# TABLE OF CONTENTS OF SPECIAL PROVISIONS

Note: This Table of Contents has been prepared for the convenience of those using this contract with the sole express purpose of locating quickly the information contained herein; and no claims shall arise due to omissions, additions, deletions, etc., as this Table of Contents shall not be considered part of the contract.

Table of Contents

CONTRACT TIME AND LIQUIDATED DAMAGES ..... 3
NOTICE TO CONTRACTOR – CONSTRUCTION SIGNS ..... 6
NOTICE TO CONTRACTOR – GLOBAL POSITIONING SYSTEM (GPS) ..... 7
COORDINATES FOR SIGNS ..... 7
NOTICE TO CONTRACTOR – HAZARDOUS MATERIALS ..... 8
INVESTIGATIONS ..... 8
NOTICE TO CONTRACTOR – LIMITS FOR VIBRATIONS TO ..... 10
ADJACENT UTILITIES ..... 10
NOTICE TO CONTRACTOR – MANAGEMENT OF REUSABLE AND ..... 11
SURPLUS SOIL ..... 11
NOTICE TO CONTRACTOR - CONTRACT DURATION ..... 13
NOTICE TO CONTRACTOR – PROTECTION OF EXISTING UTILITIES ..... 14
NOTICE TO CONTRACTOR - CDMS SUBMITTALS ..... 16
NOTICE TO CONTRACTOR – MANDATED USE OF AASHTOWARE ..... 17
PROJECT CONSTRUCTION MANAGEMENT SOFTWARE (CONSTRUCTION) ..... 17
NOTICE TO CONTRACTOR - ELECTRONIC ENGINEERING DATA (EED) ..... 18
NOTICE TO CONTRACTOR -- MEMBRANE WATERPROOFING ..... 19
(COLD LIQUID ELASTOMERIC) ..... 19
SECTION 1.05 - CONTROL OF THE WORK ..... 20
SECTION 1.06 CONTROL OF MATERIALS ..... 22
SECTION 1.07 – LEGAL RELATIONS AND RESPONSIBILITIES ..... 24
SECTION 1.08 - PROSECUTION AND PROGRESS ..... 25
SECTION 1.10–ENVIRONMENTAL COMPLIANCE ..... 28
SECTION 12.00 – GENERAL CLAUSES FOR HIGHWAY SIGNING ..... 30
SMALL CONTRACTOR AND SMALL CONTRACTOR MINORITY ..... 32
BUSINESS ENTERPRISES ..... 32
ITEM # 0101000A - ENVIRONMENTAL HEALTH AND SAFETY ..... 39
ITEM #0202216A – EXCAVATION AND REUSE OF EXISTING ..... 47
CHANNEL BOTTOM MATERIAL ..... 47
ITEM #0202217A – SUPPLEMENTAL STREAMBED CHANNEL ..... 50
MATERIAL ..... 50
ITEM #0202218A – WASHING-IN SUPPLEMENTAL STREAMBED ..... 53
MATERIAL ..... 53
ITEM #0202329A MANAGEMENT OF REUSABLE AND SURPLUS SOIL ..... 57
ITEM #0202911A – CONDITION SURVEY (SITE NO. 1) ..... 60
ITEM #0204151A - HANDLING WATER ..... 62
ITEM #0210821A—WATER POLLUTION CONTROL ..... 63
ITEM #0219011A – SEDIMENT CONTROL SYSTEM AT CATCH BASIN ..... 65
ITEM #0406125.20A – BITUMINOUS CONCRETE PATCHING – ..... 67
PARTIAL DEPTH ..... 67
ITEM #0406312A – GUTTER LINE SEALING FOR BRIDGES ..... 70
ITEM #0406315A – 80 MIL PAVEMENT MARKING GROOVE 7” WIDE ..... 73
ITEM #0406899A – E-TICKETING (BITUMINOUS CONCRETE) ..... 75
ITEM #0406999A - ASPHALT ADJUSTMENT COST ..... 78

ITEM #0503866A – REMOVAL OF EXISTING CULVERT \(SITE NO. 1\) ..... 81
ITEM #0601541A - 12’ X 10’ PRECAST CONCRETE BOX CULVERT ..... 83
ITEM #0601183A - PRECAST CONCRETE CUT-OFF WALL ..... 83
ITEM #0703031A - ROCK WEIR ..... 88
ITEM #0707009A - MEMBRANE WATERPROOFING (COLD LIQUID ..... 90
ELASTOMERIC) ..... 90
ITEM #0819002A - PENETRATING SEALER PROTECTIVE COMPOUND ..... 99
ITEM #0824049A – REMOVE CONCRETE MEDIAN BARRIER ..... 102
ITEM #0916105A - STRUCTURE-MOUNTED SOUND BARRIER ..... 103
ITEM#0916219A – ROCK IN POLE EXCAVATION ..... 113
ITEM #0916302A – TIMBER NOISE BARRIER WALL (TYPE I) ..... 113
ITEM #0916406A - REMOVE NOISE BARRIER WALL ..... 115
ITEM #0916408A - REMOVE NOISE BARRIER WALL (STRUCTURE) ..... 116
ITEM #0917010A - REPAIR GUIDERAIL ..... 117
ITEM #0922509A – TEMPORARY CONSTRUCTION ACCESS ROAD ..... 119
ITEM #0949875A – WETLAND PLANTINGS ..... 121
ITEM #0950043A - WETLAND GRASS ESTABLISHMENT ..... 124
ITEM #0952001A – SELECTIVE CLEARING AND THINNING ..... 126
ITEM #0952051A - CONTROLAND REMOVAL OF INVASIVE VEGETATION ..... 128
ITEM #0969030A - PROJECT COORDINATOR (MINIMUM BID) ..... 133
ITEM #0969062A - CONSTRUCTION FIELD OFFICE, MEDIUM ..... 139
ITEM #0971001A – MAINTENANCE AND PROTECTION OF TRAFFIC ..... 147
ITEM #1003891A – FIBERGLASS UTILITY POLE ..... 176
ITEM #1003906A - REMOVE LIGHT STANDARD ..... 178
ITEM #1003912A - REMOVE CONCRETE LIGHT STANDARD BASE ..... 179
ITEM #1005602A - LED LUMINAIRE – TYPE 2 ..... 180
ITEM #1014402A BREAKAWAY FUSE CONNECTOR ..... 182
ITEM #1019027A - PRE-ASSEMBLED AERIAL CABLE ..... 183
ITEM #1020030A - TEMPORARY ILLUMINATION UNIT ..... 184
ITEM #1020998A - TEMPORARY LIGHT STANDARD ATTACHMENT ..... 187
BRACKET ..... 187
ITEM #1206011A - REMOVAL OF EXISTING OVERHEAD SIGNING ..... 189
ITEM #1206023A - REMOVAL AND RELOCATION OF EXISTING SIGNS ..... 190
ITEM #1208931A – SIGN FACE - SHEET ALUMINUM (TYPE IX ..... 191
RETROREFLECTIVE SHEETING) ..... 191
ITEM #1208937A – SIGN FACE - SHEET ALUMINUM (TYPE XI ..... 191
RETROREFLECTIVE SHEETING) ..... 191
ITEM #1210113A—6” (WHITE) TYPE I EPOXY RESIN PAVEMENT ..... 195
MARKINGS ..... 195
ITEM #1210114A—6” (YELLOW) TYPE I EPOXY RESIN PAVEMENT ..... 195
MARKINGS ..... 195
ITEM #1220027A – CONSTRUCTION SIGNS ..... 200
ITEM #1300085A – STANDARD STEEL ROAD PLATE ..... 205
ITEM #1806226A – PRE-WARNING VEHICLE ..... 207
PERMITS AND/OR REQUIRED PROVISIONS: ..... 208

OCTOBER 1, 2025
FEDERAL AID PROJECT NO. N/A
STATE PROJECT NO. 0048-0200

(REPLACEMENT OF BRIDGE NO. 05585 – INTERSTATE 91 OVER GRAPE BROOK)

Town of Enfield

The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 819, dated 2024, as revised by the Supplemental Specifications dated January 2025 (otherwise referred to collectively as "ConnDOT Form 819") is hereby made part of this contract, as modified by the Special Provisions contained herein. The current edition of the State of Connecticut Department of Transportation's "Construction Contract Bidding and Award Manual" ("Manual"), is hereby made part of this contract. If the provisions of this Manual conflict with provisions of other Department documents (not including statutes or regulations), the provisions of the Manual will govern. The Special Provisions relate in particular to the Replacement of Bridge No. 05585 in the Town of Enfield.

## CONTRACT TIME AND LIQUIDATED DAMAGES

In order to minimize the hazard, cost and inconvenience to the traveling public and pollution of the environment, it is necessary to limit the time of construction work, which interferes with traffic as specified in Article 1.08.04 of the Special Provisions.

There will be two assessments for liquidated damages and they will be addressed in the following manner:

1. For this contract, an assessment per day for liquidated damages, at a rate of Two Thousand Four Hundred (2,400) Dollars per day shall be applied to each calendar day the work runs in excess of the Four Hundred Eighty Three (483) allowed calendar days for the contract.

2. For this contract, an assessment per hour for liquidated damages shall be applied to each hour, or any portion thereof, in which the Contractor interferes with normal traffic operations during the restricted hours given in Article 1.08.04 of the Special Provisions. The liquidated damages shall be as shown in the following tables entitled "Liquidated Damages Per Hour" for each hour, or any portion thereof, in

which the Contractor interferes with normal traffic operations during the restricted hours.

For the purpose of administering this contract, normal traffic operations are considered interfered with when:

a. Any portion of the travel lanes or shoulders is occupied by any personnel, equipment, materials, or supplies including signs.

b. The transition between the planes of pavement surfaces is at a rate of one inch in less than fifteen feet longitudinally.

## LIQUIDATED DAMAGES PER HOUR

**PROJECT NO. 0048-0200**

**I-91 NB in Enfield**

| 3 Through Lane Section<br>Mile Pt. 50.21-58.00 | | | |
|---|---|---|---|
| If Working Periods Extends Into | A.M.<br>1 Lane<br>Closure | A.M.<br>2 Lane<br>Closure | P.M.<br>1 Lane<br>Closure |
| 1st Hour of Restrictive Period | $ 500 | $ 500 | $ 8,000 |
| 2nd Hour of Restrictive Period | $ 500 | $ 10,000 | $ 35,000 |
| 3rd Hour or any Subsequent Hour of Restrictive Period | $ 500 | $ 20,000 | $ 50,000 |

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “0”, “S”, “1”, or “2”.

The above liquidated damages shall be applied when the actual number of lanes closed exceeds the number of lanes allowed to be closed, as dictated in the Limitation of Operations Chart.

If all available shoulder widths or gore areas are not available to traffic for each hour designated with a “0” on the Limitation of Operations Charts, then liquidated damages of $500 shall apply for each hour, or part thereof.

## LIQUIDATED DAMAGES PER HOUR

### PROJECT NO. 0048-0200
### I-91 SB in Enfield

| 3 Through Lane Section<br>Mile Pt. 50.42-58.00 | | | |
|---|---|---|---|
| If Working Periods Extends Into | A.M.<br>1 Lane<br>Closure | A.M.<br>2 Lane<br>Closure | P.M.<br>1 Lane<br>Closure |
| 1st Hour of Restrictive Period | $ 15,000 | $ 70000 | $ 500 |
| 2nd Hour of Restrictive Period | $ 60,000 | $ 100,000 | $ 500 |
| 3rd Hour or any Subsequent Hour of Restrictive Period | $ 50,000 | $ 100,000 | $ 500 |

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “0”, “S”, “1”, or “2”.

The above liquidated damages shall be applied when the actual number of lanes closed exceeds the number of lanes allowed to be closed, as dictated in the Limitation of Operations Chart.

If all available shoulder widths or gore areas are not available to traffic for each hour designated with a “0” on the Limitation of Operations Charts, then liquidated damages of $500 shall apply for each hour, or part thereof.

# NOTICE TO CONTRACTOR – CONSTRUCTION SIGNS

The Contractor shall furnish, install, and maintain Bipartisan Infrastructure Law project signs for the duration of the Contract. The Contractor shall also remove the signs upon completion of the work under the project. A special provision for these signs has been added to the Contract for Item No. 1220027A - Construction Signs.

# NOTICE TO CONTRACTOR – GLOBAL POSITIONING SYSTEM (GPS) COORDINATES FOR SIGNS

The Contractor shall obtain and provide to the Engineer sign installation data, including Global Positioning System (GPS) latitude and longitude coordinates, for all new State owned and maintained signs. The Engineer shall forward the sign data to the Division of Traffic Engineering for upload into the Highway Sign Inventory and Maintenance Management Program (SIMS). Sign data submissions or questions relating to SIMS or GPS shall be sent to DOT-SignInventory@ct.gov. Refer to the special provision for Section 12.00 General Clauses For Highway Signing.

# NOTICE TO CONTRACTOR – HAZARDOUS MATERIALS INVESTIGATIONS

A limited hazardous materials site investigation has been conducted for the rehabilitation of Bridge No. 05585 Culvert, I-91 Northbound over Grape Brook, Enfield, Connecticut. The scope of inspection was limited to the representative components projected for impact.

No painted surfaces were identified at the Bridge No. 05585; therefore, no lead paint was identified.

All steel and metal generated from work tasks (painted or not) shall be segregated and recycled as scrap metal at a scrap metal recycling facility. The recycling of scrap metal (regardless of lead paint concentration) is exempt from USEPA RCRA and CTDEEP Hazardous Waste Regulation.

Suspect asbestos containing black tar on the asphalt coated corrugated metal pipe and soft white drain packing were sampled and found to contain no detectable amounts of asbestos.

No bird/pigeon guano accumulations, mice droppings/nests, homeless activity, bloodborne pathogen (BBP) concerns or other hazardous/regulated items were observed in accessible areas of the noise wall along I-91 or local to Bridge No. 05585 Culvert.

Various levels of lead, chromium, arsenic and barium were identified within the pressure treated wood associated with the noise wall near Bridge No. 05585.

Results obtained from TCLP sampling for leachable metals determined the treated wood wall itself to be **non-hazardous, non-RCRA waste**.

CCA-treated wood shall be disposed of at CTDEEP permitted solid waste disposal area that is approved to receive Special Waste. Contractor can ship the treated wood directly to a CTDEEP permitted solid waste disposal area that is approved to receive special waste, or ship CCA-treated wood to a listed CTDEEP Volume Reduction Plant that is permitted to accept, handle, manage and ship the CCA-treated wood to a CTDEEP permitted solid waste disposal area that is approved to receive Special Waste. Note that the Volume Reduction Plant cannot use the treated wood in their process.

The Contractor is hereby notified that these hazardous/regulated materials requiring special management or disposal procedures will be encountered during various construction activities conducted within the project limits. The Contractor will be required to implement appropriate health and safety measures for all construction activities impacting these materials. These measures shall include, but are not limited to, air monitoring, engineering controls, personal protective equipment and decontamination, equipment decontamination and personnel training. WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC HAZARDS ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

The Department, as Generator, will provide an authorized representative to sign all manifests and waste profile documentation required by disposal facilities for disposal of hazardous materials.

The Sections which shall be reviewed by the Contractor include, but are not limited to, the following:

- Item No. 0916406A – Remove Noise Barrier Wall

The Contractor is alerted to the fact that a Department environmental consultant may be on site for abatement and related activities, to collect environmental samples (if necessary), and to observe site conditions for the State.

Information pertaining to the results of the limited hazardous materials investigations discussed can be found in the document listed below. This documents shall be available for review electronically.

- HazMat Inspection Letter, Rehabilitation Bridge No. 05585 Culvert, I-91 Northbound over Grape Brook, Enfield, CT, TRC Environmental Corporation, January 20, 2023.

- HazMat Inspection Letter, I-91 NB Noise Wall by Bridge No. 05585, Enfield, CT, TRC Environmental Corporation, June 10, 2025.

## NOTICE TO CONTRACTOR – LIMITS FOR VIBRATIONS TO ADJACENT UTILITIES

Due to the close proximity of the existing 18" sanitary sewer line adjacent to the construction area and proposed temporary access roads, vibration due to construction activities shall be monitored.

The monitoring of vibrations adjacent to Bridge No. 05585 shall include the existing 18" sanitary sewer line located south of the bridge and shall be performed in accordance with the special provision "Item #0202911A – Condition Survey (Site No. 1)".

# NOTICE TO CONTRACTOR – MANAGEMENT OF REUSABLE AND SURPLUS SOIL

The following provides guidance regarding the management of soil for reuse and disposal of surplus soil. This guidance is provided to facilitate reuse of soil to the maximum extent possible and to facilitate disposal of surplus material if/when warranted. An estimated 550 cubic yards (CY) of soil have been designated as surplus.

Historical investigations associated with State roadway construction projects have shown consistency with finding low levels of semi-volatile organic compounds (SVOCs), extractable petroleum hydrocarbons (ETPH), pesticides, and metals within Project limit soils. Soil within the construction limits of Project 0048-0200 should be considered the same for soil management purposes. Contaminants are expected to be at concentrations above the RCS-1 Acceptance Criteria for approved facilities under Policy #COMM-15-01 (Massachusetts Department of Environmental Protection (MassDEP) Interim Policy on the Re-Use of Soil for Large Reclamation Projects) or similar state policy. Actual contaminants and concentration levels found during construction may vary and such variations will not be considered a change in condition provided the material can still be disposed of as non-hazardous.

**All excavated soils shall be reused within the Project limits to the maximum extent possible** unless deemed unsuitable by the Engineer due to physical indications of contamination or the geotechnical characteristics of the material.

Excavated material that is suitable for reuse shall be managed at the point of origin for use as backfill. In instances where such soil cannot be reused directly at the point of origin or within several days of excavation, the surplus material, excluding existing pavement structure (asphalt and subbase), rock, ledge, and concrete, shall be stored at a Department-provided Temporary Reuse Stockpile Area (TRSA), or at an alternative Contractor-selected and Department-approved TRSA. Material that has not been reused within the CTDOT right of way by the end of the project or is deemed unsuitable for reuse due to physical indications of contamination shall be disposed of at a Department-approved treatment, recycling, or disposal facility.

A Temporary Reuse Stockpile Area (TRSA) location for Project 0048-0200 has been identified by the Department and is shown on the Project Plans. Additionally of note, the general location for TRSA placement has also been designated as a placement area for surplus soils if deemed suitable as referenced above. If additional space is needed or an alternative location is preferred by the Contractor, the Contractor shall propose the soil stockpile location(s) for approval of the Engineer.

The Contractor shall effectively manage the soil to reuse as much as possible, to minimize the need for off-site disposal. Any soil remaining at the end of the Project shall be disposed of as specified in *Item No. 0202329A - Management of Reuseable and Surplus Soil*. Material sampling will be performed by a Department representative and the analytical data will be provided to the Contractor to secure appropriate disposal arrangements. A Department representative will aid in the Contractor's waste profile paperwork preparation and will sign disposal paperwork (e.g., waste profile, shipping papers, etc.) as Generator.

Worker health and safety protocols that address potential risks of exposure to site-specific contaminant hazards shall be incorporated in a site-specific Environmental Health and Safety Plan. This plan shall be updated to include Project worker protocols that protect against site specific compounds found in soil. Costs pertaining to health and safety measures associated with site specific hazards shall be included in the lump sum under *Item No. 0101000A - Environmental Health and Safety*.

In the event groundwater is encountered during construction, any dewatering associated with the construction shall be performed in accordance with the CTDEEP's "*General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities"* unless evidence of contamination (oily sheen, etc.) is observed by the Engineer.

# NOTICE TO CONTRACTOR - CONTRACT DURATION

The Contractor is hereby notified that this is not to be considered an ordinary project by any means and that due to the inconvenience to the traveling public that it causes, extra manpower, equipment and workshifts may be required to complete the work in accordance within the specified contract time.

# NOTICE TO CONTRACTOR – PROTECTION OF EXISTING UTILITIES

Existing utilities shall be maintained during construction. The Contractor shall verify the location of underground and overhead utilities. Construction work within the vicinity of utilities shall be performed in accordance with current safety regulations.

Representatives of the various utility companies shall be allowed access to the work, by the Contractor.

The Contractor shall be liable for all damages or claims received or sustained by any persons, corporations or property in consequence of damage to the existing utilities, their appurtenances, or other facilities caused directly or indirectly by the operations of the Contractor.

In order to notify utility companies the number 1-800-922-4455 (Call Before You Dig), in accordance with Sections 16-345 through 16-359 of the Public Utilities Regulatory Authority (PURA) state statutes, must be called at least two (2) full working days prior to the start of excavation. This notification will enable the utility companies to mark out their facilities in the field.

Contractors are cautioned that it is their responsibility to verify locations, conditions, and field dimensions of all existing features, as actual conditions may differ from the information shown on the plans or contained elsewhere in the specifications.

The Contractor shall notify the Engineer prior to the start of work and shall be responsible for all coordination with the Department. The Contractor shall allow the Engineer complete access to the work.

Any damage to any existing private and public utility, as a result of the Contractors operations, shall be repaired to the utility and Engineer's satisfaction at no cost to the State, the Town or the Utilities, including all materials, labor, etc., required to complete the repairs.

During the excavation for the proposed improvements, the cover over the existing underground Utilities will be reduced. Therefore, the Contractor shall have the location of the underground Utilities marked out prior to and following the excavation. The Contractor's attention is directed to the requirements of Article 1.07.13-Contractor's Responsibility for Adjacent Property, Facilities and Services.

Prior to opening an excavation, effort shall be made to determine whether underground installations, i.e., sewer, fuel, electric line, etc., will be encountered and, if so, where such underground installations are located. When the excavation approaches the estimated location of such installation, the exact location shall be determined by careful probing or hand digging, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation.

The Contractor shall perform all work in such a manner that will protect each Utility Company's facilities from damage. This may include excavation by hand methods as well as modified compaction methods when working close to underground Utilities. The Contractor is responsible for coordinating their work with each utility sufficiently in advance of the work so that the utility can schedule their work crews.

# NOTICE TO CONTRACTOR - CDMS SUBMITTALS

Upon execution of the Contract, the Contractor acknowledges and agrees that contractual submittals for this Project shall be submitted and handled through the Department's Construction Document Management System (CDMS). The CDMS that the Department is currently using is COMPASS.

Contractor submittals including Shop Drawings, Working Drawings, Product Data, RFIs, and RFCs shall be generated and delivered by the Contractor in accordance with the Department's Contractor's User Manual. The administering District office will inform the Contractor of other deliverables required to be similarly submitted.

Access credentials will be provided free of charge to the Contractor.

The Department shall not be held responsible for delays, lack of processing or responses to submittals that do not follow the specified guidelines in the Contractor's User Manual.

# NOTICE TO CONTRACTOR – MANDATED USE OF AASHTOWARE PROJECT CONSTRUCTION MANAGEMENT SOFTWARE (CONSTRUCTION)

The Contractor shall use ***AASHTOWare Project***® software as outlined in the specifications noted below. This will require that the Contractor and all subcontractor(s) designate and dedicate staff within 10 days after the execution of the Contract or approval to sublet as appropriate. It will also require the Contractor and all subcontractors to provide internet access, computing devices suitable for this work, training, and other related work as outlined in the specifications noted below.

All costs for these requirements shall be included in the general cost of the work.

The following special provisions are pertinent to, and detail the requirements for, this work:

## SECTION 1.05 - CONTROL OF THE WORK

Article 1.05.12 – Payrolls
This Article outlines the requirements for submission of payrolls.

Article 1.05.25 –Use of AASHTOWare Project® Software
This Article outlines the overall requirements for the use of the AASHTOWare Project® Software.

## SECTION 1.08 – PROSECUTION AND PROGRESS

Article 1.08.01—Transfer of Work or Contract
This Article outlines the requirements for subcontractor payment and payment verifications.

# NOTICE TO CONTRACTOR - ELECTRONIC ENGINEERING DATA (EED)

The EED is an assembly of engineering data files that were used to produce the Contract plans.

**Electronic Engineering Data (EED) is provided for information purposes only. In case of conflict between the EED and the Contract plans and specifications, the contract plans and specifications shall govern.** The EED has been reviewed by the Department for quality control purposes, but it is the Contractor's responsibility to build the Project per the contract plans and specifications.

The EED is being provided to the Engineer for GPS/RTS inspection. The Contractor may use the EED to assist in bidding, layout, and Automated Machine Control/Guidance.

The EED includes geospatially correct 2D CAD files and may include horizontal and vertical alignment data files, 3D surface model files (break-line features and triangles) and a preference file. The data is being provided in one of the MicroStation versions, consisting of native and converted formats:

## MicroStation V8i (InRoads)

- Native Format
  - Bentley MicroStation CAD files (dgn)
  - Bentley SS2 InRoads Alignment Files (alg)
  - Bentley SS2 InRoads Digital Terrain Models (dtm)
  - Bentley SS2 InRoads Preference File (xin)
- Converted Format (for use in GPS/RTS Site equipment)
  - AutoCAD CAD files (dxf)
  - Alignment files (xml)
  - Surface Models (xml)

## MicroStation CONNECT (OpenRoads)

- Native Format
  - Bentley CONNECT MicroStation CAD files (dgn – contains CAD graphics, OpenRoads alignments and terrain models)
- Converted Format (for use in GPS/RTS Site equipment)
  - AutoCAD CAD files (dxf)
  - Alignment files (xml – exported from CONNECT MicroStation CAD file)
  - Surface Models (xml – exported from CONNECT MicroStation CAD file)

For a complete list of EED files, see the EED file manifest (PDF) located in the EED_XXXX-XXXX.zip file (XXXX-XXXX is the project number) which is posted with the contract PS&E's on the State Contracting portal. The EED zip file can also be found in the project COMPASS page in the *Contract Documents/100_Contract_Plans (PDF)* folder.

# NOTICE TO CONTRACTOR -- MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)

The Contractor is hereby notified that changes have been made to the referenced Membrane Waterproofing special provision and that the Contractor shall comply with all requirements of such specification.

The major changes include the following:

- Addition of language to clarify the definition of a Manufacturer is as described in Article 1.06.01 of the Standard Specifications,

- Allowance for single pass application of 80 mil membrane thickness by hand application provided a demonstration on a test section shows the Applicator is able to meet the specified tolerances, and is acceptable to the Engineer. Similar test section allowance requirements will apply to mechanical applicator systems,

- Addition of requirements for taking measurements of ambient air and dew point temperatures and that no primer or membrane applications shall be allowed if the difference between these two temperatures is 5º F or less, and

- Addition of language clarifying that all components shall be from the same batch as identified on original packaging (barrels, etc), or be discarded – no mixing of like material from different batches shall be allowed.

# SECTION 1.05 - CONTROL OF THE WORK

*Add the following to the beginning of the first paragraph of* Article 1.05.12:

**1.05.12—Payrolls:** The Contractor and all subcontractors shall use ***AASHTOWare Project®*** software in accordance with Article 1.05.25, with a Department-provided template, or by other means previously accepted by the Department, to electronically upload all Project payrolls, as directed herein.

*Add the following to the end of* Article 1.05.12:

These requirements shall be included in all subcontracts for this Project.

All costs for these requirements shall be included in the general cost of the work.

*Add the following new* Article 1.05.25:

**1.05.25—Use of *AASHTOWare Project*® Software:** The Contractor and all subcontractor(s) shall use the ***AASHTOWare Project®*** software for electronic submittal of all payrolls as outlined in the Department's AASHTOWare Contractor's User Manual, found at the Department's AASHTOWare Training webpage, and as stated in the specifications.

The Contractor and all subcontractor(s) shall use the ***AASHTOWare Project®*** software for monthly verification of project payments at all tiers, as outlined in the Department's AASHTOWare Contractor's User Manual, found at the Department's AASHTOWare Training webpage, and as stated in the specifications. The Department will inform the Contractor of other deliverables to be similarly submitted, as required.

Within 10 days of execution of the Contract, the Contractor shall submit the name(s) of the ***AASHTOWare Software Project Liaison*** and required staff that will be using the Department's software for this work. Similarly, within 10 days after the Contractor (or a subcontractor) enters into a subcontractor agreement to sublet any work, they shall submit the name(s) of their ***AASHTOWare Software Project Liaison*** and required staff that will be using the Department's software for this work. The Contractor and subcontractors shall immediately notify the Department of any change in Project staff authorized to access the AASHTOWare system or of a need to revise the Project Liaison.

Training materials, such as videos and written guides are available on the Department website for Contractor use. The Contractor and all subcontractors shall be responsible to train their staff.

This ***AASHTOWare Project®*** software will require that the Contractor and all subcontractor(s) provide their staff with access to the internet, using devices suitable for this work, at their own expense, throughout the duration of the Project. The Department has obtained licensing that allows the Contractor and subcontractors to access (from the internet) and use of the ***AASHTOWare Project®*** software. The Department will provide the Contractor and subcontractors with usernames and passwords to access the ***AASHTOWare Project®*** software, at no cost.

The Department shall not be held responsible for delays, lack of processing, or responses to submittals that do not follow the specified guidelines in the Department's AASHTOWare Contractor's User Manual, found at the Department's AASHTOWare Training webpage.

These requirements shall be included in all subcontracts for this Project.

All costs for these requirements shall be included in the general cost of the work.

# SECTION 1.06 CONTROL OF MATERIALS

**Article 1.06.01 -** Source of Supply and Quality:

Add the following:

For the following materials the Contractor shall submit a complete description of the item consisting of the latest manufacturer shop drawing(s) which completely illustrates the material presented for formal approval. The submitted shop drawing(s) shall clearly call-out all material and operational properties for the item specific to the project. Such approval shall not change the requirements for a certified test report and materials certificate as may be called for.

Light Standards
Conductors
Luminaires
Conduit
Cable in Duct
Fuses and Fuse Holders
Navigation Lights
Precast Foundation
Service Items
Temporary Illumination Unit
Aerial Cable
Handhole
Junction Box

Required shop drawings for all items listed above shall be submitted in one package at the same time. Please note: the list of items above is a "general" list of items. Certain items listed may or may not be present in a specific project. Please consult the Detailed Estimate sheet for project specific items.

**Article 1.06.07 -** Certified Test Reports and Materials Certificate.

Add the following:

1) For the materials in the following items, a Certified Test Report will be required confirming their conformance to the requirements set forth in these plans or specifications or both. Should the consignee noted on a Certified Test Report be other than the Prime Contractor, then Materials Certificates shall be required to identify the shipment.

Light Standards
Conductors
Cable in Duct
Anchor Bolts
Aerial Cable
Temporary Illumination Unit

2) For materials in the following items, a Materials Certificate will be required confirming their conformance to the requirements set forth in these plans or specifications or both.

Light Standards
Conductors
Cable In Duct
Luminaires
Conduit
Anchor Bolts
Aerial Cable
Temporary Illumination Unit

Please note: the list of items above is a “general” list of items. Certain items listed may or may not be present in a specific project. Please consult the Detailed Estimate sheet for project specific items.

# SECTION 1.07 – LEGAL RELATIONS AND RESPONSIBILITIES

**Article 1.07.11 Opening of Section of project to Traffic or Occupancy:**

*Add the following sentence to the last paragraph:*

"In cases in which guiderail is damaged by the traveling public, repair or replacement will be reimbursable as contained elsewhere herein."

**Article 1.07.13** - Contractor's Responsibility for Adjacent Property, Facilities and Services is supplemented as follows:

The following company and representative shall be contacted by the Contractor to coordinate the protection of their utilities on this project 30 days prior to the start of any work on this project involving their utilities:

Mr. Donald Nunes
Director of Public Works
Town of Enfield
40 Moody Road
Enfield, CT 06082
Phone: 860-253-6366

# SECTION 1.08 - PROSECUTION AND PROGRESS

*Add the following to the beginning of the first paragraph of* Article 1.08.01:

**Article 1.08.01—Transfer of Work or Contract:** The Contractor and all subcontractors shall use the *AASHTOWare Project*® software in accordance with Article 1.05.25, for monthly verification of project payments at all tiers, in accordance with the Department's AASHTOWare Contractor's User Manual, found at the Department's, Contractor and Subcontractor Training Guides and Videos webpage, and as stated in the specifications.

*Add the following to the end of* Article 1.08.01:

All costs for the requirements of this Article shall be included in the general cost of the work.

**Article 1.08.04 - Limitation of Operations - Add the following:**

In order to provide for traffic operations as outlined in the Special Provision "Maintenance and Protection of Traffic," the Contractor will not be permitted to perform any work which will interfere with the described traffic operations on all project roadways as follows:

**Route I-91**

The Contractor shall not perform any work that will interfere with traffic operations during the below State observed Legal Holidays and Legal Holiday Periods.

A. On the following State observed Legal Holidays:

| | |
|---|---|
| New Year's Day | Labor Day |
| Good Friday | Thanksgiving Day |
| Memorial Day | Christmas Day |
| Independence Day | |

B. During the following Legal Holiday Periods:
   i. When an above Legal Holiday is celebrated on a Sunday or Monday: From 6:00 a.m. the immediately preceding Friday to 6:00 a.m. the immediately following Tuesday.
   ii. When an above Legal Holiday is celebrated on a Tuesday, Wednesday, or Thursday: From 6:00 a.m. the day before to 6:00 a.m. the day after, except Thanksgiving (see below for Thanksgiving specific restrictions).
   iii. When an above Legal Holiday is celebrated on a Friday or Saturday: From 6:00 a.m. the immediately preceding Thursday to 6:00 a.m. the immediately following Monday.
   iv. Thanksgiving: From 6:00 a.m. the Wednesday before to 6:00 a.m. the Monday after.

During all other times:

A. The Contractor shall maintain and protect traffic as shown on the accompanying "Limitation of Operations" charts, which dictate the maximum number of lanes allowed to be closed and the allowable hours for implementing a rolling roadblock operation for each day of the week.
B. The Contractor will be allowed to halt traffic for a period not to exceed 10 minutes to actively perform the box culvert installation, as approved by the Engineer, between 12:01 a.m. and 5:00 a.m. during all non-Legal Holiday Periods.

The Contractor will not be allowed to perform any work that will interfere with the described traffic operations on all project roadways during the Travelers Championship Tournament from 6:00 AM the Sunday before until 6:00 am Sunday after the tournament. This Tournament typically takes place in the last week of June. The Contractor shall coordinate with the host of championship at info@travelerschampionship.com.

**I-91 Ramps**

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.

**Additional Lane Closure Restrictions**

It is anticipated that work on adjacent projects will be ongoing simultaneously with this project. The Contractor shall be aware of those projects and anticipate that coordination will be required to maintain proper traffic flow at all times on all project roadways, in a manner consistent with these specifications and acceptable to the Engineer.

The Contractor will not be allowed to perform any work that will interfere with traffic operations on a roadway when traffic operations are being restricted on that same roadway, unless there is at least a one-mile clear area length where the entire roadway is open to traffic, or the closures have been coordinated and are acceptable to the Engineer. The one-mile clear area length shall be measured from the end of the first work area to the beginning of the signing pattern for the next work area.

Project No. 0048-0200

**Limitation of Operations Chart – Maximum Number of Lanes Allowed to be Closed and Hours Allowed for a Rolling Roadblock (RRB)**

| I-91 NB in Enfield Number of Through Lanes: 3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Hour Beginning | Mon | Tue | Wed | Thu | Fri | Sat | Sun |
| Mid | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 1 AM | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 2 AM | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 3 AM | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 4 AM | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 5 AM | 2* | 2* | 2* | 2* | 2 | 2* | 2* |
| 6 AM | **0** | **0** | **0** | **0** | **0** | 2 | 2* |
| 7 AM | **0** | **0** | **0** | **0** | **0** | 1 | 2* |
| 8 AM | **0** | **0** | **0** | **0** | **0** | 1 | 1 |
| 9 AM | S | S | S | S | S | S | 1 |
| 10 AM | S | S | S | S | S | S | 1 |
| 11 AM | S | S | S | S | S | S | S |
| Noon | S | S | S | S | S | S | S |
| 1 PM | S | S | S | S | S | S | S |
| 2 PM | S | S | S | S | S | S | S |
| 3 PM | **0** | **0** | **0** | **0** | **0** | S | S |
| 4 PM | **0** | **0** | **0** | **0** | **0** | S | S |
| 5 PM | **0** | **0** | **0** | **0** | **0** | S | S |
| 6 PM | S | S | S | S | S | S | S |
| 7 PM | S | S | S | S | S | S | S |
| 8 PM | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 PM | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10 PM | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11 PM | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| I-91 SB in Enfield Number of Through Lanes: 3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Hour Beginning | Mon | Tue | Wed | Thu | Fri | Sat | Sun |
| Mid | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 1 AM | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 2 AM | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 3 AM | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 4 AM | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 5 AM | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| 6 AM | **0** | **0** | **0** | **0** | **0** | 2* | 2* |
| 7 AM | **0** | **0** | **0** | **0** | **0** | 1 | 2* |
| 8 AM | **0** | **0** | **0** | **0** | **0** | 1 | 1 |
| 9 AM | S | S | S | S | S | S | 1 |
| 10 AM | S | S | S | S | S | S | 1 |
| 11 AM | S | S | S | S | S | S | S |
| Noon | S | S | S | S | S | S | S |
| 1 PM | S | S | S | S | S | S | S |
| 2 PM | S | S | S | S | S | S | S |
| 3 PM | **0** | **0** | **0** | **0** | **0** | S | S |
| 4 PM | **0** | **0** | **0** | **0** | **0** | S | S |
| 5 PM | **0** | **0** | **0** | **0** | **0** | S | S |
| 6 PM | S | S | S | S | S | S | S |
| 7 PM | S | S | S | S | S | S | S |
| 8 PM | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 PM | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10 PM | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11 PM | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**On Legal Holidays and within Legal Holiday Periods, all hours shall be '0.'**

**"0" = No closures allowed = all available travel lanes, including exit only lanes, climbing lanes, gore areas, and all available shoulder widths shall be open to traffic during this time period.**

**"S" = Shoulders are allowed to be closed = all available travel lanes, including exit only lanes, climbing lanes, and gore areas shall be open to traffic during this time period.**

**"1" = One lane closure is allowed. Adjacent shoulder(s) and/or gore areas may also be closed.**

**"2" = Two lane closure is allowed. Adjacent shoulder(s) and/or gore areas may also be closed.**

**"*" = Signifies those hours where a rolling roadblock may be implemented**

# SECTION 1.10–ENVIRONMENTAL COMPLIANCE

**In Article 1.10.03-Water Pollution Control:**
**REQUIRED BEST MANAGEMENT PRACTICES**

*Add the following after Required Best Management Practices Number 13:*

14. The Contractor is hereby notified that one or more State and/or federally listed species of bat has been documented within the Project limits. In Connecticut, the Eastern small-footed bat (*Myotis leibii*), tri-colored bat (*Perimyotis subflavus*), little brown bat (*Myotis lucifugus*), Northern long-eared bat (*Myotis septentrionalis*) and the Indiana bat (*Myotis sodalis*) are listed as State endangered; while the silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*) and the red bat (*Lasiurus borealis*) are listed as State species of special concern. The Northern long-eared bat, tri-colored bat, and the Indiana bat are also federally listed endangered species. Bats are the only mammals capable of actual flight and are primarily nocturnal. During the daylight, bats roost in trees and caves, but many have now adapted to roost in or on buildings including barns, houses, tunnels, and bridges. Within the Project limits, bats will use the snags, cavities, and underside of bark to roost and raise young. **This Project will have a Time of Year restriction for tree clearing, trimming and removal to protect the bat species listed.**

    The Contractor shall, through the Engineer and at least 10 days prior to the commencement of any construction activities, arrange a meeting with the District Environmental Coordinator (DEC) and Office of Environmental Planning (OEP) (or their authorized delegate) to discuss proper protocol for maintaining environmental commitments made for the protection of these bat species and their habitat. OEP will provide oversight through the DEC and Engineer to ensure that the following protocols are followed and maintained during the Project:

    a. The Contractor, through the Engineer, shall arrange a pre-construction tree-clearing Site walk to review all trees proposed to be removed for the Project.
    b. Clearing, trimming or removal of any tree three (3) inches diameter at breast height (DBH) or greater will be prohibited between April 15 and October 31.
    c. This restriction shall also apply to invasive species removal work and shall be reflected in the Contractor's Invasive Vegetation Removal Plan, if applicable.

    These practices will be applied to the entire Project unless a specified location is identified within the Project plans, which denotes specific areas of concern.

    If any bats are observed in or around the Project area, the Engineer will notify the DEC to facilitate further coordination with OEP's Environmental Resource Compliance Unit. If the DEC is unable to be reached, notify OEP at Andrew.Piraneo@ct.gov or at Marilyn.Gould@ct.gov.

    The OEP will be responsible for completing and submitting the Natural Diversity Data Base (NDDB) Vertebrate Sheet (https://portal.ct.gov/DEEP/Endangered-Species/Contributing-Data). This completed document allows CTDEEP to update their database.

All listed bat species are protected by federal and/or State laws which prohibit killing, harming, taking, harassing, or keeping them in your possession. A CTDEEP fact sheet(s) for the listed bats noted above shall be posted in the Contractor's and Inspection field offices and can be downloaded at the link below.

CTDEEP's Fact Sheet for Bats:
Bat Fact Sheet

# SECTION 12.00 – GENERAL CLAUSES FOR HIGHWAY SIGNING

**Description:**

Work under this item shall conform to the requirements of Section 12.00 supplemented as follows:

**12.00.07 – Global Positioning System (GPS) coordinates for signs:**

The Contractor shall obtain and provide to the Engineer sign installation data, including Global Positioning System (GPS) latitude and longitude coordinates, for all new permanent State owned and maintained signs (temporary and construction signs are not to be included) installed in the project. The Engineer shall forward the sign data to the Division of Traffic Engineering for upload into the Highway Sign Inventory and Maintenance Management Program (SIMS). Sign data submissions or questions relating to SIMS or GPS shall be sent to DOT-SignInventory@ct.gov.

The horizontal datum is to be set to the State Plane Coordinate System, North American Datum of 1983 (NAD83) in feet. The minimum tolerance must be within 10 feet. The format of the GPS information shall be provided in a Microsoft Office compatible spreadsheet (Excel) file with data for each sign. The record for each sign installed is to be compatible with the anticipated CTDOT Sign Inventory and Management System (CTSIMS). The following format shall be used. However, the data fields noted by "#" are not required for the project submission. These entries will be completed as part of the Traffic Engineering CTSIMS data upload.

The cost of this work shall be included in the cost of the respective sign face – sheet aluminum and sign face – extruded aluminum items. The receipt of this electronic database must be received and accepted by the Engineer prior to final payment for items involving permanent highway signing. The electronic database information shall detail information regarding the sign actually installed by the project.

| | Field Number | Type | size | Description |
|---|---|---|---|---|
| | 1 | text | 20 | Record Number (starting at 1…) |
| | 2 | text | 20 | Sign Catalog Number |
| # | 3 | text | 10 | Size Height |
| # | 4 | text | 10 | Size Width |
| | 5 | text | 25 | Legend |
| # | 6 | text | 10 | Background Color |
| # | 7 | text | 10 | Copy Color |
| | 8 | Link | 25 | Material (see acceptable categories) |
| | 9 | text | 30 | Comments if any |
| # | 10 | text | 20 | MUTCD Type |
| | 11 | text | 15 | Town |

| | | | | |
|---|---|---|---|---|
| | 12 | text | 5 | Route |
| | 13 | text | 5 | Route direction |
| # | 14 | text | 10 | Highway Log Mileage |
| | 15 | text | 15 | Latitude |
| | 16 | text | 15 | Longitude |
| | 17 | text | 25 | Mounting Type |
| | 18 | text | 25 | Reflective Sheeting Type |
| | 19 | date | 25 | Date Installed |
| | 20 | text | 10 | Number of Posts |
| | 21 | text | 255 | Sheeting Manufacturer name and address |
| | 22 | text | 15 | State Project Number (or) |
| | 23 | text | 15 | Encroachment Permit number. |
| | 24 | Graphic | * | Sign Picture Graphic. |

* Graphics provided shall be representative of the sign supplied and be in color. Graphic formats shall be either JPG or TIFF and provided with a recommended pixel density of 800 x 600. The graphic shall be inserted in the supplied media in field 24 for each sign.

# SMALL CONTRACTOR AND SMALL CONTRACTOR MINORITY BUSINESS ENTERPRISES

## (SET-ASIDE)

October 12, 2022

NOTE: Certain requirements and procedures stated in this "Special Provision" are applicable prior to the execution of the Contract.

## I. GENERAL

A. The Contractor shall cooperate with the Connecticut Department of Transportation (CTDOT) in implementing the required contract obligations concerning "Small Contractor" and "Small Contractor Minority Business Enterprise" use on this Contract in accordance with Section 4a-60g of the Connecticut General Statutes as revised. References, throughout this "Special Provision", to "Small Contractors" are also implied references to "Small Contractor Minority Business Enterprises" as both relate to Section IIA of these provisions. The Contractor shall also cooperate with CTDOT in reviewing the Contractor's activities relating to this provision. This "Special Provision" is in addition to all other equal opportunity employment requirements of this Contract.

B. For the purpose of this "Special Provision", the "Small Contractor(s)" and "Minority Business Enterprise(s)" named to satisfy the set-aside requirement must be certified by the Department of Administrative Services, Business Connections/ Set-Aside Unit [(860) 713-5236Small Minority Business Center (ct.gov). As a "Small Contractor" and "Minority Business Enterprises" as defined by Section 4a-60g Subsections (1) and (4) of the Connecticut General Statutes as revised and is subject to approval by CTDOT to do the work for which it is nominated pursuant to the criteria stipulated in Section IIC-3.

C. Contractors who allow work which they have designated for "Small Contractor" participation in the pre-award submission required under Section IIC to be performed by other than the approved "Small Contractor" organization and prior to concurrence by CTDOT, will not be paid for the value of the work performed by organizations other than the "Small Contractor" designated.

D. If the Contractor is unable to achieve the specified contract goals for "Small Contractor" participation, the Contractor shall submit written documentation to CTDOT's Manager of Construction Operations indicating his/her attempts to satisfy goal requirements. Documentation is to include but not be limited to the following:

1. A detailed statement of the efforts made to select additional subcontract opportunities for work to be performed by each "Small Contractor" in order to increase the likelihood of achieving the stated goal.

2. A detailed statement, including documentation of the efforts made to contact and solicit contracts with each "Small Contractor", including the names, addresses, dates and telephone numbers of each "Small Contractor" contacted, and a description of the information provided to each "Small Contractor" regarding the scope of services and anticipated time schedule of items proposed to be subcontracted and the nature of response from firms contacted.

3. For each "Small Contractor" that placed a subcontract quotation which the Contractor considered not to be acceptable, provide a detailed statement of the reasons for this conclusion.

4. Documents to support contacts made with CTDOT requesting assistance in satisfying the contract specified or adjusted "Small Contractor" dollar requirements.

5. Document other special efforts undertaken by the Contractor to meet the defined goal.

E. Failure of the Contractor to have at least the specified dollar amount of this contract performed by "Small Contractor" as required in Section IIA of this "Special Provision" will result in the reduction in contract payment to the Contractor by an amount equivalent to that determined by subtracting from the specific dollar amount required in Section IIA, the dollar payments for the work actually performed by each "Small Contractor". The deficiency in "Small Contractor" achievement, will therefore, be deducted from the final contract payment. However, in instances where the Contractor can adequately document or substantiate its good faith efforts made to meet the specified or adjusted dollar amount to the satisfaction of CTDOT, no reduction in payments will be imposed.

F. All records must be retained for a period of three (3) years following completion of the contract and shall be available at reasonable times and places for inspection by authorized representatives of CTDOT.

G. Nothing contained herein, is intended to relieve any contractor or subcontractor or material supplier or manufacturer from compliance with all applicable Federal and State legislation or provisions concerning equal employment opportunity, affirmative action, nondiscrimination and related subjects during the term of this Contract.

## II. SPECIFIC REQUIREMENTS

In order to increase the participation of "Small Contractors", CTDOT requires the following:

A. Not less than **11** (%) percent of the **final** value of this Contract shall be subcontracted to and performed by, and/or supplied by, manufactured by and paid to "Small Contractors" and/or "Small Contractors Minority Business Enterprises".

*If the above percentage is zero (0%) AND an asterisk (*) has been entered in the adjacent brackets [ ], this Contract is 100% solely set-aside for participation by "Small Contractors" and/or "Small Contractors Minority Business Enterprises".*

B. The Contractor shall assure that each "Small Contractor" will have an equitable opportunity to compete under this "Special Provision", particularly by arranging solicitations, time for the preparation of Quotes, Scope of Work, and Delivery Schedules so as to facilitate the participation of each "Small Contractor".

C. The Contractor shall provide to CTDOT's Manager of Contracts within Five (5) days after the bid opening the following items:

1. A certification of work to be subcontracted (Exhibit II) signed by both the Contractor and the "Small Contractor" listing the work items and the dollar value of the items that the nominated "Small Contractor" is to perform on the project to achieve the minimum percentage indicated in Section IIA above.

2. A certification of past experience (Exhibit III) indicating the scope of work the nominated "Small Contractor" has performed on all projects, public and private, for the past five (5) years.

3. In instances where a change from the originally approved named "Small Contractor" (see Section IB) is proposed, the Contractor is required to submit, in a reasonable and expeditious manner, a revised submission, comprised of the documentation required in Section IIC, Paragraphs 1, 2 and 3 and Section E together with documentation to substantiate and justify the change, (i.e., documentation to provide a basis for the change) to CTDOT's Manager of Construction Operations for its review and approval prior to the implementation of the change. The Contractor must demonstrate that the originally named "Small Contractor" is unable to perform in conformity to specifications, or unwilling to perform, or is in default of its contract, or is overextended on other jobs. The Contractor's ability to negotiate a more advantageous contract with another "Small Contractor" is not a valid basis for change. Documentation shall include a letter of release from the originally named "Small Contractor" indicating the reason(s) for the release.

D. After the Contractor signs the Contract, the Contractor will be required to meet with CTDOT's Manager of Construction Operations or his/her designee to review the following:

1. What is expected with respect to the "Small Contractor" set aside requirements.

2. Failure to comply with and meet the requirement can and will result in monetary deductions from payment.

3. Each quarter after the start of the "Small Contractor" the Contractor shall submit a report to CTDOT's Manager of Construction Operations indicating the work done by, and the dollars paid to each "Small Contractor" to date.

4. What is required when a request to sublet to a "Small Contractor" is submitted.

E. The Contractor shall submit to CTDOT's Manager of Construction Operations all requests for subcontractor approvals on standard forms provided by the Department.

If the request for approval is for a "Small Contractor" subcontractor for the purpose of meeting the contract required "Small Contractor" percentage stipulated in Section IIA, a copy of the legal contract between the Contractor and the "Small Contractor" subcontractor must also be submitted at the same time. Any subsequent amendments or modifications of the contract between the Contractor and the "Small Contractor" subcontractor must also be submitted to CTDOT's Manager of Construction Operations with an explanation of the change(s). The contract must show items of work to be performed, unit prices and, if a partial item, the work involved by both parties.

In addition, the following documents are to be attached:

(1) A statement explaining any method or arrangement for renting equipment. If rental is from a Contractor, a copy of Rental Agreement must be submitted.

(2) A statement addressing any special arrangements for manpower.

(3) A statement addressing who will purchase material.

F. Contractors subcontracting with a "Small Contractor" to perform work or services as required by this "Special Provision" shall not terminate such firms without advising CTDOT, in writing, and providing adequate documentation to substantiate the reasons for termination if the designated "Small Contractor" firm has not started or completed the work or the services for which it has been contracted to perform.

G. Material Suppliers or Manufacturers

If the Contractor elects to utilize a "Small Contractor" supplier or manufacturer to satisfy a portion or all of the specified dollar requirements, the Contractor must provide the Department with:

1. An executed Affidavit Small Contractor (Set-Aside) Connecticut Department of Transportation Affidavit Supplier or Manufacturer (sample attached), and

2. Substantiation of payments made to the supplier or manufacturer for materials used on the project.

Brokers and packagers shall not be regarded as material Suppliers or manufacturer.

H. Non-Manufacturing or Non-Supplier "Small Contractor" Credit

Contractors may count towards its "Small Contractor" goals the following expenditures with "Small Contractor" firms that are not manufacturers or suppliers:

1. Reasonable fees or commissions charged for providing a bona fide service such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, material or supplies necessary for the performance of the contract provided that the fee or commission is determined by the Department of Transportation to be reasonable and consistent with fees customarily allowed for similar services.

2. The fees charged for delivery of materials and supplies required on a job site (but not the cost of the materials and supplies themselves) when the hauler, trucker, or delivery service is not also the manufacturer of or a regular dealer in the materials and supplies, provided that the fee is determined by the Department of Transportation to be reasonable and not excessive as compared with fees customarily allowed for similar services.

3. The fees or commissions charged for providing any bonds or insurance specifically required for the performance of the Contract, provided that the fee or commission is determined by the Department of Transportation to be reasonable and not excessive as compared with fees customarily allowed for similar services.

## III. BROKERING

For the purpose of this "Special Provision", a "Broker" is one who acts as an agent for others in negotiating contracts, purchases, sales, etc., in return for a fee or commission. Brokering of work by a "Small Contractor" is not allowed and is a contract violation.

## IV. PRE-AWARD WAIVERS:

If the Contractor's submission of the "Small Contractor" listing, as required by Section IIC indicates that it is unable, by subcontracting to obtain commitments which at least equal the amount required by Section IIA, it may request, in writing, a waiver of up to 50% of the amount required by Section IIA. To obtain such a waiver, the Contractor must submit a completed "Application for Waiver of Small Contractor Minority Business Enterprise Goals" to CTDOT's Manager of Contracts which must also contain the following documentation:

1. Information described in Section ID.

2. For each "Small Contractor" contacted but unavailable, a statement from each "Small Contractor" confirming its unavailability.

Upon receipt of the submission requesting a waiver, the CTDOT's Manager of Contracts shall submit the documentation to the Director of the Office of Contract Compliance who shall review it for completeness. After completion of the Director of Contract Compliance's review, she/he should write a narrative of his/her findings of the application for a waiver, which is to include his/her recommendation. The Director of Contract Compliance shall submit the written narrative to the Chairperson of the DBE Screening Committee at least five (5) working days before the scheduled meeting. The Contractor shall be invited to attend the meeting and present his/her position. The DBE Screening Committee shall render a decision on the waiver request within five (5) working days after the meeting. The DBE Screening Committee's decision shall be final. Waiver applications are available from the CTDOT Manager of Contracts.

## Please note that effective with this update, Exhibit 1 is discontinued

Exhibit 2

Rev 7/2015

**CONNECTICUT DEPARTMENT OF TRANSPORTATION (CTDOT)**

PRE-AWARD SBE COMMITMENT APPROVAL REQUEST

TO BE SUBMITTED WITHIN THE TIME FRAME INDICATED IN THE BID DOCUMENTS

Only certified SBE firms will be approved. The SBE directory is available on the Department of Administrative Service's web site: http://www.biznet.ct.gov/SupplierDiversity/SDSearch.aspx

Sheet of

CDOT Project Number (s):
Town(s) of:
Submitted By:
Original Bid ($):
Dollar amount subcontracted to this SBE firm ($):

SBE Subcontractor:
Address:

| Item Number & Description | Is This item Partial Yes No | Firm Type Code * | Units | Quantity bid by the Prime | Contract Unit Price | Quantity Subcontracted | Subcontract Unit Price ** | Total Item price subcontracted |
|---|---|---|---|---|---|---|---|---|
| | N | | | | | | | 0.00 |
| | N | | | | | | | 0.00 |
| | N | | | | | | | 0.00 |
| | N | | | | | | | 0.00 |
| | N | | | | | | | 0.00 |
| | N | | | | | | | 0.00 |
| | N | | | | | | | 0.00 |

If any of the items above are checked **Yes** as to **Partial**, please provided or use an attachment to offer an explanation of the work involved. Also please identify who is responsible for the remainder of the partial items.

* Firm Type Code: **S** (subcontractor), **M** (manufacturer), **P** (supplier), **T** (trucking), **V** (services)

** In instances where the Prime is paying the Subcontractor a higher unit price than the bid, by submitting this form the Prime agrees to the higher subcontracted price without qadditional costs to the Department.

Signature of Prime Contractor, Title | Date | Signature of Subcontractor, Title | Date

After this submittal is approved by the Department, any proposed changes to it must be submitted to the Department for approval.

SBE Exhibit 3 Revised May 2012

## Sample of Past Construction Experience

**Only include the work within the last 5 years that are relevant to the work performed on this project**

**CTDOT Project Number:** _____

**SBE Firm:** _____

| Project Description and Location | Your Contract Value | The Name of the Owner or the Prime Contractor on the Project/Contact Name and Phone Number | Actual or Estimated Completion Date | overview of items Performed |
|---|---|---|---|---|
| | | | | |

# ITEM # 0101000A - ENVIRONMENTAL HEALTH AND SAFETY

**Description:**

Under this item, the Contractor shall establish protocols and provide procedures to protect the health and safety of its employees and subcontractors as related to the proposed construction activities performed within the project limits. Work under this Item consists of the development and implementation of a written HASP that addresses the relative risk of exposure to documented hazards present within the project limits. The HASP shall establish health and safety protocols that address the relative risk of exposure to regulated substances in accordance with 29 CFR 1910.120 and 29 CFR 1926.65. Such protocols shall only address those concerns directly related to site conditions.

Note: The Engineer will prepare a site-specific health and safety plan which is compatible with the Contractor's plan and will be responsible for the health and safety of all project Inspectors, Department employees and consulting engineers.

**Materials:**

The Contractor must provide chemical protective clothing (CPC) and personal protective equipment (PPE) as stipulated in the Contractor's HASP during the performance of work in areas identified as potentially posing a risk to worker health and safety for workers employed by the Contractor and all subcontractors.

**Construction Methods:**

**1-Existing Information:** Historical investigations associated with State roadway construction projects have shown consistency with finding low levels of semi-volatile organic compounds (SVOCs), extractable petroleum hydrocarbons (ETPH), pesticides, and metals within project limit soils. Soils within the project limits of Project 0048-0200 should be considered the same for health and safety purposes. Additionally, while these conditions have been typically found along State roadway soils, it is hereby noted that the above-referenced contaminant list should neither be considered exhaustive nor meant to imply encountered soil contaminant concentrations will fall within a specific range. The Contractor shall utilize all available information and existing records and data pertaining to chemical and physical hazards associated with any of the regulated substances identified to develop the HASP.

**2-General:** The requirements set forth herein pertain to the provision of workers' health and safety as it relates to proposed Project activities when performed in the presence of hazardous or regulated materials or otherwise environmentally sensitive conditions. THE PROVISION OF WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIAL

AND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC HAZARDS POSED TO CONTRACTOR EMPLOYEES IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

The Contractor shall be responsible for the development, implementation and oversight of the HASP throughout the performance of work within the project limits, as identified in the Contract Documents, and in other areas identified by the Engineer or by the HASP where site conditions may pose a risk to worker health and safety and/or the environment. **No physical aspects of the work within the project limits shall begin until the HASP is reviewed by the Engineer and is determined to meet the requirements of the specifications. However, the Contract time, in accordance with Article 1.03.08, will begin on the date stipulated in the Notice to Proceed.**

**3-Regulatory Requirements:** All construction related activities performed by the Contractor within the project limits where site conditions may pose a risk to worker health and safety and/or the environment shall be performed in conformance with 29 CFR 1926, Safety and Health Regulations for Construction and 29 CFR 1910, Safety and Health Regulations for General Industry. Conformance to 29 CFR 1910.120, Hazardous Waste Site Operations and Emergency Response (HAZWOPER) may also be required, where appropriate.

**4-Submittals**: Three copies of the HASP shall be submitted to the Engineer within four (4) weeks after the Award of Contract or four (4) weeks prior to the start of any work in the project limits, whichever is first, but not before the Award of the Contract.

The HASP shall be developed by a qualified person designated by the Contractor. This qualified person shall be a Certified Industrial Hygienist (CIH), Certified Hazardous Material Manager (CHMM), or a Certified Safety Professional (CSP). He/she shall have review and approval authority over the HASP and be identified as the Health and Safety Manager (HSM). The HASP shall bear the signature of said HSM indicating that the HASP meets the minimum requirements of 29 CFR 1910.120 and 29 CFR 1926.65.

The Engineer will review the HASP within four (4) weeks of submittal and provide written comments as to deficiencies in and/or exceptions to the plan(s), if any, to assure consistency with the specifications, applicable standards, policies and practices and appropriateness given potential or known site conditions. Items identified in the HASP which do not conform to the specifications will be brought to the attention of the Contractor, and the Contractor shall revise the HASP to correct the deficiencies and resubmit it to the Engineer for determination of compliance with this item. The Contractor shall not be allowed to commence work activities within the project limits, or where site conditions exist which may pose a risk to worker health and safety and/or the environment, until the HASP has been reviewed and accepted by the Engineer. No claim for delay in the progress of work will be considered for the Contractor's failure to submit a HASP that conforms to the requirements of the Contract.

**5-HASP Provisions:**

(a) General Requirements: The Contractor shall prepare a HASP covering all Project site work regulated by 29 CFR 1910.120(b)/ 1926.65(b) to be performed by the Contractor and all subcontractors under this Contract. The HASP shall establish in detail, the protocols necessary for the recognition, evaluation, and control of all hazards associated with each task performed under this Contract. The HASP shall address site-specific safety and health hazards of each phase of site operation and include the requirements and procedures for employee protection. The level of detail provided in the HASP shall be tailored to the type of work, complexity of operations to be performed, and hazards anticipated. Details about some activities may not be available when the initial HASP is prepared and submitted. Therefore, the HASP shall address, in as much detail as possible, all anticipated tasks, their related hazards and anticipated control measures.

The HASP shall interface with the Contractor's Safety and Health Program. Any portions of the Safety and Health Program that are referenced in the HASP shall be included as appendices to the HASP. All topics regulated by the 29 CFR 1910.120(b)(4) and those listed below shall be addressed in the HASP. Where the use of a specific topic is not applicable to the Project, the HASP shall include a statement to justify its omission or reduced level of detail and establish that adequate consideration was given the topic.

(b) Elements:

(i) Site Description and Contamination Characterization: The Contractor shall provide a site description and contaminant characterization in the HASP that meets the requirements of 29 CFR 1910.120/1926.65.

(ii) Safety and Health Risk Analysis/Activity Hazard Analysis: The HASP shall address the safety and health hazards on this site for every operation to be performed. The Contractor shall review existing records and data to identify potential chemical and physical hazards associated with the site and shall evaluate their impact on field operations. Sources, concentrations (if known), potential exposure pathways, and other factors as noted in CFR 1910.120/126.65, paragraph (c)(7) employed to assess risk shall be described. The Contractor shall develop and justify action levels for implementation of engineering controls and personal protective equipment upgrades and downgrades for controlling worker exposure to the identified hazards. If there is no permissible exposure limit (PEL) or published exposure level for an identified hazard, available information from other published studies may be used as guidance. Any modification of an established PEL must be fully documented.

The HASP shall include a comprehensive section that discusses the tasks and objectives of the site operations and logistics and resources required to complete each task. The hazards associated with each task shall be identified. Hazard prevention techniques, procedures and/or equipment shall be identified to mitigate each of the hazards identified.

(iii) Staff Organization, Qualifications and Responsibilities: The HASP shall include a list of personnel expected to be engaged in site activities and certify that said personnel have completed the educational requirements stipulated in 29 CFR 1910.120 and 29 CFR 1926.65, are currently monitored under a medical surveillance program in compliance with those regulations, and that they are fit for work under "level C" conditions.

The Contractor shall assign responsibilities for safety activities and procedures. An outline or flow chart of the safety chain of command shall be provided in the HASP. Qualifications, including education, experience, certifications, and training in safety and health for all personnel engaged in safety and health functions shall be documented in the HASP. Specific duties of each on-site team member should be identified. Typical team members include but are not limited to Team Leader, Scientific Advisor, Site Safety Officer, Public Information Officer, Security Officer, Record Keeper, Financial Officer, Field Team Leader, and Field Team members.

The HASP shall also include the name and qualifications of the individual proposed to serve as Health and Safety Officer (HSO). The HSO shall have full authority to carry out and ensure compliance with the HASP. The Contractor shall provide a competent HSO on-site who is capable of identifying existing and potential hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees and who has authorization to take prompt corrective measures to eliminate or control them. The qualifications of the HSO shall include completion of OSHA 40-hour HAZWOPER training and 8-hour HAZWOPER supervisory training; a minimum of one year of working experience with the regulated compounds that have been documented to exist within Project limits; a working knowledge of Federal and State safety regulations; specialized training or documented experience (one year minimum) in personal and respiratory protective equipment program implementation; the proper use of air monitoring instruments, air sampling methods and procedures; and certification training in first aid and CPR by a recognized, approved organization such as the American Red Cross.

The primary duties of the HSO shall be those associated with worker health and safety. The Contractor's HSO responsibilities shall be detailed in the written HASP and shall include, but not be limited to the following:

(A) Directing and implementing the HASP.

(B) Ensuring that all Project personnel have been adequately trained in the recognition and avoidance of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury (29 CFR 1926.21). All personnel shall be adequately trained in procedures outlined in the Contractor's written HASP.

(C) Authorizing Stop Work Orders, which shall be executed upon the determination of an imminent health and safety concern.

(D) Contacting the Contractor's HSM and the Engineer immediately upon the issuance of a Stop Work order when the HSO has made the determination of an imminent health and safety concern.

(E) Authorizing work to resume, upon approval from the Contractor's HSM.

(F) Directing activities, as defined in the Contractor's written HASP, during emergency situations; and

(G) Providing personal monitoring where applicable, and as identified in the HASP.

(iv) Employee Training Assignments: The Contractor shall develop a training program to inform employees, supplier's representatives, and official visitors of the special hazards and procedures (including PPE, its uses and inspections) to control these hazards during field operations. Official visitors include but are not limited to Federal Agency Representatives, State Agency Representatives, Municipal Agency Representatives, Contractors, subcontractors, etc. This program shall be consistent with the requirements of 29 CFR 1910.120 and 29 CFR 1926.65.

(v) Personal Protective Equipment: The plan shall include the requirements and procedures for employee protection and should include a detailed section on respiratory protection. The Contractor shall describe in detail and provide appropriate personal protective equipment (PPE) to insure that workers are not exposed to levels greater than the action level for identified hazards for each operation stated for each work zone. The level of protection shall be specific for each operation and shall be in compliance with all requirements of 29 CFR 1910 and 29 CFR 1926. The Contractor shall provide, maintain, and properly dispose of all PPE.

(vi) Medical Surveillance Program: All on-site Contractor personnel engaged in 29 CFR 1910.120/1926.65 operations shall have medical examinations meeting the requirements of 29 CFR 1910.120(f) prior to commencement of work.

The HASP shall include certification of medical evaluation and clearance by the physician for each employee engaged in 29 CFR 1910.120/1926.65 operations at the site.

