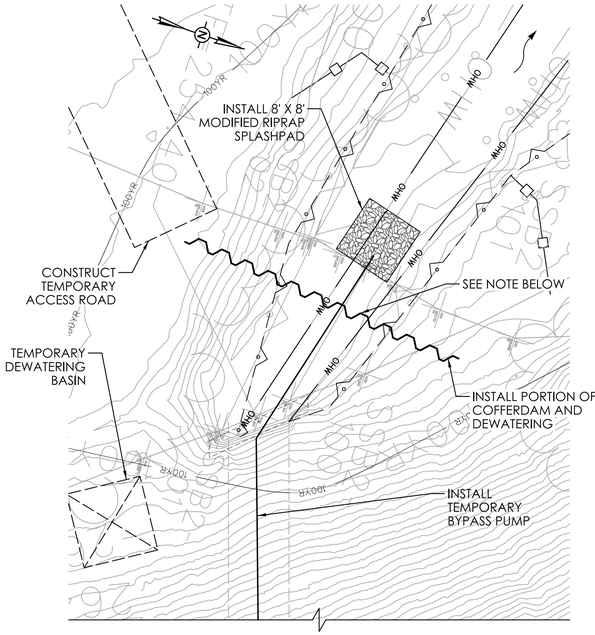
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

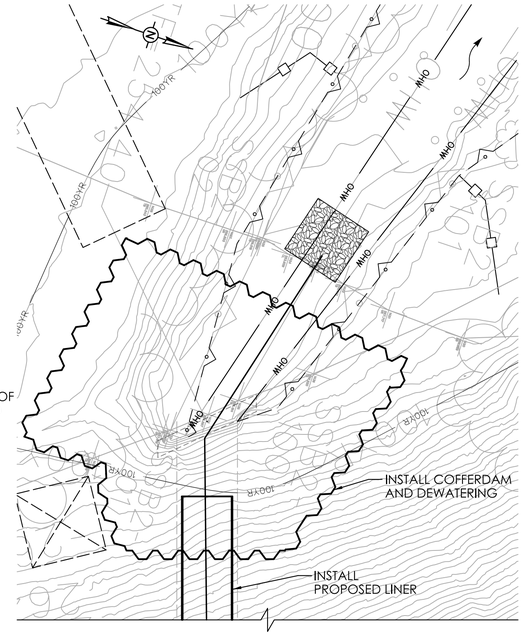
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: OUTLET DETAILS - BRIDGE NO. 06889

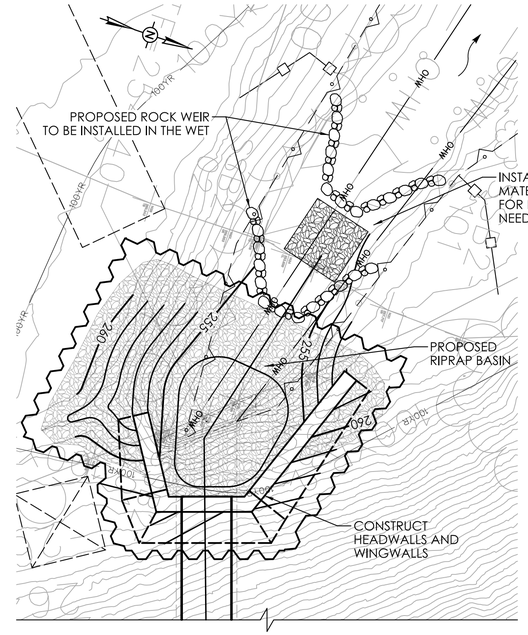
ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

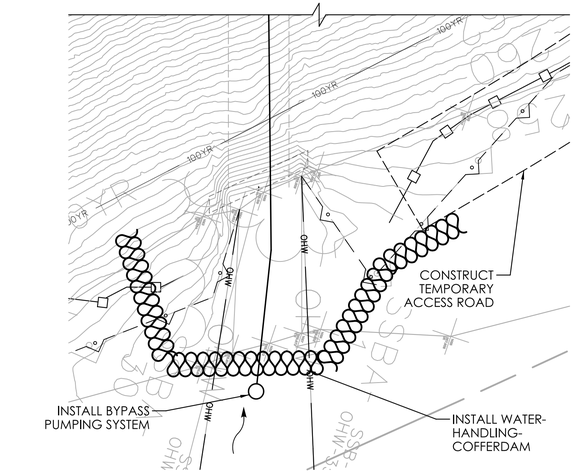
DRAWING NO. PMT-109
SHEET NO.

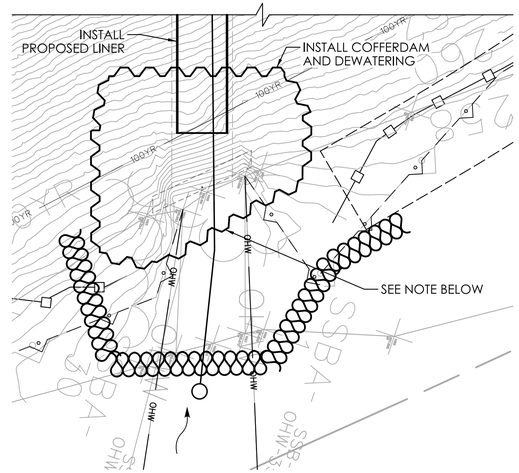
LASTED SAVED BY: PBarbosa **FILE NAME:** c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04808\SB_CP_0079-0240_Culvert#06889_Outlet_Details_Permit.dgn
PLOTTED DATE: 7/9/2024

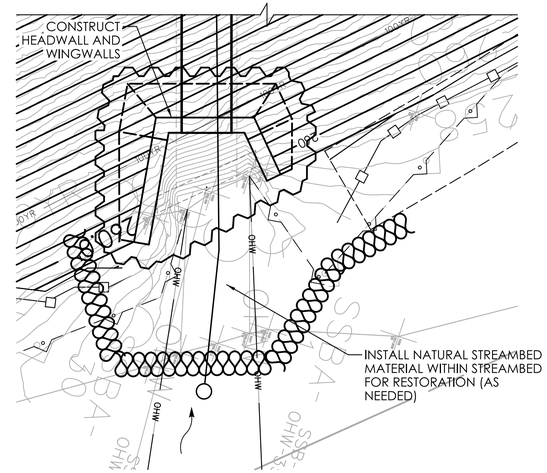




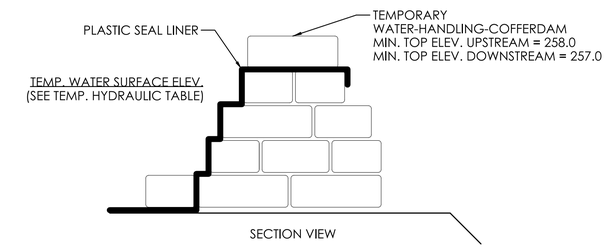








TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	1.3 CFS
AVERAGE SPRING FLOW	2.6 CFS
2-YEAR DESIGN FLOW	108 CFS
LOW FLOW PUMPING DISCHARGE = 10 X ASF	26 CFS
DESIGN 10 X ASF WSEL UPSTREAM	256.84 FT
TEMPORARY ALLOWABLE WSEL UPSTREAM	256.07 FT



WATER-HANDLING-COFFERDAM

(NOT TO SCALE)

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY CONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENTS POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALATION OF THE STRUCTURE SHAL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

WATER-HANDLING-COFFERDAM NOTES:

1. CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY WATER HANDLING SYSTEM AS REQUIRED DURING CONSTRUCTION OF THE NEW STRUCTURE.

2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.

3. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.

4. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS PMT-49 AND PMT-58.

5. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGED TO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.

6. BASED UPON FIELD CONDITIONS, WORK DURATION. AND EXPECTED WEATHER CONDITIONS, THE ENGINEER MAY APPROVE A CONSTRUCTION WATER HANDLING PLAN WITH LOWER PUMPING FLOWS, PROVIDED THAT THIS INCONCLUDES A CONTINGENCY PLAN, WHICH MINIMIZES NEGATIVE IMPACTS AND SAFELY CONVEYS LARGER FLOWS THROUGH THE WORK AREA.

STAGE 1: SUGGESTED SEQUENCE OF CONSTRUCTION

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS).
2. CONSTRUCT ACCESS ROADS AT BOTH INLET AND OUTLET.
3. INSTALL WATER-HANDLING-COFFERDAM AT INLET.
4. INSTALL PORTION OF COFFERDAM AND DEWATERING AT OUTLET.
5. INSTALL STREAM BYPASS PUMPING SYSTEM THROUGH CULVERT.
6. CLEAN EXISTING PIPE. ALL WORK SHALL BE PERFORMED IN THE DRY.
7. FILL VOIDS BEHIND THE CULVERT AND REPAIR EXISTING PIPE.

NOTE: THE ELEVATION OF THE TOP OF "COFFERDAM AND DEWATERING" WITHIN THE OHW SHALL BE EQUAL TO THAT OF THE "WATER-HANDLING-COFFERDAM." ALL OTHER TOP ELEVATIONS OF "COFFERDAM AND DEWATERING" SHALL BE 1 FT HIGHER THAN RETAINED EARTH ELEVATION.

STAGE 2: SUGGESTED SEQUENCE OF CONSTRUCTION

1. INSTALL COFFERDAM AND DEWATERING AT INLET AND OUTLET.
2. EXCAVATE AND REMOVE EXISTING CUTOFF WALLS AND PORTION OF EXISTING PIPE AT INLET AND OUTLET.
3. PERFORM SLIP LINING OPERATION IN THE DRY.
4. INSTALL SPACERS FOR PROPOSED PIPE.
5. INSTALL NEW 77.7" I.D. SLIP-IN PIPE TO COMPLETE STAGE-2 CONSTRUCTION.

STAGE 3: SUGGESTED SEQUENCE OF CONSTRUCTION

1. EXCAVATE AND INSTALL CUTOFF WALLS AND WINGWALLS.
2. PERFORM GROUTING OF ANNULAR SPACE IN LIFTS PER SPECIFICATIONS.
3. PREPARE SUBGRADE OF INLET AND OUTLET AREAS.
4. INSTALL STREAMBED MATERIAL AT INLET AND RIPRAP APRON AT OUTLET.
5. REMOVE COFFERDAM AND DEWATERING AT INLET AND OUTLET EXCEPT FOR PORTIONS BELOW EXISTING PIPE TO REMAIN.
6. REMOVE WATER-HANDLING-COFFERDAM AT INLET.
7. REMOVE BYPASS OPERATION AND OPEN NEW CULVERT TO STREAM FLOWS.
8. INSTALL PROPOSED ROCK WEIR DOWNSTREAM IN THE WET CONDITION.
9. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
10. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

BRIDGE NO. 06889

REVISION DESCRIPTION | DATE | REV.

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE: 1" = 10'-0"

SIGNATURE/ BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - BRIDGE NO. 06889

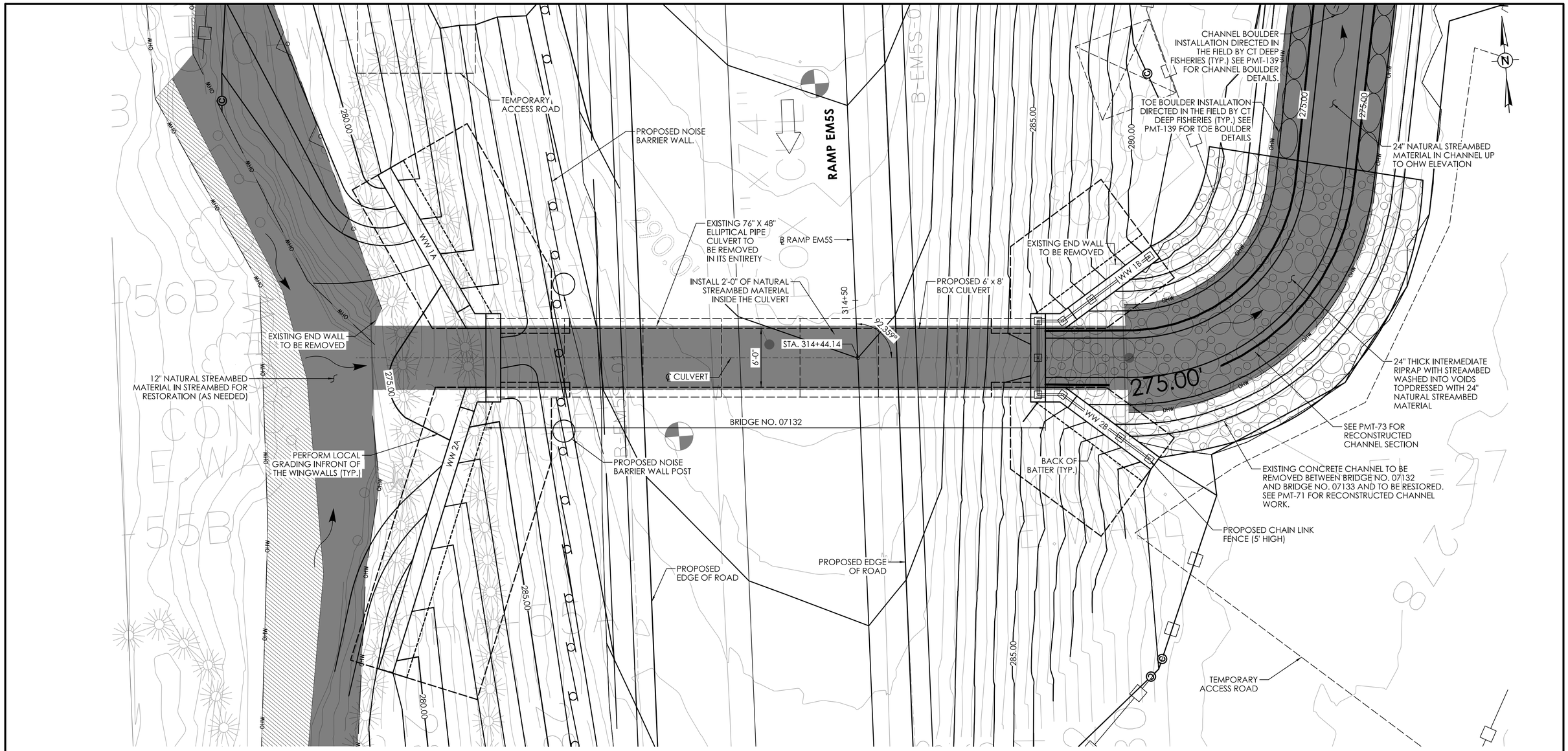
ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-110

SHEET NO.

LASTED SAVED BY: PBarbosa FILE NAME: c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04808\SB_CP_0079-0240_Culvert#06889_Water_Handling_Staging_Permit.dgn
PLOTTED DATE: 7/8/2024



OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 36 S.F. / 57 FT. = 0.63 FT.
0.63 FT. < 0.82 FT. (RECOMMENDED MINIMIUM)

BANKFULL WIDTH (BFW):

BFW = 16 FT.
1.2 x BFW = 19.2 FT.
19.2 FT. > 6 FT. PROPOSED CULVERT SPAN

HYDRAULIC DATA	
DRAINAGE AREA	0.22 SQ. MILE
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	130 CFS
AVERAGE DAILY FLOW ELEVATION	275.34 FT.
UPSTREAM DESIGN WATER SURFACE ELEVATION	279.44 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	278.57 FT.

GENERAL PLAN - BRIDGE NO. 07132

SCALE: 1" = 5'

LEGEND

- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

BRIDGE NO. 07132

REVISION DESCRIPTION | DATE | REV.

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: AC CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 07132

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-111
SHEET NO.

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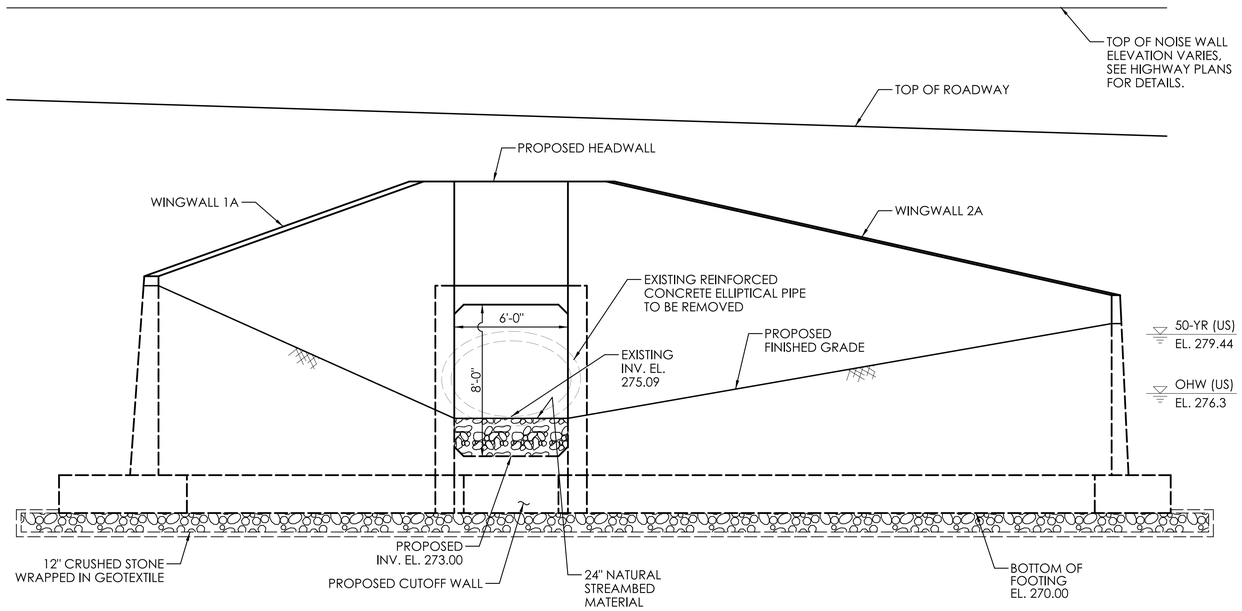
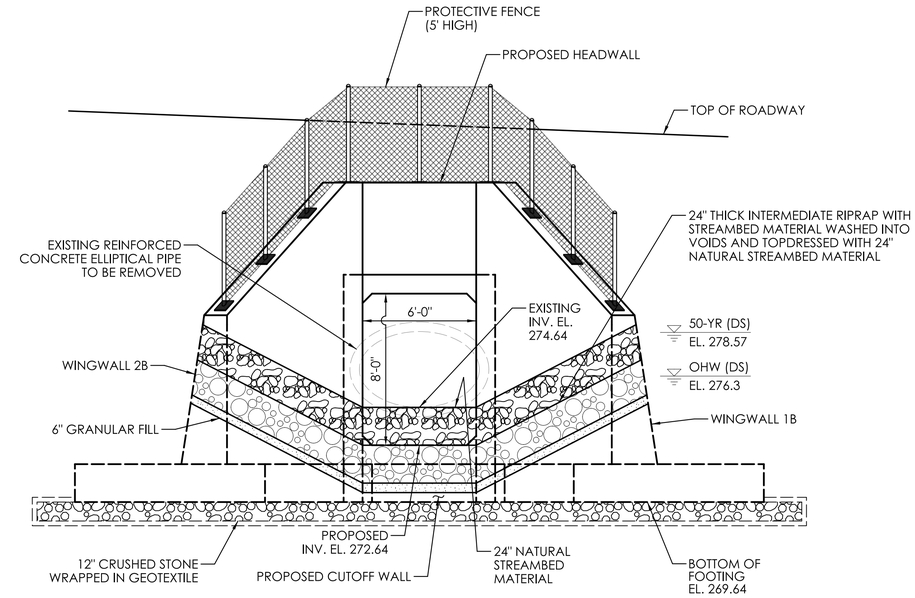


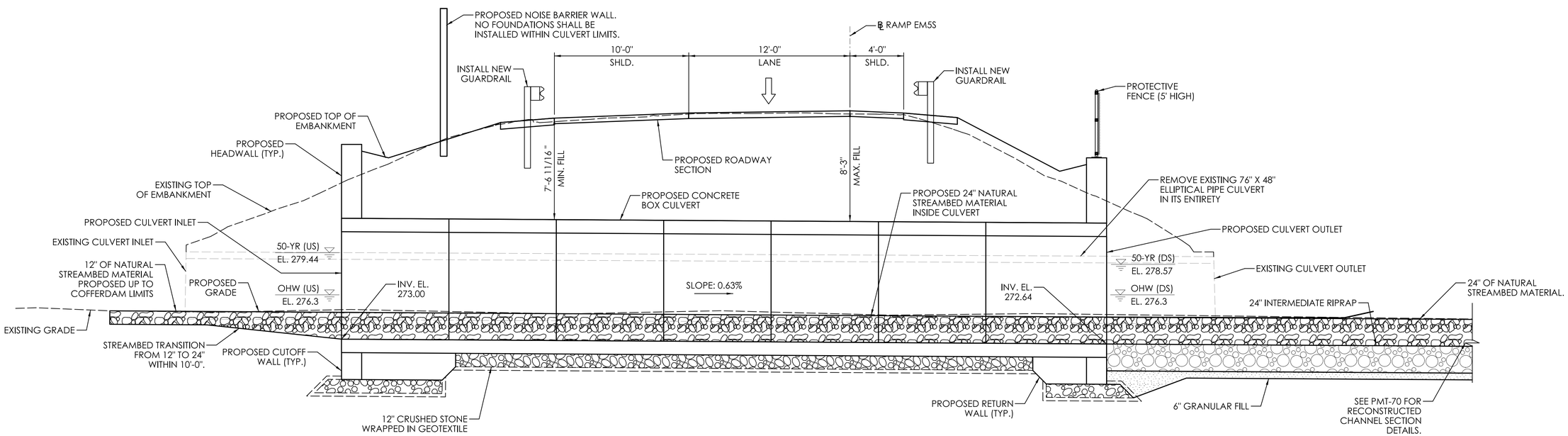
INLET ELEVATION

SCALE: ¼" = 1'-0"



OUTLET ELEVATION

SCALE: ¼" = 1'-0"



LONGITUDINAL SECTION

SCALE: ¼" = 1'-0"

BRIDGE NO. 07132

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: AC CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 07132

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-112

SHEET NO.

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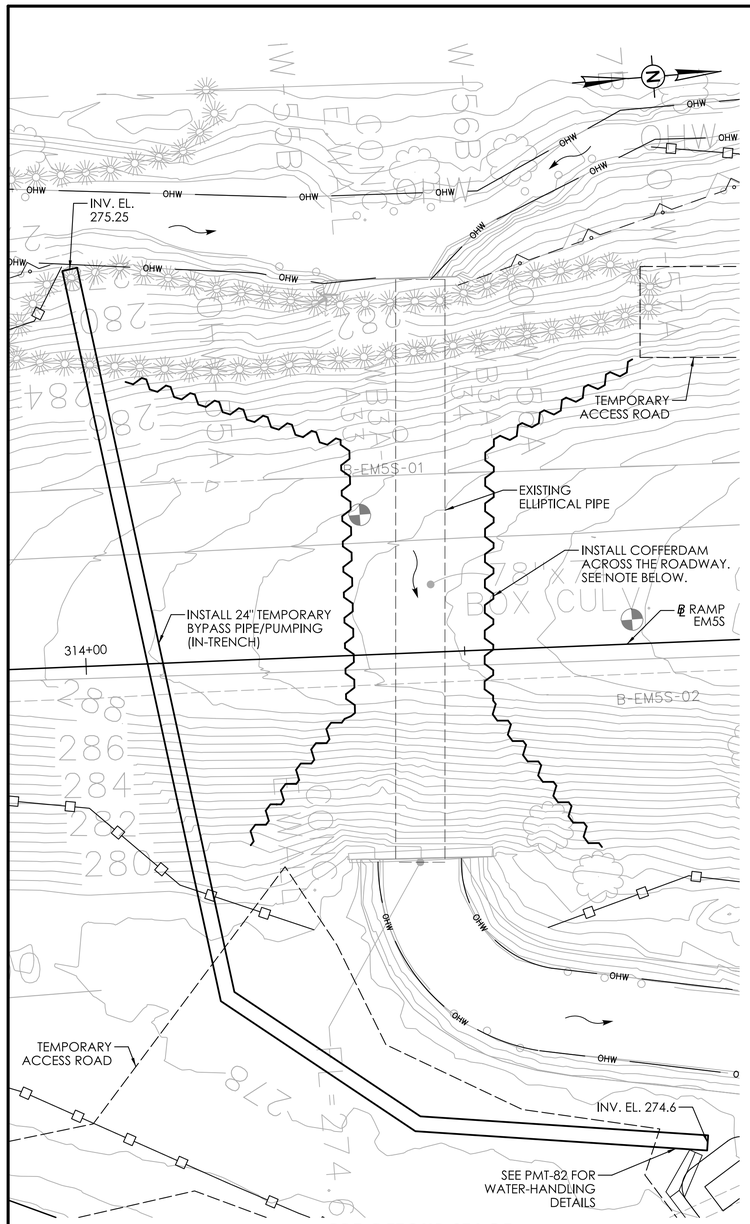
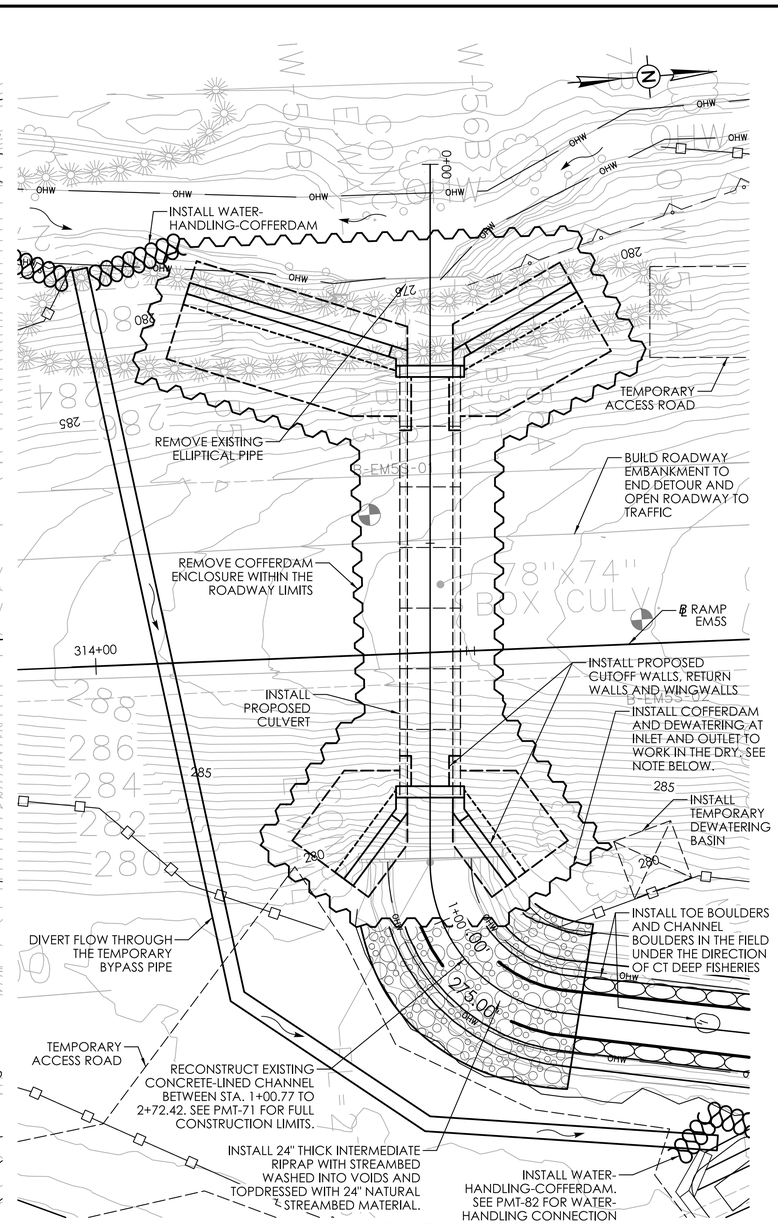
PLOTTED DATE: 7/8/2024



PRE-DETOUR STAGE

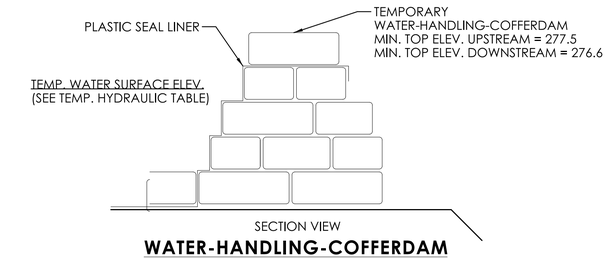


STAGE 1

NOTE: THE ELEVATION OF THE TOP OF "COFFERDAM AND DEWATERING" WITHIN THE OHW SHALL BE EQUAL TO THAT OF THE WATER-HANDLING-COFFERDAM." ALL OTHER TOP ELEVATIONS OF "COFFERDAM AND DEWATERING" SHALL BE 1 FT HIGHER THAN RETAINED EARTH.

TEMPORARY HYDRAULIC DATA

AVERAGE DAILY FLOW	0.4 CFS
AVERAGE SPRING FLOW	0.8 CFS
2-YEAR DESIGN FLOW	35 CFS
TEMPORARY DESIGN DISCHARGE	8 CFS
TEMPORARY DESIGN FREQUENCY	10 X ASF
GRAVITY FLOW BYPASS PIPE DISCHARGE = 10 X ASF	8 CFS
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	276.95 FT
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	276.18 FT



WATER-HANDLING-COFFERDAM

(NOT TO SCALE)

WATER-HANDLING-COFFERDAM NOTES

1. CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY WATER HANDLING SYSTEM AS REQUIRED DURING CONSTRUCTION OF THE NEW STRUCTURE.
2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.
3. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

   ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.
4. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS PMT-36.
5. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGED TO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.
6. BASED UPON FIELD CONDITIONS, WORK DURATION, AND EXPECTED WEATHER CONDITIONS, THE ENGINEER MAY APPROVE A CONSTRUCTION WATER HANDLING PLAN WITH LOWER PUMPING FLOWS, PROVIDED THAT THIS INCLUDES A CONTINGENCY PLAN, WHICH MINIMIZES NEGATIVE IMPACTS AND SAFELY CONVEYS LARGER FLOWS THROUGH THE WORK AREA.

SUGGESTED SEQUENCE OF CONSTRUCTION:

THE FOLLOWING SEQUENCE AND IMPLIED METHODS OF CONSTRUCTION ARE SUGGESTED AND ARE INTENDED TO CONVEY THE ASSUMPTIONS MADE BY THE DESIGNER TO DEVELOP THE REQUIREMENTS FOR REGULATORY PERMITS INCLUDED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING HIS MEANS AND METHODS FOR COMPLETION OF THE PROJECT AND SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK.

TRAFFIC SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE PROVISIONS FOR "MAINTENANCE AND PROTECTION OF TRAFFIC" AND "PROSECUTION AND PROGRESS". REFER TO MPT PLANS FOR SUGGESTED TRAFFIC CONTROLS.

THE INTENT OF THE COFFERDAMS ARE TO MINIMIZE GROUND WATER INFILTRATION IN ADDITION TO ACTING AS A TEMPORARY EARTH RETAINING SYSTEM. SEE STANDARD SPECIFICATION FOR "COFFERDAM AND DEWATERING".