(vii) Exposure Monitoring/Air Sampling Program: The Contractor shall submit an Air Monitoring Plan as part of the HASP which is consistent with 29 CFR 1910.120, paragraphs (b)(4)(ii)(E), (c)(6), and (h). The Contractor shall identify specific air sampling equipment, locations, and frequencies in the air-monitoring plan. Air and exposure monitoring requirements shall be specified in the Contractor's HASP. The Contractor's CIH shall specify exposure monitoring/air sampling requirements after a careful review of the contaminants of concern and planned site activities.

(viii) Site Layout and Control: The HASP shall include a map, work zone delineation (support, contamination, reduction and exclusion), on/off-site communications, site access controls, and security (physical and procedural).

(ix) Communications: Written procedures for routine and emergency communications procedures shall be included in the Contractor's HASP.

(x) Personal Hygiene, Personal Decontamination and Equipment Decontamination: Decontamination facilities and procedures for personnel protective equipment, sampling equipment, and heavy equipment shall be discussed in detail in the HASP.

(xi) Emergency Equipment and First Aid Requirements: The Contractor shall provide appropriate emergency first aid kits and equipment suitable to treat exposure to the hazards identified, including chemical agents. The Contractor will provide personnel that have certified first aid/CPR training on-site at all times during site operations.

(xii) Emergency Response Plan and Spill Containment Program: The Contractor shall establish procedures in order to take emergency action in the event of immediate hazards (i.e., a chemical agent leak or spill, fire or personal injury). Personnel and facilities supplying support in emergency procedures will be identified. The emergency equipment to be present on-site and the Emergency Response Plan procedures, as required 29 CFR 1910.120, paragraph (1)(1)(ii) shall be specified in the Emergency Response Plan. The Emergency Response Plan shall be included as part of the HASP. This Emergency Response Plan shall include written directions to the closest hospital as well as a map showing the route to the hospital.

(xiii) Logs, Reports and Record Keeping: The Contractor shall maintain safety inspections, logs, and reports, accident/incident reports, medical certifications, training logs, monitoring results, etc. All exposure and medical monitoring records are to be maintained according to 29 CFR 1910 and 29 CFR 1926. The format of these logs and reports shall be developed by the Contractor to include training logs, daily logs, weekly reports, safety meetings, medical surveillance records, and a phase-out report. These logs, records, and reports shall be maintained by the Contractor and be made available to the Engineer.

The Contractor shall immediately notify the Engineer of any accident/ incident. Within two working days of any reportable accident, the Contractor shall complete and submit to the Engineer an accident report.

(xiv) Confined space entry procedures: Confined space entry procedures, both permit required and non permit required, shall be discussed in detail.

(xv) Pre-entry briefings: The HASP shall provide for pre-entry briefings to be held prior to initiating any site activity and at such other times as necessary to ensure that employees are apprised of the HASP and that this plan in being followed.

(xvi) Inspections/audits: The HSM or HSO shall conduct Inspections or audits to determine the effectiveness of the HASP. The Contractor shall correct any deficiencies in the effectiveness of the HASP.

**6-HASP Implementation:** The Contractor shall implement and maintain the HASP throughout the performance of work. In areas identified as having a potential risk to worker health and safety, and in any other areas deemed appropriate by the HSO, the Contractor shall be prepared to immediately implement the appropriate health and safety measures, including but not limited to the use of personal protective equipment (PPE), and engineering and administrative controls.

If the Engineer observes deficiencies in the Contractor's operations with respect to the HASP, they shall be assembled in a written field directive and given to the Contractor. The Contractor shall immediately correct the deficiencies and respond, in writing, as to how each was corrected. Failure to bring the work area(s) and implementation procedures into compliance will result in a Stop Work Order and a written directive to discuss an appropriate resolution(s) to the matter. When the Contractor demonstrates compliance, the Engineer shall remove the Stop Work Order. If a Stop Work Order has been issued for cause, no delay claims on the part of the Contractor will be honored.

Disposable CPC/PPE, i.e. disposable coveralls, gloves, etc., which come in direct contact with hazardous or potentially hazardous material shall be placed into 55-gallon USDOT 17-H drums and disposed of in accordance with Federal, State, and local regulations. The drums shall be temporarily staged and secured within the WSA until the material is appropriately disposed.

**7-HASP Revisions:** The HASP shall be maintained on-site by the Contractor and shall be kept current with construction activities and site conditions under this Contract. The HASP shall be recognized as a flexible document which shall be subject to revisions and amendments, as required, in response to actual site conditions, changes in work methods and/or alterations in the relative risk present. All changes and modifications shall be signed by the Contractor's HSM and shall require the review and acceptance by the Engineer prior to the implementation of such changes.

Should any unforeseen hazard become evident during the performance of the work, the HSO shall bring such hazard to the attention of the Contractor and the Engineer as soon as possible. In the interim, the Contractor shall take action, including Stop Work Orders and/or upgrading PPE as necessary to re-establish and maintain safe working conditions and to safeguard on-site personnel, visitors, the public and the environment. The HASP shall then be revised/amended to reflect the changed condition.

**Method of Measurement:**

1-Within thirty (30) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for acceptance a breakdown of its lump sum bid price for this item detailing:

(a) The development costs associated with preparing the HASP in accordance with these Specifications.
(b) The cost per month for the duration of the Project to implement the HASP and provide the services of the HSM and the HSO.

2-If the lump sum bid price breakdown is unacceptable to the Engineer; substantiation showing that the submitted costs are reasonable shall be required.

3-Upon acceptance of the payment schedule by the Engineer, payments for work performed will be made as follows:

(a) The lump sum development cost will be certified for payment.

(b) The Contractor shall demonstrate to the Engineer monthly that the HASP has been kept current and is being implemented and the monthly cost will be certified for payment.

(c) Any month where the HASP is found not to be current or is not being implemented, the monthly payment for the Environmental Health and Safety Item shall be deferred to the next monthly payment estimate. If the HASP is not current or being implemented for more than thirty calendar days, there will be no monthly payment.

(d) Failure of the Contractor to implement the HASP in accordance with this Specification shall result in the withholding of all Contract payments.

**Basis of Payment:**

This work will be paid for at the Contract lump sum price for "Environmental Health and Safety" which price shall include all materials, tools, equipment and labor incidental to the completion of this item for the duration of the Project to maintain, revise, monitor and implement the HASP. Such costs include providing the services of the HSM and HSO, Contractor employee training, chemical protective clothing (CPC), personal protective equipment (PPE), disposal of PPE and CPC, medical surveillance, decontamination facilities, engineering controls, monitoring and all other HASP protocols and procedures established to protect the Health and Safety for all on-site workers.

| Pay Item | Pay Unit |
|---|---|
| Environmental Health and Safety | L.S. |

# ITEM #0202216A – EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL

**Description:** This work shall consist of excavating existing channel bottom material, herein referred to as natural streambed material, in areas where the channel bottom is to be disturbed and regraded to create a work area for a bridge, culvert, articulated concrete block placement, cofferdam installation, as shown on the plans or as directed by the Engineer. This item shall also include the stockpiling and protecting of the excavated material on-Site, subsequent placement, top dressing, or backfilling of the excavated stockpiled material within the watercourse, as shown on the plans or as directed by the Engineer.

**Materials:** The material for this item shall consist of the existing naturally-formed rocks, cobbles, gravel, soils and clean natural sediments from within the channel.

Any material excavated from shale, ledge (bedrock) formations broken from larger boulders, or material with sharp acute edges will not be accepted. Broken concrete will not be accepted.

Geotextile: Geotextile shall be as specified in M.08.01-19 Geotextiles.

**Construction Methods:**

**1. Stockpiling of Material.** The Contractor shall submit for the Engineer's approval a proposed location for stockpiling material. The proposed location shall be upland where disruption to the stream channel or impact to wetland areas caused by moving the natural streambed material to and from the stockpile are minimized. The Contractor shall prepare the area approved by the Engineer, suitable in size and location for stockpiling the natural streambed material.

The stockpile shall be located where it can remain undisturbed for the duration of the stream channel reconstruction or as shown on the plans and shall be protected using sedimentation control measures. The stockpile area shall be free of debris and cleaned adequately to prevent mixing with underlying soil or other materials, including the use of a separation barrier such as: high-survivability geotextile fabric, polyethylene sheeting, or similar. The stockpile area shall be adequately covered to protect the excavated natural streambed material from erosion by rain, wind, or other forces.

**2. Excavation of Natural Streambed Material.** The Contractor shall notify the Engineer 10 days in advance of excavation and placement of natural streambed material activities. The Engineer will identify the limits of the exposed natural streambed material during excavation under this item. The Engineer will identify the bottom limit of excavation, an amount up to but not exceeding 24 inches in depth, unless approved by the Engineer or their authorized delegate, based upon visual inspection of the natural streambed material. After the limits of excavation have been determined, the Contractor shall excavate the natural streambed material, separate from any other roadway, structure, channel or unsuitable material excavation on Site. After the natural streambed material has been excavated, it shall be placed in the pre-approved stockpile area.

**3. Backfilling and Placement with Natural Streambed Material.** The stockpiled natural streambed material shall be placed as fill material as specified at the designated location(s) to the required thickness and elevation as shown on the plans or as directed by the Engineer or their authorized delegate. Placement methods likely to cause segregation of the various sizes of stone will not be permitted. Placement techniques shall prevent integration with non-natural streambed material and shall keep the natural streambed material relatively homogenous. The natural streambed material shall be placed in a manner that replicates the original condition of the channel prior to excavation and to the elevation as shown on the plans.

**4. Top Dressing with Natural Streambed Material.** The stockpiled natural streambed material shall be used as top dressing over riprap or other material as specified at the designated location(s) to the required thickness and elevation as shown on the plans or as directed by the Engineer or their authorized delegate. Placement techniques shall prevent integration with the non-natural streambed material and shall keep the natural streambed material relatively homogenous. The natural streambed material shall be placed in a manner that replicates the original condition of the channel prior to excavation and to the elevation as shown on the plans.

**5. Site Maintenance.** When backfilling, placing, or top dressing, the Contractor shall perform all containment, diversion, or other separation of the channel flow to minimize sediment transport downstream.

The disposal of any surplus and/or unsuitable material shall be in accordance with Article 1.09.04.

If the Engineer determines that there is an insufficient quantity of natural streambed material within the Project limits, the Contractor shall procure Supplemental Streambed Channel Material as specified under Item #0202217A.

If it is required for the Project to have washing-in of supplemental streambed material, the Contractor shall procure Washing-in Supplemental Streambed Material as specified under Item #0202218A.

The pre-approved stockpile areas shall be restored to the satisfaction of the Engineer. Work to restore/regrade stockpile areas will be paid for under the respective pay item(s).

**Method of Measurement:** This work will be measured for payment by the number of cubic yards of natural streambed material excavated, stockpiled, maintained, installed, and accepted.

The Engineer will delineate the horizontal pay limit prior to the start of excavation. The vertical pay limit will be measured from the top of the existing channel bottom to the bottom of excavation required specifically for the stockpiling of channel bottom material.

Any material excavated beyond the approved horizontal pay limits or deeper than the depth of natural streambed material identified and approved by the Engineer will not be measured for payment under this item. Should such additional excavation be required to complete the Contract work, it will be measured for payment separately under the applicable pay item(s).

**Basis of Payment:** Payment for this work will be made at the Contract unit price per cubic yard for "Excavation and Reuse of Existing Channel Bottom Material." The price shall include all materials, equipment, geotextile, tools, and labor incidental to the preparation of the stockpile area, excavation of natural streambed material, hauling of the material to the stockpile, and separation of any rock ledge or concrete debris, storing, and protecting (including sedimentation controls and covering) excavated material.

Payment for clearing and grubbing of the approved stockpile area will be included in the item "Clearing and Grubbing."

Payment for the removal and proper disposal of all surplus and/or unsuitable material will be in accordance with Article 1.09.04 – Extra and Cost-Plus Work.

Riprap or other specified material as shown on the plan will be paid for under the respective items.

Payment for supplemental streambed channel material will be included in the Item #0202217A "Supplemental Streambed Channel Material." If no item appears in the proposal, payment for the work will be in accordance with Article 1.09.04 – Extra and Cost-Plus Work.

Payment for washing in supplemental streambed channel material will be included in the Item #0202218A "Washing-in Supplemental Streambed Material." If no item appears in the proposal, payment for the work will be in accordance with Article 1.09.04 – Extra and Cost-Plus Work.

Payment for all containment, diversion or other separation of stream flow will be included in the item "Cofferdam and Dewatering" or special provision for "Handling Water."

| Pay Item | Pay Unit |
|---|---|
| Excavation and Reuse of Existing Channel Bottom Material | c.y. |

# ITEM #0202217A – SUPPLEMENTAL STREAMBED CHANNEL MATERIAL

**Description:** This work shall consist of procuring, transporting, and placing supplemental streambed channel material, herein referred to as supplemental streambed material, meeting the visual inspection requirements herein, along stream bank/channel improvement locations as shown on the plans or denoted on the Project's permit applications. This item shall also include any necessary temporary protection and stockpiling of the supplemental streambed material on–Site, subsequent placement, top dressing, or backfilling of the supplemental streambed material within the watercourse, as shown on the plans or as directed by the Engineer.

**Materials:** When a sufficient quantity of material is not available from the existing streambed channel for placement, top dressing, or backfilling within the permitted footprint of the stream bank/channel improvement locations, the Contractor shall furnish supplemental streambed material from an off-Site source. Supplemental streambed material must be visually inspected and accepted by the Engineer or their authorized delegate prior to being delivered to the Site. The Contractor shall notify the Engineer at least 10 working days in advance of the need for inspection of proposed off-Site material.

The supplemental streambed material for this item shall be consistent with the existing naturally-formed cobbles and rocks, gravel, and clean natural sediments found within the existing channel. Rock excavated from shale, ledge (bedrock) formations broken from larger boulders, broken concrete or angular material, or material with sharp acute edges will not be accepted.

Geotextile: Geotextile shall be as specified in M.08.01-19 Geotextiles.

**Construction Methods:**

**1. Stockpiling of Material**. At the start of construction, the Contractor shall prepare an area, approved by the Engineer, suitable in size and location for stockpiling the supplemental streambed material. The Contractor shall select an upland location where disruption to the stream channel or impact to wetland areas caused by moving the supplemental streambed material to and from the stockpile are minimized during the placement of material. The stockpile shall be located where it can remain undisturbed for the duration of the stream channel construction and shall be protected using sedimentation control measures.

The stockpile area shall be free of debris and cleaned adequately to prevent mixing with underlying soil or other materials, including the use of high-survivability geotextile fabric, or similar, if required. The stockpile area shall be adequately covered to protect the supplemental streambed channel material from erosion by rain or other forces. After supplemental streambed material and existing natural streambed material have been placed in the stockpile areas, no other excavated or off-Site material shall be placed in the stockpiles.

**2. Backfilling and Placement with Supplemental Streambed Material.** The stockpiled supplemental streambed material shall be placed as fill material as specified at the designated location(s) to the required thickness and elevation as shown on the plans or as directed by the

Engineer or their authorized delegate. Placing this material by methods likely to cause segregation of the various sizes of stone will not be permitted. Placement techniques shall prevent integration with non-natural streambed material and shall keep the streambed material relatively homogenous. The streambed material shall be placed in a manner that replicates the original condition of the channel prior to excavation and to the elevation as shown on the plans.

**3. Top Dressing with Supplemental Streambed Material.** The stockpiled supplemental streambed material shall be used as top dressing over riprap or other material as specified at the designated location(s) to the required thickness and elevation as shown on the plans or as directed by the Engineer or their authorized delegate. Placement techniques shall prevent integration with the non-natural streambed material and shall keep the streambed material relatively homogenous. The streambed material shall be placed in a manner that replicates the original condition of the channel prior to excavation and to the elevation as shown on the plans.

**4. Site Maintenance.** When placing, backfilling, or top dressing streambed material, the Contractor shall perform all containment, diversion, or other separation of the channel flow to minimize sediment transport downstream.

If it is required for the Project to have washing-in of supplemental streambed material, the Contractor shall procure Washing-in Supplemental Streambed Material as specified under Item #0202218A.

The pre-approved stockpile areas shall be restored to the satisfaction of the Engineer. Work to restore/regrade stockpile areas will be paid for under the respective pay item(s).

**Method of Measurement:** Work under this item will be measured for payment as provided under Article 1.09.04 – Extra and Cost-Plus Work.

The sum of money shown on the estimate and in the itemized proposal as "Estimated Cost" for this work will be considered the price bid even though payment will be made only for actual work performed. The estimated cost figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figures will be disregarded and the original price will be used to determine the total amount bid for the Contract.

**Basis of Payment:** Payment for "Supplemental Streambed Material" shall include all materials, equipment, geotextile, tools, and labor incidental to the preparation of the stockpile area, hauling of the material to the stockpile, placement of supplemental streambed material, and separation of any rock ledge or concrete debris, storing, and protecting (including sedimentation controls and covering) excavated material.

Payment will be as specified under Article 1.09.04 – Extra and Cost-Plus Work.

Payment for clearing and grubbing of the approved stockpile area will be included in the item "Clearing and Grubbing."

Payment for excavation and reuse of existing channel bottom material will be included in the Item #0202216A “Excavation and Reuse of Existing Channel Bottom Material.”

Payment for washing in supplemental streambed material will be included in the Item #0202218A “Washing-in Supplemental Streambed Material.” If no item appears in the proposal, the work will be in accordance with Article 1.09.04 – Extra and Cost-Plus Work.

Payment for all containment, diversion or other separation of stream flow will be included in the item “Cofferdam and Dewatering” or special provision for "Handling Water."

| Pay Item | Pay Unit |
|---|---|
| Supplemental Streambed Channel Material | est. |

# ITEM #0202218A – WASHING-IN SUPPLEMENTAL STREAMBED MATERIAL

**Description:** This work shall consist of procuring, transporting, stockpiling, and washing in of supplemental streambed material, meeting the visual inspection requirements herein, along stream bank/channel improvement locations as shown on the plans or denoted on the Project's permit applications or as directed by the Engineer. This item shall also include any necessary temporary protection and stockpiling of the washing-in supplemental streambed material on–Site and subsequent washing in of supplemental streambed material for filling voids of riprap areas within the watercourse, as shown on the plans or as directed by the Engineer.

**Materials:** When washing in of supplemental streambed material is required, the Contractor shall furnish the washing-in supplemental streambed material from an off-Site source. The supplemental streambed material for washing in must be visually inspected and accepted by the Engineer or their authorized delegate prior to being delivered to the Site. The Contractor shall notify the Engineer at least 10 working days in advance of the need for inspection of proposed off-Site material.

Geotextile: Geotextile shall be as specified in M.08.01-19 Geotextiles.

**Construction Methods:**

1. **Stockpiling of Material**. At the start of construction, the Contractor shall prepare an area, approved by the Engineer, suitable in size and location for stockpiling the supplemental streambed material for washing in. The Contractor shall select an upland location where disruption to the stream channel or impact to wetland areas caused by moving the supplemental streambed material to and from the stockpile are minimized during the placement of material. The stockpile shall be located where it can remain undisturbed for the duration of the stream channel construction and shall be protected using sedimentation control measures. The stockpile of streambed material for washing in shall be kept separate from other streambed material stockpile areas.

The stockpile area shall be free of debris and cleaned adequately to prevent mixing with underlying soil or other materials, including the use of high-survivability geotextile fabric, or similar, if required. The stockpile area shall be adequately covered to protect the supplemental streambed material from erosion by rain or other forces. After supplemental streambed material for washing in has been placed in the stockpile area, no other excavated or off-Site material shall be placed in the stockpiles.

2. **Washing-in Supplemental Streambed Material.** If it is specified on the plans that washing-in supplemental streambed material for filling voids between riprap, or other material, is required, the Contractor must submit a Washing-In Supplemental Streambed Material Plan (SMP) for the Engineer's acceptance. The SMP shall include the following:

1) Provide a plan and section identifying the completed installation and preparation of riprap area to receive streambed material as shown on the plans or as directed by the Engineer or their authorized delegate.
2) Provide means and methods for washing in the supplemental streambed material. Means and methods shall include:
   a. Equipment used to place material.
   b. Washing in of material is to be done manually. Water from the watercourse shall be used to wash in the streambed material into the voided areas between the riprap or other material as specified on the plans. Washing in should be done carefully and at a controlled flow rate/velocity (approximately 4.0 gpm) to not cause erosion of adjacent erodible soils or cause turbid effluent to flow out of the riprap-filled area.
   c. Provide a Catalogue Cut of type and size of pump and hose proposed to be used.
   d. Measures to prevent turbidity from the work area. The Contractor may dewater the areas as defined under Article 2.04 Cofferdam and Dewatering or Item Handling Water.
3) Show calculations of estimated quantity of streambed material needed to wash in and fill riprap voids. The ratio of natural streambed material to riprap shall be approximately 1:3 (assuming 30% voids in the riprap).

**Method for washing in supplemental streambed material:**

Pre-blending riprap with the supplemental streambed material is prohibited. Placement and washing in of supplemental streambed material shall occur after all the riprap has been installed and shaped to final dimensions and grade as shown on the plans or as directed by the Engineer. Placement and washing in of supplemental streambed material must occur within a confined area.

1) Initially place approximately 12-inch lift of the washing-in streambed material over the riprap. Manually hand shovel/rake to assist with placing the streambed material into the riprap voids prior to washing in the streambed material.
2) Begin to manually wash the streambed material into the voids, slowly add more washing-in streambed material on top, in a manner to prevent turbid effluent flow from exiting the work area.
3) If turbidity is observed discharging from the confined work area, cease operations immediately and implement preventative measures as outlined in the approved SMP, until the water level subsides and naturally permeates. Continually observe the confined work area.
4) The Contractor may be allowed to move to different area(s) and continue the washing in process, as noted in Steps 1-3 above, if other locations need the water levels to subside and permeate. (It may be necessary to stop temporarily if the rate of water application exceeds the storage capacity and natural infiltration of the riprap area.)
5) The Contractor shall continue until all voids are filled with streambed material to the satisfaction of the Engineer or their authorized delegate. The ratio of streambed material to riprap shall be approximately 1:3 (assuming 30% voids in the riprap). This ratio should

be considered as a guideline in deciding whether riprap voids are likely to be filled. If the calculated volume of streambed material based on 30% void space has not been washed in, it should be assumed that the voids are not fully filled.

6) Partially remove water-handling-cofferdams or cofferdams to allow watercourse to flow through the area in a controlled manner. Observe watercourse over a period of time; should the water flow go under the surface through the recently created riprap area, reinstall water-handling-cofferdams and continue washing streambed material into riprap voids. Repeat this process as necessary until subsurface flow is no longer observed.

The Contractor may propose alternative methods to meet the requirements noted above. The means and methods will be reviewed by the Engineer or their authorized delegate for acceptance.

**3. Site Maintenance.** When washing in supplemental streambed material, the Contractor shall perform all containment, diversion, or other separation of the channel flow to minimize sediment transport downstream.

The pre-approved stockpile areas shall be restored to the satisfaction of the Engineer. Work to restore the stockpile areas shall be paid for under the respective pay item.

**Method of Measurement:** Work under this item shall be measured for payment as provided under Article 1.09.04 – Extra and Cost-Plus Work.

The sum of money shown on the estimate and in the itemized proposal as "Estimated Cost" for this work will be considered the price bid even though payment will be made only for actual work performed. The estimated cost figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figures will be disregarded, and the original price will be used to determine the total amount bid for the Contract.

**Basis of Payment:** The price shall include all materials, equipment, geotextile, pumps, hoses, tools, and labor incidental to the preparation of the stockpile area, hauling of the material to the stockpile, placement and washing-in supplemental streambed material to fill riprap voids, and separation of any rock ledge or concrete debris, storing, and protecting (including but not limited to sedimentation controls and covering of excavated material).

Payment for Washing-in Supplemental Streambed Material will be paid for under Article 1.09.04 – Extra and Cost-Plus Work.

Payment for clearing and grubbing of the approved stockpile area will be included in the Item "Clearing and Grubbing."

Payment for excavation and reuse of existing channel bottom material will be included in the ITEM #0202216A "Excavation and Reuse of Existing Channel Bottom Material."

Payment for supplemental streambed channel material, other than washing-in streambed material, will be included in the Item #0202217A “Supplemental Streambed Channel Material.”

Payment for all containment, diversion or other separation of stream flow will be included in the item “Cofferdam and Dewatering” or special provision for "Handling Water."

| Pay Item | Pay Unit |
|---|---|
| Washing-in Supplemental Streambed Material | est. |

# ITEM #0202329A MANAGEMENT OF REUSABLE AND SURPLUS SOIL

**Description:**

Work under this item shall include all materials, equipment, tools, and labor required to

(1) stage, manage, and stockpile soil excavated from within the Project limits at a Department-provided Temporary Reuse Stockpile Area (TRSA), or at an alternative Contractor-selected and Department-approved TRSA;
(2) load and transport soil from various stockpile locations, place, and compact said soil within Project limits or in areas with a paved surface (or with poly underlayment) at the selected and approved stockpile area(s) or TRSA; and
(3) maintain the stockpile area(s) or TRSA including the establishment of Conservation areas or as outlined in the Project plans.

This item includes the management of soil for reuse within the Project limits. An estimated 550 cubic yards (CY) of soil have been designated as surplus. The Department encourages and prefers the reuse of this surplus soil within the CTDOT right-of-way to the maximum extent possible, reducing the costs associated with disposal at a regulated facility. Worker health and safety protocols that address potential risks of exposure to site-specific hazards shall be incorporated in the site-specific Health and Safety Plan.

**Construction Methods:**

A. Material Staging and Reuse

The Contractor shall be responsible for the staging and management of excavated soil to maximize reuse. If additional space or alternative locations are preferred by the Contractor to those indicated on the plans, the Contractor shall be responsible for locating and securing stockpile areas within the Project limits, at a nearby existing staging area, or at a nearby Department of Transportation-owned property, as approved by the Engineer.

Excavated soil shall be loaded, transported, placed, and compacted at locations within the Project limits to the maximum extent possible in accordance with the following conditions:

(1) such soil is deemed to be suitable for use as fill by the Engineer; and
(2) such soil is not placed below the water table.

Any surplus soil unsuitable for reuse shall be disposed of at a Department-approved treatment, recycling, or disposal facility.

TRSAs utilized for final placement of soil shall be constructed in accordance with Section 2.02.03(5) consisting of final grades maintainable by the Department. All existing drainage must be re-established and fully functioning before Project close-out. If drainage did not exist prior to construction of the TRSA, swales shall be established at the toe of slope to allow for stormwater runoff.

If an existing Conservation Area (CA) is selected and approved by the Department for staging and reuse of surplus soils, or the Department-provided TRSA is selected to be established as a new CA following final placement of soil, the following conditions shall be met:

(1) If the anticipated duration of the project will result in excess compaction of the topsoil, existing topsoil shall be stripped and stored for the duration of the project to be placed in kind at the selected CA. If reuse of existing topsoil is not feasible, a minimum of 12 inches of approved topsoil shall be imported, placed, and graded at the CA. Used areas must be scarified before the placement of topsoil;
(2) Soil piles shall have finished slopes no greater than 6:1 and be free of woody debris and large rocks;
(3) Finished areas shall be clear of invasive species and be re-established at the direction of the engineer with Conservation seed mix per Item #0950040A; and
(4) Existing drainage must be re-established and fully functioning before Project close-out. If drainage ways did not exist prior to reuse of soil in the CA, drainage swales shall be established at the toe of slope to allow for stormwater runoff.

Prior to approval of use of a CA, a plan sheet of finished grades for the proposed site must be submitted for review and approval by the Engineer. Contractor should note that existing CAs are not permitted to be used unless all other suitable alternatives have been investigated.

B. Material Transportation

In addition to all pertinent Federal, State, and local laws or regulatory agency polices, the Contractor shall adhere to the following precautions during the transport of soil off-site:

- Transported soils are to be covered sufficiently to preclude the loss of material during transport prior to leaving the site and are to remain covered until arrival at the TRSA location.

**Method of Measurement:**

This work, being paid on a lump sum basis, will not be measured for payment. The amount of excavation will be determined in accordance with 2.02.04 – Method of Measurement, or by a method approved by the Engineer. A schedule of values for payment shall be submitted to the Department for review and comment prior to first payment.

**Basis of Payment:**

"Management of Reusable and Surplus Soil" will be paid for at the Contract lump sum price, which shall include all materials, equipment, tools and labor necessary to (1) stage, manage, and stockpile soil at a Department-provided Temporary Reuse Stockpile Area (TRSA), or at an alternative Contractor-selected and Department-approved TRSA; (2) load and transport soil from various stockpile locations to fill areas located within the Project limits or a nearby Department

of Transportation owned property, and to place and compact said soil; and (3) maintain/restore the stockpile area(s)/TRSA.

Payment shall include all equipment, materials, tools, and labor incidental to this work.

The establishment of specialized vegetation within Conservation Areas will be paid for under Item #0950040A – Conservation Seedings for Slopes.

| Pay Item | Pay Unit |
|---|---|
| Management of Reusable and Surplus Soil | LS |

# ITEM #0202911A – CONDITION SURVEY (SITE NO. 1)

**Description:** The Contractor shall perform a construction survey and vibration monitoring of the existing 18" sanitary sewer line adjacent to the construction areas. The monitoring of vibrations adjacent to Bridge No. 05585 shall include the 18" sanitary sewer line located south of the bridge.

The condition survey shall document the existing conditions, including cracks, settlements misalignments and other existing structural defects. The condition survey shall also establish ambient vibration levels and determine and recommend tolerable and safe levels of vibrations to the existing structures due to construction. The condition survey shall document conditions through the duration of the construction project as ordered by the Engineer and shall include both pre and post-construction conditions.

**Materials:** None required

**Construction Methods:** The Contractor shall perform a pre-construction survey of existing facilities in accordance with this specification to establish baseline data, including ambient vibration levels and existing structural defects, to establish safe and tolerable levels of vibrations and deformations to existing facilities, and to monitor and record vibration and deformation levels during construction.

The Contractor shall engage a professional engineer licensed in the state of Connecticut, with a minimum of five (5) years of experience, to prepare the Condition Survey. Said engineer will be referred to in this work as the condition survey engineer, and they shall retain, partner with, or oversee a geotechnical engineering consultant and a professional vibrations consultant, all licensed in the state of Connecticut, to perform the work in this specification. The condition survey engineer and their agents for this work shall act as the representative of the interests of the adjacent property owners during construction, and he shall be reimbursed by the Contractor.

In general, equipment for vibration monitoring should be capable of detecting velocities of 0.1 inch per second or less. When vibration levels exceed established tolerable levels, the Contractor shall immediately stop work and take whatever measures are necessary to reduce vibration levels below tolerable levels.

In general, during the construction of the temporary access roads and during the removal and resetting of sound barriers, survey points shall be established on utility within 20 feet of any proposed driven temporary earth retaining system or drilled barrier pole. The Contractor shall monitor these points for vertical and lateral movement in an approved manner to the accuracy determined by the Engineer.

When deformations exceed the predetermined tolerable and safe levels, the Contractor shall immediately stop work and, if directed by the Engineer, backfill the excavated hole or area.

The Contractor shall be responsible for selecting and using equipment and procedures that keep

deformations of existing structures within specified tolerable levels.

At least 45 days before starting any construction activities which will induce vibrations, the Contractor shall notify the Engineer.

The condition survey engineer shall determine the condition of the existing utility, document any existing damage or defects, and prepare a written report including color photographs, color video (i.e. sewer camera inspection), sketches, plans and any other pertinent information. A minimum of four (4) copies of the report shall be submitted to the Engineer. The report shall be stamped and signed by the condition survey engineer and shall include pre- and post-construction conditions.

The condition survey engineer shall provide written summaries of construction observations and monitoring, to be made available to the Engineer as directed. The results of monitoring and instrumentation program shall be included.

The condition survey engineer shall attend site meetings as needed to discuss issues and/or construction procedures.

**Method of Measurement:** This work, being paid on a lump sum basis, will not be measured for payment.

**Basis of Payment:** Payment for this item shall be made at the contract Lump Sum prices for "Condition Survey (Site No. 1)" which shall include all field inspections, photographs, video, sketches and final report for each utility identified, engineering studies and recommendations, reports, construction monitoring, meetings, and all services necessary to complete this work.

| Pay Item | Pay Unit |
|---|---|
| Condition Survey (Site No. 1) | LS |

# ITEM #0204151A - HANDLING WATER

**Description:** Work under this item shall consist of designing, furnishing, installing, maintaining, and removing of a temporary water handling system. This may include water-handling-cofferdams, bypass pipes, bypass pumps/hoses, temporary energy dissipation, sump pumps, drainage channels, water handling for ancillary drainage, and dewatering.

A temporary water handling system redirects water beyond, through, or around the limits of construction to allow work to be done in the dry.

**Materials:** The materials required for this work shall be as shown on the plans, on the accepted Contractor's Working Drawing submittal, or as ordered by the Engineer.

**Construction Methods:** The Contractor shall prepare and submit written procedures for handling water. Working Drawings, in accordance with Article 1.05.02, shall also be prepared and submitted.

The Contractor shall consider stream conditions, water elevations, expected weather, and risks associated with the Site to determine the type of temporary water handling system required to redirect water away from work being performed. The system shall be designed to comply with the Temporary Hydraulic Table in the Contract plans and be compatible with the stage of construction and Maintenance and Protection of Traffic scheme, as indicated in the Contract, and shall conform to Section 1.10.

The Contractor shall be responsible to maintain and repair the water handling system throughout the duration of the Contract. If the system becomes damaged, displaced, or not functioning properly due to construction activities, stream conditions or storm events, the Contractor shall be responsible to remediate the system back to working order per plan or as required at the direction of the Engineer.

Unless otherwise directed by the Engineer, all temporary water handling system components shall be removed in an acceptable manner when no longer required.

**Method of Measurement:** The work under this item, being paid on a lump sum basis, will not be measured for payment.

**Basis of Payment:** This work will be paid for at the Contract lump sum price for "Handling Water" completed and accepted, which price shall include designing (including submittals and Working Drawings), furnishing, installing, maintaining, and removing of all temporary water handling system components as are necessary for completion of the work. This price shall include all materials, equipment, tools, labor and work incidental thereto.

A schedule of values for payment shall be submitted to the Engineer for review and comment.

| Pay Item | Pay Unit |
|---|---|
| Handling Water | l.s. |

# ITEM #0210821A—WATER POLLUTION CONTROL

**Description:** This work shall consist of measures to control water pollution and soil erosion which become necessary for the completion of the work, but for which no item is provided in the Contract. Such measures include:

- temporary check dams, water bars, berms, dikes, dams
- temporary sediment traps
- pump settling basins
- silt fence
- inlet protection
- hay bales
- erosion control matting
- fiber rolls, coir rolls, wattles
- gravel, stone, riprap
- mulch
- permanent or temporary seeding
- slope drains, ditches, channels, temporary drainage measures
- dust control
- topsoil
- other erosion control materials, devices, or methods

If a situation arises that requires immediate deployment of water pollution control measures, the Engineer will direct the Contractor to use this item to prosecute the work.

If the Contractor proposes changes in construction methods or staging which would affect the as designed pollution controls, plans for revised pollution controls shall be submitted for the Engineer's approval prior to start of work.

**Materials:** The materials shall meet the pertinent articles of the Standard Specifications. The Contractor shall submit Product Data for the materials.

**Construction Methods:** The Engineer has the authority to control the surface area of earth material exposed by construction operations and to direct the Contractor to immediately provide permanent or temporary pollution control measures to protect watercourses, wetlands, or other natural resources. Every effort shall be made by the Contractor to prevent erosion on the Site and prevent runoff onto abutting property.

All disturbed areas shall be permanently or temporarily stabilized by mulching, seeding or other methods as the work progresses to comply with the intent of this specification.

All damaged slopes shall be repaired as soon as possible. The Engineer will limit the surface area of earth material exposed if the Contractor fails to sufficiently protect the slopes.

The Contractor shall always have on hand the necessary materials and equipment to provide for slope stabilization and corrective measures to damaged slopes.

Temporary channels, ditches, water bars and outfalls shall be protected prior to directing water into them.

The erosion control features installed by the Contractor shall be maintained by the Contractor, and such installations shall be removed if ordered by the Engineer. Maintenance of erosion control measures by the Contractor shall include the clean out of accumulated sediment.

**Method of Measurement:** The work and materials required for Water Pollution Control measures will be measured for payment as provided for under 1.09.04 - Extra and Cost-Plus Work.

The sum of money shown on the estimate and in the itemized proposal as "Estimated Cost" for this work will be considered the price bid even though payment will be made only for actual work performed. The estimated cost figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figures will be disregarded, and the original price will be used to determine the total amount bid for the Contract.

**Basis of Payment:** Work will be paid for as provided under 1.09.04 - Extra and Cost-Plus Work.

Control measures that are made necessary by the Contractor's failure to install and maintain controls as a part of the work as scheduled or ordered by the Engineer shall be performed by the Contractor at its own expense.

Control work at off-Site areas selected by the Contractor shall be the responsibility of the Contractor.

| Pay Item | Pay Unit |
|---|---|
| Water Pollution Control | est |

# ITEM #0219011A – SEDIMENT CONTROL SYSTEM AT CATCH BASIN

**Description:** Work under this item shall consist of furnishing, installing, maintaining, replacing, and removing sediment control system at catch basins, herein referred to as Silt Sack, at the locations as shown on plans or as directed by the Engineer. The work shall also include removal of accumulated sediment, and disposal of accumulated sediment,

**Materials:** The Silt Sack must be commercially produced and marketed for the specific application(s) on the Project. All Silt Sack must be manufactured from a specially designed woven polypropylene geotextile sewn material. The Silt Sack must be able to handle flows of at least 180 gallons per minute per square foot, fit any sized catch basin or drop inlet, and be UV resistant.

The Silt Sack product shall be one of the following or an approved equal:

1. Siltsack®
2. Dandy Sack®
3. FleXstorm Catch-It™
4. PIG®Sediment-Drain Filter
5. ACF Environmental Silt Sack

The Sediment Control System at Catch Basin must have the following features: two dump straps attached at the bottom to facilitate the emptying of the Silt Sack and lifting straps to be used to lift the Silt Sack from the catch basin or drop inlet. The Silt Sack shall have a restraint cord approximately halfway up to keep the sides away from the catch basin or drop inlet walls. When required, a curb deflector shall be installed as directed by the Engineer.

Product Data for the Silt Sack to be used by the Contractor must be submitted for review and acceptance by the Engineer or their authorized delegate prior to the installation on-Site.

**Construction Methods:** The Contractor shall install the Silk Sack per the manufacturer's instructions and recommendations at each catch basin or drop inlet as shown on the plans or as directed by the Engineer to provide inlet protection to prevent silt, sediment, or debris from entering the stormwater drainage system.

When the Silt Sack becomes 1/2 full of accumulated sediment, the Contractor shall empty, clean, and replace the Silt Sack back into the catch basin or drop inlet. Sediment emptied shall be considered unsuitable material and be disposed of at an off-Site approved upland facility per federal, State, and local environmental laws and regulations.

At the completion of the Project, the Contractor shall remove all Silt Sacks within the Project limits. Any spilled sediment material during removal operations shall be removed by the Contractor at no cost to the State.

**Method of Measurement:** Sediment Control System at Catch Basin will be measured as each installed, maintained, accepted, and removed. There will be no separate measurement for maintenance or replacement associated with this item.

**Basis of Payment**: The item "Sediment Control System at Catch Basin" will be paid at the Contract unit price for each completed system in place and accepted, which price shall include installing, maintaining, replacing, removal of material, off-Site disposal of accumulated material, materials, equipment, tools, and labor incidental thereto.

The cost of installing hay bales, geotextile, check dam, or fiber roll for inlet protection shall be paid for under their respective Contract item or special provision.

| Pay Item | Pay Unit |
|---|---|
| Sediment Control System at Catch Basin | ea. |

# ITEM #0406125.20A – BITUMINOUS CONCRETE PATCHING – PARTIAL DEPTH

**Description**:
This work shall consist of milling out deteriorated bituminous concrete pavement to a depth between 1.5 to 2.5 inches, disposing of pavement millings, sweeping and cleaning, application of tack coat on all surfaces within the milled area, and placement of Hot-Mix Asphalt (HMA) or an equivalent Polymer Modified Asphalt (PMA) to match the elevation of the surrounding pavement.

For road sections being milled and paved, all patching operations must be completed after milling is complete and before paving begins. All patching operations shall be completed within one working day following milling and shall be completed before traffic is permitted to resume on the exposed roadway.

**Materials:**
Materials for this work shall meet the requirements of Section M.04 and shall consist of the following:

1. HMA S0.375 or an equivalent PMA. All HMA or PMA shall be Traffic Level 2 unless indicated otherwise on the plans.
2. Tack coat.

**Construction Methods:**
Equipment for this work shall include, but is not limited to, the following:

1. Milling machine: A milling machine designed and built for milling flexible pavements. It shall be self-propelled with sufficient power, traction, and stability to maintain depth and slope and shall be capable of removing the existing bituminous concrete pavement.

   The rotary drum of the machine shall use carbide or diamond tip tools spaced not more than 15 mm apart. The forward speed of the milling machine shall be a maximum of 45 feet/minute. The tools on the revolving cutting drum must be continually maintained and shall be replaced as warranted to provide a uniform pavement texture.

   The machine shall be equipped with an integral pickup and conveying device to immediately remove milled material from the surface of the roadway and discharge the millings into a truck in one operation. The machine shall also be equipped with a means of effectively limiting the amount of dust escaping from the milling and removal operation. When milling smaller areas or areas where it is impractical to use the above described equipment, the Contractor may be permitted to use a lesser equipped milling machine, if approved by the Engineer.

   The minimum milling width shall be 20 inches, making the minimum achievable patch size 20 inches by 20 inches, or 0.30 square yards.

2. 10-foot straight edge.

3. Sweeper: A sweeper, equipped with a water tank, capable of remove millings and loose debris.

4. Air compressor: An air compressor capable of producing 100 psi oil free compressed air for cleaning the milled pavement surface.

5. Hot air lance: A hot air lance that can deliver 100 psi oil free heated air to clean and dry the pavement surface. The compressed air emitted from the tip of the lance shall achieve a temperature of at least 1500°F.

6. Paving and compaction equipment: Paving and compaction equipment meeting the requirements of Section 4.06. It is expected that much of the placement will require hand work or a mixture of equipment and hand tools to achieve the required results. Smaller compaction equipment, including vibratory plate compactors, will be allowed by the Engineer to achieve the required results. At all times the Contractor is required to meet the density and compaction and all other requirements specified in Sections 4.06 and M.04.

7. Portable lighting equipment: If the work is performed at night a truck towed light tower and driver shall be provided for use by the Engineer for all marking, installation, and inspection of the patches.

8. Tack Coat Distributor: A minimum 150-gallon capacity tank that is trailer mounted or self-propelled and capable of applying tack coat meeting the requirements of Section 4.06.

The work shall include, but is not limited to, the following:

1. Demarcating: The Engineer will mark out areas for patching and will determine the appropriate milling depth between 1.5 inches and 2.5 inches. The minimum length and width dimensions of the patch shall be 20 inches. Any area to be patched shall completely encompass the entire distressed pavement area and extend at least 6 inches beyond into the surrounding pavement wherever possible.

2. Milling: Mill marked out areas to the specified depths.

3. Sweeping, Cleaning, and Drying: Sweep the milled surface clean, and allow milled areas to dry. Any moisture in or on the milled areas must be allowed to evaporate or be removed with the assistance of the hot air lance. When the milled area is dry to the satisfaction of the Engineer, it shall be blown clean of any residual dust or debris using compressed air.

4. Applying Tack Coat: Apply tack coat to the entire clean and dry milled area, including the sides/walls of the area to be patched, in accordance with the requirements of Section 4.06.

5. Placing Patch Material: After the tack coat has had sufficient time to cure or break, HMA S0.375 or equivalent PMA shall be placed and compacted to the requirements above and in Section 4.06. The Contractor shall confirm that the surface elevation of the finished patch matches the elevation of the surrounding pavement surface to within 1/4 inch using the 10-foot straightedge. The Contractor shall confirm that all patch material placed is uniform in appearance without segregation.

**Method of Measurement:**
This work will be measured by the number of square yards of patched bituminous concrete completed and accepted.

**Basis of Payment:**
This work will be paid for at the Contract unit price per square yard of "Bituminous Concrete Patching – Partial Depth." The price shall include all tools, materials, labor and equipment; milling, removing, and disposing of pavement millings; sweeping and cleaning of the milled area; drying the milled area; applying tack coat to the milled area; and placement and compaction of HMA or PMA.

| Pay Item | Pay Unit |
|---|---|
| Bituminous Concrete Patching – Partial Depth | s.y. |

# ITEM #0406312A – GUTTER LINE SEALING FOR BRIDGES

**Description:** This work shall consist of applying hot-applied asphalt crack sealant along the gutter line of bridges after paving to seal the joint between the bituminous concrete overlay and parapet, curb, or barrier at the locations and to the limits shown on the Plans.

**Materials:**

1. Crack Seal: The crack seal material shall be composed of a hot-applied asphalt meeting ASTM D6690 Type II requirements.

   Prior to the start of work, the Contractor shall submit a Materials Certification (MC) in accordance with Article 1.06.07 certifying the joint seal material meets these requirements. The Contractor must submit to the Engineer all Safety Data Sheets (SDS) from the material manufacturer prior to the commencement of work.

2. Blotting Agent – Detackifier: This material shall be a fine-graded granular material with 100% aggregate passing the 3/16-inch sieve and no more than 5% passing the #200 sieve when tested in accordance with AASHTO T 27 and T 11.

   The material shall be as recommended by the supplier of the crack sealant and shall be used as recommended by the supplier, except that no paper, cotton, or other organic materials will be allowed. Product Data shall be submitted to the Engineer for review in accordance with Article 1.05.02.

**Construction Methods**: The sealing operation shall proceed in accordance with the requirements of the "Maintenance and Protection of Traffic" and "Prosecution and Progress" specifications.

1. Equipment: The equipment used by the Contractor shall include the following:

   a. Melter Applicator: This shall consist of a boiler kettle equipped with pressure pump, hose, and applicator wand; the boiler kettle may be a combination melter and pressurized applicator of a double-boiler type with space between the inner and outer shells filled with heat transfer oil. Heat transfer oil shall have a flash point of not less than 600°F. The kettle shall include a temperature control indicator. The kettle shall be capable of maintaining the crack seal material at the manufacturer's specified application temperature range. The kettle shall include an insulated applicator hose and application wand. The hose shall be equipped with a shutoff control. The kettle shall include a mechanical full sweep agitator to provide continuous blending. Thermometers shall monitor the material temperature and the heating oil temperature. Thermostatic controls shall allow the operator to regulate material temperature up to at least 425°F.

   b. Application Wand and Squeegee Applicator: The material shall be applied with a wand followed by a squeegee applicator. The squeegee applicator shall be of

commercial/industrial quality and be designed with a configuration to properly strike off the sealant placed along the gutter line of the bridge, adjacent bituminous concrete overlay and parapet, curb, or barrier to the dimensions specified. It shall be of a size adequate to strike off, flush with the surrounding areas, all crack seal material placed. This tool shall be either attached to the applicator wand or be a separate long handled tool.

c. Hot Air Lance: This shall be designed for cleaning and drying the pavement edge along the curb parapet or barrier. Minimum compressed air capacity shall be 100 psi. The oil-free compressed air emitted from the tip of the lance shall be oil free and capable of achieving a temperature of at least 1500°F.

2. Weather Requirements: The pavement shall be dry without frost, snow, ice, or standing water on the roadway surface and within the areas to be sealed. The ambient temperature must be at least 40ºF and rising during application.

3. Material Mixing Procedure: The prepackaged material shall be added to the melter applicator in the presence of the Engineer. It shall then be mixed and heated to the recommended application temperature. The crack sealant shall never exceed 400°F. The treatment material shall be maintained at the manufacturer's specified/recommended application temperature range during application. The sealing operation shall be suspended if the temperature of the crack sealant falls outside the specified temperature range and shall remain suspended until the crack sealant is brought within the specified range.

4. Delineation of Areas to be Sealed: Prior to the sealing operation, the Contractor shall locate and mark out the start and end limits of the work. The sealing shall span the entire length of the structure and be done along each side of the bridge such that both gutter lines are completely sealed, as shown on the Plans. Sealing shall be performed after the surface lift of the bituminous concrete overlay is placed, at a time determined by the Engineer, not to exceed 4 weeks after final paving is completed. The sealing operation shall not damage or otherwise negatively impact the performance of any portion of the overlay, membrane waterproofing, bridge deck, joint, or other structural element.

Sealing Preparation: Areas to be sealed shall be treated with a hot air lance prior to application of the crack seal material. A minimum of two (2) passes shall be made. Within 10 minutes of the second hot air lance treatment the sealant shall be applied. The use of the hot air lance is not intended to heat the areas to be sealed. It is to be used to blow away all debris and remove any latent moisture from the areas to be sealed until the area is completely dry as determined by the Engineer. "Moisture" does not include standing water. The hot air lance is not to be used to boil off or blow standing water. If standing water is present, the sealing operation shall be postponed until such time that the standing water evaporates naturally. The Contractor may use compressed, oil-free air (not heated) to blow standing water to help accelerate the natural evaporation process. If standing water remains after using compressed air, the area shall be allowed to dry naturally until remaining standing water evaporates. The hot air lance shall be used after visible water has evaporated. If an area is already completely dry as determined by the Engineer, the hot air lance shall be operated at its lowest temperature possible.

The parapet, curb, or barrier face shall be masked off above the sealant line to ensure straight, clean, and neat lines are provided along the vertical surface and that crack seal material is placed within the dimensions specified below.

5. Sealing Operation: Once prepared, all specified areas shall be sealed along their entire length with the crack seal applicator. Crack seal shall be placed 2 inches up onto the parapet, curb, or barrier face and 4 to 6 inches onto the adjacent bituminous concrete overlay. There shall be no build-up of sealant material above or adjacent to the sealed areas beyond these limits. Sealed areas are to be flattened with the squeegee applicator immediately following application of the crack sealant, striking excess material flat and even with the adjacent surface(s). If the initial application of crack sealant fails to fill the area flush or shrinks upon cooling with a depression of 1/8 inch or greater, additional applications of sealant shall be placed where necessary. Care shall be taken during the sealing operation to ensure that overfilling and spilling of material is avoided.

6. Protection of Sealed Areas: Traffic shall not be permitted on the sealed area of pavement along the gutter line until the crack sealant is set, so that the material does not deform or track and be pulled out by tires. If work under this item is not followed by placement of an overlay of any kind, a detackifier or blotting agent shall be used. If the work under this item is being performed prior to placing a surface treatment (e.g., chip seal), a detackifier or blotting agent will not be allowed.

7. Removal and Disposal of Material: All debris generated from the operations described above shall be removed by the Contractor. Treatment material remaining in the Contractor's kettle at the end of the work shift shall be properly discarded. Treatment material shall not be re-heated for use in subsequent crack sealing applications unless permitted by the Engineer. All debris and surplus treatment material shall be properly disposed of in accordance with Article 1.10.03 and State of Connecticut regulations.

8. Acceptance of Work: When work is complete, an inspection shall be scheduled. The Engineer will note all deficiencies including areas exhibiting adhesion failure, cohesion failure, tracking of sealant material, locations of missing, incompletely or incorrectly constructed sealant, or other factors that show the work is not acceptable. Work identified by the Engineer as not acceptable shall be repaired at the Contractor's expense. The Contractor shall notify the Engineer upon completion of any corrective work performed.

**Method of Measurement**: This work will be measured by the total number of linear feet sealed, verified and accepted by the Engineer.

**Basis of Payment:** This work will be paid for at the Contract unit price per linear foot for "Gutter Line Sealing for Bridges" complete and accepted in place. The price shall include all submittals, materials, equipment, tools, and labor incidental thereto. No payment will be made to the Contractor prior to submittal of required documents.

| Pay Item | Pay Unit |
|---|---|
| Gutter Line Sealing for Bridges | l.f. |

# ITEM #0406315A – 80 MIL PAVEMENT MARKING GROOVE 7" WIDE

**Description:**
Work under this item shall consist of grooving the pavement surface in continuous or intermittent intervals for the placement of recessed pavement markings. Unless otherwise noted, the groove shall be 1 inch wider than the anticipated pavement marking. The groove for double-yellow centerline markings shall consist of two grooves, each 5 inches wide.

**Groove Width:** 5 inches wide for 4-inch markings
7 inches wide for 6-inch markings
9 inches wide for 8-inch markings
13 inches wide for 12-inch markings

**Groove Depth:** 0.080 inches ± 0.010 inches

The groove shall not be installed continuously for intermittent (Dotted Lines and Broken Lane Lines) pavement markings, but only where markings are to be applied.

The groove shall not be installed on metal bridge decks, on bridge joints, at drainage structures, at loop detector sawcut locations, or in other areas identified by the Engineer.

**Construction Methods:**
Equipment:
The grooving equipment shall be equipped with a free-floating, depth-controlled head which provides a consistent groove depth over irregular pavement surfaces. The grooving head shall only be equipped with diamond saw blades. Any ridges in the bottom of the groove shall have a maximum height of 0.015 inches. The grooving equipment shall be capable of installing a groove 6 inches away from any vertical or horizontal obstruction.

Installation: The pavement marking groove shall be installed in accordance with the current CTDOT pavement marking standard drawings.

The Contractor shall establish control points for measuring offsets and pre-marks along the entire distance of pavement being grooved. Prior to installation of the groove, the Contractor shall verify that the equipment is capable of installing the correct width and spacing of the groove. The control points, pre-marks, and equipment will be reviewed by the Engineer prior to commencement of the work.

The groove will be considered defective if any edge of the groove varies more than 0.25 inch in a 10-foot length, or if the alignment of the groove visibly deviates from the normal alignment of the road.

Final Cleaning: The Contractor shall immediately collect all debris and dust resulting from the grooving operation by vacuuming the pavement groove and adjacent pavement surface. Collected debris and any waste material shall be properly disposed of by the Contractor.

The work area shall be returned to a debris-free state prior to re-opening to traffic.

Repair of Unacceptable Groove:
The Contractor shall repair any defective groove(s) to the satisfaction of the Engineer. All work in conjunction with this repair shall be performed at no additional cost to the State.

Pavement Marking Requirements:
The Contractor is required to install permanent pavement markings in the grooves before the lane or roadway is opened to live traffic. If the permanent pavement markings cannot be installed before the lane or roadway is opened to live traffic, the Contractor will need to obtain approval from the Engineer to open the lane or roadway. Liquidated Damages based on Limitation of Operations restrictions will be enforced. If approved by the Engineer, the Contractor will be allowed to open the lane or roadway to live traffic and the Contractor will be required to install temporary hot-applied waterborne pavement markings without glass beads, at their own expense, within 24 hours of opening the lane or roadway. Temporary hot-applied waterborne pavement markings shall be applied at a 5 mil thickness. Within 5 calendar days after the installation of the groove, permanent pavement markings shall be applied in the groove over the temporary hot-applied waterborne pavement markings.

Groove Depth Gauge:
The Contractor shall supply the Engineer with two accurate, easily readable gauges with which to verify groove depth for the duration of the Project. The gauges shall be delivered at least one week prior to the anticipated beginning of grooving operations. Gauges shall be accompanied by the manufacturer's instructions for their use. The gauges will be returned to the Contractor at the conclusion of the Project.

**Method of Measurement:**
This work will be measured for payment by the number of linear feet of grooves installed in the pavement as ordered and accepted by the Engineer.

**Basis of Payment:**
This work will be paid for at the Contract unit price per linear foot of "Pavement Marking Groove" installed in the pavement and accepted. This price shall include cleaning of the pavement, all materials, equipment, tools, depth gauges, and labor incidental thereto, and disposal of any waste material resulting from the grooving operation.

| Pay Item | Pay Unit |
|---|---|
| 80 Mil Pavement Marking Groove 7" Wide | l.f. |

# ITEM #0406899A – E-TICKETING (BITUMINOUS CONCRETE)

**Description:**
This item consists of coordination between the HaulHub Technologies Automated Electronic Ticketing (e-Ticketing) System, the bituminous concrete material supplier, and the Department for bituminous concrete materials delivered to the Project. It also includes supplying all requirements of the Materials and Construction Methods sections of this specification.

**Materials:**
The Contractor shall supply three (3) new cellular-enabled Android or iOS phones with backup power for use by the Department during the Project, including car chargers and protective cases. The Contractor shall submit proposed phone Product Data to the Department prior to purchase. The Contractor shall supply an unlimited cellular plan for the e-Ticketing phones. Phones will be returned to the Contractor at the conclusion of the Project.

The phones supplied for Department personnel use shall:

1. Contain minimum 128gb local storage to store all e-Tickets for each load of material delivered during paving operations.
2. Have battery capacity able to stay active for an entire paving operation. Backup power batteries shall have a minimum of 10,000 mAh (milliamp hours) and have compatible connections with phones.

The Contractor shall supply all equipment needed to receive e-Tickets for their own use or for their subcontractors' use and the cost shall be included in the general cost of the Project.

**Construction Methods:**
At least 30 days prior to initial use of the e-Ticketing system, the Contractor shall set up a meeting with HaulHub Technologies, the bituminous concrete material supplier, Department Project personnel and Division of Construction Operations (DCO) personnel to coordinate collecting pertinent information. At least 15 days prior to paving, the bituminous concrete material supplier shall generate a calibration ticket to ensure proper integration of HaulHub with the bituminous concrete material supplier's existing ticketing system.

Any questions regarding this item shall be directed to mailto:Eticketing.DOT@ct.gov

HaulHub is contracted by the Department, therefore the Contractor shall not be responsible for training or support. Virtual training will be available to all parties by HaulHub Technologies upon request prior to bituminous concrete material being delivered to the Project. The Department Contract with Haul Hub includes a technical representative that will be available virtually, or on-Site as needed, for on-demand troubleshooting during the Project. DOT Inspection staff is responsible for logging all loads as Delivered or Rejected, and to document any waste tonnage.

HaulHub Technologies will coordinate initial setup of the e-Ticketing system with the bituminous concrete supplier(s). The e-Ticketing system shall be integrated with the bituminous concrete material suppliers' existing point of sale and ticketing system to deliver and store e-Tickets for immediate and later use by Project staff.

During the Project, each delivery vehicle shall have an e-Ticket and a paper ticket produced for each load of material. Printed tickets will be acceptable in lieu of e-Tickets in the event of e-Ticketing system malfunction or lack of cellular reception. Material source locations shall be equipped with reliable, stable Internet access. Providing reliable internet access shall be supplied at no additional cost to the State.

Information on e-Tickets shall meet the requirements of standard specifications Sub article 4.06.03-1 (Material Documentation) for bituminous concrete materials and as noted below.

Information on e-Tickets shall include:

a) e-Ticket Number and producer ticket number, if different
b) State of Connecticut printed on e-Ticket
c) Name of Producer, identification of Plant, and specific storage silo if used
d) Date and time
e) Truck Ticketed Time
f) Mixture Designation, Mix Type and Traffic Level. Curb mixtures for machine-placed curbing must state "curb mix only"
g) If WMA Technology is used, "-W" must be listed following the mixture designation
h) Net weight of mixture loaded into the vehicle. (When RAP and/or RAS is used, the moisture content shall be excluded from the mixture net weight.)
i) Gross weight (equal to the net weight plus the tare weight or the loaded scale weight)
j) Tare weight of vehicle (daily scale weight of the empty vehicle)
k) Project number, purchase order number, name of Contractor (if Contractor other than Producer)
l) Vehicle number – unique means of identification of vehicle
m) For Batch Plants: individual aggregate, recycled materials, and virgin asphalt max/target/min weights when silos are not used
**n)** For every mixture designation: the running daily and project total delivered, and sequential load number

**Method of Measurement:**
This item, being paid on a lump sum basis, will not be measured for payment. Prior to beginning work, the Contractor shall submit a proposed schedule of values for this item for review and concurrence by the Engineer.

**Basis of Payment:**
The work under the item "e-Ticketing (Bituminous Concrete)" will be paid at the Contract lump sum price and shall include furnishing all materials, labor, tools, equipment, and incidentals as specified in the Materials and Construction Methods articles of this specification. Poor Internet access will not be considered justification for any Contract schedule adjustment, delays or costs associated with the delays.

| Pay Item | Pay Unit |
|---|---|
| e-Ticketing (Bituminous Concrete) | l.s. |

# ITEM #0406999A - ASPHALT ADJUSTMENT COST

**Description:** The Asphalt Adjustment Cost will be based on the variance in price for the performance-graded binder component of the following:

I. Hot Mix Asphalt (HMA) and Polymer Modified Asphalt (PMA),
II. Ultra-Thin Bonded HMA (UTB-HMA) and Ultra-Thin Bonded PMA (UTB-PMA),
III. Thin Friction Wearing Course (TFWC),
IV. Binder Rich Intermediate Courses (BRIC) and Stone Matrix Asphalt (SMA), and
V. Asphalt Rubber Chip Seal (ARCS) treatments completed and accepted during the Contract.

**The Asphalt Price is available on the Department of Transportation website at:**
http://www.ct.gov/dot/asphaltadjustment

**Construction Methods:**

An asphalt adjustment will be applied only if all the following conditions are met per mixture:

I. For HMA, PMA, TFWC, BRIC, and SMA mixtures:
   a. The HMA, PMA, TFWC, BRIC, or SMA mixture for which the adjustment would be applied is listed as a Contract item with a pay unit of tons.
   b. ***The total quantity for all HMA, PMA, TFWC, BRIC, and SMA mixtures in the Contract or individual purchase order (Department of Administrative Service contract awards) exceeds 1000 tons or the Project duration is greater than 6 months.***
   c. The difference between the posted *Asphalt Base Price* and *Asphalt Period Price* varies by more than $5.00 per ton.

II. For UTB-HMA and UTB-PMA mixtures:
   a. The UTB-HMA or UTB-PMA mixture for which the adjustment would be applied is listed as a Contract item.
   b. ***The total quantity for the UTB-HMA or UTB-PMA mixture in the Contract exceeds:***
      ***i. 800 tons if the UTB-HMA or UTB-PMA item has a pay unit of tons,***
      ***ii. 30,000 square yards if the UTB-HMA or UTB-PMA item has a pay unit of square yards, or***
      ***iii. the Project duration is greater than 6 months.***
      Note: The quantity of UTB-HMA or UTB-PMA measured in tons shall be determined from the material documentation requirements set forth in the UTB-HMA or UTB-PMA item specification.
   c. The difference between the posted *Asphalt Base Price* and *Asphalt Period Price* varies by more than $5.00 per ton.
   d. No Asphalt Adjustment Cost will be applied to the liquid emulsion that is specified as part of the UTB-HMA or UTB-PMA mixture system.

III. For Asphalt Rubber Chip Seal (ARCS) treatments:
   a. The ARCS treatment for which the adjustment would be applied is listed as a Contract item.

b. ***The total quantity for the ARCS treatment in the Contract exceeds 30,000 square yards or the Project duration is greater than 6 months.***

Note: The quantity of asphalt binder measured in tons used for the Asphalt Rubber Chip Seal treatment shall be determined from the material documentation requirements set forth in the ARCS item specification. The Asphalt Adjustment Cost will also be applied to the asphalt binder used to pre-coat the cover aggregate as part of the ARCS and will be considered as a portion of the total tons of binder for the treatment. The additional quantity of binder measured in tons will be determined based on a percentage of the cover aggregate weight per the requirements set forth in the ARCS item specification.

c. The difference between the posted *Asphalt Base Price* and *Asphalt Period Price* varies by more than $5.00 per ton.

Regardless of the binder used in all mixtures or treatments, the Asphalt Adjustment Cost will be based on PG 64-22.

The Connecticut Department of Transportation (CTDOT) will post on its website, the average per ton selling price (asphalt price) of the performance-graded binder. The average is based on the high and low selling price published in the most recent available issue of the **Asphalt Weekly Monitor®** furnished by Poten & Partners, Inc. under the "East Coast Market – New England, New Haven, Connecticut area," F.O.B. manufacturer's terminal.

The selling price furnished from the Asphalt Weekly Monitor ® is based on United States dollars per standard ton (US$/ST).

**Method of Measurement:**

**A.** **Formula A: HMA x [PG%/100] x [(*Period Price - Base Price*)] = $ ____**

Where:

- **HMA:**
  1. For HMA, PMA, UTB-HMA, UTB-PMA, TFWC, BRIC, and SMA mixtures with pay units of tons:
     The quantity in tons of accepted HMA, PMA, UTB-HMA, UTB-PMA, TFWC, BRIC, or SMA mixture measured and accepted for payment.
  2. For UTB-HMA and UTB-PMA mixtures with pay units of square yards:
     The quantity of UTB-HMA and UTB-PMA mixture delivered, placed, and accepted for payment, calculated in tons as reported according to the Material Documentation provision of the UTB-HMA and UTB-PMA specification.
- ***Asphalt Base Price***: The asphalt price posted on the CTDOT website 28 days before the actual bid opening posted.
- ***Asphalt Period Price***: The asphalt price posted on the CTDOT website during the period the HMA, PMA, UTB-HMA, UTB-PMA, TFWC, BRIC, or SMA mixture was placed.
- **PG%** (Performance-Graded Binder percentage):
  1. For HMA or PMA mixes:
     - PG% = 4.5 for HMA S1 and PMA S1

- PG% = 5.0 for HMA S0.5 and PMA S0.5
- PG% = 6.0 for HMA S0.375, PMA S0.375, HMA S0.25 and PMA S0.25

2. For UTB-HMA, UTB-PMA, TFWC, BRIC, and SMA mixes:
   - PG% = Design % PGB (Performance Graded Binder) in the approved job mix formula, expressed as a percentage to the tenth place (e.g. 5.1%)

**B.** For Asphalt Rubber Chip Seal:

**Formula B: Total Tons x [(*Period Price - Base Price*)] = $ ____**

Where:

- ***Total tons:*** The tons of asphalt binder for each lot of asphalt rubber produced, as reported according to the Testing and Certification article of the specification for Asphalt Rubber Chip Seal, and the tonnage of binder used to coat the cover aggregate calculated as follows: 0.6% x tons of cover aggregate.
- ***Asphalt Base Price***: The asphalt price posted on the CTDOT website 28 days before the actual bid opening posted.
- ***Asphalt Period Price***: The asphalt price posted on the CTDOT website during the period the Asphalt Rubber Chip Seal mixture was placed.

The Asphalt Adjustment Cost shall not be considered as a changed condition in the Contract as result of this provision since all bidders are notified before submission of bids.

**Basis of Payment:** The "Asphalt Adjustment Cost" will be calculated using the applicable formula(s) indicated above. A payment will be made for an increase in costs. A deduction from monies due the Contractor will be made for a decrease in costs.

The sum of money shown on the Estimate and in the itemized proposal as "Estimated Cost" for this item will be considered the bid price although the adjustment will be made as described above. The estimated cost figure is not to be altered in any manner by the bidder. If the bidder should alter the amount shown, the altered figure will be disregarded and the original cost figure will be used to determine the amount of the bid for the Contract.

| Pay Item | Pay Unit |
|---|---|
| Asphalt Adjustment Cost | est. |

# ITEM #0503866A – REMOVAL OF EXISTING CULVERT (SITE NO. 1)

Work under this item shall meet to the requirements of Section 5.03 of the Standard Specifications amended as follows:

**5.03.01 – Description:** Replace the first sentence with the following:

This work shall consist of the removal and satisfactory disposal of the existing corrugated metal pipe culvert of Bridge No. 05585 as shown on the plans or as directed by the Engineer. Work under this item shall include the removal and disposal of corrugated metal pipe culvert, fill and bituminous wearing surfaces and all materials, equipment, tools, labor, and work incidental to the removal of the corrugated metal pipe culverts and disposal of waste materials.

**5.03.03 – Construction Methods:** Add the following:

All work shall proceed as directed by and to the satisfaction of the Engineer and in accordance with the details shown on the plans, or as approved by the Engineer. In addition, all work shall be in accordance with requirements for the construction staging as shown on the plans.

Prior to initiating work, the Contractor shall submit for review, plans, working drawings, computations, and written documentation describing his methods of removal and for false work and shielding required for the protection, environmentally sensitive areas, and adjoining property all in accordance with Subarticle 1.05.02-2. Acceptance of the Contractor's plans shall not be considered as relieving the Contractor of any responsibility.

The existing culvert shall be dismantled in accordance with the methods proposed by the Contractor and approved by the Engineer.

The Contractor's attention is drawn to the environmental sensitivity of the brook and surrounding wetlands. Culvert removal shall not result in damage to any permanent construction (new or existing) or to adjoining property or brook area. If damage does occur, it shall be repaired by the Contractor to the satisfaction of the Engineer at no additional expense to the State.

**5.03.04 – Method of Measurement:** Delete the entire Article and replace with the following:

This work, being paid for on a lump sum basis, will not be measured for payment.

**5.03.05 – Basis of Payment:** Replace the first paragraph with the following:

This work will be paid for at the contract lump sum price for "Removal of Existing Culvert (Site No.1)", which shall include the removal and disposal of corrugated metal pipe culverts, fill, and bituminous wearing surfaces and all materials, equipment, tools, labor, and work incidental to the removal of the corrugated metal pipe culverts and disposal of waste materials.

Monitoring of the existing 18" sanitary sewer line during the removal of the existing culvert will

be paid for under the item “Condition Survey (Site No. 1)”. Removal of existing concrete headwalls, wingwalls, and parapet walls at inlet and outlet shall be paid for under item for “Removal of Existing Masonry”.

| Pay Item | Pay Unit |
|---|---|
| Removal of Existing Culvert (Site No.1) | L.S. |

# ITEM #0601541A - 12' X 10' PRECAST CONCRETE BOX CULVERT
# ITEM #0601183A - PRECAST CONCRETE CUT-OFF WALL

**Description:** Work under this item consists of furnishing and installing a precast concrete box culvert(s) and precast concrete cutoff wall(s), including return walls, as shown on the plans and as ordered by the Engineer. This item also includes all hardware, inserts, dowels for connections, reinforcing steel and joint materials as shown on the plans.

**Materials:**

- The concrete mix design shall meet the requirements of M.03.02, Class PCC05562, and shall be submitted to the Engineer.
- All reinforcing steel, including dowel bar mechanical connectors, shall be galvanized and shall meet the requirements of M.06.01.
- All threaded concrete inserts, lifting fixtures, and miscellaneous hardware cast into precast concrete components shall be galvanized in accordance with ASTM A153 or ASTM B695 Grade 50. All portions of the lifting and seating devices shall be recessed from the finished concrete surface.
- Non-shrink grout shall meet the requirements of M.03.05 and be suitable for submerged applications.
- Gaskets shall meet the requirements of ASTM D1056, C1677 or C990.
- Geotextiles shall be the "Separation (Class 1)" type and shall be selected from the Department's Qualified Product List.

**Construction Methods**:

1. **Submittals:** All submittals shall include a title sheet with the following:
    - Project number, town and crossing.
    - Bridge number, when shown on the plans.
    - Design code, as applicable.
    - Contact information for fabricator – contact information shall include name and address of the fabricator and the name of contact person with phone number and email address.

**(a) Shop Drawings - Precast Concrete Components:** Prior to fabrication, the Contractor shall submit an individually packaged set of shop drawings for the precast concrete components for each precast box culvert location to the Engineer for review, in accordance with the plans and 1.05.02. Each shop drawing package shall include details necessary for fabrication of each unique component, handling and installation of the precast concrete components, supporting documents for all materials incorporated into the precast concrete components and for other materials provided by the fabricator.

**(b) Working Drawings - Lifting and Seating Devices :** Prior to fabrication, the Contractor shall submit working drawings and supporting computations for the embedded lifting and seating devices required for the handling and installation of the precast concrete components at each box culvert location to the Engineer for review in accordance with 1.05.02. Prior to applying load to the embedded devices, the concrete shall attain the

minimum concrete compressive strength associated with the safe working load of the device.

**(c) Working Drawings - Installation of Precast Concrete Components:** Prior to installation of the precast concrete components, the Contractor shall submit working drawings and supporting computations for the lifting and placement of the precast concrete components, to the Engineer for review in accordance with 1.05.02. Cranes shall be operated in accordance with the Connecticut Department of Public Safety regulations. The Contractor shall be responsible for verifying the weight of each lift. The working drawing submittal shall include the following:

- Plan of the work area showing all structures, roads, railroad tracks, Federal and State regulated areas as depicted on the plans, overhead and subsurface utilities, property lines, or any other information relative to erection. No picks shall be allowed over vehicular, pedestrian, railway or vessel traffic.
- A detailed narrative describing the lifting and installation sequence.
- Manufacture's data sheet for the crane(s) including the load/capacity chart. The capacity of the crane shall be adequate for the total lift/pick load including rigging, spreaders and other materials. In the area of railroads and navigable waterways, the capacity shall be as required by the regulatory authorities.
- Manufacturer's data sheets and product data sheets for all rigging (slings, spreader bars, blocks, etc.), lifting devices, and other connecting equipment and hardware listing the number, type, size, arrangement and capacity of each.
- Location of each crane for each pick.
- Crane support measures, including any support beneath the outriggers such as bearing pads, crane mats, planking or special decking, or other means to transfer the crane's total weight (including the lifted load) into the earth or structure beneath it.
- Delivery location of each component.
- Boom length and the lift and setting radius for each pick (or maximum lift radius).
- Pick point location(s) on each component.
- Lifting weight of each component including rigging (clamps, spreader beams, etc.)

**(d) Product Data – Field Installed Materials:** Prior to installation of the precast concrete components, the Contractor shall submit product data for field installed materials, such as non-shrink grout, geotextile, etc., not addressed in other submissions to the Engineer for review in accordance with 1.05.02.

**2. Fabrication and Manufacture:** The fabrication and manufacture of the precast concrete components shall meet the requirements of M.08.02-4 as supplemented by the following:

**(a) Reinforcing Steel:** Reinforcing steel shall be fabricated and installed in accordance with Articles 6.02.03-2 through 6.02.03-5. The welding of reinforcement is not permitted.

**(b) Test Cylinders:** During the casting of the components, the Contractor shall cast a minimum of four 4 inch × 6 inch test cylinders in accordance with AASHTO T23 during each production run. Cylinders shall be cured under the requirements of ASTM C31 and shall be used to confirm that the concrete meets the requirements of M.03.02.

**(c) Placing Concrete:** Concrete shall not be deposited in the forms until the Contractor has inspected the reinforcing steel, including all other embedded components, and has documented such inspection.

Concrete shall not be deposited into the forms when the ambient temperature is below 40°F or above 100°F, unless adequate heating or cooling procedures have been previously approved by the Engineer. The concrete temperature shall be 60°F to 90°F at the time of placement.

Truck-mixed or transit-mixed concrete will not be allowed.

Production during the winter season, from November 15 to March 15 inclusive, will be permitted only on beds located in a completely enclosed structure of suitable size and dimension that provides a controlled atmosphere for the protection of the casting operation and the product.

Outside concreting operations will not be permitted during rainfall unless the operation is completely under cover.

The concrete shall be vibrated internally, or externally, or both, as needed to provide adequate flow and consolidation of the concrete. The vibration shall be provided in such a manner as to avoid displacement of reinforcing steel, forms, or other components. There shall be no interruption in the placement of concrete. Concrete shall be placed and vibrated sufficiently to produce a surface free from imperfections such as honeycombing, segregation, cracking, or checking.

Any deficiencies noted in the components may be cause for rejection.

**(d) Finishing:** All fins, runs, or mortar shall be removed from the concrete surfaces which will remain exposed. Form marks on exposed surfaces shall be smoothed by grinding. All exposed, outside concrete surfaces shall be given a grout clean-down finish in accordance with 6.01.03-10.

**(e) Handling and Storage:** Any precast concrete components damaged during storage, transportation or handling shall be repaired or replaced by the Contractor, at its own expense, as directed by the Engineer.

**(f) Repairs:** The Contractor shall submit to the Engineer, for review, any proposed methods or materials to be used in the repair of precast concrete components or defective surfaces. Precast concrete components with defective area greater than 10% as determined by the Engineer will be rejected.

**3. Fabrication Tolerances:** Tolerances of forming precast concrete box sections shall be as follows:

**(a) Internal Dimensions:** The internal dimensions shall be within 1% of the design dimensions or within 1 1/2 inches, whichever is less.

**(b) Roof, Floor and Wall Thickness:** The roof, floor and wall thickness shall be within 1/4 inch of the thicknesses shown in the design.

**(c) Laying Length of Opposite Surfaces:** Variations in laying lengths of two opposite surfaces of the box section shall be less than 1/8 inch/foot of internal span up to 3/4 inch maximum.

**(d) Length of Section:** The length of a section shall not vary from the designed length by more than 1/2 inch in any box section.

**4. Pre-assembly of Box Sections:** Box sections shall conform to all dimensions within tolerances specified herein. Adjacent sections shall be assembled without a gasket at the manufacturing plant to ensure that all tolerances are met prior to shipping. All sections that will be joined with mechanical connectors shall be pre-assembled, complete with fasteners, to confirm alignment. The Department shall be given at least 2 working days' notice to inspect and evaluate the sections prior to shipping.

**5. Installation:** The installation of the precast concrete box sections and components shall be in accordance with the plans and the following:

**(a)** The installation of the precast concrete box sections shall proceed as required by the sequence of construction, stage construction plans, and the special provisions entitled "Prosecution and Progress" and "Maintenance and Protection of Traffic."

**(b)** Prior to installing the inlet and outlet end box culvert sections, a bed of non-shrink grout shall be placed on the cut-off walls. The end box culvert sections shall be connected to the cut-off wall using galvanized dowels installed in cast or drilled holes and bonded with non-shrink grout.

**(c)** All box culvert lap joints shall be sealed with rubber gaskets and must provide a silt-tight fit. A positive means, through the use of seating devices, shall be used for pulling each section against the adjacent section to assure a silt-tight joint. The gasket shall be uniformly compressed to a minimum of 1/2 of its uncompressed width. The joint opening between adjacent seated sections on all interior surfaces of the culvert shall be uniform and match the width shown on the plans. The interior surfaces on either side of the lap joints of the adjacent seated sections shall form a smooth and continuous plane, free from irregularities.

**(d)** After its installation, any box section, as determined by the Engineer, not acceptable in vertical or horizontal alignment for any reason, including but not limited to settlement, displacement, excess camber or misfit, shall be removed by the Contractor and correctly installed, as directed by the Engineer and at the Contractor's expense.

**(e)** The lap joints on the exterior of the roof and the interior of the floor and the lap joints on the interior and exterior of the walls (full height on each side) shall be filled with non-shrink grout after seating the sections. The exposed portions of the lap joints within the haunches or fillets on the interior of the culvert sections shall also be filled with non-shrink grout. The non-shrink grout shall be finished smooth and flush with the adjacent concrete surface.

All portions of the lifting and seating devices that extend to or beyond the finished concrete surface shall be removed. All fixtures or holes cast into the sections for lifting or seating shall be completely filled with non-shrink grout and finished smooth and flush with the adjacent concrete surface.

The surface preparation, mixing, placing, curing, and finishing of the non-shrink grout shall follow the written instructions provided by the manufacturer of the grout. The Contractor shall furnish the Engineer with copies of the instructions.

Prior to the passage of flowing water over the with non-shrink grout, the non-shrink grout shall attain a minimum compressive strength of 3,000 psi.

**(f)** Geotextile shall be placed on the exterior surface of the roof and walls of the culvert over the lap joints between the culvert sections. The geotextile shall extend 12 inches to each side of the joint and shall be attached to the culvert with silicone caulk.

6. **Erection Tolerances:** The Contractor shall be responsible for ensuring the overall length of the box culvert meets the layout requirements on the plans within all acceptable tolerances as specified in the contract.

**Method of Measurement:** The work for the precast concrete box culvert will not be measured for payment but will be paid for by the linear foot of precast concrete box culvert as dimensioned on the plans along each box culvert cell, completed and accepted.

The work for the precast concrete cut-off wall, including return walls, will not be measured for payment but will be paid for by the linear foot of precast concrete cut-off wall dimensioned on the plans along the centerline of monolithic component including return walls, completed and accepted.

**Basis of Payment:** The work for the precast concrete box culvert will be paid for at the Contract unit price per linear foot for "12'X10' Precast Concrete Box Culvert," completed in place and accepted, which price shall include all equipment, materials, tools and labor incidental to the manufacture, shipping, repair and installation of the precast concrete box culvert of the specified size(s) at the locations shown on the plans.

The work for the precast concrete cut-off wall will be paid for at the Contract unit price per linear foot for "Precast Concrete Cut-Off Wall", completed in place and accepted, which price shall include all equipment, materials, tools and labor incidental to the manufacture, shipping, repair and installation of the precast concrete components at the locations shown on the plans.

| Pay Item | Pay Unit |
|---|---|
| 12'X 10' Precast Concrete Box Culvert | l.f. |
| Precast Concrete Cut-off Wall | l.f. |

# ITEM #0703031A - ROCK WEIR

**Description:** Work under this item shall consist of furnishing and placing boulders to create a rock weir within an existing or proposed channel to redirect flow, reduce streambank erosion and improve or create aquatic habitat through the formation of scour pools. This item shall also include maintaining a stockpile of the material on the Site, placement of the stockpiled material in the channel, and the removal and proper disposal of all unused and unacceptable material.

**Materials:** The individual boulder type and size used shall be as noted on the plans or as directed by the Engineer. The mineral composition and color of the boulders selected shall replicate to the extent possible the existing boulders on-Site.

Individual boulder material for this item shall be sound, durable and free from decomposed stones or other defects impairing durability and shall be resistant to the action of air and water.

Material the Contractor proposes to use must be inspected and approved by the Engineer or their authorized delegate prior to the excavation of existing on-Site material within the Project limits or hauling of material from an off-Site source. The Contractor shall provide the Engineer at least 10 work days' notice for the inspection and approval of the individual boulders.

The following will **NOT** be accepted for vortex boulders/top layer of the weir:

- individual boulders consisting of sandstone, shale, or other rock material prone to disintegration
- boulders with visible cracks or spalling
- rock excavated from ledge (bedrock) formations or broken from larger boulders
- boulders with sharp corners, angular edges, or edges as a result of cutting or crushing operations
- broken concrete.

Footer rocks shall serve as the foundation of the weir. The footer rocks shall have reasonable flat tops and bottoms to enable better placement of the top layer of the weir. Rock excavated from ledge (bedrock) and boulders with sharp corners, angular edges as a result of cutting (quarried stone) are acceptable to use for footer rocks.

The following will **NOT** be accepted for footer rocks:

- individual boulders consisting of sandstone, shale, or other rock material prone to disintegration
- boulders with visible cracks or spalling
- broken concrete

**Construction Methods:** The Contractor shall submit for the Engineer's approval a proposed location plan for stockpiling the boulders. The proposed location shall be suitable in size and upland of the channel to minimize disruption to the channel or impact to wetland areas caused by moving the materials to and from the stockpile during the placement of material. The stockpile

area shall be prepared in accordance with the "Required Best Management Practices" in Article 1.10.03.

Prior to installation, the Contractor shall stake out the location of the rock weir by indicating each end and the apex, and the Contractor shall notify the Engineer for a field review. The final location will be at the discretion of the Engineer or their authorized delegate.

The Contractor shall provide the Engineer at least 10 work days' notice prior to initiating the placement of the individual boulders to create a rock weir. The work and placement of the boulders shall be in accordance with the plans or as directed by the Engineer or their authorized delegate. No work on the rock weir will be allowed on-Site without presence of the Engineer or their authorized delegate in order to oversee the construction activities.

Equipment: When placing and maneuvering the individual boulders within the channel or embedding boulders into the streambank, the Contractor shall use an excavator with a bucket and thumb. Any other equipment proposed to be used shall be reviewed and approved in advance by the Engineer or their authorized delegate.

All disturbed areas, including the stockpile area, shall be permanently stabilized using approved erosion and sedimentation control measures and in accordance with the required "Erosion and Sedimentation Control Plan."

**Method of Measurement:** This work will be measured for payment by the number of each rock weir installed and accepted, including disposal of unacceptable and surplus materials.

**Basis of Payment**: This work will be paid for at the Contract unit price each for "Rock Weir," completed and accepted. The price shall include all materials, equipment, tools and labor incidental to the preparation of the stockpile area, excavation of channel bottom, hauling of the material to the stockpile, separation of any rock ledge or concrete debris, and storing and protecting (including sedimentation controls and covering) of excavated material.

| Pay Item | Pay Unit |
|---|---|
| Rock Weir | ea. |

# ITEM #0707009A - MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)

**Description**: Work under this item consists of furnishing and installing a seamless elastomeric waterproofing membrane system applied to a concrete or steel surface as shown on the plans, and as directed by the Engineer. Work shall also include conditioning of the surface to be coated, and all submittals and quality-control testing noted herein.

The completed membrane system shall be comprised of a primer coat, reinforcing material as specified or directed, membrane coating (minimum total thickness of 80 mil and maximum total thickness not to exceed 120 mil), an additional 40 mil membrane layer with aggregate broadcast into the material while still wet, and an application of tack coat.

**Materials**: The Contractor shall select a waterproofing membrane system from the Department's Qualified Products List (QPL) for Spray-Applied Membrane Waterproofing System. All materials incorporated in the work shall meet the Manufacturer's specification for the chosen system. A Manufacturer is the original source of supply as defined in Article 1.06.01 of CTDOT's Standard Specifications. The Engineer will reject any system that is not on the QPL.

Reinforcing material (to bridge gaps, joints and cracks) shall be as recommended by the manufacturer.

Aggregate: The aggregate shall be a nonfriable, durable #8 aggregate stone with no more than one-half percent (0.5%) passing the #200 sieve by weight.

Concrete Deck Repair Material: Depressions greater than ½ inch that are required to be filled before application of the membrane shall be repaired with a neat repair mortar as approved by the Engineer. If the repair includes engagement of reinforcing steel, the repair shall be performed under separate, appropriate Contract items.

**Construction Methods:**

1. Submittals:
   At least 30 days prior to installation of the membrane system, the Contractor shall submit to the Engineer the following:
   (a) A Site-specific Installation Plan that includes, but is not limited to, the manufacturer's recommended equipment, materials and procedure for:
      1) Authorization by Manufacturer of applicator
      2) Safety precautions, SDS documents
      3) On site storage of material
      4) preparation of the deck surface and recommended surface moisture content at time of priming
      5) Pre-treatment or preparation procedure at cracks and gaps, treatment at curbs, vertical surfaces or discontinuities
      6) Overspray protections (masking and shielding)

7) Method and equipment for taking/calculating onsite temperatures and dewpoint temperatures as well as listing of acceptable temperature and dewpoint ranges for application of primer and/or membrane
8) Method and equipment for application of the primer and membrane
9) Treatment of already primed areas when delays occur; include allowable time frame for covering already placed primer or treatment if the primed surface is compromised
10) Treatment at overlap areas
11) Method for placement of the aggregated coat
12) All Quality Control (QC Plan) tests and procedures to be performed prior to and during the membrane system's installation
13) Recommended repair methods for system non-compliant issues identified during application

(b) Materials Certificate for the primer, membrane and aggregate in accordance with the requirements of Article 1.06.07.
(c) Concrete Mix Design: At least two weeks before installation, the Contractor shall submit the concrete mix design to the Engineer for acceptance. For RSCP material, NTPEP lab test data shall be submitted that demonstrates that the concrete mix matches the mix that was tested by NTPEP and meets the pre-qualification criteria in the QPL. This test data shall be submitted with a Materials Certificate and a Certified Test Report in accordance with Article 1.06.07.

Automated mechanical applicators will be considered for approval for use, provided there is a trial installation area to demonstrate that the required thickness can be consistently achieved. The Installation Plan shall identify and differentiate between areas using automated applicators and areas where hand application will be used, such as on vertical surfaces and at areas prior to installation of reinforcing material.

2. A technical representative, in the employ of the manufacturer, shall be present on-Site immediately prior to and during application of the membrane. The technical representative shall not be an employee of the installation contractor but is on Site solely to perform QC. The technical representative shall review environmental conditions for proper application, inspect and approve the surface prior to priming, provide guidance on the handling, mixing and addition of components, observe application of the primer and membrane. The technical representative is required to notify the Engineer immediately when conditions are not within acceptable parameters and any further installation will be analyzed by the Engineer under Article 1.06.04. The technical representative shall be qualified and shall perform all required QC testing and remain on the Project site until the membrane has fully cured.

   All QC testing, including verbal direction or observations at the time of installation, shall be recorded and submitted to the Engineer for inclusion in the Project records. The QC testing data shall be received by the Department's Project personnel prior to any paving over the finished membrane, or within 24 hours following completion of any staged portion of the work.

3. Applicator Approval: The Contractor's membrane Applicator shall be fully trained and authorized by the membrane manufacturer and shall have successfully completed at least six spray membrane projects in the past two years. The Contractor shall furnish references from those projects, including names of contact persons and the names, addresses and phone numbers of persons who supervised the projects. This information shall be submitted to the Engineer prior to the submittal of the Installation Plan. The Engineer shall have sole authority to determine the adequacy and compliance of the submitted information. Inadequate proof of ability to perform the work will be grounds to reject proposed applicators.

4. Job Conditions:
   (a) Environmental Requirements: Air and substrate temperatures shall be between 40°F and 104°F and the substrate shall be above the dew point. Outside of this range, the Manufacturer shall be consulted.

   The Applicator shall be provided with adequate disposal facilities for nonhazardous waste generated during installation of the membrane system. The applicator shall follow safety instructions regarding respirators and safety equipment.

   Extra care shall be taken to prevent the introduction of moisture onto the area to be membraned including, but not limited to, locating water rest break areas/devices away from the works, prevent vehicles from accessing the prepared areas that may have AC units that drip water. If there is any potential for moisture to impact application, operations shall cease until conditions warrant proper adherence to specification requirements.

   (b) Safety Requirements: All open flames and spark producing equipment shall be removed from the work area prior to commencement of application.

   Personnel not involved in membrane application or inspection duties shall be kept out of the work area.

5. Delivery, Storage and Handling:
   (a) Packaging and Shipping: All components of the membrane system shall be delivered to the Site in the Manufacturer's packaging, clearly identified with the product type, lot and batch number, manufactured date and expiry or "Best-used-by Date."

   (b) Storage and Protection: The Applicator shall be provided with a storage area for all components. The area shall be cool, dry and out of direct sunlight and shall be in accordance with the Manufacturer's recommendations and relevant health and safety regulations.

   Copies of Safety Data Sheets (SDS) for all components shall be kept on Site for review by the Engineer or other personnel.

(c) Shelf Life - Membrane Components: Packaging of all membrane components shall include a shelf-life date sealed by the Manufacturer. No membrane components whose original shelf life has expired shall be used.

6. Pre-application Meeting: A minimum one week prior to beginning any membrane waterproofing work, an on-site Pre-application meeting shall be scheduled to review all requirements of the approved Installation Plan. This meeting shall include representatives from the membrane system's Manufacturer and from the Installer as well as the Prime Contractor.

7. Surface Preparation:
   (a) Protection: The Contractor shall be responsible for the protection of equipment, adjacent areas, and affected pedestrians/traffic from over spray or other contamination. Permanent highway features adjacent to the work such as, but not limited to, curbs, parapets, sidewalks and bridge joints shall be masked prior to application of the materials.

   (b) Surface Preparation: Surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae, growth, laitance, friable matter, dirt, bituminous products, previous waterproofing materials or any material that will affect the proper bonding/adhesion of the membrane to the surface receiving the membrane application. If required, degreasing shall be done by detergent washing in accordance with ASTM D4258.

   Sharp peaks and discontinuities within the areas to be coated shall be ground smooth. Any peak greater than ¼ inch above the surface profile of the prepared substrate shall be ground to the surrounding elevation and voids and holes greater than ½" in the surface patched with appropriate material. The surface shall be abrasively cleaned, in accordance with ASTM D4259, to provide a sound substrate free from laitance and shall achieve a Concrete Surface Profile (CSP) as defined by the International Concrete Repair Institute (ICRI) of between 4 and 6. The QC representative shall have on their person and available for use by Department Engineers, a full CSP Chip Set to confirm concrete surface meets above profile requirement. Areas not falling within the noted range shall be re-addressed as needed.

   Steel components to receive membrane waterproofing shall be blast cleaned in accordance with the Society of Steel Protective Coatings' SSPC-SP6, Commercial Blast Cleaning, and shall be coated with the membrane waterproofing system within the same work shift.

8. Inspection and Testing: Prior to priming of the surface, the Engineer, the Applicator and Manufacturer's technical representative shall inspect and approve the prepared substrate.

   (a) Random tests for deck moisture content shall be conducted on the substrate by the Contractor at the Site using a "Sovereign Portable Electronic Moisture Master Meter,"

"Tramex CMEXpertII Concrete Moisture Meter" or approved equal. The minimum frequency shall be one test per 1000 s.f. but not less than three tests per shift for each contiguous section worked on during that shift. Additional tests may be required if atmospheric conditions change and retesting of the substrate moisture content is warranted.

The membrane system shall not be installed on substrate with a moisture content greater than 6%, or at a moisture content above the amount recommended by the written submittal installation documentation from the system's Manufacturer.

(b) The ambient air temperature and dew point temperature readings shall be taken immediately prior to starting any primer or membrane application and continuously throughout the installation process. No primer or membrane application shall be allowed if the difference between the two is 5° deg or less, or is not within the recommended air and dew point temperature ranges noted in the submitted Installation Plan from the system's Manufacturer.

(c) Random tests for adequate tensile bond strength shall be conducted by the Contractor on the substrate using an adhesion tester in accordance with the requirements of ASTM D7234 for concrete substrate or ASTM D4541 for steel substrate. The minimum frequency shall be one test per 5,000 s.f. but not less than three adhesion tests per shift for each contiguous section worked on during that shift. The locations of the pull tests shall be at least a distance from each other equal to or greater than 1/3 of the width or length (whichever is greater) of the area being worked in that section. The location of the pull tests shall be located in accordance with ASTM D3665 or a statistically based procedure of stratified random sampling approved by the Engineer.

Adequate surface preparation will be indicated by tensile bond strengths of the substrate greater than or equal to 150 psi or failure in a concrete surface and greater than or equal to 300 psi for steel surfaces.

If the tensile bond strength is lower than the minimum specified, the Engineer may request additional substrate preparation.

(d) Grouted joints, materials that the membrane cannot bond to, and cracks or discontinuities that cannot be bridged over by the membrane material shall be covered by a reinforcing material recommended by the membrane system's Manufacturer prior to application of membrane layers as approved or directed by the Engineer.

9. Application:
   (a) The System shall be applied in the following distinct steps as follows:
      1) Substrate preparation,
      2) Priming,
      3) Reinforcing material application over grouted joints, cracks, etc., embedded in wet membrane bonding layer,

4) Membrane application,
5) Membrane with aggregate.

(b) Immediately prior to the application of any components of the System, the surface shall be adequately dry (see Section 8(a) of this specification) and any remaining dust or loose particles shall be removed using clean, dry, oil-free compressed air or industrial vacuum.

(c) Where the area to be treated is bound by a vertical surface (e.g. curb or wall), the membrane system shall be continued up the vertical, if shown on the plans or directed by the Engineer.

(d) The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results, in accordance with the Manufacturer's recommendations or as approved or directed by the Engineer. All components shall be used from its original packaging (barrels) or be discarded – no mixing of like materials from different batches shall be allowed.

(e) A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

(f) Primer: The primer shall consist of one coat with an overall coverage rate of 125 to 175 s.f./gal unless otherwise recommended in the Manufacturer's written instructions.

All components shall be measured and mixed in accordance with the Manufacturer's recommendations.

The primer shall be spray applied using a single component spray system approved for use by the Manufacturer. If required by Site conditions and allowed by the manufacturer brush, squeegee or roller application will be allowed.

The primer shall be allowed to cure tack-free for a minimum of 30 minutes or as required by the Manufacturer's instructions, whichever time is greater, prior to application of the first lift of waterproofing membrane.

Porous concrete (brick) may require a second coat of primer should the first coat be absorbed.

Bond Strength: Random tests for adequate adhesion capacity shall be conducted on the primed substrate in accordance with the requirements of ASTM D7234 for concrete or ASTM D4541 for steel substrate. The minimum frequency shall be one test per 5,000 s.f. but not less than three adhesion tests per shift for each contiguous section worked on during that shift. The locations of the pull tests shall be at least a distance from each other equal to or greater than 1/3 of the width or length (whichever is greater) of the area being worked in that section. The location of the pull tests shall be located in accordance

with ASTM D3665 or a statistically based procedure of stratified random sampling approved by the Engineer.

Adequate adhesion will be indicated by tensile bond strengths of primer to the substrate greater than or equal to 150 psi or failure in a concrete surface and greater than or equal to 300 psi for steel surfaces.

Any primer not adequately applied shall be removed and new primer applied at the Contractor's expense, as directed by Engineer.

Delays to the membrane installation following installation of the primer may necessitate remedial measures. Re-application of the primer or any work required due to, but not limited to, precipitation, ambient or dew point temperatures falling out of allowable zone, materials dropped on the surface, shall be accomplished as outlined in the Installation Plan.

(g) Membrane and Reinforcing Material: Application of the membrane on the primed surface shall not commence until the primer is cured and adequate adhesion capacity achieved as described in Section 9(f) of this specification.

The waterproofing membrane shall consist of two equal 40 mil coats for a total dry film thickness of a minimum 80 mils but not to exceed 120 mils. successive coats shall be of a contrasting color to aid in Quality Assurance and inspection.

Hand sprayer application of a single layer at 80 mils may be allowed after demonstration on a test section of not less than 100 sq. feet, of the applicator's ability to meet specified tolerances has been reviewed and found acceptable to the Engineer.

Use of an automated mechanical applicator to achieve the required thicknesses in either one or two equal layers, may be allowed after demonstration on a test section of not less than 100 sq. feet, of the applicator's ability to meet specified tolerances has been reviewed and found acceptable to the Engineer.

Reinforcing material, if required, shall be applied as described in the Installation Plan.

The substrate shall be coated in a methodical manner.

Thickness checks: For each layer, checks for wet film thickness using a gauge pin or standard comb-type thickness gauge shall be carried out once every 100 s.f. Where rapid set time of the membrane does not allow for wet film thickness checks, ultrasonic testing (steel surfaces only), calibrated point-penetrating (destructive) testing, in-situ sampling (cutout of small sections for measuring thicknesses), or other methods approved by the Engineer shall be employed for determination of dry film thickness. The measured thickness of each and every individual test of the membrane shall be greater than or equal to the required thickness.

Bond Strength: Random tests for adequate adhesion shall be conducted on the membrane in accordance with the requirements of ASTM D7234 for concrete substrate or ASTM D4541 for steel substrate. The minimum test frequency shall be one test per 5,000 s.f. but no less than three adhesion tests per bridge. Adequate adhesion will be indicated by tensile bond strengths of the membrane to the substrate of greater than or equal to 150 psi or failure in a concrete surface, and greater than or equal to 300 psi for steel surfaces.

Repair the membrane system following destructive testing and correct any deficiencies in the membrane system or substrate noted during QC testing in accordance with the Manufacturer's recommendations to the satisfaction of the Engineer at no additional cost to the State.

(h) Repairs: For areas left untreated or where the membrane hasn't bonded or becomes damaged, a patch repair shall be carried out to restore the integrity of the system. The damaged areas shall be cut back to sound materials, abraded and wiped with solvent (e.g. acetone or other manufacturer-recommended material) up to a width of at least six inches on the periphery, removing any contaminants unless otherwise recommended by the Manufacturer. The substrate shall be primed as necessary and tested for adhesion before the membrane layer(s) are applied. A continuous layer shall be obtained over the substrate with a six-inch overlap onto any adjacent existing membrane. The repaired area shall be tested for adhesion, with a minimum of one test per repair area.

(i) Overlapped areas: Where the membrane is to be joined to existing cured material, the overlapped area shall be cut back to sound material if necessary, abraded and wiped with solvent (e.g. acetone or other manufacturer-recommended material) or cleaned in accordance with the Installation Plan, up to a width of at least six inches prior to application of the overlapping membrane material. A continuous layer shall be obtained over the substrate with a six-inch overlap onto existing membrane. The overlapped section shall be tested for adhesion, with a minimum of one test per 200 lineal feet.

(j) Aggregated Finish:
1) Apply an additional 40 mil thick layer of the membrane material immediately followed by an aggregate coating, before the membrane cures, at a rate to fully cover the coated area to a point where no membrane material is visible. The membrane and aggregate shall be fully integrated after the aggregate has been applied and the membrane cured.
2) Using motorized mechanical sweepers followed by a vacuum or motorized blower apparatus, remove all loose and excess aggregate and fines from the surface, to the satisfaction of the Engineer, and dispose of properly prior to application of tack coat and overlay.
3) Traffic shall not be allowed to travel on the completed membrane system without prior approval of Engineer upon consultation with Manufacturers technical representative.

4) Localized areas not fully coated following removal of loose aggregate, defined as being at least 90% covered with well-adhered aggregate within any one square foot area, shall be touched-up with additional membrane and aggregate as needed. These areas shall then be swept and/or vacuumed or blown again prior to application of tack coat and overlay.
5) Tack coat: a Tack Coat Emulsion shall be applied to the aggregated finish prior to covering with a bituminous concrete mat. Material shall be applied in two coats of 0.06 - 0.08 gal/s.y. allowing it to break in between coats. This work shall be done as part of the paving operation and paid under separate, applicable Contract items.

10. Final Review: The Engineer and the Applicator shall jointly review the area(s) over which the completed system has been installed. Any irregularities or other criteria that do not meet the requirements of the Engineer shall be addressed at this time.

**Method of Measurement**: This item will be measured by the number of square yards of waterproofed surface completed and accepted.

**Basis of Payment**: This item will be paid for at the Contract unit price per square yard of "Membrane Waterproofing (Cold Liquid Elastomeric)," complete and accepted in place, which price shall include submittals, Pre-Work Meeting, all surface preparation, furnishing, storing and applying the system, technical representative and Quality Control testing, and any necessary repairs and remediation work as well as all materials, equipment, tools, labor incidental to this work.

The asphalt emulsion (tack coat) will be paid separately.

| Pay Item | Pay Unit |
|---|---|
| Membrane Waterproofing (Cold Liquid Elastomeric) | s.y. |

# ITEM #0819002A - PENETRATING SEALER PROTECTIVE COMPOUND

**Description:** Work under this item shall consist of cleaning concrete surfaces of dirt, dust, and debris, and furnishing and applying a clear, penetrating sealer to concrete surfaces where shown on the plans, to provide a barrier against the intrusion of moisture and chlorides. This work also includes furnishing, installing, and removing platforms, scaffolding, ladders, and other means of access as well as shields, as required, to protect adjacent areas and traffic from overspray.

**Materials:** The penetrating sealer shall conform to Article M.03.09. A Materials Certificate shall be submitted for the penetrating sealer in accordance with Article 1.06.07. A product not listed on the Qualified Products List (QPL) may be considered for approval. A Certified Test Report shall be submitted in accordance with Article 1.06.07 indicating that the product being considered conforms to the Test Requirements listed on the QPL.

**Construction Methods:**

Submittals: The Contractor shall submit to the Engineer Safety Data Sheets (SDS), Technical Data Sheets and product literature for the approved sealer. The literature shall include written instructions how to apply the sealer to vertical and horizontal surfaces, and where required, overhead surfaces. Application rate and number of applications of sealer shall be addressed.

The Contractor shall submit to the Engineer, in accordance with Article 1.05.02, written procedures for cleaning the concrete surfaces prior to sealer application The submittal shall include proposed equipment and materials and shall address how adjacent traffic and other areas shall be protected from dust, debris and overspray during the cleaning and application processes. Where the sealer is to be applied to parapets before pavement is placed, the submittal shall address protection of the deck and curb to which membrane waterproofing will be applied. Should the membrane already be present, the submittal shall address shielding of the membrane. It shall also indicate how vegetation and regulated areas shall be protected from overspray. The submittal shall address the conditions under which work may proceed, including wind speed, temperature and precipitation. It shall also include procedures to be followed to protect the work should unfavorable weather conditions occur before the product has been absorbed.

The Contractor shall inspect the surfaces to be sealed to identify surface cleaning needs before submitting the procedures. The Contractor shall identify concrete surfaces that:

- Need repair
- Require special attention or cleaning procedures
- Have been previously treated with coatings or curing compounds that would hinder penetration of the sealer into the concrete
- Will be new or newly repaired

Written procedures shall include observations listed above. Application of penetrating sealer to new concrete shall be addressed in the application procedures. Forms for surfaces of new concrete to receive penetrating sealer shall not be treated using form release oil, which can inhibit or prevent penetration of the sealer into the concrete.

Surface Preparation: Concrete surfaces to which penetrating sealer will be applied shall be clean and free of grease, oil, and other surface contaminants, including biological growth. Dry surfaces may be cleaned by sweeping with brushes or brooms, and blowing clean with oil-free, compressed air. The Contractor shall take care not to damage the concrete surface finish during cleaning operations. Care shall be taken so that cleaning methods do not damage joint sealant or other components of the structure that are to remain.

Application: Application of the sealer may begin only after the Engineer evaluates the concrete surfaces and determines that conditions for installation comply with the accepted written application procedures.

The sealer shall be applied in accordance with the accepted application procedures at the rate specified by the manufacturer. The Contractor shall monitor and record the number of square feet of concrete surface sealed and the number of gallons of sealer applied over that surface area to verify that the required application rate is being met. A minimum of three applications of sealer shall be assumed to be needed. After the first application of the sealer, curing time shall be recorded and submitted to the Engineer. Additional applications of sealer shall be applied as specified in the application instructions, provided adequate time between applications and appropriate curing of the sealer have occurred. For each application, the Contractor shall record the area and number of gallons of sealer applied as well as the curing time for that application. The Contractor may be directed to apply sealer in up to three separate applications if concrete surfaces readily absorb the previous application.

If the Contractor is directed to apply more than three applications of sealer, the additional applications will be compensated as extra work. Should salts, oil or other visually undesirable materials be evacuated from the concrete by the penetrating sealer and remain on the surface after sufficient rain events have occurred, the Engineer may order surface cleaning of the concrete as extra work.

The Engineer shall be provided access to inspect the concrete surface during application and after the sealer has had adequate time to cure.

**Method of Measurement:** This work will be measured for payment by the actual number of square yards of concrete, sealed and accepted, within the designated limits. The area will be measured once, regardless of the number of applications required.

**Basis of Payment:** This work will be paid for at the Contract unit price per square yard for "Penetrating Sealer Protective Compound," complete, which price shall include all equipment tools, labor and materials, incidental thereto, including the preparation of the concrete surfaces and proper disposal of debris.

The following are not included in the cost of this item and will be considered Extra Work:

- Special cleaning procedures ordered by the Engineer to properly prepare the concrete surface for application of the penetrating sealer (such as removal of tightly adherent biological growth, graffiti, or other difficult-to-remove surface contaminants)

- Additional applications of sealer as noted in the Construction Methods
- Cleaning of evacuated material from sealed surfaces as ordered by the Engineer.

| Pay Item | Pay Unit |
|---|---|
| Penetrating Sealer Protective Compound | s.y. |

# ITEM #0824049A – REMOVE CONCRETE MEDIAN BARRIER

**Description:**

This work shall include the removal and satisfactory disposal of all concrete median barrier, the removal of which is necessary to the final completion of the work.

**Construction Methods:**

Existing concrete median barrier shall be removed to the lines shown on the plans or as ordered by the Engineer, due precaution being taken to avoid injury to new construction, public utility installations or abutting property. The material excavated shall be disposed of as directed by the Engineer.

**Method of Measurement**:

Concrete median barrier removed under this item will be measured for payment by the length in feet in place before removal.

**Basis of Payment:**

Payment for removing concrete barrier will be made at the Contract unit price per linear foot for "Remove Concrete Median Barrier", which price shall include all equipment, tools and labor incidental to the removal of the material and the disposal as directed by the Engineer.

| Pay Item | Pay Unit |
|---|---|
| Remove Concrete Median Barrier | L.F. |

# ITEM #0916105A - STRUCTURE-MOUNTED SOUND BARRIER

**Description:** Work under this item shall consist of designing, fabricating, furnishing, and erecting a structure-mounted sound barrier attached to a new or existing solid concrete railing on a bridge or wall structure at the location(s) specified and to the details shown on the Plans.

The term "sound barrier" is used throughout this specification to describe a wall constructed along a highway to lower the highway noise level in the area behind the wall. Some organizations and publications use the term "noise barrier" instead of "sound barrier". The terms should be considered interchangeable.

**Materials:** Structure-mounted sound barriers shall be crashworthy; include a panel retention system; meet specific material, acoustic, and performance requirements; and meet general material requirements.

**1. Crashworthy:** The crashworthiness of structure-mounted sound barriers is based on the structure-mounted sound barrier system being successfully crash tested to meet one of the following:

a) MASH TL-4, Tests 4-10, 4-11 and 4-12 requirements, documented in a signed crash test report by an accredited crash testing facility.

b) MASH TL-4, Test 4-12 requirements and written justification of meeting Test 4-10 and Test 4-11 requirements, documented in a signed crash test report by an accredited crash testing facility.

**2. Panel Retention System:** Structure-mounted sound barriers shall include a panel retention system to prevent the panels from dislodging and falling from the structure due to a vehicle collision.

**3. Specific Material Requirements:** Specific material and performance requirements for sound barriers are categorized by the type of material used in the construction of the panels. The following specific requirements shall be met by each sound barrier type:

**(a) Transparent Structure-Mounted Sound Barrier -** Transparent acrylic sound barriers shall be comprised of transparent, shatter-resistant acrylic panels within aluminum frames. Unless noted otherwise on the Plans, the panels shall be colorless (clear) with embedded black filaments, oriented perpendicular to the posts, for shatter resistance and bird deterrence.

The acrylic panels shall meet the requirements of ASTM D1003 and D481 and shall comply with EN 1794-1 and 1794-2. The panels shall retain all broken pieces by employing either an internal and/or external restraint system. The panels shall be certified to retain all broken pieces after 10 years of outdoor exposure. A bird deterrence feature shall be included on all panels. The panels shall have a pattern capable of minimizing bird impacts. The bird deterring

pattern shall be an integral part of the panel, capable of withstanding graffiti removal efforts. Application of films in secondary, postproduction processes, is not permitted.

Transparent acrylic sound barrier panels shall be tested and proven to meet the following performance requirements:

1. Tensile Strength shall be greater than 9,250 psi in accordance with ASTM D638.
2. Flexural Modulus shall be greater than 445,000 psi in accordance with ASTM D790.
3. Rockwell Hardness shall be greater than M-90 in accordance with ASTM D785.
4. Sound Transmission Coefficient (STC) shall have a minimum rating of 32 in accordance with ASTM E90 and ASTM E413.
5. Light Transmission shall be greater than 90% in accordance with D1003.
6. Haze shall be less than 1.5% in accordance with D1003.
7. Yellowness Index shall be less than 1 in accordance with D1003.
8. Resistance to brush fire shall be Class 2 in accordance with EN1794-2
9. Horizontal Burn Rate shall be less than 2.5 inches/minute in accordance with ASTM D635.
10. Smoke Density shall be less than 50% in accordance with ASTM D2843.
11. Self-ignition shall be greater than 650°F in accordance with ASTM D1929.
12. To withstand impacts of stones thrown up from the road surface, structure-mounted sound barrier system shall meet the requirements of EN1794-1, Appendix C.

**(b) Aluminum Structure-Mounted Sound Barrier -** Aluminum sound barriers shall be comprised of panels with exterior extruded aluminum alloy 6063-T6 faces and a core of sound absorbing, non-moisture absorbing, material contained within aluminum frames. Unless otherwise noted on the Plans, the aluminum panels shall be uncoated, mill finish.

Aluminum sound barrier panels shall be tested and proven to meet the following performance requirements:

1. Freeze-thaw resistance shall have no visible deterioration within 300 cycles and in accordance with ASTM C666.
2. Salt-scaling resistance shall have a rating equaling zero, no deterioration, within 50 cycles and in accordance with ASTM C672.
3. Burn Resistance shall have Flame Spread Index, FSI < 25 and Smoke Developed Index, SDI < 20 in accordance with ASTM E84.
4. Impact Resistance shall pass a large missile test in accordance with ASTM E1996 and Testing Application Standard (TAS) 201.
5. Pressure Cycling Resistance shall have no structural failure up to +/- 142 psf in accordance with TAS 202 and TAS 203.
6. Sound Transmission Class (STC) shall have a minimum rating of 32 in accordance with

ASTM E90 and ASTM E413.

**4. General Material Requirements:** In addition, each structure-mounted sound barrier type shall meet the following general requirements as applicable:

**(a) Structural Steel:** All structural steel plates shall meet the requirements of ASTM A572, Grade 50. W-beams, channels, and angles shall meet the requirements of ASTM A992, Grade 50. Hollow Structural Sections, HSS, shall meet the requirements of ASTM A500, Grade B or C.

All structural steel components shall be hot dip galvanized after fabrication and shall meet the requirements of ASTM A123.

**(b) High Strength Bolts, Nuts, Washers:** Bolts and other hardware shall meet the requirements of ASTM F3125 Grade A325, Type 1 and shall be hot dip galvanized in accordance with ASTM F2329, or mechanically galvanized in accordance with ASTM B695, Class 55.

**(c) Adhesive Bonding Material:** Adhesive bonding material shall be as specified in 6.10.02.

**(d) Reports and Certificates:** The Contractor shall submit Certified Test Reports and Materials Certificates in conformance with 1.06.07 for the steel used for the members and components, high-strength bolts (including nuts and washers), anchor rods (including nuts and washers), and threaded rods (including nuts and washers). In addition, the following shall be submitted:

1. Mill test reports that indicate the place where the material was melted and manufactured.

2. High-strength bolt test results for proof load tests, wedge tests, and rotational-capacity tests that indicate where the tests were performed, date of tests, location of where the components were manufactured and lot numbers.

3. Galvanized material test results that indicate the thickness of the galvanizing.

Prior to incorporation into the work, the Contractor shall submit samples in conformance with 1.06.02 for the steel used for the members and components, high-strength bolts (including nuts and washers), anchor rods (including nuts and washers), and threaded rods (including nuts and washers).

**5. Structure-Mounted Sound Barrier Systems:** The structure-mounted sound barrier systems in Table 1 can meet the above requirements and are acceptable for use on structures:

| **Table 1** | |
|---|---|
| **Transparent Structure-Mounted Sound Barrier** | |
| **Acrylite Soundstop MASH TL-4 Noise Barrier System**<br>Durisol<br>313 Trindale Road Suite C<br>Archdale, NC 27263<br>Email: andrew.weaver@durisol.com<br>www.durisol.com | Successfully crash-tested to meet MASH TL-4, test procedures 4-10, 4-11, and 4-12. Refer to FHWA Safety Eligibility Letter B-352.<br><br>Barrier conditions for MASH TL-4 crash-testing included:<br>1. Posts attached with adhesive bonded anchors to outside vertical face of single slope solid concrete railing meeting MASH TL-4 requirements.<br>2. The specified minimum compressive strength of the concrete used in the railing was 4,000 psi.<br>3. Traffic railing height above finished roadway surface: 36 inches<br>4. Barrier height above finished roadway surface: shall match existing barrier height, 14+/- feet, to be verified in field<br>5. Maximum post spacing: 10.0 feet c-c<br>6. 2 continuous, longitudinal crash rails; the lower mounted 4.67 feet above the above finished roadway surface; the upper mounted 10.00 feet above the above finished roadway surface |
| **Aluminum Structure-Mounted Sound Barrier** | |
| **Aluminum MASH TL-4 Noise Barrier System**<br>Durisol<br>313 Trindale Road Suite C<br>Archdale, NC 27263<br>Email: andrew.weaver@durisol.com<br>www.durisol.com | Successfully crash-tested to meet MASH TL-4, test procedure 4-12.<br><br>Barrier conditions for MASH TL-4 crash-testing included:<br>**1.** Posts attached with adhesive bonded anchors to outside vertical face of single slope solid concrete railing meeting MASH TL-4 requirements.<br>**2.** The specified minimum compressive strength of the concrete used in the railing was 4,000 psi.<br>**3.** Traffic railing height above finished roadway surface: 36 inches<br>**4.** Barrier height above finished roadway surface: shall match existing barrier height, 14+/- feet, to be verified in field<br>**5.** Maximum post spacing: 10.0 feet c-c<br>**6.** 2 continuous, longitudinal crash rails; the lower mounted 4.67 feet above the above finished roadway surface; the upper mounted 10.00 feet above the above finished roadway surface |

| | |
|---|---|

Structure-mounted sound barriers other than those listed in Table 1 may be used provided they meet the specification requirements and are accepted by the Engineer as "an approved equal".

**6. Prohibited Materials:** The use of structure-mounted sound barriers with components and elements comprised entirely of timber is not permitted.

The use of structure-mounted sound barriers comprised of concrete panels placed between vertical posts is not permitted.

**Construction Methods:**

**1. Design and Detailing Requirements:** The Plans contain conceptual layout and details of a sound barrier wall mounted to a structure. Unless otherwise shown or limited by the Plans, the Contractor shall select the type of sound barrier to be constructed on the structure, based on the design and details of a wall meeting the Site conditions and constraints, and shall furnish and erect the wall in accordance with the submittals that the Engineer has reviewed and authorized for the work. The use of more than 1 material type of sound barrier on a structure is not permitted.

The design and detailing of the sound barrier and its components, including its anchorage, shall meet the requirements of the latest edition of the AASHTO LRFD Bridge Design Specifications [LRFD], including the latest interim specifications, as amended by the Connecticut Bridge Design Manual, available on the bid advertising date of the Contract.

**2. Submittals:** Prior to fabrication and the preparation of working drawings, the Contractor shall submit Product Data documentation, supporting the sound barrier(s) selected for construction meets the crashworthy requirements, for review in accordance with Article 1.05.02.

Prior to fabrication, the Contractor shall submit Working Drawings and design calculations, for each sound barrier, with all details and documents necessary for fabrication and erection of the structure and its components, for review in accordance with Article 1.05.02. The Working Drawings and design calculations for the sound barriers shall meet the Working Drawing requirements for permanent construction. The Working Drawings and calculations shall be prepared in Customary U.S. units.

The sound barrier Working Drawing submittal shall include, but not be limited to the following:

**(a)** Plan, elevation, and typical section, drawn to scale, of the supporting structure and structure-mounted sound barrier including:
1. Project number, town, and location.
2. General notes addressing design criteria, materials, material designations, welding requirements, Sound Transmission Class (STC), Noise Reduction Coefficient (NRC), repair of damaged areas of coatings, and installation requirements.
3. Supporting structure constraints:
   a. Start and end of structure.
   b. Joints in concrete parapet, sidewalk, and deck, including expansion joints,

contraction joints, construction joint and control joints.
   c. Location of existing and/or proposed conduits and junction boxes located in the parapet.
   d. Location of existing and/or proposed light standards.
   e. Location of existing and/or proposed cantilever and truss sign supports.
   f. Location of existing and/or proposed utilities.
   g. Location of emergency access locations.
   h. Location of existing and/or proposed utilities.
4. Start and end of the wall located relative to end of supporting structure.
5. Post spacing and location relative to applicable support structure constraints.
6. Post lengths.
7. Elevations of the finished top and bottom of the wall panels at all locations.
8. Location of horizontal angle points.
9. Markings: The date of manufacturing, the production lot number, and the piece mark shall be clearly marked on the side of each panel.

**(b)** Plans, details, and sections for the following:
1. Post dimensions and details.
2. Panel dimensions and details showing the pattern, color, and texture.
3. Allowable fabrication tolerances for wall panels and posts.
4. Allowable installation tolerances for posts including allowable variations of horizontal spacing and from plumb.
5. Connection of post to concrete components of the supporting structure – anchor rod layout, adhesive bonded anchor details (if applicable), cast-in-place anchorage details (if applicable).
6. Panel to post connection details, including panel retention system.
7. Panel to panel connection details.
8. Details and methods for sealing gaps and openings between panels, posts, and the parapet.
9. Details to accommodate built out, thicker parapet sections.
10. Provisions for temperature expansion and contraction in the sound barrier support systems.

**(c)** Construction and installation procedures, including false work required to temporarily support components during construction.

**(d)** The sound barrier design calculations shall include, but not be limited to the following:
1. Project number, town, and location.
2. References to design specifications, including interim specifications, and the applicable code section and articles.
3. Description/documentation for all computer programs used in the design.
4. Drawings/models of the structure, components, and connections, with dimensions, loads, and references to the local and global coordinate systems used (as applicable), to facilitate review of the results.
5. Load combinations, load factors and resistance factors for all applicable limit states.

6. Deflections due to all applicable limit states.

Prior to fabrication, a finished sample of each different type of sound barrier panel to be installed shall be submitted for review in accordance with 1.05.02-4 – Product Data for compliance with the Contract requirements. The sample shall be 24 inches x 24 inches x full thickness of the panel element.

Prior to fabrication, the Contractor shall submit welding procedures in accordance with 1.05.17.

Prior to drilling holes for adhesive bonded anchors, the Contractor shall meet requirements of 6.10.03-A.

**3. Fabrication, Inspection, and Installation:** Fabrication of the sound barrier and its components may begin only after the Working Drawings, design calculations, panel sample and welding procedures have been reviewed and the Engineer has authorized fabrication to begin.

Prior to removing the existing barrier, the Contractor shall field survey existing noise barrier wall (length and height) within the limits to be removed.

The steel fabricator shall be AISC certified for the fabrication under the Standard for Bridge and Highway Metal Component Manufacturers (CPT).

Notification of shop fabrication shall be as specified in 6.03.03-4(a).

No changes may be made during fabrication without prior written approval by the Department.

Inspection of shop fabrication shall be as specified in 6.03.03-4(e).

The transparent and aluminum structure-mounted sound barriers shall meet the following tolerances:

(a) Posts:
   1. Post Height = +1/2”
   2. Post Vertical Sweep:
      a. Posts < 16’ long = +1/8”
      b. Posts > 16’ long = +1/4”

(b) Post Installation:
   1. In horizontal plane from Plan location = +1”
   2. In horizontal plane from adjacent post = +1/2”
   3. Post plumb = +1/8” per 10’ of wall height

(c) Panels:
   1. Panel Length and Height = +1/4”
   2. Panel Structural Thickness = +1/4”
   3. Panel Horizontal Sweep = +1/8”
   4. Panel Vertical Sweep = +1/8”

All welding details, procedures and nondestructive testing shall meet the requirements of AWS D1.1 Structural Welding Code - Steel. Welders shall meet the requirements of 6.03.03-1(b).

Nondestructive testing shall be as specified in 6.03.03-4(f).

Galvanized members and components shall be free from uncoated areas, blisters, flux deposits, and gross inclusions. Lumps, projections, globules, or heavy deposits of zinc which will interfere with the intended use of the material will not be permitted.

All damaged areas of the hot-dip galvanized surfaces shall be repaired in accordance with the requirements of ASTM A780. If paint containing zinc dust is used for repairs, the dry coating thickness shall be at least 50% greater than the thickness of the adjacent hot-dip galvanized coating, but no greater than 4.0 mils. The paint shall be brush applied; the use of aerosol spray shall not be permitted. The color of the finished repair area shall closely match the color of the adjacent hot-dip galvanized surface at the time of the repair to the satisfaction of the Engineer.

The finished members and components shall be subject to inspection by the Engineer prior to shipment.

The finished members and components shall be protected with sufficient dunnage and padding to protect them from damage and distortion during transportation. Damage to any material during transportation, improper storage, faulty erection, or undocumented fabrication errors may be cause for rejection of the material at the Project site. All costs associated with any corrective action will be borne by the Contractor.

Following delivery to the Project site, the Engineer will perform a visual inspection of all material to verify shipping documents, fabricator markings, and that there was no damage to the materials or coatings during transportation and handling. Panels will be rejected if there are variations in the exposed face treatments that deviate from the approved sample's color or texture as determined by the Engineer.

The Engineer is not responsible for approving or accepting any fabricated materials prior to final erection and assembly at the Project site.

High-strength bolts, nuts and washers shall be stored in accordance with 6.03.03-5(f).

The sound barrier wall shall be erected, assembled, and installed in accordance with the procedures and methods submitted with the Working Drawings. The Contractor and the barrier designer are responsible to ensure that the proposed erection and assembly procedures and methods are acceptable for use with the sound barrier. Methods and procedures submitted with the Working Drawings that differ from these specifications shall be so noted.

A qualified representative from wall manufacturer shall be at the Site at the initiation of sound barrier installation to assist the Contractor and the Engineer. The representative shall be available for consultation on an as-needed basis, as requested by the Contractor or the Engineer.

Posts shall be installed plumb. Adhesive bonded anchors shall meet the requirements of 6.10.02. Connections to concrete components shall be tensioned as shown on the Working Drawings.

High-strength bolts, including nuts and washers, shall be installed and tensioned in accordance with 6.03.03-5(f). All faying surfaces of the connections shall be in firm, continuous contact after the high-strength bolts have been installed and tensioned. All high-strength bolts in the connections shall be inspected in accordance with 6.03.03-5(f)) to confirm the high-strength bolts are properly tensioned.

Panels shall be installed level and connected as shown on the Working Drawings. All opening and gaps shall be sealed as shown on the Working Drawings.

The Contractor shall be responsible for ensuring a completed sound barrier, free of cracks, dents, deformations, discoloration, or objectionable marks which may adversely affect the barriers' performance, aesthetics, or serviceability as determined by the Engineer. All panels that exhibit any form of structural damage, as determined by the Engineer, will be rejected. Rejected panels shall be replaced. All work and materials required to replace rejected panels shall be at the Contractor's expense.

The Contractor shall repair all damaged areas of the coating as shown on the Working Drawings.

**Method of Measurement:** Structure-Mounted Sound Barrier will be measured by the number of square feet of Structure-Mounted Sound Barrier completed and accepted within the limits indicated on the Plans or as ordered by the Engineer. The horizontal pay limit will be measured from center to center of each vertical post supporting each panel between the end posts mounted on the structure. The vertical pay limit will be measured from the bottom of the barrier panel section to the top of the barrier panel. Each span between columns shall be measured for payment separately, where stepping is required.

The panel installed between the end post mounted on the structure and the first post of the sound barrier on the highway approach, including any hardware for its connection to the end post, will not be included in the measurement for payment under this item but will be included in the highway approach sound barrier item.

**Basis of Payment:** Payment for this work will be made at the Contract unit price per square foot for " Structure-Mounted Sound Barrier," complete and accepted in place, which price shall include on-call and on-site services of the representative from the sound barrier manufacturer, sample(s), all work and materials used for the fabrication, surveying of existing barrier, complete installation including furnishing engineering and design, installing anchors, and construction of the barriers, equipment, tools, labor and work incidental to the installation of the sound barrier.

The unit price shall also include initial coating of the sound barrier elements and components as well as any field repairs to damaged areas of the coating.

No payment will be made for work related to the field survey, field-verification of site and

structure conditions, and preparation of submittals.

| Pay Item | Pay Unit |
|---|---|
| Structure-Mounted Sound Barrier | s.f. |

# ITEM#0916219A – ROCK IN POLE EXCAVATION

# ITEM #0916302A – TIMBER NOISE BARRIER WALL (TYPE I)

**9.16.01—Description:** This work shall consist of furnishing and constructing noise barriers in the locations and to the dimensions and details shown on the plans or as ordered by the Engineer.

Unless a specific type of wall is required by the plans, the Contractor may select any of the types whose details are shown on the plans.

The Contractor shall identify, by type and name, the proposed specific type of wall for each location upon which the bid is based.

If different types of walls are proposed, the Contractor shall design the transition or connection of the different types and submit the design and details to the Engineer for overall consideration, review, and approval prior to furnishing material.

Rock in so far as it applies to "Rock in Pole Excavation" shall be defined as rock in definite ledge formation, boulders or portions of boulders, cement masonry structures, concrete structures or Portland cement concrete pavement which has a cross-sectional area that exceeds 50% of the cross-sectional area of the designed pier hole.

**9.16.02—Material:** Materials for Portland cement concrete shall meet the requirements of M.03. The size of aggregate and the mix formulation shall be submitted to the Engineer for approval.

Materials for access door shall be as indicated on the Contract Drawings.

All other materials shall meet the requirements as indicated on the individual noise barrier wall plans.

**9.16.03—Construction Methods:** All walls shall be constructed as shown on the plans and as recommended by the manufacturer or fabricator.

**Shop Drawings:** The Contractor shall submit shop drawings to the Engineer for review and comment in accordance with 1.05.02. These drawings shall include, but not be limited to, the following information: The layout plans, details of stepped installation on grades, transition, and connection of wall on a structure to the adjacent wall, material lists and material designations.

The Contractor shall prepare and submit working drawings based on the concept and scheme as presented in the plans and this specification to the Engineer and CTDOT Office of Environmental Planning for review and acceptance.

All vertical joints shall be plumb.

Where poles are used, they shall be set in concrete in predrilled holes. The concrete shall fill the bore to the full depth of hole and shall be crowned at the top for drainage. The drilled hole shall be reasonably true and plumb to the stated diameter and depth. Precautions shall be taken in the

operational procedures to protect the hole from collapse. Should rock or other obstructions be encountered in making the hole, this material shall be removed and any space outside the designed pier diameter shall be replaced with concrete.

The concrete shall be placed in the dry, against the existing soil or rock. All disturbed material around the concrete shall be compacted.

Compacted granular fill shall be constructed in accordance with 2.14.

All ground beyond the gravel or stone limits disturbed by the installation of the wall shall be restored to its original condition and all excess material removed from the Site.

Prior to removing the existing barrier, the Contractor shall field survey existing noise barrier wall (length and height) within the limits to be removed.

**9.16.04—Method of Measurement:** This item will be measured for payment by the number of square feet of noise barrier wall completed and accepted within the limits indicated on the plans or as ordered by the Engineer. The horizontal pay limit shall be from center to center of each pier, pole or post. The vertical pay limit shall be from the finished ground elevation, prior to placement of crushed stone, measured at the center of the panel, to the top of the wall. Areas above the design height and the overhang area beyond the centerline of pier, pole or post will not be measured for payment.

The access door shall not be measured for payment, but shall be included in the item 'Timber Noise Barrier Wall - Type I'.

The horizontal pay limit for structure mounted noise barrier wall will be as described above, whereas the vertical pay limit will be measured from the top to the bottom of sheathing.

Where rock is encountered, it will be measured for payment from the top of the rock to the bottom of the necessary rock excavation.

**9.16.05—Basis of Payment:** Payment for this work will be made at the Contract unit price per square foot for "Noise Barrier Wall" or "Noise Barrier Wall (Type)" complete in place, which price shall include all materials, including planks, poles, battens, stone, foundations, and materials for the fabrication and installation of the wall itself, surveying of existing wall, grading, disposal of surplus material, equipment, tools, labor and work incidental to the installation of the wall.

When rock is encountered within the limits of excavation, its removal will be paid for at the Contract unit price per vertical foot for "Rock in Pole Excavation," which price shall include any additional excavation to remove the rock and any additional concrete required to fill the excavation beyond the designed pier hole diameter or depth.

| Pay Item | Pay Unit |
|---|---|
| Noise Barrier Wall (Type I) | s.f. |
| Rock in Pole Excavation | v.f. |

ITEM # 0916219A,
0916302A

# ITEM #0916406A - REMOVE NOISE BARRIER WALL

**Description**: This work shall include the removal and satisfactory disposal of all existing noise barrier wall, including foundations, where shown on the plans or as directed by the Engineer, and in accordance with these specifications.

**Construction Methods:** Noise wall shall be removed in its entirety. Precaution shall be taken to avoid injury to new construction, public utility installations or abutting property. The material removed shall be disposed of offsite in accordance with all applicable local, state and federal regulations. Concrete foundations shall be removed within limits of barrier wall removal.

**Method of Measurement:** This work will be measured for payment by the number of linear feet of noise barrier wall removed and disposed of, measured horizontally between the outer limits of the noise barrier wall.

**Basis of Payment:** Payment for removing and disposing of noise barrier wall will be made at the contract unit price per linear foot for "Remove Noise Barrier Wall", which price shall include all equipment, tools and labor incidental for the removal and disposal of all elements.

| Pay Item | Pay Unit |
|---|---|
| Remove Noise Barrier Wall | l.f. |

# ITEM #0916408A - REMOVE NOISE BARRIER WALL (STRUCTURE)

**Description**: This work shall include the removal and satisfactory disposal of all structure mounted noise barrier wall where shown on the plans or as directed by the Engineer, and in accordance with these specifications.

**Construction Methods:** Structure mounted noise wall shall be removed in its entirety. Precaution shall be taken to avoid injury to new construction, public utility installations or abutting property. The material removed shall be disposed of offsite in accordance with all applicable local, state and federal regulations.

**Method of Measurement:** This work will be measured for payment by the number of linear feet of structure mounted noise wall removed and disposed of, measured horizontally between the extreme limits of the structure mounted noise barrier wall.

**Basis of Payment:** Payment for removing and disposing of structure mounted noise barrier wall will be made at the contract unit price per linear foot for "Remove Noise Barrier Wall (Structure)", which price shall include all equipment, tools and labor incidental thereto.

| Pay Item | Pay Unit |
|---|---|
| Remove Noise Barrier Wall (Structure) | l.f. |

# ITEM #0917010A - REPAIR GUIDERAIL

**Description:** Work under this item shall consist of the repair of newly installed guiderail. It shall be repaired in the locations originally installed and fabricated in conformity with the lines, designations, dimensions, and details shown on the plans or as ordered by the Engineer.

**Materials:** The material for guiderail shall meet the requirements as specified within the original applicable contract items.