PRE-DETOUR STAGE

1. CONSTRUCT TEMPORARY ACCESS ROADS AT BOTH INLET AND OUTLET.
2. INSTALL TEMPORARY BY-PASS PIPE (IN-TRENCH).
3. INSTALL COFFERDAM ACROSS THE ROADWAY DURING OFF-PEAK HOURS.

STAGE 1

1. INSTALL COFFERDAM AND DEWATERING AT INLET AND OUTLET TO FINISH ENCLOSURE.
2. INSTALL WATER-HANDLING-COFFERDAMS TO DIVERT FLOWS INTO THE TEMPORARY BY-PASS PIPE.
3. BEGIN RECONSTRUCTION OF EXISTING CONCRETE-LINED CHANNEL BETWEEN STA. 1+00.77 TO 2+72.42, INSTALL 24" THICK INTERMEDIATE RIPRAP TOPDRESSED WITH 24" NATURAL STREAMBED MATERIAL, AND INSTALL TOE AND CHANNEL BOULDERS. SEE PMT-71 FOR FULL CONSTRUCTION LIMITS.
4. CLOSE RAMP EM5S AND DETOUR TRAFFIC.
5. EXCAVATE THE ROADWAY EMBANKMENT TO EXPOSE THE EXISTING PIPE CULVERT.
6. REMOVE EXISTING PIPE AND EXCAVATE TO THE BOTTOM OF CULVERT AND WINGWALLS.
7. PREP THE BASE FOR FOOTINGS AND CULVERT CONSTRUCTION.
8. INSTALL CUTOFF WALLS, RETURN WALLS, AND WINGWALL FOOTINGS.
9. INSTALL PROPOSED BOX CULVERT.
10. INSTALL PROPOSED WINGWALL STEMS.
11. REMOVE PORTIONS OF THE COFFERDAM AND DEWATERING WITHIN THE ROADWAY LIMITS AND BACKFILL THE CULVERT TO END DETOUR AND OPEN THE RAMP TO TRAFFIC.

STAGE 2

1. INSTALL NATURAL STREAMBED MATERIAL WITHIN THE CULVERT.
2. FINISH RECONSTRUCTION OF EXISTING CONCRETE-LINED CHANNEL WITHIN THE COFFERDAM LIMITS (STA. 0+00.00 TO 1+00.77), INSTALL 24" THICK INTERMEDIATE RIPRAP TOPDRESSED WITH 24" NATURAL STREAMBED MATERIAL.
3. PERFORM CHANNEL GRADING UPSTREAM OF THE CULVERT WITHIN THE COFFERDAM LIMITS AND PLACE NATURAL STREAMBED MATERIAL.
4. REMOVE COFFERDAM AND DEWATERING AND DIVERT WATER INTO THE NEW CULVERT.
5. FILL SECTION OF TEMPORARY BY-PASS PIPE BELOW THE EM5S EMBANKMENT WITH FLOWABLE FILL CONCRETE AND ABANDON PIPE.

FINAL CONDITION

1. WORK BEHIND THE BARRIERS FOR FINISHING UP THE ROADWAY CONSTRUCTION ABOVE THE CULVERT.
2. INSTALL CHAINLINK FENCE ABOVE THE WINGWALLS AT THE OUTLET END.
3. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
4. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY CONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED ASA SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENTS POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.
* ANY RIPARIAN OR WETLAND AREAS DISTURBED BY THE CONSTRUCTION ACCESS ROAD AT THE OUTLET OR THE INLET STAGING AREA SHOULD BE RESTORED WITH WOODY OR WETLAND PLANTINGS AT THE COMPLETION OF THE PROJECT.

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

REV.	DATE	REVISION DESCRIPTION

BRIDGE NO. 07132

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: AC CHECKED BY: DK

SCALE 1" = 10'-0"

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - BRIDGE NO. 07132

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-113

SHEET NO.

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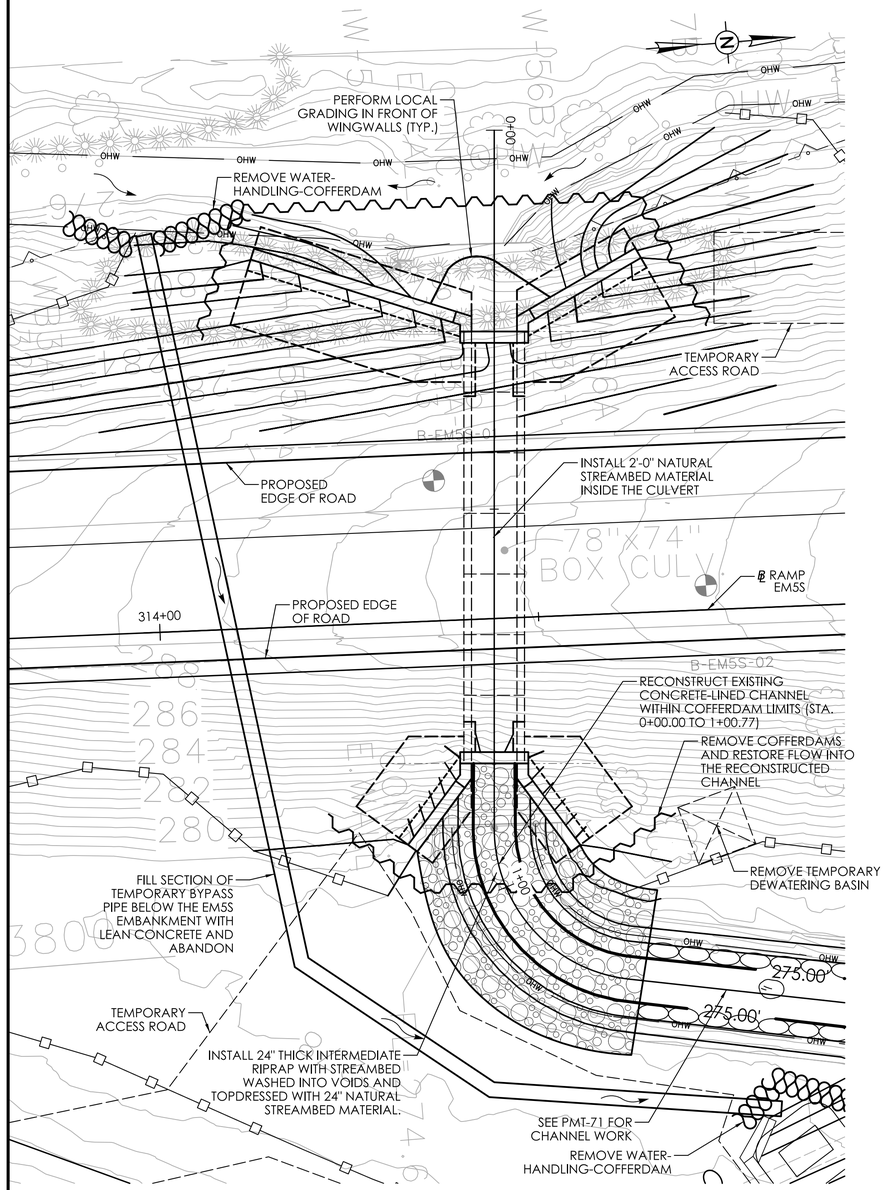
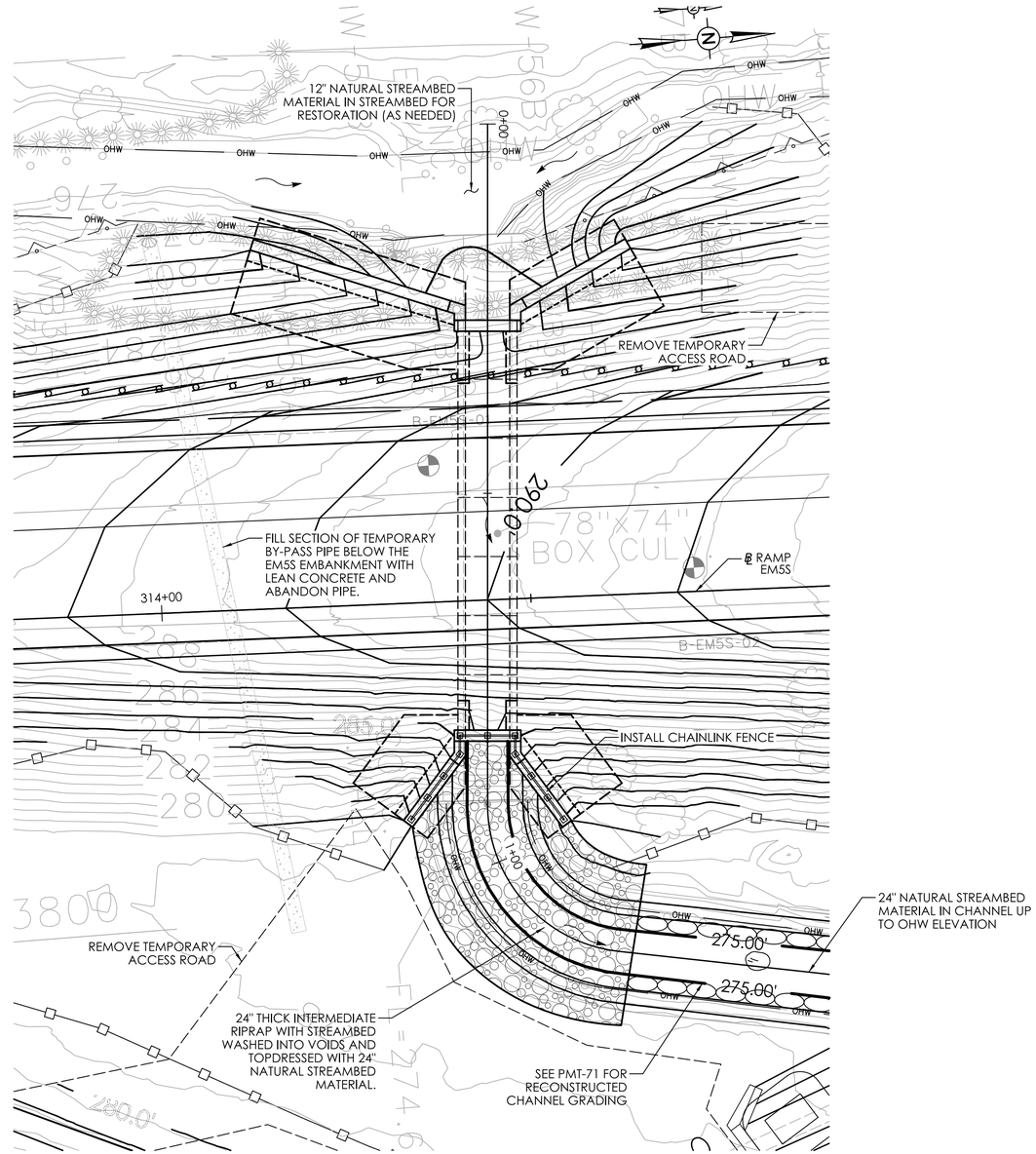
PLOTTED DATE: 7/9/2024



STAGE 2



FINAL CONDITIONS

BRIDGE NO. 07132

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: AC CHECKED BY: DK

SCALE: 1" = 10'-0"

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - BRIDGE NO. 07132

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-114
SHEET NO.

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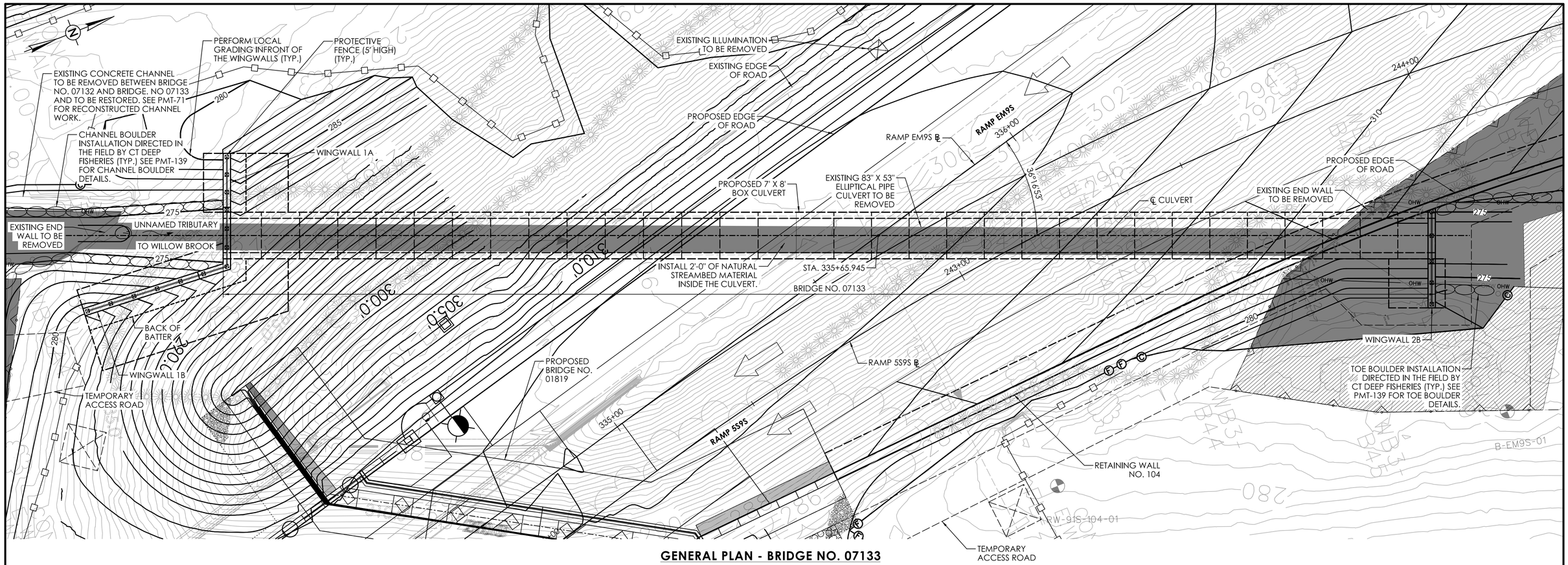
PLOTTED DATE: 7/9/2024



GENERAL PLAN - BRIDGE NO. 07133

SCALE 1" = 10'-0"

HYDRAULIC DATA	
DRAINAGE AREA	0.25 SQ. MILE
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	130 CFS
AVERAGE DAILY FLOW ELEVATION	274.25 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	278.49 FT
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	277.61 FT

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 42 SF / 247 FT = 0.17 FT
0.17 FT < 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 16 FT
1.2 X BFW = 19.2 FT
19.2 FT > 7 FT PROPOSED CULVERT SPAN

LEGEND

- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

REV.	DATE	REVISION DESCRIPTION

BRIDGE NO. 07133

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 07133

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-115
SHEET NO.

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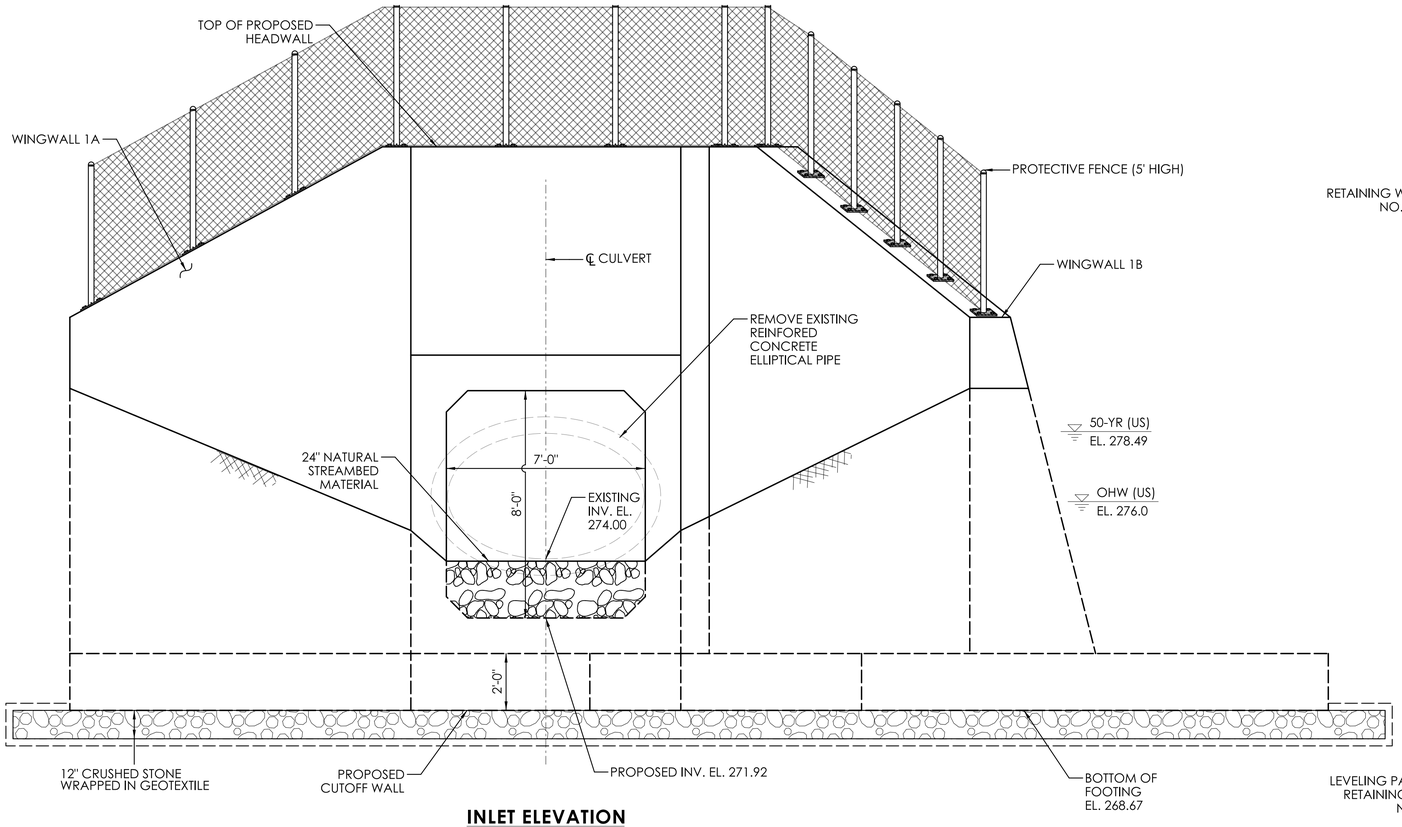
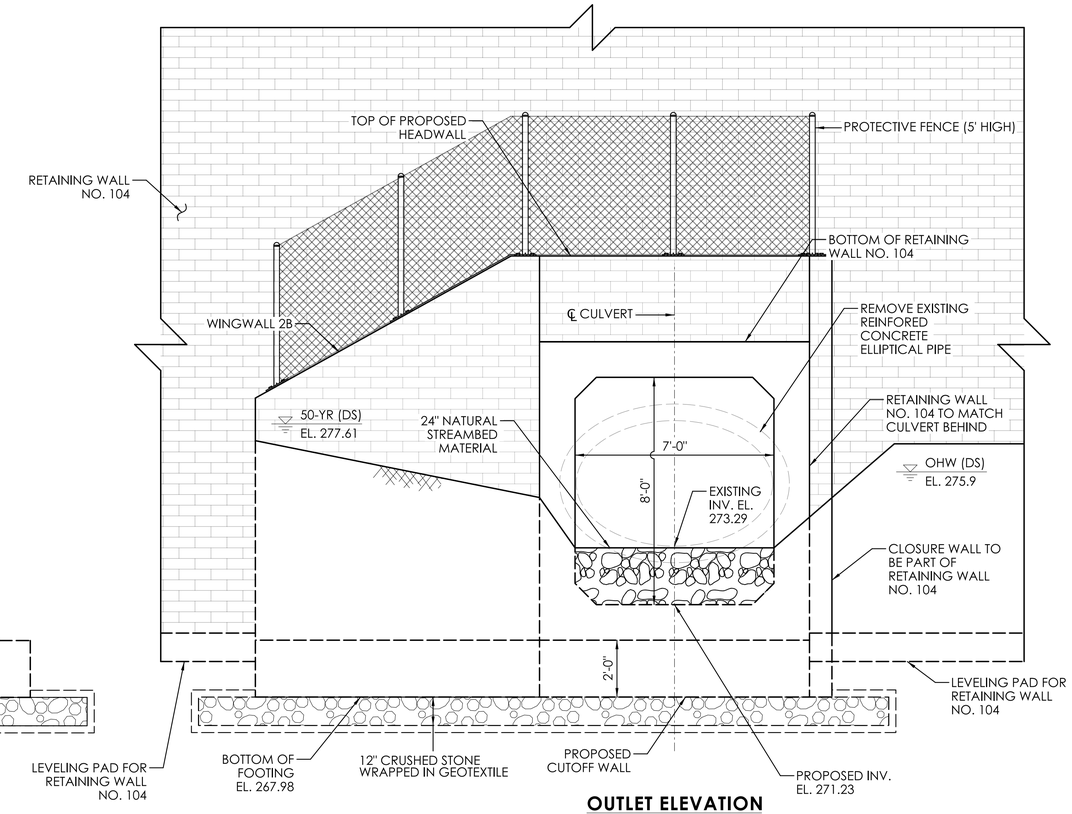


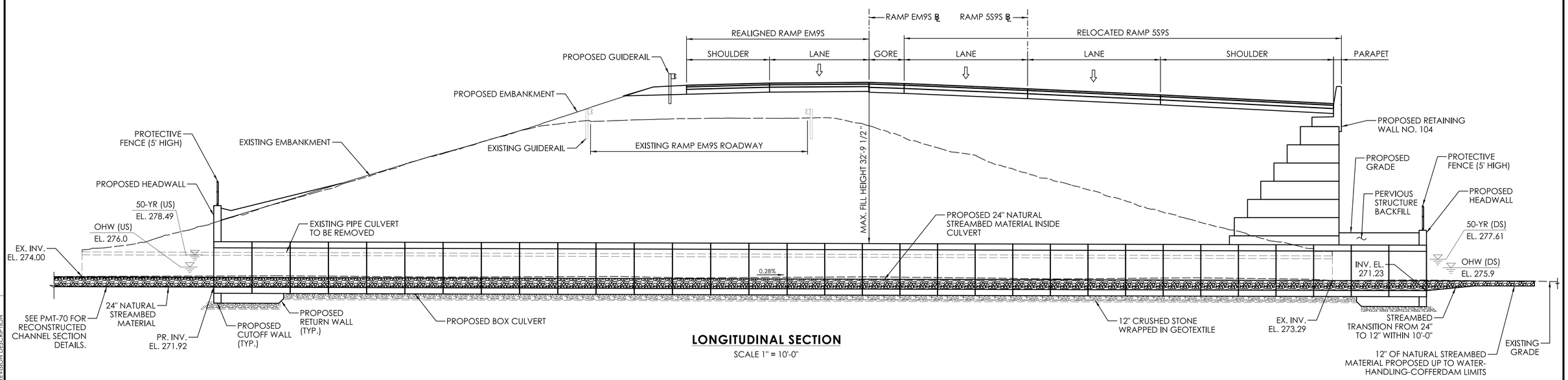
INLET ELEVATION

SCALE: 3/8" = 1'-0"



OUTLET ELEVATION

SCALE: 3/8" = 1'-0"



LONGITUDINAL SECTION

SCALE 1" = 10'-0"

BRIDGE NO. 07133

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 07133

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-116

SHEET NO.

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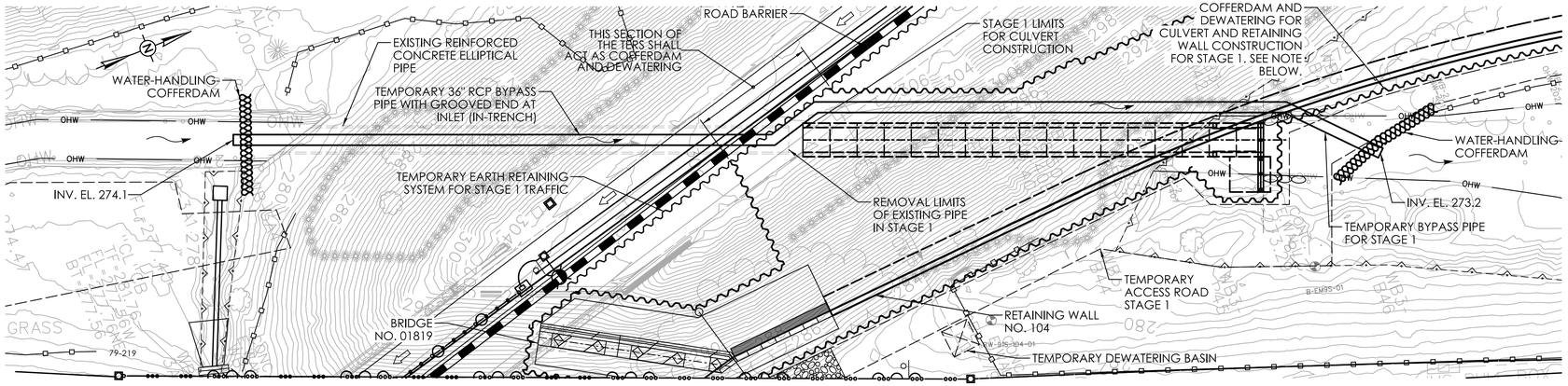
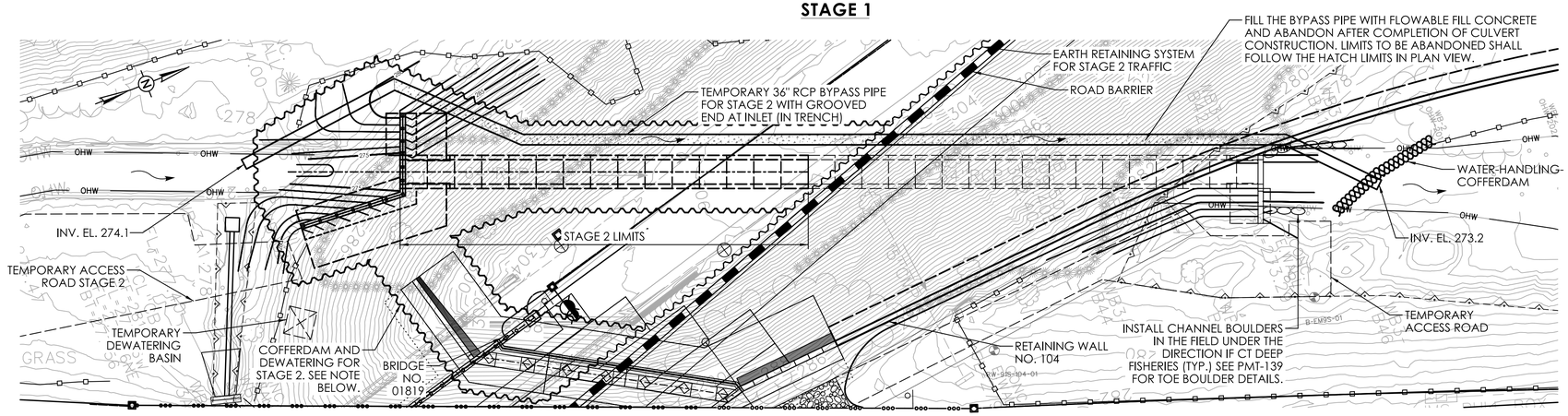


STAGE 1

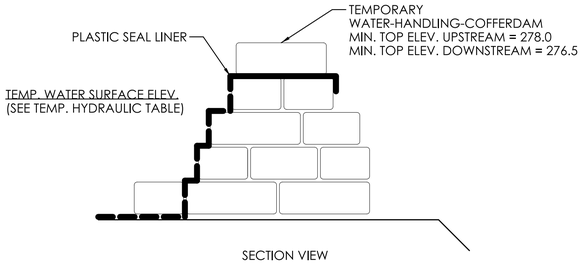


STAGE 2

NOTE: THE ELEVATION OF THE TOP OF "COFFERDAM AND DEWATERING" WITHIN THE OHW SHALL BE EQUAL TO THAT OF THE "WATER-HANDLING-COFFERDAM." ALL OTHER TOP ELEVATIONS OF "COFFERDAM AND DEWATERING" SHALL BE 1 FT HIGHER THAN RETAINED EARTH ELEVATION.

TEMPORARY HYDRAULIC DATA

AVERAGE DAILY FLOW	0.4 CFS
AVERAGE SPRING FLOW	0.8 CFS
TEMPORARY DESIGN DISCHARGE	35 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
GRAVITY FLOW BYPASS PIPE DISCHARGE = 2-YEAR FREQUENCY	35 CFS
STAGE 1	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	277.14 FT
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	275.70 FT
STAGE 2	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	277.39 FT
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	275.61 FT



SECTION VIEW

WATER-HANDLING-COFFERDAM

(NOT TO SCALE)

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY CONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENTS POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

SUGGESTED SEQUENCE OF CONSTRUCTION

THE FOLLOWING SEQUENCE AND IMPLIED METHODS OF CONSTRUCTION ARE SUGGESTED AND ARE INTENDED TO CONVEY THE ASSUMPTIONS MADE BY THE DESIGNER TO DEVELOP THE REQUIREMENTS FOR REGULATORY PERMITS INCLUDED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING HIS MEANS AND METHODS FOR COMPLETION OF THE PROJECT AND SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK.

THE TRAFFIC SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE PROVISIONS FOR "MAINTENANCE AND PROTECTION OF TRAFFIC" AND "PROSECUTION AND PROGRESS". REFER TO MPT PLANS FOR SUGGESTED TRAFFIC CONTROLS.

THE INTENT OF THE COFFERDAMS ARE TO MINIMIZE GROUND WATER INFILTRATION IN ADDITION TO ACTING AS A TEMPORARY EARTH RETAINING SYSTEM. SEE STANDARD SPECIFICATION FOR "COFFERDAM AND DEWATERING".

PRE STAGE 1

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS) INCLUDING SCS AT CATCH BASINS.
2. INSTALL TEMPORARY BYPASS PIPE (IN-TRENCH).
3. CONSTRUCT TEMPORARY ACCESS ROADS AT BOTH INLET AND OUTLET.
4. INSTALL TEMPORARY TRAFFIC BARRIER FOR STAGE 1.
5. INSTALL TEMPORARY EARTH RETAINING SYSTEM FOR STAGE 1.