When repairing guiderail, the Contractor shall reuse any undamaged existing guiderail elements, timber rail, wire rope, appropriate posts, delineators, lap bolts, and other hardware within the project limits as approved by the Engineer to repair the guiderail. The Contractor shall use new materials when any components of the existing railing are damaged or missing and cannot be obtained from other guiderail systems being removed or converted within the Project limits.

**Construction Methods:** The repair of guiderail shall be in accordance with contraction methods as specified within the original applicable contract items.

Guiderail, including end anchors, which has been installed in final condition and accepted by the Engineer, shall be eligible for reimbursement for repairs subject to the conditions described below. If multiple runs are to be installed in a single stage as indicated in the contract documents, determination for reimbursement shall be made when all runs within the stage are complete and accepted as previously described. On projects without designated stages, guiderail installations must be complete and serving the intended function as determined by the Engineer.

When newly installed guiderail is damaged by public traffic, the following conditions must be satisfied prior to reimbursement for payment;

1. The damage must have been caused solely by the traveling public.

2. The contractor shall provide satisfactory evidence that such damage was caused by public traffic. Such as accident reports obtained from the Connecticut Department of Public Safety, police agencies or insurance companies; statements by reliable, unbiased eyewitnesses; or identification of the vehicle involved in the accident.

3. The contractor shall attempt to collect the costs from the person or persons responsible for the damage and provide documentation of those efforts to the satisfaction of the Engineer.

4. If such evidence cannot be obtained, the Engineer may determine that the damage was not caused by the Contractor and reimbursement for payment is warranted.

This repair provision does not relieve the Contractor of the requirements of Section 1.07, any other contractual requirements for maintenance and protection of traffic and final acceptance and relief of responsibility for the project.

The contractor shall remain responsible for the safety and integrity of the guiderail system for the duration of the project. In the event the guiderail is damaged, the Contractor shall provide sufficient cones, drums and other traffic control devices to provide safe passage by the public. When ordered by the Engineer, the Contractor shall furnish replacement parts and immediately repair the guiderail, but in no case more than 24 hours after notification from the Engineer. In non-emergency situations, the guiderail shall be repaired within 72 hours. The repaired guiderail or anchorages, when completed, shall conform to these specifications for a new system. The Contractor shall be responsible for the removal and the proper disposal of all damaged material and debris.

**Method of Measurement:** Guiderail damaged solely by the traveling public will be measured for payment. Damage caused by the Contractor's equipment or operations will not be measured for payment.

The sum of money shown on the estimate and in the itemized proposal as "Estimated Cost" for repair of guiderail will be considered the price bid even though payment will be made only for actual work performed. The estimated cost figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figures will be disregarded and the original price will be used to determine the total amount bid for the contract.

**Basis of Payment:** Repair of guiderail will be paid for in accordance with Article 1.09.04 as required to restore the rail to its full working condition in conformance with these specifications for a new system. There will be no payment for maintenance and protection of traffic for work associated with this item unless, in the opinion of the Engineer, the sole purpose of the maintenance and protection of traffic is for repair of the guiderail.

| Pay Item | Pay Unit |
|---|---|
| Repair Guiderail | est. (est.) |

# ITEM #0922509A – TEMPORARY CONSTRUCTION ACCESS ROAD

## Description:

Work under this item shall consist of the installation, maintenance and removal of temporary access roads for vehicles to access the work areas. This item also includes all work, tools, materials and labor associated with site preparation/ restoration, which includes an existing topographical survey of the disturbed area, removal of chain link fence, earth excavation to the required grade, slope protection of areas beyond the access roads, borrow to restore the impacted area to the original grades and the reconstruction of impacted slopes.

## Materials:

No. 3 Crushed Stone shall comply with the requirements of Section M.01. Geotextile (Separation – Class 1) shall be of a type listed on the Connecticut DOT's Qualified Products List for Class 1. Turf Establishment shall be used for temporary (side) slope protection and shall comply with the requirements of Section 9.50. If required, new materials shall comply with Section M.13.

## Construction Methods:

Prior to construction of the temporary construction access road, the Contractor shall submit to the Engineer for review complete design calculations and plans meeting the requirements of Section 1.05.02 for the temporary construction access road.

Excavation shall be made in conformity with the requirements of the plans and as ordered by the Engineer. The access area shall be cleared of all roots and other objectionable material prior to geotextile placement. All excavated materials shall be stockpiled in accordance with Article 1.10.03 and used to restore impacted areas.

Geotextile shall be placed parallel to the access drive centerline in a loose manner to permit it to conform to the surface irregularities and prevent it from damage during stone installation. The geotextile and crushed stone shall be completely removed after use.

All slopes shall be stabilized by mulching, seeding or otherwise protected throughout use. All damaged slopes shall be repaired as soon as possible. Upon completion within the work area, the grades shall be restored to the requirements of the plans. The finished grade Turf Establishment shall be paid for separately.

## Method of Measurement:

This work will be measured for payment by the area of temporary construction access roads constructed, removed, restored and accepted by the Engineer.

**Basis of Payment:**

This work will be paid for at the contract unit price per square yard for "Temporary Construction Access Road", which price shall include all labor, materials, equipment, tools and incidentals thereto, necessary to complete this work. Temporary earth retaining systems shall be paid for under item "Temporary Earth Retaining System". Installation of new chain link fence shall be paid for under item "5' Chain Link Fence".

| **Pay Item** | **Pay Unit** |
|---|---|
| Temporary Construction Access Road | SY |

# ITEM #0949875A – WETLAND PLANTINGS

*Amend Section 9.49 as follows:*

**Article 9.49.01—Description:** *Add the following:*

Work under this item shall include furnishing, installing, trees, shrubs and herbaceous stock of the type and size indicated in the Plant List(s) identified on the Permit Planting Plan, herein referred to as Wetland Area(s). Work in the Wetland Area(s) will be performed under the direction of an Environmental Scientist from the Connecticut Department of Transportation's Office of Environmental Planning (OEP).

**Article 9.49.02—Materials:** *Add the following:*

The trees, shrubs, and herbaceous stock to be planted within the Wetland Area(s) shall be straight species, native varieties, and conform to Section 3 of the American Standards for Nursery Stock, meeting the requirements for container size, root mass and number of canes of the of those species listed in the Plant List(s) identified on the Permit Planting Plan. No varieties, hybrids, or cultivars will be accepted.

| Botanical Name | Common Name | Size | Qty. | Indicator |
|---|---|---|---|---|
| *Asclepias incarnata* | Swamp Milkweed | 2" plug | 40 | OBL |
| *Asclepias tuberosa* | Butterfly Milkweed | 2" plug | 40 | NI |

The Environmental Scientist from OEP must accept any species substitutions from the Plant List(s) identified on the Permit Planting Plan prior to plant inspection and delivery to the Site. If substitutions are proposed, the Contractor must provide OEP with documentation from 3 wholesale plant material sources of supply per M.13.07-5 indicating that the species type or size listed in the Plant List(s) identified on the Permit Planting Plan is not available. No varieties, hybrids, or cultivars of any species will be allowed as a substitution.

**Article 9.49.03—Construction Methods:**

**1. Planting Season:** *Add the following:*

**All Plant Material to be Installed in Permit Planting Plan (Including Deciduous and Evergreen)**

Spring: March 1st to June 15$^{th}$ (inclusive).

Fall: August 15th to October 31st (inclusive).

A schedule for planting must be submitted by the Contractor to the Engineer for OEP's acceptance.

**3. Field Coordination:** *Add the following:*

For the Wetland Area(s), a schedule for planting must be submitted by the Contractor to the Engineer for review and acceptance by OEP's Environmental Scientist at least 30 days prior to planting. Plant locations shall be as generally depicted and identified on the Permit Planting Plan as directed by the Environmental Scientist.

**4. Planting Layout:** *Add the following:*

For the Wetland Area(s), the Contractor shall review Site conditions and inform the Environmental Scientist of any conflicts. The Contractor shall coordinate planting layout with the Environmental Scientist for review and acceptance.

**5. Preparation of Planting Areas:** *Add the following:*

For the Wetland Area(s), the planting areas shall be prepared by use of approved tools or machinery. All undesirable invasive species shall be removed in accordance with the requirements detailed in the Control and Removal of Invasive Vegetation special provision. All undesirable material shall be removed from the Site and disposed of by the Contractor in a manner satisfactory to the Engineer.

**6. Pit Excavation:** *Add the following:*

Plant pits within the Wetland Area(s), must be hand dug. Machinery may be allowed for use in limited areas, with prior acceptance of the Environmental Scientist.

**7. Setting Plants:** *Add the following:*

All planting within the Wetland Area(s), shall meet the following additional requirements:

a. Plantings shall be installed as shown identified on the Permit Planting Plan according to their wetland indicator status or as directed by OEP's Environmental Scientist.

b. **Setting of Trees and Shrubs in Wetland Area(s):** Trees and shrubs shall be installed as shown and identified on the Permit Planting Plan or as directed by OEP's Environmental Scientist. All trees and shrubs identified on the Permit Planting Plan shall be set so that they are level with the microtopography within the immediate area.

c. All plants shall be set manually, and any relocated plants shall be placed in locations with suitable hydrology and soils, and where appropriate structural context with other plants can be maintained, as determined by OEP's Environmental Scientist.

**8. Fertilizing:** *Add the following:*

Fertilizing within the Wetland Area(s) is strictly prohibited.

**11. Pruning:** *Delete Section.*

**12. Spraying:** *Delete Section.*

**13. Mulching:** *Add the following:*

For the Wetland Area(s), mulching is not allowed below the state or federal inland wetland limit.

*Add the following at the end of Article 9.49.03:*

**Article 9.49.04—Method of Measurement:**

*Add the following**:***

Wetland Plantings will be measured for payment as a Contract lump sum item.

**Article 9.49.05—Basis of Payment:** *Add the following:*

Wetland Plantings will be paid for at the Contract lump sum price for "Wetland Plantings," which price shall include all materials, tools, equipment, labor, and work incidental thereto. The Contractor shall submit to the Department a Schedule of payment values for review and comment prior to payment.

Replacement of dead or rejected plants required within 1 year of the initial planting installation will not be measured for payment. The Environmental Scientist will inspect the wetland plants 1 year after initial installation and 1-year thereafter and determine the number and types of replacement plants to be provided. The Engineer will pay up to 60% of the lump sum cost for plantings installed but not yet receiving final acceptance.

Plantings not covered under Wetland Plantings shall be paid under individual Contract items. These plants are identified on the Permit Planting Plan.

| Pay Item | Pay Unit |
|---|---|
| Wetland Plantings | l.s. |

# ITEM #0950043A - WETLAND GRASS ESTABLISHMENT

**Description:** The work included in this item shall consist of providing an accepted stand of established wetland grasses by furnishing and placing seed as shown on the plans, permits, or as directed by the Engineer within the Wetland Mitigation Area(s) or other areas when required.

**Materials:** All wetland grass mixture sources shall be locally obtained within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland in order to preserve and enhance the diversity of native wetland grass species.

The placement of fertilizer, mulch or bio-degradable erosion control matting will not be allowed within any wetland area.

All wetland seed mixture sources shall be approved by the Engineer prior to purchase.

Three (3) qualified wetland seed mixtures are as follows:

1. **New England Wet Mix (Wetland Seed Mix)**, New England Wetland Plants, Inc. 820 West Street Amherst, MA 01002, or equal. Rate shall be 1 pound PLS per 2,500 sq. ft.

2. **OBL Wetland Mix,** Ernst Conservation Seeds, Inc. 8884 Mercer Pike, Meadville, PA 16335, or equal. Rate shall be 1 pound PLS per 2,000 sq. ft.

3. **Vermont Wetland Shrub**, Vermont Wetland Plant Supply, LLC, P.O. Box 153, Orwell, VT 05760, or equal. Rate shall be 1 pound PLS per 2,420 sq. ft.

All seed mixtures must be reviewed and approved by the Engineer prior to application. All seed Materials Certificates must have seed mixtures that shall not include any invasive species pursuant to Connecticut General Statute Sec. 22a-381d, or any State Threatened or State Endangered species known pursuant to Connecticut General Statute Sec. 26-303 which would be a violation of the Connecticut Endangered Species Act. The seed tags from the bags are to be removed by the Engineer upon delivery and attached to the Materials Certificate. No seeding shall occur if the requirements are not met.

All approved seed mixtures shall be obtained in sufficient quantities to meet the pure live seed (PLS) application rates as determined by the seed analysis of the mixture.

**Construction Methods**: Construction methods shall be those established as agronomically acceptable and feasible and approved by the Engineer.

Wetland grass establishment seeding for Wetland Mitigation Site(s): Seeding shall occur during the fall season immediately following construction of the wetland site(s). Fall seeding must occur from August 15$^{th}$ to October 31$^{th}$.

Wetland grass establishment seeding for areas other than the Wetland Mitigation Site(s), when required: Seeding dates shall adhere to Section 9.50 – Turf Establishment.

Seeding shall be applied to wetland areas that will not be routinely inundated. If seed is purchased in bulk rather than by PLS, the rate of application must be adjusted to meet the required PLS seeding rate. This seeding rate shall be increased by the appropriate percentage based on the information provided on the seed tags at delivery, as determined by the following formula:

(Germination Percentage X Purity Percentage)/100 = Percentage PLS

The Engineer shall verify that the seed is applied at a rate that will allow for 100% PLS.

**Method of Measurement:** This work will be measured for payment by the number of square feet of surface area of established wetland seed mixture, planted, and accepted as specified or by the number of square feet of surface area of seeding actually covered as specified.

**Basis of Payment:** This work shall be paid at the Contract unit price per square foot for "Wetland Grass Establishment," which price shall include all materials maintenance, equipment, tools, labor, transportation, operations and all work incidental thereto. Partial payment of up to 50% may be made for work completed, but not accepted. Full payment shall not be made until the area has been accepted by the Engineer.

| Pay Item | Pay Unit |
|---|---|
| Wetland Grass Establishment | s.f. |

# ITEM #0952001A – SELECTIVE CLEARING AND THINNING

*Section 9.52 is amended as follows:*

**Article 9.52.03 – Construction Methods is supplemented as follows:**

Extruded and Sheet Aluminum Signs:

Prior to scheduling sign installation and at least 14 days in advance of clearing operations, stake out the limits of vegetation and tree clearing to provide visibility to signs as described below.

Visibly mark or flag trees proposed to be removed. Contact the Engineer if an adjustment to sign location can prevent tree removal.

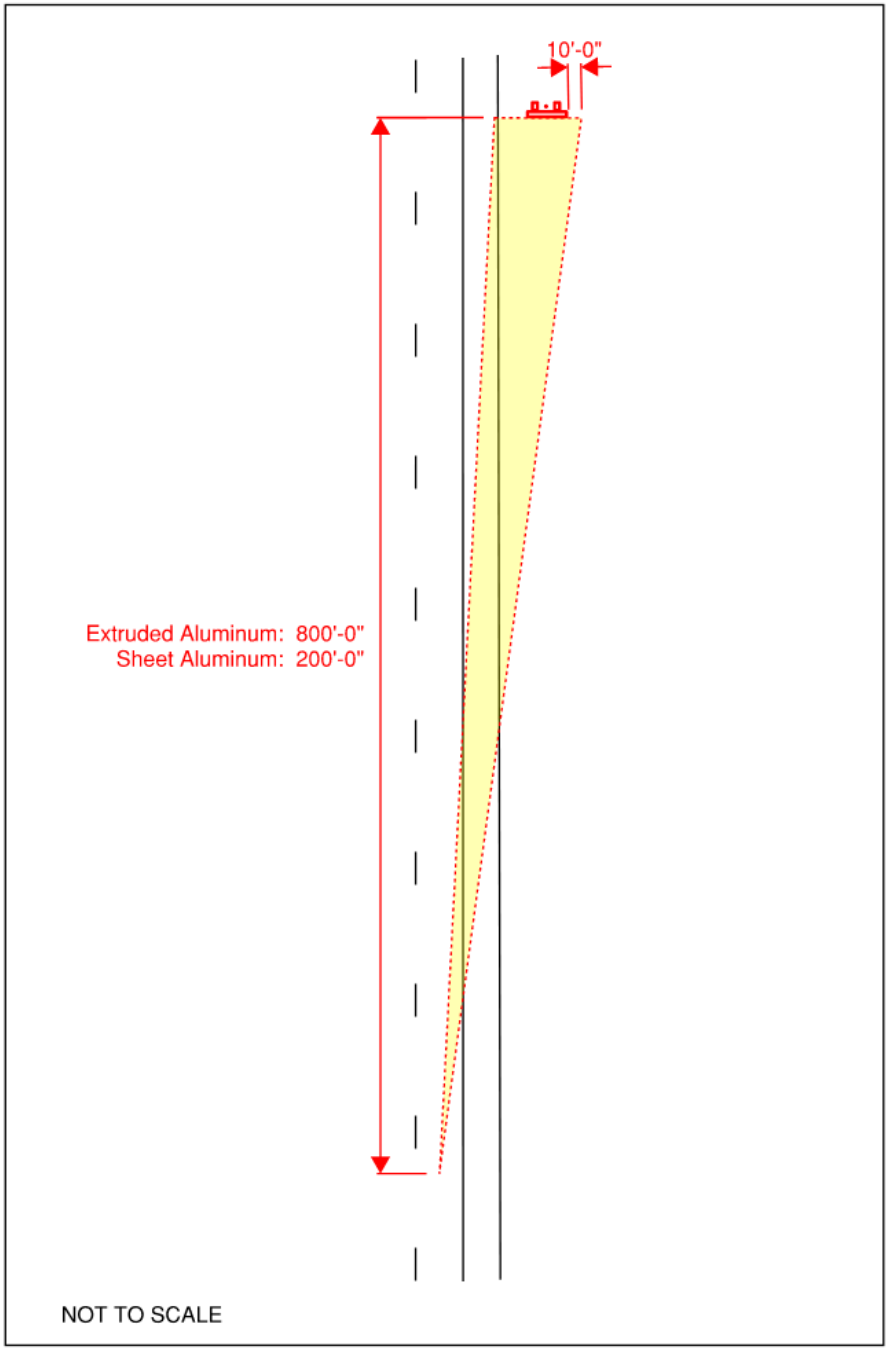
The Engineer will review the identified trees and verify the limits of clearing and thinning prior to the Contractor proceeding with the cutting operation.

At all extruded aluminum sign and sign support locations, cut, trim and/or remove vegetation/tree limbs needed for installation and to provide visibility to the sign(s) and to account for future vegetation growth. The entire sign plus a 10’ buffer shall be visible for 800-ft measured from the center of the right-travel lane approaching the sign, as viewed from a 3.5-ft height above the roadway.

At all sheet aluminum sign locations, cut, trim and/or remove vegetation/tree limbs needed for installation and to provide visibility to the sign(s) and to account for future vegetation growth. The entire sign plus a 10’ buffer shall be visible for 200-ft measured from the center of the right-travel lane approaching the sign, as viewed from a 3.5-ft height above the roadway.

This work shall be completed prior to installing the sign panel onto the vertical supports.

# Clearing and Thinning for Extruded Aluminum Signs & Sheet Aluminum Signs



# ITEM #0952051A - CONTROL AND REMOVAL OF INVASIVE VEGETATION

**Description:** This work shall include the development and implementation of an Invasive Vegetation Removal Plan (IVRP) to outline the identification and treatment methods for the control of invasive vegetation, including trees if present, as directed by the Engineer or their authorized delegate. This work will also include the removal and off-Site disposal of invasive vegetation from within the Project limits in accordance with the accepted IVRP.

The list of invasive vegetation to be controlled, removed, and disposed off-Site under this item can be found on the following websites:

- Connecticut Invasive Plant Working Group (CIPWG) Invasive Plants Council (http://cipwg.uconn.edu/invasive_plant_list/ )
- US Army Corps of Engineers (ACOE) New England District Compensatory Mitigation Guidance Appendix K (http://www.nae.usace.army.mil/portals/74/docs/regulatory/Mitigation/2016_New_England_Compensatory_Mitigation_Guidance.pdf)

**Materials:** The herbicide shall be formulated as applicable for target-species foliar treatment or a flush cut/stump treatment. All herbicide applications shall be in accordance with Product label rates and in conjunction with Sections 22a-46 to 22a-66z of the Connecticut General Statutes (CGS).

Flagging tape, if used, shall be fluorescent, 'All-Weather' type, resistant to UV and water damage.

Stakes shall be survey-grade, as specified under Article 9.80.02.

**Construction Methods:** The Contractor shall be responsible to identify invasive vegetation at all times of the year and to prepare a plan for its control, removal, and off-Site disposal without assistance.

**1. IVRP:** Prior to any ground disturbance within the Project limits, the Contractor shall submit a proposed IVRP to the Engineer or their authorized delegate for review and comment. The Contractor shall address any comments to the satisfaction of the Engineer and resubmit their revised IVRP for review and acceptance.

The IVRP shall include the following information:

1) Proposed dates for the initial walk through of the invasive vegetated areas to be controlled and removed for off-Site disposal.
2) Schedule identifying specific dates when herbicide treatment or mechanical excavation or removal of invasive species is to occur for the life of the Contract, including the 1-year warranty period that begins at Substantial Completion. The treatment schedule shall coincide with the Contractor's schedule.
3) Plan sheets identifying the species of invasive vegetation and trees within the Project limits showing the total square yards proposed to be controlled and removed for off-Site disposal. For each species of invasive vegetation present on-Site, the following shall be described:
   a. Types and concentrations of any herbicides to be used to control the identified species

for the life of the Contract, including any adjuvants, SDS sheets, types of tools, equipment, or machinery to be used.

b. Mechanical excavation and removal methods including the type of machinery to be used.

4) Provide proof of DEEP Pesticide Application Business registration pursuant to CGS Section 22a-66b, and certifications for each supervisor and operational commercial applicator on-Site or as required under CGS Sections 22a-54 to 22a-58. All Contractors physically applying pesticides on Department construction Projects to treat invasive vegetation in the State highway right-of-way must ensure that the "6 Rights-of-Way Pest Control" certification is held by at least one Commercial Supervisory Pesticide Applicator employed at the Pesticide Application Business. If the applicator does not have a commercial supervisory certificate, then the applicator must have a junior operator certificate in "6 Rights-of-Way Pest Control" and operate under the written or in-person directions of the supervisor who is certified in "6 Rights-of-Way Pest Control." More information on DEEP certifications and permits for applying pesticides is available at the Pesticide Management Program page website. The Department reserves the right to require additional DEEP certifications based on Project Site specific requirements.
5) A description of safety equipment required.
6) Procedures for handling chemical spills.
7) Proposed disposal methods:
   a. Procedures for off-Site removal of invasive vegetation including trees.
   b. Provide address of disposal location, current permits / letters from the town authorizing such activity and a Site map (showing regulated areas).
   **c. Invasive vegetation shall not be buried on-Site.**

If changes are required to the accepted IVRP during the life of the Contract (including registration/certification changes for the personnel applying pesticides or new invasive species not previously identified in the original IVRP submission) or additional invasive vegetation control and/or removal are ordered by the Engineer, these changes shall be documented by the Contractor and resubmitted to the Engineer or their authorized delegate for review and acceptance. Only those changes recommended by the appropriately licensed supervisor/ applicator will be considered. At no time shall the Contractor direct or advise workforces on the pesticide treatment. All direction must be generated from the licensed Pesticide Application Business and approved by the Engineer.

The IVRP or any amended version must be accepted by the Engineer or their authorized delegate prior to beginning of any mechanical excavation or herbicide treatment in the areas which require invasive species control, removal and off-Site disposal as identified Contractor's marked up plan sheets. The accepted methods must be capable of total control and removal of all identified invasive species in the identified areas throughout the life of the Contract and the 1-year warranty period.

**2. Special Handling of Invasive Species Vegetation:** The Contractor will be allowed to mechanically excavate invasive vegetation and underlying soils using the accepted methods in the IVRP. The accepted methods must be capable of the removal of all soil to a depth where invasive plant material and root system is no longer evident, to the satisfaction of the Engineer or their authorized delegate. Suitable material shall be provided and placed to final grade as shown on the plans or as directed by the Engineer.

All excavated invasive vegetation and underlying soils shall be considered an unsuitable material and must be removed separately from clearing and grubbing operations and disposed of off-Site at an approved location as described in the Contractor's IVRP.

Whether the Contractor's method of removal is by flush cutting/stump treatment or spraying of herbicides, invasive species, including trees identified as invasive in the above websites or IVRP, must be removed separately from clearing and grubbing operations and disposed of at an approved location as described in the Contractor's IVRP.

The Contractor will not be allowed to strip/cut topsoil from any location and reuse this material within the Project limits identified within the IVRP as an area requiring treatment. The stripped/cut material is considered unsuitable material and is to be taken off-Site to an approved disposal facility as described in the Contractor's IVRP.

Wood chips from invasive species are not allowed to be stockpiled or reused on-Site. Wood chipping on-Site may be allowed to remain on-Site if temporarily stored in a properly contained enclosure and removed off-Site at the end of the treatment cycle, to the satisfaction of the Engineer or their authorized delegate.

No equipment or vehicles other than those required to complete the work as described in the Contractor's IVRP will be permitted in the areas designated for invasive vegetation removal. Any equipment used to process invasive vegetation, such as chippers and transport vehicles, must be cleaned prior to further use.

**3. Site Maintenance:** Broadcast or uncontrolled spray application will not be permitted, and care must be taken to avoid contacting non-target native species. If any non-target native species to remain within the Project limits are inadvertently treated with herbicide and perish, they shall be replaced with in-kind species at the Contractor's expense.

Vines shall be cut from the ground to the tree canopy. Twining vines within a tree canopy shall be removed to the greatest extent possible without damaging the existing tree to remain. Should branches be damaged, the Contractor shall prune damaged limbs at their expense. All corrective pruning shall meet the requirements of the National Arborists Association Pruning Standards. Note: Use of aerial equipment is encouraged; use of a pole saw to cut vines leaving unsightly debris hanging from the trees will not be allowed.

Flush cutting/stump treatment of brush and trees shall not be more than 2 inches above the ground line.

Any invasive species control and removal work performed throughout the duration of the Contract that causes damage or soil disturbance shall be repaired at the Contractor's expense within 7 days. Disturbed areas shall be vegetatively stabilized with the appropriate seed mix and protected with hay mulch, cellulous fiber mulch, or erosion control matting.

Limits for control and removal of invasive vegetation shall be maintained for the life of the Contract. Should stakes or flagging be damaged during the course of construction, the Contractor shall re-establish limits. Use of reference staking is permissible.

**4. Field Meetings:** The Contractor's IVRP must receive acceptance from the Engineer, or their authorized delegate and have the Site surveyed, staked, and flagged prior to any field meeting.

The Contractor shall provide at least 10 working days' notice to the Engineer for any scheduled field meeting(s) as described in the IVRP. During the meeting, the Contractor's IVRP shall be reviewed to verify the identified invasive species and to review the square yardage on the marked-up plan sheet(s). At this time, the Engineer or their authorized delegate may identify additional invasive species or designate additional areas for removal that are not included within the Contractor's submitted IVRP.

Additional field meetings may be warranted at any time, as directed by the Engineer or their authorized delegate, to ensure the Contractor is compliant with the IVRP or amended versions.

**5. Treatment**: The treatment schedule as identified in the IVRP may be modified based on changes to the Contractor's construction schedule or based on existing field conditions. The Contractor shall provide at least 10 working days' notice to the Engineer or their authorized delegate prior to proceeding with each treatment.

Treatment of invasive species will not be permitted without notifying the Engineer or their authorized delegate prior to activity and such personnel shall be on-Site to observe the work, unless specifically authorized otherwise. Treatment shall not be permitted outside of normal working hours, unless specifically authorized.

Prior to any herbicide treatment on-Site, the Contractor shall provide proof of DEEP Pesticide registration/certification, as specified above in **1. IVRP**. The Contractor shall not perform, nor allow subcontractors to perform, any treatment work at any time unless proof of current registration/certification for the actual supervisor and operator conducting or overseeing the herbicide application is available to the Engineer, upon request.

At a minimum, the Contractor shall treat all areas within the optimal growing season between April 15 and October 15. Additional spot treatment measures may be warranted within the same optimal growing season in any year throughout the life of the Contract if full control and removal of the invasive species is not achieved within the Project limits as outlined in the IVRP or as identified by the Engineer or their authorized delegate. When herbicide is used, a minimum of 10 working days is required prior to clearing and grubbing, planting, and seeding operations, so the herbicide application can take effect.

Mechanical excavation and disposal may occur at any time of the year as specified above in **2. Special Handling of Invasive Species Vegetation**.

If rain or windy conditions are anticipated on the day of the scheduled treatment, the Contractor will not be allowed to proceed, unless authorized by the Engineer or their authorized delegate.

**Method of Measurement:** The work to remove invasive vegetation, as defined above, will be measured for payment by the number of square yards of invasive vegetation surveyed, treated, and removed as required, including any required re-treatment of any regrowth or new growth. This work shall also include the removal of invasive trees, if present. No additional payment will be made for subsequent treatments.

All areas for removal shall be surveyed, flagged, and measured prior to treatment. After a review of the surveyed limits during the field meeting(s), the Engineer may designate additional areas for removal not indicated on the plans which will be measured for payment by the number of square yards treated.

**Basis of Payment:** The work for the removal of invasive vegetation and trees will be paid for at the Contract unit price per square yard for "Control and Removal of Invasive Vegetation." Payment shall include all labor, surveys, materials, tools, and equipment necessary for limits of the invasive area(s); development and required revisions of the IVRP; maintenance of the limits throughout the Project; species identification; proof of DEEP pesticide registration/certification; and cutting, excavation and replacement of in-kind material, treating, re-treating, removal, and off-Site disposal of designated invasive plant and tree material. Off-Site disposal of residue shall include the loading, transport, dumping, and fees associated with legal off-Site disposal.

- Upon Engineer's acceptance of the required IVRP, the Contractor will receive payment equal to 10% of the estimated Contract Item value.
- Upon completed initial herbicide or mechanical removal treatment methods as described in the IVRP, the Contractor will receive payment equal to 20% of all areas receiving treatment.
- The Contractor will receive incremental payments for each additional treatment throughout the duration of the Project of all areas receiving treatment. The total of incremental payments will not exceed 40% of the Contract item value.
- Upon successful completion of the 1-year warranty period covering all treated areas on the Project, the Contractor will receive final payment.
- Any fines levied against the Department due to the Contractor's or Subcontractor's failure to comply with the specifications or applicable regulations will be deducted from the monies due the Contractor.

All other vegetation to be removed which is not designated as invasive vegetation or invasive tree shall be removed in accordance with the Item "Clearing and Grubbing" or other Contract items. Vegetative stabilization of disturbed areas will be paid for under the respective Contract items.

| Pay Item | Pay Unit |
|---|---|
| Control and Removal of Invasive Vegetation | s.y. |

# ITEM #0969030A - PROJECT COORDINATOR (MINIMUM BID)

**Description:** Under this item the Contractor shall furnish software, the services of an administrative employee as the Project Coordinator for this Project, and other deliverables, to coordinate and expedite all phases of the work required for the Project and to ensure that the construction schedule required by Article 1.05.08 (as modified herein) is submitted and maintained.

The minimum lump sum bid for this item shall be equal to 0.5% of the Contractor's total bid. Failure of the Contractor to bid at least the minimum amount will result in the Department adjusting the Contractor's bid to include the minimum bid amount for this item.

The Project Coordinator's resume shall be submitted for acceptance, in writing, within seven (7) calendar days of the award of the Contract, and shall not be changed without prior written notice to the Department.

The resume must demonstrate that the Project Coordinator is experienced and versatile in the preparation, interpretation and modification of Critical Path Method (CPM) construction schedules. This must include successful completion of at least three (3) construction projects of similar complexity, where they served in a lead scheduling capacity. If the Contractor does not have an employee that has these skills, they shall engage the services of a Consultant, subject to the approval of the Engineer, for the scheduling work required. If a Consultant is engaged, they shall be present at the first meeting, along with the Project Contractor, prepared to discuss, in detail, the methods and techniques they propose to use. Thereafter, the Project Coordinator or the Consultant responsible for updating the CPM Schedule shall attend all meetings between the Contractor, its Subcontractors, and any other meetings, which will affect the CPM schedule.

When the Contract is administered under Section 1.20 (Facilities Construction), the following requirement shall also apply:

> The Project Coordinator's resume shall demonstrate, in addition to the above noted requirements, a minimum of eight (8) years' experience related to commercial/industrial building construction as a Project Coordinator, and shall have knowledge of all trades involved in the construction, including civil/site work, environmental work, concrete work, masonry work, steel work, carpentry, electrical work, and mechanical work. Other combinations of experience and education totaling ten (10) years in commercial building construction will be considered subject to the approval of the Engineer.

Computer Software: The Contractor shall provide the following software with all the required maintenance throughout the Contract. The Engineer reserves the right to expand or relax this specification to adapt to the software limitations and availability.

> Software: The Contractor shall use latest version of the Oracle Primavera P6 scheduling software to produce the required schedules. The Contractor shall provide the Engineer

with a licensed copy registered in the Department's name of the same version of the Oracle Primavera P6 scheduling software, and maintain Oracle Primavera customer support services offered by the software producer for the duration of the Contract.

The Contractor shall deliver to the Engineer all supporting documentation for the software including any instruction manuals. The Contractor shall coordinate delivery of the software through the Department Project Engineer.

**Construction Methods:** The Project Coordinator shall attend all meetings between the Contractor and the Department, the Contractor and its Subcontractors, and any other meetings that affect the progress of the work. The Project Coordinator shall be knowledgeable of the status of all parts of the work throughout the duration of the Contract.

**Submittals:** In Article 1.05.08 (Schedules and Reports) references to Bar Chart schedules shall be replaced with the following:

Critical Path Method (CPM) Scheduling:

Proper relationship between all major activities shall be indicated. Node numbers shall be coded such that the major activities shown on the Critical Path Schedule shall be easily referenced to the Detailed Project Schedule when it is developed. Break down the work covered under each Special Provision, or Division and Section of Article 1.20 of the Standard Specifications, into individual activities required and logically group related activities together within the CPM.

All documents which require review by the Department shall be clearly identified within the schedule. The Department and any outside agency shall be allocated a minimum number of calendar days for review in accordance with Article 1.20-1.05.02. If Article 1.20 does not apply, the Department shall be allocated a minimum of thirty (30) calendar days (exclusive of weekends and holidays) for review and comment on each submittal. Any submittals requiring review by an outside Agency (DEEP, Coast Guard, Army Corps of Engineers, etc.) shall be allocated a minimum of sixty (60) calendar days. The Department shall not be held responsible for any delay associated with any substitution or other revisions proposed by the Contractor that are subject to review.

The schedule shall indicate the logic of the work for the major elements and components of work under the Contract, such as the planned mobilization of plant and equipment, sequences of operations, procurement of materials and equipment, duration of activities, type of relationship, lag time (if any), and such other information necessary to present a clear statement of the intended activities.

The schedule shall consist of a network technique of planning, scheduling and control, shall be a clear statement of the logical sequence of work to be done, and shall be prepared in such a manner that the Contractor's work sequence shall be optimized between early start and late start restraints. The Contractor shall use the same criteria in a consistent manner throughout the term of the Contract. If, at any time, the Contractor alters logic, original durations, and descriptions, adds activities or activity codes or in any way modifies the Baseline Schedule, they must notify the

Engineer of the change, in writing, presenting in detail the reasons for the change. The Engineer reserves the right to accept or reject any such change.

The critical path of the Project must be identified on the CPM schedule. The critical path is the longest-duration path through the network. The significance of the critical path is that the activities on it cannot be delayed without delaying the Project. Because of its potential impact on the entire schedule, critical path analysis is an important aspect of Project planning.

The critical path can be identified by determining the following four parameters for each activity:

1. ES - Earliest Start Time: the earliest time at which the activity can start given that its precedent activities must be completed first.
2. EF - Earliest Finish Time: equal to the earliest start time for the activity plus the time required to complete the activity.
3. LF - Latest Finish Time: the latest time at which the activity can be completed without delaying the Project.
4. LS - Latest Start Time: equal to the latest finish time minus the time required to complete the activity.

The *float time* for an activity is the time between its earliest and latest start time, or between its earliest and latest finish time. Float is the amount of time that an activity can be delayed past its earliest start or earliest finish without delaying the Project. Delays to activities on the critical path through the project network in which no float exists, that is where ES=LS and EF=LF, will delay the Project.

Float available in the schedule, at any time shall not be considered for the exclusive use of either the Department or the Contractor. During the Contract, any float generated due to the efficiencies of either party is not for the sole use of the party generating the float; rather it is a shared commodity to be reasonably used by either party. Project float will be a resource available to both the Department and the Contractor.

Each CPM Schedule submittal shall be in the form of an activity on node diagram (precedence diagramming method) and shall include at a minimum,

- Early Start computer sort
- Total Float computer sort
- Activity Number computer sort
- Schedule Diagram in Time Scaled Logic format
- Claim digger report or approved equal
- Other reports as required by the Engineer
- Digital backup data which includes all Project schedule files in the program format

If the diagrams are requested to be printed out by the Department, they shall be on 22 inch x 34 inch sheets. Additional, more detailed diagrams for important aspects or phases of the work may be required as requested by the Department.

Activity I.D. numbers shall be keyed to the item numbers assigned in the Contract. The first three or four digits of the activity I.D. number shall be identical to the first three or four digits of the pay item number in the Contract. The remaining digits may be used to provide unique, orderly and sequential I.D. numbers for each activity.

Activity codes shall be listed in a schedule dictionary provided by the Project Coordinator and maintained as directed by the Engineer. At a minimum, activity codes for responsibility (prime, subcontractor by name), location of work (bridge #, span #, sta. #, site, building, type of work, etc.) and stage or phase number should be included.

1. Recovery Schedules: If, in the opinion of the Engineer, the updated schedule indicates that the Project has fallen behind, or that a revision in sequence of operations may be necessary for any other reason, absent a justifiable time extension, the Contractor shall immediately institute all necessary steps to improve the Project's progress and shall submit such revised network diagrams, tabulations and operational plans, as may be deemed necessary by the Engineer, to demonstrate the manner in which an acceptable rate of progress will be regained.

2. Should the Contractor not demonstrate an ability to regain an acceptable rate of progress, the Engineer will require the schedule to be resource loaded in the next monthly update. No additional compensation will be allowed for resource loading the schedule.

3. As-Built Schedule: Within thirty (30) days of completion of the Project, including all corrective work, the Contractor shall submit an "As-Built Schedule" showing the actual progress of work. The Contractor shall submit three prints of this final CPM Schedule and digital project backup data which includes all Project schedule files for the Engineer's exclusive use.

4. Daily Construction Reports: For Contracts administered under Section 1.20 (Facilities Construction), the Project Coordinator shall assist the Engineer in the preparation of a daily construction report, by ensuring that each of the Contractor's employees and subcontractors working on the Project Site on a given day signs the Engineer's sign-in sheet for that day. They shall keep and provide to the Engineer their daily list of employees and subcontractors who worked on the Project Site each day.

**Method of Measurement:** Within ten (10) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for review and comment a breakdown of its lump sum bid price for this item detailing:

1. The development cost to prepare the Baseline Schedule in accordance with Article 1.05.08 or 1.20-1.05.08 as modified by these specifications. Development costs shall not exceed

25% of the total cost of the Project Coordinator item and shall include costs to furnish and install all specified hardware.

2. The cost to provide the services of the Project Coordinator, including costs to prepare and submit the Monthly Updates and Narrative, to furnish and submit any Recovery Schedules, to furnish and submit Two Week Look Ahead Schedules and to maintain and provide supplies for the specified hardware. A per month cost will be derived by taking this cost divided by the number of Contract months remaining from the date of acceptance of the Baseline Schedule.

3. The cost of submission and certification of the As-Built Schedule in accordance with these specifications. The submission and certification costs shall be no less than 2% of the total cost of the item.

4. Substantiation showing that the costs submitted are reasonable based on the Contractor's lump sum bid.

Upon acceptance of the payment schedule of values by the Engineer, payments for work performed will be made as follows:

1. Upon acceptance of the "Baseline" Schedule by the Engineer, the lump sum development cost will be certified for payment.

2. Upon receipt of each monthly narrative and update Schedule (the first being an update of the approved Baseline Schedule noted above), the per month cost for the services of the Project Coordinator will be certified for payment.

3. Upon acceptance of the As-Built Schedule by the Engineer, the lump sum submission and certification cost will be certified for payment.

**Basis of Payment:** This item will be paid for at the Contract lump sum price for "Project Coordinator" complete, which price shall include the preparation and submission of all schedules, narratives, updates, reports and submittals, including an electronic copy of the schedule unprotected.

The lump sum price will be certified for payment as described in "Method of Measurement" subject to the following conditions:

1. Any month where the monthly update of the CPM schedule is submitted late, as specified in Article 1.05.08, without authorization from the Engineer, will result in the following actions:

    a. The monthly payment for the Project Coordinator item will be deferred to the next monthly payment estimate. If any monthly submittal is more than thirty (30)

calendar days late, there will be no monthly payment for the services of the Project Coordinator.

b. The greater of 5% of the monthly payment estimate or $25,000 will be retained from the monthly payment estimate until such time as the Contractor submits all required reports.

c. If, in the Engineer's judgment, the Contractor is not in compliance with this specification, the Engineer may withhold all Contract payments.

2. In the event the Contract time extends beyond the original completion date by more than thirty (30) calendar days, and a time extension is granted, the Department may require additional CPM schedule updates which will be paid for at the per month cost for the services of the Project Coordinator.

3. If the Contractor is not in compliance with this specification or has failed to submit a monthly update, or a Recovery Schedule for any portion of the work, the Engineer will withhold all Contract payments until the schedule is submitted to and accepted by the Engineer.

| Pay Item | Pay Unit |
|---|---|
| Project Coordinator | l.s. |

# ITEM #0969062A - CONSTRUCTION FIELD OFFICE, MEDIUM

**Description:** Under the item included in the bid documents, adequate weatherproof office quarters with related furnishings, materials, equipment, and other services, shall be provided by the Contractor for the duration of the work, and if necessary, for a close-out period determined by the Engineer. The office, furnishings, materials, equipment, and services are for the exclusive use of CTDOT forces and others who may be engaged to augment CTDOT forces with relation to the Contract. The office quarters shall be located convenient to the work site and installed in accordance with Article 1.08.02. This office shall be separated from any office occupied by the Contractor. Ownership and liability of the office quarters shall remain with the Contractor.

Furnishings/Materials/Supplies/Equipment: All furnishings, materials, equipment, and supplies shall be in like new condition for the purpose intended and require approval of the Engineer.

Office Requirements: The Contractor shall furnish the office quarters and equipment as described below:

| Description \ Office Size | Small | Med. | Large | Extra Large |
|---|---|---|---|---|
| Minimum Sq. Ft. of floor space with a minimum ceiling height of 7 ft. | 400 | 720 | 1400 | 2800 |
| Minimum number of exterior entrances. | 2 | 2 | 2 | 2 |
| Minimum number of parking spaces. | 7 | 7 | 10 | 15 |

Office Layout: The office shall have a minimum square footage as indicated in the table above and shall be partitioned as shown on the building floor plan as provided by the Engineer.

Unless otherwise approved by the Engineer, office space shall be partitioned into segregated work areas for each user as follows:

A. Each work area (or cubicle) shall be a minimum of 8 feet × 8 feet, with full height walls or tall cubicle partitions (minimum 6 feet high), placed to provide a minimum of 6 feet walking space around and between each user work area (for social distancing).
B. Only one user (workstation/desk) per work area.
C. Desks, tables, and other work surfaces shall be arranged so that adjacent users do not face each other.

Tie-downs and Skirting: Modular offices shall be tied-down and fully skirted to ground level.

Lavatory Facilities: For field offices sizes Small and Medium the Contractor shall furnish a toilet facility at a location convenient to the field office for use by CTDOT personnel and such assistants as they may engage; and for field offices sizes Large and Extra Large the Contractor shall furnish two (2) separate lavatories with toilet (men and women), in separately enclosed rooms that are properly ventilated and comply with applicable sanitary codes. Each lavatory shall have hot and cold running water and flush-type toilets. For all facilities the Contractor shall supply lavatory and sanitary supplies as required.

Windows and Entrances: The windows shall be of a type that will open and close conveniently, shall be sufficient in number and size to provide adequate light and ventilation, and shall be fitted with locking devices, blinds, and screens. The entrances shall be secure, screened, and fitted with a lock for which four keys shall be furnished. All keys to the construction field office shall be furnished to the CTDOT and will be kept in their possession while State personnel are using the office. Any access to the entrance ways shall meet applicable building codes, with appropriate handrails. Stairways shall be ADA/ABA compliant and have non-skid tread surfaces. An ADA/ABA compliant ramp with non-skid surface shall be provided with the Extra-Large field office.

Lighting: The Contractor shall equip the office interior with electric lighting that provides a minimum illumination level of 100 foot-candles at desk level height, and electric outlets for each desk and drafting table. The Contractor shall also provide exterior lighting that provides a minimum illumination level of 2 foot-candles throughout the parking area and for a minimum distance of 10 ft. on each side of the field office.

Parking Facility: The Contractor shall provide a parking area, adjacent to the field office, of sufficient size to accommodate the number of vehicles indicated in the table above. If a paved parking area is not readily available, the Contractor shall construct a parking area and driveway consisting of a minimum of 6 inches of processed aggregate base graded to drain. The base material will be extended to the office entrance.

Field Office Security: Physical Barrier Devices - This shall consist of physical means to prevent entry, such as: 1) All windows shall be barred, or security screens installed; 2) All field office doors shall be equipped with dead bolt locks and regular day operated door locks; and 3) Other devices as directed by the Engineer to suit existing conditions.

Electric Service: The field office shall be equipped with an electric service panel, wiring, outlets, etc., to serve the electrical requirements of the field office, including lighting, general outlets, computer outlets, electronics, etc., and meet the following minimum specifications:

A. 120/240 volt, 1 phase, 3 wire
B. Ampacity necessary to serve all equipment. Service shall be a minimum 100 amp dedicated to the construction field office.
C. The electrical panel shall include a main circuit breaker and branch circuit breakers of the size and quantity required.
D. Additional 120-volt, single phase, 20-amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed at each desk and personal computer table (workstation) location.
E. Additional 120-volt, single phase, 20-amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed, for use by the Telephone Company.
F. Additional 120-volt circuits and duplex outlets as required meeting National Electric Code requirements.
G. One exterior (outside) wall mounted GFI receptacle, duplex, isolated ground, 120-volt, straight blade.
H. After work is complete and prior to energizing, the State's CTDOT electrical inspector, must be contacted at 860-594-2240. (Do Not Call Local Town Officials)

I. Prior to field office removal, the CTDOT Office of Information Systems (CTDOT OIS) must be notified to deactivate the communications equipment.

Heating, Ventilation and Air Conditioning (HVAC): The field office shall be equipped with sufficient and properly operating, heating, air conditioning, and ventilation equipment to maintain a temperature range of 68º-80º Fahrenheit within the field office. The Contractor shall increase ventilation rates and increase the percentage of outdoor air that circulates into the system where possible.

Telephone Service: The Contractor shall provide telephone service with unlimited nation-wide calling plan. For a Small, Medium, and Large field office this shall consist of the installation of one (1) telephone line for phone/voice service. For an Extra-Large field office this shall consist of three (3) telephone lines for phone/voice service. The Contractor shall pay all charges.

The Contractor shall provide the field office telephone number(s) to the CTDOT Project Engineer within 10 calendar days after the signing of the Contract as required by Article 1.08.02.

Data Communications Facility Wiring: As soon as the field office is in place, the Contractor shall propose a central wiring location, to designated CTDOT District personnel for the review and approval of CTDOT OIS. The central wiring location shall be large enough to house the Contractor supplied modem, Contractor supplied patch panel (if applicable), and CTDOT OIS supplied LAN switch and router. The Contractor shall supply the number of Category 6A 568B patch panels necessary to support the anticipated number of networked devices. The central wiring location shall also house the data circuit with appropriate power requirements and Category 6A cable run to the location of the installed data circuit. Power shall be provided at the central wiring location to power the hardware installed.

The Contractor shall install CAT 6A cables from the central wiring location to each workstation, Smart Board/TV location, Multifunction Laser Printer/Copier/Scanner and any other networked devices. The CAT 6A cables shall terminate in a (Category 6A 568B) wall or surface mount data jack at each networked device. Each run / jack shall be clearly labeled with an identifying Jack Number. The CAT 6A cables shall be terminated at the central wiring location with a service loop and RJ45 connectors. The Contractor shall also supply CAT6A cables of adequate length to reach from the wall or surface mount jack to the device being networked.

The number of networked devices anticipated shall be at least equal to the number of personal computer tables, Multi-Function Laser Printer/Copier/Scanner, Contractor supplied devices, and smartboards listed below.

Additional Equipment, Facilities and Services: The Contractor shall provide at the field office at least the following to the satisfaction of the Engineer:

| Furnishing Description | Office Size | | | |
|---|---|---|---|---|
| | Small | Med. | Large | Extra Large |
| | Quantity | | | |
| Office desk (2.5 ft. x 5 ft.) with drawers, locks, and matching desk chair that have pneumatic seat height adjustment and dual wheel casters on the base. | 1 | 3 | 5 | 8 |
| Standard secretarial type desk and matching desk chair that has pneumatic seat height adjustment and dual wheel casters on the base. | - | - | - | 1 |
| Personal computer tables (4 ft. x 2.5 ft.). | 2 | 3 | 5 | 8 |
| Drafting type tables (3 ft. x 6 ft.) and supported by wall brackets and legs; and matching drafter's stool that have pneumatic seat height adjustment, seat back and dual wheel casters on the base. | 1 | 1 | 1 | 2 |
| Conference table, 3 ft. x 12 ft. | - | - | - | 1 |
| Table – 3 ft. x 6 ft. | - | - | - | 1 |
| Office Chairs. | 2 | 4 | 8 | 20 |
| Mail slot bin – legal size. | - | - | 1 | 1 |
| Non-fire-resistant cabinet. | - | - | 2 | 4 |
| Fire resistant cabinet (legal size/4 drawer), locking. | 1 | 1 | 2 | 3 |
| Storage racks to hold 3 ft. x 5 ft. display charts. | - | - | 1 | 2 |
| Vertical plan racks for 2 sets of 2 ft. x 3 ft. plans for each rack. | 1 | 1 | 2 | 2 |
| Double door supply cabinet with 4 shelves and a lock – 6 ft. x 4 ft. | - | - | 1 | 2 |
| Case of cardboard banker boxes (Min 10 boxes/case) | 1 | 1 | 2 | 3 |
| Open bookcase – 3 shelves – 3 ft. long. | - | - | 2 | 2 |
| White Dry-Erase Board, 36" x 48" min. with markers and eraser. | 1 | 1 | 1 | 1 |
| Interior partitions – 6 ft. x 6 ft., soundproof type, portable and freestanding. | - | - | 6 | 6 |
| Coat rack with 20 coat capacity. | - | - | - | 1 |
| Wastebaskets - 30 gal., including plastic waste bags. | 1 | 1 | 1 | 2 |
| Wastebaskets - 5 gal., including plastic waste bags. | 1 | 3 | 6 | 10 |
| Electric wall clock. | - | - | - | 2 |
| Electronic Level | 1 | 1 | 1 | 2 |

| Furnishing Description (continued) | Office Size | | | |
|---|---|---|---|---|
| | Small | Med. | Large | Extra Large |
| | Quantity | | | |
| Telephone. | 1 | 2 | 3 | - |
| Full size stapler 20 (sheet capacity, with staples) | 1 | 2 | 5 | 8 |
| Desktop tape dispensers (with Tape) | 1 | 2 | 5 | 8 |
| 8 Outlet Power Strip with Surge Protection | 3 | 4 | 6 | 9 |
| Rain Gauge | 1 | 1 | 1 | 1 |
| Business telephone system for three lines with ten handsets, intercom capability, and one speaker phone for conference table. | - | - | - | 1 |
| Mini refrigerator - 3.2 c.f. min. | 1 | 1 | 1 | 1 |
| Hot and cold-water dispensing unit. Disposable cups and bottled water shall be supplied by the Contractor for the duration of the project. | 1 | 1 | 1 | 1 |
| Microwave, 1.2 c.f., 1000W min. | 1 | 1 | 1 | 1 |
| Fire extinguishers - provide and install type and *number to meet applicable State and local codes for size of office indicated, including a fire extinguisher suitable for use on a computer terminal fire. | * | * | * | * |
| Electric pencil sharpeners. | 1 | 2 | 2 | 2 |
| Multi-Function Laser Printer/Copier/Scanner combination unit, network capable, as specified below under Field Office Technology | 1 | 1 | 1 | 1 |
| Field Office Internet Service and Hardware as specified below under Field Office Technology | 1 | 1 | 1 | 1 |
| Digital Camera as specified below under Field Office Technology | 1 | 1 | 3 | 3 |
| Teleconferencing Equipment as specified below under Field Office Technology | - | 1 | 1 | 1 |
| Infrared Thermometer, including annual third-party certified calibration, case, and cleaning wipes. | 1 | 1 | 1 | 2 |
| Concrete Curing Box as specified below under Concrete Testing Equipment. | 1 | 1 | 1 | 1 |
| Concrete Air Meter and accessories as specified below under Concrete Testing Equipment as specified below. Contractor shall provide third party calibration on a quarterly basis. | 1 | 1 | 1 | 1 |
| Concrete Slump Cone and accessories as specified below under Concrete Testing Equipment. | 1 | 1 | 1 | 1 |
| First Aid Kit | 1 | 1 | 1 | 1 |
| T-handle concrete cylinder mold splitter as specified below under Concrete Testing Equipment | 1 | 1 | 1 | 1 |
| Smart Phones as specified under Computer Related Hardware and Software. | - | - | - | - |

The furnishings and equipment required herein shall remain the property of the Contractor. Any supplies required to maintain or operate the above listed equipment or furnishings shall be provided by the Contractor for the duration of the project.

Field Office Technology:
The Contractor shall supply the internet service connection, Contractor supplied modem, associated hardware, Digital Camera(s), Smart Phones, Multifunction Laser Printer/Copier/Scanner, Conference Room Teleconferencing Equipment, associated hardware and software meeting the requirements of this specification, as well as the latest minimum specifications posted, as of the Project advertising date, at CTDOTs Construction Field Office Technology web site.

Within 10 calendar days after the signing of the Contract, but before ordering/purchasing the required Digital Camera(s), Smart Phones, Multifunction Laser Printer/Copier/Scanner, Teleconferencing Equipment, as well as associated hardware, the Contractor must submit a copy of their proposed order(s) with catalog cuts and specifications to the Administering CTDOT District for review and approval. The modem, digital cameras, smart phones, and Teleconferencing Equipment will be reviewed by CTDOT District personnel for approval. The Multifunction Laser Printer/Copier/Scanner will be reviewed by the CTDOT OIS. The Contractor shall not purchase the hardware, software, or services until the Administering CTDOT District informs them that the proposed equipment, software, and services are approved. The Contractor will be solely responsible for the costs of any hardware, software, or services purchased without approval.

The Contractor and/or their internet service provider shall be responsible for the installation, setup of the internet service connection and the configuration of the modem with a static IP address. Installation shall be coordinated with CTDOT District and Project personnel. Specifically, the Contractor shall supply the District with a Static IP Address, Subnet Mask Address and Gateway Address immediately upon establishment of internet service connection to assist with OIS equipment installation.

After the approval of the hardware and software, the Contractor shall contact the designated representatives of the CTDOT administering District, a minimum of 2 working days in advance of the proposed delivery or installation of the modem / Internet Service Connection, Digital Camera(s), Smart Phones, Multifunction Laser Printer/Copier/Scanner, Teleconferencing Equipment, as well as associated hardware, software, supplies, and support documentation. The hardware and cabling shall be installed in the field office to and at locations acceptable to the Engineer. Adequate electric service shall be supplied at all hardware and workstation locations to support the Department staff and hardware specified.

The Contractor shall provide all supplies, paper, maintenance, service, and repairs (including labor and parts) for the printer(s), copiers, field office Wi-Fi / internet service, and other equipment and facilities required by this specification for the duration of the Contract. All repairs of contractor supplied equipment and internet service must be performed with-in 48 hours. If the repairs require more than 48 hours, then an equal or better replacement must be provided.

Once the Contract has been completed, the Contractor supplied hardware and software will remain the property of the Contractor.

First Aid Kit: The Contractor shall supply a first aid kit adequate for the number of personnel expected based on the size of the field office specified and shall keep the first aid kit stocked for the duration that the field office is in service.

Rain Gauge: The Contractor shall supply, install and maintain a rain gauge for the duration of the Project, meeting these minimum requirements. The rain gauge shall be installed on the top of a post such that the opening of the rain gauge is above the top of the post an adequate distance to avoid splashing of rainwater from the top of the post into the rain gauge. The location of the rain gauge and post shall be approved by the Engineer. The rain gauge shall be made of a durable material and have graduations of 0.1 inches or less with a minimum total column height of 5 inches. If the rain gauge is damaged the Contractor shall replace it prior to the next forecasted storm event at no additional cost.

Electronic Level: The Contractor shall supply and maintain in working order, for the duration of the Contract, the number of electronic levels, identified in the Additional Equipment, Facilities and Services table of this specification. The electronic level(s) shall meet the following requirements:

A. 48-inch length, box beam type
B. IP65 water and dust proof
C. 0.1-degree accuracy
D. Backlit display
E. Carrying case included
F. New or like new condition

Concrete Testing Equipment: If the Contract includes items that require compressive strength cylinders for concrete, in accordance with the Schedule of Minimum Testing Requirements for Sampling Materials for Test, the Contractor shall provide the following equipment.

A. Concrete Cylinder Curing Box – meeting the requirements of Section 6.12 of the Standard Specifications.
B. Air Meter – The air meter provided shall be in good working order and meet the requirements of AASHTO T 152.
C. Slump Cone Mold – Slump cone, base plate, and tamping rod shall be provided in like-new condition and meet the requirements of AASHTO T 119, Standard Test Method for Slump of Hydraulic-Cement Concrete.
D. T-handle concrete cylinder mold splitter.

All testing equipment will remain the property of the Contractor at the completion of the Project.

Insurance Policy: The Contractor shall provide a separate insurance policy, with no deductible, in the minimum amount of five thousand dollars ($5,000) to insure all State-owned data equipment and supplies used in the office against all losses. The Contractor shall be named insured on that policy, and the CTDOT shall be an additional named insured on the policy. Insured losses shall include, but not be limited to, theft, fire, and physical damage. The CTDOT will be responsible for all

maintenance costs of CTDOT owned computer hardware. In the event of loss, the Contractor shall provide replacement equipment in accordance with current CTDOT equipment specifications, within seven days of notice of the loss. If the Contractor is unable to provide the required replacement equipment within seven days, CTDOT may provide replacement equipment and deduct the cost of the equipment from monies due or which may become due the Contractor under the Contract or under any other contract. The Contractor's financial liability under this paragraph shall be limited to the amount of the insurance coverage required by this paragraph. If the cost of equipment replacement required by this paragraph should exceed the required amount of the insurance coverage, CTDOT will reimburse the Contractor for replacement costs exceeding the amount of the required coverage.

Maintenance: During field office occupancy by CTDOT, the Contractor shall maintain all facilities and furnishings provided under the above requirements, and shall maintain and keep the office quarters clean through the use of professional cleaning including vacuuming carpet, washing and waxing floors, cleaning restrooms, removal of trash, general cleaning, etc.

Exterior areas shall be mowed and clean of debris. A trash receptacle (dumpster) with weekly pickup (trash removal) shall be provided. Snow removal, sanding and salting of all parking, walkway, and entrance way areas shall be accomplished during a storm if on a workday during work hours, immediately after a storm and prior to the start of a workday. If snow removal, salting and sanding are not completed by the specified time, the State will provide the service and all costs incurred will be deducted from the next payment estimate.

**Method of Measurement:** The furnishing and maintenance of the Construction Field Office will be measured for payment by the number of calendar months that the office is in place and in operation, rounded up to the nearest month.

There will not be any price adjustment due to any change in the minimum computer related hardware and software requirements.

**Basis of Payment:** The furnishing and maintenance of the Construction Field Office will be paid for at the Contract unit price per month for "Construction Field Office, Medium," which price shall include all material, equipment, labor, service contracts, licenses, software, repair or replacement of hardware and software, related supplies, utility services, parking area, external illumination, trash removal, snow and ice removal, and work incidental thereto, as well as any other costs to provide requirements specified herein.

| Pay Item | Pay Unit |
|---|---|
| Construction Field Office, Medium | Month |

# ITEM #0971001A – MAINTENANCE AND PROTECTION OF TRAFFIC

**Article 9.71.01 – Description** *is supplemented by the following:*

The Contractor shall maintain and protect traffic as described by the following and as limited in the special provision for Section 1.08 - Prosecution and Progress:

**Route I-91**

The Contractor shall maintain and protect the minimum number of through lanes and shoulders on a paved travel path not less than 12 feet in width per lane during the hours dictated in the special provision for Article 1.08.04 – Limitation of Operations, with the following exceptions:

1. During the allowable periods and when the Contractor is actively working, the Contractor will be permitted to maintain and protect the minimum number of through lanes and shoulders on a paved travel path not less than 11 feet in width per lane as shown on the Maintenance and Protection of Traffic plans and during the hour dictated in the special provisions for Article 1.08.04 – Limitation of Operations.

The Contractor will be permitted to halt traffic during the allowable periods. If more than one 10 minute period is required, then the Contractor shall allow all stored vehicles to proceed through the work area prior to the next stoppage.

**Route I-91 Ramps**

The Contractor shall maintain and protect existing traffic operations, with the following exceptions:

During the allowable periods and when the Contractor is actively working, the Contractor will be permitted to maintain and protect a minimum of 1 lane of traffic on a paved travel path not less than 12 feet in width.

**Article 9.71.03 - Construction Methods** *is supplemented as follows:*

**General**

The Contractor is required to delineate any raised structures within the travel lanes, so that the structures are visible day and night, unless there are specific Contract plans and provisions to temporarily lower these structures prior to the completion of work.

When the installation of all intermediate courses of bituminous concrete pavement is completed for the entire roadway, the Contractor shall then install the final course of bituminous concrete pavement.

When the Contractor is excavating adjacent to the roadway, the Contractor shall provide a 3 foot shoulder between the work area and travel lanes, with traffic drums spaced every 50 feet. At the end of the work shift if the vertical drop-off exceeds 3 inches, the Contractor shall provide a temporary bituminous concrete traversable slope of 4:1 or flatter that is acceptable to the Engineer.

The Contractor, during the course of any active overhead construction work, shall close the lanes directly below the work area for the entire length of time overhead work is being undertaken.

At no time shall an overhead sign be left partially removed or installed.

When an existing sign is to be relocated or replaced, the work shall be completed during the same work shift.

The field installation of a signing pattern shall constitute interference with existing traffic operations and shall not be allowed, except during the allowable periods.

On limited-access highways, construction vehicles entering travel lanes shall not be allowed without a lane closure. The lane closure shall be of sufficient length to allow vehicles to enter or exit the work area at the posted speed limit, in order to merge with existing traffic.

**Existing Signing**

The Contractor shall maintain all existing overhead and side-mounted signs within the Project limits throughout the duration of the Project. The Contractor shall temporarily relocate signs and sign supports as many times as deemed necessary, and shall install temporary sign supports if necessary and as directed by the Engineer.

**Requirements for Winter**

The Contractor shall schedule a meeting with representatives of the Department, including the offices of Maintenance and Traffic, and the Town/City to determine any interim traffic control measures the Contractor shall accomplish prior to winter to provide safety to motorists and permit adequate snow removal procedures. This meeting shall be held prior to October 31 of each year and will include, but not be limited to, discussion of the status and schedule of the following items: lane and shoulder widths, pavement restoration, traffic signal work, pavement markings, and signing.

**Signing Patterns**

The Contractor shall erect and maintain all signing patterns in accordance with the traffic control plans contained herein. Proper distances between advance warning signs and proper taper lengths are mandatory.

**Pavement Markings - Limited Access Highways, Turning Roadways and Ramps**

During construction, the Contractor shall maintain all pavement markings throughout the limits of the Project.

Temporary pavement markings shall be installed on each intermediate course of bituminous concrete pavement and on any milled surface by the end of the work shift.

Permanent Epoxy Resin Pavement Markings shall be installed on the final course of bituminous concrete pavement within 10 calendar days of the final pavement installation if no Pavement Marking Grooves are proposed.

**Temporary Pavement Markings**

Temporary pavement markings shall consist of temporary painted pavement markings and shall be installed in accordance with Section 12.09. During stage construction, pavement markings shall be installed as shown on the Maintenance and Protection of Traffic plans. The markings shall include 4 inch wide white lane lines (solid and broken), 4 inch wide edge lines, lane-use

arrows at the stop bar. Temporary 12 inch wide white stop bars shall consist of temporary pavement marking tape, as described below.

Refer to Pavement Marking Groove special provisions for pavement marking requirements.

Temporary 12 inch wide white stop bars consisting of temporary plastic pavement marking tape shall be installed on exit ramps if permanent Epoxy Resin Pavement Markings are not installed by the end of the work shift on the final course of bituminous concrete pavement. Temporary stop bars may consist of two 6 inch wide white markings or three 4 inch wide white markings placed side by side. The Contractor shall remove and dispose of these markings when the permanent Epoxy Resin Pavement Markings are installed. The cost of furnishing, installing and removing the Temporary Plastic Pavement Marking Tape is included under the applicable temporary pavement marking items.

All temporary pavement markings exposed throughout the winter shall be Epoxy Resin Pavement Markings, unless directed otherwise by the Engineer.

Temporary pavement markings, as described above, shall be maintained until the permanent pavement markings are installed.

**Final Pavement Markings**

Refer to Pavement Marking Groove special provisions for pavement marking requirements. Permanent epoxy resin pavement markings shall be installed in accordance with Section 12.10 and the applicable Traffic Engineering Standard Drawings.

If Temporary Plastic Pavement Marking Tape is installed, then the Contractor shall remove and dispose of these markings during the same work shift that the permanent epoxy resin pavement markings are to be installed. The cost of furnishing, installing and removing the Temporary Plastic Pavement Marking Tape shall be paid for under the appropriate pay items.

**Traffic Control During Construction Operations**

The following guidelines shall assist field personnel in determining when and what type of traffic control patterns to use for various situations. These guidelines shall provide for a safer and more efficient movement of traffic through work zones and enhance the safety of work forces in the work area.

**Traffic Control Patterns**

Traffic control patterns shall be used when a work operation requires that all or part of any vehicle or work area protrudes onto any part of a travel lane or shoulder or is within the clear zone. For each situation, the installation of traffic control devices shall be based on the following:

- Speed and volume of traffic.
- Duration of operation.
- Exposure to hazards.

Traffic control patterns shall be uniform, neat, and orderly in order to command respect from the motorist.

Lane reduction tapers should be placed so that the entire length of the taper is installed on a tangent section of roadway and the entire taper area can be seen by the motorist.

All existing conflicting signs shall be removed, covered with an opaque material, or turned so that they are not legible to oncoming traffic prior to implementing a traffic control pattern. The existing signs shall be uncovered or reinstalled once the pattern is removed.

A buffer area should be provided during installation of a traffic control pattern and maintained for the duration of the work. The buffer area shall be free of any equipment, workers, materials, and parked vehicles.

Construction Traffic Control Plans 19 through 25 should be used for moving operations such as line striping, rumble strips, pothole patching, mowing, or sweeping when it is necessary for equipment to occupy a travel lane.

Traffic control patterns are not required for vehicles on an emergency patrol type activity or for a short duration stop of up to one hour, as long as the equipment is contained within the shoulder. Flashing lights, arrow boards, truck-mounted or trailer-mounted impact attenuators, and appropriate Trafficperson(s) shall be used when required.

In a situation not adequately covered by the Construction Traffic Control Plans, the Contractor shall contact the Engineer for assistance prior to setting up a traffic control pattern.

**Placement of Signs**

Signs shall be placed in a position that allows motorists the opportunity to reduce their speed prior to the work area. Signs shall be installed on the same side of the roadway as the work area. On multi-lane divided highways, advance warning signs shall be installed on both sides of the highway. On directional roadways (on-ramps, off-ramps, one-way roads) where the sight distance to signs is restricted, these signs should be installed on both sides of the roadway.

**Allowable Adjustment of Signs and Devices Shown on the Construction Traffic Control Plans**

The Construction Traffic Control Plans contained herein show the location and spacing of signs and devices under ideal conditions. Signs and devices should be installed as shown on these plans.

The proper application of the Construction Traffic Control Plans and installation of traffic control devices is dependent upon actual field conditions.

In the case of a horizontal or vertical sight restriction in advance of the work area, the traffic control pattern shall be extended to provide adequate sight distance for approaching traffic.

Adjustments to the Construction Traffic Control Plans shall only be made at the direction of the Engineer.

Table 1 indicates the minimum taper lengths required for a lane closure based on the posted speed limit and lane width of the roadway. These taper lengths shall only be used when the recommended taper lengths shown on the Construction Traffic Control Plans cannot be achieved.

**Table 1 – Minimum Taper Length**

| POSTED SPEED LIMIT (MPH) | MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE (FEET) | |
|---|---|---|
| | FREEWAYS | SECONDARY ROADS |
| 30 OR LESS | 180 | 165 |
| 35 | 245 | 225 |
| 40 | 320 | 295 |
| 45 | 540 | 495 |
| 50 | 600 | 550 |
| 55 | 660 | 605 |
| 65 | 780 | 715 |

**1. Work Zone Safety Meetings**

1.a) Prior to the commencement of work, a Work Zone Safety Meeting shall be conducted with representatives from DOT Construction, Connecticut State Police (Local Barracks), Municipal Police, the Contractor (Project Superintendent) and the Traffic Control Subcontractor (if different than the prime Contractor) to review the traffic operations, lines of responsibility, and operating guidelines which will be used on the Project. DOT Traffic Engineering shall be invited to the Work Zone Safety Meeting. Other Work Zone Safety Meetings during the course of the Project should be scheduled as needed.

1.b) A Work Zone Safety Meeting Agenda shall be developed and used at the Meeting to outline the anticipated traffic control issues during the construction of this Project. Any issues that can't be resolved at these Meetings will be brought to the attention of the District Engineer and the Office of Construction. The agenda shall include:

i. Review Project scope of work and time;
ii. Review Section 1.08, Prosecution and Progress;
iii. Review Section 9.70, Trafficpersons;
iv. Review Section 9.71, Maintenance and Protection of Traffic;
v. Review Contractor's schedule and method of operations;
vi. Review special concern areas: ramps, turning roadways, medians, lane drops, etc.;
vii. Open discussion of work zone questions and issues;
viii. Discussion of review and approval process for changes in Contract requirements as they relate to work zone areas.

**2. General**

**2.a) Traffic control patterns shall only be installed if the required minimum number of signs, traffic cones, traffic drums, and other equipment (i.e. one Arrow Board for each lane closed, two Truck-Mounted or Trailer-Mounted Attenuators (TMAs), Changeable Message Sign, etc.) are on Site.**

2.b) The Contractor shall have spare maintenance and protection of traffic equipment (TMAs, Arrow Board, Changeable Message Sign(s), construction signs, traffic cones, traffic drums, etc.) available at all times in case of mechanical failures, etc. Spare maintenance and protection of traffic equipment installed as a result of a sudden equipment breakdown shall be replaced by the Contractor within 24 hours.

2.c) Failure of the Contractor to have the required minimum number of signs, personnel, and equipment, which results in the pattern not being installed, shall not be a reason for a time extension or claim for lost time.

2.d) In cases of differences of opinion between the Contractor and the Inspection staff, the Contractor shall follow the directions of the Engineer. The matter shall be brought to the District Office for resolution immediately or, in the case of work after regular business hours, on the next business day.

**3. Installing and Removing Traffic Control Patterns**

3.a) Lane closures shall be installed beginning with the advance warning signs and proceeding forward toward the work area.

3.b) Lane closures shall be removed in the reverse order, beginning at the end of the work area, or traffic control pattern, and proceeding back toward the advance warning signs.

3.c) Stopping traffic may be allowed within the allowable hours stated in Section 1.08.04:

i. For those activities stated within the Contract.
ii. During paving, milling operations, or similar activities where, in the middle of the operation, it is necessary to flip the pattern to complete the operation on the other half of the roadway so traffic does not travel across the longitudinal joint or difference in roadway elevation.
iii. To move slow moving equipment across live traffic lanes into the work area.

3.d) The Contractor shall adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.

3.e) Additional devices are required on entrance ramps, exit ramps, and intersecting roads to warn and/or move traffic into the proper travel path prior to merging with or exiting from the mainline traffic. This shall be completed before installing the mainline pattern past the ramp or intersecting roadway.

3.f) Workers are prohibited from crossing the travel lanes on limited access roadways to install and remove signs or other devices on the opposite side of the roadway. Any signs or devices on the opposite side of the roadway shall be installed and removed separately.

**4. Implementation of Rolling Road Block (RRB)**

4.a) Temporary road closures using a RRB may be allowed on limited access highways for operations associated with the installation and removal of temporary lane closures. RRB may be allowed for the installation and removal of lead signs and lane tapers only and shall meet the following requirements:

i. Refer to the Limitation of Operations Chart provided in Section 1.08.04 for the hours allowed for implementing a RRB operation. The Contractor shall only implement a RRB operation within the hours shown in the Chart.
ii. In areas with good sight lines and full shoulders, signs on the side of the road opposite the traffic pattern should be installed in a separate operation.

iii. TMAs equipped with Arrow Boards shall be used to slow traffic to implement the RRB. State Police Officers in marked vehicles may be used to support the implementation of the RRB. The RRB shall start by having all vehicles, including TMAs and police vehicles, leave the shoulder or on-ramp and accelerate to normal roadway speeds in each lane. The vehicles will then position themselves side by side and decelerate to the RRB speed on the highway.

iv. A Pre-Warning Vehicle, as specified elsewhere in the Contract, shall be used to advise the motorists that sign pattern installation or removal is underway.

v. The RRB duration shall not exceed 15 minutes from the start of the traffic block until all lanes are opened as designated in the Limitation of Operations chart. If the RRB duration exceeds 15 minutes on 2 successive shifts, no further RRB will be allowed until the Contractor obtains approval for a revised installation procedure from the District.

vi. RRB shall not be used to expand a lane closure pattern to an additional lane during the shift. The workers and equipment required to implement the additional lane closure should be staged from within the closed lane. TMAs (and State Police if available) shall be used to protect the workers installing the taper in the additional lane.

vii. Exceptions to these work procedures may be submitted to the District Office for consideration. A minimum of 2 business days shall be allowed for review and comment by the District.

viii. The Engineer and the Contractor will review and discuss the RRB procedures (including any revisions) in advance of the work. The implementation of the agreed upon plan will be reviewed with the State Police during the Work Zone Safety Meeting held before each shift involving temporary lane closures. If the State Police determine that alternative procedures should be implemented for traffic control during the work shift, the Department and Contractor will attempt to resolve any discrepancies with the duty sergeant at the Troop. If the discrepancies are unable to be resolved prior to the start of the shift, then the work will proceed as recommended by the Department. Any unresolved issues shall be addressed the following day.

**5. Use of Arrow Boards**

5.a) On limited access roadways, one Arrow Board shall be used for each lane that is closed. The Arrow Board shall be installed concurrently with the installation of the traffic control pattern and its placement shall be as shown on the Construction Traffic Control Plans. Additional Arrow Boards shall be deployed if sight distances are limited.

5.b) On non-limited access roadways, the use of an Arrow Board for lane closures is optional. The roadway geometry, sight distance, and traffic volume shall be considered in the decision to use the Arrow Board.

5.c) A vehicle displaying an arrow board shall be equipped with high-intensity rotating, flashing, oscillating, or strobe lights.

5.d) The flashing arrow mode shall be used for lane closure (merge) tapers.

5.e) The flashing arrow mode shall not be used for temporary alternating one-way traffic operations or to laterally shift lanes of traffic.

5.f) The flashing double arrow mode shall only be used for closing a center lane on a multilane roadway where adjacent left and right lanes remain open.

5.g) For shoulder work or roadside work near the shoulder, the Arrow Board shall be positioned in the shoulder and the flashing alternating diamond mode should be used.

5.h) The flashing alternating diamond caution mode should also be used when supplemental Arrow Boards are positioned in an already closed lane.

**6. Use of Truck-Mounted or Trailer-Mounted Impact Attenuators (TMAs)**

6.a) On limited access roadways, lane closures shall use a minimum of two TMAs to install and remove traffic control patterns. If two TMAs are not available, then the pattern shall not be installed.

6.b) On non-limited access roadways, the use of TMAs to install and remove patterns closing a lane(s) is optional. The roadway geometry, sight line distance, and traffic volume shall be considered in the decision to utilize the TMAs.

6.c) On limited access roadways, one TMA shall be placed on the shoulder and the second TMA shall be approximately 1,000 feet ahead blocking the lane to establish the advance and transition signing. The Arrow Board mounted on the TMA shall be in the arrow mode when taking the lane. The sign truck and workers shall be at sufficient distance ahead of the second TMA. In no case shall the TMA be used as the sign truck or a work truck. Once the transition is in place, the TMAs shall travel in the closed lane until all Portable Changeable Message Signs, signs, Arrow Boards, and cones/drums are installed. The Arrow Board mounted on the TMA should be in the flashing alternating diamond caution mode when traveling in the closed lane.

6.d) A TMA shall be placed prior to the first work area in the pattern. If there are multiple work areas within the same pattern, then additional TMAs shall be positioned at each additional work area as needed. The Arrow Board mounted on the TMA should be in the flashing alternating diamond caution mode when in the closed lane.

6.e) TMAs shall be positioned a sufficient distance prior to the workers or equipment being protected to allow for appropriate vehicle roll-ahead in the event that the TMA is hit, but not so far that an errant vehicle could travel around the TMA and into the work area. For additional placement and use details, refer to Section 18.06. Some operations, such as paving and concrete repairs, do not allow for placement of the TMA(s) within the

specified distances. In these situations, the TMA(s) shall be placed at the beginning of the work area and shall be advanced as the paving or concrete operations proceed.

6.f) TMAs will be paid for in accordance with how the unit is used. If it is used as a TMA and is in the proper location as specified, then it will be paid for at the specified hourly rate for Truck-Mounted or Trailer-Mounted Impact Attenuator. When the TMA is used as an Arrow Board, it will be paid for at the daily rate for Arrow Board. If a TMA is used to install and remove a pattern and is also used as an Arrow Board in the same day, then the unit will be paid for as a Truck-Mounted or Trailer-Mounted Impact Attenuator for the hours used to install and remove the pattern, typically 2 hours (1 hour to install and 1 hour to remove). If the TMA is also used as an Arrow Board during the same day, then the unit will only be paid for at the daily rate as an Arrow Board.

**7. Use of Traffic Drums and Traffic Cones**

7.a) On limited-access highways, ramps, and turning roadways:

i. Traffic drums shall be used for taper channelization.
ii. Traffic drums shall be used to delineate raised catch basins and other hazards.
iii. Traffic cones with a minimum height of 42 inches may be used in place of drums in the tangent section of a closed lane or shoulder.
iv. Traffic cones less than 42 inches in height shall not be used.

7.b) On all roadways:

i. Traffic drums shall be used in place of traffic cones in traffic control patterns that are in effect for more than a 36-hour duration.
ii. Traffic cones shall not be left unattended.
iii. Traffic cones with a minimum height of 42 inches shall be used when the posted speed limit is 45 MPH or above.

7.c) Typical spacing of traffic drums and/or cones shown on the Construction Traffic Control Plans in the Contract are maximum spacings and may be reduced to meet actual field conditions as required.

**8. Use of Barricade Warning Lights**

8.a) Barricade Warning Lights may be installed on channelizing devices when used in a merge taper. The Barricade Warning Lights shall flash in a sequential pattern when used in a merge taper. The successive flashing shall occur from the upstream end (beginning) of the merge taper to the downstream end (end) of the merge taper.

8.b) Type C Barricade Warning Lights may be used at night to delineate the edge of the travel way.

c) Type B Barricade Warning Lights shall be used on post-mounted advanced warning signs.

## 9. Use of Portable Changeable Message Signs (PCMS)

9.a) On limited access roadways, one PCMS shall be used in advance of the traffic control pattern for all lane closures. Prior to installing the pattern, the PCMS shall be installed and in operation, displaying the appropriate lane closure information. The PCMS shall be positioned ½ to 1 mile ahead of the start of the lane closure taper. If the distance to the nearest exit ramp is greater than the specified ½ to 1 mile distance, then an additional PCMS shall be positioned a sufficient distance ahead of the exit ramp (and before the previous on-ramp where practical) to alert motorists to the work and therefore offer them an opportunity to take the exit.

9.b) On non-limited access roadways, the use of PCMS for lane closures is optional. The roadway geometry, sight line distance, and traffic volume shall be considered in the decision to use the PCMS.

9.c) PCMS should be placed off the shoulder of the roadway and behind a traffic barrier, if practical. Where a traffic barrier is not available to shield the PCMS, it should be placed off the shoulder and outside of the clear zone. If a PCMS has to be placed on the shoulder of the roadway or within the clear zone, it should be placed on the paved shoulder with a minimum of five traffic drums placed in a taper in front of it to delineate its position. The taper shall meet minimum distance requirements for a shoulder closure. The PCMS shall be protected if it is used for a continuous duration of 36 hours or more.

9.d) The PCMS shall be removed from the clear zone and have the display screen cleared and turned 90 degrees away from the roadway when the PCMS is no longer required.

9.e) The PCMS should not be used within 1,000 feet of an existing PCMS or Variable Message Sign (VMS).

9.f) A PCMS message shall:

i. consist of no more than two phases;
ii. contain no more than three lines of text per phase;
iii. have no more than eight characters per line, including spaces.

9.g) The PCMS should be used for specific situations that need to command the motorist's attention which cannot be conveyed with standard construction signs. The PCMS should not be used for generic messages (ex.: Road Work Ahead, Bump Ahead, Gravel Road, etc.) or for messages that need to be displayed for long periods of time, such as during stage construction. These types of messages should be displayed with construction signs. Special signs shall be coordinated with the Office of Construction and the Division of Traffic Engineering for the proper layout/dimensions required.

9.h) Typical messages that are allowed on the PCMS are shown below. Approval must be received from the Office of Construction for any message(s) different than the typical messages shown in Figure 1.

9.i) All messages shall comply with the information provided in Tables 2 and 3.

| Message No. | Phase 1 | Phase 2 |
|---|---|---|
| 1 | LEFT LANE CLOSED | MERGE RIGHT |
| 2 | 2 LEFT LANES CLOSED | MERGE RIGHT |
| 3 | LEFT LANE CLOSED | REDUCE SPEED |
| 4 | 2 LEFT LANES CLOSED | REDUCE SPEED |
| 5 | RIGHT LANE CLOSED | MERGE LEFT |
| 6 | 2 RIGHT LANES CLOSED | MERGE LEFT |
| 7 | RIGHT LANE CLOSED | REDUCE SPEED |
| 8 | 2 RIGHT LANES CLOSED | REDUCE SPEED |
| 9 | LANES CLOSED AHEAD | REDUCE SPEED |
| 10 | LANES CLOSED AHEAD | USE CAUTION |
| 11 | EXIT XX CLOSED | USE EXIT YY |
| 12 | EXIT XX CLOSED USE YY | FOLLOW DETOUR |
| 13 | 2 LANES SHIFT AHEAD | USE CAUTION |
| 14 | 3 LANES SHIFT AHEAD | USE CAUTION |

**Figure 1: Typical PCMS Messages**

## Table 2: Acceptable Abbreviations

| Word Message | Standard Abbreviation | Word Message | Standard Abbreviation |
|---|---|---|---|
| Access | ACCS | Minimum | MIN |
| Afternoon / Evening | PM | Minor | MNR |
| Ahead | AHD | Minute(s) | MIN |
| Alternate | ALT | Monday | MON |
| Avenue | AVE, AV | Morning / Late Night | AM |
| Bicycle | BIKE | Mount | MT |
| Blocked | BLKD | Mountain | MTN |
| Boulevard | BLVD | National | NATL |
| Bridge | BR | Normal | NORM |
| CB Radio | CB | North | N |
| Center | CTR | Northbound | NBND |
| Center | CNTR | Oversized | OVRSZ |
| Chemical | CHEM | Parking | PKING |
| Circle | CIR | Parkway | PKWY |
| Compressed Natural Gas | CNG | Pavement | PVMT |
| Condition | COND | Pedestrian | PED |
| Congested | CONG | Place | PL |
| Construction | CONST | Pounds | LBS |
| Court | CT | Prepare | PREP |
| Crossing | XING | Quality | QLTY |
| Crossing (other than highway-rail) | XING | Right | RT |
| Downtown | DWNTN | Road | RD |
| Drive | DR | Roadwork | RDWK |
| East | E | Route | RT, RTE |
| Eastbound | EBND | Saint | ST |
| Electric Vehicle | EV | Saturday | SAT |
| Emergency | EMER | Service | SERV |
| Entrance, Enter | ENT | Shoulder | SHLDR |
| Exit | EX | Slippery | SLIP |
| Express | EXP | South | S |
| Expressway | EXPWY | Southbound | SBND |
| Feet | FT | Speed | SPD |
| Freeway | FRWY, FWY | State, county, or other non-US or non-Interstate numbered route | [Route Abbreviation determined by highway agency]** |
| Friday | FRI | Street | ST |
| Frontage | FRNTG | Sunday | SUN |
| Hazardous | HAZ | Telephone | PHONE |
| Hazardous Material | HAZMAT | Temporary | TEMP |
| High Occupancy Vehicle | HOV | Terrace | TER |
| Highway | HWY | Thruway | THWY |
| Highway-Rail Grade Crossing | RR XING | Thursday | THURS |

| | | | |
|---|---|---|---|
| Hospital | HOSP | Tons of Weight | T |
| Hour(s) | HR, HRS | Traffic | TRAF |
| Information | INFO | Trail | TR |
| International | INTL | Travelers | TRVLRS |
| Interstate | I- | Tuesday | TUES |
| Junction / Intersection | JCT | Turnpike | TPK |
| Lane | LN | Two-Way Intersection | 2-WAY |
| Left | LFT | Two-Wheeled Vehicles | CYCLES |
| Liquid Propane Gas | LP-GAS | Upper | UPR |
| Local | LOC | US Numbered Route | US |
| Lower | LWR | Vehicle(s) | VEH, VEHS |
| Maintenance | MAINT | Warning | WARN |
| Major | MAJ | Wednesday | WED |
| Maximum | MAX | West | W |
| Mile(s) | MI | Westbound | WBND |
| Miles Per Hour | MPH | | |

** A space and no dash shall be placed between the abbreviation and the number of the route.

**Table 3: Unacceptable Abbreviations**

| Unacceptable Abbreviation | Intended Word | Common Misinterpretation |
|---|---|---|
| ACC | Accident | Access (Road) |
| CLRS | Clears | Colors |
| DLY | Delay | Daily |
| FDR | Feeder | Federal |
| L | Left | Lane (Merge) |
| LT | Light (Traffic) | Left |
| PARK | Parking | Park |
| POLL | Pollution (Index) | Poll |
| RED | Reduce | Red |
| STAD | Stadium | Standard |
| WRNG | Warning | Wrong |

**10. Use of State Police Officers**

10.a) State Police may be used only on limited access highways and secondary roadways that are under their primary jurisdiction. A minimum of one Officer may be used per critical sign pattern; however, a State Police presence is not required. Shoulder closures and right lane closures can generally be implemented without the presence of a State Police Officer. Left lane closures may also be implemented without State Police presence in areas with only moderate traffic and wide, unobstructed medians. It may be desirable to have a State Police presence, when available, under specific situations, such as nighttime lane closures; left lane closures with minimal width for setting up advance signs and staging; lane and shoulder closures on turning roadways/ramps or mainline where sight distance is minimal; and closures where extensive turning movements or traffic congestion regularly occur; however, they are not required.

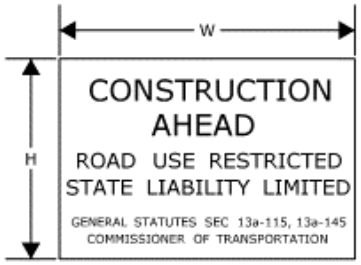
10.b) If a State Police presence is provided, once the pattern is in place, the State Police Officer should be positioned in a non- hazardous location in advance of the pattern to provide advance warning to the motorist. If traffic backs up beyond the beginning of the pattern, then the State Police Officer shall reposition so that they are located prior to the backup. The State Police Officer should not be located immediately behind or within the roll ahead area of any TMA or within the work zone buffer area. The State Police Officer shall not be positioned in such a way that the State Police Officer obstructs any construction warning signs or PCMS from view of the motorist.

10.c) Other functions of the State Police Officer(s) may include:

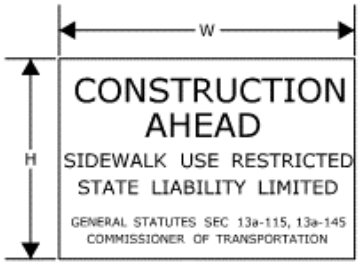
i. Assisting construction vehicles entering and exiting the work area.
ii. Enforcement of motor vehicle laws within the work area, if specifically requested by the Engineer.

10.d) State Police Officers assigned to a work site shall take direction from the Engineer.

# SERIES 16 SIGNS




| | | W H |
|---|---|---|
| 16-E | 80-1605 | 84" x 60" |
| 16-H | 80-1608 | 60" x 42" |
| 16-M | 80-1613 | 30" x 24" |




| | | W H |
|---|---|---|
| 16-S | 80-1619 | 48" x 30" |

SIGN 16-S SHALL BE USED ON ALL PROJECTS THAT REQUIRE SIDEWALK RECONSTRUCTION OR RESTRICT PEDESTRIAN TRAVEL ON AN EXISTING SIDEWALK.

SERIES 16 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE TRAFFIC CONTROL PATTERNS. SERIES 16 SIGNS SHOULD BE LOCATED TO ALLOW MOTORISTS THE OPPORTUNITY TO AVOID A WORK ZONE. SERIES 16 SIGNS SHOULD BE INSTALLED ON MAJOR INTERSECTING ROADWAYS THAT APPROACH THE WORK ZONE. ON LIMITED-ACCESS HIGHWAYS, THESE SIGNS SHOULD BE LOCATED IN ADVANCE OF THE NEAREST UPSTREAM EXIT RAMP AND ON ANY ENTRANCE RAMPS PRIOR TO OR WITHIN THE WORK ZONE LIMITS.

SIGNS 16-E AND 16-H SHALL BE POST-MOUNTED.

SIGN 16-E SHALL BE USED ON ALL FREEWAYS AND EXPRESSWAYS.

SIGN 16-H SHALL BE USED ON ALL RAMPS, OTHER STATE ROADWAYS AND MAJOR TOWN/CITY ROADWAYS.

SIGN 16-M SHALL BE USED ON OTHER TOWN ROADWAYS.

CONSTRUCTION TRAFFIC CONTROL PLAN
SERIES 16 SIGNS

SCALE: NONE

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

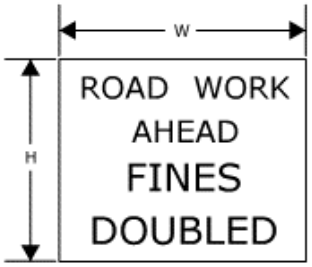
APPROVED Tracy L Fogarty Tracy L. Fogarty, P.E. 2013.10.09 16:30:32-04'00'
PRINCIPAL ENGINEER

## REGULATORY SIGN "ROAD WORK AHEAD, FINES DOUBLED"

THE REGULATORY SIGN "ROAD WORK AHEAD FINES DOUBLED" SHALL BE INSTALLED FOR ALL WORK ZONES THAT OCCUR ON ANY STATE HIGHWAY AND MUNICIPAL ROAD IN CONNECTICUT WHERE THERE ARE WORKERS PRESENT ON THE HIGHWAY.

THE "ROAD WORK AHEAD FINES DOUBLED" REGULATORY SIGN SHALL BE PLACED AFTER THE SERIES 16 SIGN AND IN ADVANCE OF THE "ROAD WORK AHEAD" SIGN.

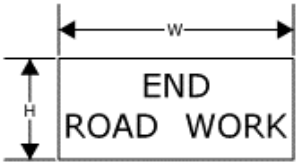
| | W | H |
|---|---|---|
| 31-1906 | 48" | 42" |
| 31-1907 | 60" | 54" |




## "END ROAD WORK" SIGN

THE LAST SIGN IN THE PATTERN SHALL BE THE "END ROAD WORK" SIGN.

| | W | H |
|---|---|---|
| 80-9606 | 36" | 18" |
| 80-9612 | 48" | 24" |




CONSTRUCTION TRAFFIC CONTROL PLAN

ROAD WORK AHEAD SIGNS

SCALE: NONE

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED

Tracy L. Fogarty, P.E.
2019.09.12 15:54:44 -04'00'

PRINCIPAL ENGINEER

# NOTES FOR TRAFFIC CONTROL PLANS

1. IF A TRAFFIC STOPPAGE OCCURS IN ADVANCE OF SIGN (A), THEN AN ADDITIONAL SIGN (A) SHALL BE INSTALLED IN ADVANCE OF THE STOPPAGE.

2. SIGNS (AA), (A), AND (D) SHOULD BE OMITTED WHEN THESE SIGNS HAVE ALREADY BEEN INSTALLED IN ADVANCE TO DESIGNATE A LARGER WORK ZONE THAN THE WORK ZONE THAT IS ENCOMPASSED ON THIS PLAN.

3. SEE TABLE 1 FOR ADJUSTMENT OF TAPERS IF NECESSARY.

4. TRAFFIC CONES AND PORTABLE CONSTRUCTION SIGNS SHALL NOT BE LEFT UNATTENDED.

5. ALL CONFLICTING SIGNS WITHIN THE LIMITS OF A ROADWAY / LANE CLOSURE AREA SHALL BE COVERED WITH AN OPAQUE MATERIAL WHILE THE CLOSURE IS IN EFFECT, AND UNCOVERED WHEN THE ROADWAY / LANE CLOSURE IS RE-OPENED TO ALL LANES OF TRAFFIC.

6. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 48 HOURS, THEN ANY EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED, AND TEMPORARY PAVEMENT MARKINGS THAT DELINEATE THE PROPER TRAVELPATHS SHALL BE INSTALLED.

7. DISTANCES BETWEEN SIGNS IN THE ADVANCE WARNING AREA MAY BE REDUCED TO 100' ON LOW-SPEED URBAN ROADS (SPEED LIMIT $\leqslant$ 40 MPH).

8. IF THIS PLAN IS TO REMAIN IN OPERATION FROM SUNSET TO SUNRISE, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.

9. A PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF MILE TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.

10 SIGN (P) SHALL BE MOUNTED A MINIMUM OF 7 FEET FROM THE PAVEMENT SURFACE TO THE BOTTOM OF THE SIGN.

TABLE 1 - MINIMUM TAPER LENGTHS

| POSTED SPEED LIMIT (MILES PER HOUR) | MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE |
|---|---|
| 30 OR LESS | 180' |
| 35 | 245' |
| 40 | 320' |
| 45 | 540' |
| 50 | 600' |
| 55 | 660' |
| 65 | 780' |

CONSTRUCTION TRAFFIC CONTROL PLAN

NOTES

SCALE: NONE

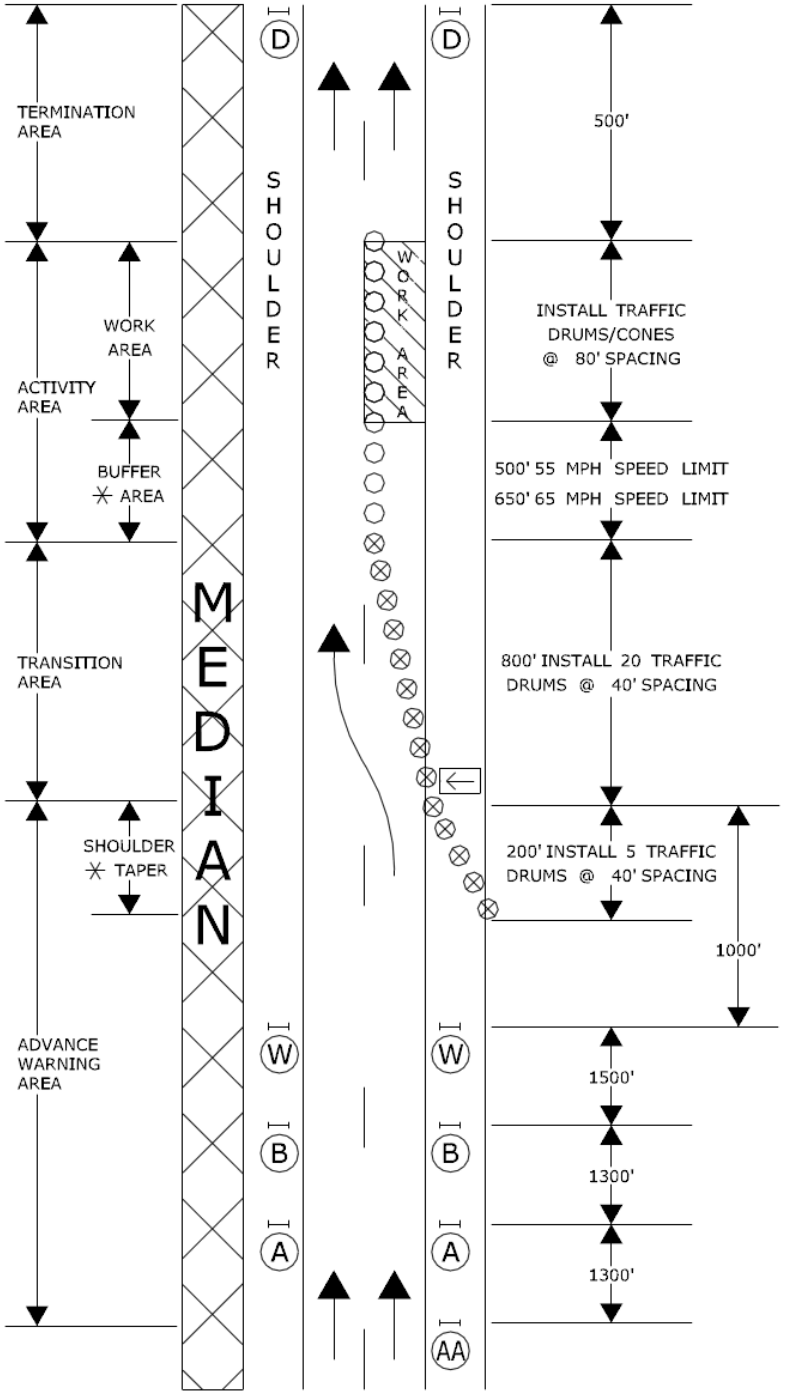
CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

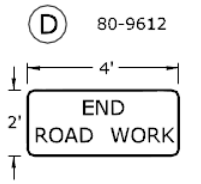
APPROVED Tracy L. Fogarty, P.E. 2019.09.13 08:47:47-04'00'

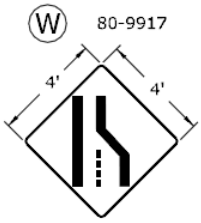
PRINCIPAL ENGINEER

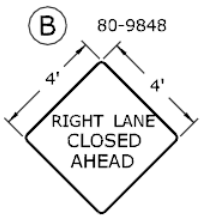
# WORK IN RIGHT LANE - MULTILANE HIGHWAY

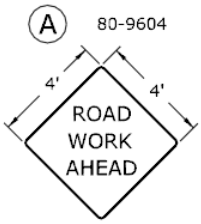
SIGN FACE
126 SQ. FT (MIN.)

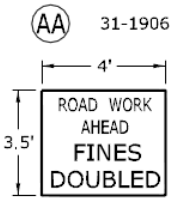



TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN

## PLAN 1

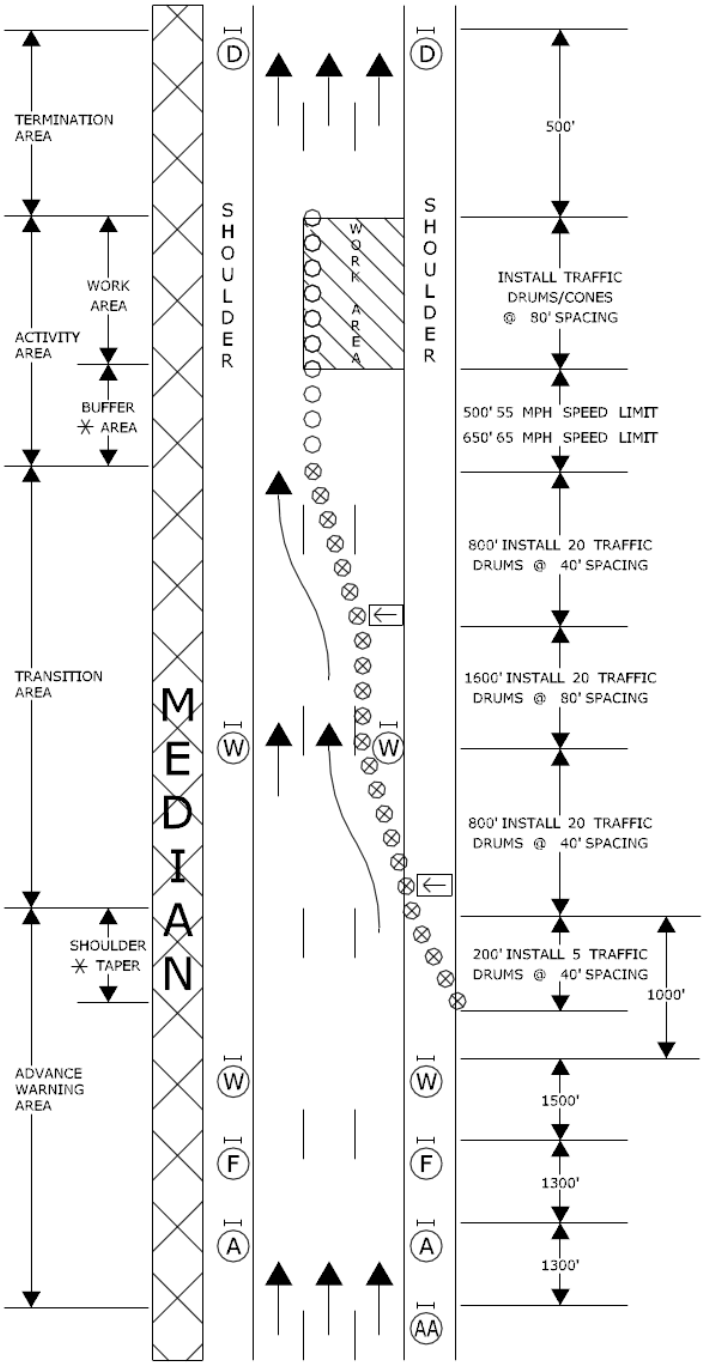
SEE NOTES 1, 2, 3, 4, 5, 6, 8, 9

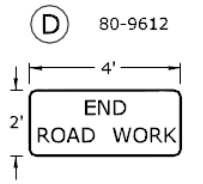
CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

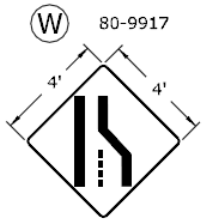
APPROVED Charles S. Harlow 2012.06.05 15:51:00-04'00'
PRINCIPAL ENGINEER

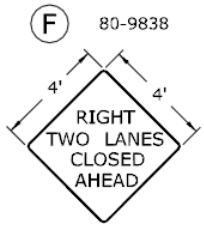
# WORK IN RIGHT TWO LANES - MULTILANE HIGHWAY

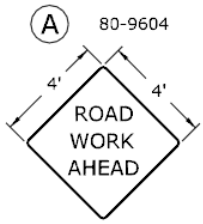
SIGN FACE
158 SQ. FT (MIN.)

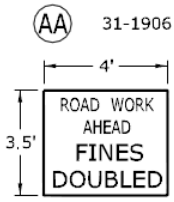



TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN

## PLAN 2

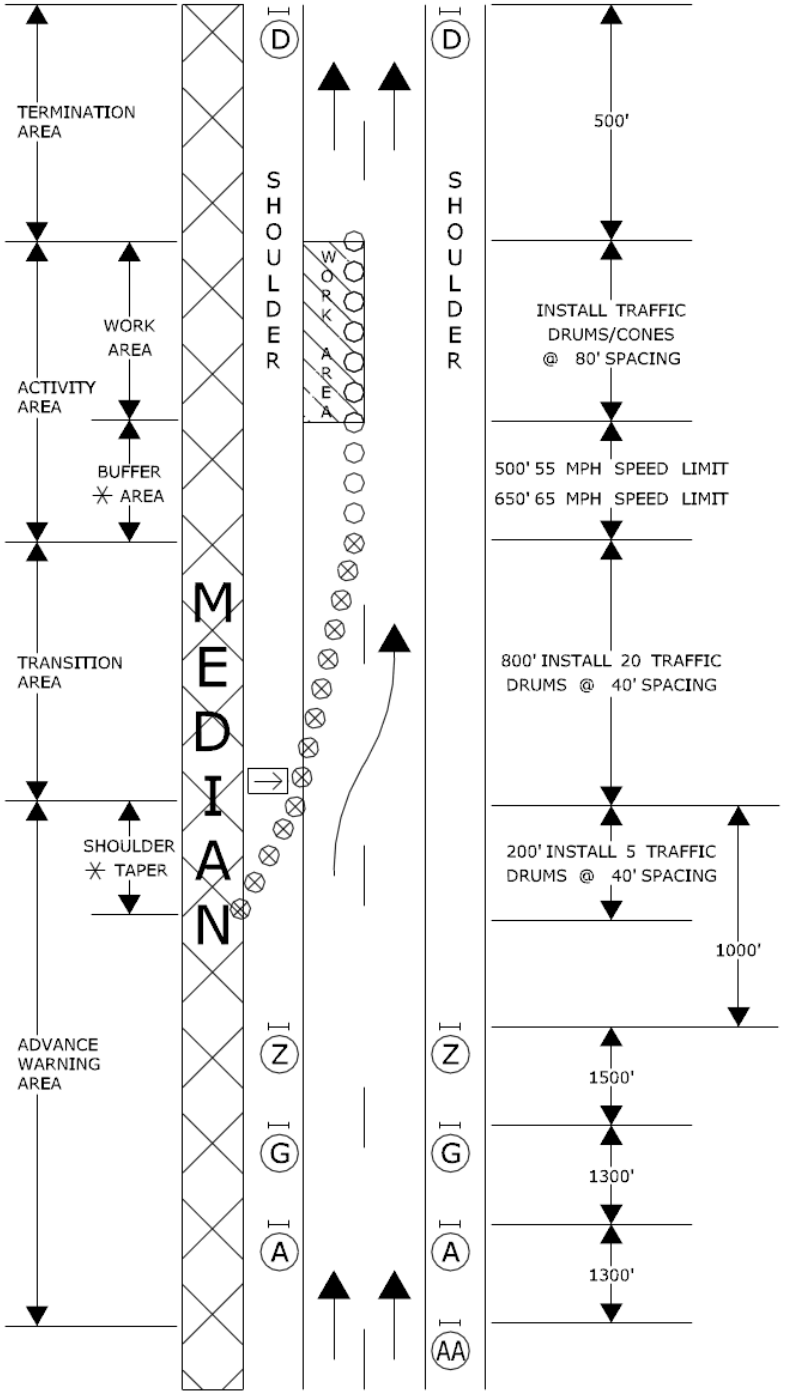
SEE NOTES 1, 2, 3, 4, 5, 6, 8, 9

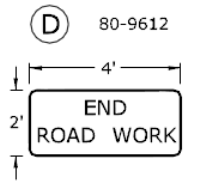
CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

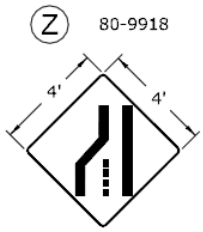
APPROVED Charles S. Harlow 2012.06.05 15:51:23-04'00'
PRINCIPAL ENGINEER

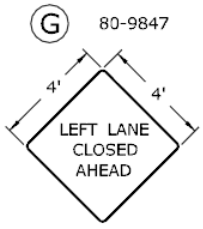
# WORK IN LEFT LANE - MULTILANE HIGHWAY

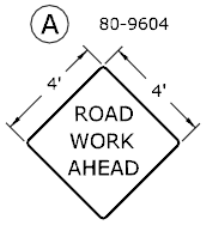
SIGN FACE
126 SQ. FT (MIN.)

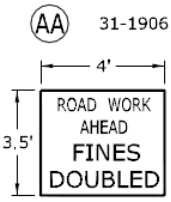



TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN

## PLAN 3

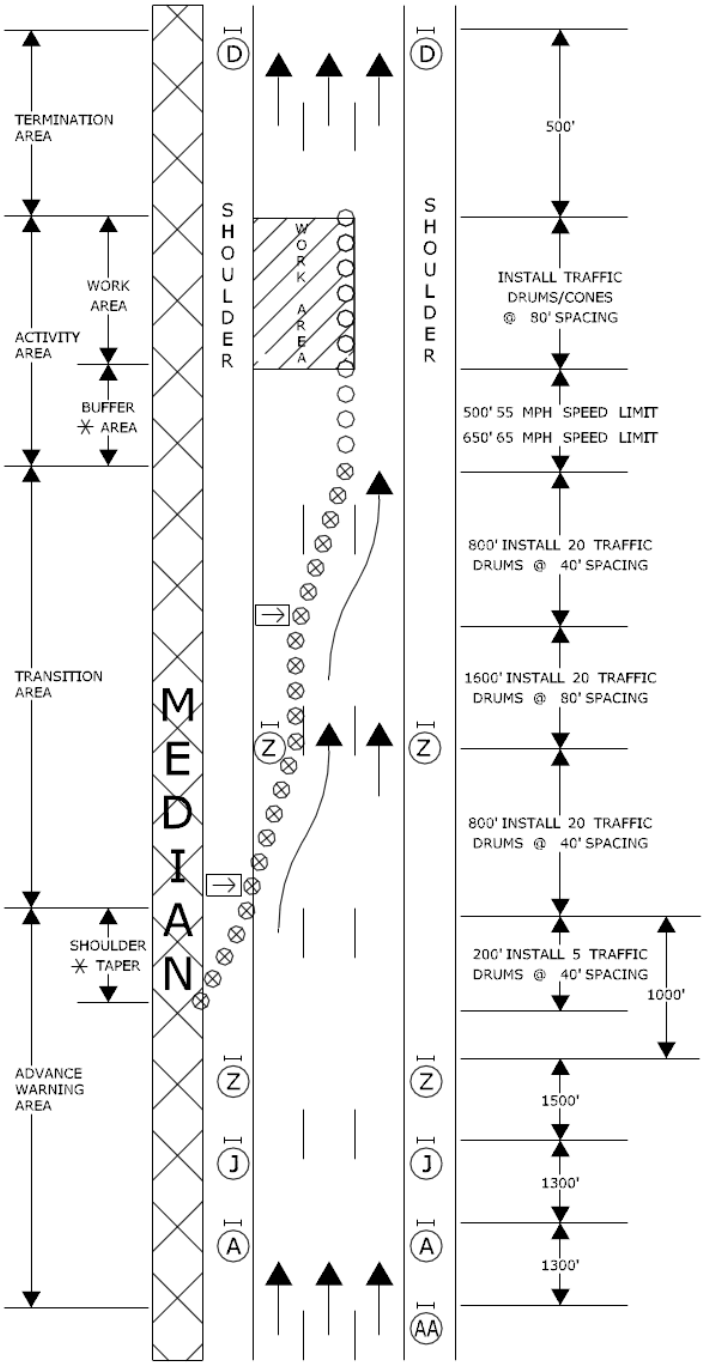
SEE NOTES 1, 2, 3, 4, 5, 6, 8, 9

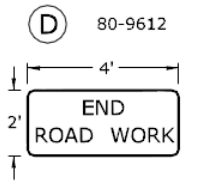
CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

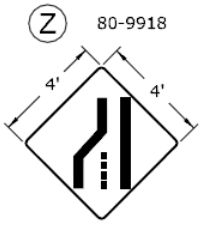
APPROVED Charles S. Harlow 2012.06.05 15:51:46-04'00'
PRINCIPAL ENGINEER

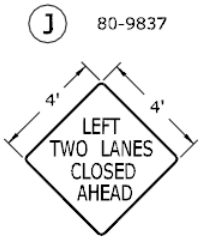
# WORK IN LEFT TWO LANES - MULTILANE HIGHWAY

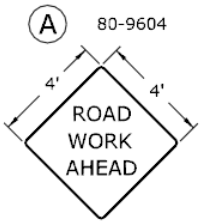
SIGN FACE
158 SQ. FT (MIN.)

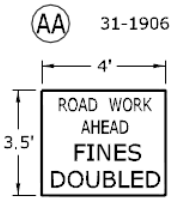



○ TRAFFIC CONE **OR** TRAFFIC DRUM
✳ OPTIONAL ⊗ TRAFFIC DRUM ⊢ PORTABLE SIGN SUPPORT
⇦ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN

## PLAN 4

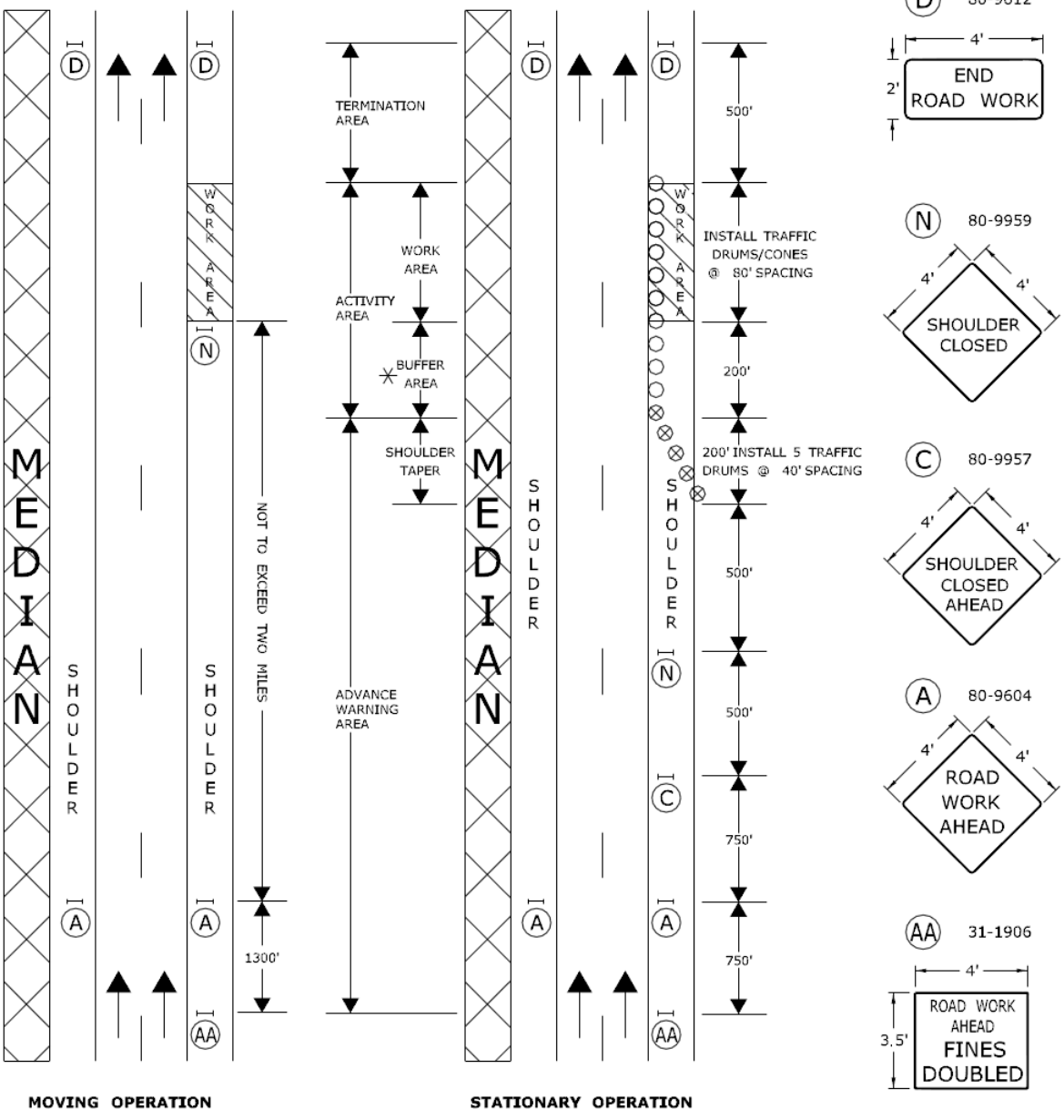
SEE NOTES 1, 2, 3, 4, 5, 6, 8, 9

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED _____ Charles S. Harlow 2012.06.05 15:52:10-04'00'
PRINCIPAL ENGINEER

# WORK IN SHOULDER AREA - MULTILANE HIGHWAY

SIGN FACE
94 SQ. FT (MIN.)




TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN

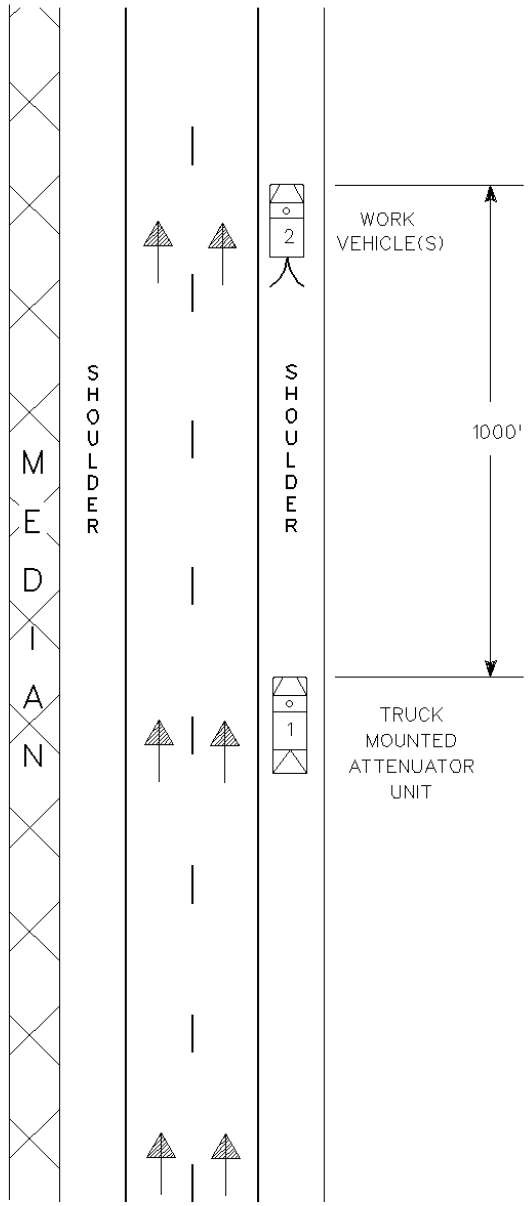
## PLAN 6

SEE NOTES 1, 2, 4, 8

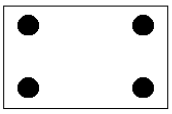
CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:52:38-04'00'
PRINCIPAL ENGINEER

# MOVING OPERATION ON RIGHT SHOULDER
# MULTILANE HIGHWAY & SECONDARY ROADWAYS




SIGN MOUNTED ON TRUCK 1



DEPARTMENT APPROVED
ARROW BOARD
( FLASHING YELLOW MODE )

REV'D 1-02

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING &
HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

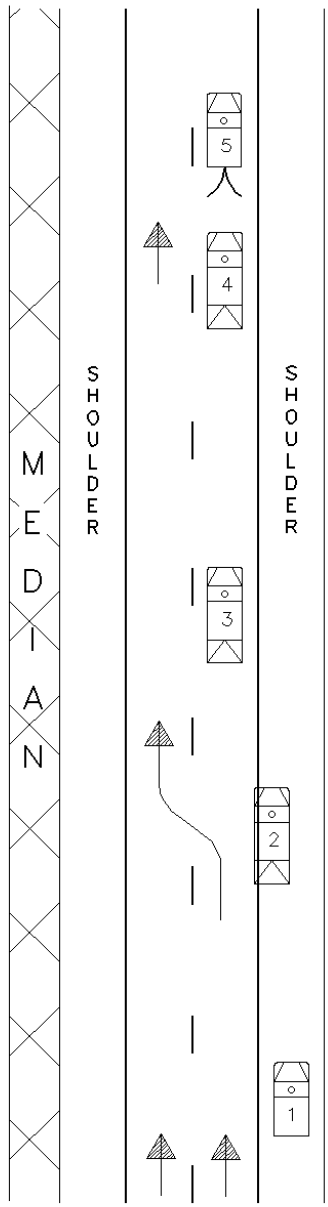
CONSTRUCTION
TRAFFIC CONTROL PLAN

PLAN 19

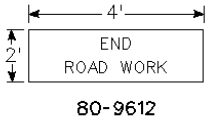
SCALE NONE

APPROVED J. Mccall PRINCIPAL ENGINEER DATE 1-30-02

# MOVING OPERATION IN RIGHT LANE AND OUTSIDE SHOULDER AT THE SAME TIME MULTILANE HIGHWAY

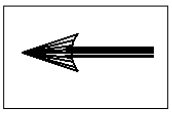



**SIGN MOUNTED ON VEHICLE 5**



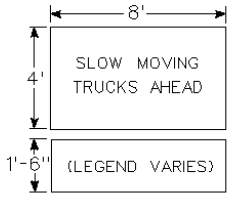

80-9612

**SIGN MOUNTED ON TRUCKS 2, 3, & 4**



DEPARTMENT APPROVED ARROW BOARD

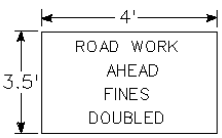
**SIGNS MOUNTED ON VEHICLE 1**




80-9815
THIS SIGN SHOULD BE COVERED WHEN NOT IN USE.

80-9914
USE APPROPRIATE MESSAGE FOR OPERATION.

**SIGN MOUNTED ON VEHICLE 2**




31-1906

REV'D 1-02

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

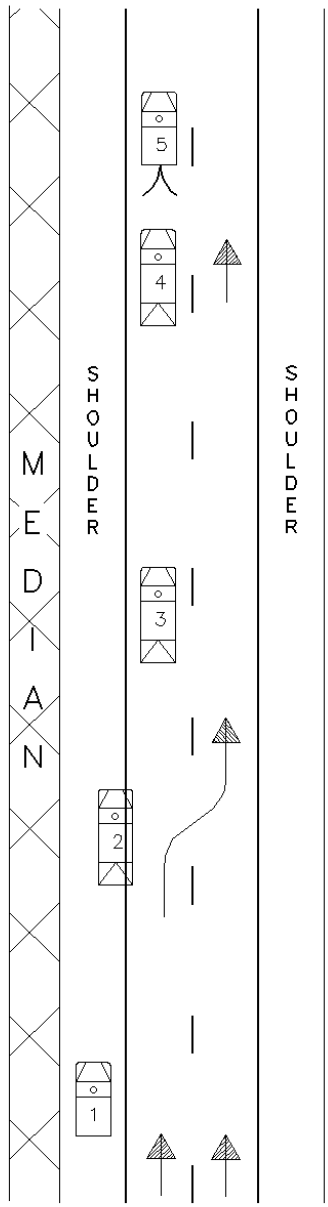
CONSTRUCTION
TRAFFIC CONTROL PLAN

PLAN 20

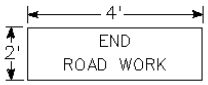
SCALE NONE

APPROVED John D. Micall
PRINCIPAL ENGINEER
DATE 1-30-02

# MOVING OPERATION IN LEFT LANE AND INSIDE SHOULDER AT THE SAME TIME MULTILANE HIGHWAY

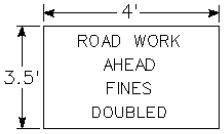



**SIGN MOUNTED ON VEHICLE 5**



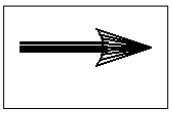

80-9612

**SIGN MOUNTED ON VEHICLE 2**



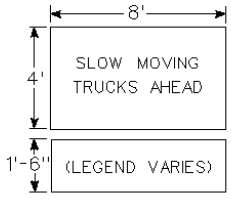

31-1906

**SIGN MOUNTED ON TRUCKS 2, 3, & 4**



DEPARTMENT APPROVED ARROW BOARD

**SIGNS MOUNTED ON VEHICLE 1**




80-9815
THIS SIGN SHOULD BE COVERED WHEN NOT IN USE.

80-9914
USE APPROPRIATE MESSAGE FOR OPERATION.

WHEN THE LEFT SHOULDER WIDTH CANNNOT ACCOMMODATE A VEHICLE, THEN ADVANCE WARNING VEHICLE 1 MAY DRIVE PARTIALLY IN THE LANE.

REV'D 1-02

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

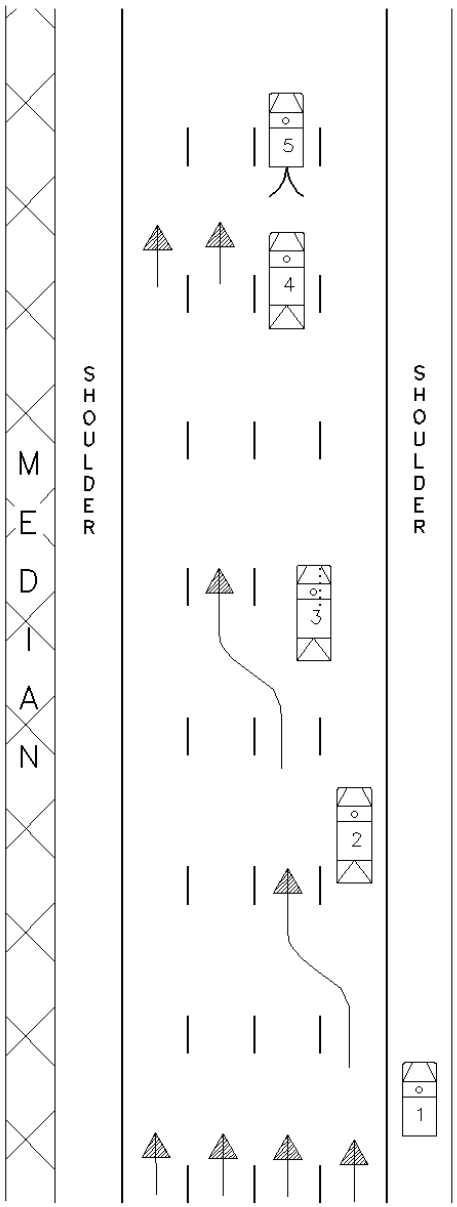
CONSTRUCTION
TRAFFIC CONTROL PLAN

PLAN 21

SCALE NONE

APPROVED John D. Micali PRINCIPAL ENGINEER DATE 1-30-02

# MOVING OPERATION IN CENTER LANE
# MULTILANE HIGHWAY




WORK VEHICLE(S)

150'

TRUCK MOUNTED ATTENUATOR UNIT

DISTANCE VARIES ACCORDING TO OPERATION

TRUCK MOUNTED ATTENUATOR UNIT

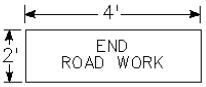
800'

TRUCK MOUNTED ATTENUATOR UNIT

1000'

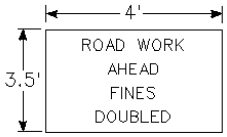
ADVANCE WARNING VEHICLE

**SIGN MOUNTED ON VEHICLE 5**



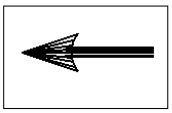

80-9612

**SIGN MOUNTED ON VEHICLE 2**



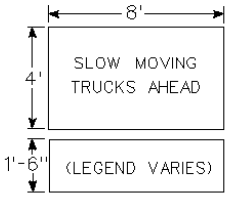

31-1906

**SIGN MOUNTED ON TRUCKS 2, 3, & 4**



DEPARTMENT APPROVED ARROW BOARD

**SIGNS MOUNTED ON VEHICLE 1**




80-9815
THIS SIGN SHOULD BE COVERED WHEN NOT IN USE.

80-9914
USE APPROPRIATE MESSAGE FOR OPERATION.

REV'D 1-02

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

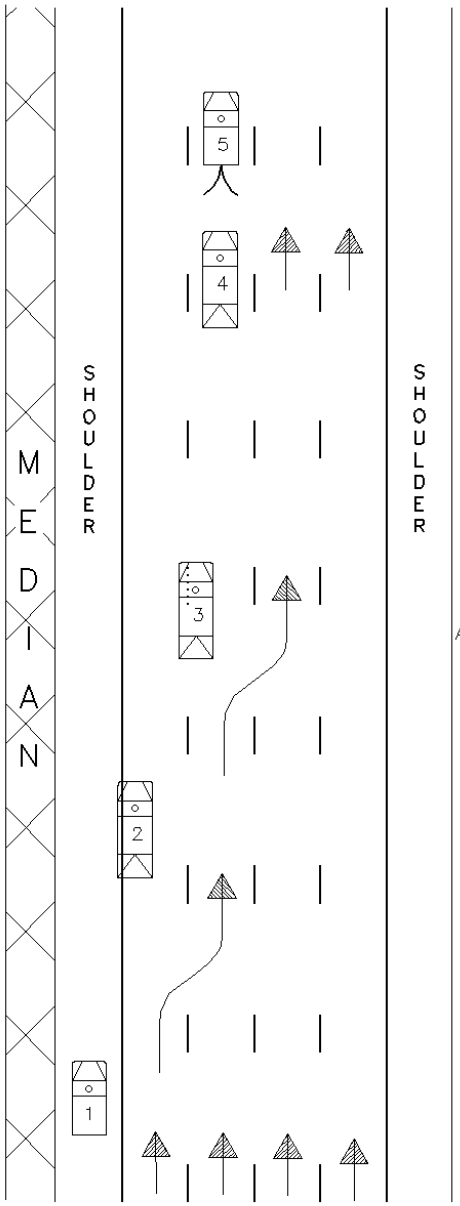
CONSTRUCTION
TRAFFIC CONTROL PLAN

PLAN 22

SCALE NONE

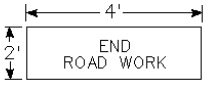
APPROVED John D. Micall
PRINCIPAL ENGINEER
DATE 1-30-02

# MOVING OPERATION IN CENTER LANE
# MULTILANE HIGHWAY



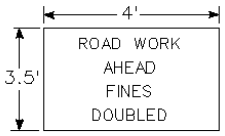

WORK VEHICLE(S)
150'
TRUCK MOUNTED ATTENUATOR UNIT
DISTANCE VARIES ACCORDING TO OPERATION
TRUCK MOUNTED ATTENUATOR UNIT
800'
TRUCK MOUNTED ATTENUATOR UNIT
1000'
ADVANCE WARNING VEHICLE

**SIGN MOUNTED ON VEHICLE 5**



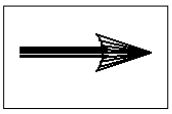

80-9612

**SIGN MOUNTED ON VEHICLE 2**



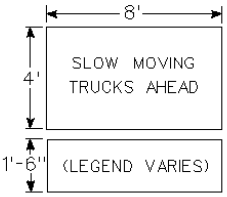

31-1906

**SIGN MOUNTED ON TRUCKS 2, 3, & 4**



DEPARTMENT APPROVED ARROW BOARD

**SIGNS MOUNTED ON VEHICLE 1**




80-9815
THIS SIGN SHOULD BE COVERED WHEN NOT IN USE.

80-9914
USE APPROPRIATE MESSAGE FOR OPERATION.

WHEN THE LEFT SHOULDER WIDTH CANNNOT ACCOMMODATE A VEHICLE, THEN ADVANCE WARNING VEHICLE 1 MAY DRIVE PARTIALLY IN THE LANE.

REV'D 1-02

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

CONSTRUCTION
TRAFFIC CONTROL PLAN

PLAN 23

SCALE NONE

APPROVED John D. Micali
PRINCIPAL ENGINEER
DATE 1-30-02

**Article 9.71.05 – Basis of Payment** *is supplemented by the following:*

The temporary relocation of signs and supports, and the furnishing, installation and removal of any temporary supports shall be paid for under the item "Maintenance and Protection of Traffic". Temporary overhead sign supports and foundations shall be paid for under the appropriate item(s).

The cost of furnishing, installing, and removing the material for the 4H:1V traversable slope shall be paid for under the item "Maintenance and Protection of Traffic".

# ITEM #1003891A – FIBERGLASS UTILITY POLE

**DESCRIPTION:** Under this item the Contractor shall furnish and install a Non-breakaway fiberglass utility pole and associated hardware, to be used for temporary lighting during construction, as indicated on the plans or as directed by the Engineer. At the end of the project the fiberglass pole shall become the property of the Contractor.

**MATERIALS:** The pole shaft shall be fiberglass reinforced composite (FRC). The pole shaft shall be constructed by the filament winding process from thermosetting polyester resin and contain a minimum of 65 percent of "E" type fiberglass by weight. The filament windings shall be continuously applied with uniform tension and shall be placed on the pole helically at low angles to provide axial strength. Additional windings shall be placed on the pole in a circular manner to provide compressive strength. The pole is to be round, tapered, hollow, and reinforced in the support arm and hardware attachment areas. The pole is to be non-conductive and chemically inert. The pole shall meet the current AASHTO LTS-2 *Street Lighting Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, and shall be approved by FHWA for use on Federal Aid projects. A 2 ½" (63.5 millimeters) x 5" (127 millimeters) handhole shall be provided at the base of the pole shaft at approximately 18" (460 millimeters) above the finished grade line. The pole shaft shall be ± 47' in length to provide a 40' aerial cable attachment height above grade.