STAGE 1:

1. MAINTAIN TRAFFIC ON RAMP EM9S.
2. INSTALL STAGE 1 COFFERDAM AND DEWATERING TO FACILITATE CONSTRUCTION OF CULVERT AND WINGWALL 2B.
3. EXCAVATE TO EXPOSE THE PORTION OF THE EXISTING PIPE CULVERT.
4. INSTALL WATER-HANDLING COFFERDAM TO DIVERT FLOW INTO THE TEMPORARY BYPASS PIPE.
5. REMOVE THE EXISTING PIPE CULVERT WITHIN STAGE 1 LIMITS AND EXCAVATE TO THE BOTTOM OF CULVERT AND WINGWALL 2B FOUNDATION.
6. PREP THE BASE FOR FOOTINGS AND CULVERT CONSTRUCTION.
7. CONSTRUCT CUTOFF WALL AND RETURN WALLS FOOTINGS AT THE OUTLET.
8. INSTALL PROPOSED CULVERT UP TO STAGE 1 LIMITS.
9. CONSTRUCT PROPOSED WINGWALL 2B AT OUTLET.
10. CONSTRUCT PROPOSED RETAINING WALL NO. 103 AND 104.
11. INSTALL NATURAL STREAMBED MATERIAL WITHIN THE CULVERT.
12. PERFORM CHANNEL GRADING DOWNSTREAM OF THE CULVERT WITHIN THE COFFERDAM LIMITS AND PLACE NATURAL STREAMBED MATERIAL
13. BACKFILL ABOVE THE CULVERT, INSTALL TEMPORARY EARTH RETAINING SYSTEM AND COFFERDAM AND DEWATERING FOR STAGE 2. REMOVE STAGE 1 PORTIONS OF THE COFFERDAM AND DEWATERING.
14. INSTALL TEMPORARY TRAFFIC BARRIER FOR STAGE 2.

STAGE 2:

1. TEMPORARILY OPEN RAMP 5S9S TO TRAFFIC.
2. EXCAVATE TO EXPOSE THE REMAINING PORTION OF THE EXISTING PIPE CULVERT.
3. REMOVE THE REMAINING PORTION OF THE EXISTING PIPE CULVERT AND EXCAVATE TO THE BOTTOM OF CULVERT AND WINGWALLS 1A AND 1B FOUNDATION.
4. CONSTRUCT CUTOFF WALL, RETURN WALLS, AND WINGWALL FOOTINGS AT THE INLET.
5. COMPLETE INSTALL OF THE PROPOSED CULVERT.
6. CONSTRUCT PROPOSED WINGWALL STEMS AT INLET.
7. INSTALL NATURAL STREAMBED MATERIAL WITHIN THE REMAINDER OF THE CULVERT.
8. PERFORM CHANNEL GRADING UPSTREAM OF THE CULVERT WITHIN THE COFFERDAM LIMITS AND PLACE NATURAL STREAMBED MATERIAL.
9. REMOVE PORTION OF ACCESS ROAD INFRONT OF THE WALL 104 FROM INLET OF BRIDGE NO. 07134 AND OUTLET OF BRIDGE NO. 07133. LEAVE ENOUGH ACCESS ROAD TO INSTALL TOE BOULDERS.
10. INSTALL TOE BOULDERS AT OUTLET. SEE PMT-139 FOR TOE BOULDER DETAILS.
11. REMOVE WATER-HANDLING-COFFERDAM DOWNSTREAM AND COFFERDAM AND DEWATERING UPSTREAM AND DIVERT WATER INTO THE NEW CULVERT.
12. FILL TEMPORARY BYPASS PIPE WITH FLOWABLE FILL CONCRETE AND ABANDON PIPE.
13. PERFORM ROADWAY WORK ABOVE THE CULVERT TO COMPLETE CONSTRUCTION OF BRIDGE NO. 07133.
14. REMOVE UPSTREAM ACCESS ROAD AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
15. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

WATER-HANDLING-COFFERDAM SANDBAGS

1. CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY WATER HANDLING SYSTEM AS REQUIRED DURING CONSTRUCTION OF THE NEW STRUCTURE.

2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.

3. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.

4. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS PMT-36 AND PMT-37.

5. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGED TO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.

6. BASED UPON FIELD CONDITIONS, WORK DURATION, AND EXPECTED WEATHER CONDITIONS, THE ENGINEER MAY APPROVE A CONSTRUCTION WATER HANDLING PLAN WITH LOWER PUMPING FLOWS, PROVIDED THAT THIS INCONCLUDES A CONTINGENCY PLAN, WHICH MINIMIZES NEGATIVE IMPACTS AND SAFELY CONVEYS LARGER FLOWS THROUGH THE WORK AREA.

BRIDGE NO. 07133

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE: 1" = 20'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

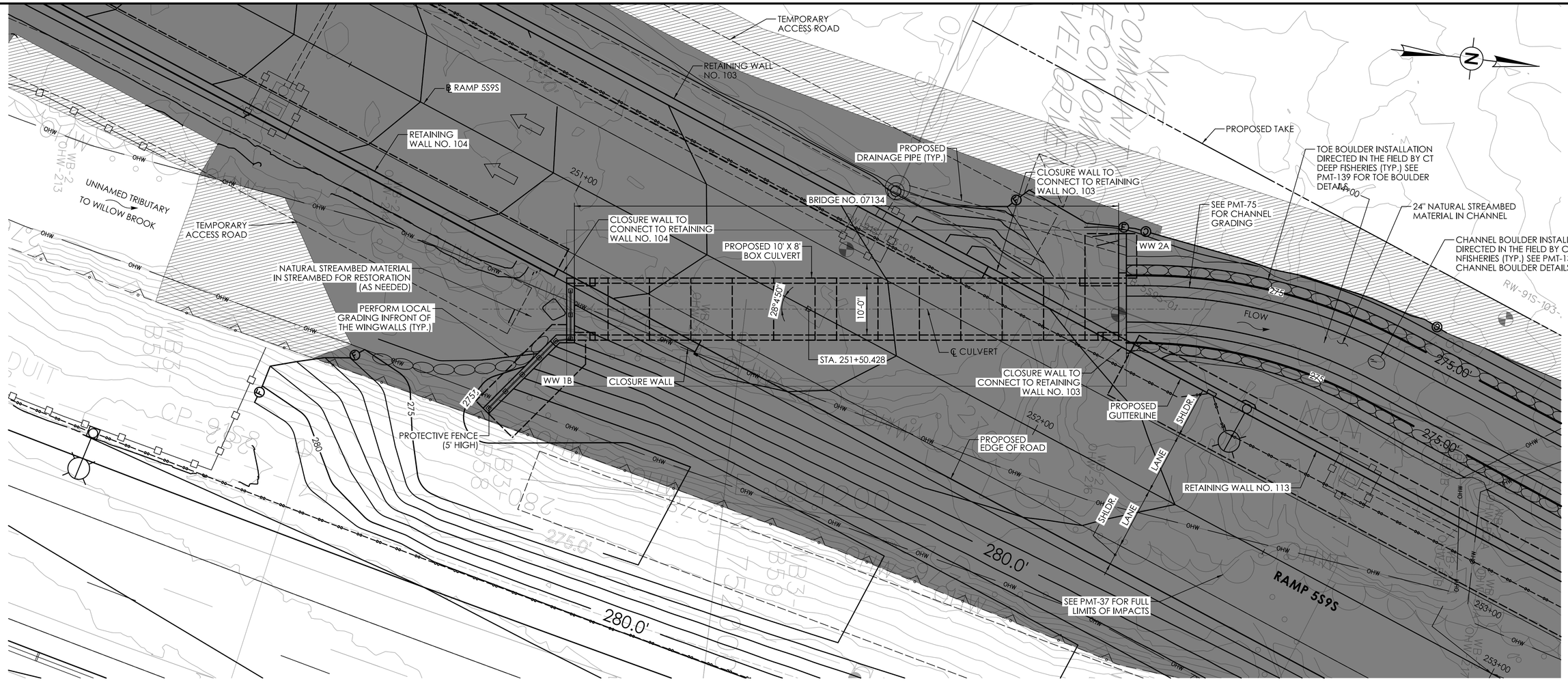
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - BRIDGE NO. 07133

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-117
SHEET NO.

LASTED SAVED BY: PBarbosa FILE NAME: c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04806\SB_CP_0079-0240_Culvert#07133_Water_Handling_Plan_Permit.dgn
PLOTTED DATE: 7/9/2024



GENERAL PLAN - BRIDGE NO. 07134

SCALE: 1" = 10'

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 64 SF / 108.17 FT = 0.59 FT
0.59 FT < 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 24 FT
1.2 X BFW = 28.8 FT
28.8 FT > 8 FT PROPOSED CULVERT SPAN

HYDRAULIC DATA	
DRAINAGE AREA	0.32 SQ. MILE
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	130 CFS
AVERAGE DAILY FLOW ELEVATION	273.13 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	277.41 FT
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	277.16 FT

LEGEND

- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

REV. | DATE | REVISION DESCRIPTION

BRIDGE NO. 07134

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 07134

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-118
SHEET NO.

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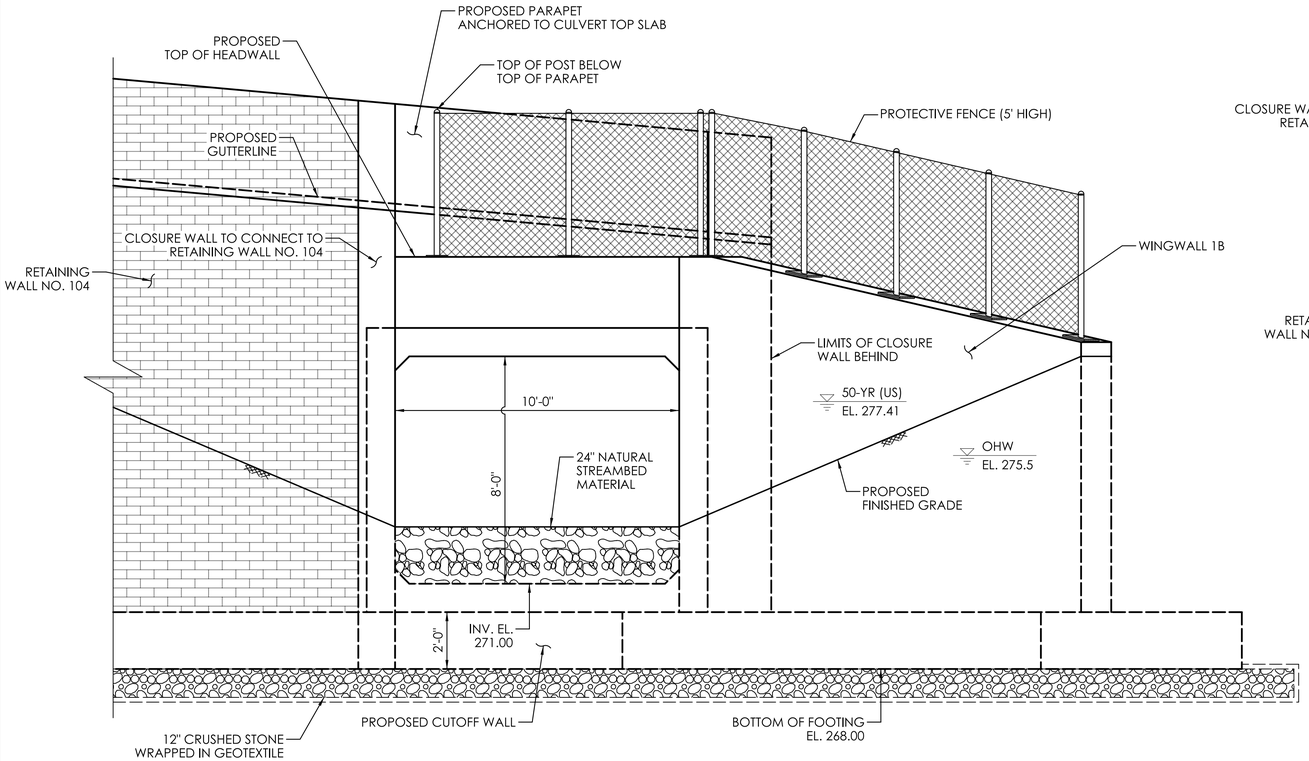
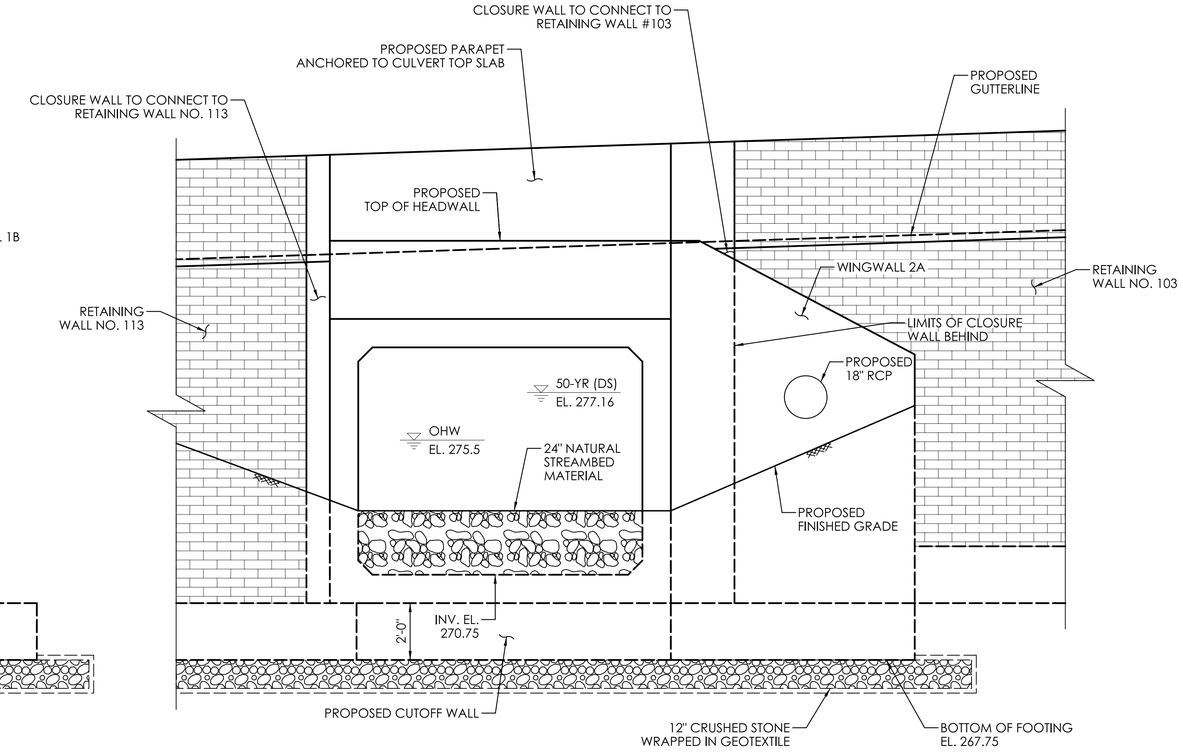


INLET ELEVATION

SCALE: ⅜" = 1'-0"



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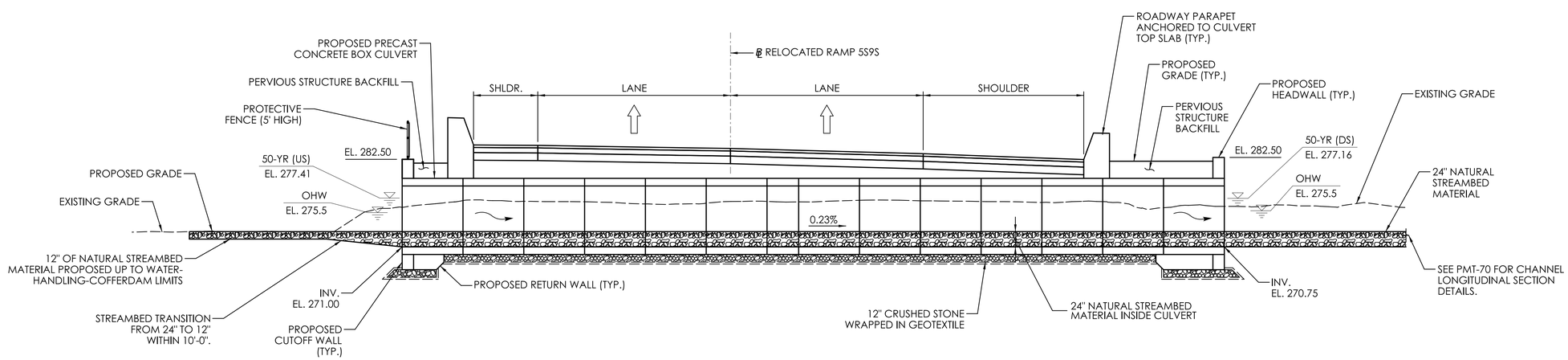


LONGITUDINAL SECTION

SCALE: ⅛" = 1'-0"

BRIDGE NO. 07134

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

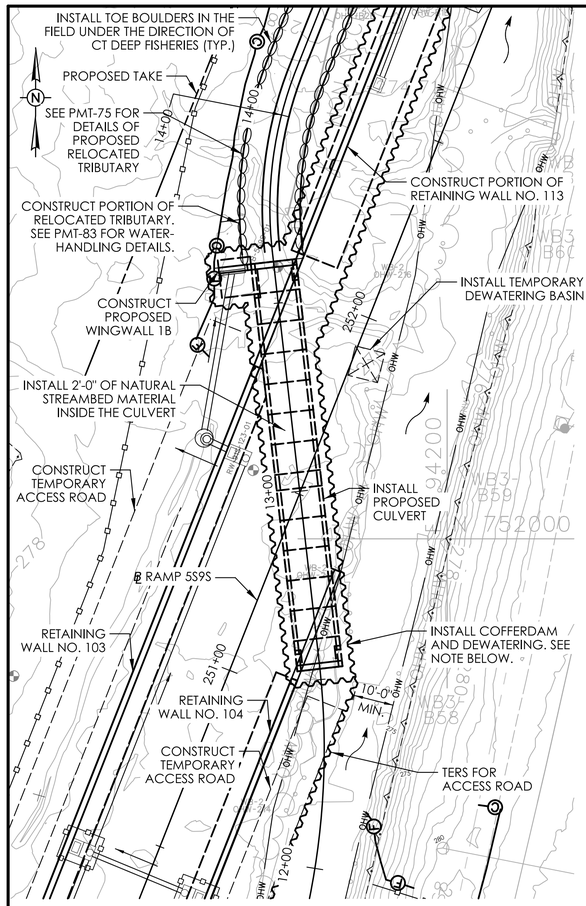
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 07134

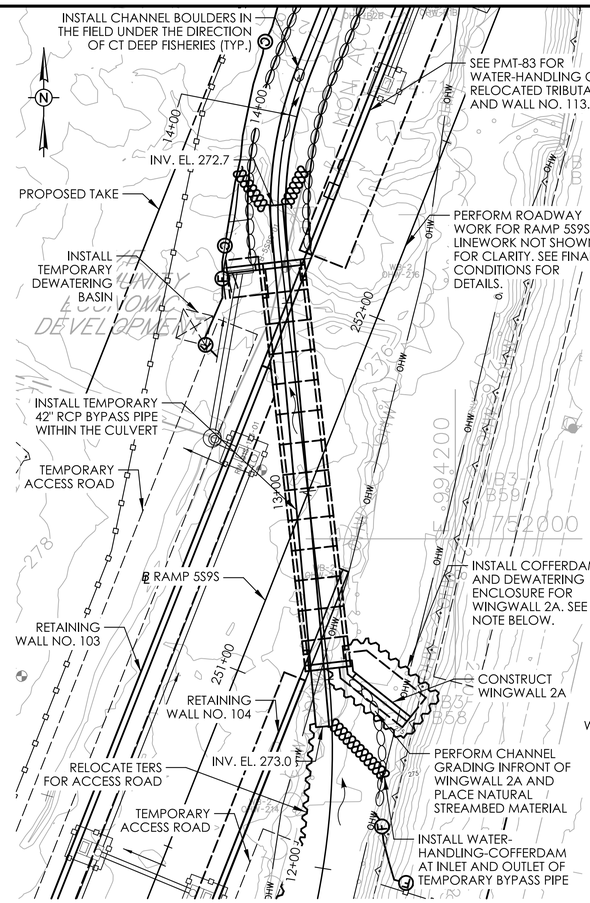
ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-119
SHEET NO.

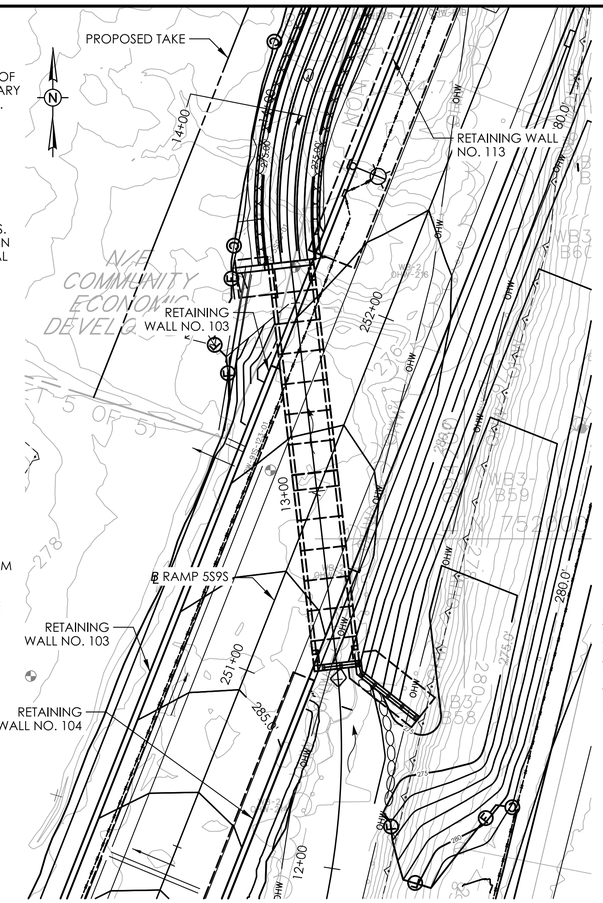
LASTED SAVED BY: PBarbosa **FILE NAME:** c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04804\SB_CP_0079-0240_Culvert#07134_Section_Elevation_Permit.dgn
PLOTTED DATE: 7/8/2024



STAGE 1



STAGE 2



FINAL CONDITIONS

PRE-STAGE 1

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS) INCLUDING SCS AT CATCH BASINS.
2. CONSTRUCT TEMPORARY ACCESS ROAD.

STAGE 1

1. INSTALL COFFERDAM AND DEWATERING TO FACILITATE CONSTRUCTION OF BRIDGE AND OUTLET WINGWALL (1B).
2. EXCAVATE TO BOTTOM OF BRIDGE AND WINGWALL FOUNDATION.
3. PREP THE BASE FOR FOOTING AND BRIDGE CONSTRUCTION.
4. CONSTRUCT PROPOSED CUTOFF WALLS, RETURN WALLS, AND WINGWALL 1B FOOTING.
5. INSTALL PROPOSED CULVERT.
6. CONSTRUCT PROPOSED WINGWALL 1B STEM.
7. CONSTRUCT PORTION OF RELOCATED TRIBUTARY.
8. INSTALL NATURAL STREAMBED MATERIAL WITHIN THE CULVERT.
9. INSTALL TOE BOULDERS UPSTREAM.
10. PERFORM UPSTREAM CHANNEL GRADING WITHIN THE COFFERDAM LIMITS.
11. CONSTRUCT PORTION OF PROPOSED WALL NO. 113.
12. CONSTRUCT RETAINING WALLS 103 AND 104 FOR RAMP WORK.

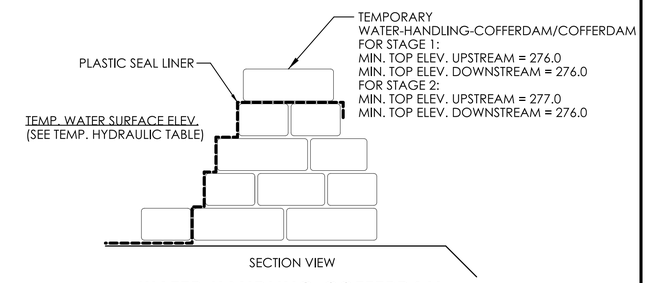
NOTE: THE ELEVATION OF THE TOP OF "COFFERDAM AND DEWATERING" WITHIN THE OHW SHALL BE EQUAL TO THAT OF THE "WATER-HANDLING-COFFERDAM." ALL OTHER TOP ELEVATIONS OF "COFFERDAM AND DEWATERING" SHALL BE 1 FT HIGHER THAN RETAINED EARTH ELEVATION.

STAGE 2

1. INSTALL TEMPORARY BYPASS PIPE WITHIN THE CULVERT.
3. INSTALL WATER-HANDLING-COFFERDAM TO DIVERT FLOW INTO THE BYPASS PIPE.
4. INSTALL COFFERDAM AND DEWATERING ENCLOSURE FOR INLET WINGWALL (2A).
5. INSTALL CHANNEL BOULDERS UPSTREAM.
6. CONSTRUCT PROPOSED WINGWALL 2A.
7. INSTALL TOE BOULDERS BOULDERS DOWNSTREAM.
8. PERFORM CHANNEL GRADING IN FRONT OF THE WINGWALL 2A AND PLACE NATURAL STREAMBED MATERIAL.
9. INSTALL CHAIN LINK FENCE ATOP THE INLET WINGWALL.
10. CONSTRUCT ROADWAY PARAPETS ANCHORED INTO TOP SLAB OF CULVERT.
11. REMOVE TEMPORARY BYPASS PIPE.
12. CONTINUE CONSTRUCTION OF RETAINING WALLS NO. 103 AND 104.
13. FINISH RAMP 5S9S ROADWAY CONSTRUCTION TO COMPLETE BRIDGE CONSTRUCTION.
14. REMOVE ACCESS ROAD AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
15. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

TEMPORARY HYDRAULIC DATA

AVERAGE DAILY FLOW	0.4 CFS
AVERAGE SPRING FLOW	0.8 CFS
TEMPORARY DESIGN DISCHARGE	35 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
GRAVITY FLOW BYPASS PIPE DISCHARGE = 2-YEAR FREQUENCY	35 CFS
STAGE 1	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	274.99 FT
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	274.89 FT
STAGE 2	
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	275.99 FT
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	275.31 FT



WATER-HANDLING-COFFERDAM

(NOT TO SCALE)

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY CONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE
* INSTREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.
* ANY RIPRARIAN AREAS DISTURBED DURING THE CONSTRUCTION OF TEH RAMP OR THE CULVERT SHOULD BE RESTORED WITH WOODY PLANTINGS AT THE COMPLETION OF THE PROJECT.
* THE NATIVE STREAMBED MATERIALS WITHIN THE NEW CULVERT SHOULD BE ARRANGED TO PROVIDE A LOW FLOW CHANNEL THAT REMAINS PASSABLE DURING PERIODS OF LOW DISCHARGE.

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

WATER-HANDLING-COFFERDAM SANDBAGS

1. CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY WATER HANDLING SYSTEM AS REQUIRED DURING CONSTRUCTION OF THE NEW STRUCTURE.

2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.

3. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.

4. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS PMT-37.

5. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGED TO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.

6. BASED UPON FIELD CONDITIONS, WORK DURATION, AND EXPECTED WEATHER CONDITIONS, THE ENGINEER MAY APPROVE A CONSTRUCTION WATER HANDLING PLAN WITH LOWER PUMPING FLOWS, PROVIDED THAT THIS CONCLUDES A CONTINGENCY PLAN, WHICH MINIMIZES NEGATIVE IMPACTS AND SAFELY CONVEYS LARGER FLOWS THROUGH THE WORK AREA.

BRIDGE NO. 07134

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: PBR CHECKED BY: DK

SCALE: 1" = 20'-0"

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - BRIDGE NO. 07134

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-120
SHEET NO.

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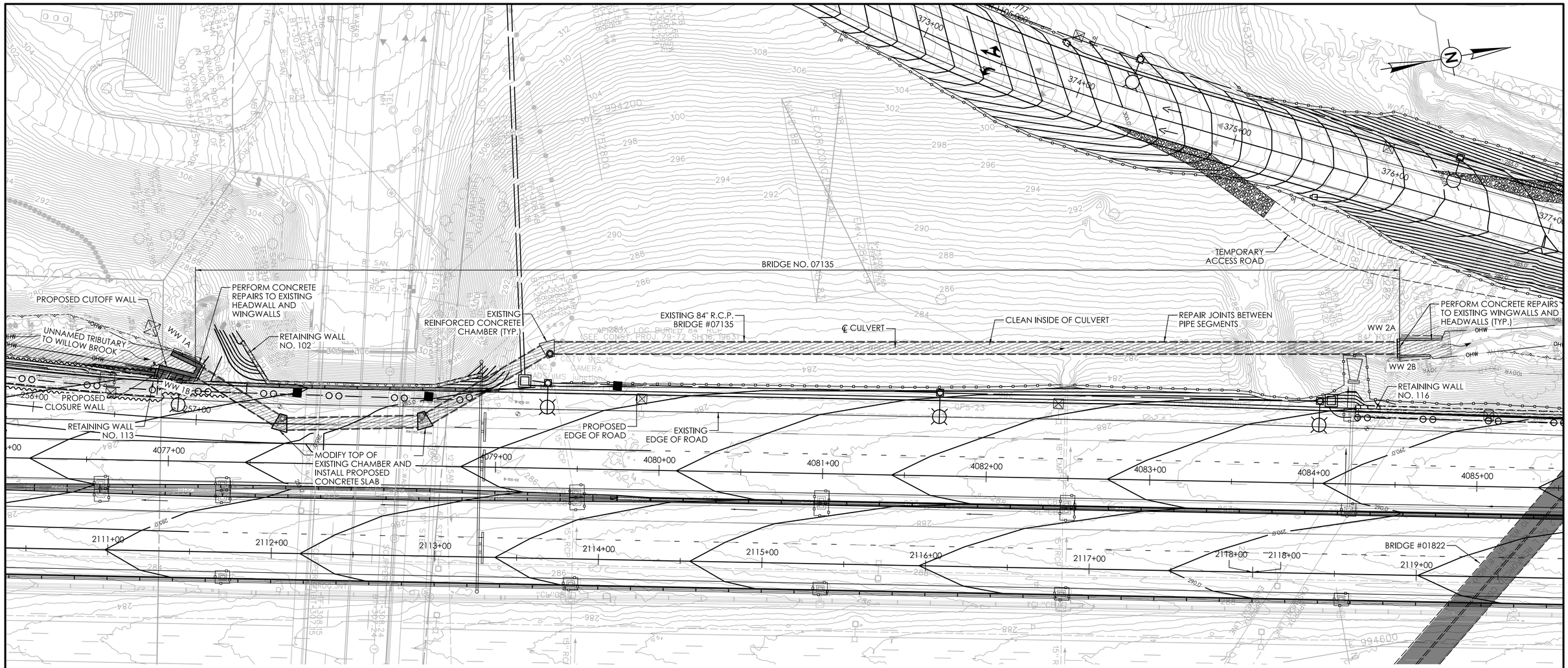
PLOTTED DATE: 7/25/2024



GENERAL PLAN - BRIDGE NO. 07135

SCALE: 1" = 30'

SCOPE OF WORK:

1. CLEAN INSIDE OF CULVERT.
2. CONSTRUCT NEW CUTOFF WALL AT INLET.
3. PERFORM REPAIRS TO EXISTING HEADWALLS AND WINGWALLS.
4. REPAIR JOINTS BETWEEN PIPE SEGMENTS.
5. MODIFY EXISTING JUNCTION CHAMBERS WITHIN THE ROADWAY LIMITS.
6. RESTORE NATURAL STREAMBED MATERIAL AT INLET.

HYDRAULIC DATA	
DRAINAGE AREA	0.38 SQ. MILE
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	197 CFS
AVERAGE DAILY FLOW ELEVATION	271.71 FT.
UPSTREAM DESIGN WATER SURFACE ELEVATION	276.89 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	274.44 FT.