The pole exterior surface is to be grey with a natural (textured) finish. The surface of the pole will be uniform for the entire length of the pole. The laminate shall contain colored pigment, the color of the final coating, and be of uniform color throughout the entire wall thickness of the pole. A coating shall be applied to the pole to maintain surface integrity against the damaging effects of sunlight and extremes in weather. The coating is to be highly weather resistant pigmented polyurethane. The coating thickness shall have minimum dry film thickness of 1-1/2 mils (0.0381 millimeter).

The surface shall be tested for a minimum of 5000 hours of accelerated testing in accordance with ASTM G154 (UV-A lamp 340 NM wave length, 130° F (54.4° C), cycle lamp 4 hours on 4 hours off) with the following results: Fiber exposure: none, Crazing: none, Checking: none, Chalking: none, Color: may dull slightly.

The pole shall be suitable for direct burial, direct buried poles the butt end shall be enlarged to provide resistance to rotation and pull out.

Each pole is to be permanently marked in characters 3/16" (4.8 millimeters) minimum high on a brass or stainless steel plate with the manufacturer's identification symbol, month and year of manufacture. Each pole shall be individually packaged for protection during shipping and storage. The pole shall be warranted to be free of defects in materials and workmanship for a period of three years from the date of purchase.


0048-0200

The top of the pole is to be pre-drilled for two 5/8" (M16) thru bolts on 9-1/2" (241 millimeters) centers starting 4" (100 millimeters) below the top of the pole. A 1-1/2" (40 millimeters) wire exit hole shall be centered 1/2 the distance between the two holes.

A cast aluminum removable cap shall be securely mounted to the top of the pole. The cap shall be corrosion resistant and must remain in place when subjected to the maximum wind loading for which the pole is designed.

Anchors shall conform to the pertinent requirements of Article M.16.04-2b, c, d, and e.

**CONSTRUCTION METHODS:** The fiberglass pole shall be set in the earth to the required depth and proper compaction of backfill provided around the pole and then attached to the anchors with guys as necessary. When necessary, the fiberglass utility pole shall be relocated to maintain different illumination circuits as dictated by the construction stages.

Upon completion of the project the fiberglass utility pole shall be removed and shall remain the property of the Contractor.

Upon removal of the pole, the resulting excavation shall be properly backfilled to match the surrounding area.

**METHOD OF MEASUREMENT:** This work will be measured for payment by the number of fiberglass utility poles installed and accepted.

**BASIS OF PAYMENT:** This work will be paid for at the contract unit price each for "Fiberglass Utility Pole" complete in place, which price shall include all materials, fiberglass poles, anchors, guys, brackets, and all equipment, tools, labor and all work incidental thereto including excavating, auguring, backfilling, removal, hauling, relocation, and disposal. The unit cost for this item is a one-time only cost. The cost of removing and relocating the fiberglass utility pole to maintain different illumination circuits shall be included in the unit cost.

| Pay Item | Pay Unit |
|---|---|
| Fiberglass Utility Pole | EA. |

# ITEM #1003906A - REMOVE LIGHT STANDARD

**DESCRIPTION:** Under this item the Contractor shall remove an existing light standard with transformer base (where present), bracket(s), and luminaire as indicated on the plans or as directed by the Engineer. The removed materials (excluding luminaires) shall remain the property of the Contractor.

**CONSTRUCTION METHODS:** The Contractor shall remove a light standard, transformer base (where present), bracket, and luminaire, where required. The removed materials (excluding luminaires) shall remain the property of the Contractor.

All removed materials shall be properly disposed of by the Contractor. All regulated materials shall be as described and disposed of under Item No. 0101143A – Handling and Disposal of Regulated Items.

**METHOD OF MEASUREMENT:** This work will be measured for payment by the number of light standards with associated equipment removed and disposed of complete and accepted.

**BASIS OF PAYMENT:** This work will be paid for at the contract unit price each for "Remove Light Standard" complete, which price shall include the removal of a light standard with associated transformer base (where present), bracket, luminaire, lamp, cable and hardware, delivering, disposing, hauling, and including all materials, tools, equipment, labor and work incidental thereto.

| Pay Item | Pay Unit |
|---|---|
| Remove Light Standard | EA. |

# ITEM #1003912A - REMOVE CONCRETE LIGHT STANDARD BASE

**DESCRIPTION:** Under this item the Contractor shall remove an existing concrete light standard base where shown on the plans or as directed. The removed concrete base shall remain the property of the Contractor.

**CONSTRUCTION METHODS:** The Contractor shall remove a concrete light standard base where required. The removed base shall be properly disposed of by the Contractor. The resulting excavation shall be coordinated with the median removal, unless otherwise noted on the plans.

**METHOD OF MEASUREMENT:** This work will be measured for payment by the number of concrete light standard bases removed and disposed of, complete and accepted.

**BASIS OF PAYMENT:** This work will be paid for at the contract unit price each for "Remove Concrete Light Standard Base", which price shall include excavation, removal, backfill, hauling and disposing of the concrete base, all materials, equipment and work incidental thereto.

| Pay Item | Pay Unit |
|---|---|
| Remove Concrete Light Standard Base | EA. |

# ITEM #1005602A - LED LUMINAIRE – TYPE 2

**DESCRIPTION:** This item shall consist of furnishing and installing a light emitting diode (LED) luminaire of the wattage, distribution, and voltage as specified, completely wired and attached to the arm or bracket of the pole in accordance with the plans and specifications.

**MATERIALS:** The LED luminaire shall be one of the following:

For luminaires with a Type II light distribution:

Philips Lumec, Road Focus, catalog number: **RFL-135W80LED-4K-G2-R2M-HVU-API-SP2-GY3**, with the following characteristics: 136 watts, 18,819 lumens, 4000k CCT, 480 volt, Type II medium light distribution, and 20kV/10kA surge suppression.

American Electric, Autobahn, catalog number: **ATB0-P304-480-R2-NR-NL,** with the following characteristics: 124 watts, 18,010 lumens, 4000k CCT, 480 volt, Type II light distribution, and 20kV/10kA surge suppression.

Eaton, Cooper Lighting, Archeon Medium, catalog number: **ARCH-M-PA2-120-740-8-T2U-AP-20K-K** with the following characteristics: 122 watts, 18,056 lumens, 4000k CCT, 480 volt, Type II urban light distribution, and 20kV/10kA surge suppression.

No alternate luminaires will be accepted. A catalog cut will be required. It is the Contractors responsibility to install a luminaire of the required light distribution Type (II, III, or IV) at the location as called for on the plans. Shop drawings for this item shall include both Type II, Type III, and Type IV light distributions. Prior to ordering the luminaire from the manufacturer, the Contractor shall determine the correct quantity of each distribution type.

The luminaire housing shall be powder coated grey in color.

The luminaire shall be equipped with an internal bubble level.

The luminaire housing shall not have a photocontrol receptacle.

The luminaire's onboard circuitry shall include a surge protection device (SPD) to withstand high repetition noise transients as a result of utility line switching, nearby lightning strikes, and other interference. The LED luminaire shall be provided with integral 20Kv/10kA surge protection which shall conform and be labeled as UL 1449 compliant. The SPD protects the luminaire from damage and failure for common and differential mode transient peak currents up to 10 kA (minimum). SPD performance shall have been tested per procedures in ANSI C136.2/IEEE C62.41-2:2002 category C high exposure. The SPD shall fail in such a way as the Luminaire will no longer operate and the driver will be isolated from additional spikes. The SPD shall be field replaceable.

The LED luminaire shall carry a limited five year warranty on the LEDs and the Driver.

Conductors shall be #10 AWG in accordance with Article M.15.11 of the Standard Specifications. Insulation shall be THHN/THWN and rated for 600 volts. The equipment grounding conductor shall be No. 10 AWG, THHN/THWN, rated for 600 volts. The ground wire shall be green in color.

Fuses and fuse holders shall conform to the requirements of Article M.15.05. Fuses shall be fast acting type, rated at 10 amps.

**CONSTRUCTION METHODS:** The LED luminaire shall be installed at the end of the bracket and shall be securely fastened, properly oriented, connected to the power supply conductors, cleaned, and ready for operation. The luminaire shall be leveled using the internal bubble level within the fixture (if so equipped) or by placing an electronic (digital) level along the flat bottom face of the luminaire. All luminaires suspected of not being leveled shall be re-leveled by the Contractor at the discretion of the Engineer. The Contractor shall ensure that once installed the LED luminaire functions properly.

For installation on a new light standard: Fuse holders and fuses shall be installed in the pole base or in the adjacent cast iron junction box for bridge parapet mounted poles. Three No. 10 AWG conductors shall be installed from the fuse holders to the luminaire. The luminaire shall be properly grounded with a No. 10 AWG equipment ground connected between the ground rod/system in the light pole base and the grounding lug in the luminaire.

For installation on an existing light standard: The Contractor shall remove and replace the existing no. 10 AWG conductors and existing fuses/fuse kits. Three No. 10 AWG conductors shall be installed from the fuse holders to the luminaire. For three phase lighting systems, the circuit phase connection of the existing luminaire (to be removed) shall be retained when connecting the LED luminaire. The luminaire shall be properly grounded with a No. 10 AWG equipment ground connected between the ground rod/system in the light pole base and the grounding lug in the luminaire.

**METHOD OF MEASUREMENT:** This work will be measured for payment by the number of LED luminaires installed, complete and accepted.

**BASIS OF PAYMENT:** This work will be paid for at the contract unit price each for "LED Luminaire – Type 2" of the type and size specified, complete and accepted in place, which price shall include all materials including luminaire, LEDs, driver, surge suppressor, conductors, fuses, fuse holders, connections, leveling, grounding, and all labor, tools, equipment and work incidental thereto.

| Pay Item | Pay Unit |
|---|---|
| LED Luminaire – Type 2 | EA. |

# ITEM #1014402A BREAKAWAY FUSE CONNECTOR

**DESCRIPTION:** This item shall consist of furnishing and installing a breakaway fuse connector with fuse at the location as indicated on the plans or as directed by the Engineer.

**MATERIALS:** The fuse connector and fuse shall conform to Article M.15.05 and the contract details.

No. 10 single conductors shall conform to Article M.15.05 and Article M.15.11. Equipment grounding conductor shall have green colored insulation.

**CONSTRUCTION METHODS:** The breakaway fuse connector with fuse shall be installed in conformance with Section 10.04. Three No. 10 AWG conductors shall be installed in the light pole from the pole base (or parapet cast iron junction box when present) to the luminaire. The luminaire shall be properly grounded to the grounding system. This item shall also include the removal and disposal of the existing fuse connector and No. 10 AWG conductors from the pole base (or parapet cast iron junction box when present) to the luminaire.

**METHOD OF MEASUREMENT:** This work shall be measured for payment by the number of breakaway fuse connectors installed, complete and accepted.

**BASIS OF PAYMENT:** This work will be paid for at the contract unit price each for "Breakaway Fuse Connector " complete and accepted in place, which price shall include the fuse connector, fuse, conductors, connection, removal, disposal and all equipment, tools, labor, and work incidental thereto.

| Pay Item | Pay Unit |
|---|---|
| Breakaway Fuse Connector | EA. |

# ITEM #1019027A - PRE-ASSEMBLED AERIAL CABLE

**DESCRIPTION:** This work shall consist of furnishing and installing pre-assembled aerial cable, with insulators and brackets, on proposed poles at the location indicated on the plans to maintain illumination circuits.

**MATERIALS:** Pre-assembled aerial cable shall be 7 strand aluminum containing a No. 6 AWG bare ACSR messenger with three No. 6 AWG cross-linked polyethylene insulated conductors rated at 600 volts.

**CONSTRUCTION METHODS:** The pre-assembled aerial cable shall be attached to poles with insulators, including all connections as indicated on the plans or as directed by the Engineer. When necessary, the pre-assembled aerial cable shall be relocated to maintain different illumination circuits as dictated by the construction stages. Pre-assembled aerial cable used for temporary lighting shall be removed once the permanent lighting is installed and operational. Removed aerial cable shall remain the property of the Contractor.

Where pre-assembled aerial cable is connected to an existing aluminum light standard, the Contractor shall properly guy the light standard in the direction required to offset the force applied to the pole by the aerial cable. The Contractor shall take all precautions while applying tension to the aerial cable to not damage the aluminum pole and pole transformer base. Removed pole caps shall be stored and properly re-installed upon final removal of the aerial cable. Upon removal of the aerial cable, all circuit connections shall be returned to original condition within the aluminum light standard. Where installed over a roadway, the aerial cable shall be installed at the maximum achievable height on the poles to which it is attached. The amount of “sag” in the installed aerial cable shall be minimized while ensuring the cable tension falls within the structural limits of the pole. Under no circumstances shall the height of the aerial cable over the roadway be less than 18’.

Pre-assembled aerial cable shall be used to maintain ramp lighting circuits and mainline circuits where the need for large diameter cable is not necessary to maintain proper voltage drop levels.

**METHOD OF MEASUREMENT:** This work will be measured for payment by the actual number of linear feet of pre-assembled aerial cable installed and accepted, including attachments.

**BASIS OF PAYMENT:** This work will be paid for at the contract unit price per linear foot for "Pre-Assembled Aerial Cable" of the size and voltage specified, complete in place, which price shall include, insulators, entrance cap and attachment, bracket, guys, anchors, all materials, tools, connections, equipment, labor, and work incidental thereto. The unit cost for this item is a one time only cost. The cost of removing and relocating the aerial cable to maintain different illumination circuits shall be included in the unit cost.

| Pay Item | Pay Unit |
|---|---|
| Pre-Assembled Aerial Cable | L.F. |

# ITEM #1020030A - TEMPORARY ILLUMINATION UNIT

**DESCRIPTION:** Under this item the Contractor shall furnish and install a breakaway fiberglass light pole, bracket, luminaire, and associated hardware, to be used for temporary lighting during construction, as indicated on the plans or as directed by the Engineer. At the end of the project the temporary illumination unit shall become the property of the Contractor.

**MATERIALS:** The pole shaft shall be fiberglass reinforced composite (FRC). The pole shaft shall be constructed by the filament winding process from thermosetting polyester resin and contain a minimum of 65 percent of "E" type fiberglass by weight. The filament windings shall be continuously applied with uniform tension and shall be placed on the pole helically at low angles to provide axial strength. Additional windings shall be placed on the pole in a circular manner to provide compressive strength. The pole is to be round, tapered, hollow, and reinforced in the support arm and hardware attachment areas. The pole is to be non-conductive and chemically inert. The pole shall meet the current AASHTO LTS-2 *Street Lighting Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, and shall be approved by FHWA for use on Federal Aid projects. A 2½" x 5" handhole shall be provided at the base of the pole shaft at approximately 18" above the finished grade line.

The pole exterior surface is to be grey with a natural (textured) finish. The surface of the pole will be uniform for the entire length of the pole. The laminate shall contain colored pigment, the color of the final coating, and be of uniform color throughout the entire wall thickness of the pole. A coating shall be applied to the pole to maintain surface integrity against the damaging effects of sunlight and extremes in weather. The coating is to be highly weather resistant pigmented polyurethane. The coating thickness shall have minimum dry film thickness of 1½ mils.

The surface shall be tested for a minimum of 5000 hours of accelerated testing in accordance with ASTM G154 (UV-A lamp 340 NM wavelength, 130° F, cycle lamp 4 hours on 4 hours off) with the following results: Fiber exposure: none, Crazing: none, Checking: none, Chalking: none, Color: may dull slightly.

The pole shall be suitable for direct burial and shall conform to the breakaway requirements of the current AASHTO *Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals.* For direct buried break-away poles the butt end shall be enlarged to provide resistance to rotation and pull out.

Where indicated on the plans, the pole shaft shall be equipped with an anchor base of heavy duty A356-T6 aluminum which shall be permanently bonded to the outside of the fiberglass shaft. The anchor base pole shall be installed on a concrete foundation, parapet anchorage, or other fixed anchorage as called for on the plans. The anchor base pole shall be non-breakaway, but shall be attached to the anchorage using breakaway couplings as indicated on the plans or as directed by the Engineer

Each pole is to be permanently marked in characters 3/16” minimum high on a brass or stainless steel plate with the Manufacturer's identification symbol, month and year of manufacture. Each pole shall be individually packaged for protection during shipping and storage. The pole shall be warranted to be free of defects in materials and workmanship for a period of three years from the date of purchase.

The top of the pole is to be pre-drilled for two ⅝" thru bolts on 9½" centers starting 4” below the top of the pole. A 1½" wire exit hole shall be centered one half the distance between the two holes.

A cast aluminum removable cap shall be securely mounted to the top of the pole. The cap shall be corrosion resistant and must remain in place when subjected to the maximum wind loading for which the pole is designed.

The luminaire bracket arm shall be 12' in length (single member) of an upsweep design fabricated from tubular aluminum. The luminaire end shall have a 2⅜" outside diameter.

Anchors shall conform to the pertinent requirements of Article M.16.04-2b, c, d, and e.

The temporary LED luminaire shall be 120-140 watt, ± 18,000 lumen, 4000k CCT, featuring LED light bar technology, with Type II full-cutoff light distribution, 20kV/10kA surge suppression, and 480 volt electronic driver. The luminaire housing shall be powder coated grey in color. The LED luminaire shall carry a limited five year warranty on the LEDs and the Driver. The LED luminaire shall be one of the following: Philips Lumec (Road Focus series), American Electric (Autobahn series), Eaton-Cooper Lighting (Archeon Medium series), or General Electric (Evolve series). No alternate luminaires will be accepted. A catalog cut will be required.

The Contractor may re-use a temporary illumination unit which was salvaged from another Connecticut DOT project provided the unit meets the requirements of the current project, is in excellent structural condition, and retains full breakaway and operational performance. The contractor shall submit a shop drawing, Materials Certificate, and Certified Test Report for the salvaged temporary illumination unit. The Materials Certificate and Certified Test Report shall be in full compliance with the requirements of Section 1.06.07.

**CONSTRUCTION METHODS:** The fiberglass pole shall be set in the earth to the required depth and proper compaction of backfill provided around the pole and then attached to the anchors with guys as necessary. For anchor base poles the pole base shall be securely bolted to the anchor bolts of the fixed anchorage (breakaway couplings shall be used where directed). The bracket shall be attached to the pole and shall provide a luminaire mounting height over the roadway of 35’. The bracket and luminaire assembly shall be installed perpendicular to the center line of the roadway. When necessary, the temporary light pole and luminaire shall be relocated to maintain different illumination circuits as dictated by the construction stages.

Upon completion of the project the temporary illumination unit shall be removed and shall remain the property of the Contractor.

Upon removal of the pole, the resulting excavation shall be properly backfilled to match the surrounding area.

**METHOD OF MEASUREMENT:** This work will be measured for payment by the number of temporary illumination units installed and accepted.

**BASIS OF PAYMENT:** This work will be paid for at the contract unit price each for "Temporary Illumination Unit" complete in place, which price shall include all materials, fiberglass poles, breakaway base, anchor base (when required), anchors, guys, brackets, luminaire, driver, hardware, connections, hauling, and all equipment, tools, labor and all work incidental thereto including excavating, auguring, removal of bituminous overlay, backfilling, removal, hauling, relocation, and disposal. The unit cost for this item is a one-time only cost. The cost of removing and relocating the temporary illumination unit to maintain different illumination circuits shall be included in the unit cost.

| Pay Item | Pay Unit |
|---|---|
| Temporary Illumination Unit | EA. |

# ITEM #1020998A - TEMPORARY LIGHT STANDARD ATTACHMENT BRACKET

**DESCRIPTION:** Work under this item shall consist of furnishing, installing and removing temporary brackets to support temporary illumination units on bridge parapets and temporary precast concrete barrier curbs in order to maintain proper illumination on the roadway during all construction stages. The temporary support brackets shall be any type which the Contractor elects to build which adequately support the temporary light standard units. Holes and anchorages installed in bridge parapets for the purpose of anchoring or supporting the brackets and light standards shall be repaired as part of this work.

**MATERIALS:** Steel plate used for temporary support brackets shall conform to the requirements of ASTM A36.

Expansion anchors shall be Hilti HSL Expansion Anchor, Rawl-Bolt or other similar type of expansion anchor which uses a hexagon headed bolt for expanding the anchor.

The chemical anchoring material shall be a resin compound specially formulated to anchor steel bolts in holes drilled in concrete. The chemical anchoring material shall be from the Department of Transportation's approved list.

Anchor bolts shall conform to the requirements of Subarticle M.15.02.

Non-shrink grout shall conform to Subarticle M.03.01-12.

Class PCC03341 Concrete shall conform to the requirements of Article M.03.01.

Reinforcing steel shall conform to ASTM A615, and shall be deformed Grade 420.

**CONSTRUCTION METHODS:** Temporary support brackets to support temporary illumination units shall be designed by the Contractor to support the temporary light standard under design loadings called out in the AASHTO publication “Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals”, 1994.

The Contractor shall submit working drawings and design calculations for temporary light standard attachment brackets in accordance with the requirements of Article 1.05.02(2). The working drawings and design calculations shall be prepared, sealed and signed by a Professional Engineer, licensed in the state of Connecticut. These drawings shall be submitted for approval in accordance with Article 1.05.02(3).

Temporary light standard attachment bracket shall be secured to the non-traffic side of concrete barrier curbs and parapets. No part of the support bracket shall extend into or beyond the traffic side face of the concrete barrier curb or parapet.

The temporary attachment brackets are the property of the Contractor and shall be removed from the project site when no longer required. Temporary anchors, threaded rods and hardware fastened to concrete barrier curbs and parapets shall be removed and disposed of off site. All holes in the concrete barrier curbs and parapets shall be filled with non-shrink grout after the temporary attachment brackets have been removed.

The unit cost for this item is a one-time only cost. The cost of removing and relocating the temporary light standard attachment bracket to maintain different illumination circuits shall be included in the unit cost.

**METHOD OF MEASUREMENT:** This work will be measured for payment by the number of temporary light standard support bracket units installed and accepted.

**BASIS OF PAYMENT:** This work will be paid for at the contract unit price per each for "Temporary Light Standard Attachment Bracket", complete in place, which price shall include all materials, anchors, guys, hardware, and all equipment, tools, labor and all work incidental thereto and the removal of these materials at the end of the project. The unit cost for this item is a one-time only cost. The cost of removing and relocating the temporary light standard attachment bracket to maintain different illumination circuits shall be included in the unit cost.

| Pay Item | Pay Unit |
|---|---|
| Temporary Light Standard Attachment Bracket | EA. |

# ITEM #1206011A - REMOVAL OF EXISTING OVERHEAD SIGNING

Section 12.06 is supplemented as follows:

**12.06.01 – Description is supplemented with the following:**
Work under this item shall consist of the removal and disposal of designated existing overhead signs, sign supports and foundations, where indicated on the plans or as directed by the Engineer.

**12.06.03 - Construction Methods is supplemented with the following:**
Overhead sign supports, foundations, and other materials designated for removal shall be removed and disposed of by the Contractor as directed by the Engineer and in accordance with existing standards for Removal of Existing Overhead Signing.

Lead paint is presumed present on the painted surfaces of sign supports. Any activities performed by the contractor that results in a painted surface being impacted or altered shall be performed in accordance with OSHA Lead in Construction Standard 29CFR.1926.62, or the painted surface shall be tested prior to being disturbed by a qualified third party hired by the contractor to confirm that no lead is present in the paint system. If the presence of lead is presumed or lead is confirmed by testing and the contractor is unable to remove the sign supports by unbolting with the paint in place (in accordance with OSHA 29CFR 1926.62), the Contractor must submit a plan to the Engineer that outlines their proposed non-mechanical removal methods to accomplish the work.

**12.06.04 - Method of Measurement is supplemented with the following:**
The work under this item, being paid on a lump sum basis, will not be measured for payment.

**12.06.05 - Basis of Payment is supplemented with the following:**
This work will be paid for at the Contract lump sum price for "Removal of Existing Overhead Signing." This price shall include the proper removal (including testing for lead paint if warranted) and proper disposal of overhead signs, sign supports, foundations and all sign equipment including all material, labor and tools necessary to complete this work.

| Pay Item | Pay Unit |
|---|---|
| Removal of Existing Overhead Signing | L.S. |

# ITEM #1206023A - REMOVAL AND RELOCATION OF EXISTING SIGNS

Section 12.06 is supplemented as follows:

**Article 12.06.01 – #Description is supplemented with the following:**
Work under this item shall consist of the removal and/or relocation of designated side-mounted extruded aluminum and sheet aluminum signs, sign posts, sign supports, and foundations where indicated on the plans or as directed by the Engineer. Work under this item shall also include furnishing and installing new sign posts and associated hardware for signs designated for relocation.

**Article 12.06.03 – Construction Methods is supplemented with the following:**
The Contractor shall take care during the removal and relocation of existing signs, sign posts, and sign supports that are to be relocated so that they are not damaged. Any material that is damaged shall be replaced by the Contractor at no cost to the State.

Foundations and other materials designated for removal shall be removed and disposed of by the Contractor as directed by the Engineer and in accordance with existing standards for Removal of Existing Signing.

Sheet aluminum signs designated for relocation are to be re-installed on new sign posts.

**Article 12.06.04 – Method of Measurement is supplemented with the following:**
Payment under Removal and Relocation of Existing Signs shall be at the contract lump sum price which shall include all extruded aluminum and sheet aluminum signs, sign posts, and sign supports designated for relocation, all new sign posts and associated hardware for signs designated for relocation, all extruded aluminum signs, sheet aluminum signs, sign posts and sign supports designated for scrap, and foundations and other materials designated for removal and disposal, and all work and equipment required.

**Article 12.06.05 – Basis of Payment is supplemented with the following:**
This work will be paid for at the contract lump sum price for "Removal and Relocation of Existing Signs" which price shall include relocating designated extruded aluminum and sheet aluminum signs, sign posts, and sign supports, providing new posts and associated hardware for relocated signs, removing and disposing of foundations and other materials, and all equipment, material, tools and labor incidental thereto. This price shall also include removing, loading, transporting, and unloading of extruded aluminum signs, sheet aluminum signs, sign posts, and sign supports designated for scrap and all equipment, material, tools and labor incidental thereto.

| Pay Item | Pay Unit |
|---|---|
| Removal and Relocation of Existing Signs | L.S. |

# ITEM #1208931A – SIGN FACE - SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING)

# ITEM #1208937A – SIGN FACE - SHEET ALUMINUM (TYPE XI RETROREFLECTIVE SHEETING)

*Section 12.08 is supplemented and amended as follows:*

**12.08.01—Description:**

*Add the following:*

All signs shall use Type XI retroreflective sheeting with the exception of side-mounted signs with white background which shall be Type IX.

This item shall also include field testing of metal sign base posts as directed by the Engineer.

Signs shall conform to the sign details located at https://portal.ct.gov/DOT/Traffic-Engineering/Catalog-of-Signs with legend for variable signs as shown in the plans.

**12.08.03—Construction Methods:**

*Delete the last sentence and add the following:*

Metal sign base posts shall be whole and uncut. Sign base post embedment and reveal lengths shall be as shown on the plans. The Contractor shall drive the metal sign base posts by hand tools, by mechanical means or by auguring holes. If an obstruction is encountered while driving or placing the metal sign base post, the Contractor shall notify the Engineer who will determine whether the obstruction shall be removed, the sign base post or posts relocated, or the base post installation in ledge detail shall apply. Backfill shall be thoroughly tamped after the posts have been set level and plumb.

**Field Testing of Metal Sign Posts:** When the sign installations are complete, the Contractor shall notify the Engineer the Project is ready for field testing. Based on the number of posts in the Project, the Engineer will select random sign base posts which shall be removed by the Contractor for inspection and measurement by the Engineer. After such inspection is completed at each base post location, the Contractor shall restore or replace such portions of the work to the condition required by the Contract. Refer to the table in 12.08.05 for the number of posts to be field tested.

**12.08.04—Method of Measurement:**

*Add the following:*

The work required to expose and measure sign base post length and embedment depth using field testing methods, and restoration of such work, will not be measured for payment and shall be included in the general cost of the work.

**12.08.05—Basis of Payment:**

ITEM #1208931A
ITEM #1208937A

*Replace the entire Article with the following:*

This work will be paid for at the Contract unit price per square foot for "Sign Face - Sheet Aluminum" of the type specified complete in place, adjusted by multiplying by the applicable Pay Factor listed in the table below. The price for this work shall include the completed sign, metal sign post(s), span-mounted sign brackets and mast arm-mounted brackets, mounting hardware, including reinforcing plates, field testing, restoration and replacement of defective base post(s), and all materials, equipment, and work incidental thereto.

**Pay Factor Scale:** Work shall be considered defective whenever the base post length or base post embedment depth is less than the specified length by more than 2 inches. If the number of defects results in rejection, the Contractor shall remove and replace all metal sign base posts on the Project, at no cost to the Department.

**Number of Posts to be Tested and Pay Factors (Based on Number of Defects)**

| **Number of Posts in Project =>** | **51-100** | **101-250** | **251-1000** | **>1000** |
|---|---|---|---|---|
| **Sample Size=>** | **5 Posts** | **10 Posts** | **40 Posts** | **60 Posts** |
| 0 Defects | 1.0 | 1.0 | 1.025 | 1.025 |
| 1 Defect | 0.9 | 0.95 | 0.975 | 0.983 |
| 2 Defects | Rejection | 0.9 | 0.95 | 0.967 |
| 3 Defects | Rejection | Rejection | 0.925 | 0.95 |
| 4 Defects | Rejection | Rejection | 0.9 | 0.933 |
| 5 Defects | Rejection | Rejection | Rejection | 0.917 |
| 6 Defects | Rejection | Rejection | Rejection | 0.9 |
| 7 or more Defects | Rejection | Rejection | Rejection | Rejection |

Note: Projects with 50 or fewer posts will not include field testing

0048-0200

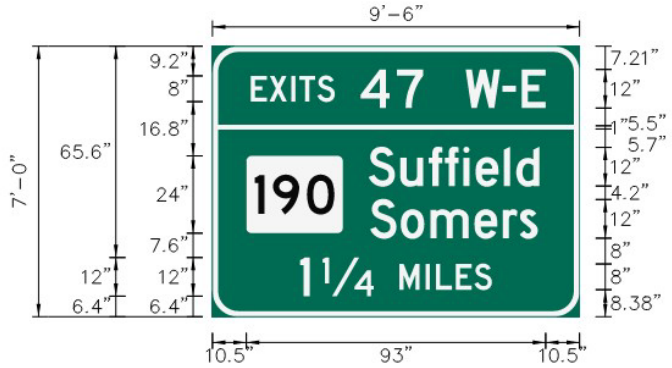
193

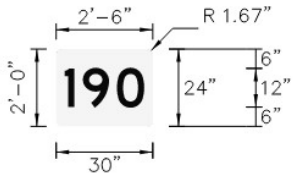
ITEM #1208931A
ITEM #1208937A

Rev. 7/21/22

# SIGN DETAIL

1:50




| | |
|---|---|
| SIGN NUMBER | 091S-048-57.20-A |
| PANEL SIZE | 9'-6" x 7'-0" |
| TOTAL AREA | 66.5 Sq.Ft. |
| MUTCD | N/A |
| BDR INSET/WIDTH | 0"/1.75" |
| CORNER RADIUS | 8" |
| BACKGROUND | TYPE: XI |
| | COLOR: Green |
| LEGEND/BORDER | TYPE: XI |
| | COLOR: White/White |

| SYMBOL | ROTATION | X | Y | WID | HT |
|---|---|---|---|---|---|
| CT-190 | 0 | 10.51 | 25.94 | 30 | 24 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**SIGN TO BE PLACED BEHIND GUIDERAIL**

Material : 0.125" Thick Sheet Aluminum
Ground Mounted
Location: Enfield Route 91 S.B. Mileage: 57.20
Temporary Sign for Project No. 0048-0200

REV'D /

File name: 091S-048-57.20-A Printed: 5/13/2025

**LETTER POSITIONS (X)**

| | | | | | | | | | | | | | | | | | | | | | LENGTH | SERIES(FONT) / SIZE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | X | I | T | S | 4 | 7 | | W | - | E | | | | | | | | | | | | D 2000 |
| 11.93 | 17.69 | 24.49 | 26.97 | 32.57 | 46.01 | 57.29 | 66.29 | 78.65 | 90.05 | 96.05 | | | | | | | | | | | 91.56 | 8,12 |
| S | u | f | f | l | e | l | d | | | | | | | | | | | | | | | D 2000 |
| 48.51 | 58.35 | 67.11 | 72.15 | 77.91 | 81.75 | 90.51 | 94.35 | | | | | | | | | | | | | | 53.04 | 12/9 |
| S | o | m | e | r | s | | | | | | | | | | | | | | | | | D 2000 |
| 48.99 | 58.47 | 67.71 | 81.39 | 90.15 | 95.43 | | | | | | | | | | | | | | | | 52.08 | 12/9 |
| 1 | 1/4 | M | I | L | E | S | | | | | | | | | | | | | | | | D 2000 |
| 27.22 | 34.22 | 58.06 | 66.22 | 69.42 | 75.58 | 81.34 | | | | | | | | | | | | | | | 59.56 | 12,8 |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

| SIGN NUMBER | 091S-048-57.01-A |
|---|---|
| PANEL SIZE | 6'-0" x 8'-0" |
| TOTAL AREA | 48 Sq.Ft. |
| MUTCD | N/A |
| BDR INSET/WIDTH | 0"/1.75" |
| CORNER RADIUS | 8" |
| BACKGROUND | TYPE: XI |
| | COLOR: Green |
| LEGEND/BORDER | TYPE: XI |
| | COLOR: White/White |

| SYMBOL | ROTATION | X | Y | WID | HT |
|---|---|---|---|---|---|
| CT-220 | 0 | 21 | 43.25 | 30 | 24 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**LETTER POSITIONS (X)**

| E | X | I | T | 4 | 8 |
|---|---|---|---|---|---|
| 12.1 | 17.86 | 24.66 | 27.14 | 40.1 | 51.74 |
| **E** | **I** | **m** | | **S** | **t** |
| 9.6 | 18.84 | 23.16 | 36.12 | 48.72 | 57.6 |
| **1/2** | **M** | **I** | **L** | **E** | |
| 12.84 | 36.68 | 44.84 | 48.04 | 54.2 | |

| LENGTH | SERIES(FONT) / SIZE |
|---|---|
| 47.8 | D 2000<br>8,12 |
| 52.8 | D 2000<br>12/9 |
| 46.32 | D 2000<br>12.8 |

ITEM #1208931A
ITEM #1208937A

# ITEM #1210113A—6” (WHITE) TYPE I EPOXY RESIN PAVEMENT MARKINGS
# ITEM #1210114A—6” (YELLOW) TYPE I EPOXY RESIN PAVEMENT MARKINGS

**Section 12.10** *is supplemented and amended as follows:*

**Article 12.10.01—Description:**

*Replace the entire Article with the following:*

This item shall consist of furnishing and installing retroreflective Yellow and White Type I Epoxy Resin Pavement Markings of the width and color specified at the locations indicated on the plans, in conformance with the plans, this specification, and as directed by the Engineer.

Type I Epoxy Resin Pavement Markings include center lines, lane lines, and shoulder lines.

Type I Epoxy Resin Pavement Markings shall be installed in a pavement marking groove. Pavement marking grooves are specified elsewhere in the Contract.

**Article 12.10.02—Materials:**

*Replace the entire Article with the following:*

Type I Epoxy Resin Pavement Markings shall meet the requirements of **Article M.07.22 – Epoxy Resin Pavement Markings** amended as follows:

*Delete the last sentence and add the following:*

(j) Type I Epoxy Resin Pavement Markings shall consist of one of the following mixes of retroreflective beads, or approved equal:

- Potter’s VISIMAX glass bead and a clear glass bead that meets the requirements of AASHTO M 247, Type 4.
- Potter’s VISIULTRA glass bead and a clear glass bead that meets the requirements of AASHTO M 247, Type 1.
- 3M’s tinted microcrystalline ceramic bead with minimum indexes of refraction of 1.89 (dry) and 2.4 (wet) when tested using the ASTM E1967 method and a clear glass bead that meets the requirements of AASHTO M 247, Type 4. Yellow tinted beads shall be installed on yellow pavement markings and white tinted beads shall be installed on white pavement markings.

**Article 12.10.03—Construction Methods:**

*In* Subarticle **1. Equipment**, *delete paragraph 1 and add the following:*

Equipment furnished shall include an applicator truck of adequate size and power, together with:

(a) remote application equipment designed to apply an epoxy resin material in a continuous pattern, and

(b) portable retroreflective bead applicators, one for each size bead, designed to provide uniform and complete coverage of the epoxy binder by a controlled free-fall method. Pressurized retroreflective bead application shall not be used.

*In* Subarticle **2. Procedures**, *delete paragraphs 3, 7, and 8 and add the following:*

All surfaces that are power washed shall be allowed to dry sufficiently prior to the application of the epoxy markings. The areas to be marked shall be broom cleaned immediately prior to the application of the epoxy markings. Retroreflective beads shall be applied immediately after application of the epoxy resin marking to provide an immediate no-track system.

The epoxy for Type I Epoxy Resin Pavement Markings shall be uniformly applied to the surface to be marked to ensure a wet film thickness, without retroreflective beads, of 20 mils ± 1 mil.

For Potter's VISIMAX glass bead Type I Epoxy Resin Pavement Markings, a first drop consisting of Potter's VISIMAX glass beads shall be applied at the rate of 8 lb./gal. of epoxy pavement marking material, immediately followed by a second drop consisting of glass beads meeting the requirements of AASHTO M 247, Type 4 at the rate of 8 lb./gal. of epoxy pavement marking material. Traffic cones or other acceptable methods shall be used to protect the Type I Epoxy Resin Pavement Markings until cured.

For Potter's VISIULTRA glass bead Type I Epoxy Resin Pavement Markings, a first drop consisting of Potter's VISIULTRA glass beads shall be applied at the rate of 10 lb./gal. of epoxy pavement marking material, immediately followed by a second drop consisting of glass beads meeting the requirements of AASHTO M 247, Type 1 at the rate of 5 lb./gal. of epoxy pavement marking material. Traffic cones or other acceptable methods shall be used to protect the Type I Epoxy Resin Pavement Markings until cured.

For 3M's tinted microcrystalline ceramic bead Type I Epoxy Resin Pavement Markings, a first drop consisting of tinted microcrystalline ceramic beads shall be applied at the rate of 5 lbs./gal. of epoxy pavement marking material, immediately followed by a second drop consisting of glass beads meeting the requirements of AASHTO M 247, Type 4 at the rate of 10 lbs./gal. of epoxy pavement marking material. Traffic cones or other acceptable methods shall be used to protect the Type I Epoxy Resin Pavement Markings until cured.

*Replace* Subarticle **3. Initial Performance** *with the following:*

The retroreflectivity of the markings applied shall be measured by the Contractor using the procedure and equipment detailed below for the Initial Test Period, Review Period, and Observation Period.

Test Lots: The following test lots will be randomly selected by the Engineer to represent the line markings applied:

**Table 12.10.03-3.1: Line Test Lots**

| Length of line | Number of Lots | Length of Test Lot |
|---|---|---|
| < 1000 feet | 1 | Length of Line |
| < 1.0 mile | 1 | 1000 feet |
| ≥ 1.0 mile | 1 per 1.0 mile | 1000 feet |

Measurement Equipment and Procedure: Retroreflectometer equipment shall be calibrated using the instructions from the instrument manufacturer within 24 hours prior to use.

Skip line measurement shall be obtained for every other stripe, taking no more than 2 readings per stripe with readings no closer than 20 inches from either end of the marking.

Solid line test lots shall be divided into 10 sub-lots of 100 foot length and measurements obtained at 1 randomly select location within each sub-lot.

The Contractor shall perform retroreflectivity readings on the Type I Epoxy Resin Pavement Markings between 30 and 37 days after installation per the measurement and sampling procedures contained in ASTM D7585 (*Standard Practice for Evaluating Retroreflective Pavement Markings Using Portable Hand-Operated Instruments*). Portable Retroreflectometer and Mobile Retroreflectometer testing is allowed using the following methods.

- ASTM E1710 *(Standard Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer)*;
- ASTM E2177 *(Standard Test Method for Measuring the Coefficient of Retroreflected Luminance ($R_L$) of Pavement Markings in a Standard Condition of Wetness).*

Additional Contents of Certified Test Report (CTR): The CTR shall also list:

- Project, Route number, and Route direction.
- Geographical location of the test site(s), including distance from the nearest reference point.
- Manufacturer and model of retroreflectometer used.
- Most recent calibration date for equipment used.
- Time of Day the readings are taken.

Recordings shall be certified by the Contractor, reviewed by the Engineer, and provided to the CTDOT Division of Traffic Engineering.

A CTR, in accordance with 1.06.07 or 1.20-1.06.07, shall be submitted to the Engineer no later than 10 days after the measurements are taken.

The Materials Certificates (MC) shall also list:

- Liquid binder application rate.
- Retroreflective bead type(s) and drop rate.

Recordings shall be certified by the Contractor, reviewed by the Engineer, and provided to the CTDOT Division of Traffic Engineering.

The MC, in accordance with 1.06.07 or 1.20-1.06.07, shall be submitted to the Engineer no later than 10 days after the measurements are taken.

Initial Test Period: The minimum initial retroreflectivity readings shall meet or exceed the following minimum values using an observation angle of 1.05 degrees and an entrance angle of 88.8 degrees:

| | *Type I White Markings | *Type I Yellow Markings |
|---|---|---|
| ASTM E1710 (Dry) | 350 mcd/lux/$m^2$ | 225 mcd/lux/$m^2$ |
| ASTM E2177 (Wet Recovery) | 300 mcd/lux/$m^2$ | 200 mcd/lux/$m^2$ |

Review Period: A 90-day Review Period shall be implemented for Type I Epoxy Resin Pavement Markings. The Contractor shall be responsible for any defects in materials and workmanship of the Type I Epoxy Resin Pavement Markings for a period of 90 days from the date the Type I Epoxy Resin Pavement Markings are installed and subjected to live traffic conditions.

At the end of the Review Period, the Engineer will inspect the Type I Epoxy Resin Pavement Markings for durability, color, and retroreflectivity, and inform the Contractor of all rejected pavement markings that require replacement. The Type I Epoxy Resin Pavement Markings will be rejected for any of the following conditions:

- Insufficient thickness or line width, uneven cross-section.
- Poor adhesion or delamination.
- Insufficient groove depth.

The Contractor shall be responsible for replacing all rejected Type I Epoxy Resin Pavement Markings at no cost to the State. All rejected Type I Epoxy Resin Pavement Markings shall be replaced within 14 days of notification to the Contractor of the failed Review Period test. All Type I Epoxy Resin Pavement Markings installed as the result of a failed Review Period test shall meet all testing requirements of the initial performance testing procedures, and shall be subject to an additional Review Period.

**Article 12.10.04—Method of Measurement:**

*Replace the entire Article with the following:*

Type I Epoxy Resin Pavement Markings will be measured for payment by the actual number of linear feet of Type I Epoxy Resin Pavement Markings installed on the pavement and accepted by the Engineer.

The cost of all measuring and testing of the retroreflectivity of the Type I Epoxy Resin Pavement Markings by the Contractor will be considered incidental to the cost of the item.

**Article 12.10.05—Basis of Payment:**

*Replace the entire Article with the following:*

This work will be paid for at the Contract unit price per linear foot for "Type I Epoxy Resin Pavement Markings" of the width and color specified, installed on the pavement and accepted. These prices shall be for all the work required by this Section and all materials, equipment, tools and labor incidental thereto. Payment will not be made for pavement markings affected by Contractor error and ordered removed.

| Pay Item | Pay Unit |
|---|---|
| 6" (White) Type I Epoxy Resin Pavement Markings | l.f. |
| 6" (Yellow) Type I Epoxy Resin Pavement Markings | l.f. |

# ITEM #1220027A – CONSTRUCTION SIGNS

**Section 12.20** *is supplemented and amended as follows:*

**Article 12.20.01 – Description:**

*Add the following:*

The Contractor shall also furnish, install, maintain, and remove Bipartisan Infrastructure Law project signs. The Bipartisan Infrastructure Law project signs shall be of the details, colors and materials as shown on the attached detail sheet.

The sign legend for this Project shall include the U.S. Department of Transportation pictograph on the lower right side of the sign with the legend Federal Highway Administration.

**Article 12.20.03 — Construction Methods:**

*Add the following:*

The Contractor shall install the Bipartisan Infrastructure Law (BIL) project signs prior to initiating construction.

The Contractor shall install BIL project sign 80-5957 on each major roadway approach to the construction Site in advance of the Project limit(s).
The sign detail is included and is also available at 80-5957.

The Contractor shall maintain the BIL project signs for the entire duration of the Project. The Contractor shall relocate the BIL project signs during construction as needed and shall remove the signs after construction work is completed.

**Article 12.20.05 – Basis of Payment:**

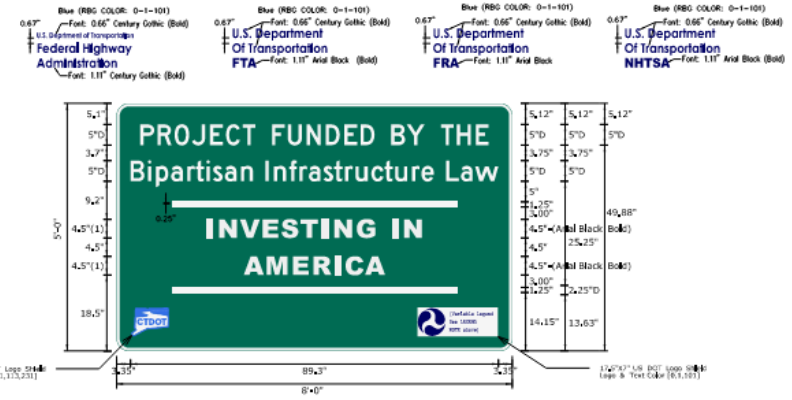
*Add the following:*

The price shall also include furnishing, installing, maintaining, relocating, and removing the Bipartisan Infrastructure Law project signs and sign posts and all hardware, materials, and labor incidental thereto.

## SIGN DETAIL

1:35

**LEGEND NOTE:** THE LEGEND NEXT TO THE US DOT LOGO SHALL BE ONE OF THE FOLLOWING BASED ON PROJECT FUNDING SOURCE:







| | |
|---|---|
| SIGN NUMBER | 80-5957 |
| PANEL SIZE | 8'-0" x 5'-0" |
| TOTAL AREA | 40.0 Sq.Ft. |
| MUTCD | N/A |
| BDR INSET/WIDTH | 0" / 0.75" |
| CORNER RADIUS | 3" |
| BACKGROUND | TYPE: IX |
| | COLOR: Green |
| LEGEND/BORDER | TYPE: IX |
| | COLOR: White/White |

* REFER TO CATALOG OF SIGNS FOR SHEETING TYPE.
WHEN COLOR IS BLACK TYPE IS "PLAIN".

| SYMBOL | ROT | X | Y | WID | HT |
|---|---|---|---|---|---|
| CT DOT LOGO | 0 | 3.5 | 3.5 | 9.21 | 7 |
| US DOT LOGO | 0 | 75.0 | 3.5 | 17.5 | 7 |
| | | | | | |
| | | | | | |
| | | | | | |

REV'D 7/24

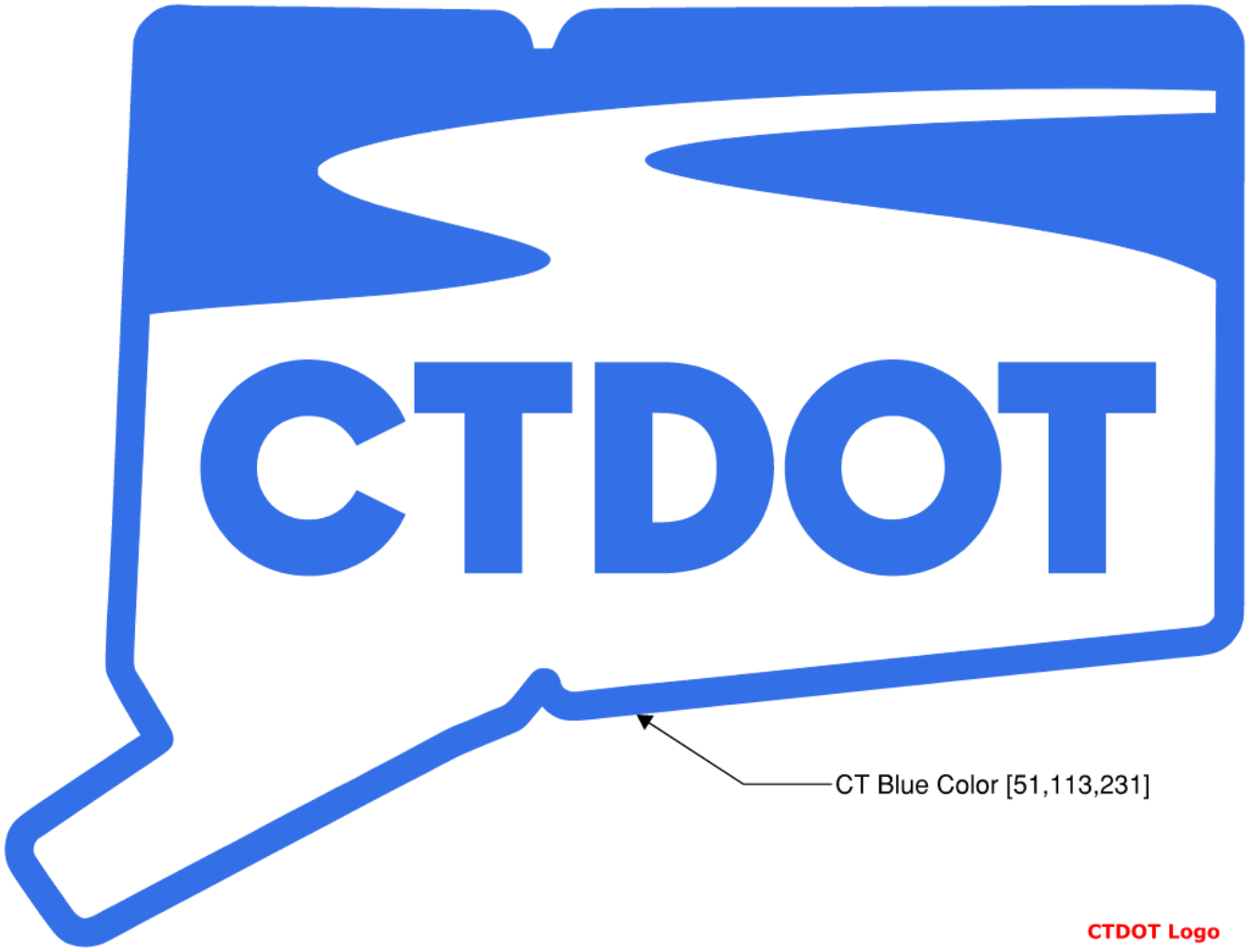
Dimensions are In Inches
Material : 0.125" Thick Sheet Aluminum
Ground Mounted

File name: 80-5957

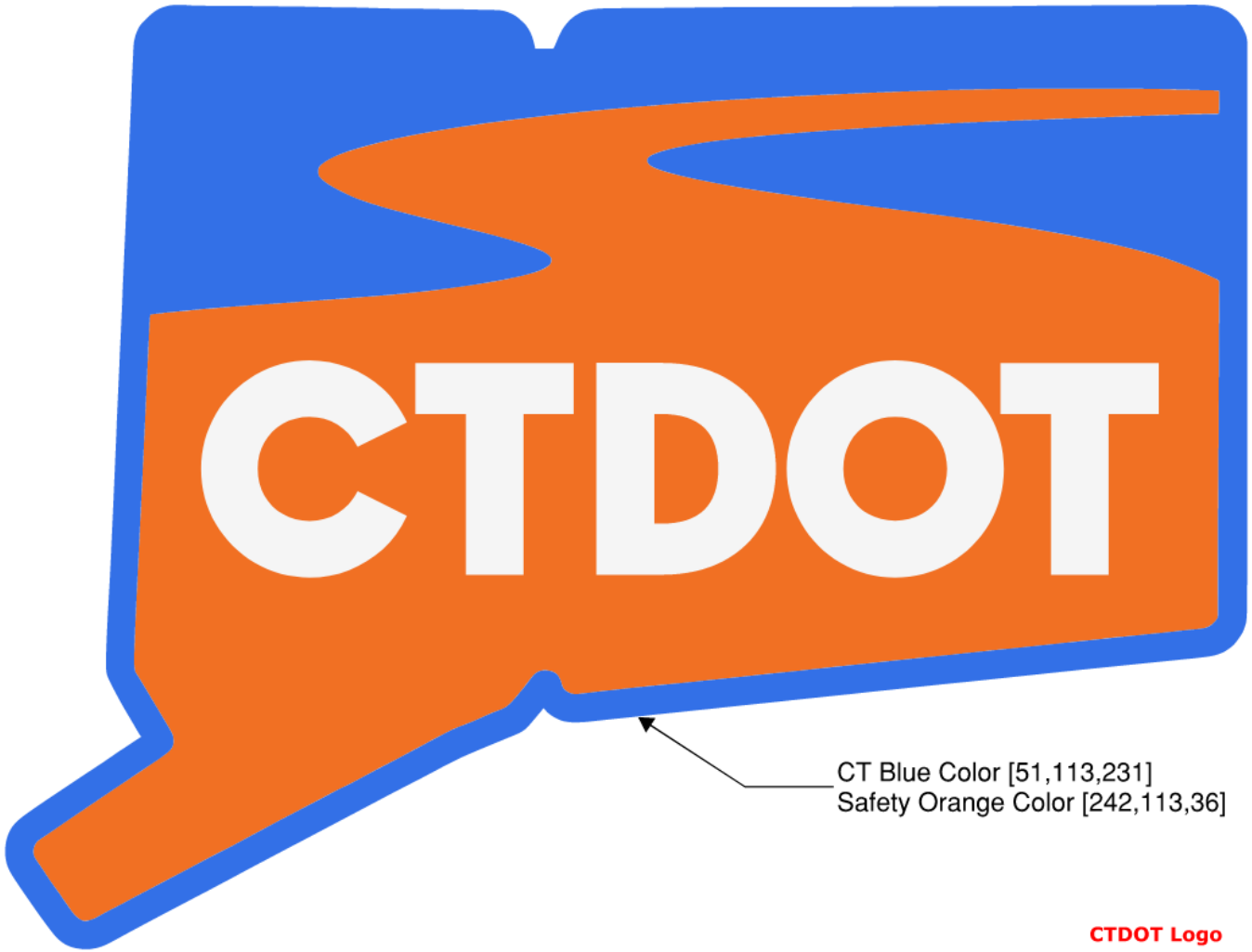
Printed: 9/13/2024

### LETTER POSITIONS (X)

| P | R | O | J | E | C | T | F | U | N | D | E | D | B | Y | T | H | E | | | | LENGTH | SERIES/SIZE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.8 | 9.9 | 14.1 | 18.3 | 22.7 | 26.5 | 30.6 | 37.7 | 41.5 | 46.1 | 50.7 | 55.2 | 59.2 | 66.6 | 70.4 | 78.7 | 82.6 | 87.2 | | | | 84.5 | D 2000 5 |
| B | l | p | a | r | t | l | s | a | n | | | | | | | | | | | | | |
| 3.4 | 7.6 | 9.6 | 13.2 | 17.1 | 19.2 | 21.8 | 23.4 | 26.2 | 30.2 | | | | | | | | | | | | | |
| I | n | f | r | a | s | t | r | u | c | t | u | r | e | L | a | w | | | | | | D 2000 |
| 36.1 | 38.2 | 41.8 | 44.3 | 46.6 | 50.2 | 52.8 | 55.4 | 57.9 | 61.8 | 65 | 67.6 | 71.6 | 74 | 79.9 | 83.5 | 87 | | | | | 89.3 | 5/3.8 |
| I | N | V | E | S | T | I | N | G | I | N | | | | | | | | | | | | Arial Black |
| 22 | 24.9 | 29.9 | 35.4 | 40 | 44.7 | 49.9 | 52.8 | 58.2 | 66.8 | 69.7 | | | | | | | | | | | 52.1 | 4.5 |
| A | M | E | R | I | C | A | | | | | | | | | | | | | | | | Arial Black |
| 30.8 | 36.4 | 42.8 | 47.7 | 52.9 | 55.5 | 60.3 | | | | | | | | | | | | | | | 34.3 | 4.5 |

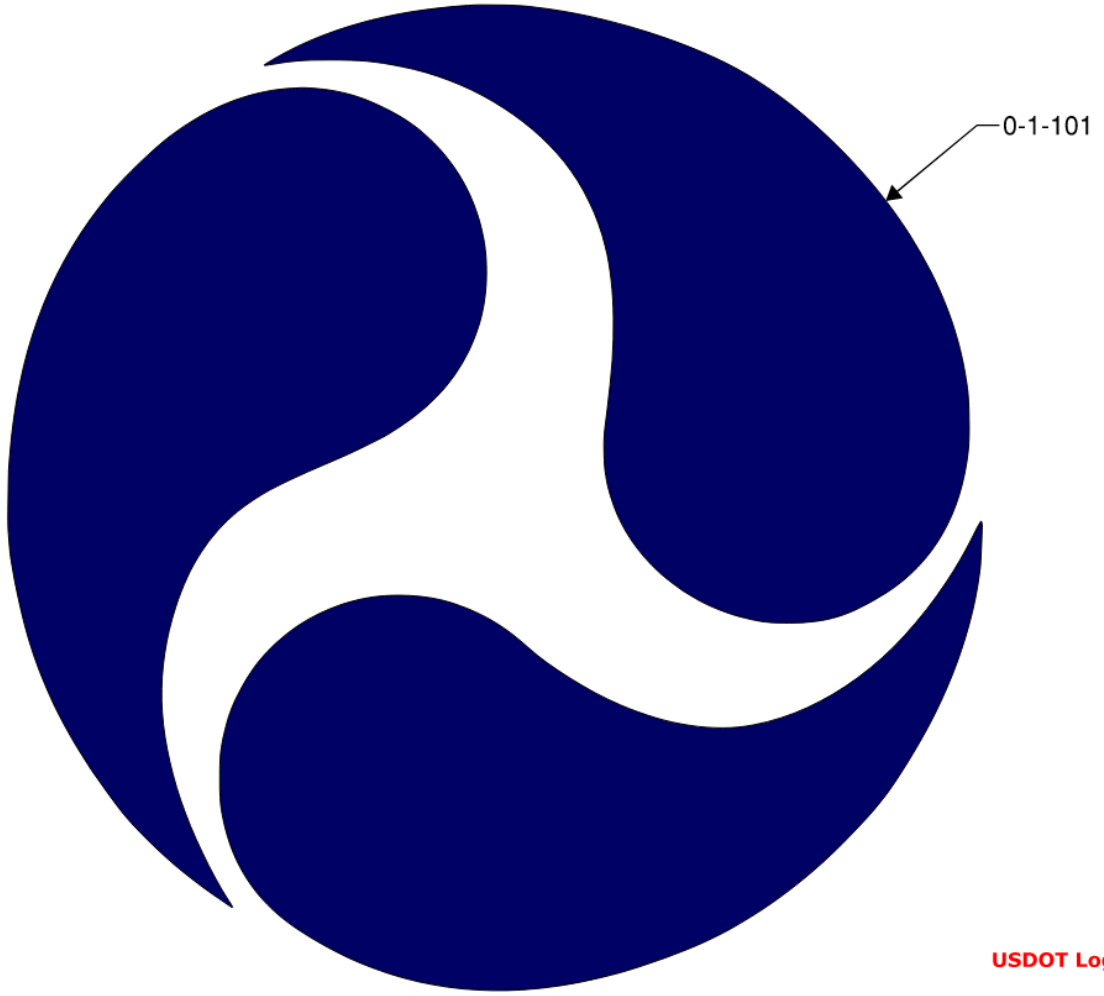



CTDOT Logo




CTDOT Logo

Link to .dgn file: New_CTDOT_Logos.dgn




USDOT Logo

Link to .dgn file: USDOT_logo.dgn

# ITEM #1300085A – STANDARD STEEL ROAD PLATE

**Description:** Work under this item shall consist of furnishing, installing, and removing a steel plate over a drainage structure to prevent processed aggregate fill placed temporarily above the drainage structure from entering the drainage system at the locations as shown on plans or as directed by the Engineer. This work shall also include the removal of a portion of the existing drainage structure, if necessary, in order to provide a level surface to place the steel plate with a complete bearing to the drainage structure as to not allow any of the processed aggregate fill to enter into the drainage system.

**Materials:** The standard steel road plates shall be steel, either ASTM A36 Grade 36 (Yield Strength of 36,000 psi) or ASTM A572 Grade 50 (Yield Strength 50,000 psi).

All plating used shall be without deformations (warping, cracking, etc.) and shall be subject to straightedge testing. Plate removal will be required if plate is permanently deformed.

The steel plate shall be sized appropriately for the drainage structure to include a 24" minimum overhang beyond the body of the drainage structure.

**Construction Methods:**

Design

The Contractor shall submit stamped working drawings and calculations to the Engineer for Review in accordance with the requirements of the standard specifications and meeting all the requirements shown on the contract drawings and specifications herein.

The plate shall be designed for the following loads per AASHTO LRFD for both STRENGTH and SERVICE Limit States.

> Live Loads including dynamic allowance: Each transverse plate section shall be designed for the following conditions at a minimum and shall consider the effects from the actual wheel placement:
>
> 32 kip wheel load over a 4' transverse width of plate.
>
> 64 kips axle load over a 6' transverse width of plate.

The plate(s) must extend beyond the edge of the drainage structure to safely and adequately support the traffic loads on it. Plate(s) shall be large enough to allow minimum of 24 inches overhang beyond the limits of the drainage structure.

The minimum thickness of plate shall be 1½". The maximum live load deflection allowed is 'L'/400. Where 'L' is the span between the drainage structure walls.

Installation

The Contractor shall take care in preparing the existing drainage structures to accept the steel plate and position the steel plate so that no processed aggregate material enters the drainage system. If necessary, the Contractor shall remove a portion of the existing drainage structure in order to provide a level surface to place the steel plate with a complete bearing to the drainage structure as

to not allow any of the processed aggregate fill to enter into the drainage system. Each plate shall be fully supported around the perimeter to prevent wobbling or rocking.

The Contractor shall prepare the adjacent surface around the drainage structure to be flush with the drainage structure such that the steel plate is also bearing on solid ground.

While the steel plates are in place under processed aggregate and temporary pavement, the Contractor shall monitor the locations of the plates periodically for cracking and any differential settlement of pavement. If noticed, the Contractor shall inform the Engineer and repair to the original condition.

At the completion of use, the Contractor shall take care in removing the steel plates and restoring the existing drainage structure to be reset.

The Contractor shall repair any damage to drainage structures at no additional cost to the Department. The Contractor shall remove any processed aggregate from the drainage system at no additional cost to the Department.

At the completion of the Project, the Contractor shall remove all standard steel road plates within the Project limits.

**Method of Measurement:** This work will be measured by the minimum number of square feet required of standard steel road plates to provide the 24" overhang in all directions beyond the outer edge of the drainage structure which is being covered. Additional steel road plate provided beyond the 24" minimum will not be measured for payment.

Preparation of the adjacent surface will not be measured for payment.

Monitoring and any repairs to the temporary pavement will not be measured for payment.

Repair to any damaged drainage structures will not be measured for payment.

**Basis of Payment**: This work will be paid for at the Contract unit price per square foot for "Standard Steel Road Plate" complete and accepted, which price shall include the cost of furnishing all materials, equipment, tools, and labor incidental thereto.

Catch basins to be reset after being uncovered, as specified on the plans, will be paid for in accordance with 5.86.

| Pay Item | Pay Unit |
|---|---|
| Standard Steel Road Plate | s.f. |

# ITEM #1806226A – PRE-WARNING VEHICLE

**Description:** Work under this item shall include furnishing, deploying and maintaining a Truck-Mounted Impact Attenuator equipped with a changeable message sign (CMS) for use as a Pre-Warning Vehicle (PWV) in a rolling road block operation on limited access highways. Impact attenuators shall only be truck-mounted. The message on the sign shall warn motorists of slow or stopped traffic conditions. The Pre-Warning Vehicle will only be paid as such when used as specified herein.

**Materials:** The Truck-Mounted Impact Attenuator shall meet the requirements of Article 18.06.02, except replace all instances of "flashing arrow," "arrow sign," and "arrow" with "CMS".

The CMS shall meet the requirements of Article 11.31.02, with the following amendments:

1. **Physical Characteristics of the CMS**
   a) Mounting – The CMS shall be truck mounted only
   b) Sign Display Dimensions – Variable sign size to meet legend requirements as specified below
2. **Visual Characteristics of the CMS Display**
   a) Sign Type – CMS shall have a LED display only
   b) Color – CMS shall have black background with orange, yellow, or amber legend
   c) Characters – Letter height shall be at least 10 inches; Single stroke
   d) Visibility– CMS brightness must provide for visibility at 1/2 mile
   e) Message – The message shall read as follows, or shall be as directed by the Engineer:

Frame 1: SLOW TRAFFIC AHEAD
Frame 2: PREPARE TO STOP
Or
Frame 1: STOPPED TRAFFIC AHEAD
Frame 2: PREPARE TO STOP

**Construction Methods:** The PWV shall be initially positioned in the right shoulder ½ mile prior to the rolling road block operation.

If a traffic queue reaches the PWV's initial location, the Contractor shall slowly reverse the PWV along the shoulder to position itself prior to the new back of queue.

The Contractor shall meet the requirements of Article 18.06.03.

**Method of Measurement:** This work will be measured for payment by the actual number of hours that the Pre-Warning Vehicle is used in a rolling road block operation during traffic pattern setup and removal. The vehicle may be left in place while not in a rolling road block operation but will be paid for under the item "Truck-Mounted or Trailer-Mounted Impact Attenuator" or under the item "Arrow Board" provided it meets the Contract requirements.

**Basis of Payment:** This work will be paid for at the Contract unit price per hour for "Pre-Warning Vehicle," which shall include the furnishing and use of the pre-warning vehicle and a driver, attenuator reflector, flashing lights, changeable message sign, and all equipment, materials, tools, labor, disposal of damaged Truck-Mounted Impact Attenuator components and work incidental thereto.

| Pay Item | Pay Unit |
|---|---|
| Pre-Warning Vehicle | hr |

# PERMITS AND/OR REQUIRED PROVISIONS:

The following Permits and/or Required Provisions follow this page and are hereby made part of this Contract.