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 38.48 SF / 751 FT = 0.05 FT
0.05 FT < 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 16 FT
1.2 X BFW = 19.2 FT
19.2 FT > 7 FT EXISTING CULVERT SPAN

LEGEND

- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

BRIDGE NO. 07135

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - BRIDGE NO. 07135

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-121
SHEET NO.

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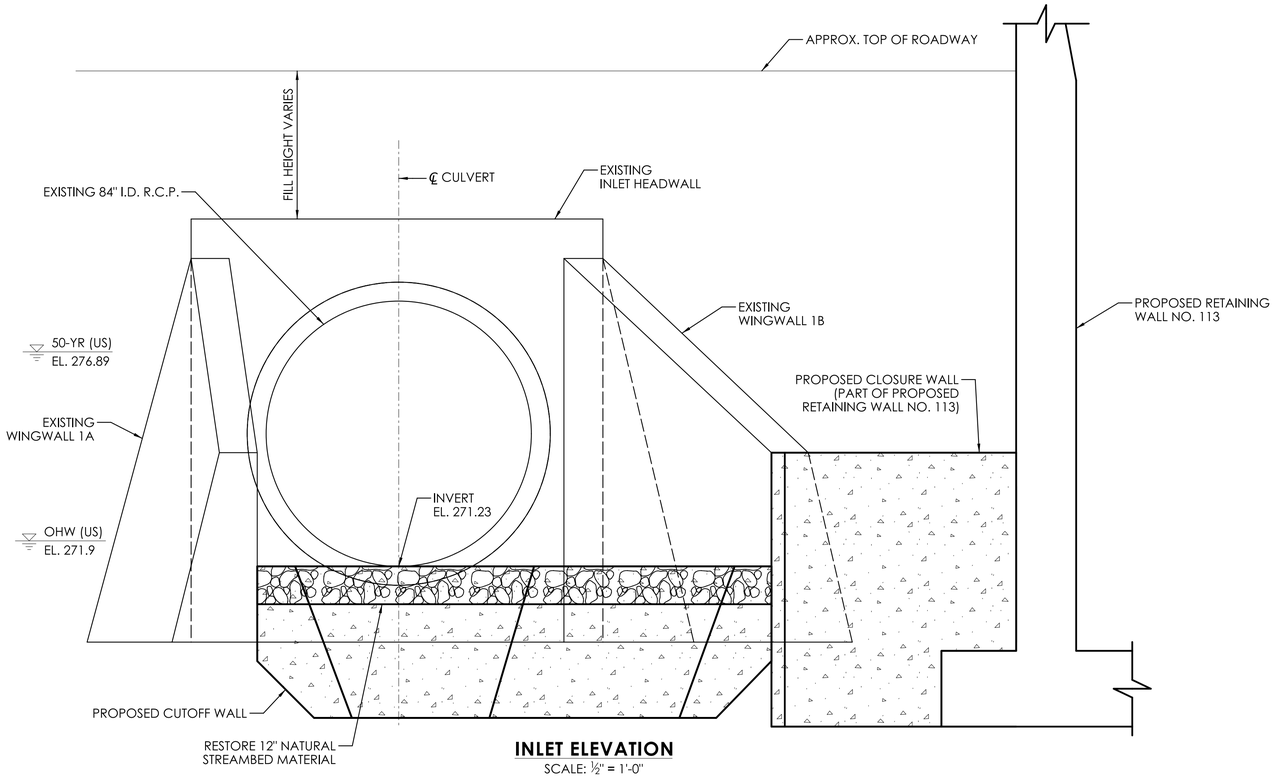
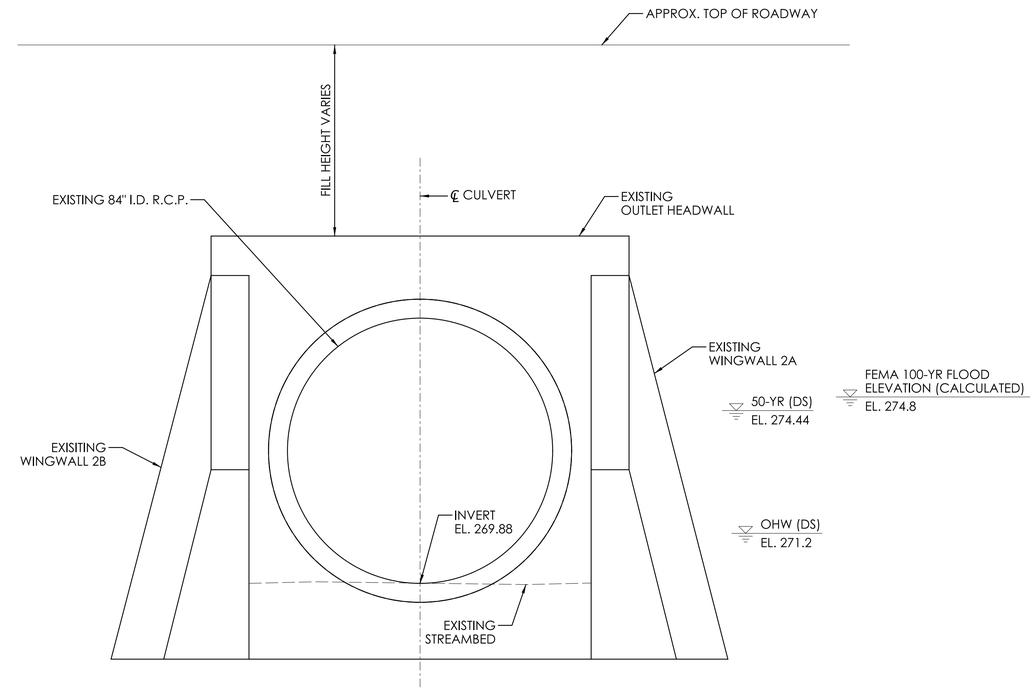
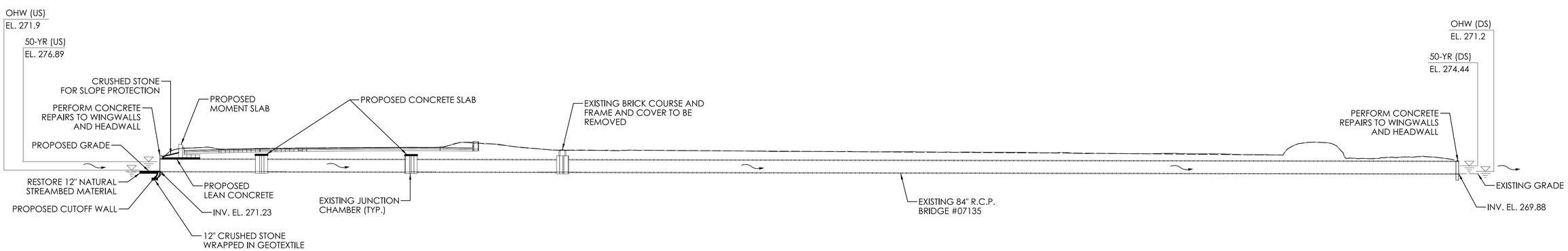


INLET ELEVATION
SCALE: ½" = 1'-0"



OUTLET ELEVATION
SCALE: ½" = 1'-0"



LONGITUDINAL SECTION
SCALE: 1" = 30'

REV.	DATE	REVISION DESCRIPTION

BRIDGE NO. 07135

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - BRIDGE NO. 07135

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-122
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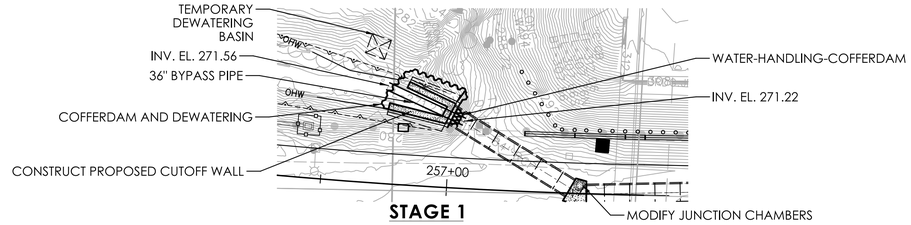
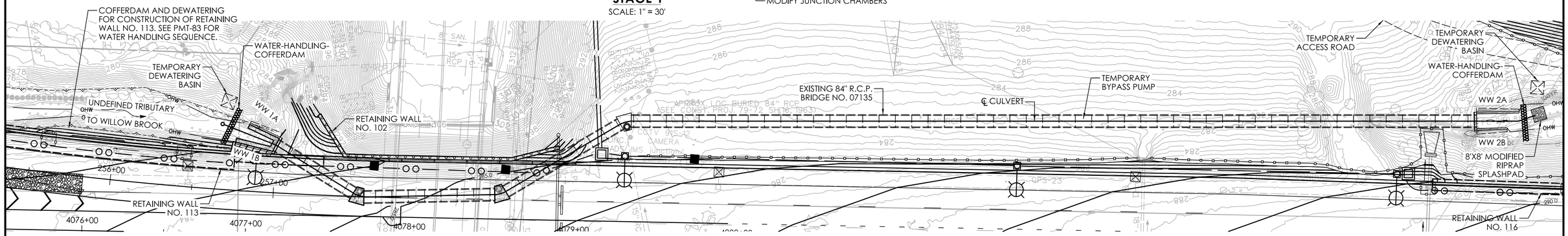


STAGE 1

SCALE: 1" = 30'



NOTE: THE ELEVATION OF THE TOP OF "COFFERDAM AND DEWATERING" WITHIN THE OHW SHALL BE EQUAL TO THAT OF THE "WATER-HANDLING-COFFERDAM." ALL OTHER TOP ELEVATIONS SHALL BE 1 FT HIGHER THAN RETAINED EARTH ELEVATION.

STAGE 2

SCALE: 1" = 30'

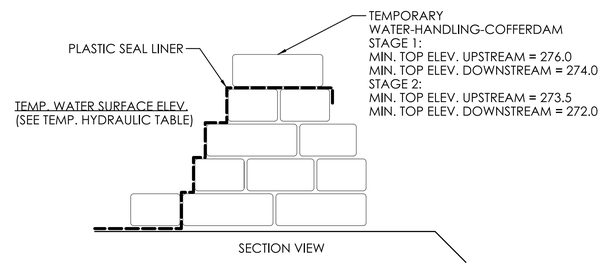
SUGGESTED SEQUENCE OF CONSTRUCTION:

STAGE 1

1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS) AND COFFERDAM AND DEWATERING AT THE INLET.
2. INSTALL A 20' LONG - 36" DIA. RCP BYPASS PIPPE AT THE INLET.
3. PERFORM CONCRETE REPAIRS TO HEADWALL AND WINGWALL AT THE INLET.
4. CONSTRUCT PROPOSED CONCRETE CUTOFF WALL AT INLET.
5. MODIFY JUNCTION CHAMBERS WITHIN THE ROADWAY LIMITS.
6. RESTORE NATURAL STREAMBED AT THE INLET.
7. REMOVE SCS, TEMPORARY BY-PASS PIPE AND COFFERDAM AND DEWATERING AT THE INLET.

STAGE 2

1. INSTALL SCS AND WATER HANDLING-COFFERDAM AT INLET AND OUTLET.
2. INSTALL A BYPASS PUMP FOR HANDLING WATER.
3. CLEAN INSIDE OF THE PIPE.
4. REPAIR CUVLERT JOINTS BETWEEN PIPE SEGMENTS AND PERFORM CONCRETE REPAIRS TO THE OUTLET WINGWALLS AND HEADWALL.
5. REMOVE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET.
6. REMOVE SCS UPON WORK COMPLETION.



WATER-HANDLING-COFFERDAM

(NOT TO SCALE)

WATER-HANDLING-COFFERDAM NOTES

1. CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY WATER HANDLING SYSTEM AS REQUIRED DURING REHABILITATION OF EXISTING CULVERT.

2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.

3. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.

4. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS PMT-37 AND PMT-38.

5. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGED TO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.

6. BASED UPON FIELD CONDITIONS, WORK DURATION, AND EXPECTED WEATHER CONDITIONS, THE ENGINEER MAY APPROVE A CONSTRUCTION WATER HANDLING PLAN WITH LOWER PUMPING FLOWS, PROVIDED THAT THIS INCLUDES A CONTINGENCY PLAN, WHICH MINIMIZES NEGATIVE IMPACTS AND SAFELY CONVEYS LARGER FLOWS THROUGH THE WORK AREA.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY CONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENTS POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."
3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	0.7 CFS
AVERAGE SPRING FLOW	1.4 CFS
STAGE 1	-
GRAVITY FLOW BYPASS PIPE DISCHARGE = 2-YEAR	45 CFS
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	275.23 FT
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	273.67 FT
STAGE 2	-
LOW FLOW PUMPING DISCHARGE = 10 X ASF	14 CFS
DESIGN 10 X ASF WATER SURFACE ELEVATION UPSTREAM	272.56 FT
DESIGN 10 X ASF WATER SURFACE ELEVATION DOWNSTREAM	271.19 FT

BRIDGE NO. 07135

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

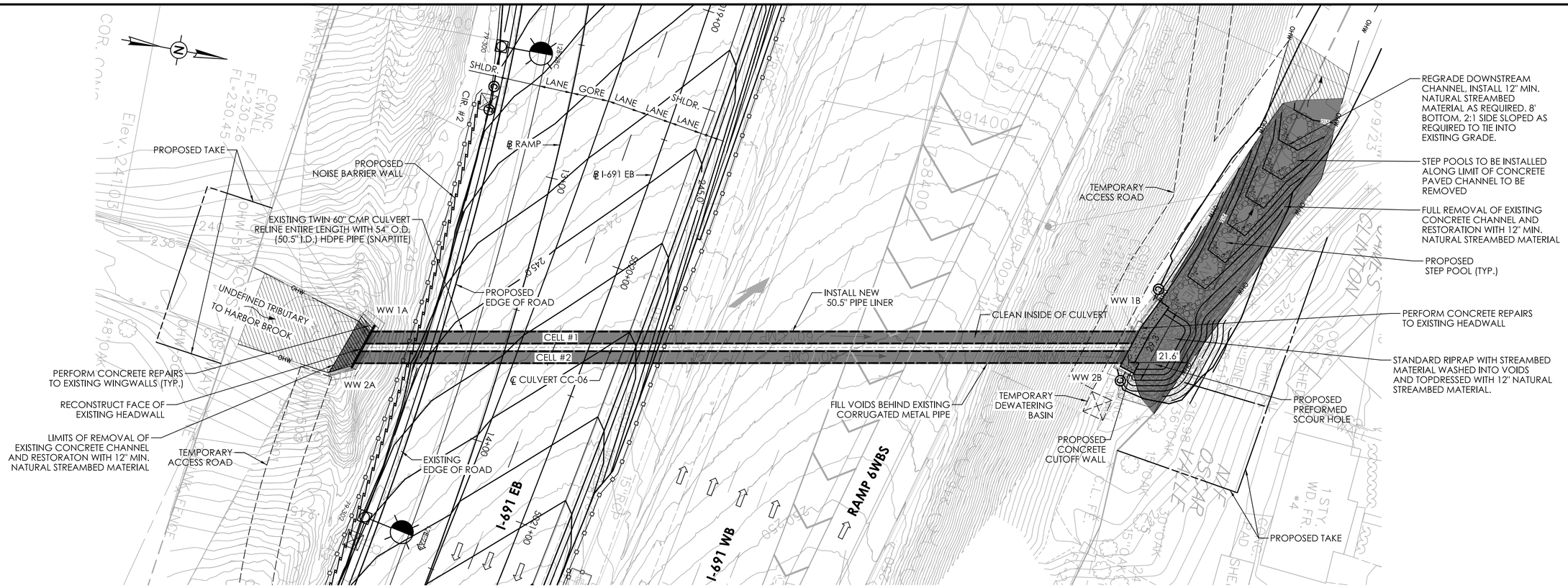
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - BRIDGE NO. 07135

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-123
SHEET NO.

LASTED SAVED BY: DKanigolla **FILE NAME:** c:\pw_working\connecticut\pbarbosa@gm2inc.com\dms04809\SB_CP_0079-0240_Culvert#07135_Water_Handling_Staging_Permit.dgn
PLOTTED DATE: 7/23/2024



GENERAL PLAN - CULVERT CC-06

SCALE: 1" = 20'

HYDRAULIC DATA	
DRAINAGE AREA	0.36 SQ. MILE
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	305 CFS
AVERAGE DAILY FLOW ELEVATION	233.87 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	237.19 FT
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	218.56 FT

OPENNESS RATIO (OR):

OR = OPEN AREA / STRUCTURE LENGTH
OR = 13.91 SF / 282 FT = 0.05 FT
0.05 FT < 0.82 FT (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 24 FT
1.2 X BFW = 28.8 FT
28.8 FT > 4.21 FT PROPOSED CULVERT SPAN

LEGEND

- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- SURVEYED EDGE OF WATER
- TEMPORARY IMPACT
- PERMANENT IMPACT

SCOPE OF WORK:

1. CLEAN EXISTING CORRUGATED METAL PIPE.
2. FILL VOIDS BEHIND EXISTING CORRUGATED METAL PIPE.
3. INSTALL NEW 50.5" I.D. PIPE LINER.
4. CONSTRUCT PROPOSED CUTOFF WALL AT OUTLET.
5. REMOVE EXISTING CONCRETE AT FACE OF INLET HEADWALL AND CONSTRUCT NEW FACE.
6. FILL ANNULAR SPACE BETWEEN EXISTING AND PROPOSED PIPE.
7. REMOVE DOWNSTREAM EXISTING CONCRETE CHANNEL IN ITS ENTIRETY.
8. CONSTRUCT PERFORMED SCOUR HOLE AND STEP POOLS AT OUTLET.
9. PERFORM CONCRETE REPAIRS TO HEADWALLS AND WINGWALLS AT INLET AND OUTLET.

REV. | DATE | REVISION DESCRIPTION

CULVERT CC-06

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/ BLOCK:

GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

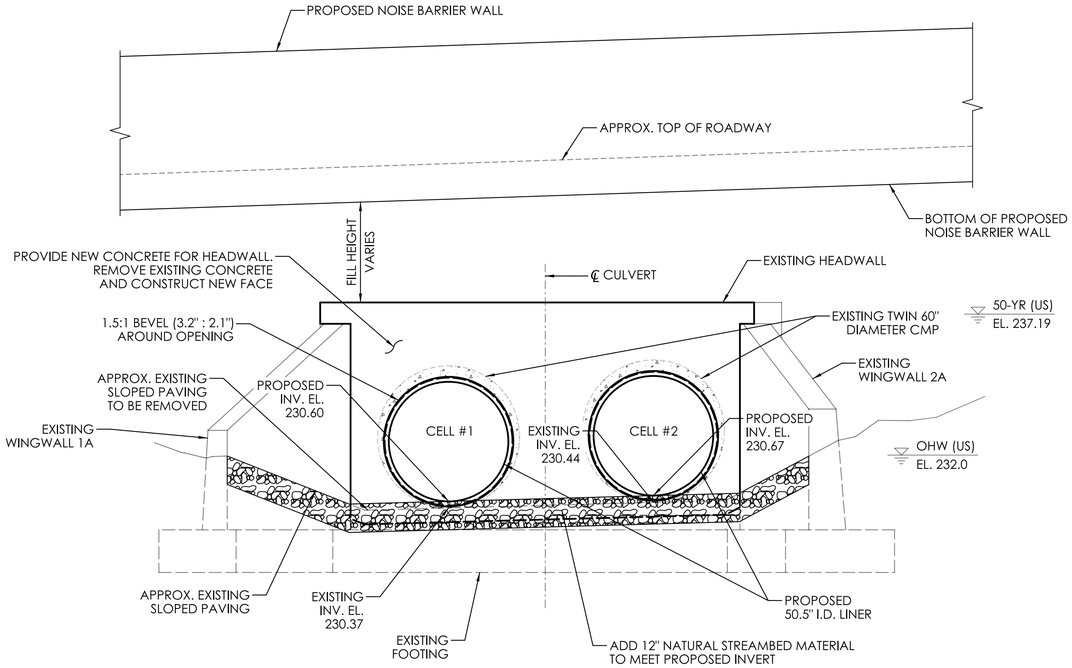
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: GENERAL PLAN - CULVERT CC-06

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

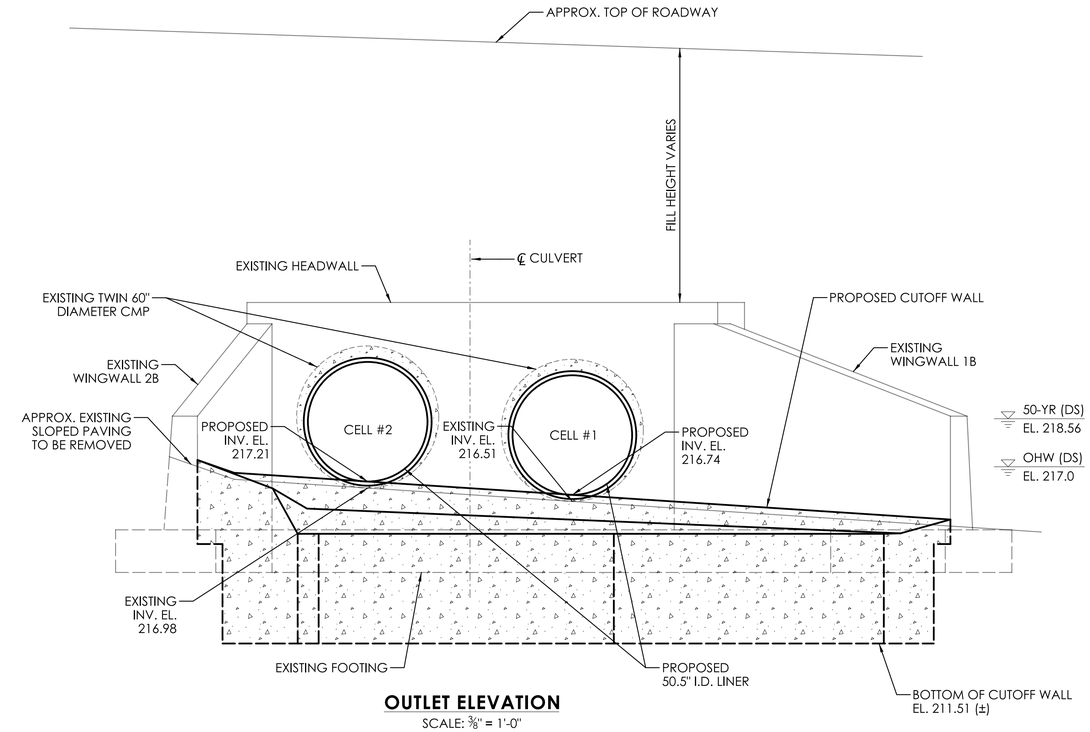
DRAWING NO. PMT-124
SHEET NO.

LASTED SAVED BY: RAlBakri **FILE NAME:** c:\pw_working\connecticut\ral-bakri@gm2inc.com\dms04810\SB_CP_0079-0240_Culvert#CC-06_GPN_Permit.dgn
PLOTTED DATE: 7/25/2024



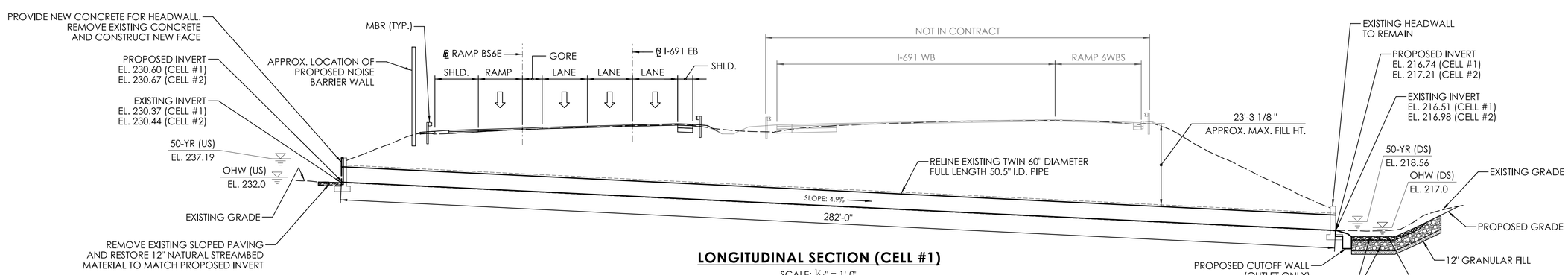
INLET ELEVATION

SCALE: 3/8" = 1'-0"



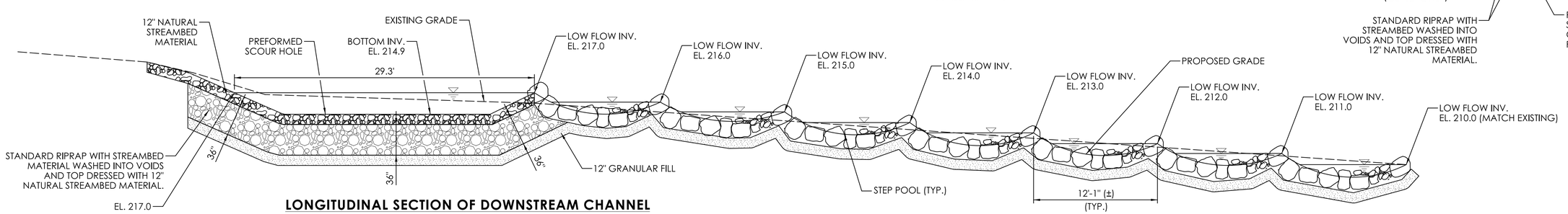
OUTLET ELEVATION

SCALE: 3/8" = 1'-0"



LONGITUDINAL SECTION (CELL #1)

SCALE: 1/16" = 1'-0"



LONGITUDINAL SECTION OF DOWNSTREAM CHANNEL

SCALE: 3/16" = 1'-0"

CULVERT CC-06

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: RA CHECKED BY: DK

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: LONGITUDINAL SECTION AND ELEVATION - CULVERT CC-06

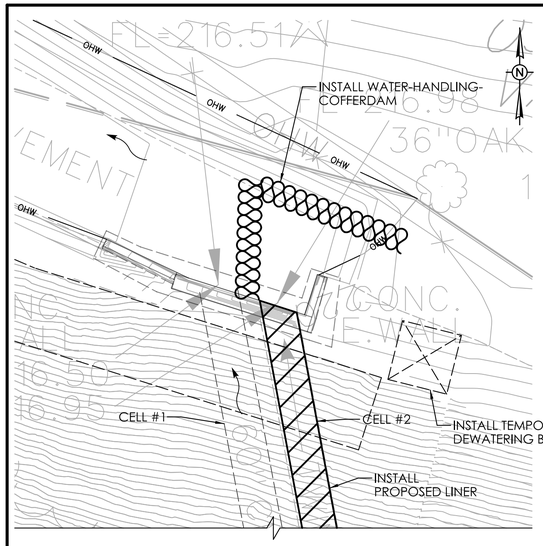
ENVIRONMENTAL PERMIT PLANS

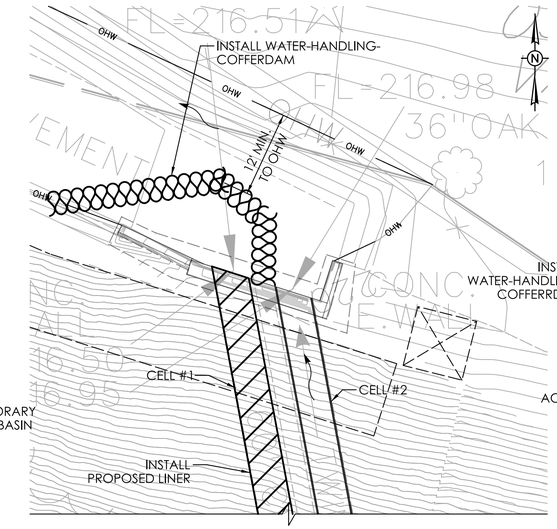
PLAN DATE: JULY 9, 2024

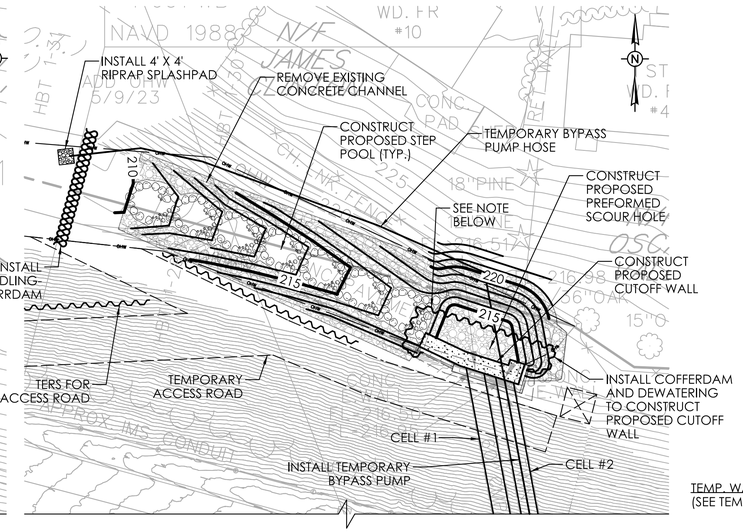
DRAWING NO. PMT-125

SHEET NO.

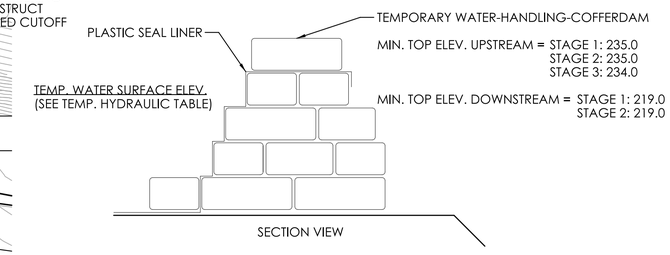
LASTED SAVED BY: PBarbosa **FILE NAME:** c:\pw_working\connecticut\val-bakri@gm2inc.com\dms04810\SB_CP_0079-0240_Culvert#CC-06_Section_Elevation_Permit.dgn
PLOTTED DATE: 7/25/2024





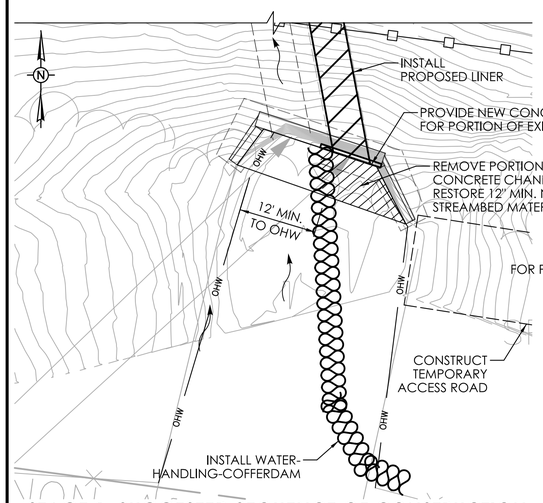


TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	0.7 CFS
AVERAGE SPRING FLOW	1.3 CFS
2-YEAR DESIGN FLOW	75 CFS
STAGE 1	
TEMPORARY DESIGN DISCHARGE	75 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
TEMPORARY WSEL UPSTREAM	234.10 FT
TEMPORARY WSEL DOWNSTREAM	218.17 FT
STAGE 2	
TEMPORARY DESIGN DISCHARGE	75 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
TEMPORARY WSEL UPSTREAM	234.39 FT
TEMPORARY WSEL DOWNSTREAM	218.49 FT
STAGE 3	
LOW FLOW PUMPING = 10 X ASF	13 CFS
DESIGN 10 X ASF WSEL UPSTREAM	232.58 FT
TEMPORARY ALLOWABLE WSEL UPSTREAM	233.00 FT



WATER-HANDLING-COFFERDAM

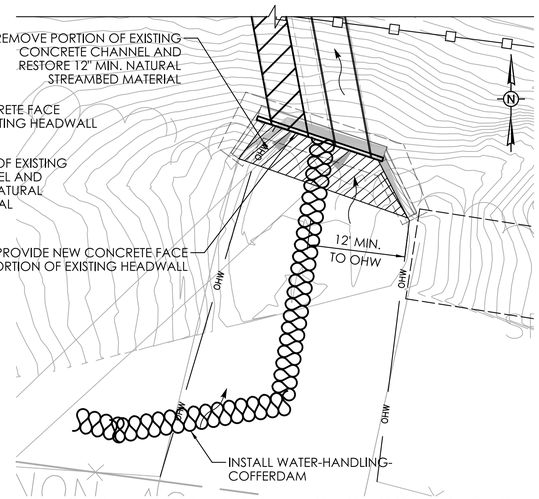
(NOT TO SCALE)



STAGE 1: SUGGESTED SEQUENCE OF CONSTRUCTION

SCALE: 1" = 10'

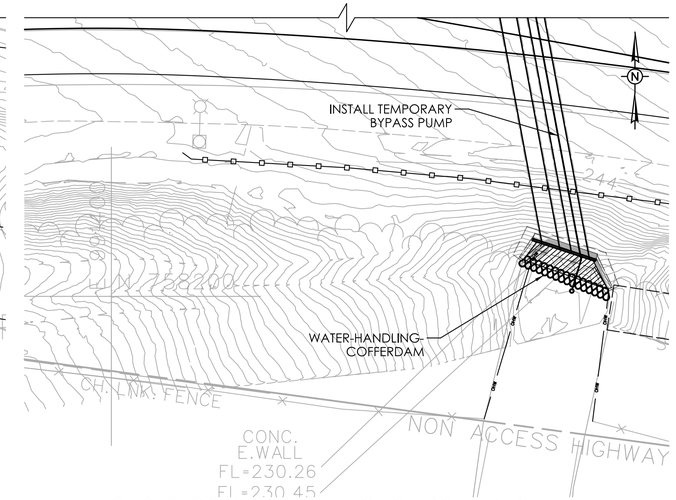
1. INSTALL SEDIMENTATION CONTROL SYSTEM (SCS).
2. CONSTRUCT ACCESS ROADS AT BOTH INLET AND OUTLET.
3. INSTALL WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #2.
4. CLEAN EXISTING CELL #2 PIPE. ALL WORK SHALL BE PERFORMED IN THE DRY.
5. FILL VOIDS BEHIND THE CULVERT AND REPAIR EXISTING PIPE.
6. INSTALL SPACERS FOR PROPOSED PIPE.
7. PERFORM SLIP LINING OPERATION IN THE DRY.
8. REMOVE EXISTING CONCRETE CHANNEL UPSTREAM.
9. PROVIDE NEW FACE FOR PORTION OF EXISTING HEADWALL AT INLET.
10. PERFORM GROUTING TO FILL ANNULAR SPACE.
11. PERFORM CONCRETE REPAIRS TO OUTLET HEADWALL AND WINGWALLS 2A AND 2B.
12. PLACE 12" MIN. NATURAL STREAMBED MATERIAL UPSTREAM TO MATCH PROPOSED INVERT.



STAGE 2: SUGGESTED SEQUENCE OF CONSTRUCTION

SCALE: 1" = 10'

1. RELOCATE WATER-HANDLING-COFFERDAMS AT INLET AND OUTLET OF CELL #2 TO CELL #1.
2. CLEAN EXISTING CELL #1 PIPE. ALL WORK SHALL BE COMPLETED IN THE DRY.
3. FILL VOIDS BEHIND THE CULVERT AND REPAIR EXISTING PIPE.
4. INSTALL SPACERS FOR PROPOSED PIPE.
5. PERFORM SLIP-LINING OPERATION IN THE DRY.
7. REMOVE EXISTING CONCRETE CHANNEL UPSTREAM.
8. PROVIDE NEW FACE FOR PORTION OF EXISTING HEADWALL AT INLET.
9. PERFORM GROUTING TO FILL ANNULAR SPACE.
10. PERFORM CONCRETE REPAIRS TO OUTLET HEADWALL AND WINGWALLS 1A AND 1B.
11. PLACE 12" MIN. NATURAL STREAMBED MATERIAL UPSTREAM TO MATCH PROPOSED INVERT.



STAGE 3: SUGGESTED SEQUENCE OF CONSTRUCTION

SCALE: 1" = 20'

1. RELOCATE WATER-HANDLING-COFFERDAMS AT INLET OF BOTH CELLS.
2. INSTALL TEMPORARY PUMPING THROUGH CELL #2.
   INSTALL WATER-HANDLING-COFFERDAM AND RIPRAP SPLASHPAD AT END OF BYPASS PIPE.
3. REMOVE ENTIRETY OF EXISTING CONCRETE CHANNEL DOWNSTREAM.
4. INSTALL COFFERDAM AND DEWATERING AT OUTLET.
5. CONSTRUCT PROPOSED CUTOFF WALL AT OUTLET.
6. REMOVE COFFERDAM AND DEWATERING AT OUTLET.
7. CONSTRUCT PREFORMED SCOUR HOLE AND STEP POOLS IN DOWNSTREAM CHANNEL.
8. REMOVE PUMPING OPERATION.
9. REMOVE TEMPORARY ACCESS ROADS AND RESTORE DISTURBED AREAS AND INSTALL PLANTINGS.
10. REMOVE SEDIMENTATION CONTROL SYSTEM UPON PERMANENT STABILIZATION.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY CONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE. UNLESS OTHERWISE INCLUDED AS A SPECIAL PROVISION OF THE LICENSE, THE CONDITION SHALL APPLY TO PROJECTS IN NON-COASTAL WATER.

THE DEPARTMENT WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMIZED TO THE EXTENTS POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW.

WATER-HANDLING-COFFERDAM NOTES

1. CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY WATER HANDLING SYSTEM AS REQUIRED DURING CONSTRUCTION OF THE NEW STRUCTURE.

2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.

3. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.

4. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS PMT-45.

5. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGED TO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.

6. BASED UPON FIELD CONDITIONS, WORK DURATION, AND EXPECTED WEATHER CONDITIONS, THE ENGINEER MAY APPROVE A CONSTRUCTION WATER HANDLING PLAN WITH LOWER PUMPING FLOWS, PROVIDED THAT THIS INCONCLUDES A CONTINGENCY PLAN, WHICH MINIMIZES NEGATIVE IMPACTS AND SAFELY CONVEYS LARGER FLOWS THROUGH THE WORK AREA.

NOTE: THE ELEVATION OF THE TOP OF "COFFERDAM AND DEWATERING" WITHIN THE OHW SHALL BE EQUAL TO THAT OF THE "WATER-HANDLING-COFFERDAM." ALL OTHER TOP ELEVATION OF "COFFERDAM AND DEWATERING" SHALL BE 1 FT HIGHER THAN RETAINED EARTH ELEVATION.

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE STRUCTURE SHALL BE STOCKPILED AND THEN REPLACED TO THE DEPTH SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIAL PROVISION "EXCAVATION AND REUSE OF THE EXISTING CHANNEL BOTTOM MATERIAL."

2. ADDITIONAL STREAMBED MATERIAL, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."

3. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLANDS LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

REV. | DATE | REVISION DESCRIPTION

CULVERT CC-06

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: CHECKED BY:

SCALE AS NOTED

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: WATER HANDLING PLAN - CULVERT CC-06

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

DRAWING NO. PMT-126
SHEET NO.

LASTED SAVED BY: PBarbosa **FILE NAME:** c:\pw_working\connecticut\pbarbosa@gm2inc.com\D0849\dgn\GP_0079-0240_Culvert#CC-06_Water_Handling_Staging_Permit.dgn
PLOTTED DATE: 7/5/2024

NOTE:

1. PLANTING ON THIS SHEET IS FOR ENVIRONMENTAL PERMITTING. ANY SUBSTITUTIONS TO THE PERMIT PLANTINGS SHALL BE COORDINATED WITH THE DEPARTMENT'S OFFICE OF ENVIRONMENTAL PLANNING (OEP).

2. PROPOSED PLANTINGS TO BE FIELD LOCATED BY CTDOT OEP OR THEIR DESIGNATED REPRESENTATIVE.

3. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.

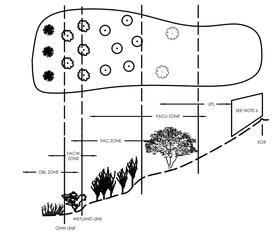
4. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH WETLAND GRASS ESTABLISHMENT. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE SEEDED WITH CONSERVATION SEEDING FOR SLOPES, OR OTHER SEED MIX AS SPECIFIED. ALL AREAS SHALL BE RESTORED.

5. ALL PLANT MATERIAL SHALL BE NURSERY GRADE STRAIGHT SPECIES. CONFORMING TO SECTION 3 OF THE AMERICAN STANDARDS FOR NURSERY STOCK. CTDOT OEP SHALL REVIEW AND APPROVE PROPOSED PLANTINGS.

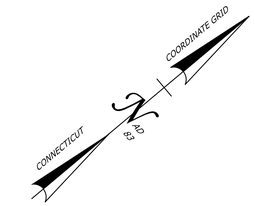
6. NO PLANTINGS TO BE PLACED IN MOW AREA.

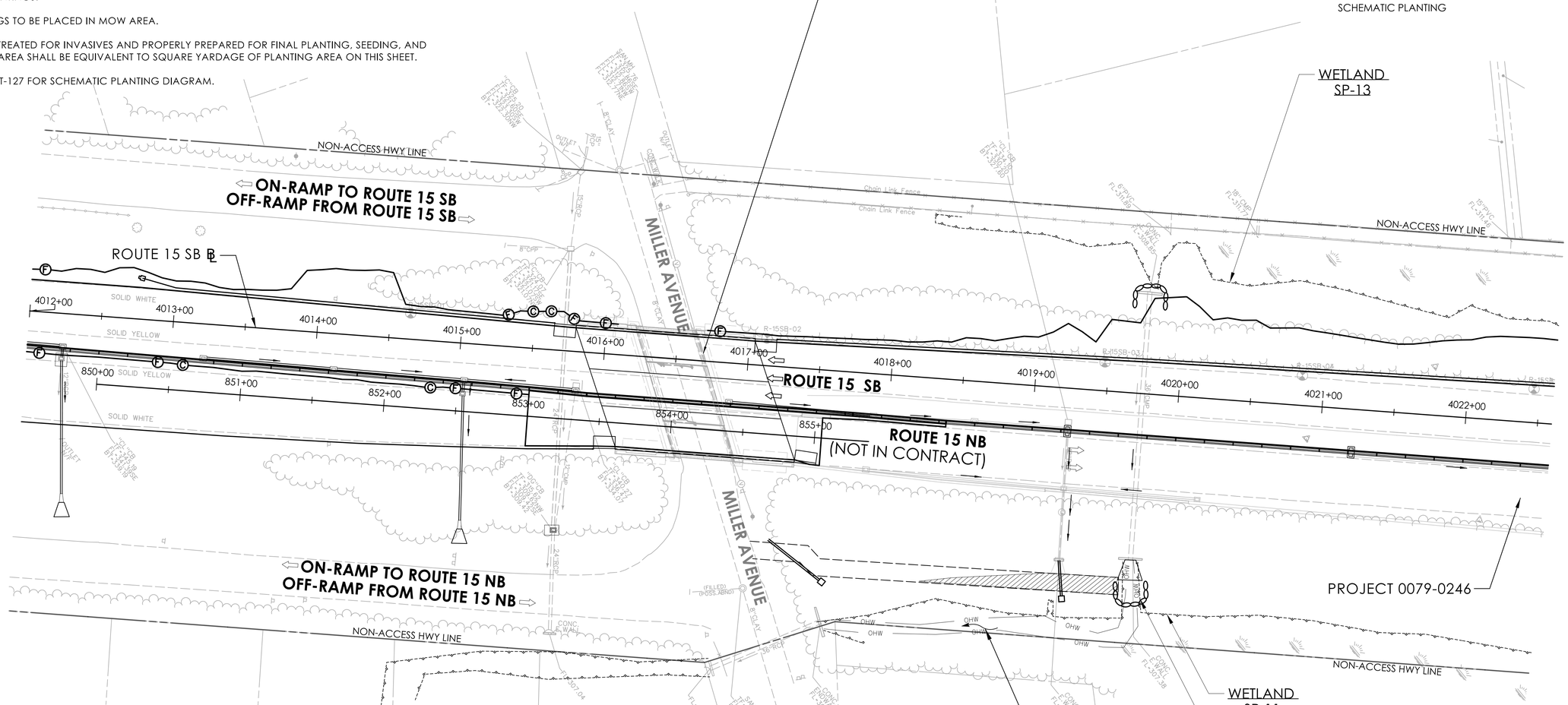
7. AREA TO BE TREATED FOR INVASIVES AND PROPERLY PREPARED FOR FINAL PLANTING, SEEDING, AND RESTORATION. AREA SHALL BE EQUIVALENT TO SQUARE YARDAGE OF PLANTING AREA ON THIS SHEET.

8. REFER TO PMT-127 FOR SCHEMATIC PLANTING DIAGRAM.



SCHEMATIC PLANTING





LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA

PLANTING LIST - RIPARIAN RESTORATION NEAR IMPACT AREA 10						
BOTANICAL NAME	**COMMON NAME**	**SIZE**	**TYPE**	**QUANTITY**	**SPACING**	**WETLAND INDICATOR**
ALNUS INCANA	SPECKLED ALDER	3-4 FT	BB	6	5 FT	FACW
CORNUS RACEMOSA	GRAY DOGWOOD	3-4 FT	BB	6	5 FT	FAC
		TOTAL PLANTS		**12**		
SEVERAL SPECIES	CONSERVATION MIX	N/A	SEED	1 LB.	1 LB./2,500 SF	FACU-FAC
		TOTAL PLANTING AREA		**1,160 S.F.**		

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV. | DATE | REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-127
SHEET NO.

LASTED SAVED BY: NBibeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_127.dgn
PLOTTED DATE: 7/9/2024

NOTE:

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2. PROPOSED PLANTINGS TO BE FIELD LOCATED BY CTDOT OEP OR THEIR DESIGNATED REPRESENTATIVE.

3. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.

4. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH WETLAND GRASS ESTABLISHMENT. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE SEEDED WITH CONSERVATION SEEDING FOR SLOPES, OR OTHER SEED MIX AS SPECIFIED. ALL AREAS SHALL BE RESTORED.

5. ALL PLANT MATERIAL SHALL BE NURSERY GRADE STRAIGHT SPECIES. CONFORMING TO SECTION 3 OF THE AMERICAN STANDARDS FOR NURSERY STOCK. CTDOT OEP SHALL REVIEW AND APPROVE PROPOSED PLANTINGS.

6. NO PLANTINGS TO BE PLACED IN MOW AREA.

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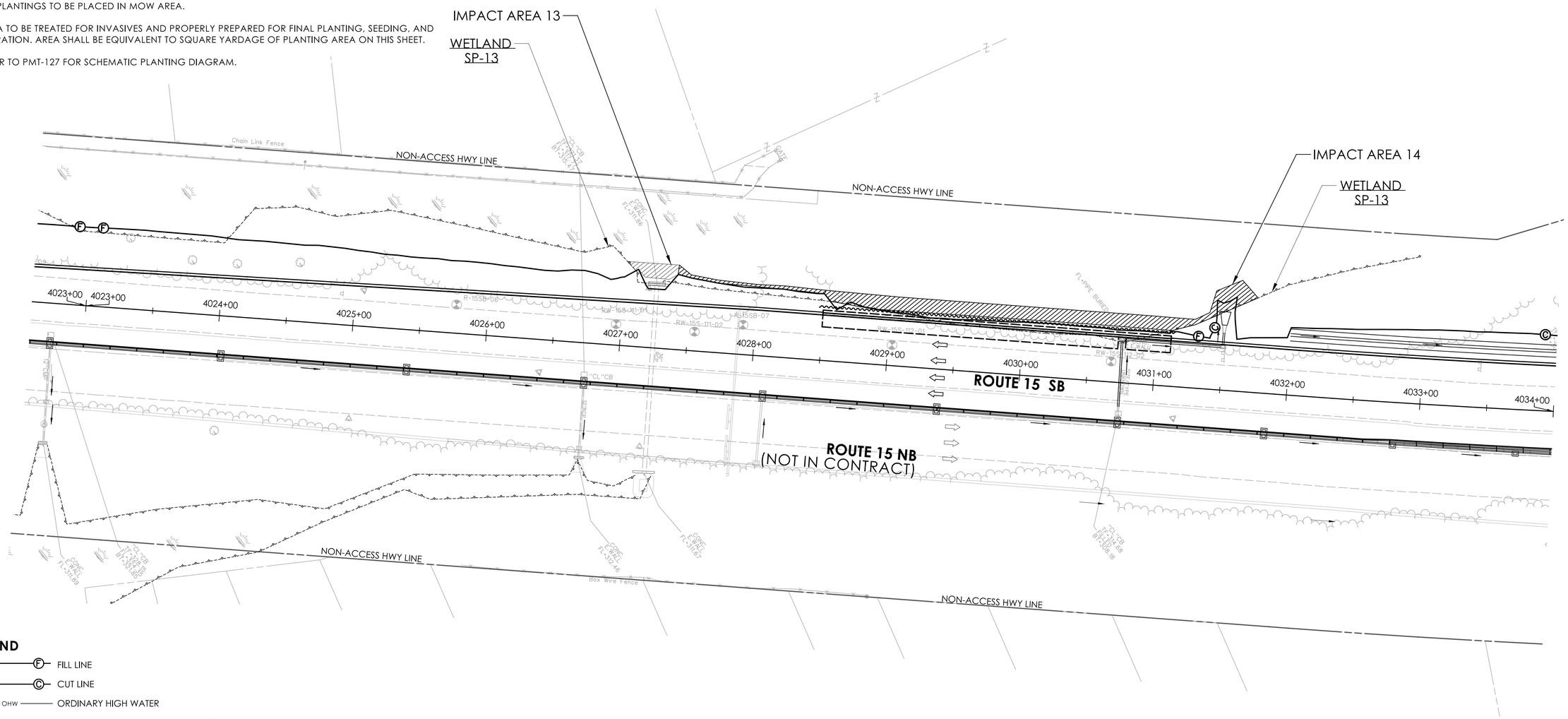
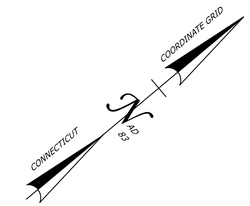
8. REFER TO PMT-127 FOR SCHEMATIC PLANTING DIAGRAM.

PLANTING LIST - IMPACT AREA 13 & 14, WETLAND SP-13

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	QUANTITY	SPACING	WETLAND INDICATOR
LINDERA BENZOIN	NORTHERN SPICEBUSH	3-4 FT	BB	12	5 FT	FACW
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	3-4 FT	BB	12	5 FT	FACW
CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	3-4 FT	BB	12	5 FT	FAC
ILEX VERTICILLATA	WINTERBERRY HOLLY	3-4 FT	BB	12	5 FT	FACW
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1 GAL.	CONTAINER	18	1'-6" O.C. THREE INDIVIDUALS PER TRIANGULAR CLUMP, RANDOMLY SPACED	OBL
			TOTAL PLANTS	**66**		
SEVERAL SPECIES	NE WET MIX	N/A	SEED	2 LBS.	1 LB./2,500 SF	FAC-FACW
		TOTAL PLANTING AREA		**3,830 S.F.**		





LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
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STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
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TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-128
SHEET NO.

LASTED SAVED BY: NBibeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_09.dgn
PLOTTED DATE: 7/9/2024

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5. ALL PLANT MATERIAL SHALL BE NURSERY GRADE STRAIGHT SPECIES. CONFORMING TO SECTION 3 OF THE AMERICAN STANDARDS FOR NURSERY STOCK. CTDOT OEP SHALL REVIEW AND APPROVE PROPOSED PLANTINGS.

6. NO PLANTINGS TO BE PLACED IN MOW AREA.

7. AREA TO BE TREATED FOR INVASIVES AND PROPERLY PREPARED FOR FINAL PLANTING, SEEDING, AND RESTORATION. AREA SHALL BE EQUIVALENT TO SQUARE YARDAGE OF PLANTING AREA ON THIS SHEET.

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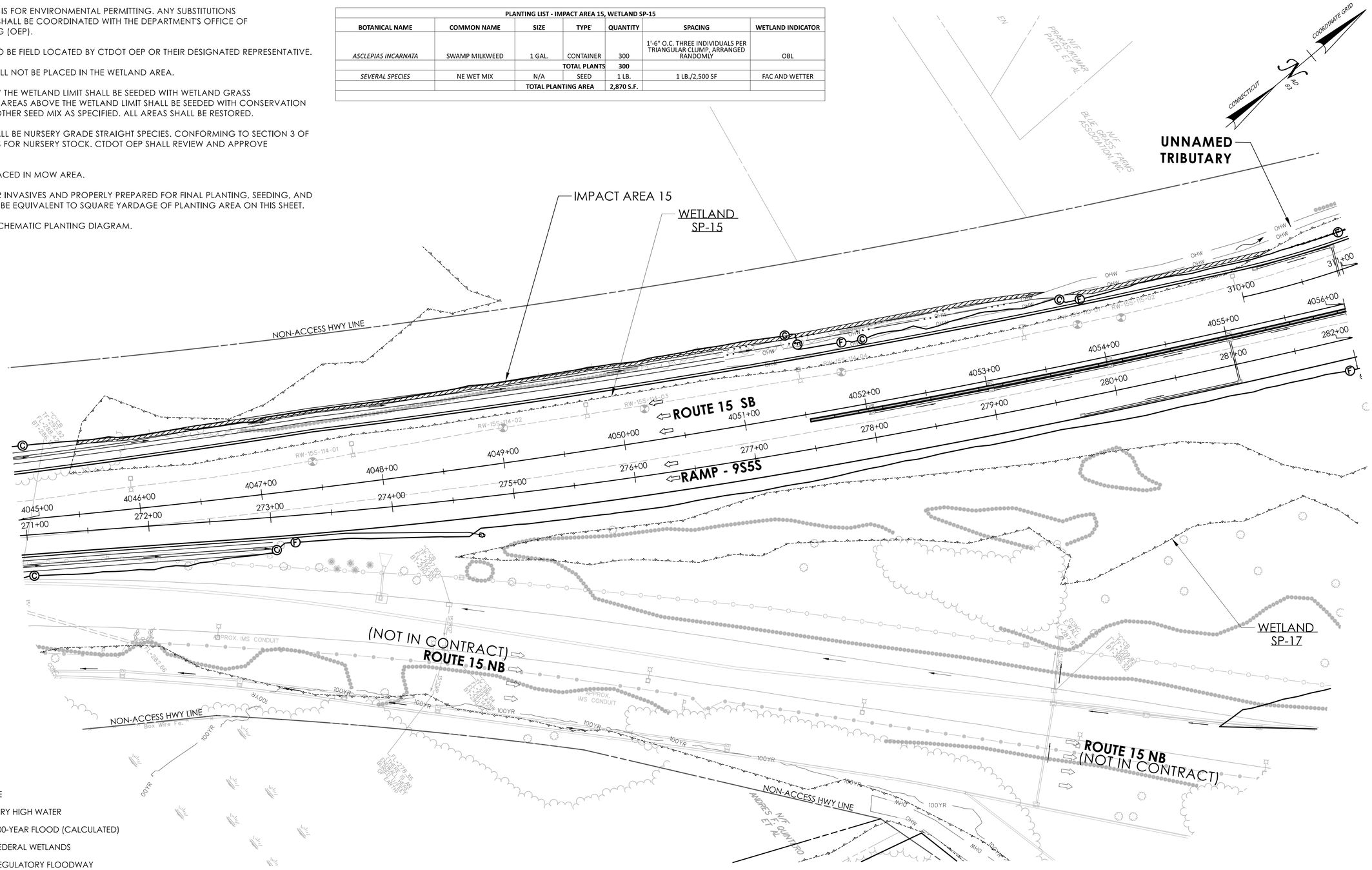
PLANTING LIST - IMPACT AREA 15, WETLAND SP-15

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	QUANTITY	SPACING	WETLAND INDICATOR
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1 GAL.	CONTAINER	300	1'-6" O.C. THREE INDIVIDUALS PER TRIANGULAR CLUMP, ARRANGED RANDOMLY	OBL
			TOTAL PLANTS	**300**		
SEVERAL SPECIES	NE WET MIX	N/A	SEED	1 LB.	1 LB./2,500 SF	FAC AND WETTER
		TOTAL PLANTING AREA		**2,870 S.F.**		



LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

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LEGEND

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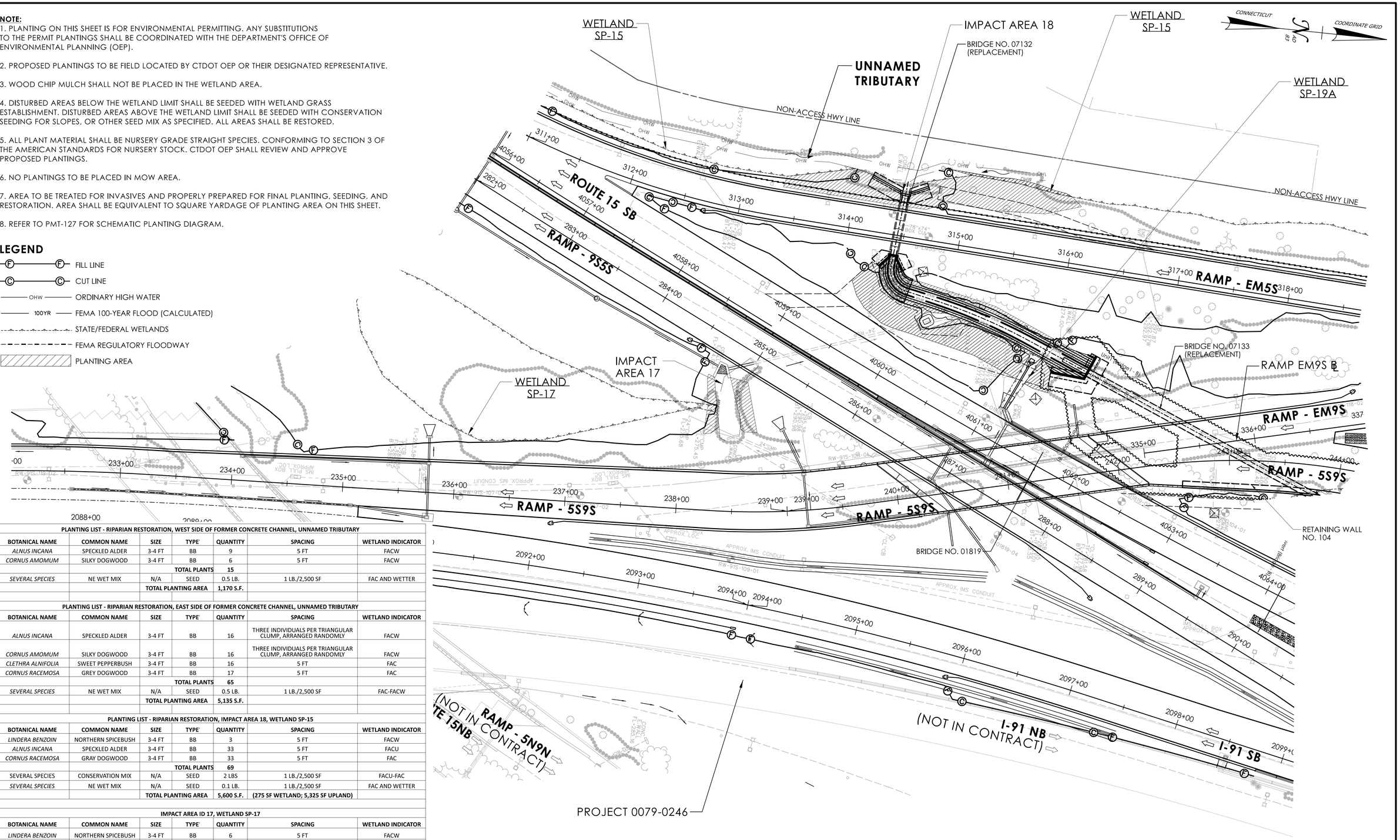
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA



PLANTING LIST - RIPARIAN RESTORATION, WEST SIDE OF FORMER CONCRETE CHANNEL, UNNAMED TRIBUTARY

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	QUANTITY	SPACING	WETLAND INDICATOR
ALNUS INCANA	SPECKLED ALDER	3-4 FT	BB	9	5 FT	FACW
CORNUS AMOMUM	SILKY DOGWOOD	3-4 FT	BB	6	5 FT	FACW
			TOTAL PLANTS	**15**		
SEVERAL SPECIES	NE WET MIX	N/A	SEED	0.5 LB.	1 LB./2,500 SF	FAC AND WETTER
		TOTAL PLANTING AREA		**1,170 S.F.**		

PLANTING LIST - RIPARIAN RESTORATION, EAST SIDE OF FORMER CONCRETE CHANNEL, UNNAMED TRIBUTARY

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	QUANTITY	SPACING	WETLAND INDICATOR
ALNUS INCANA	SPECKLED ALDER	3-4 FT	BB	16	THREE INDIVIDUALS PER TRIANGULAR CLUMP, ARRANGED RANDOMLY	FACW
CORNUS AMOMUM	SILKY DOGWOOD	3-4 FT	BB	16	THREE INDIVIDUALS PER TRIANGULAR CLUMP, ARRANGED RANDOMLY	FACW
CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	3-4 FT	BB	16	5 FT	FAC
CORNUS RACEMOSA	GREY DOGWOOD	3-4 FT	BB	17	5 FT	FAC
			TOTAL PLANTS	**65**		
SEVERAL SPECIES	NE WET MIX	N/A	SEED	0.5 LB.	1 LB./2,500 SF	FAC-FACW
		TOTAL PLANTING AREA		**5,135 S.F.**		