- **PERMITS AND/OR PERMIT APPLICATIONS**

| | |
|---|---|
| CTDEEP Individual Floodplain Management Certificate | Approved on April 16, 2025 |
| CTDEEP Inland Wetland Individual | Approved on June 10, 2025 |
| CTDEEP Pre-Construction Notification | Approved on June 10, 2025 |
| Army Corps of Engineers Pre-Construction Notification | Approved on June 13, 2025 |

- **Construction Contracts - Required Contract Provisions (State Funded Only Contracts)**

# Connecticut Department of Energy and Environmental Protection License*

## Flood Management Certification Approval

| | |
|---|---|
| **Licensee(s):** | CT Department of Transportation |
| **Licensee Address(s):** | 2800 Berlin Turnpike<br>Newington, CT 06111 |
| **License Number(s):** | 202411740 -FM |
| **Municipality:** | Enfield |
| **Project Description:** | Replacement of Bridge No. 05585 carrying I-91 over Grape Brook in the Town of Enfield |
| **Project Address/Location:** | I-91 over Grape Brook Enfield, CT 06082 |
| **Waters:** | Grape Brook |
| **Authorizing CT Statute(s) and/or Federal Law:** | CGS Section 25-68b to h |
| **Applicable Regulations of CT State Agencies:** | 25-68h-1 to 3 |
| **Agency Contact:** | Land & Water Resources Division,<br>Bureau of Water Protection & Land Reuse, 860-424-3019 |
| **License Expiration:** | Five (5) years from the date of issuance of this license. |
| **Project Site Plan Set:** | 18 sheets of Plans Titled *"Environmental Permit Plans State Project No. 0048-0200 Replacement of Bridge No. 05585 Interstate 91 Over Grape Brook in the Town of Enfield,"* Prepared by CT Department of Transportation, dated November 25, 2024 |

*Connecticut's Uniform Administrative Procedure Act defines License to include, "*the whole or part of any agency permit, certificate, approval, registration, charter or similar form of permission required by law . . .*"

**License Enclosures:** LWRD General Conditions; Site Plan Set; LWRD Compliance Certification Form

---

**Authorized Activities:**

The Licensee is hereby authorized to conduct the following work as described in application # 202411740 and as depicted on any site plan sheets / sets cited herein:

1. Remove and replace Bridge No. 05585 over Grape Brook per site plans cited herein as follows;

   Stage 1 (Eastern Culvert Section)

   a. clear and grub as necessary and install erosion and sedimentation controls;
   b. construct temporary access roads;
   c. construct temporary water handling systems redirecting flow through the adjacent existing 8’ x 10’ box culvert;
   d. shift traffic lanes and install temporary earth retaining systems (TERS);
   e. excavate and remove the eastern section of the existing culvert including headwall and wingwall;
   f. construct/install the eastern section of the 12’ x 10’ concrete box culvert, headwalls and wingwalls; and
   g. backfill and reconstruct roadway.

   Stage 2 (Middle Culvert Section)

   a. shift traffic away from middle section of the culvert;
   b. install TERS;
   c. excavate and remove the middle section of the existing culvert;
   d. construct/install the middle section of the 12’ x 10’ concrete box culvert; and
   e. backfill were necessary and reconstruct roadway.

   Stage 3 (Western Culvert Section)

   a. shift traffic away from western section of the culvert;
   b. install TERS;
   c. excavate and remove the western section of the existing culvert including headwalls and wingwalls;
   d. construct/install the western section of the 12’ x 10’ concrete box culvert, headwalls and wingwalls;
   e. backfill and reconstruct roadway;
   f. remove temporary earth retaining systems;

g. install natural streambed material, preformed scour hole and rock weir downstream of the culvert;

h. relocate temporary cofferdam system to existing culvert outlet and install preformed scour hole;

i. perform drainage work at southwest quadrant; and

j. remove erosion and sedimentation systems, temporary earth retaining systems associated with the access roads and reestablish vegetation in disturbed areas.

***Failure to comply with the terms and conditions of this license shall subject the Licensee and / or the Licensee's contractor(s) to enforcement actions and penalties as provided by law.***

**This license is subject to the following Terms and Conditions:**

1. **License Enclosure(s) and Conditions.** The Licensee shall comply with all applicable terms and conditions as may be stipulated within the License Enclosure(s) listed above.
2. **Hazardous Materials Storage.** All "critical activities" including the storage and disposal of hazardous waste or materials shall take place outside of the 500-year floodplain or contained in flood-proof containers.
3. **Associated License Conditions.** The licensee shall adhere to all special conditions imposed under this authorization and any subsequent authorizations associated with the proposed project.

Issued under the authority of the Commissioner of Energy and Environmental Protection on:

April 7, 2025

Date

Brian P. Thompson
Division Director
Land & Water Resources Division

## LWRD General Conditions

1. **Land Record Filing (for *Structures Dredging & Fill*, *Tidal Wetlands*, *Certificate of Permission*, and *Long Island Sound General Permit* Licenses only).** The Licensee shall file the Land Record Filing on the land records of the municipality in which the subject property is located not later than thirty (30) days after license issuance pursuant to Connecticut General Statutes (CGS) Section 22a-363g. A copy of the Notice with a stamp or other such proof of filing with the municipality shall be submitted to DEEP.LWRDRegulatory@ct.gov no later than sixty (60) days after license issuance. If a Land Record Filing form is not enclosed and the work site is not associated with an upland property, no filing is required.

2. **Contractor Notification.** The Licensee shall give a copy of the license and its attachments to the contractor(s) who will be carrying out the authorized activities prior to the start of construction and shall receive a written receipt for such copy, signed and dated by such contractor(s). The Licensee's contractor(s) shall conduct all operations at the site in full compliance with the license and, to the extent provided by law, may be held liable for any violation of the terms and conditions of the license. At the work site, the contractor(s) shall, whenever work is being performed, have on site and make available for inspection a copy of the license and the authorized plans.

3. **Work Commencement[1].** Not later than two (2) weeks prior to the commencement of any work authorized herein, the Licensee shall submit to DEEP.LWRDRegulatory@ct.gov, on the Work Commencement Form attached hereto, the name(s) and address(es) of all contractor(s) employed to conduct such work and the expected date for commencement and completion of such work, if any.
    - For water diversion activities authorized pursuant to 22a-377(c)-1 of the Regulations of Connecticut State Agencies, the Licensee shall also notify the Commissioner in writing two weeks prior to initiating the authorized diversion.
    - For emergency activities authorized pursuant Connecticut General Statutes Section 22a-6k, the Licensee shall notify the Commissioner, in writing, of activity commencement at least one (1) day prior to construction and of activity completion no later than five (5) days after conclusion.

4. **For Coastal Licenses Only - License Notice.** The Licensee shall post the first page of the License in a conspicuous place at the work area while the work authorized therein is undertaken.

5. **Unauthorized Activities.** Except as specifically authorized, no equipment or material, including but not limited to, fill, construction materials, excavated material or debris, shall be

[1] The Work Commencement condition and the need for a Work Commencement Form is not applicable to Flood Management Certification approvals.

deposited, placed or stored in any wetland or watercourse on or off-site. The Licensee may not conduct work within wetlands or watercourses other than as specifically authorized, unless otherwise authorized in writing by the Commissioner. Tidal wetlands means "wetland" as defined by section 22a-29 and "freshwater wetlands and watercourses" means "wetlands" and "watercourses" as defined by section 22a-38.

6. **Management of Materials.** Any materials removed from the site shall be managed in accordance with all federal, state, and local requirements, including Chapter 446K Water Pollution Control, Chapter 445 Hazardous Waste, and Chapter 446d Solid Waste of the Connecticut General Statutes.

7. **Unconfined Instream Work.** Unless otherwise noted in a condition of the license, the following conditions apply to projects in non-coastal waters:

   - Unconfined instream work is limited to the period June 1 through September 30.
   - Confinement of a work area by cofferdam techniques using sand bag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed any time of the year. The removal of such confinement devices is allowed any time of the year.
   - Once a work area has been confined, in-water work within the confined area is allowed any time of the year.
   - The confinement technique used shall completely isolate and protect the confined area from all flowing water. The use of silt boom/curtain or similar technique as a means for confinement is prohibited.

8. **For State Actions Only - Material or Equipment Storage in the Floodplain.** Unless approved by a Flood Management Exemption, the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five-hundred (500) year flood is prohibited. Any other material or equipment stored at the site below said elevation by the Licensee or the Licensee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day. In accordance with the licensee's Flood Contingency Plan, the Licensee shall remove equipment and materials from the floodplain during periods when flood warnings have been issued or are anticipated by a responsible federal, state or local agency. It shall be the Licensee's responsibility to obtain such warnings when flooding is anticipated.

9. **Temporary Hydraulic Facilities for Water Handling.** If not reviewed and approved as a part of the license application, temporary hydraulic facilities shall be designed by a qualified professional and in accordance with the *Connecticut Guidelines for Soil Erosion and Sediment Control*, the *2004 Connecticut Stormwater Quality Manual*, or the *Department of Transportation's ConnDOT Drainage Manual,* as applicable. Temporary hydraulic facilities may include channels, culverts or bridges which are required for haul roads, channel relocations, culvert installations, bridge construction, temporary roads, or detours.

10. **Excavated Materials.** Unless otherwise authorized, all excavated material shall be staged and managed in a manner which prevents additional impacts to wetlands and watercourses.

11. **Best Management Practices.** The Licensee shall not cause or allow pollution of any wetlands or watercourses, including pollution resulting from sedimentation and erosion. In constructing or maintaining any authorized structure or facility or conducting any authorized activity, or in removing any such structure or facility, the Licensee shall employ best management practices to control storm water discharges, to prevent erosion and sedimentation, and to otherwise prevent pollution of wetlands and other waters of the State. For purposes of the license, "pollution" means "pollution" as that term is defined by CGS section 22a-423. Best Management Practices include, but are not limited, to practices identified in the *Connecticut Guidelines for Soil Erosion and Sediment Control* as revised, *2004 Connecticut Stormwater Quality Manual*, Department of Transportation's *ConnDOT Drainage Manual* as revised, and the Department of Transportation Standard Specifications as revised.

12. **In-Water Work Vessel Staging and Storage. (for Structures Dredging & Fill, Tidal *Wetlands*, *Certificate of Permission*, and *Long Island Sound General Permit* Licenses only).** For any barge, vessel, skiff or floating work platform ("work vessels") utilized in the execution of the work authorized herein, the Licensee shall ensure that such work vessels:
    - do not rest on, or come in contact with, the substrate at any time, unless specifically authorized in the license.
    - are not stored over intertidal flats, submerged aquatic vegetation or tidal wetland vegetation or in a location that interferes with navigation. In the event any work vessel is grounded, no dragging or prop dredging shall occur to free it.

13. **Work Site Restoration.** Upon completion of any authorized work, the Licensee shall restore all areas impacted by construction, or used as a staging area or accessway in connection with such work, to their condition prior to the commencement of such work.

14. **Inspection.** The Licensee shall allow any representative of the Commissioner to inspect the project location at reasonable times to ensure that work is being or has been conducted in accordance with the terms and conditions of this license.

15. **Change of Use. (Applies only if a use is specified within the License "*Project Description*")**
    a. The work specified in the license is authorized solely for the purpose set forth in the license. No change in purpose or use of the authorized work or facilities as set forth in the license may occur without the prior written approval of the Commissioner. The Licensee shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this license, request permission from the Commissioner for such change. Said request shall be in writing and shall describe the proposed change and the reason for the change.

    b. A change in the form of ownership of any structure authorized herein from a rental/lease commercial marina to a wholly-owned common interest community or dockominium may constitute a change in purpose as specified in paragraph (a) above.

16. **De Minimis Alteration.** The Licensee shall not deviate from the authorized activity without

prior written approval from the Commissioner. The Licensee may request a de minimis change to any authorized structure, facility, or activity. A de minimis alteration means a change in the authorized design, construction or operation that individually and cumulatively has minimal additional environmental impact and does not substantively alter the project as authorized.

- For diversion activities authorized pursuant to 22a-377(c)-2 of the Regulations of Connecticut State Agencies, a de minimis alteration means an alteration which does not significantly increase the quantity of water diverted or significantly change the capacity to divert water.

17. **Extension Request.** The Licensee may request an extension of the license expiration date. Such request shall be in writing and shall be submitted to DEEP.LWRDRegulatory@ct.gov at least thirty (30) days prior to the license expiration. Such request shall describe the work done to date, what work still needs to be completed, and the reason for such extension. The Commissioner may extend the expiration date of this license for a period of up to one year, in order for the Licensee to complete the authorized activities. It shall be at the Commissioner's sole discretion to grant or deny such request. No more than three (3) one-year extensions will be granted under this license.

18. **Compliance Certification.** Not later than 90 days after completion of the authorized work, the Licensee shall prepare and submit to DEEP.LWRDRegulatory@ct.gov, the attached Compliance Certification Form. Such Compliance Certification shall be completed, signed, and sealed by the Licensee and a Connecticut Licensed Design Professional. If non-compliance is indicated on the form, or the Commissioner has reason to believe the activities and/or structures were conducted in non-compliance with the license, the Commissioner may require the Licensee to submit as-built plans as a condition of this license.

19. **Maintenance.** The Licensee shall maintain all authorized structures or work in optimal condition or shall remove such structures or facility and restore the affected waters to their pre-work condition. Any such maintenance or removal activity shall be conducted in accordance with applicable law and any additional approvals required by law.

20. **No Work After License Expiration.** Work conducted after the license expiration date is a violation of the license and may subject the licensee to enforcement action, including penalties, as provided by law.

21. **License Transfer.** The license is not transferable without prior written authorization of the Commissioner. A request to transfer a license shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Licensee's obligations under the license shall not be affected by the passage of title to the license site to any other person or municipality until such time as a transfer is approved by the Commissioner.

22. **Document Submission.** Any document required to be submitted to the Commissioner under the license or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

    DEEP.LWRDRegulatory@ct.gov or

Regulatory Section
Land & Water Resources Division
Department of Energy and Environmental Protection
79 Elm Street
Hartford, Connecticut 06106-5127
860-424-3019

23. **Date of Document Submission.** The date of submission to the Commissioner of any document required by the license shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under the license, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three (3) days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in the license, the word "day" as used in the license means calendar day. Any document or action which is required by the license to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.

24. **Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under the license shall be signed by the Licensee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

25. **Accuracy of Documentation.** In evaluating the application for the license, the Commissioner has relied on information and data provided by the Licensee and on the Licensee's representations concerning site conditions, design specifications and the proposed work, including but not limited to representations concerning the commercial, public or private nature of the work or structures, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, the license may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.

26. **Limits of Liability.** In granting the license, the Commissioner has relied on all representations of the Licensee, including information and data provided in support of the Licensee's application. Neither the Licensee's representations nor the issuance of the license shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.

27. **Reporting of Violations.** In the event that the Licensee becomes aware that they did not or may not comply, or did not or may not comply on time, with any provision of this license or of any document incorporated into the license, the Licensee shall immediately notify the

agency contact specified within the license and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the agency contact, the Licensee shall provide, for the agency's review and written approval, a report including the following information:

a. the provision(s) of the license that has been violated;

b. the date and time the violation(s) was first observed and by whom;

c. the cause of the violation(s), if known;

d. if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;

e. if the violation(s) has not ceased, the anticipated date when it will be corrected;

f. steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented; and

g. the signatures of the Licensee and of the individual(s) responsible for actually preparing such report.

If the violation occurs outside of normal business hours, the Licensee shall contact the Department of Energy and Environmental Protection Emergency Dispatch at 860-424-3333. The Licensee shall comply with any dates which may be approved in writing by the Commissioner.

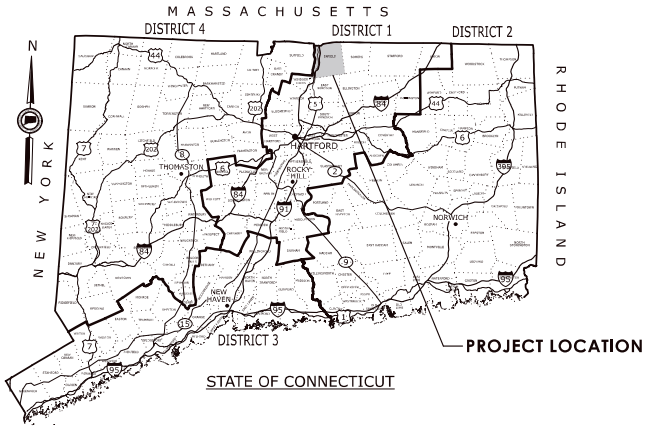
28. **Revocation/Suspension/Modification.** The license may be revoked, suspended, or modified in accordance with applicable law.

29. **Other Required Approvals.** License issuance does not relieve the Licensee of their obligations to obtain any other approvals required by applicable federal, state and local law.

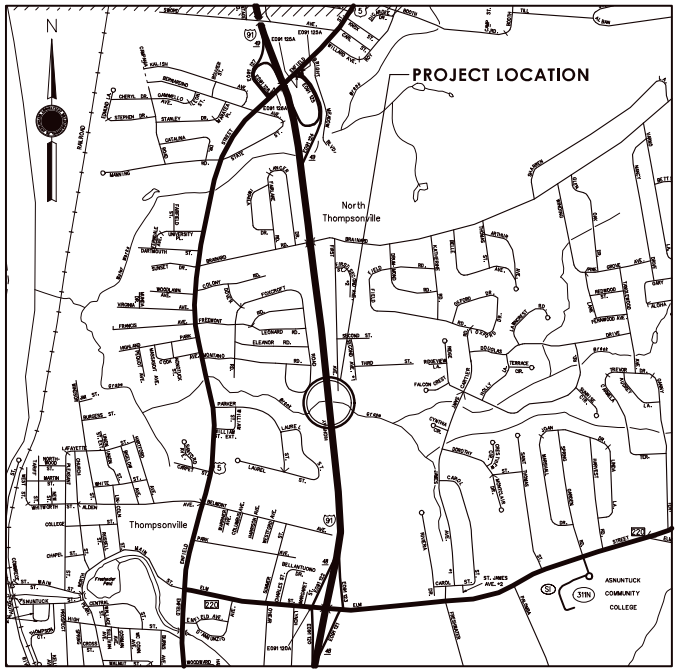
30. **Rights.** The license is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.

31. **Condition Conflicts.** In the case where a project specific special condition listed on the license differs from, or conflicts with, one of the general conditions listed herein, the project specific special condition language shall prevail. It is the licensee's responsibility to contact the agency contact person listed on the license for clarification if needed prior to conducting any further regulated activities.

# ENVIRONMENTAL PERMIT PLANS
# STATE PROJECT NO. 0048-0200
# REPLACEMENT OF BRIDGE NO. 05585
# INTERSTATE 91 OVER GRAPE BROOK
# IN THE TOWN OF ENFIELD




STATE OF CONNECTICUT




LOCATION PLAN
SCALE: 1"=1000'

Digitally signed by Michael Steeves
Date: 2024.11.27 09:54:18 -05'00'

## 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 DEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSE, WETLANDS AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM NAD83, VERTICAL DATUM BASED ON NAVD OF 1988.
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES AND INCIDENTAL CONSTRUCTION, FORM 818, SECTION 1.10 AND WILL ALSO FOLLOW REQUIRED BEST MANAGEMENT PRACTICES (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE DEEP CONNECTICUT GUIDELINES FOR SOIL EROSION & SEDIMENT CONTROL AND DEEP CONNECTICUT STORMWATER QUALITY MANUAL.

| LIST OF DRAWINGS | |
|---|---|
| DRAWING NO. | DRAWING TITLE |
| PMT-01 | TITLE SHEET |
| PMT-02 | GENERAL SITE PLAN |
| PMT-03 | WETLAND/WATERCOURSE IMPACT PLAN |
| PMT-04 | 100 YEAR FLOOD IMPACT PLAN |
| PMT-05 | ELEVATIONS |
| PMT-06 | SECTION |
| PMT-07 | STAGING AND WATER HANDLING PLAN |
| PMT-08 | ROCK WEIR DETAILS |
| PMT-09 | PERMIT PLANTING PLAN |
| PMT-10 - PMT-12 | STAGE 1 DRAINAGE PLANS |
| PMT-13 - PMT-15 | STAGE 2 DRAINAGE PLANS |
| PMT-16 - PMT-18 | STAGE 3 DRAINAGE PLANS |

DESIGNED BY: A. DICESARE ASSOCIATES, P.C.
Arthur DiCesare 2024.11.26 13:21:26-05'00'

**PLAN DATE: NOVEMBER 25, 2024**

REVISION DESCRIPTION | DATE | BY

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

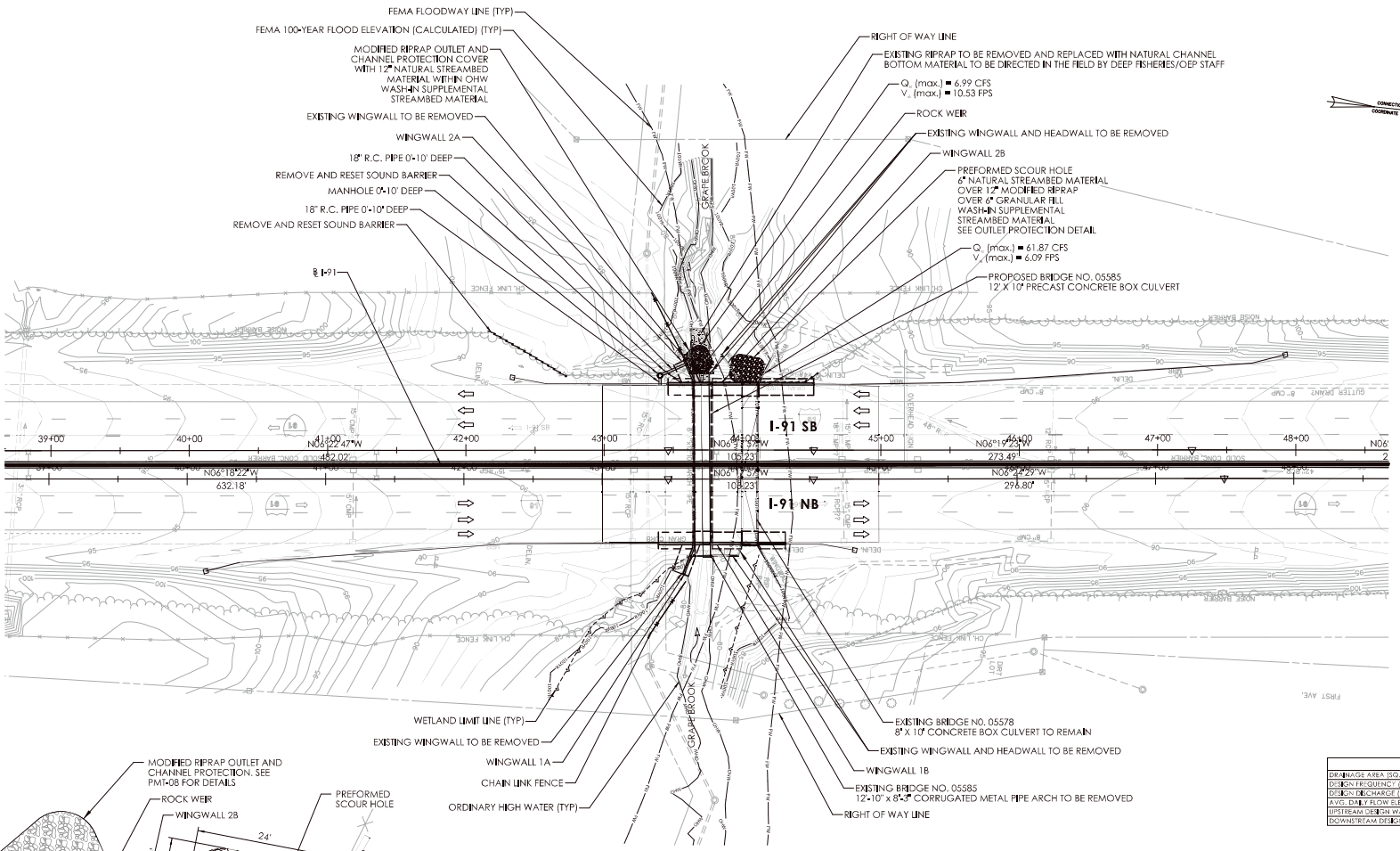
SIGNATURE/BLOCK: ADA A.DiCesare Associates, P.C. 600 Clinton Avenue Bridgeport, CT 06604 203-496-0444 www.adicesarepc.com

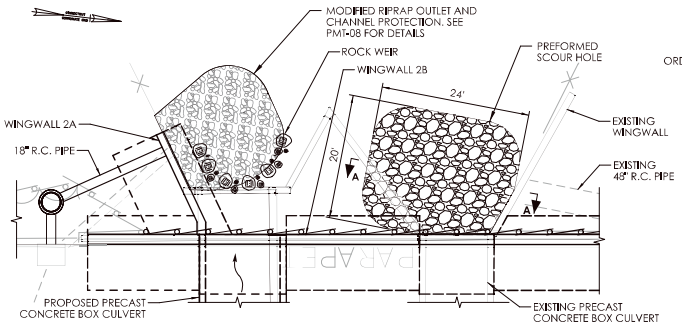
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: TITLE SHEET

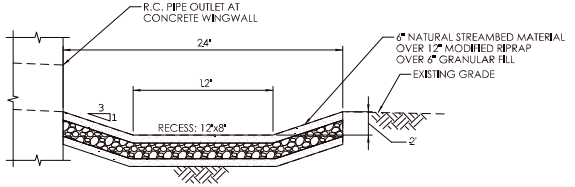
DRAWING NO. PMT-01
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-01.dgn
PLOTTED DATE: 11/25/2024




**OUTLET PROTECTION DETAIL**
NOT TO SCALE




**SECTION A-A**
NOT TO SCALE

| HYDRAULIC DATA | |
|---|---|
| DRAINAGE AREA (SQ. MI.) | 2.2 |
| DESIGN FREQUENCY (YR) | 100 |
| DESIGN DISCHARGE (CFS) | 610 |
| AVG. DAILY FLOW ELEV. (CALCULATED) (FT) | 78.1 |
| UPSTREAM DESIGN WATER SURFACE ELEV. (FT) | 82.8 |
| DOWNSTREAM DESIGN WATER SURFACE ELEV. (FT) | 79.6 |

**LEGEND**

- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- FW — FEMA FLOODWAY
- NATURAL CHANNEL BOTTOM MATERIAL

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 40'

SIGNATURE/ BLOCK:

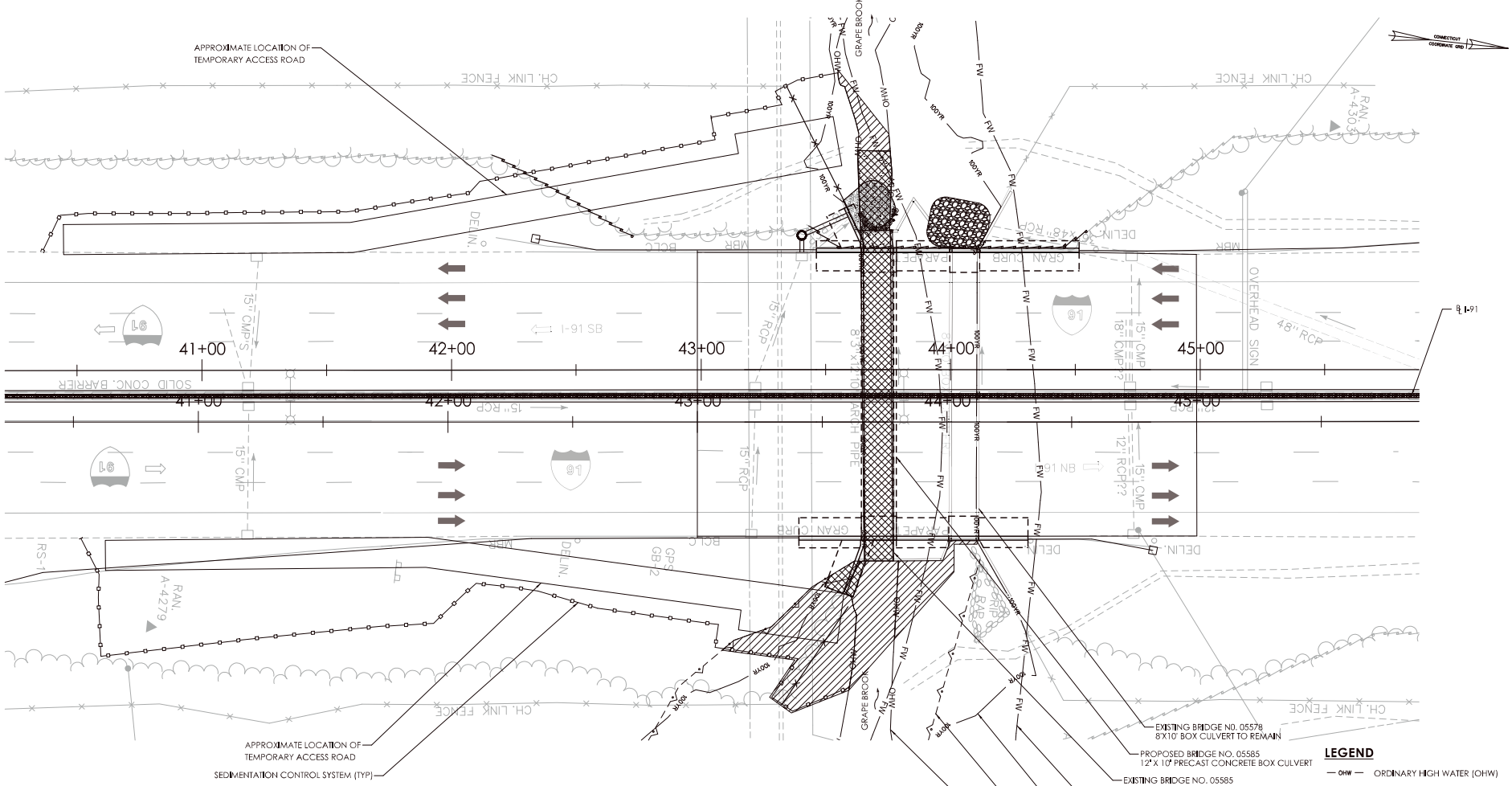
A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-02
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\NHW_CP_0048_0200_PMT-02.dgn
PLOTTED DATE: 11/25/2024




## NOTE:

THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND THE WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED TO THE EXISTING GRADES. REFER TO PERMIT PLANTING PLAN FOR DETAILS.

### INLAND WETLAND AND WATERCOURSE IMPACT TABLE

| | WETLAND SITE NO. | WETLAND IMPACTS | WATERCOURSE IMPACTS | TOTAL |
|---|---|---|---|---|
| PERMANENT IMPACTS | 1 | 90 S.F. (0.002 AC.) | 2,085 S.F. (0.048 AC.) | 2,175 S.F. (0.050 AC.) |
| TEMPORARY IMPACTS | 1 | 1,880 S.F. (0.043 AC.) | 900 S.F. (0.021 AC.) | 2,780 S.F. (0.064 AC.) |
| TOTAL IMPACTS | 1 | 1,970 S.F. (0.045 AC.) | 2,985 S.F. (0.069 AC.) | 4,955 S.F. (0.114 AC.) |

## LEGEND

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

## ENVIRONMENTAL PERMIT PLANS

**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

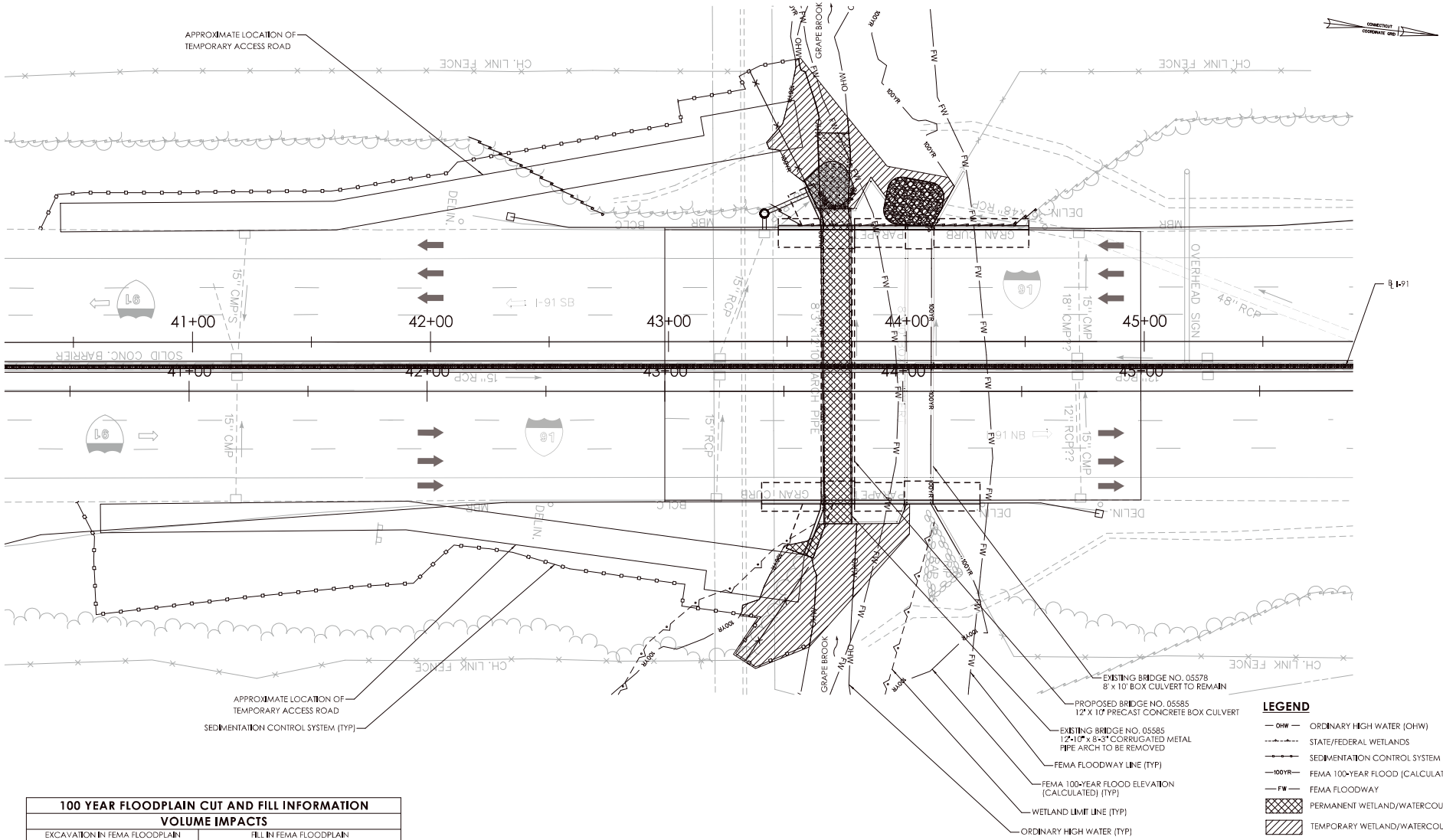
ADA — A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: WETLAND/WATERCOURSE IMPACT PLAN

DRAWING NO. PMT-03
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-03.dgn
PLOTTED DATE: 11/25/2024




| 100 YEAR FLOODPLAIN CUT AND FILL INFORMATION | |
|---|---|
| VOLUME IMPACTS | |
| EXCAVATION IN FEMA FLOODPLAIN | FILL IN FEMA FLOODPLAIN |
| 480 C.Y. | 360 C.Y. |

NOTE:
THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO THE DEEP FOR CHANGES TO THE DESIGN THAT WILL AFFECT THE NOTED REGULATORY AREAS.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

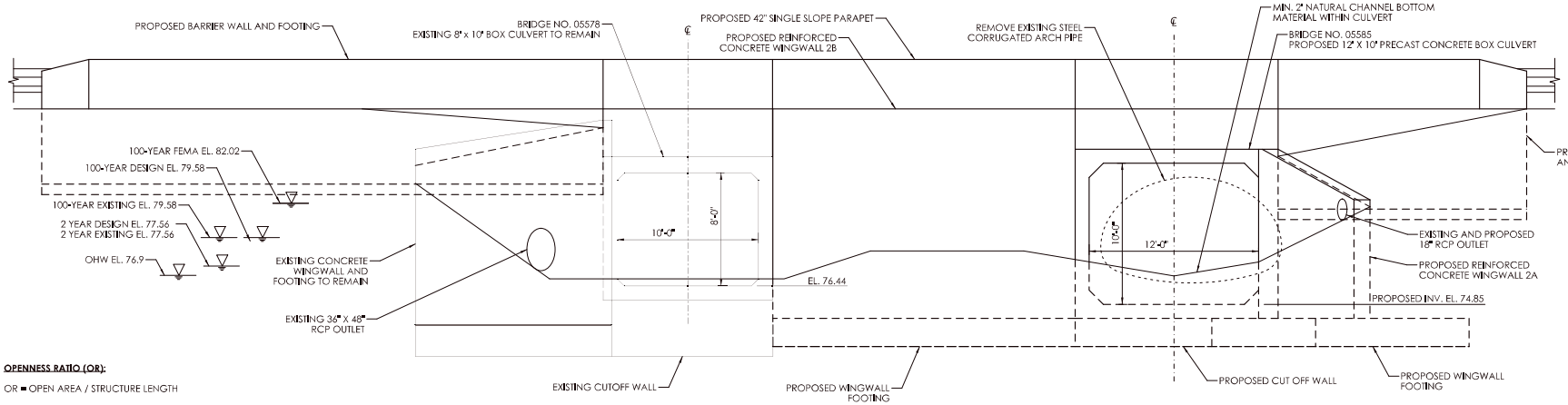
ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: 100 YEAR FLOOD IMPACT PLAN

DRAWING NO. PMT-04
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-04.dgn
PLOTTED DATE: 11/25/2024




**OUTLET ELEVATION**
SCALE: ¼" = 1'-0"

**OPENNESS RATIO (OR):**

OR = OPEN AREA / STRUCTURE LENGTH

OR = 89 SF / 117 FT = 0.67

0.67 FT < 0.82 FT

OR = (89 SF + 80 SF)/117 FT = 1.44 FT

1.44 FT > 0.82

**BANKFULL WIDTH (BFW):**

BFW = 18 FT

1.2 X BFW = 21.6 FT

21.6 FT > 12 FT PROPOSED CULVERT

21.6 FT < 22 FT PROPOSED CULVERT AND OVERFLOW BOX CULVERT

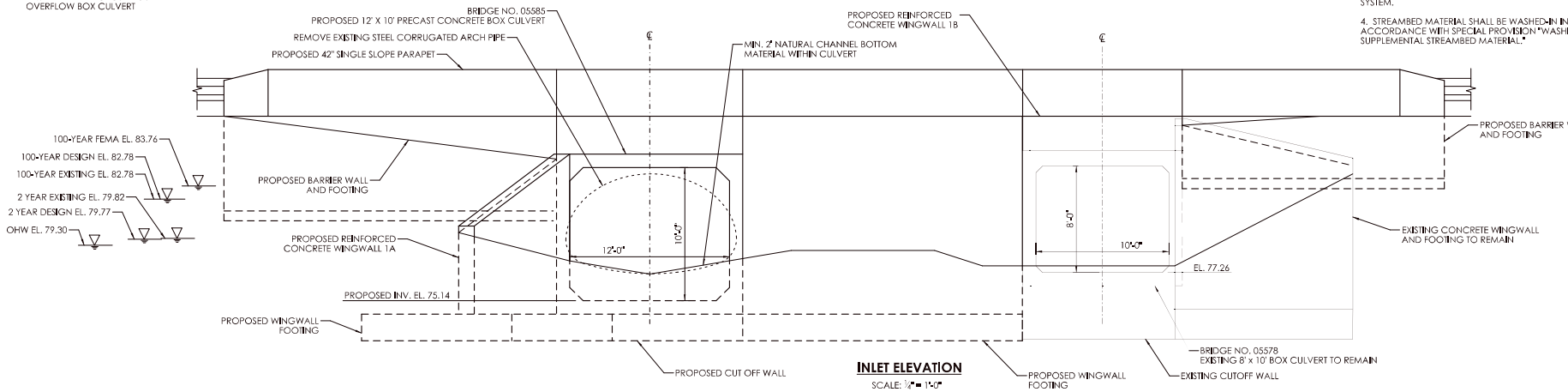
## NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE PRECAST CONCRETE BOX CULVERT SHALL BE STOCKPILED AND THEN REPLACED AT THE OUTLET 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 CHANNEL MATERIAL."

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

4. STREAMBED MATERIAL SHALL BE WASHED-IN IN ACCORDANCE WITH SPECIAL PROVISION "WASHING-IN SUPPLEMENTAL STREAMBED MATERIAL."




**INLET ELEVATION**
SCALE: ⅜" = 1'-0"

## ENVIRONMENTAL PERMIT PLANS

**PLAN DATE: NOVEMBER 25, 2024**

| NO. | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

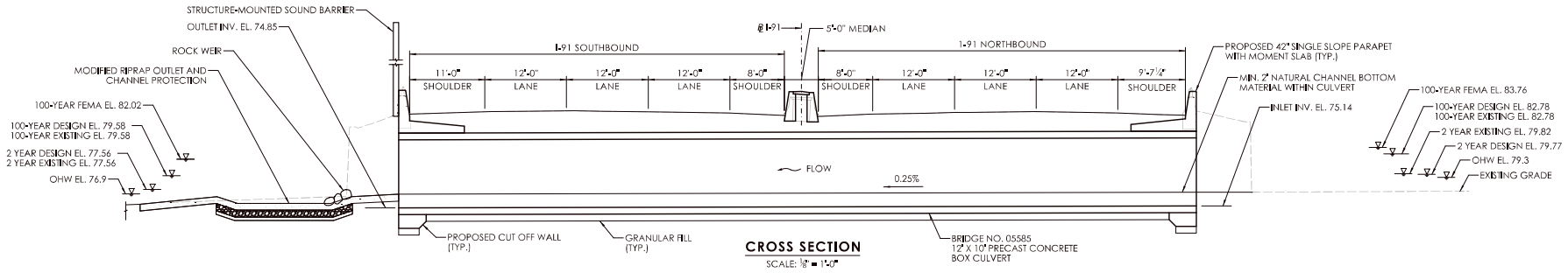
ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: ELEVATIONS

DRAWING NO. PMT-05
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-05.dgn
PLOTTED DATE: 11/25/2024




**CROSS SECTION**

SCALE: ⅛" = 1'-0"

**ENVIRONMENTAL PERMIT PLANS**

**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

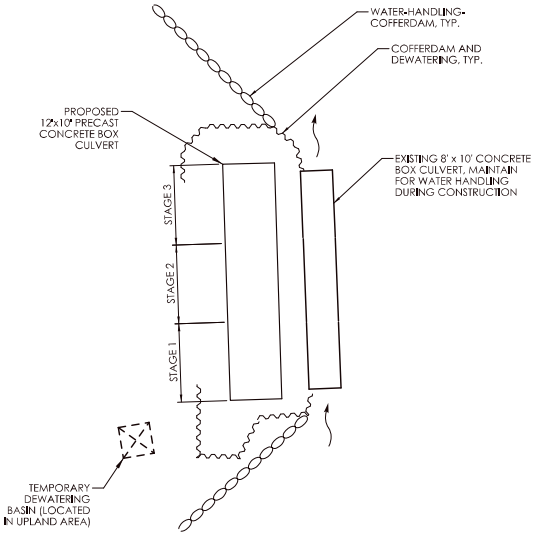
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, CT 06605
203-696-0666
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: SECTION

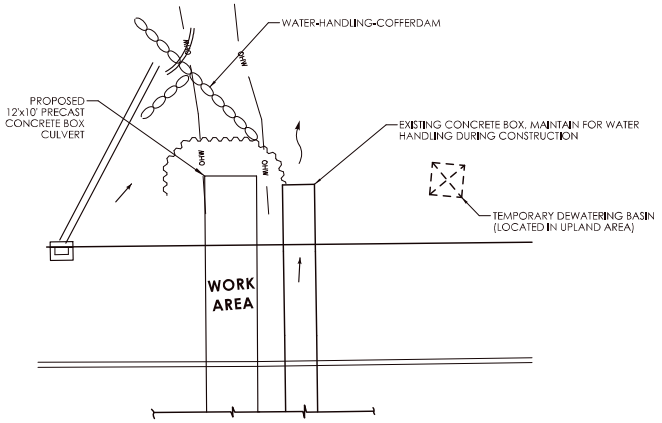
DRAWING NO. PMT-06
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\NHW_CP_0048_0200_PMT-06.dgn
PLOTTED DATE: 11/25/2024




**EXISTING STRUCTURE AS BYPASS FOR HANDLING WATER**

NOT TO SCALE




**ANCILLARY STORM DRAINAGE NEAR WORK AREA**

NOT TO SCALE

## SUGGESTED CONSTRUCTION SEQUENCING (STAGE 1)

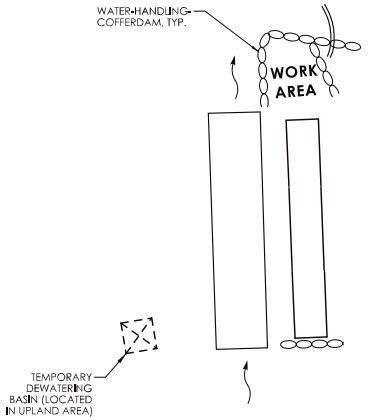
1. CLEAR AND GRUB AND INSTALL SEDIMENTATION CONTROL SYSTEM.
2. CONSTRUCT TEMPORARY ACCESS ROADS.
3. INSTALL TEMPORARY WATER-HANDLING-COFFERDAM AND COFFERDAM AND DEWATERING TO REDIRECT BROOK THROUGH EXISTING 8' x 10' BOX CULVERT.
4. SHIFT TRAFFIC LANES, INSTALL TEMPORARY EARTH RETAINING SYSTEMS AT APPROACHES, EXCAVATE, AND REMOVE HEADWALL, WINGWALL AND EXISTING CULVERT, STAGE 1 SECTION.
4. INSTALL PROPOSED 12'x10' PRECAST CONCRETE BOX CULVERT, STAGE 1 SECTION.
5. INSTALL HEADWALLS, WINGWALLS, BARRIER WALLS AND PARAPETS FOR STAGE 1.
6. BACKFILL AND RECONSTRUCT ROADWAY, STAGE 1 SECTION.

## SUGGESTED CONSTRUCTION SEQUENCING (STAGE 2)

1. SHIFT TRAFFIC LANES FOR WORK AT STAGE 2.
2. INSTALL TEMPORARY EARTH RETAINING SYSTEM AT APPROACHES, EXCAVATE, AND REMOVE EXISTING CULVERT, STAGE 2 SECTION.
3. INSTALL PROPOSED 12'x10' PRECAST CONCRETE BOX CULVERT, STAGE 2 SECTION.
4. BACKFILL AND RECONSTRUCT ROADWAY, STAGE 2 SECTION.

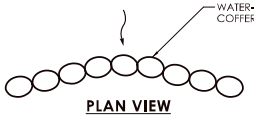
## SUGGESTED CONSTRUCTION SEQUENCING (STAGE 3)

1. SHIFT TRAFFIC LANES FOR WORK AT STAGE 3.
2. INSTALL TEMPORARY EARTH RETAINING SYSTEM AT APPROACHES, EXCAVATE, AND REMOVE HEADWALL, WINGWALL, AND EXISTING CULVERT, STAGE 3 SECTION.
3. INSTALL PROPOSED 12'x10' PRECAST CONCRETE BOX CULVERT, STAGE 3 SECTION.
4. INSTALL HEADWALL, WINGWALLS, BARRIER WALLS AND PARAPETS FOR STAGE 3.
5. BACKFILL AND RECONSTRUCT ROADWAY, STAGE 3 SECTION.
6. REMOVE TEMPORARY EARTH RETAINING SYSTEM AND INSTALL NATURAL STREAMBED MATERIAL, PREFORMED SCOUR HOLE, AND ROCK WEIRS.
7. REMOVE TEMPORARY WATER-HANDLING-COFFERDAM.
8. INSTALL TEMPORARY WATER-HANDLING-COFFERDAM AT EXISTING CULVERT OUTLET AND INSTALL PREFORMED SCOUR HOLE.
9. REMOVE TEMPORARY EARTH RETAINING SYSTEMS AT TEMPORARY ACCESS ROADS.
10. PERFORM DRAINAGE WORK AT SOUTHWEST QUADRANT.
11. FURNISH TOPSOIL, PROVIDE TURF ESTABLISHMENT AND INSTALL PLANTINGS AT DISTURBED AREAS.
12. REMOVE EROSION CONTROL MEASURES UPON STABILIZATION.

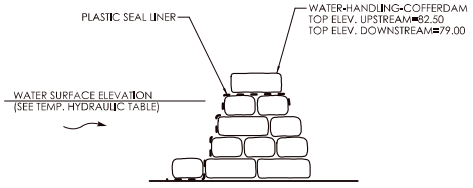



**USE OF NEW STRUCTURE DURING WORK AT EXISTING STRUCTURE OUTLET**

NOT TO SCALE




**PLAN VIEW**




**SECTION VIEW**

WATER-HANDLING-COFFERDAM SANDBAGS

NOT TO SCALE

## WATER HANDLING NOTES:

1. THE 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/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. IF A PUMP SYSTEM IS PROPOSED DURING LOW FLOW CONDITIONS, THE PUMP SYSTEM SHALL BE DESIGNED BY THE CONTRACTOR. PUMP SYSTEM PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
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 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 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.

| TEMPORARY HYDRAULIC DATA | |
|---|---|
| AVERAGE DAILY FLOW (CFS) | 4.1 |
| AVERAGE SPRING FLOW (CFS) | 7.9 |
| TEMPORARY DESIGN FREQUENCY | 2-YEAR STORM |
| 2-YEAR FREQUENCY DISCHARGE (CFS) | 140 |
| LOW FLOW PUMPING TEMPORARY DESIGN DISCHARGE = ASF (CFS) | 7.9 |
| GRAVITY FLOW BYPAS PIPE TEMPORARY DESIGN DISCHARGE = 2-YEAR FREQUENCY (CFS) | 140 |
| 2-YEAR WATER SURFACE ELEVATION UPSTREAM (FT) | 81.9 |
| 2-YEAR WATER SURFACE ELEVATION DOWNSTREAM (FT) | 77.6 |

NOTE:
VALUES AND ELEVATIONS MAY VARY SLIGHTLY FROM THE CONTRACT PLANS

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

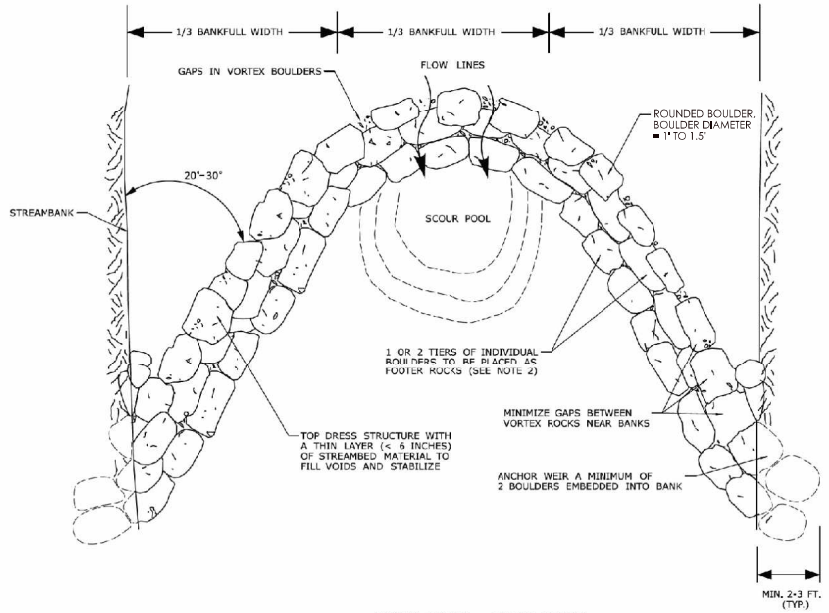
ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGING AND WATER HANDLING PLAN

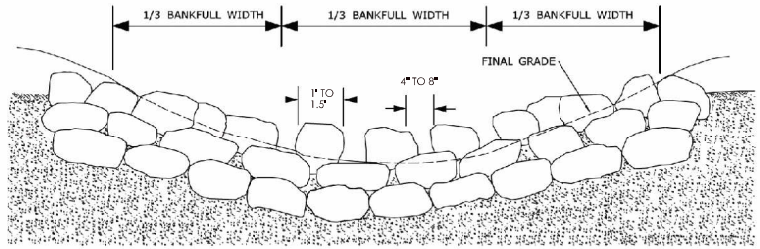
DRAWING NO. PMT-07
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-07.dgn
PLOTTED DATE: 11/25/2024



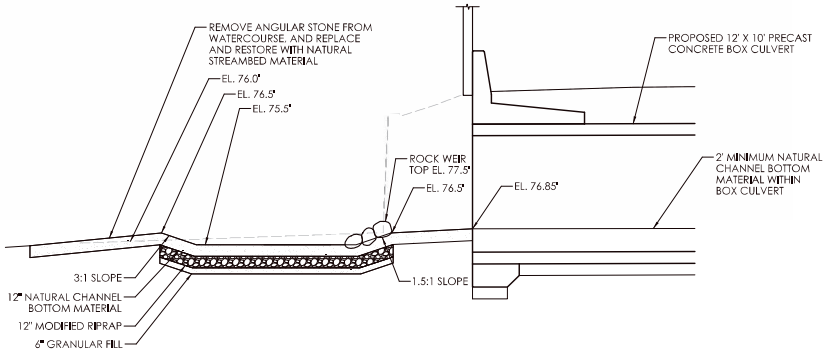

**ROCK WEIR - PLAN VIEW**

N.T.S.



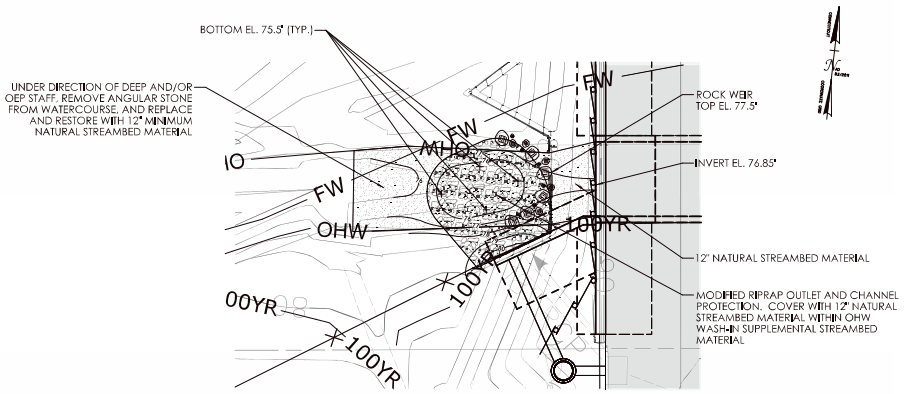

**ROCK WEIR - SECTION VIEW (UPSTREAM)**

N.T.S.




**ROCK WEIR AND OUTLET PROTECTION - PROFILE VIEW**

N.T.S.




**ROCK WEIR AND OUTLET PROTECTION - PLAN VIEW**

N.T.S.

## ROCK WEIR NOTES:

1. PLACEMENT OF THE ROCK WEIR SHALL BE UNDER THE SUPERVISION OF CTDEEP FISHERIES DIVISION STAFF (OR THEIR AUTHORIZED DELEGATE). THE CONTRACTOR SHALL COORDINATE THROUGH THE ENGINEER A MINIMUM OF 10-DAYS IN ADVANCE OF THE WEIR INSTALLATION TO ALLOW FOR CTDEEP FISHERIES DIVISION TO BE PRESENT ON SITE.
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. BOULDERS SHALL BE ROUNDED, 1' TO 1.5' IN DIAMETER AS SPECIFIED BY DEEP FISHERIES OR AS RECOMMENDED BY THE OFFICE OF ENVIRONMENTAL PLANNING (OEP). CONTRACTOR SHALL COORDINATE TYPE AND SIZE WITH DEEP FISHERIES OR OEP.
4. ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE ROCK WEIR SHALL BE PAID FOR UNDER THE ITEM FOR "ROCK WEIR". EXISTING OR NATURAL STREAMBED MATERIAL SHALL BE PAID FOR UNDER THE ITEM FOR "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL" AND "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."
5. BOULDERS SHALL BE PLACED WITHIN THE DEPARTMENT'S RIGHT-OF-WAY OR EASEMENT.

**ENVIRONMENTAL PERMIT PLANS**

**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

ADA A.D.Cesare Associates, P.C. 990 Clinton Avenue Bridgeport, CT 06606 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

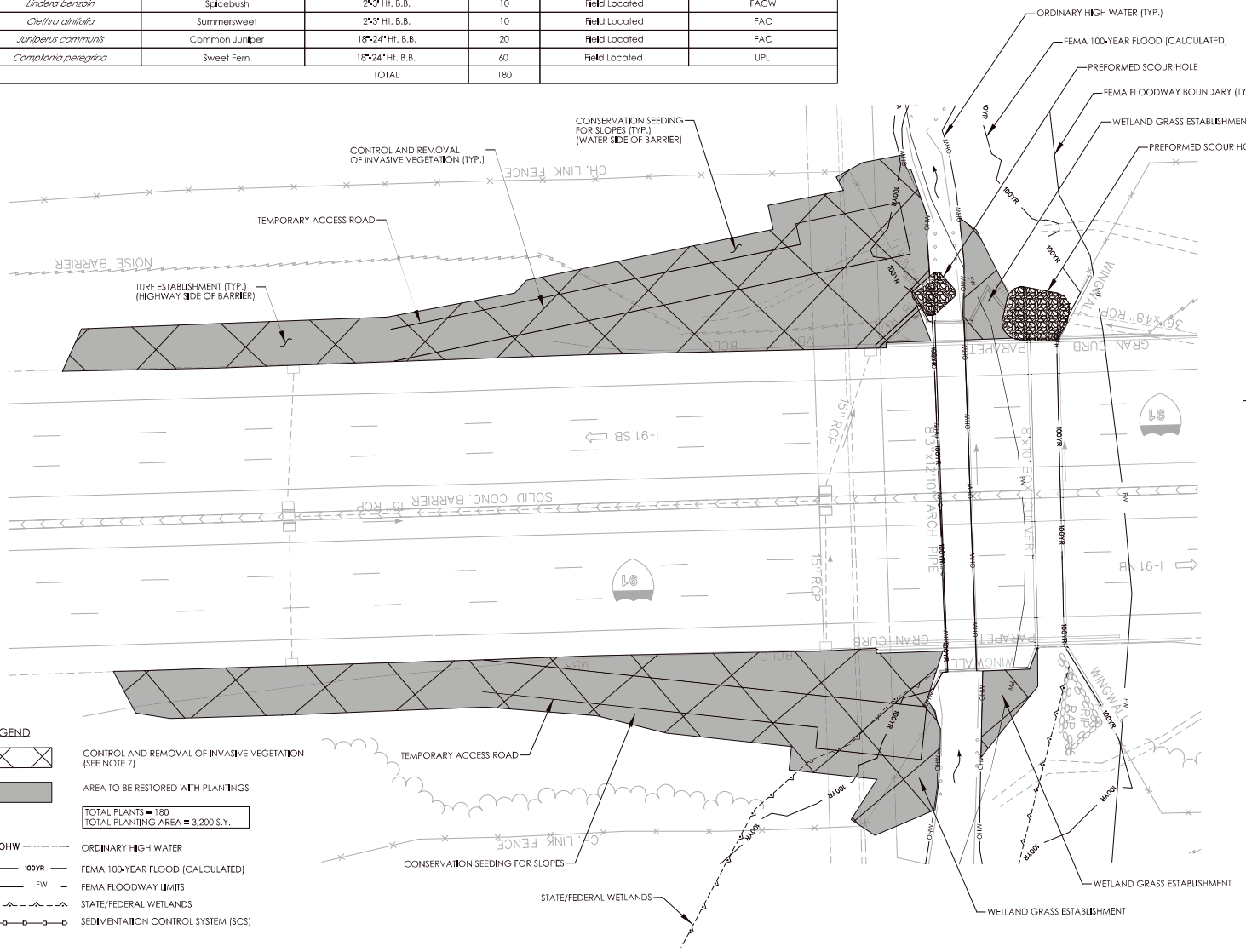
PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: ROCK WEIR DETAILS

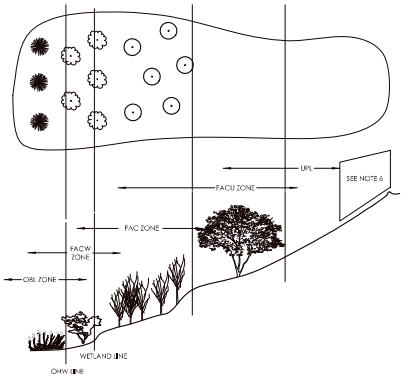
DRAWING NO. PMT-08
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\NHW_CP_0048_0200_PMT-08.dgn
PLOTTED DATE: 11/25/2024

PERMIT PLANT LIST

| BOTANICAL NAME | COMMON NAME | SIZE | QTY. | SPACING | WETLAND INDICATOR |
|---|---|---|---|---|---|
| *Asclepicas incarnata* | Swamp Milkweed | 2" Plug | 40 | Field Located | OBL |
| *Asclepias tuberosa* | Butterfly Milkweed | 2" Plug | 40 | Field Located | NI |
| *Lindera benzoin* | Spicebush | 2'-3" Ht. B.B. | 10 | Field Located | FACW |
| *Clethra alnifolia* | Summersweet | 2'-3" Ht. B.B. | 10 | Field Located | FAC |
| *Juniperus communis* | Common Juniper | 18"-24" Ht. B.B. | 20 | Field Located | FAC |
| *Comptonia peregrina* | Sweet Fern | 18"-24" Ht. B.B. | 60 | Field Located | UPL |
| | | TOTAL | 180 | | |




SCHEMATIC PLANTING

LEGEND

- CONTROL AND REMOVAL OF INVASIVE VEGETATION (SEE NOTE 7)
- AREA TO BE RESTORED WITH PLANTINGS

TOTAL PLANTS = 180
TOTAL PLANTING AREA = 3,200 S.Y.

- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- FW — FEMA FLOODWAY LIMITS
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)

NOTES

1. THE PLANTINGS ON THIS SHEET ARE 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 DISTURBED 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 AER TO BE PLACED WITHIN A MOWED AREA.

7. AREA TO BE TREATED FOR INVASIVES AND PROPERLY PREPARED FOR FINAL PLANTING, SEEDING, AND RESTORATION.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

REV | DATE | REVISION DESCRIPTION

DESIGNER/DRAFTER: CMB CHECKED BY: DMC

HORIZONTAL SCALE 1" = 20'

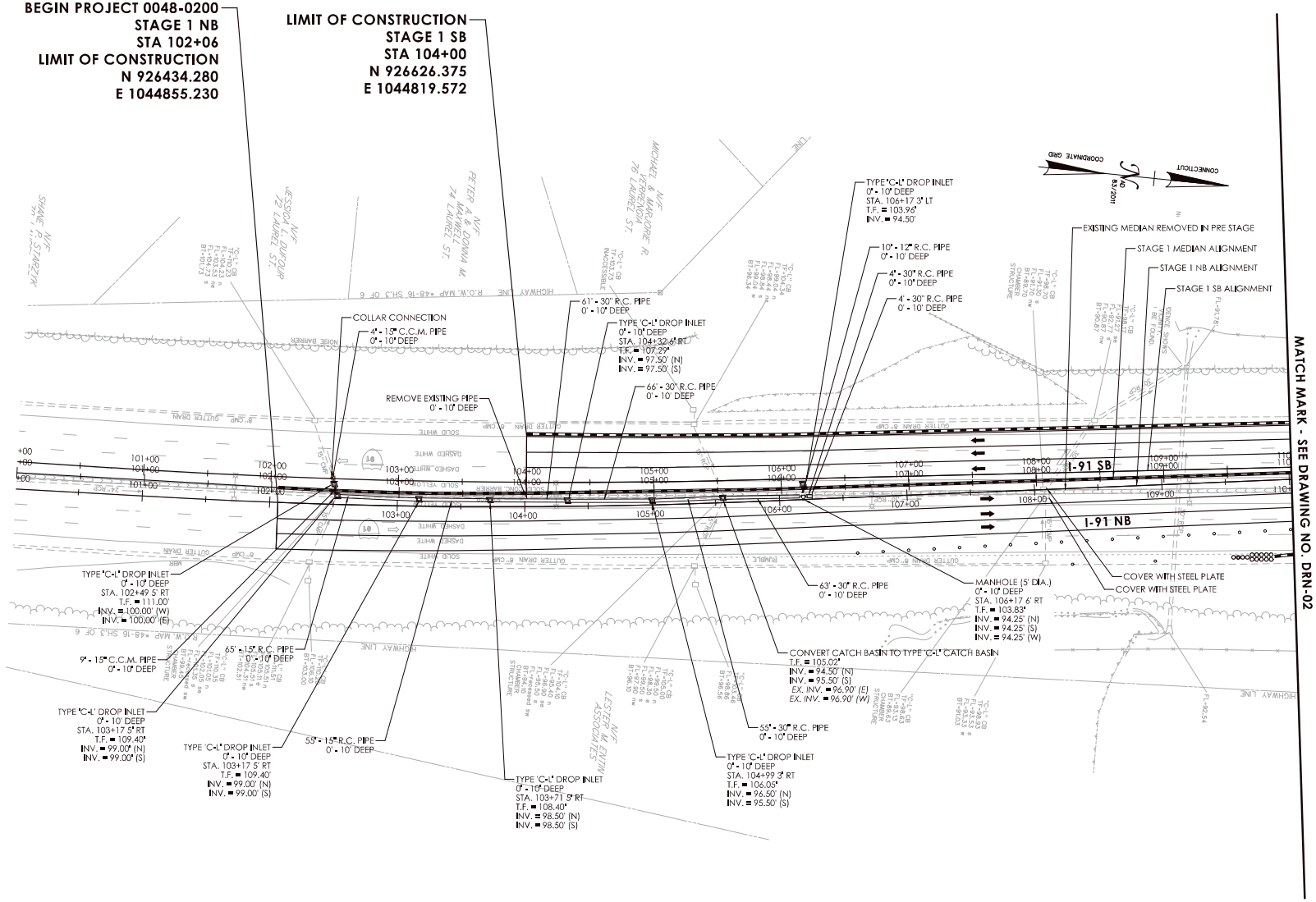
SIGNATURE/ BLOCK:

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-09
SHEET NO.