PLANTING LIST - RIPARIAN RESTORATION, IMPACT AREA 18, WETLAND SP-15

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	QUANTITY	SPACING	WETLAND INDICATOR
LINDERA BENZOIN	NORTHERN SPICEBUSH	3-4 FT	BB	3	5 FT	FACW
ALNUS INCANA	SPECKLED ALDER	3-4 FT	BB	33	5 FT	FACU
CORNUS RACEMOSA	GRAY DOGWOOD	3-4 FT	BB	33	5 FT	FAC
			TOTAL PLANTS	**69**		
SEVERAL SPECIES	CONSERVATION MIX	N/A	SEED	2 LBS	1 LB./2,500 SF	FACU-FAC
SEVERAL SPECIES	NE WET MIX	N/A	SEED	0.1 LB.	1 LB./2,500 SF	FAC AND WETTER
		TOTAL PLANTING AREA		**5,600 S.F.**	**(275 SF WETLAND; 5,325 SF UPLAND)**	

IMPACT AREA ID 17, WETLAND SP-17

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	QUANTITY	SPACING	WETLAND INDICATOR
LINDERA BENZOIN	NORTHERN SPICEBUSH	3-4 FT	BB	6	5 FT	FACW
CORNUS RACEMOSA	GRAY DOGWOOD	3-4 FT	BB	6	5 FT	FAC
			TOTAL PLANTS	**12**		
SEVERAL SPECIES	CONSERVATION MIX	N/A	SEED	0.5 LB.	1 LB./2,500 SF	FACU-FAC
		TOTAL PLANTING AREA		**1,098 S.F.**		

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

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DESIGNER/DRAFTER: EFC CHECKED BY: PMB

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
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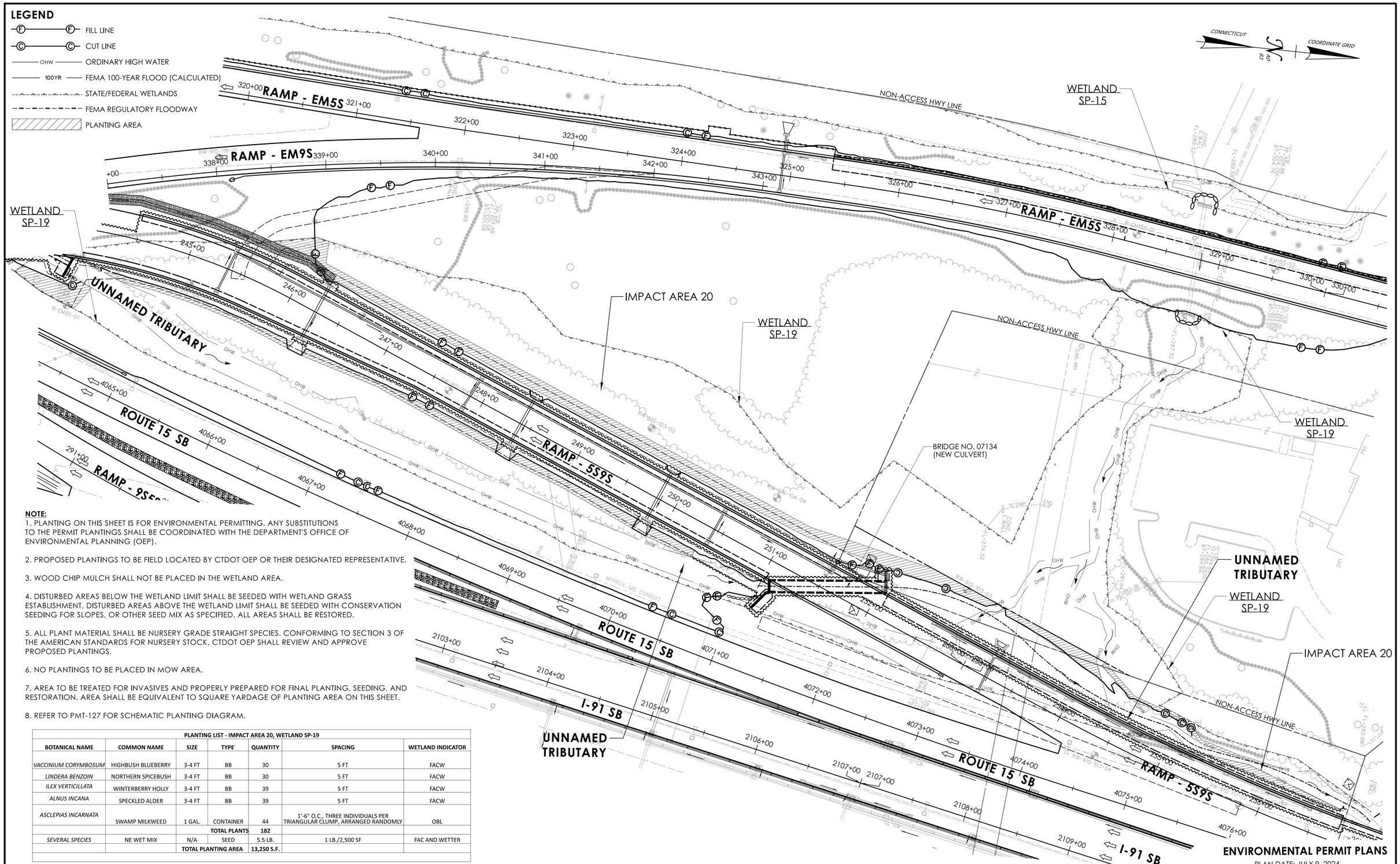
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-130
SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_11.dgn
PLOTTED DATE: 7/9/2024

LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA



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PLANTING LIST - IMPACT AREA 20, WETLAND SP-19

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	QUANTITY	SPACING	WETLAND INDICATOR
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	3-4 FT	BB	30	5 FT	FACW
LINDERA BENZOIN	NORTHERN SPICEBUSH	3-4 FT	BB	30	5 FT	FACW
ILEX VERTICILLATA	WINTERBERRY HOLLY	3-4 FT	BB	39	5 FT	FACW
ALNUS INCANA	SPECKLED ALDER	3-4 FT	BB	39	5 FT	FACW
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1 GAL.	CONTAINER	44	1'-6" O.C., THREE INDIVIDUALS PER TRIANGULAR CLUMP, ARRANGED RANDOMLY	OBL
			TOTAL PLANTS	**182**		
SEVERAL SPECIES	NE WET MIX	N/A	SEED	5.5 LB.	1 LB./2,500 SF	FAC AND WETTER
		TOTAL PLANTING AREA		**13,250 S.F.**		

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DRAWING TITLE: PERMIT PLANTING PLAN

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SHEET NO.

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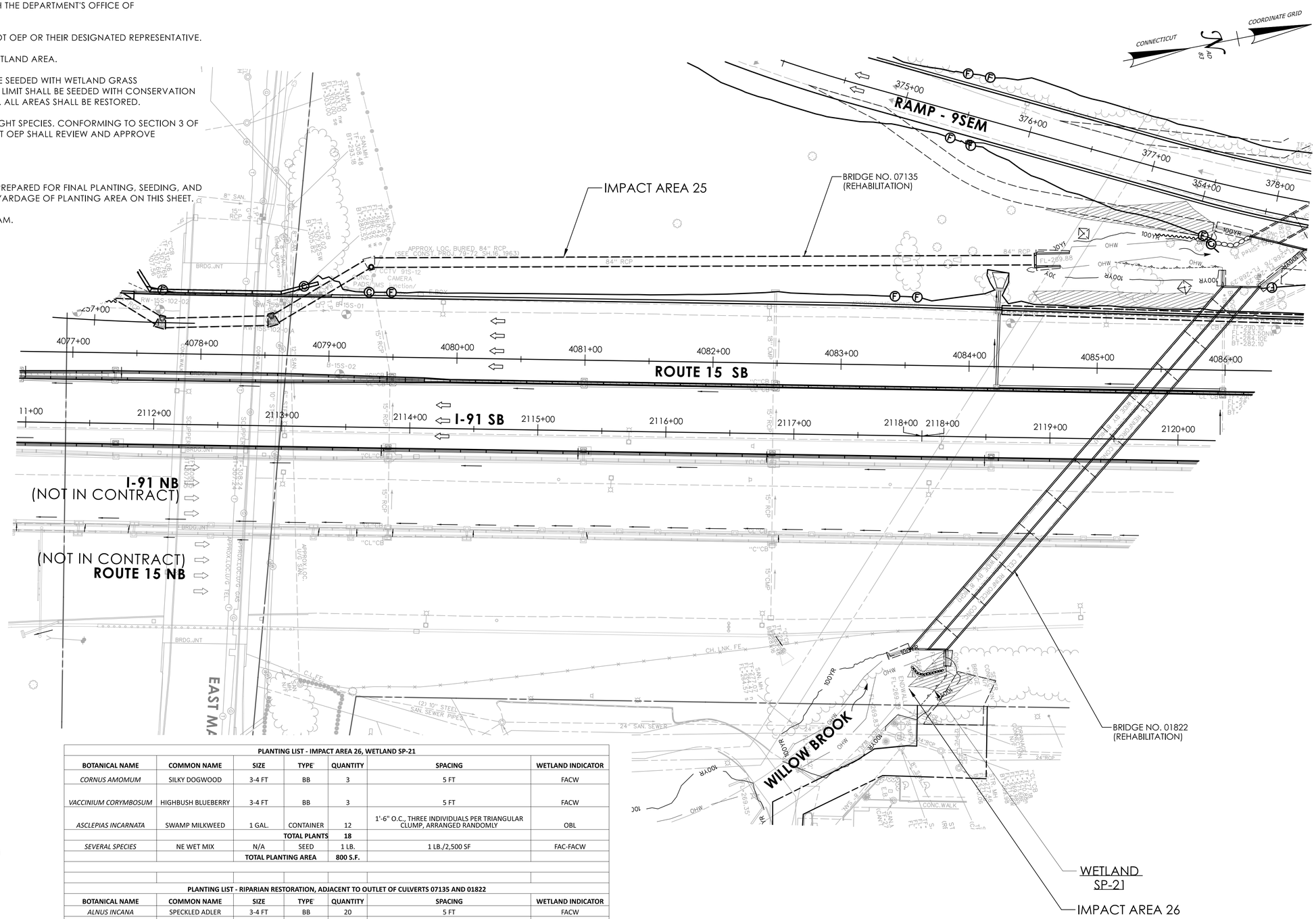

LEGEND

- FILL LINE
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- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA

PLANTING LIST - IMPACT AREA 26, WETLAND SP-21						
BOTANICAL NAME	**COMMON NAME**	**SIZE**	**TYPE***	**QUANTITY**	**SPACING**	**WETLAND INDICATOR**
CORNUS AMOMUM	SILKY DOGWOOD	3-4 FT	BB	3	5 FT	FACW
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	3-4 FT	BB	3	5 FT	FACW
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1 GAL.	CONTAINER	12	1'-6" O.C., THREE INDIVIDUALS PER TRIANGULAR CLUMP, ARRANGED RANDOMLY	OBL
			TOTAL PLANTS	**18**		
SEVERAL SPECIES	NE WET MIX	N/A	SEED	1 LB.	1 LB./2,500 SF	FAC-FACW
		TOTAL PLANTING AREA		**800 S.F.**		

PLANTING LIST - RIPARIAN RESTORATION, ADJACENT TO OUTLET OF CULVERTS 07135 AND 01822						
BOTANICAL NAME	**COMMON NAME**	**SIZE**	**TYPE***	**QUANTITY**	**SPACING**	**WETLAND INDICATOR**
ALNUS INCANA	SPECKLED ADLER	3-4 FT	BB	20	5 FT	FACW
CONUS RACEMOSA	GRAY DOGWOOD	3-4 FT	BB	20	5 FT	FAC
CORNUS AMOMUM	SILKY DOGWOOD	3-4 FT	BB	6	5 FT	FACW
			TOTAL PLANTS	**46**		
SEVERAL SPECIES	CONSERVATION MIX	N/A	SEED	1.5 LB.	1 LB./2,500 SF	FACU-FAC
SEVERAL SPECIES	NE WET MIX	N/A	SEED	0.2 LB.	1 LB./2,500 SF	FAC AND WETTER
		TOTAL PLANTING AREA		**3,335 S.F.**		

ENVIRONMENTAL PERMIT PLANS

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1	02/08/2025	J-HOOK VANE ADDED

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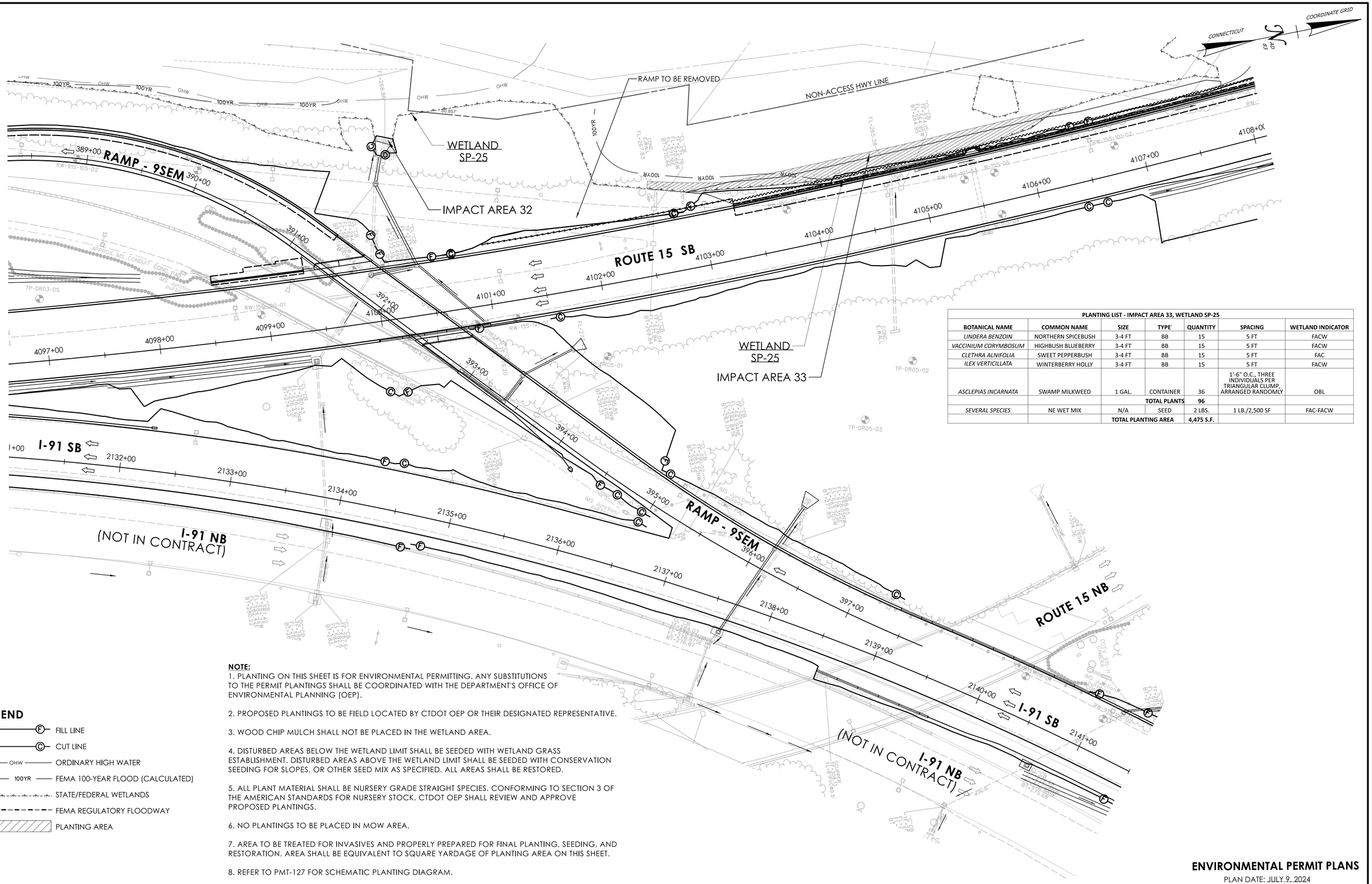

PLANTING LIST - IMPACT AREA 33, WETLAND SP-25						
BOTANICAL NAME	**COMMON NAME**	**SIZE**	**TYPE**	**QUANTITY**	**SPACING**	**WETLAND INDICATOR**
LINDERA BENZOIN	NORTHERN SPICEBUSH	3-4 FT	BB	15	5 FT	FACW
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	3-4 FT	BB	15	5 FT	FACW
CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	3-4 FT	BB	15	5 FT	FAC
ILEX VERTICILLATA	WINTERBERRY HOLLY	3-4 FT	BB	15	5 FT	FACW
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1 GAL.	CONTAINER	36	1'-6" O.C., THREE INDIVIDUALS PER TRIANGULAR CLUMP, ARRANGED RANDOMLY	OBL
		TOTAL PLANTS		**96**		
SEVERAL SPECIES	NE WET MIX	N/A	SEED	2 LBS.	1 LB./2,500 SF	FAC-FACW
		TOTAL PLANTING AREA		**4,475 S.F.**		

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6. NO PLANTINGS TO BE PLACED IN MOW AREA.

7. AREA TO BE TREATED FOR INVASIVES AND PROPERLY PREPARED FOR FINAL PLANTING, SEEDING, AND RESTORATION. AREA SHALL BE EQUIVALENT TO SQUARE YARDAGE OF PLANTING AREA ON THIS SHEET.

8. REFER TO PMT-127 FOR SCHEMATIC PLANTING DIAGRAM.

LEGEND

- (F)——(F) FILL LINE
- (C)——(C) CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

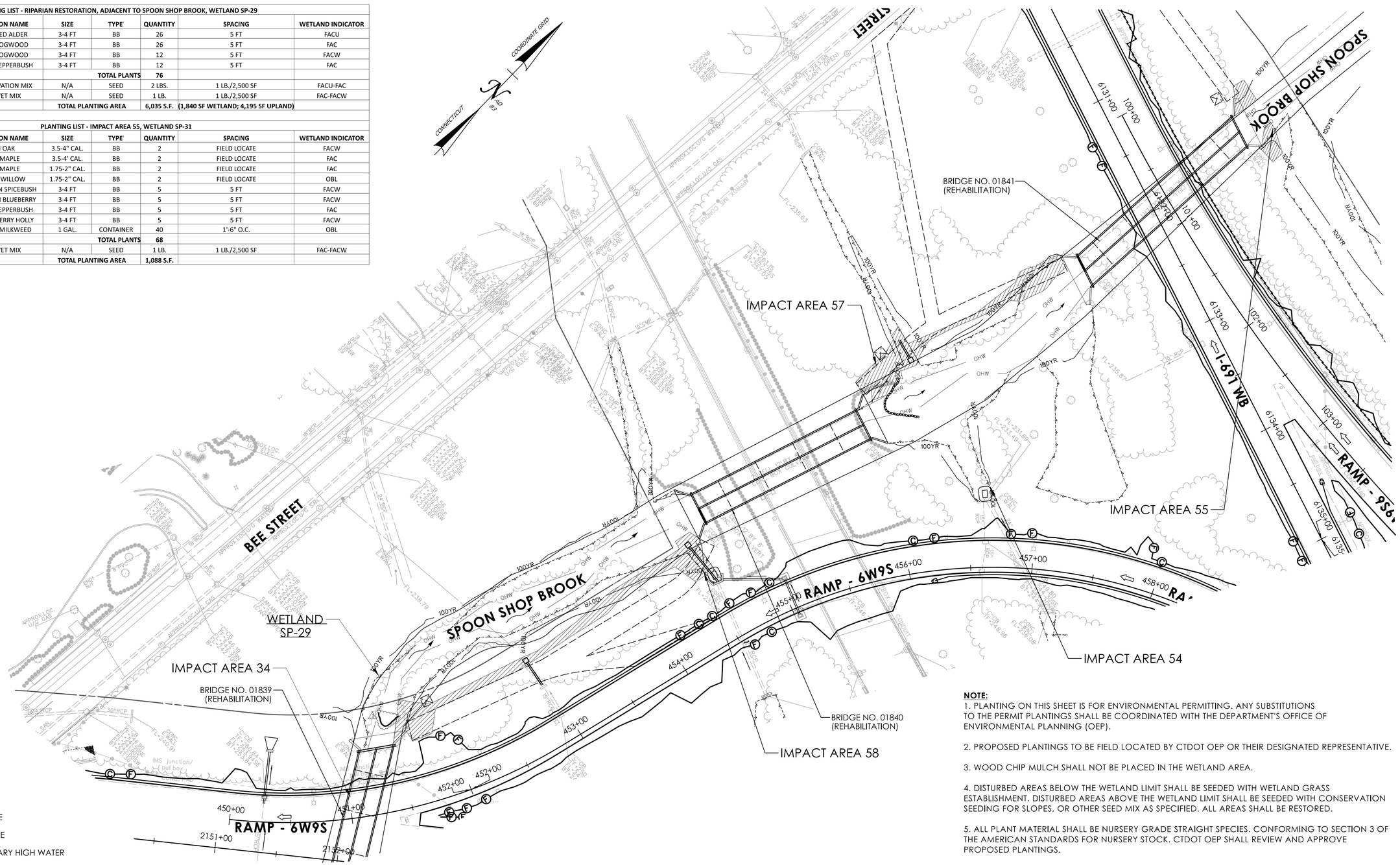
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-133
SHEET NO.

LASTED SAVED BY: NBibeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_16.dgn
PLOTTED DATE: 7/9/2024

PLANTING LIST - RIPARIAN RESTORATION, ADJACENT TO SPOON SHOP BROOK, WETLAND SP-29						
BOTANICAL NAME	**COMMON NAME**	**SIZE**	**TYPE[1]**	**QUANTITY**	**SPACING**	**WETLAND INDICATOR**
ALNUS INCANA	SPECKLED ALDER	3-4 FT	BB	26	5 FT	FACU
CORNUS RACEMOSA	GRAY DOGWOOD	3-4 FT	BB	26	5 FT	FAC
CORNUS AMOMUM	SILKY DOGWOOD	3-4 FT	BB	12	5 FT	FACW
CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	3-4 FT	BB	12	5 FT	FAC
			TOTAL PLANTS	**76**		
SEVERAL SPECIES	CONSERVATION MIX	N/A	SEED	2 LBS.	1 LB./2,500 SF	FACU-FAC
SEVERAL SPECIES	NE WET MIX	N/A	SEED	1 LB.	1 LB./2,500 SF	FAC-FACW
		TOTAL PLANTING AREA		**6,035 S.F.**	**(1,840 SF WETLAND; 4,195 SF UPLAND)**	

PLANTING LIST - IMPACT AREA 55, WETLAND SP-31						
BOTANICAL NAME	**COMMON NAME**	**SIZE**	**TYPE[1]**	**QUANTITY**	**SPACING**	**WETLAND INDICATOR**
QUERCUS PALUSTRIS	PIN OAK	3.5-4" CAL.	BB	2	FIELD LOCATE	FACW
ACER RUBRUM	RED MAPLE	3.5-4' CAL.	BB	2	FIELD LOCATE	FAC
ACER RUBRUM	RED MAPLE	1.75-2" CAL.	BB	2	FIELD LOCATE	FAC
SALIX NIGRA	BLACK WILLOW	1.75-2" CAL.	BB	2	FIELD LOCATE	OBL
LINDERA BENZOIN	NORTHERN SPICEBUSH	3-4 FT	BB	5	5 FT	FACW
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	3-4 FT	BB	5	5 FT	FACW
CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	3-4 FT	BB	5	5 FT	FAC
ILEX VERTICILLATA	WINTERBERRY HOLLY	3-4 FT	BB	5	5 FT	FACW
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1 GAL.	CONTAINER	40	1'-6" O.C.	OBL
			TOTAL PLANTS	**68**		
SEVERAL SPECIES	NE WET MIX	N/A	SEED	1 LB.	1 LB./2,500 SF	FAC-FACW
		TOTAL PLANTING AREA		**1,088 S.F.**		



LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA

NOTE:

1. PLANTING ON THIS SHEET IS FOR ENVIRONMENTAL PERMITTING. ANY SUBSTITUTIONS TO THE PERMIT PLANTINGS SHALL BE COORDINATED WITH THE DEPARTMENT'S OFFICE OF ENVIRONMENTAL PLANNING (OEP).

2. PROPOSED PLANTINGS TO BE FIELD LOCATED BY CTDOT OEP OR THEIR DESIGNATED REPRESENTATIVE.

3. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.

4. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH WETLAND GRASS ESTABLISHMENT. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE SEEDED WITH CONSERVATION SEEDING FOR SLOPES, OR OTHER SEED MIX AS SPECIFIED. ALL AREAS SHALL BE RESTORED.

5. ALL PLANT MATERIAL SHALL BE NURSERY GRADE STRAIGHT SPECIES. CONFORMING TO SECTION 3 OF THE AMERICAN STANDARDS FOR NURSERY STOCK. CTDOT OEP SHALL REVIEW AND APPROVE PROPOSED PLANTINGS.

6. NO PLANTINGS TO BE PLACED IN MOW AREA.

7. AREA TO BE TREATED FOR INVASIVES AND PROPERLY PREPARED FOR FINAL PLANTING, SEEDING, AND RESTORATION. AREA SHALL BE EQUIVALENT TO SQUARE YARDAGE OF PLANTING AREA ON THIS SHEET.

8. REFER TO PMT-127 FOR SCHEMATIC PLANTING DIAGRAM.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	ROCK WEIR ADDED

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

HORIZONTAL SCALE 1"=40' (0, 40', 80')

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-134
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_134_REV1.dgn
PLOTTED DATE: 2/8/2025

NOTE:

1. PLANTING ON THIS SHEET IS FOR ENVIRONMENTAL PERMITTING. ANY SUBSTITUTIONS TO THE PERMIT PLANTINGS SHALL BE COORDINATED WITH THE DEPARTMENT'S OFFICE OF ENVIRONMENTAL PLANNING (OEP).

2. PROPOSED PLANTINGS TO BE FIELD LOCATED BY CTDOT OEP OR THEIR DESIGNATED REPRESENTATIVE.

3. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.

4. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH WETLAND GRASS ESTABLISHMENT. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE SEEDED WITH CONSERVATION SEEDING FOR SLOPES, OR OTHER SEED MIX AS SPECIFIED. ALL AREAS SHALL BE RESTORED.

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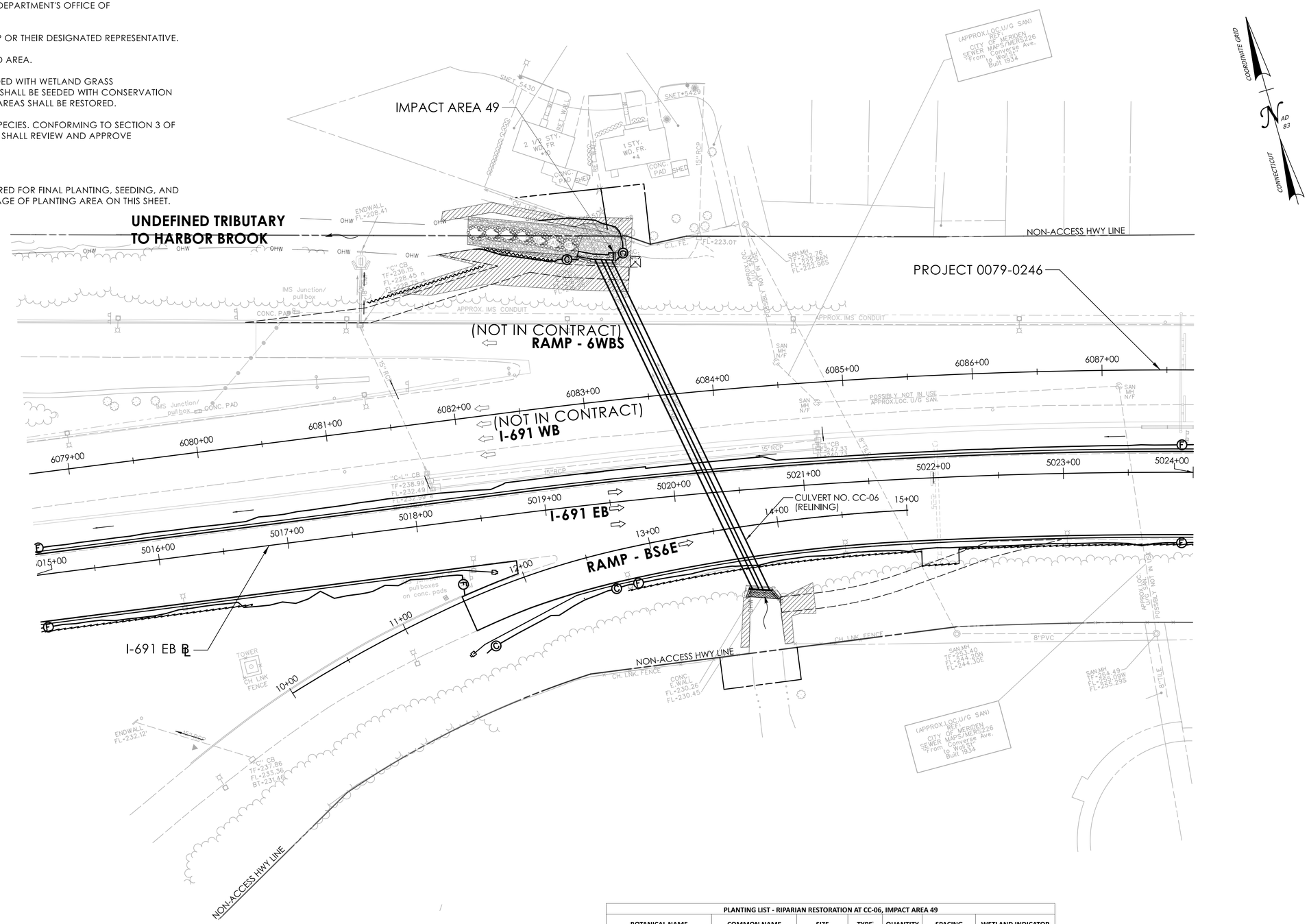
8. REFER TO PMT-127 FOR SCHEMATIC PLANTING DIAGRAM.



LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA

PLANTING LIST - RIPARIAN RESTORATION AT CC-06, IMPACT AREA 49

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	QUANTITY	SPACING	WETLAND INDICATOR
ALNUS INCANA	SPECKLED ALDER	3-4 FT	BB	36	5 FT	FACW
CORNUS RACEMOSA	AMERICAN HAZLENUT	3-4 FT	BB	36	5 FT	FAC
		TOTAL PLANTS		72		
SEVERAL SPECIES	CONSERVATION MIX	N/A	SEED	2.5 LB.	1 LB./2,500 SF	FACU-FAC
		TOTAL PLANTING AREA		5,935 S.F.		

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REVISION DESCRIPTION | DATE | REV.

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-135
SHEET NO.

LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_135.dgn
PLOTTED DATE: 7/9/2024

NOTE:

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2. PROPOSED PLANTINGS TO BE FIELD LOCATED BY CTDOT OEP OR THEIR DESIGNATED REPRESENTATIVE.

3. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.

4. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH WETLAND GRASS ESTABLISHMENT. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE SEEDED WITH CONSERVATION SEEDING FOR SLOPES, OR OTHER SEED MIX AS SPECIFIED. ALL AREAS SHALL BE RESTORED.

5. ALL PLANT MATERIAL SHALL BE NURSERY GRADE STRAIGHT SPECIES. CONFORMING TO SECTION 3 OF THE AMERICAN STANDARDS FOR NURSERY STOCK. CTDOT OEP SHALL REVIEW AND APPROVE PROPOSED PLANTINGS.

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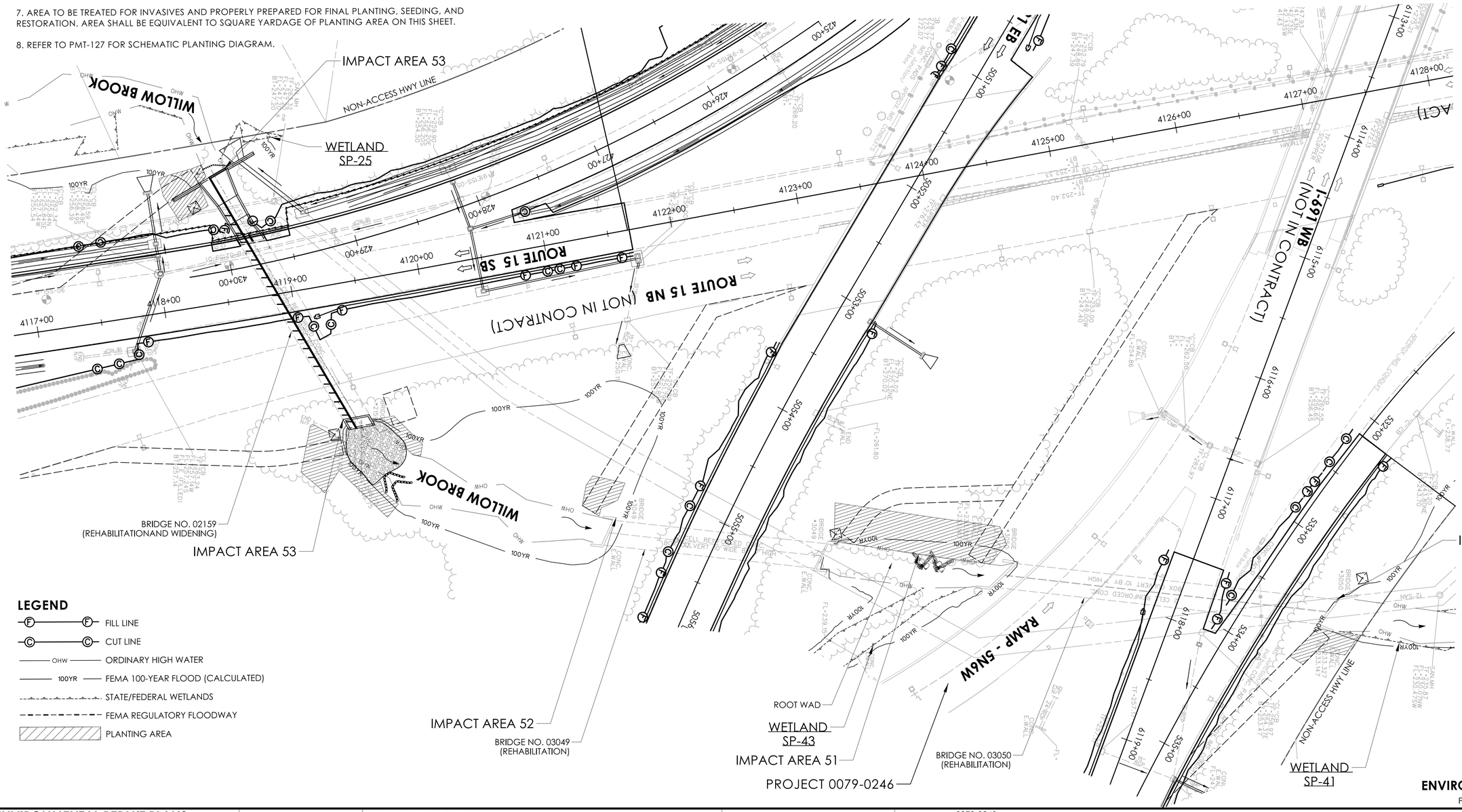
8. REFER TO PMT-127 FOR SCHEMATIC PLANTING DIAGRAM.

PLANTING LIST - RIPARIAN RESTORATION ALONG WILLOW BROOK, IMPACT AREAS 50-53

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	QUANTITY	SPACING	WETLAND INDICATOR
ACER RUBRUM	RED MAPLE	3.5-4" CAL.	BB	10	FIELD LOCATE	FAC
BETULA POPULIFOLIA	GREY BIRCH	8-10 FT	BB	10	FIELD LOCATE	FAC
POPULUS DELTOIDES	EASTERN COTTONWOOD	3-4 FT	BB	10	FIELD LOCATE	FAC
ALNUS INCANA	SPECKLED ALDER	3-4 FT	BB	52	5 FT	FACW
CORNUS RACEMOSA	GRAY DOGWOOD	3-4 FT	BB	52	5 FT	FAC
		TOTAL PLANTS		**134**		
SEVERAL SPECIES	CONSERVATION MIX	N/A	SEED	3.5 LBS.	1 LB./2,500 SF	FACU-FAC
		TOTAL PLANTING AREA		**8,375 S.F.**		



LEGEND

- FILL LINE
- CUT LINE
- ORDINARY HIGH WATER
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80' HORIZONTAL SCALE 1"=40'

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-136
SHEET NO.

LASTED SAVED BY: NBilbeau FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_136.dgn
PLOTTED DATE: 7/9/2024

NOTE:

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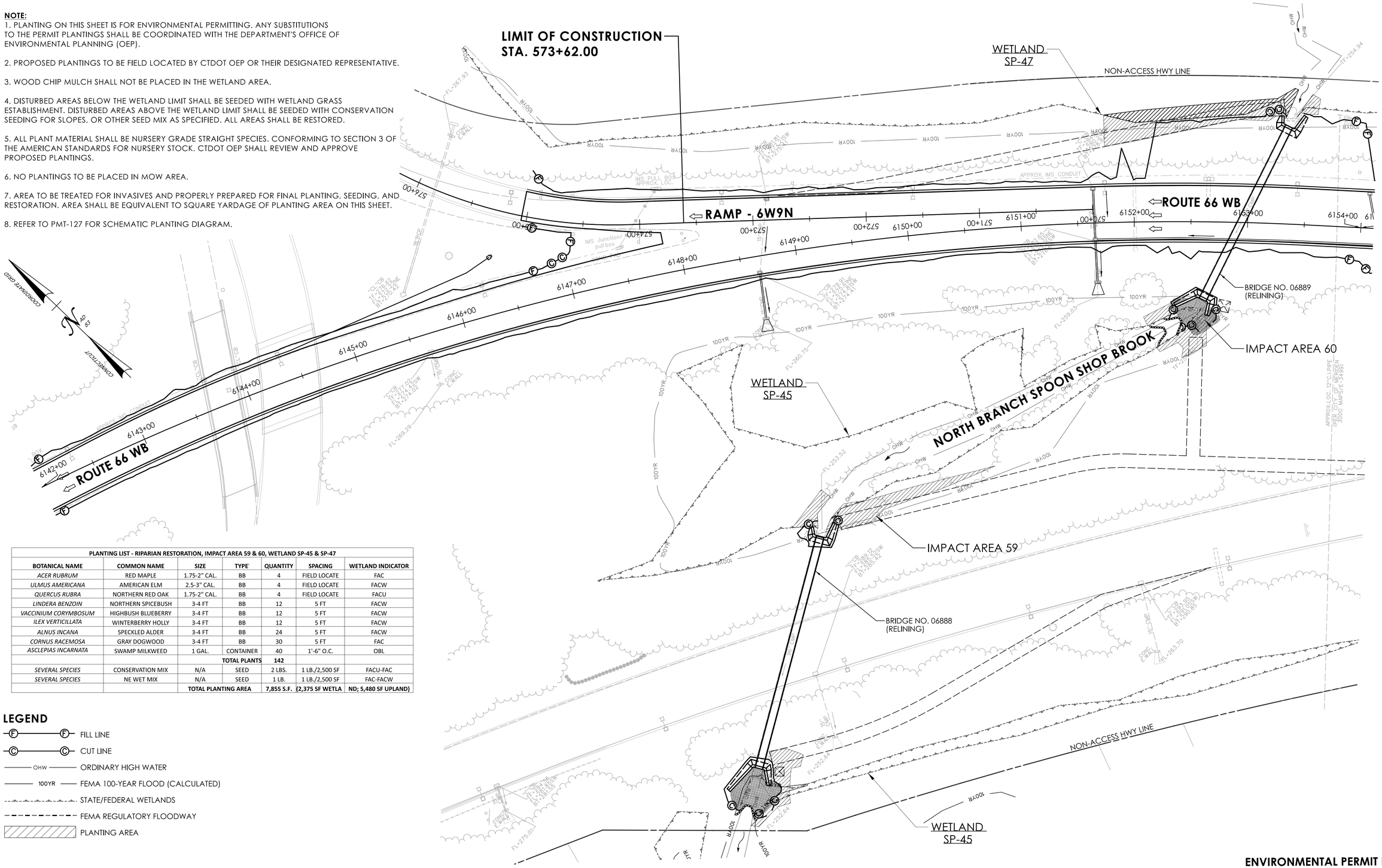
8. REFER TO PMT-127 FOR SCHEMATIC PLANTING DIAGRAM.



PLANTING LIST - RIPARIAN RESTORATION, IMPACT AREA 59 & 60, WETLAND SP-45 & SP-47						
BOTANICAL NAME	**COMMON NAME**	**SIZE**	**TYPE**	**QUANTITY**	**SPACING**	**WETLAND INDICATOR**
ACER RUBRUM	RED MAPLE	1.75-2" CAL.	BB	4	FIELD LOCATE	FAC
ULMUS AMERICANA	AMERICAN ELM	2.5-3" CAL.	BB	4	FIELD LOCATE	FACW
QUERCUS RUBRA	NORTHERN RED OAK	1.75-2" CAL.	BB	4	FIELD LOCATE	FACU
LINDERA BENZOIN	NORTHERN SPICEBUSH	3-4 FT	BB	12	5 FT	FACW
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	3-4 FT	BB	12	5 FT	FACW
ILEX VERTICILLATA	WINTERBERRY HOLLY	3-4 FT	BB	12	5 FT	FACW
ALNUS INCANA	SPECKLED ALDER	3-4 FT	BB	24	5 FT	FACW
CORNUS RACEMOSA	GRAY DOGWOOD	3-4 FT	BB	30	5 FT	FAC
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1 GAL.	CONTAINER	40	1'-6" O.C.	OBL
			TOTAL PLANTS	**142**		
SEVERAL SPECIES	CONSERVATION MIX	N/A	SEED	2 LBS.	1 LB./2,500 SF	FACU-FAC
SEVERAL SPECIES	NE WET MIX	N/A	SEED	1 LB.	1 LB./2,500 SF	FAC-FACW
		TOTAL PLANTING AREA		**7,855 S.F.**	**(2,375 SF WETLA**	**ND; 5,480 SF UPLAND)**

LEGEND

- FILL LINE
- CUT LINE
- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- STATE/FEDERAL WETLANDS
- FEMA REGULATORY FLOODWAY
- PLANTING AREA

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

REVISION DESCRIPTION | DATE | REV.

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

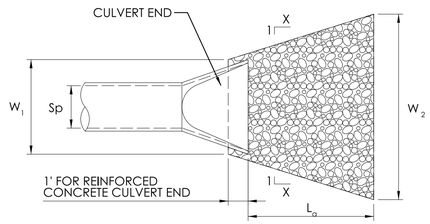
SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

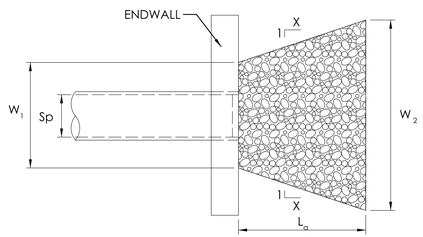
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-137
SHEET NO.

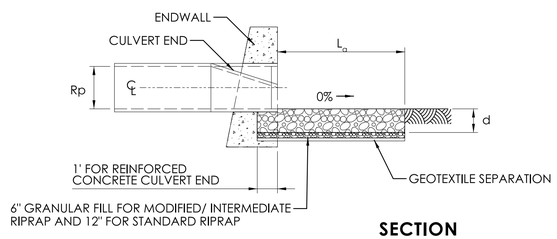
LASTED SAVED BY: NBibeau **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_137.dgn
PLOTTED DATE: 7/9/2024



CULVERT END PLAN VIEW



ENDWALL PLAN VIEW



SECTION
CULVERT END AND ENDWALL

TYPE A AND B RIPRAP APRON

LEGEND

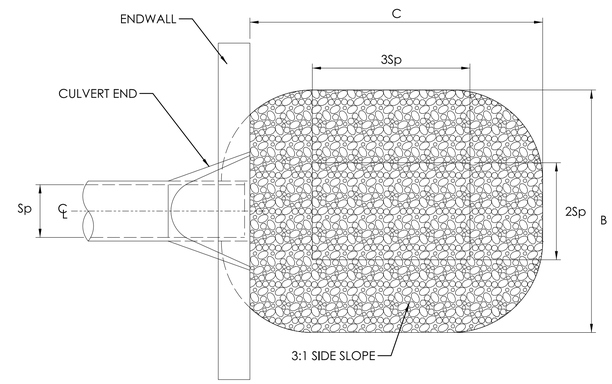
Sp = MAX. INSIDE PIPE SPAN (NON-CIRCULAR SECTIONS)
INSIDE PIPE DIAMETER (CIRCULAR SECTIONS)

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

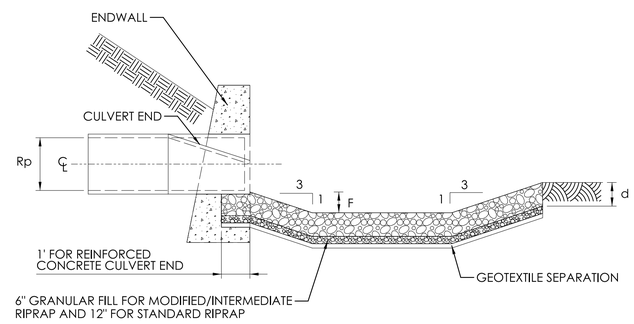
d = 12" MODIFIED RIPRAP
18" INTERMEDIATE RIPRAP
36" STANDARTD RIPRAP

	X	W1	W2
TYPE A RIPRAP APRON	3	3Sp	3Sp + 0.7La
TYPE B RIPRAP APRON	5	3Sp	3Sp + 0.4La

NOTE: SEE GENERAL SITE PLANS FOR
LOCATION SPECIFIC INFORMATION



PLAN



SECTION

LEGEND

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

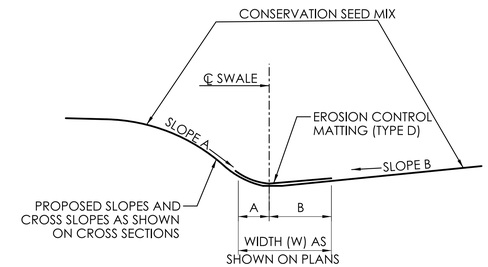
Rp = MAX. INSIDE PIPE RISE (NON-CIRCULAR SECTIONS)
INSIDE PIPE DIAMETER (CIRCULAR SECTIONS)

d = 12" MODIFIED RIPRAP
18" INTERMEDIATE RIPRAP
36" STANDARTD RIPRAP

TYPE 1: F = 0.5Rp
TYPE 2: F = Rp
C = 3Sp + 6F
B = 2Sp + 6F

NOTE: SEE GENERAL SITE PLANS FOR
LOCATION SPECIFIC INFORMATION

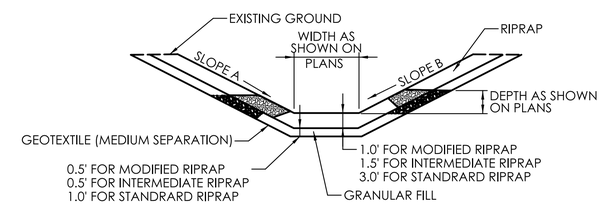
PREFORMED SCOUR HOLE



TYPICAL GRASS SWALE WITH
EROSION CONTROL MATTING (TYPE D)

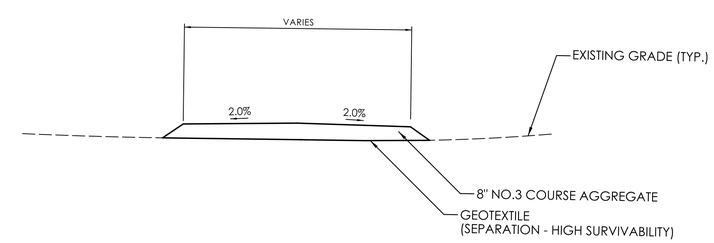
SLOPE A	SLOPE B	A	B
2:1	12:1	(2/2+12)W	(12/2+12)W
6:1	12:1	(6/6+12)W	(12/6+12)W
12:1	12:1	(12/12+12)W	(12/12+12)W
6:1	6:1	(6/6+6)W	(6/6+6)W

NOTE: SEE GENERAL SITE PLANS FOR
LOCATION SPECIFIC INFORMATION



RIPRAP DITCH

NOTE: SEE GENERAL SITE PLANS FOR
LOCATION SPECIFIC INFORMATION

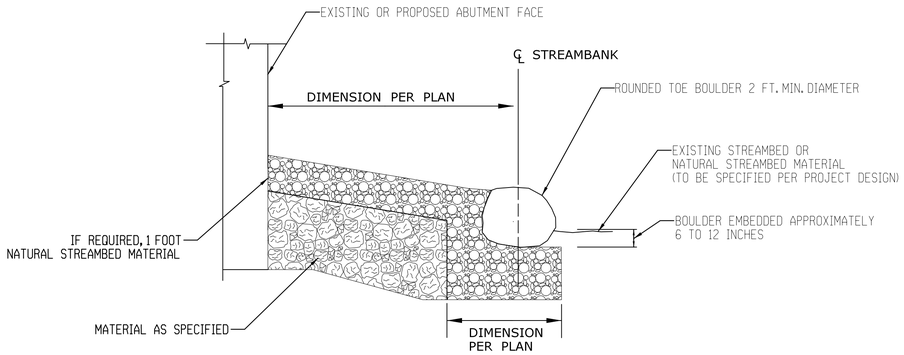


TEMPORARY ACCESS ROAD
WITHIN WETLANDS

NOTE: MATERIAL FOR TEMP. ACCESS ROAD SHALL
BE REMOVED AFTER USE; AREA TO BE RESTORED
WITH STOCKPILED WETLAND SOIL AND SEEDED OR
PLANTED PER PLANS.

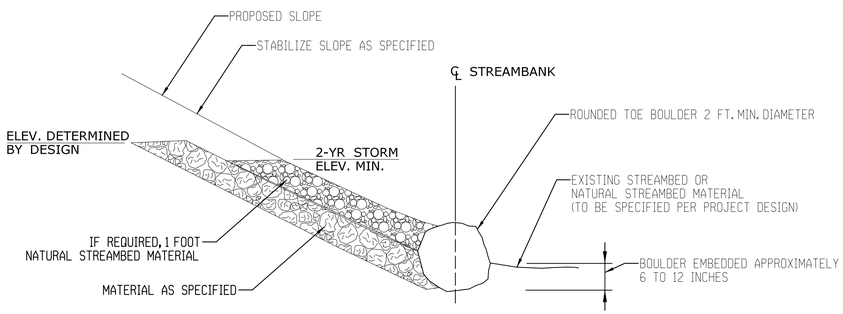
ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

NOTE: SEE GENERAL PLANS FOR LOCATION SPECIFIC INFORMATION



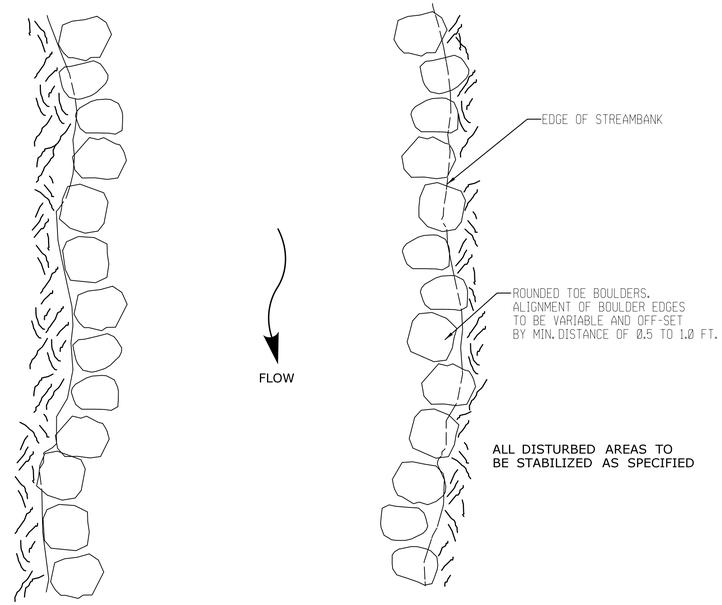
TOE BOULDERS AT STRUCTURE

N.T.S.



TOE BOULDERS FOR PROPOSED EMBANKMENT STABILIZATION

N.T.S.



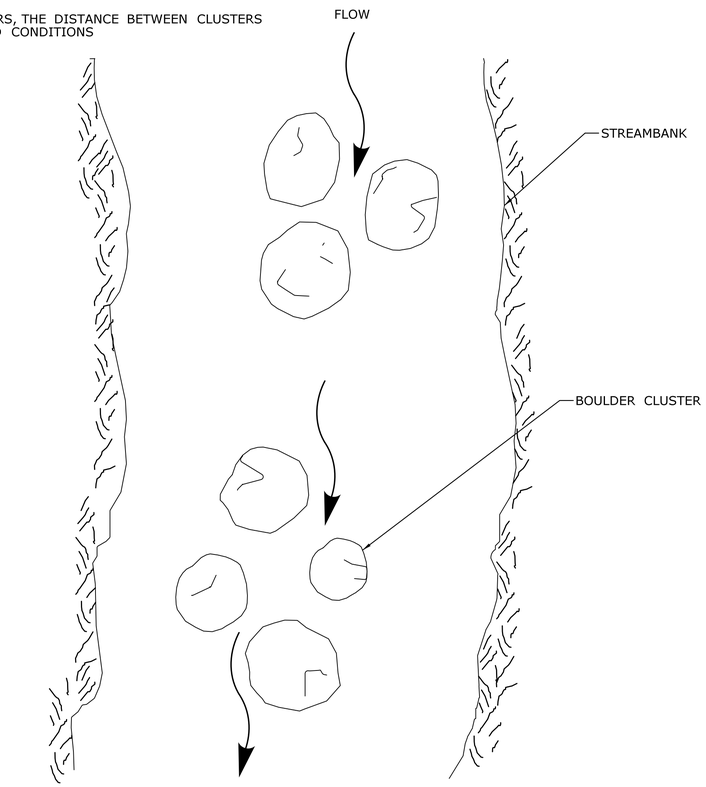
TOE BOULDERS PLAN VIEW

N.T.S.

NOTE

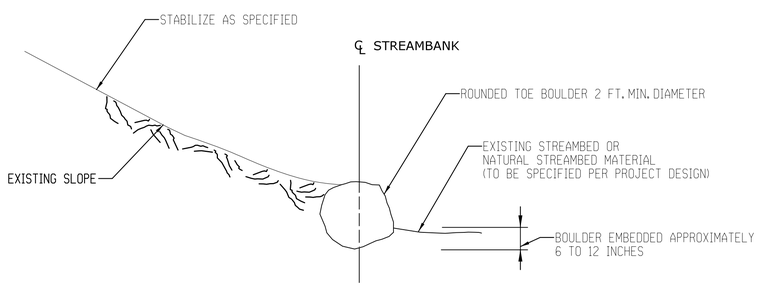
1. ROUNDED BOULDERS APPROXIMATELY 2-3 FT. MIN. DIAMETER SHALL BE PLACED IN CLUSTERS, AS DIRECTED IN THE FIELD BY THE ENGINEER OR THEIR AUTHORIZED DELEGATE. SEE SPECIAL PROVISION "PLACEMENT OF CHANNEL BOULDER"

2. FOR MULTIPLE CLUSTERS, THE DISTANCE BETWEEN CLUSTERS WILL BE BASED ON FIELD CONDITIONS



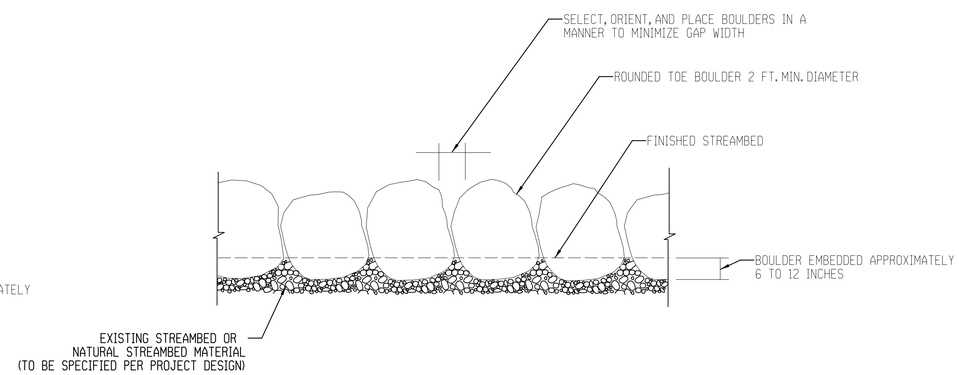
PLACEMENT OF CHANNEL BOULDERS PLAN VIEW

N.T.S.



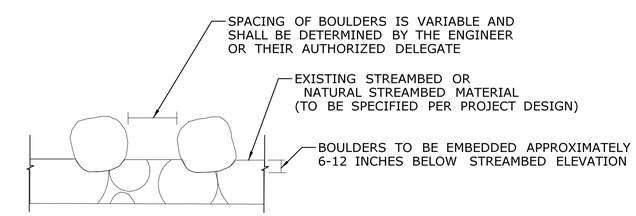
TOE BOULDERS AT EXISTING EMBANKMENT

N.T.S.



TOE BOULDERS PROFILE VIEW

N.T.S.



PLACEMENT OF CHANNEL BOULDERS SECTION VIEW

N.T.S.

NOTE

PLACEMENT OF THE TOE BOULDERS SHALL BE DIRECTED IN THE FIELD BY THE ENGINEER OR THEIR AUTHORIZED DELEGATE. SEE SPECIAL PROVISION "PLACEMENT OF TOE BOULDERS"

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 40' 80'
HORIZONTAL SCALE 1"=40'

SIGNATURE/ BLOCK:

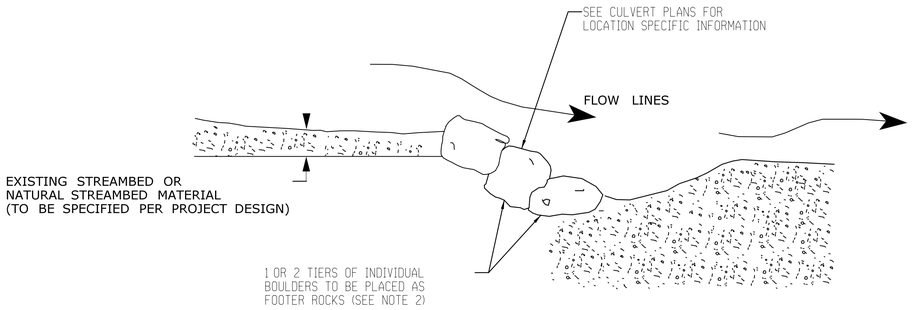
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: MISCELLANEOUS DETAILS

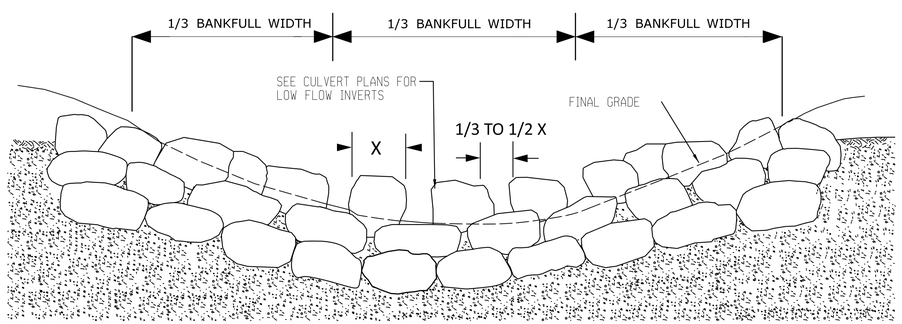
DRAWING NO. PMT-139
SHEET NO.

LASTED SAVED BY: Efchitas FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_03.dgn
PLOTTED DATE: 7/9/2024



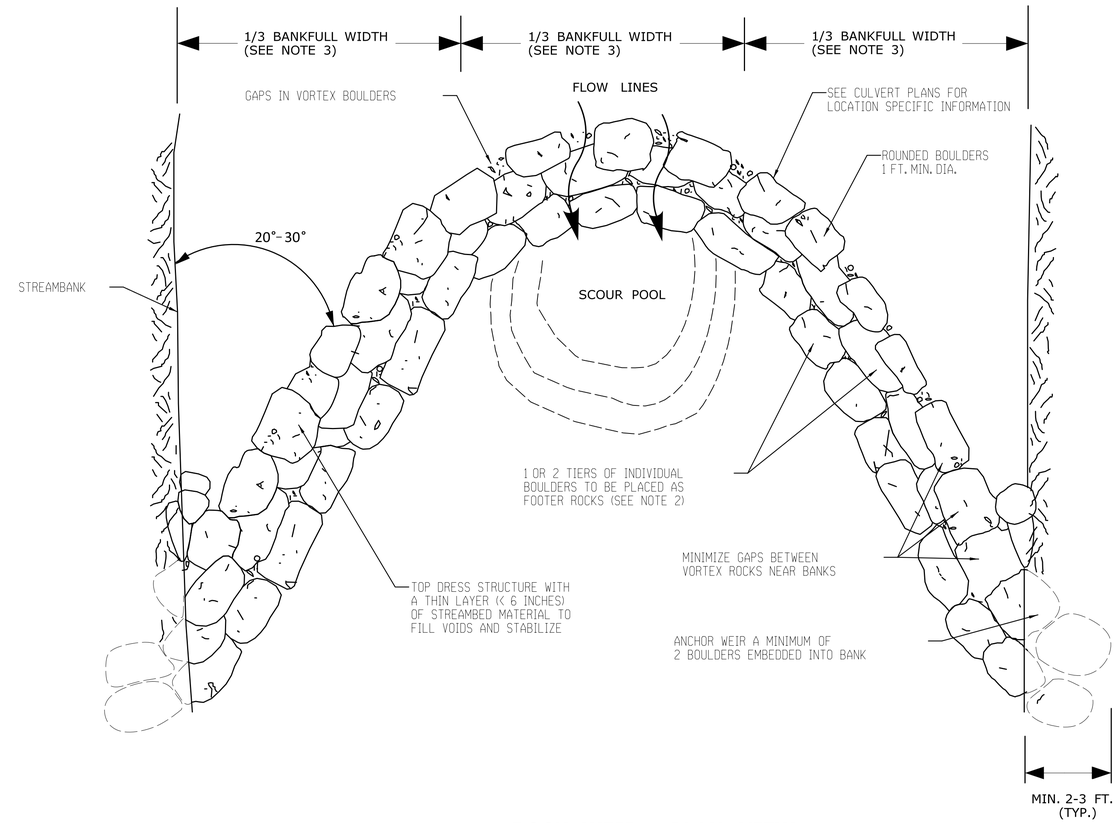
ROCK WEIR - PROFILE VIEW

N.T.S.



ROCK WEIR - SECTION VIEW (UPSTREAM)

N.T.S.



ROCK WEIR - PLAN VIEW

N.T.S.

NOTE:

1. PLACEMENT OF THE ROCK WEIR SHALL BE DIRECTED IN THE FIELD BY THE ENGINEER OR THEIR AUTHORIZED DELEGATE. SEE SPECIAL PROVISION "ROCK WEIR".

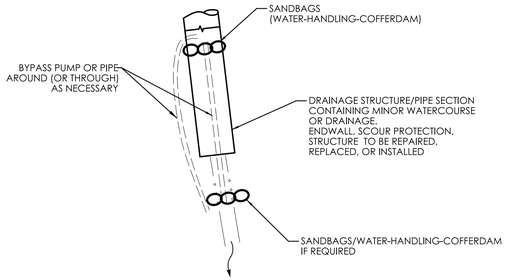
2. FOOTER ROCKS SHALL SERVE AS THE FOUNDATION FOR THE TOP LAYER OF THE WEIR. FOOTER ROCKS SHALL HAVE REASONABLE FLAT TOPS AND BOTTOMS TO ENABLE BETTER PLACEMENT OF THE TOP LAYER OF THE WEIR.

3. BANKFULL WIDTH DISTANCE IS MEASURED AT THE LOCATION OF THE PROPOSED WEIR.

4. CONTACT MICHAEL STEEVES OF CTDEEP FISHERIES AT MICHAEL.E.STEEVES@CT.GOV TEN DAYS BEFORE THE INSTALLATION OF ROCK WEIRS.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JULY 9, 2024



WATER HANDLING FOR MINOR

WATERCOURSE/DRAINAGE WORK

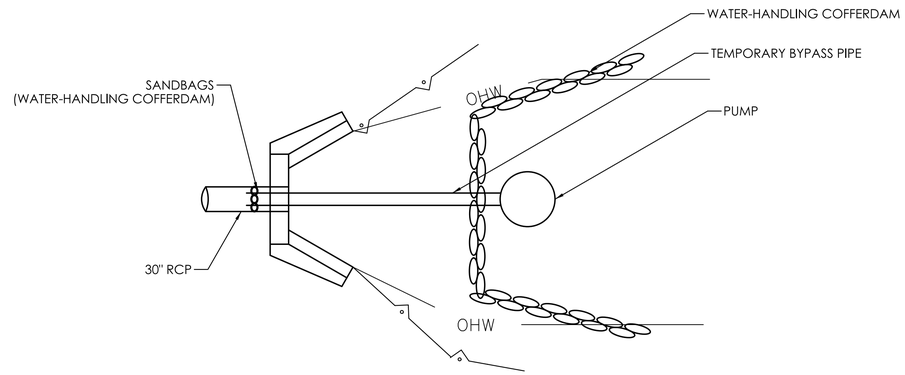
(NOT TO SCALE)

SCHEMATIC COULD APPLY TO WORK AT
INLET, OUTLET, OR WITHIN THE STRUCTURE

NOTE: THE PROPOSED WORK AND WATER HANDLING MEASURES SHALL NOT IMPACT ADDITIONAL REGULATED AREAS BEYOND THOSE DEPICTED AS TEMPORARY OR PERMANENT IMPACTS WITHIN THESE PERMIT PLANS.

LOCATION TABLE

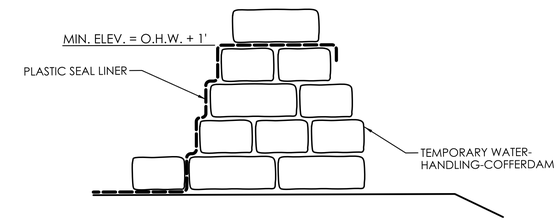
STA.	OFF.	PIPE SIZE
4019+75	116' RT	30"
4019+75	71' LT	30"
4060+05	53' LT	24"
328+84	52' RT	36"
328+74	50' LT	36"
381+75	71' LT	36"
2198+06	170' RT	30"



WATER-HANDLING FOR INLETS IMPACTING WATERCOURSES

LOCATION TABLE

STA.	OFF.	PIPE SIZE	WATERCOURSE
231+16	29' LT	30"	WILLOW BROOK



TEMPORARY WATER-HANDLING-COFFERDAM TYPICAL SECTION

LOCATION TABLE

STA.	OFF.	PIPE SIZE	OHW ELEV.
231+16	29' LT	30"	276.5
2198+06	120' RT	30"	319.0
14+60	9' LT	N/A	284.25
15+65	22' LT	N/A	275.75
16+60	2' LT	N/A	273.25

SUGGESTED CONSTRUCTION SEQUENCE:

1. INSTALL EROSION AND SEDIMENTATION CONTROL SYSTEM.
2. INSTALL WATER-HANDLING-COFFERDAM, BYPASS PIPE, AND DEWATERING BASIN AS NECESSARY.
3. CLEAN EXISTING CULVERT.
4. PRESSURE GROUT THE VOIDED AREAS BEHIND THE EXISTING PIPE WHERE NECESSARY.
5. TEMPORARILY REMOVE THE BYPASS PIPE. LINE THE EXISTING PIPE WITH A CURED IN PLACE LINER.
6. REINSTALL THE BYPASS PIPE.
7. CONSTRUCT COFFERDAM AND DEWATERING AT BOTH INLET AND OUTLET WHERE NECESSARY.
8. REMOVE AND REPLACE THE INLET AND OUTLET HEADWALLS AND WINGWALLS WHERE NECESSARY.
9. REMOVE COFFERDAM AND DEWATERING AT BOTH INLET AND OUTLET.
10. BACKFILL AND GRADE AROUND NEW HEADWALLS.
11. INSTALL PREFORMED SCOUR HOLE, ROCK WEIR, RIPRAP, AND NATURAL STREAMBED MATERIAL TO BRING THE STREAMBED UP TO THE NEW INVERT ELEVATION WHERE NECESSARY.
12. REMOVE TEMPORARY WATER-HANDLING-COFFERDAM AND BYPASS PIPES. RESTORE FLOWS THROUGH THE CULVERT.
13. RESTORE AREAS WITH CONSERVATION SEED MIX AND INSTALL PLANTINGS WHERE NECESSARY.
14. REMOVE EROSION CONTROL UPON PERMANENT STABILIZATION.

WATER HANDLING NOTES:

1. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.
2. TEMPORARY WATER-HANDLING-COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS.

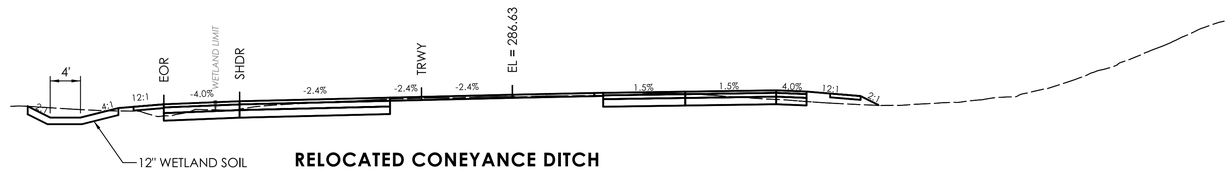
   ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENT'S 'HANDLING WATER TYPICAL SCHEMATIC' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.
3. WATER HANDLING MEASURES SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS.
4. ANY STORM DRAINAGE DISCHARGING INTO A CONFINED WORK AREA FROM EXISTING OR PROPOSED STORM DRAINAGE PIPES SHALL BE DIVERTED OR PUMPED OUTSIDE THE CONFINED AREAS. PUMPS/PIPES SHALL BE SIZED BY THE CONTRACTOR TO HANDLE THE EXPECTED FLOWS AND BE DISCHARGED TO A STABLE LOCATION. THE CONTRACTOR SHALL SUBMIT THE MEANS AND METHODS OF HANDLING STORM DRAINAGE TO THE ENGINEER FOR APPROVAL AND IS INCLUDED AS PART OF WATER HANDLING.
5. IF WATER IS PRESENT DURING CONSTRUCTION OF THE RIPRAP SPLASH PAD OR PREFORMED SCOUR HOLE, THE WATER HANDLING COFFERDAM SHOULD BE INSTALLED TO A MINIMUM ELEVATION OF THE ORDINARY HIGH WATER ELEVATION PLUS ONE FOOT.

SEDIMENT CONTROL SYSTEM NOTES:

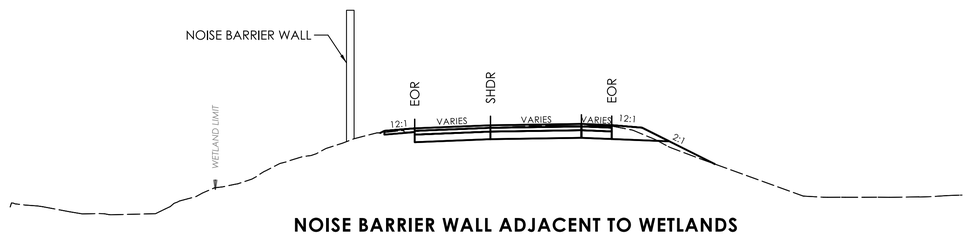
1. THE CONTRACTOR SHALL DEVELOP EROSION AND SEDIMENTATION CONTROL PLANS WHICH DEPICT THE LOCATION OF ALL SEDIMENT CONTROL SYSTEMS (SCS) - SINGLE AND DOUBLE ROW. THESE PLANS SHALL BE SUBMITTED TO THE DEPARTMENT FOR REVIEW AND APPROVAL.
2. A DOUBLE ROW OF SEDIMENT CONTROL BARRIER SHALL BE UTILIZED BETWEEN ANY DISTURBED AREA AND DOWNGRADIENT WETLAND OR WATERCOURSE WITHIN 50 FEET, UNLESS THERE WOULD BE AN ADVERSE IMPACT TO ADJACENT WETLANDS/WATERCOURSES DUE TO INSTALLATION OF A DOUBLE ROW (I.E. WOULD RESULT IN LARGER WETLAND/ WATERCOURSE IMPACT.)
3. THE CONTRACTOR SHOULD ALSO CONSIDER LOCATIONS WHERE ADDITIONAL EROSION CONTROL BARRIERS (DOUBLE ROW OF SCS OR ACCEPTED EQUIVALENT) MAY BE NECESSARY WITHIN THE PROJECT AREA. NEED SHALL BE BASED ON THE CONTRIBUTING DISTURBED AREA, DRAINAGE AREA, SLOPES GREATER THAN 8%, LENGTH OF SLOPE, AND FLOW CONDITIONS TO MAINTAIN SHEET FLOW. THE DEPARTMENT WILL REVIEW THE CONTRACTOR'S PROPOSED LOCATION(S) FOR DOUBLE ROW OF SCS. IF DETERMINED NECESSARY, THE ENGINEER WILL DIRECT THE CONTRACTOR TO INSTALL AND MAINTAIN ADDITIONAL ROWS OF EROSION CONTROL BARRIER.

ENVIRONMENTAL PERMIT PLANS

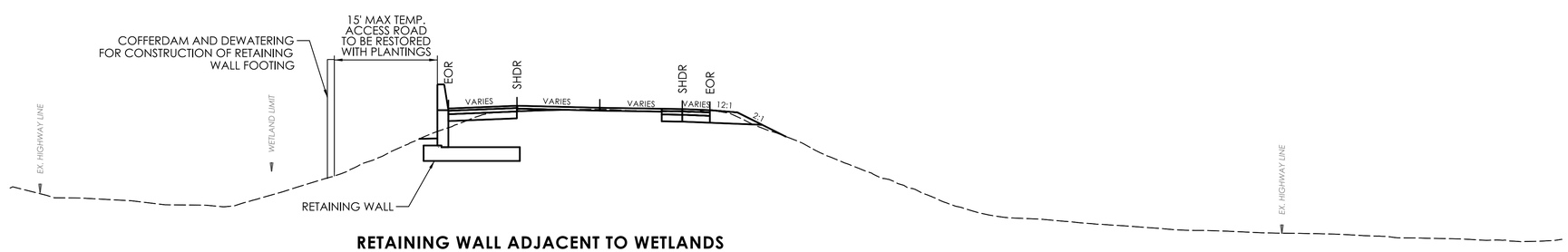
PLAN DATE: JULY 9, 2024



RELOCATED CONEYANCE DITCH
ROUTE 15 SB
4045+00 TO 4051+00



NOISE BARRIER WALL ADJACENT TO WETLANDS



RETAINING WALL ADJACENT TO WETLANDS

NOTE:
1. TEMPORARY EARTH RETAINING SYSTEMS AND SHEETING SHALL BE REMOVED AT THE COMMENCEMENT OF CONSTRUCTION.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: EFC CHECKED BY: PMB

0 10' 20'
HORIZONTAL SCALE
1"=10'

SIGNATURE/ BLOCK:
GM2 ASSOCIATES, INC.
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

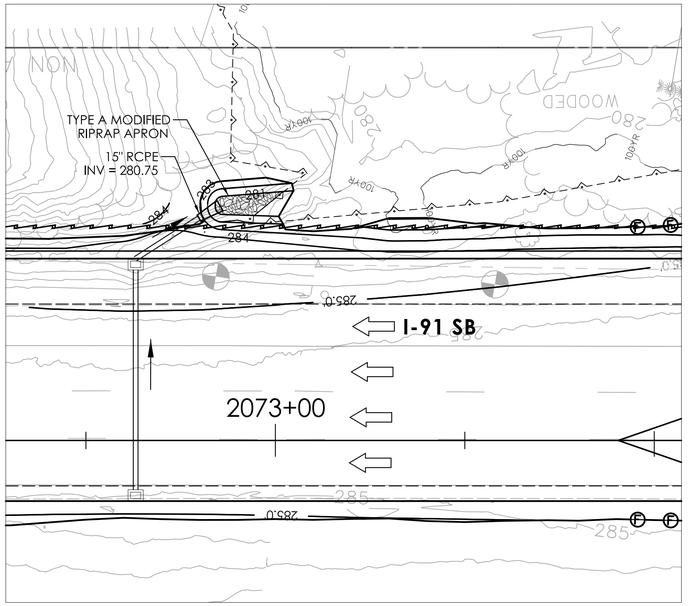
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: MISCELLANEOUS DETAILS

DRAWING NO. PMT-142
SHEET NO.

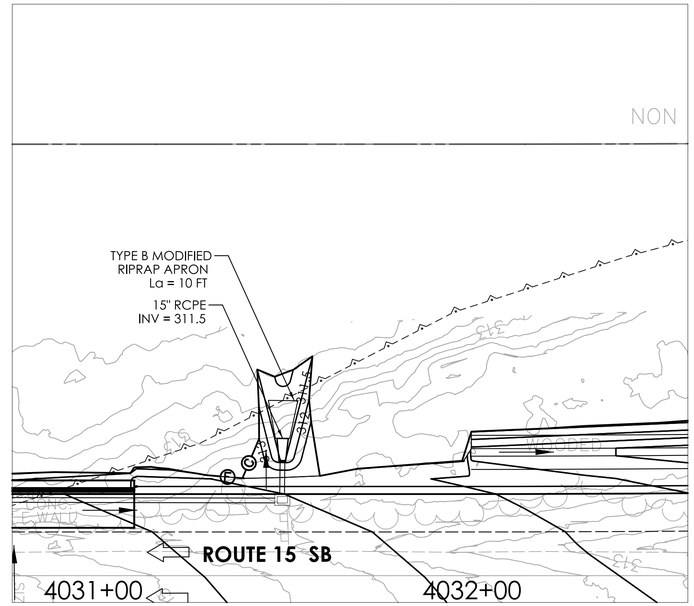
LASTED SAVED BY: Efchilas **FILE NAME:** c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_03.dgn
PLOTTED DATE: 7/9/2024

IMPACT AREA 7 (SEE PMT-08, PMT-31)



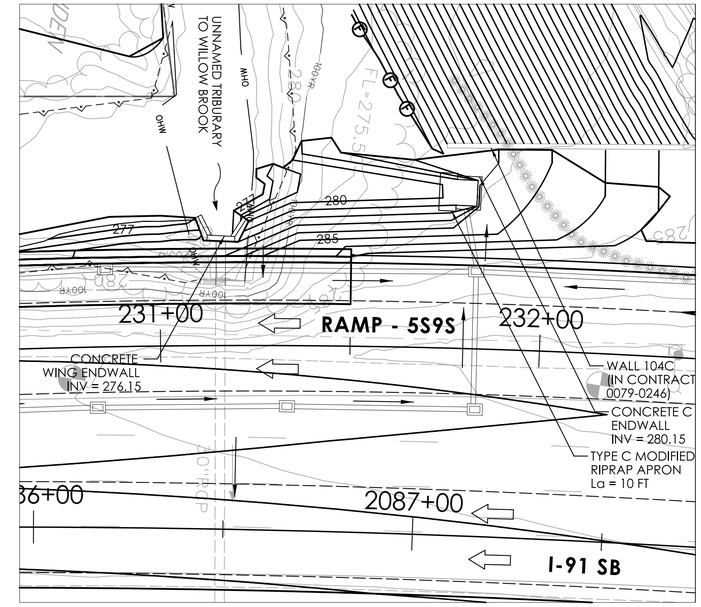
L-SHAPED CONCRETE ENDWALL 240-224
STA. 2072+84, 62' LT

IMPACT AREA 14 (SEE PMT-11, PMT-34)



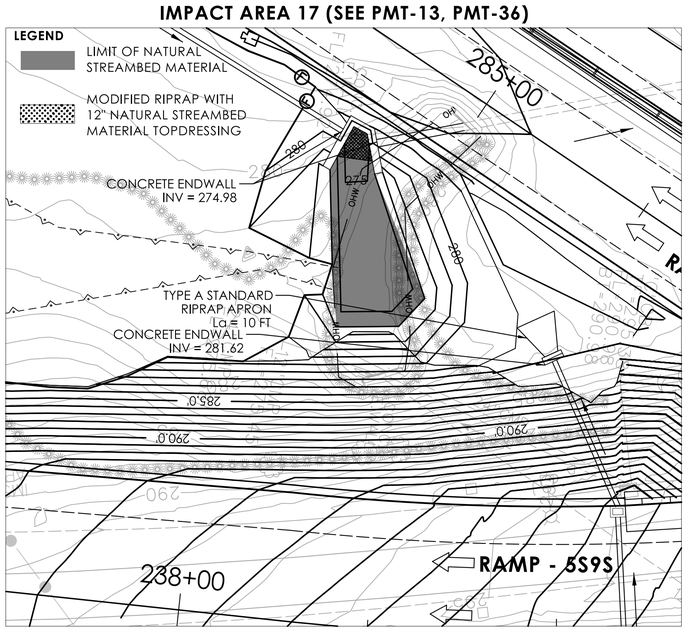
15" CONCRETE PIPE END 240-207A
STA. 4031+50, 43' LT

IMPACT AREA 9 (SEE PMT-09, PMT-32)



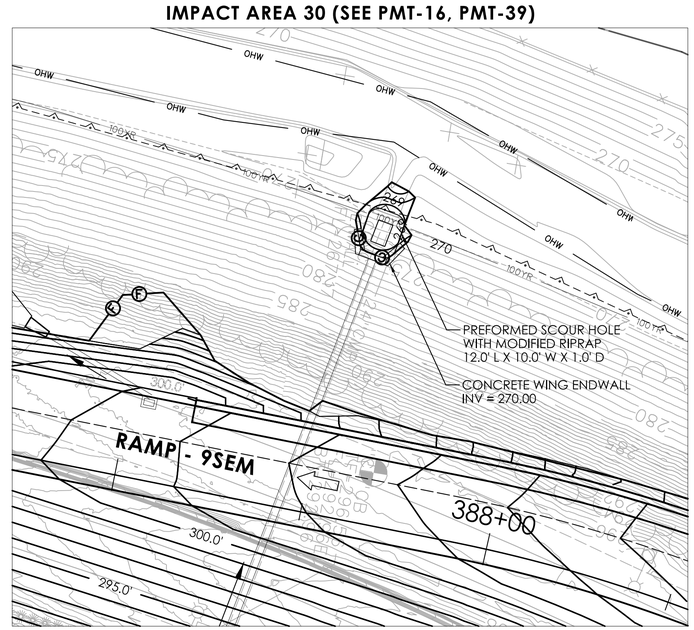
C-SHAPED CONCRETE ENDWALL 240-222A
STA. 231+84, 39' LT

IMPACT AREA 17 (SEE PMT-13, PMT-36)



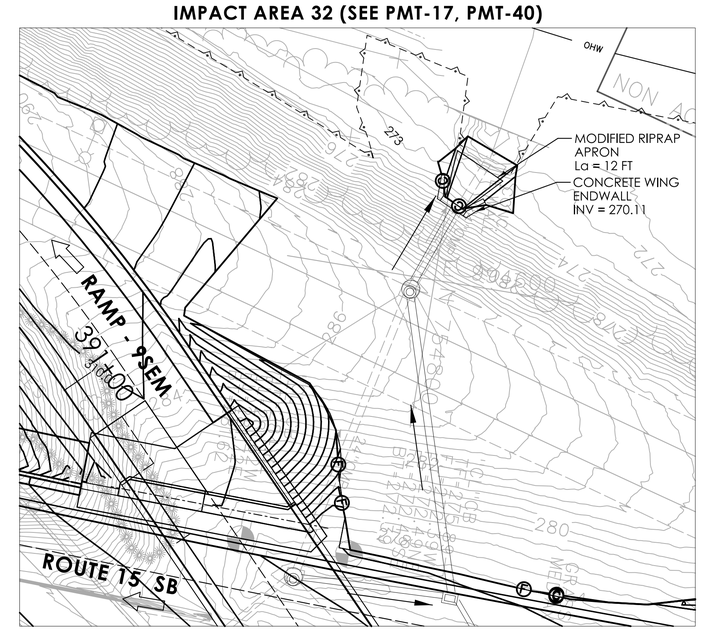
SPECIAL CONCRETE ENDWALL 240-235B
STA. 284+81, 27' RT

IMPACT AREA 30 (SEE PMT-16, PMT-39)



WING TYPE CONCRETE ENDWALL 240-250A
STA. 387+56, 70' LT

IMPACT AREA 32 (SEE PMT-17, PMT-40)



WING TYPE CONCRETE ENDWAL 240-252A
STA. 4100+20, 147' LT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

REV.	DATE	REVISION DESCRIPTION

ENVIRONMENTAL PERMIT PLANS

DESIGNER/DRAFTER: NAB CHECKED BY: PMB

HORIZONTAL SCALE 1" = 20' (0, 20', 40')

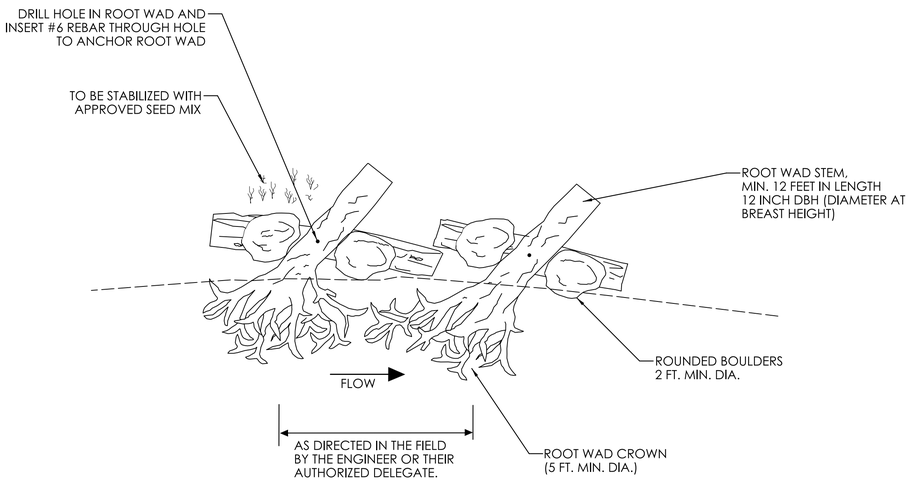
SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

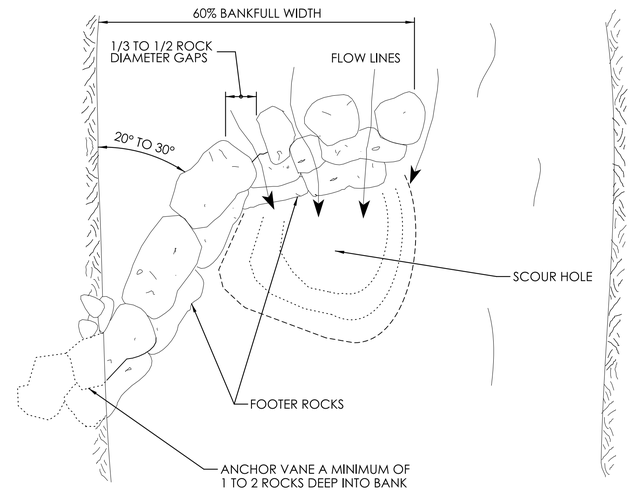
PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND CITY OF MIDDLETOWN
DRAWING TITLE: MISCELLANEOUS DETAILS

DRAWING NO. PMT-143
SHEET NO.

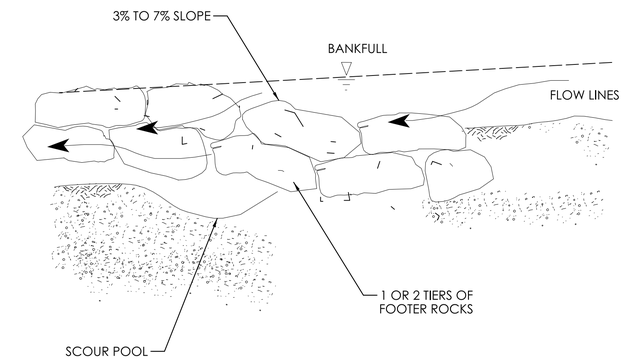
LASTED SAVED BY: NBibeau FILE NAME: c:\pw_working\connecticut\parsons_epw27916\dms03432\HW_CP_0079_0240_PMT_143.dgn
PLOTTED DATE: 7/9/2024



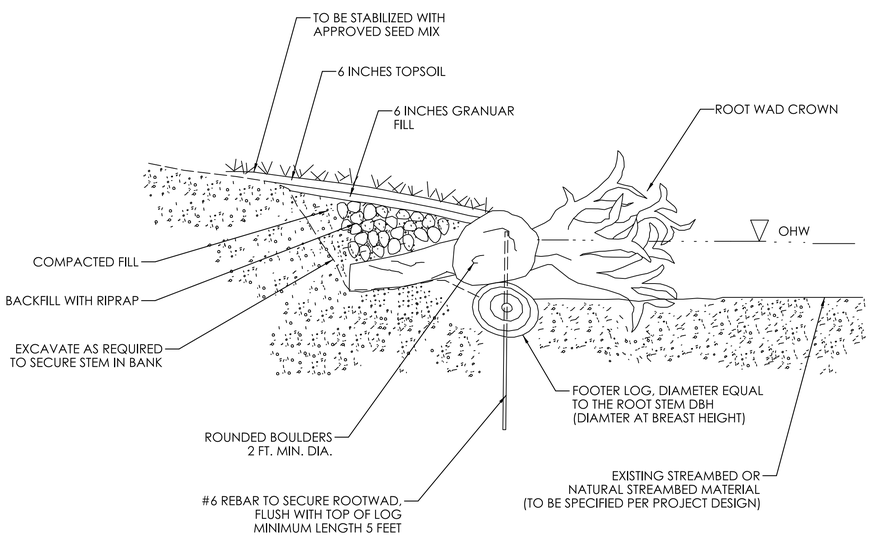
ROOT WAD - PLAN VIEW
N.T.S.



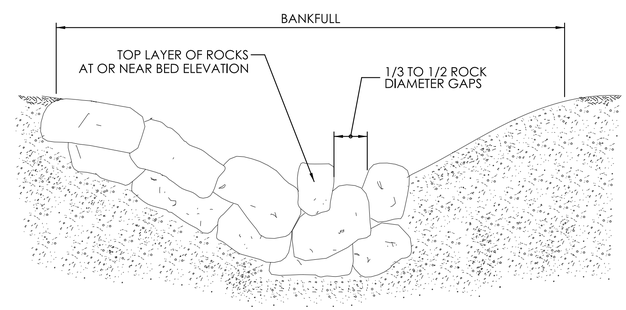
J-HOOK VANE - PLAN VIEW
N.T.S.



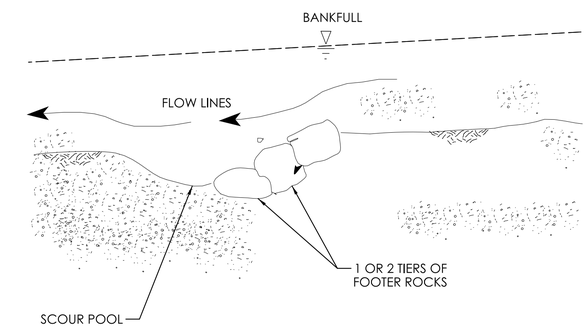
VANE ARM - PROFILE VIEW
N.T.S.



ROOT WAD - SECTION VIEW
N.T.S.



J-HOOK VANE - SECTION VIEW
N.T.S.



J-HOOK - PROFILE VIEW
N.T.S.

NOTE:
ANDREW MIANO OF DEEP FISHERIES MUST BE CONTACTED
TEN DAYS PRIOR TO THE PLACEMENT OF THE ROOTWADS
AT ANDREW.J.MIANO@CT.GOV
SEE SPECIAL PROVISIONS "ROOT WADS"

NOTE:
ANDREW MIANO OF DEEP FISHERIES MUST BE CONTACTED
TEN DAYS PRIOR TO THE PLACEMENT OF THE J-HOOK VANE
AT ANDREW.J.MIANO@CT.GOV
SEE SPECIAL PROVISIONS "J-HOOK VANE"

REV.	DATE	REVISION DESCRIPTION
1	02/08/2025	ADDED A NOTE

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JULY 9, 2024

ENVIRONMENTAL PERMIT PLANS
DESIGNER/DRAFTER: EFC CHECKED BY: PMB

NOT TO SCALE

SIGNATURE/BLOCK: GM2 ASSOCIATES, INC. 115 GLASTONBURY BLVD. GLASTONBURY, CT 06033

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0079-0240
PROJECT DESCRIPTION: I-91/I-691/ROUTE 15 SOUTHBOUND IMPROVEMENTS
TOWN(S): CITY OF MERIDEN AND TOWN OF MIDDLETOWN
DRAWING TITLE: MISCELLANEOUS DETAILS

DRAWING NO. PMT-144
SHEET NO.

LASTED SAVED BY: Efchilas FILE NAME: c:\pw_working\connecticut\parsons_epw23653\dms03432\HW_CP_0079_0240_PMT_03.dgn
PLOTTED DATE: 2/8/2025