LASTED SAVED BY: DOUG1 FILE NAME: G:\JOBS1\15C\15C5400\BRIDGES\DATA\Enfield_05585\DGN\Hydro\SR_MSH_0048-0200_PMT-02.dgn
PLOTTED DATE: 11/25/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

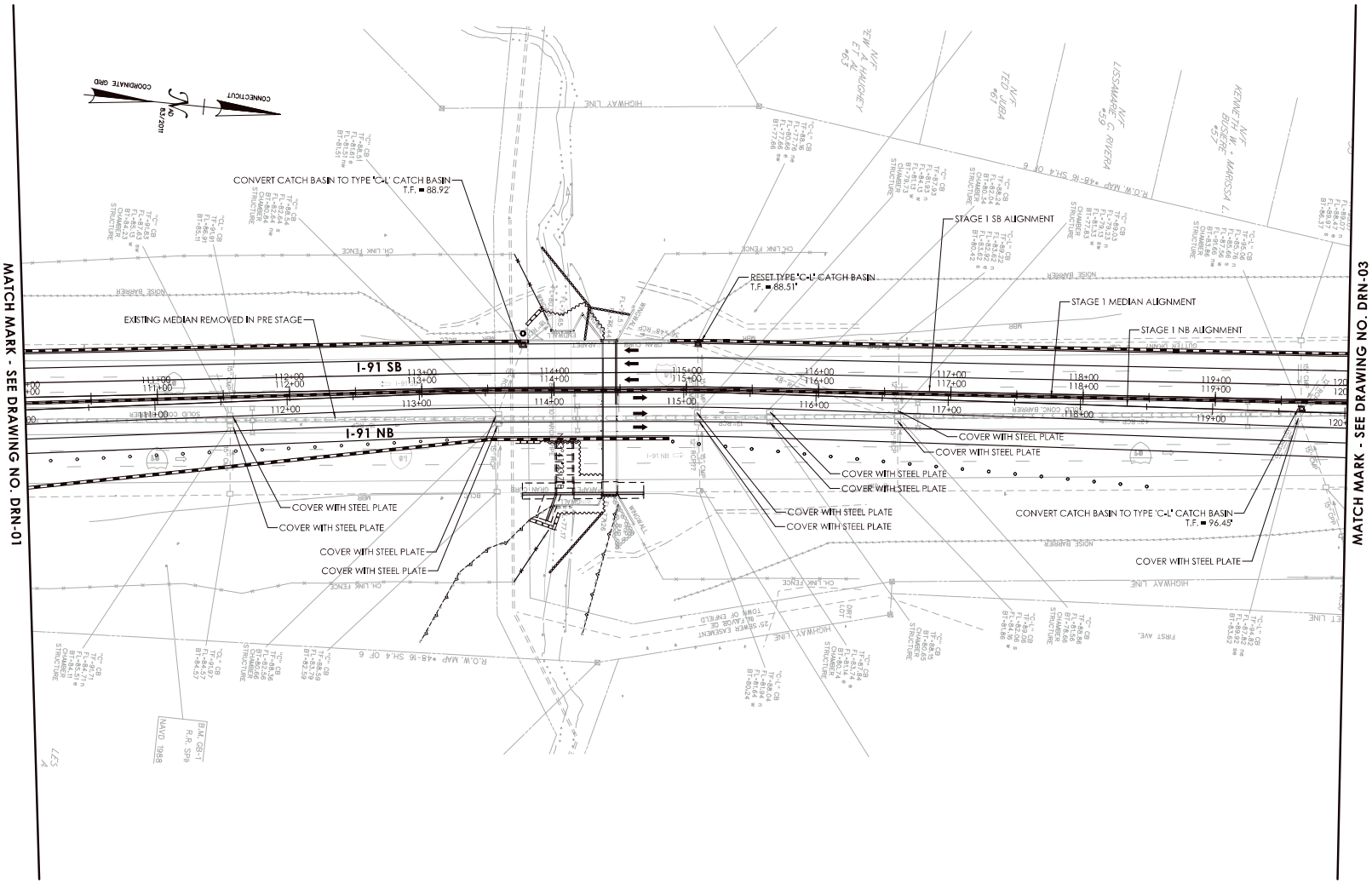
ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 1 DRAINAGE PLAN - 1

DRAWING NO. PMT-10
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-10_12.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | REVISION DESCRIPTION | DATE |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

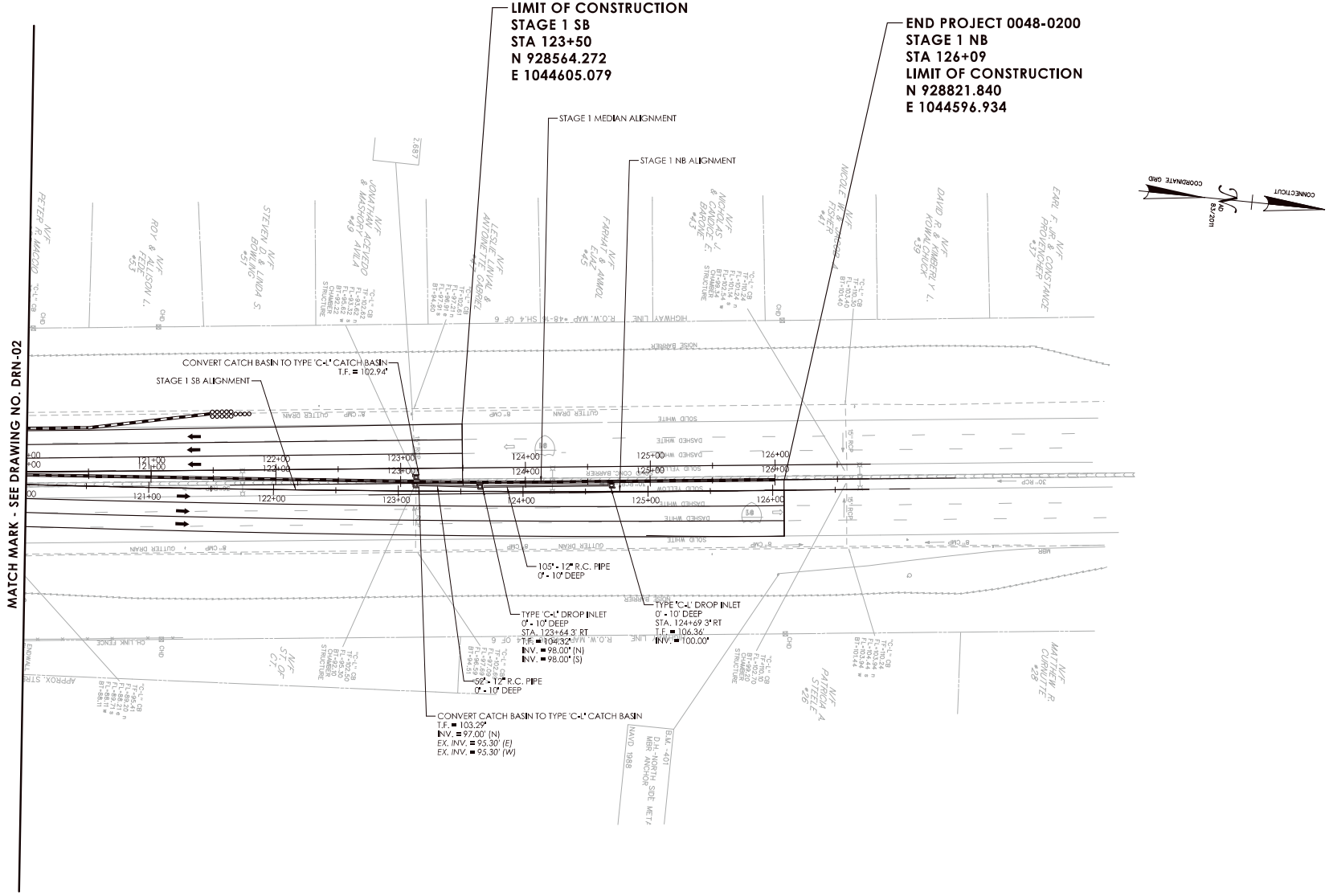
ADA DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 1 DRAINAGE PLAN - 2

DRAWING NO. PMT-11
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-10_12.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

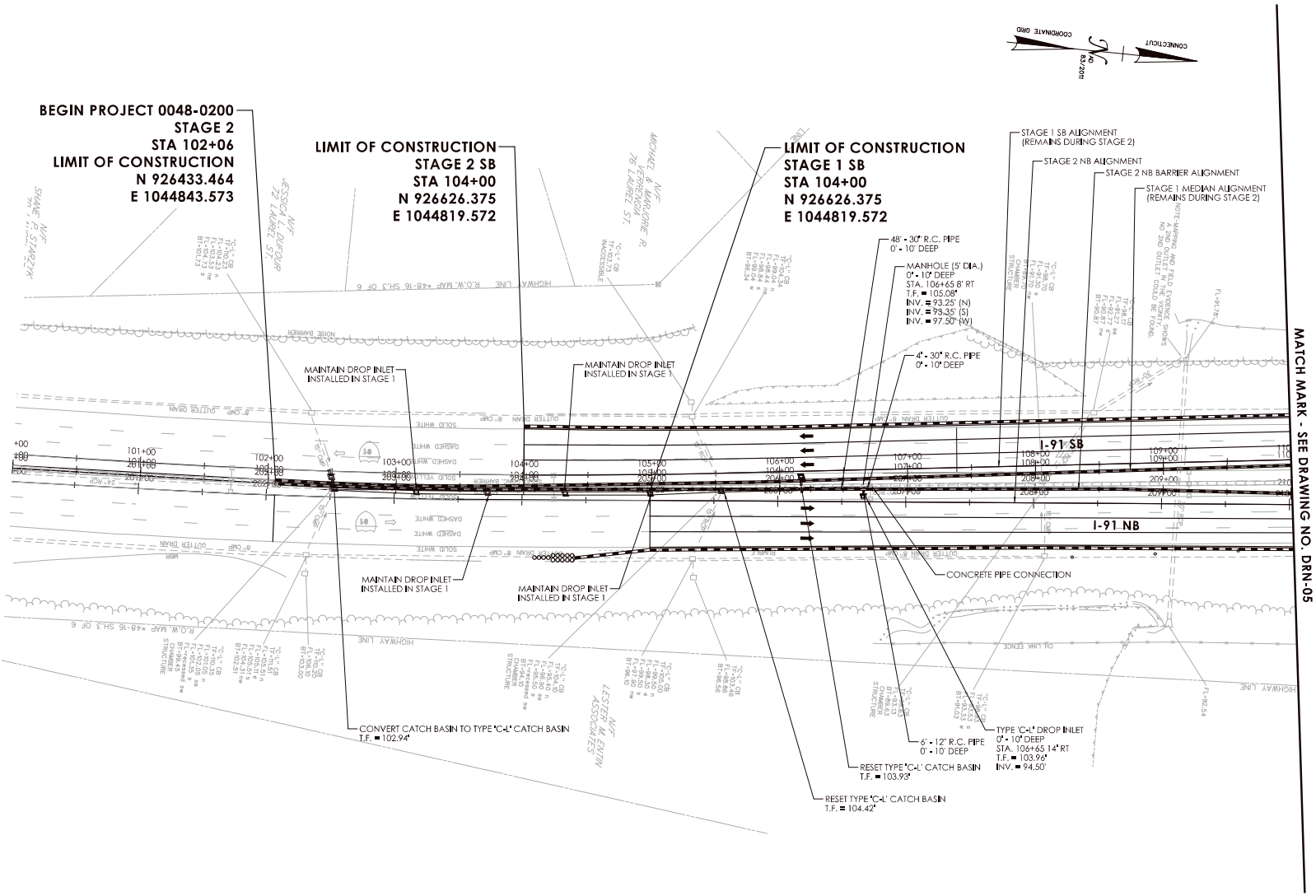
ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 1 DRAINAGE PLAN - 3

DRAWING NO. PMT-12
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-10_12.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | REVISION DESCRIPTION | DATE |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

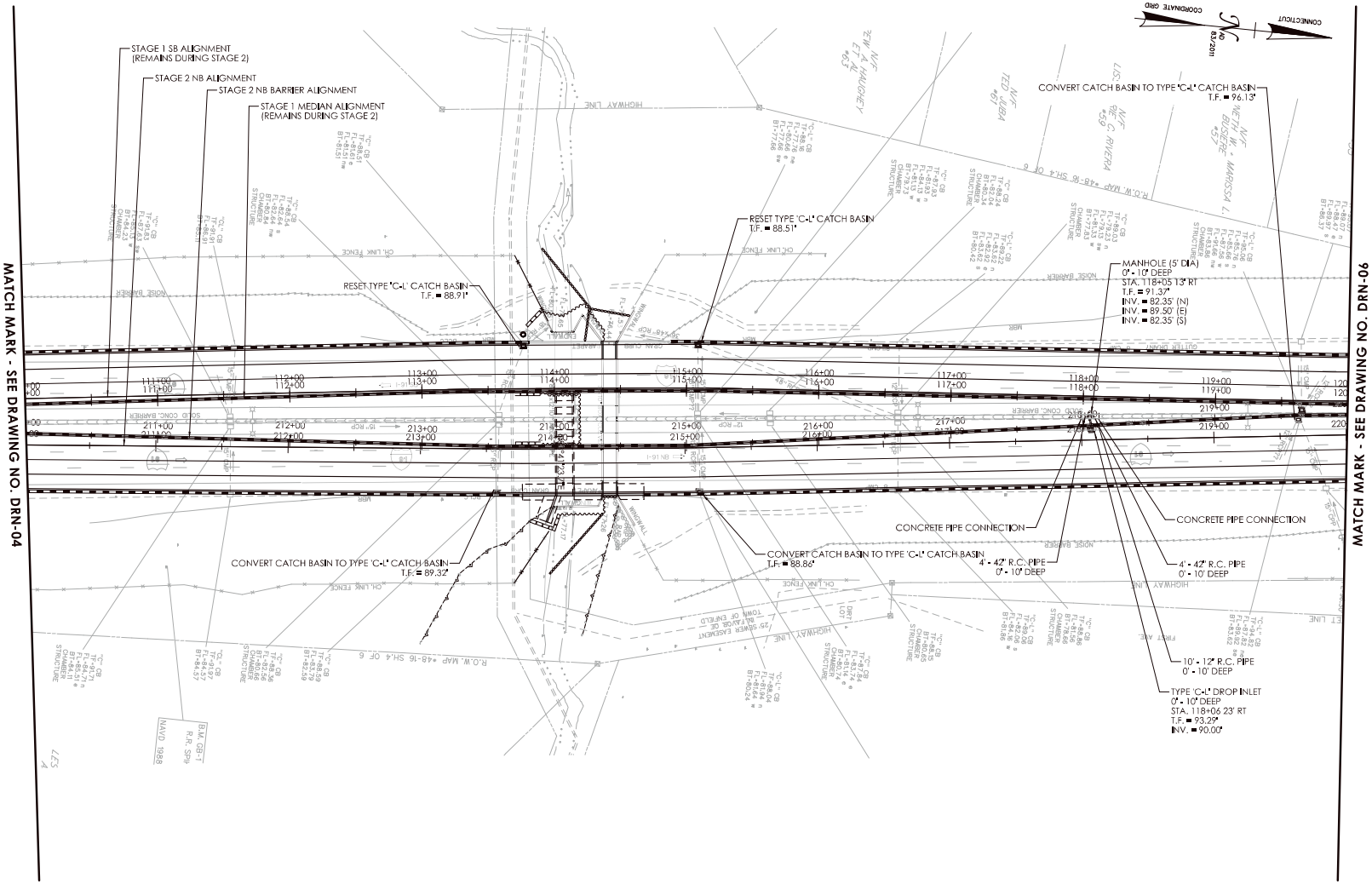
ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 2 DRAINAGE PLAN - 1

DRAWING NO. PMT-13
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\4\Contract_Plans\HW_CP_0048_0200_PMT-13_15.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | REVISION DESCRIPTION | DATE |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE
0 20' 40'
1" = 20'

SIGNATURE/ BLOCK:

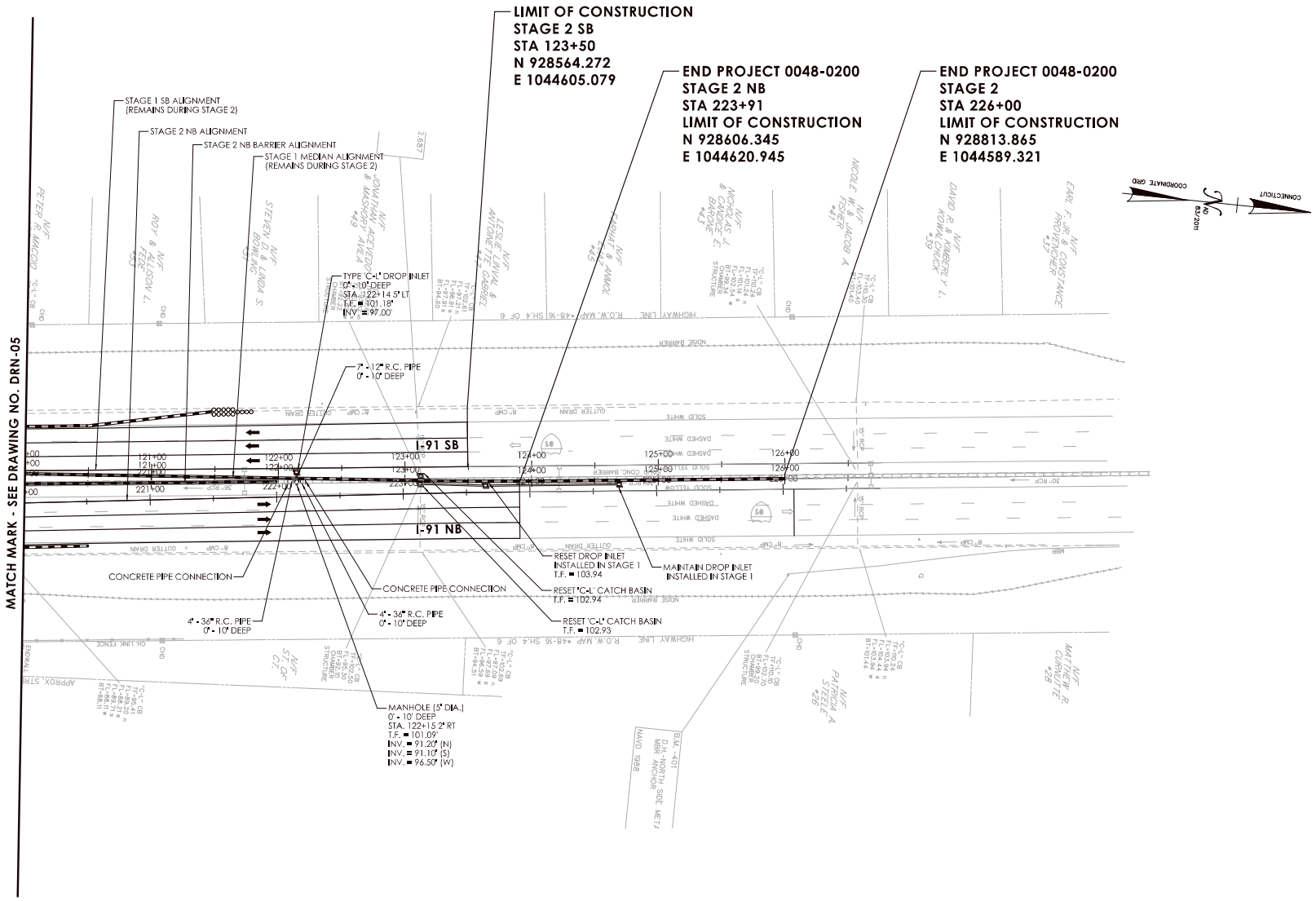
ADA
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, CT 06605
203-696-0666
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 2 DRAINAGE PLAN - 2

DRAWING NO. PMT-14
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-13_15.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | REVISION DESCRIPTION | DATE |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE
1" = 20'

SIGNATURE/ BLOCK:

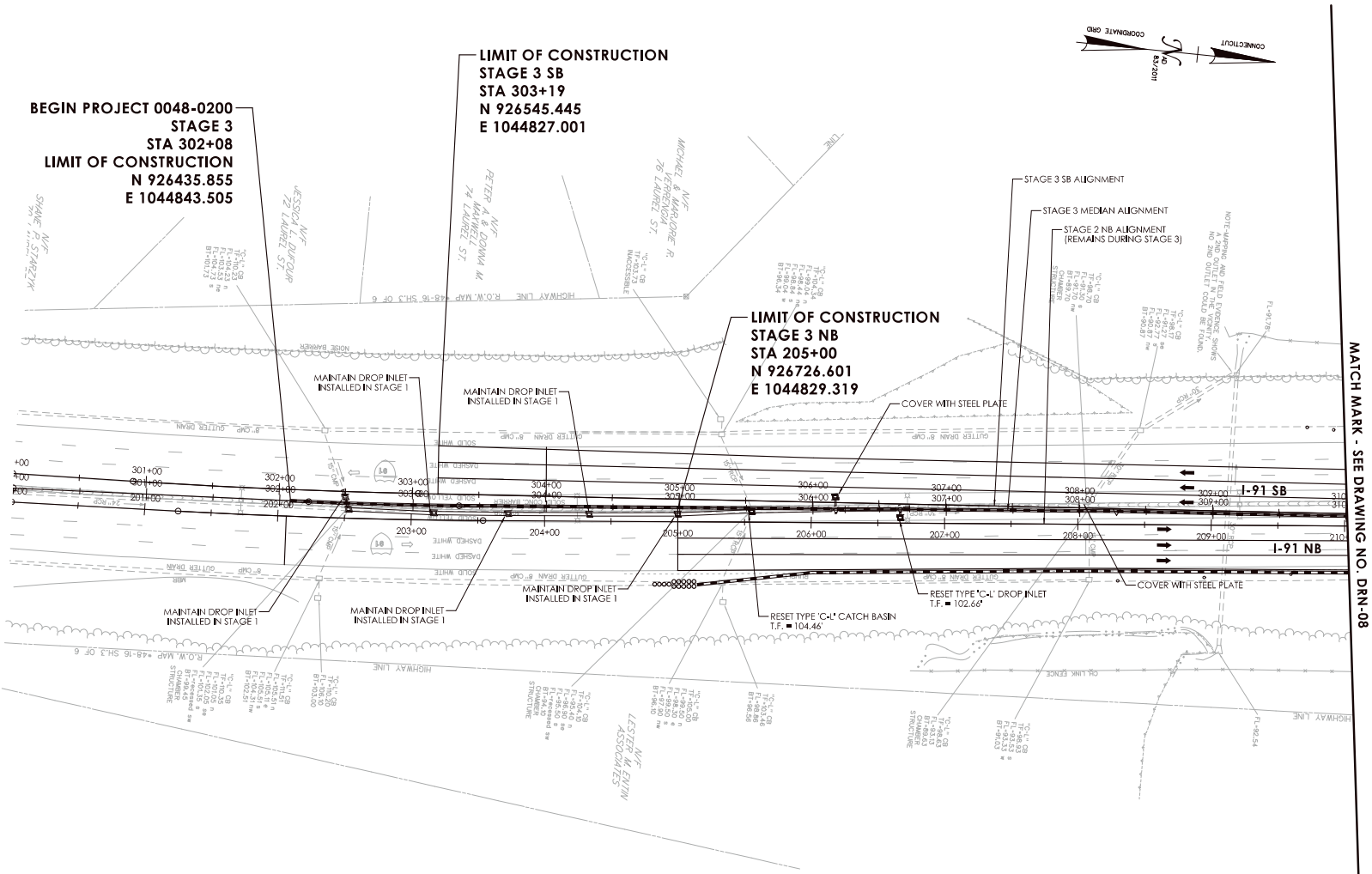
ADA — A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 2 DRAINAGE PLAN - 3

DRAWING NO. PMT-15
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-13_15.dgn
PLOTTED DATE: 9/17/2024




**NOTES:**

1. FINAL DRAINAGE WILL BE REVERTED BACK TO EXISTING CONDITIONS AFTER THE COMPLETION OF STAGE 3.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

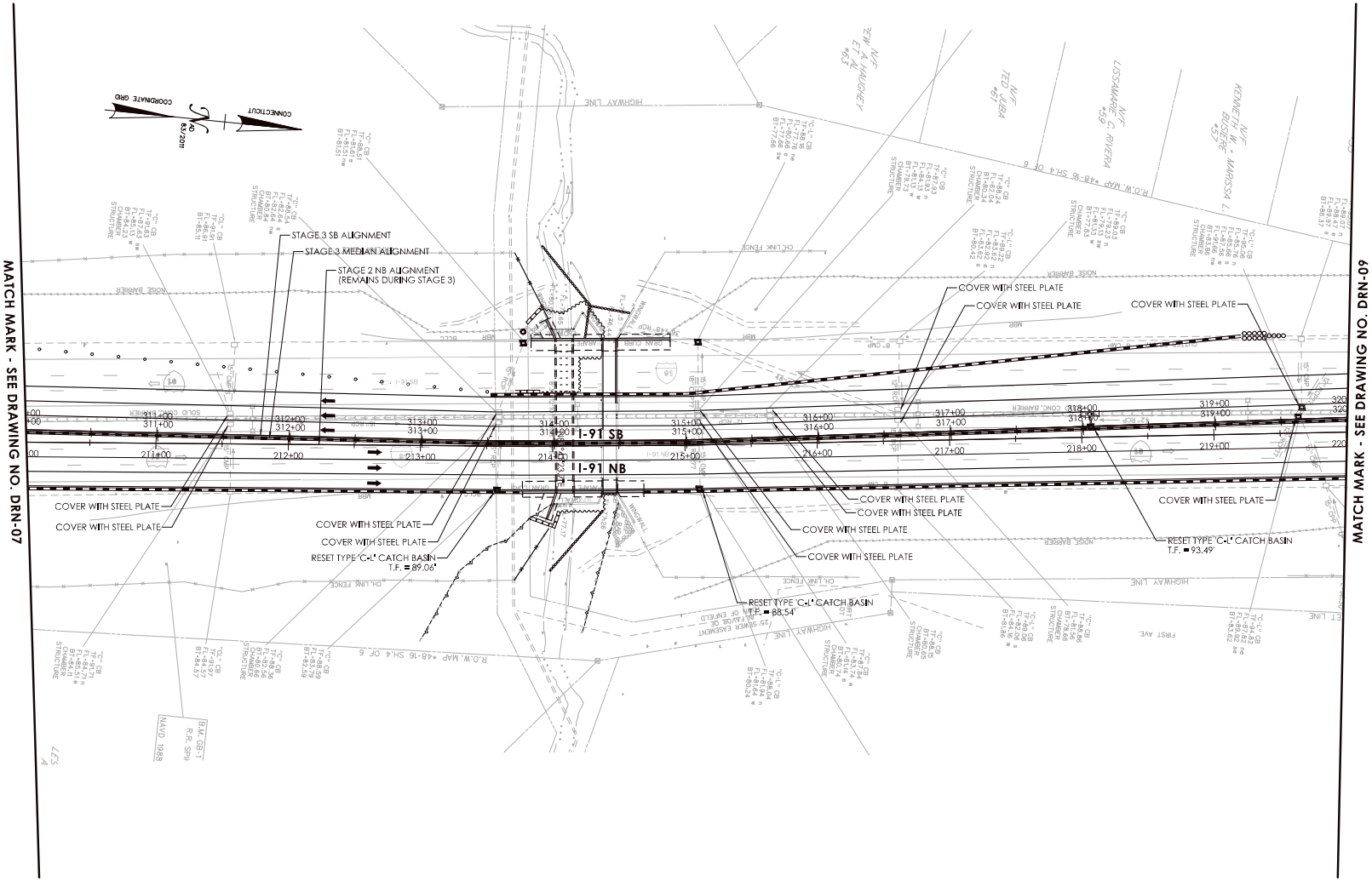
ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06608 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 3 DRAINAGE PLAN - 1

DRAWING NO. PMT-16
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-16_18.dgn
PLOTTED DATE: 9/17/2024




**NOTES:**

1. FINAL DRAINAGE WILL BE REVERTED BACK TO EXISTING CONDITIONS AFTER THE COMPLETION OF STAGE 3.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

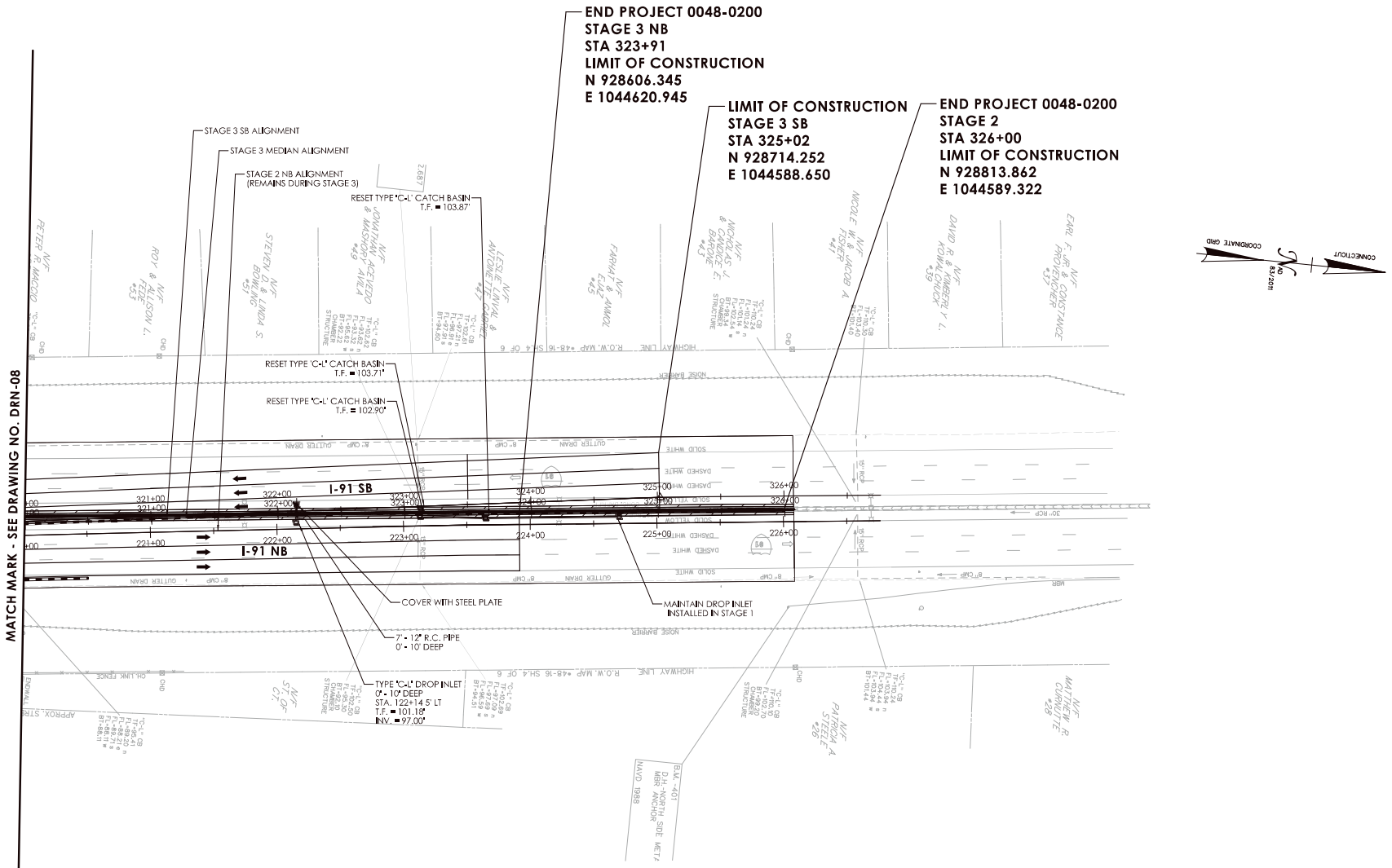
ADA DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 3 DRAINAGE PLAN - 2

DRAWING NO. PMT-17
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-16_18.dgn
PLOTTED DATE: 9/17/2024




**NOTES:**

1. FINAL DRAINAGE WILL BE REVERTED BACK TO EXISTING CONDITIONS AFTER THE COMPLETION OF STAGE 3.

**ENVIRONMENTAL PERMIT PLANS**

**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

ADA DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0666 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 3 DRAINAGE PLAN - 3

DRAWING NO. PMT-18
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-16_18.dgn
PLOTTED DATE: 9/17/2024

# Compliance Certification Form

The following certification must be signed by the licensee working in consultation with a Connecticut-licensed design professional and must be submitted to the address indicated at the end of this form within ninety (90) days of completion of the authorized work.

1. Licensee Name: CT Department of Transportation

   DEEP License Number(s): 202411740 - FM

   Municipality in which project is occurring: Enfield

2. **Check one:**

   (a) ☐ "I certify that the final site conditions and / or structures are in general conformance with the approved site plans". Identify and describe any deviations and attach to this form.

   (b) ☐ "The final site conditions and / or structures are not in general conformance with the approved site plans. The enclosed "as-built" plans note the modifications".

3. "I understand that any false statement in this certification is punishable as a criminal offence under section 53a-157b of the General Statutes and under any other applicable law."

_____ _____
Signature of Licensee Date

_____
Name of Licensee (print or type)

_____ _____
Signature of CT-Licensed Design Professional Date

_____
Name of CT-Licensed Design Professional (print or type)

_____
Professional License Number (if applicable)

Affix Stamp Here

- As-built plans shall include: elevations or tidal datums, as applicable, and structures, including any proposed elevation views and cross sections included in the approved license plans. Such as-built plans shall be the original ones and be signed and sealed by an engineer, surveyor or architect, as applicable, who is licensed in the State of Connecticut.
- The Licensee will be notified by staff of the Land and Water Resources Division (LWRD) if further compliance review is necessary. Lack of response by LWRD staff does not imply compliance.

Submit this completed form to :
DEEP.LWRDRegulatory@ct.gov or
**Regulatory Section**
**Department of Energy and Environmental Protection**
**Land & Water Resources Division**
**79 Elm Street**
**Hartford, CT 06106-5127**

# Connecticut Department of Energy and Environmental Protection License*

## General Permit for Water Resource Construction Activities - Approval of Authorization

| | |
|---|---|
| **Licensee(s):** | Connecticut Department of Transportation |
| **Licensee Address(s):** | 2800 Berlin Turnpike<br>Newington, CT 06111 |
| **License Number(s):** | 202411739-GPCST |
| **Municipality:** | Enfield |
| **Project Description:** | Replacement of Bridge No. 05585 for infrastructure improvement |
| **Project Address/Location:** | I-91 over Grape Brook |
| **Waters:** | Grape Brook and unnamed wetlands |
| **Authorizing CT Statute(s) and/or Federal Law:** | CGS Section 22a-36 to 45 |
| **Applicable Regulations of CT State Agencies:** | 22a-39-1 to 15 |
| **Agency Contact:** | Land & Water Resources Division,<br>Bureau of Water Protection & Land Reuse, 860-424-3019 |
| **License Expiration:** | Five (5) years from the date of issuance of this license. |
| **Project Site Plan Set:** | *Environmental Permit Plans State Project No. 0048-0200 Replacement of Bridge No. 05585 Interstate 91 over Grape Brook in the Town of Enfield,* 18 sheets, prepared by State of Connecticut Department of Transportation, and dated November 25, 2024. |
| **License Enclosures:** | General Permit - Water Resource Construction Activities; Site Plan Set; LWRD Work Commencement Form |

*Connecticut's Uniform Administrative Procedure Act defines License to include, "*the whole or part of any agency permit, certificate, approval, registration, charter or similar form of permission required by law . . .*"

**Authorized Activities:**

The Licensee is hereby authorized to conduct the following work as described in application # 202411739 and as depicted on any site plan sheets / sets cited herein:

Temporarily and permanently impact 900 square feet (sf) and 2,085 sf of Grape Brook, respectively, and temporarily and permanently impact 1,880 sf and 90 sf of unnamed wetlands, respectively, to replace Bridge 05585 over Grape Brook which includes:

1. Installing temporary a temporary access road with associated temporary sedimentation and erosion controls at the culvert inlet from I-91 Northbound (temporary access road from I-91 Southbound to the outlet is outside of the regulatory area) as depicted on site plan set sheets PMT-03 and PMT-04;
2. Installing temporary water handling cofferdams to temporarily divert the flows of Grape Brook through the adjacent Bridge 05578 during construction as depicted on site plan set sheets PMT-03, PMT-04, PMT-07, PMT-11, PMT-14, and PMT-17;
3. Replace the existing 132' long, 12'10" wide by 8' 4" high corrugated squashed metal pipe (CMP) (also referred to as Bridge 05585) conveying Grape Brook under I-91 with a 117' long, 12' wide by 10' high box culvert embedded 2'and backfilled with 2' of natural streambed material in the structure as depicted on site plan set sheets PMT-02, PMT-03, PMT-04, PMT-05, PMT-06, PMT-07, and PMT-08;
4. Installing 12" of natural streambed material in the footprint of the existing CMP which is being shortened as depicted on site plan set sheets PMT-06 and PMT-08;
5. Replace the existing culvert wingwalls and headwalls with four new wingwalls and a new inlet and outlet headwall to accommodate the new, shortened Bridge 05585 as depicted on site plan set PMT-02 and PMT-05;
6. Installing a rock weir comprised of approximately 1' to 1.5' diameter rounded boulders downstream of the outlet of Bridge 05585 as depicted in site plan set sheet PMT-08;
7. Installing a 20' long by 18' wide (bottom dimensions of 12.4' long by 7' wide) and 1' deep scour hole directly downstream of the rock weir comprised of a 6" granular fill base layer covered by 12" modified rip rap and top-dressed with 12" of washed-in natural streambed material at and below ordinary high water (OHW) as depicted on site plan set sheets PMT-02 and PMT-08;
8. Remove angular stone from downstream of the constructed channel outlet protection associated with Bridge 05585 and restore with a minimum of 12" of natural streambed material as depicted on site plan set sheets PMT-02 and PMT-08; and
9. Restore and install plantings in wetlands area as depicted on site plan set sheet PMT-09.

***Failure to comply with the terms and conditions of this license shall subject the Licensee and / or the Licensee's contractor(s) to enforcement actions and penalties as provided by law.***

**This license is subject to the following Terms and Conditions:**

1. **License Enclosure(s) and Conditions.** The Licensee shall comply with all applicable terms and conditions as may be stipulated within the License Enclosure(s) listed above.

2. **Fisheries Notification.** The Licensee shall notify the DEEP Fisheries Division at least ten (10) days prior to the commencement of Authorized Activity 6 (rock weir installation).
3. **Removal of Angular Stone and Stream Channel Restoration.** The Licensee shall remove the existing angular stone located downstream of the outlet of Bridge 05585 and restore the channel with natural streambed material as depicted in site plan set sheet PMT-08 herein and denoted in Authorized Activity 8.
4. **Stockpile of Native Streambed Material.** The Licensee shall stockpile native streambed material excavated from Grape Brook during the installation of the replacement of Bridge 05585. The Licensee shall locate this stockpile outside of wetlands and/or watercourses. The Licensee shall utilize the stockpiled native streambed material when restoring the outlet area downstream of the culvert, top-dressing the outlet scour pool, and/or installing 2' of native streambed material through the new box culvert. The Licensee shall utilize supplemental streambed materials which substantially matches the material present within Grape Brook if additional material is needed.
5. **Invasive Species Management and Plantings.** The Licensee shall manage invasive vegetation and install native plantings to restore the construction area as depicted on site plan set sheet PMT-09 herein.
6. **Work Commencement.** Not later than two (2) weeks prior to the commencement of any work authorized herein, the Licensee shall submit to DEEP.LWRDRegulatory@ct.gov, on the Work Commencement Form attached hereto, the name(s) and address(es) of all contractor(s) employed to conduct such work and the expected date for commencement and completion of such work, if any.

Issued under the authority of the Commissioner of Energy and Environmental Protection on:

June 10, 2025

Date

Brian P. Thompson
Division Director
Land & Water Resources Division

# General Permit for
# Water Resource Construction Activities

**Issuance Date: June 4, 2024**
**Expiration Date: June 4, 2034**

**Bureau of Water Protection and Land Reuse**
**Land and Water Resources Division**

# General Permit for Water Resource Construction Activities

## Table of Contents


**Section 1. Authority** ..... 3

**Section 2. Definitions** ..... 3

**Section 3. Authorization Under This General Permit** ..... 6
(a) Eligible Activities ..... 6
(b) Requirements for Authorization ..... 8
(c) Geographic Area ..... 8
(d) Effective Date and Expiration Date of This General Permit ..... 9
(e) Effective Date of Authorization ..... 9
(f) Transition to and from an Individual Permit ..... 9
(g) Activities not Authorized by This General Permit ..... 10

**Section 4. Request for Authorization** ..... 10
(a) Who Must File a Request for Authorization ..... 10
(b) Scope of Request for Authorization ..... 10
(c) Contents of Request for Authorization ..... 11
(d) Where to File a Request for Authorization ..... 13
(e) Copy to Municipality. ..... 13
(f) Additional Information ..... 13
(g) Action by Commissioner ..... 13

**Section 5. Conditions of This General Permit** ..... 14
(a) Operating Conditions ..... 14
(b) Reporting and Record Keeping Requirements ..... 14
(c) Recording and Reporting Violations ..... 15
(d) Modification of Authorized Activity ..... 15
(e) Completion of Authorized Activity ..... 15

**Section 6. General Conditions** ..... 16
(a) Reliance on Registration ..... 16
(b) Duty to Correct and Report Violations ..... 16
(c) Duty to Provide Information ..... 16
(d) Certification of Documents ..... 16
(e) Date of Filing ..... 17
(f) False Statements ..... 17
(g) Correction of Inaccuracies ..... 17
(h) Transfer of Authorization ..... 17
(i) Other Applicable Law ..... 18
(j) Other Rights ..... 18

**Section 7. Commissioner's Powers** ..... 18
(a) Abatement of Violations ..... 18

(b) General Permit Revocation, Suspension, or Modification .....18
(c) Filing of an Individual Permit Application.....18

# General Permit for Water Resource Construction Activities

## Section 1. Authority

This general permit is issued under the authority of sections 22a-6, 22a-45a and 22a-378a of the General Statutes. For the purposes of this general permit, authorization under 22a-45a is limited to any proposed regulated activity conducted by any department, agency or instrumentality of the state, except any local or regional board of education.

## Section 2. Definitions

As used in this general permit the following definitions shall apply:

*"Authorized activity"* means a regulated activity, including erection, placement, or maintenance of a structure or other facility, conducted or maintained under the authority of section 3 of this general permit.

*"Beach Maintenance Plan"* means a written plan for maintaining beach facilities. Such plan shall: describe the location of any such facilities; provide detailed maintenance activities to be carried out and typical design specifications and plans for such activities; estimate the quantities of material to be placed or removed in connection with such maintenance activities; describe procedures for disposal of excess material and solid waste generated in connection with such maintenance activities; and, provide the best management practices to be implemented while conducting such maintenance activities, including measures to ensure fish passage and minimize damage to habitat for fish, wildlife, or stream invertebrates.

*"Best management practice"* means a practice, procedure, activity, structure or facility designed to prevent or minimize pollution or other environmental damage or to maintain or enhance existing environmental quality. Best management practices include, but are not limited to: placement of erosion and sedimentation controls; restrictions on land use or development; construction setbacks from wetlands and watercourses; proper disposal of waste materials; procedures for equipment maintenance that prevent fuel spillage; construction methods to prevent flooding or disturbance of wetlands and watercourses; construction methods to maintain continuous stream flow; and, the confinement of in-stream work to protect fish and wildlife resources.

*"Boat Launch Maintenance Plan"* means a written plan for maintaining boat launch facilities. Such plan shall: describe the location of any such facilities; provide detailed maintenance activities to be carried out and typical design specifications and plans for such activities; estimate the quantities of material to be placed or removed in connection with such maintenance activities; describe procedures for disposal of excess material and solid waste generated in connection with such maintenance activities; and, provide the best management practices to be implemented while conducting such maintenance activities, including measures to ensure fish passage and minimize damage to habitat for fish, wildlife, or stream invertebrates.

*"CFR"* means Code of Federal Regulations.

*"Commissioner"* means the commissioner as defined by section 22a-2 of the General Statutes.

"*Compensatory mitigation"* means action taken which provides a gain of aquatic resource area and/or improvement of resource functions/values, to compensate for adverse impacts to aquatic resource(s) after avoidance and minimization have been achieved to the greatest extent practicable. Compensatory mitigation actions may include restoration, creation, or enhancement of an aquatic resource, and, in some circumstances, preservation may also be allowed to serve as compensation.

*"Consumptive use"* means any withdrawal or removal of water from the waters of the State, including but not limited to any withdrawal or removal from public or private water supply for industrial use, irrigation, hydropower generation, flood management, water quality management, recreation, landscaping ponds and decorative water fountains, or any other purpose or use.

*"Department"* means the Department of Energy and Environmental Protection.

*"Diversion"* means diversion as defined in section 22a-367 of the General Statutes.

*"Divert"* means divert as defined in section 22a-367 of the General Statutes.

*"Documented Legal Right"* means a written instrument which is recorded on the municipal land records and formalizes an easement, right of way, reserved right, agreement, obligation, or other legally enforceable act.

*"Drainage Maintenance Plan"* means a written plan for maintaining drainage facilities, and may include, without limitation, provision for channels, basins, bridges, culverts or pipes. Such plan shall: describe the location of any such facilities; provide detailed maintenance activities to be carried out and typical design specifications and plans for such activities; estimate the quantities of material to be placed or removed in connection with such maintenance activities; describe procedures for disposal of excess material and solid waste generated in connection with such maintenance activities; and, provide the best management practices to be implemented while conducting such maintenance activities, including measures to ensure fish passage and minimize damage to habitat for fish, wildlife, or stream invertebrates. Where the subject activity involves the construction, erection or maintenance of a structure or other facility, other than a highway or bridge, owned or operated by the State of Connecticut, such plan incorporates the applicable requirements for drainage basin stormwater management plans in section 25-68h-3 of the Regulations of Connecticut State Agencies.

*"Excess material"* means material such as soil, sand, gravel, stone, or debris, produced by the construction of an authorized activity which material is not utilized in such construction.

*"FEMA"* means the Federal Emergency Management Agency.

*"Floodplain"* means floodplain as defined in section 25-68b of the General Statutes.

*"Floodway"* means the regulatory floodway as defined in 44 CFR Section 59.1 for a particular watercourse and delineated on a map titled *Floodway & Flood Boundary Map* or *Flood Insurance Rate Map* issued by the FEMA for the municipality wherein such watercourse is located.

*"Groundwater"* means that portion of waters, as the term waters is defined in section 22a-367 of the General Statutes, located at or below the ground surface.

*"Hydrologic and hydraulic design report"* means a report consisting of engineering studies, design computations and other documentation as appropriate to fully and clearly describe the design of the proposed activity and the hydrologic and hydraulic effects thereof.

*"Individual permit"* means a permit issued by the commissioner to a named permittee pursuant to section 22a-39 or 22a-368 of the General Statutes.

*"Infrastructure"* means physical structures such as roads, bridges, multi-use trails, utilities, railways, and appurtenant structures necessary for the economy and governmental agencies to function.

*"LWRD"* means Land and Water Resources Division.

*"Material"* means material as defined in section 22a-38 of the General Statutes.

*"Non-consumptive use"* means any diversion of waters of the State due to channelizing, damming, collecting, piping, culverting, filling, relocating or dredging such waters or the detaining of stormwater for the purpose of stormwater management.

*"Permittee"* means any person or municipality whose request for authorization has been approved by the commissioner.

*"Person"* means person as defined in section 22a-2 of the General Statutes.

*"Pollution"* means pollution as defined in section 22a-423 of the General Statutes.

*"Regulated activity"* means any activity regulated by the commissioner under sections 22a-39 or 22a-368 of the General Statutes.

*"Requester"* means the person who submits to the commissioner a request for authorization.

*"Request for authorization"* means a request for authorization submitted under Section 4 of this general permit.

*"Solid waste"* means solid waste as defined in section 22a-207 of the General Statutes.

"*State Property Use Plan*" means a written plan approved by the commissioner for the

allowance of minor activities conducted on state property. Such plan may be amended from time to time provided such amendments are approved by the commissioner and shall include a process for validating that an entity conducting the activity has a *Documented Legal Right* to conduct such activity on State property. Such plan shall also identify State properties and the types of activities, including, but not limited to: placement of shoreline stabilization measures; installation of seasonal recreational structures; replacement or installation of drainage pipes or culverts for road crossings; replacement or installation of utility infrastructure; and identification of best management practices to be implemented while conducting such activities, including measures to ensure fish passage and minimize damage to habitat for fish, wildlife, or stream invertebrates.

*"Structure"* means any man-made object erected or placed above, on, or in the ground or under water.

*"Surface water"* means that portion of waters, as defined in section 22a-367 of the General Statutes, located above the ground surface.

*"Trail Maintenance Plan"* means a written plan for maintaining recreational trails. Such plan shall: describe the location of any such facilities; provide detailed maintenance activities to be carried out and typical design specifications and plans for such activities; estimate the quantities of material to be placed or removed in connection with such maintenance activities; describe procedures for disposal of excess material and solid waste generated in connection with such maintenance activities; and, provide best management practices to be implemented while conducting such maintenance activities, including measures to ensure fish passage and minimize damage to habitat for fish, wildlife, or stream invertebrates.

*"Watercourses"* means watercourses as defined in section 22a-38 of the General Statutes.

*"Waters"* means waters as defined in section 22a-367 of the General Statutes.

*"Wetlands"* means wetlands as defined in section 22a-38 of the General Statutes.

## Section 3. Authorization Under This General Permit

### *(a) Eligible Activities*

(1) Drainage Maintenance

Excavate accumulated sediment or remove brush; clean or reshape a sediment basin; install and repair the end wall of a culvert or bridge; repair erosion damage at pipe or culvert inlet or outlet; repair drainage pipe or culvert; replace or extend a drainage pipe or culvert with a maximum diameter of 42 inches and which is no more than ten feet (10) from the inlet and outlet sides of the culvert and receives drainage from a watershed of one (1) square mile or less. Such activities shall be performed pursuant to a Drainage Maintenance Plan that has been approved, in writing, by the commissioner under Section 4 of this general permit provided that any such activity does not involve placement of more than fifty (50) cubic yards of fill; impact more than four hundred

(400) sq. ft of wetlands or watercourses; and is not greater than seventy five (75) feet in length from the inlet and outlet sides of a drainage pipe, culvert or bridge.

(2) Trail Maintenance

Repair or replace existing nature access structures; repair or replace footings, foundations, piers, structural piles, posts or supports for a boardwalk; grade and place fill for the installation of landscape timbers and / or stone walls; place or remove fill for the maintenance of an existing path or trail. Such activities shall be performed pursuant to a Trail Maintenance Plan that has been approved, in writing, by the commissioner under Section 4 of this general permit.

(3) Boat Launch Maintenance

Repair or replace, in-kind, existing boat launch ramps; remove accumulated sediment; remove/replace/repair docks, pilings, bulkheads and associated structures; install fencing and signage; repair culvert potholes; repair ADA walkways and associated ramps; install/relocate concrete wheel stops; fill end of ramp scour holes with stone; and place riprap on side slopes to address erosion. Such activities shall be performed pursuant to a Boat Launch Maintenance Plan that has been approved, in writing, by the commissioner under Section 4 of this general permit.

(4) Beach Maintenance for Inland Beaches

Re-grade existing beaches; replace sand on existing beaches to fill sink holes or eroded areas. Such activities shall be performed pursuant to a Beach Maintenance Plan that has been approved, in writing, by the commissioner under Section 4 of this general permit. This general permit is not intended to authorize the expansion of any beach area beyond existing limits.

(5) Minor Activities Conducted on State Property

Activities such as, but not limited to; shoreline stabilization measures (grading, placement of fill, installation, or maintenance of landscape timbers and/or stone walls); installation or maintenance of structures (docks or swim floats); replacement or installation of drainage pipes or culverts for road crossings; and replacement or installation of utility conduits. Such activities shall be performed pursuant to a State Property Use Plan approved, in writing, by the commissioner under Section 4 of this general permit provided any such activities shall not involve placement of more than twenty-five (25) cubic yards of fill or impact more than 0.15 acres of wetlands or watercourses.

(6) Trail Construction

Construction of a new boardwalk or trail; expansion or extension of an existing boardwalk, trail or nature access structure including the installation of footings,

foundations, piers, structural piles, posts or supports; grading and placement of fill for the installation of landscape timbers and / or stone walls associated with a trail. Such activities shall not involve placement of more than fifty (50) cubic yards of fill or impact more than a total of 0.15 acres of wetlands and watercourses.

(7) State Facility Upgrades for Resilience

Reconstruction of an existing state facility for resilience from flooding and extreme weather events. Activities may include, but are not limited to the following: construction of a dry egress pathway for emergency access to an existing facility; installation of geotextiles or vegetative buffer strips for slope stabilization; elevation of an existing site for the purposes of providing dry floodproofing; raising of an existing structure above the base flood elevation; improvements to existing stormwater management systems; installation of a generator for the purposes of providing emergency backup power and upgrading of facilities in general (including but not limited to sidewalks or parking lots). Such improvements shall have no more than 0.20 acres of permanent and temporary impacts to wetlands & watercourses.

(8) Infrastructure Installation & Repairs

Placement of fill for roadway widening; repair or replacement of a bridge; and placement, repair, or replacement of cables, conduits or pipelines with multiple stream or wetland impact locations. Such improvements shall have no more than 0.20 acres of permanent impacts to wetlands and watercourses and no more than 0.20 acres of temporary impacts to wetlands and watercourses.

Placement of fill for roadway widening; repair or replacement of a bridge; and placement, repair, or replacement of cables, conduits or pipelines with a single wetland or watercourse impact location. Such improvements shall have no more than 0.15 acres of permanent impacts to wetlands and watercourses and no more than 0.15 acres of temporary impacts to wetlands and watercourses.

(9) Conservation Activities

Placement of fill for the enhancement of wetland areas and alteration of existing hydraulic structures associated with conservation of fish and wildlife habitats. Such improvements shall have no more than 0.20 acres of permanent impacts to wetlands and watercourses and no more than 0.20 acres of temporary impacts to wetlands and watercourses.

(10) Infrastructure Projects with Interagency Coordination

Any activity for which an authorization has been granted under a Department of Army (US Army Corps of Engineers) General Permit, Self-Verification, provided: 1) the commissioner has granted a section 401 water quality certification for such Department of the Army General Permit, 2) the activity is consistent with the section 401 water quality certification granted by the commissioner for such Department of the Army General Permit, and 3) the conditions of Section 3(b) of this general permit have been satisfied. *The issuance of a provisional permit or authorization by the Army Corps of*

*Engineers for an activity does not satisfy the requirements for authorization under this general permit.*

***(b) Requirements for Authorization***

This general permit authorizes a regulated activity listed in Section 3(a) of this general permit, provided:

(1) For those activities identified under Section 3(a) (10) of this general permit, a completed LWRD License Application Transmittal Form, designated fee has been filed with the commissioner and the commissioner notifies the requestor in writing of the receipt of a completed request and acknowledges such activity is eligible for authorization under this general permit.

(2) For those activities identified under Section 3(a) (1) through (9), inclusive, of this general permit, a completed LWRD License Application Transmittal Form and designated fee has been filed with the commissioner **and** the commissioner subsequently issues a written approval to the requestor.

(3) Flood Management Certification by State Agency

If such activity is maintained or proposed by a Connecticut state agency, such agency has complied with and obtained approval from the commissioner in accordance with sections 25-68b through 25-68h, inclusive, of the General Statutes, and sections 25-68h-1 through 25-68h-3, inclusive, of the Regulations of Connecticut State Agencies.

(4) Floodplain Management

Such activity does not and will not cause or contribute to flooding or flood hazards, permanently obstruct a floodway, or interfere with federal, state or local flood management efforts, and does and will comply with 44 CFR Parts 59 through 79, inclusive.

(5) Coastal Permits

If such activity is located, wholly or in part, waterward of the coastal jurisdiction line in tidal, coastal, or navigable waters of the State or in tidal wetlands, that said activity has been authorized pursuant to sections 22a-359 through 22a-363f, inclusive, or 22a-28 through 22a-35, inclusive of the General Statutes.

(6) Endangered and Threatened Species and Species of Special Concern

Such activity does not threaten the continued existence of any species listed pursuant to section 26-306 of the General Statutes and will not result in the destruction or adverse modification of habitat designated as essential to such species.

(7) Aquifer Protection

Such activity, if located within an aquifer protection area as mapped under section 22a-354b of the General Statutes, complies with sections 22a-354i-1 through 22-354i-10, inclusive, of the Regulations of Connecticut State Agencies.

(8) Conservation and Preservation Restrictions

If such activities are located on or may affect property subject to a conservation or preservation restriction, pursuant to section 47-42d of the General Statutes, proof of written notice to the holder of such restriction of the proposed activity's registration pursuant to this general permit or a letter from the holder of such restriction verifying that the proposed activity is in compliance with the terms of the restriction shall be provided to the commissioner prior to the start of the regulated activity.

(9) Wetland and Watercourse Mitigation

In constructing or maintaining the activities authorized herein, in the event that irreversible or irretrievable loss of wetland or watercourse resources occurs, the commissioner may require compensatory mitigation to be performed pursuant to section 22a-41 of the General Statutes. If mitigation is required to be performed as compensation for loss, the mitigation work shall be consistent with the terms and conditions of an approved mitigation plan, as authorized by the commissioner.

***(c) Geographic Area***

This general permit shall apply throughout the State of Connecticut.

***(d) Effective Date and Expiration Date of This General Permit***

This general permit shall be effective on the date it is issued and shall expire on that date ten (10) years thereafter.

***(e) Effective Date of Authorization***

(1) For those activities eligible for authorization under Section 3(a) (10) of this general permit, an activity is authorized on the date the commissioner notifies the registrant in writing of the receipt of a completed registration, which includes the applicable fee and acknowledges such activity is eligible for authorization under this general permit.

(2) For those activities eligible for authorization under Section 3(a)(1)through (9), inclusive, of this general permit, where an approval from the commissioner is required, the effective date of authorization of such activity shall be the date the commissioner issues a written approval of such request for authorization for such activity.

### *(f) Transition to and from an Individual Permit*

No person shall operate or conduct an activity authorized by both an individual permit and this general permit. The requirements for transitioning authorization are as follows:

(1) *Transition from an Individual Permit to Authorization under this General Permit*. If an activity meets the requirements for authorization under this general permit and such operation or activity is presently authorized by an individual permit, the entity to whom any such individual permit has been issued ("the Permittee") may surrender the right to operate or conduct any activity under such individual permit. The Permittee shall acknowledge its intention to surrender its permit in writing on a form prescribed by the commissioner. However, any such surrender shall not take effect, and such Permittee's individual permit shall continue to apply, until the date that the commissioner issues an authorization for such operation or activity under this general permit.

(2) *Transition from Authorization under this General Permit to an Individual Permit*. If the commissioner approves a request for authorization under this general permit and subsequently issues an individual permit for the same activity, then on the date any such individual permit is issued by the commissioner, the authorization issued under this general permit shall automatically expire.

### *(g) Activities Not Authorized by This General Permit*

A regulated activity may not lawfully be conducted or maintained unless it is authorized under this general permit or authorized by an individual permit.

(1) The diversion of water for consumptive use is not authorized by this general permit.

(2) Any activity for which the commissioner has denied eligibility for federal Clean Water Act section 401 Water Quality Certification or under Department of the Army Regional General Permits for the State of Connecticut is not authorized by this general permit.

## Section 4. Request for Authorization

### *(a) Who Must File a Request for Authorization*

Any person or municipality seeking to undertake a regulated activity under the authority of this general permit, shall file with the commissioner: 1) a request for authorization which meets the requirements of Section 4 of this general permit; and 2) the applicable fee.

Note: Activities that received authorization under the ***General Permit for Water Resources Construction Activities***, issued April 2, 2014 shall cease if a

registration form is not submitted within one hundred twenty (120) days of the effective date of this general permit. Such activities shall be performed in accordance with the requirements of the ***General Permit for Water Resources Construction Activities***, issued April 2, 2014, until their cessation or until registration with this general permit has been completed.

***(b) Scope of Request for Authorization***

A requester shall file a request for authorization for each site where an activity or activities are proposed. Where activities are proposed to be conducted at more than one site, a separate request for authorization shall be filed for each site.

***(c) Contents of Request for Authorization***

(1) Fees

(A) The filing fee of $ 5,000 shall be submitted upon each request for authorization for activities pursuant to Sections 3(a)(1) through (8), inclusive, of this general permit except: 1) the request for authorization fee for a municipality for such activities shall be discounted 50% or 2) the request for authorization fee shall be discounted 50% if the filing is done electronically.

(B) The filing fee of $ 2,500 shall be submitted with each request for authorization for activities pursuant to Sections 3(a) (9) and (10) of this general permit except: 1) the request for authorization fee for a municipality for such activities shall be discounted 50% or 2) the request for authorization fee shall be discounted 50% if the filing is done electronically.

(C) In accordance with 22a-6f of the General Statutes, no fee shall be required from any agency, board, commission, council, or department of the state, provided that the agency, board, commission, council or department of the state has compensated the Department in an amount equal to such fee pursuant to a written agreement.

(D) The filing of any request for authorization shall not be deemed complete and no activity shall be authorized by this general permit unless the filing fee has been paid in full.

(E) The filing fee shall be paid by check or money order payable to the Department of Energy and Environmental Protection. Filing fees paid by state agencies may be paid by means of a service transfer or invoice.

(F) All requests for authorization fees are non-refundable.

(2) Information Requirements and Request for Authorization

A request for authorization shall be filed on forms prescribed and provided by the commissioner and shall include but not be limited to the following:

(A) Legal name, address, email address and telephone number of the requester. If the requester is an entity transacting business in Connecticut and is required to register with the Connecticut Secretary of the State, provide the exact name as registered with the Connecticut Secretary of the State.

(B) Legal name, address, email address and telephone number of the owner of the property on which the subject activity is to take place.

(C) Legal name, address, email address and telephone number of the requester's attorney or other representative, if applicable.

(D) Legal name, address, email address and telephone number of any consultant(s) or engineer(s) retained by the requester to prepare the request for authorization or to design or construct the subject activity.

(E) Location address of the site with respect to which the request for authorization is submitted.

(F) Location Map - A depiction, on an 8.5" x 11" copy of the relevant portion of the most recent version of the United States Geologic Survey topographic map (Scale 1:24,000), of the exact location of the property at which such activity will be conducted.

(G) A description of the present and intended use(s) of the property at which such activity will be conducted and the reason for conducting such activity.

(H) A description of all natural and manmade features, including wetlands, watercourses, fish and wildlife habitat, floodplains, and structures and appurtenances thereto, potentially affected by the subject activity.

(I) A plan of the site ("site plan") showing its boundaries, the location of the subject activity and section views, as appropriate, of the property at which such activity will be conducted, depicting the location and design of such activity, existing and proposed topography, the legal boundaries of such property, the location of wetland soil types, the location of tidal wetlands, watercourses, vernal pools, and coastal resources on and immediately adjacent to such property, the sequence of construction or other actions associated with the proposed activities, including placement and removal of any temporary fill or structures, the location of all erosion and sedimentation control measures, the location on such property where any excess materials resulting from construction at such property may be placed, a north arrow and distance scale, and a title block indicating the name of the requester, the name of the individual who prepared the plan,

and the date(s) such plan was prepared or revised. If such property is located in a floodplain, the plan shall also depict the location of any floodway, the elevation of the base flood. The plan may incorporate existing natural resource maps and shall be of sufficient scale and detail to adequately depict the existing and proposed conditions of such property.

(J) The signature of the requester and of the individual or individuals responsible for preparing the request for authorization, each of whom shall certify in writing as follows:

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I certify that this request for authorization is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that a complete copy of this request for authorization, including all documents attached thereto, was sent by regular or certified mail or was hand delivered to the municipal wetlands agency, zoning commission, planning commission or combined planning and zoning commission, and conservation commission of each municipality which is or may be affected by the subject activity. I understand that a false statement made in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

### *(d) Where to File a Request for Authorization*

1. Submit a hardcopy of a completed LWRD License Application Transmittal Form and filing fee, to:

   CENTRAL PERMIT PROCESSING UNIT
   DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
   79 ELM STREET
   HARTFORD, CT 06106-5127

   Applications will not be processed without the fee. The fee shall be non-refundable and shall be paid by check or money order to the Connecticut Department of Energy & Environmental Protection. State Agencies should submit the applicable registration/application package without the application fee and check the box in Part I to indicate the fee will be paid by Inter-Agency Transfer of Funds.

2. Upon receipt of the Transmittal Form and fee, the Central Permit Processing Unit

(CPPU) will e-mail a confirmation receipt letter to the requestor containing the Department assigned application number.

3. Upon receipt of the email from CPPU, the requestor is to electronically submit the full application package with the remaining required forms in accordance with the following steps:

    a. Send an empty/blank email to DEEP.LWRDRegulatorySubmittals@ct.gov

    b. An automated email response will contain instructions for uploading the Transmittal Form and applicable Program Forms, management plans, or additional supporting documents of your application to the LWRD File Transfer Protocol (FTP) website.

    c. Follow directions contained in the email for uploading the application sections.

If you are not capable of submitting the application electronically or if you have other questions or concerns regarding application submittals, please contact LWRD staff at 860-424-3019.

***(e) Copy to Municipality***

A copy of such LWRD License Application Transmittal Form shall be filed before the date that the activity is proposed to be initiated with the inland wetlands agency, zoning commission, planning commission or combined planning and zoning commission, and conservation commission of each municipality which is or may be affected by the subject activity.

***(f) Additional Information***

The commissioner may require a requester to submit additional information, which the commissioner reasonably deems necessary to evaluate the consistency of the subject activity with the requirements for authorization under this general permit.

***(g) Action by Commissioner***

(1) The commissioner may reject without prejudice a request for authorization if it is determined that it does not satisfy the requirements of Section 4(c) of this general permit, or more than thirty (30) days have elapsed since the commissioner requested that the requester submit additional information or the required fee and the requester has not submitted such information or fee. Any request for authorization refiled after such a rejection shall be accompanied by the fee specified in Section 4(c)(1) of this general permit.

(2) The commissioner may disapprove a request for authorization if it is found that the subject activity is inconsistent with the requirements for authorization under Section 3 of this general permit, or for any other reason provided by law.

(3) Disapproval of a request for authorization under this subsection shall constitute notice to the requester that the subject activity may not lawfully be conducted or maintained without the issuance of an individual permit.

(4) The commissioner may approve a request for authorization with reasonable conditions. If the commissioner approves a request for authorization with conditions, the requester shall be bound by such conditions as if they are a part of this general permit.

(5) Rejection, disapproval, or approval of a request for authorization shall be in writing.

## Section 5. Conditions of This General Permit

### *(a) Operating Conditions*

(1) A requester shall ensure that each action with respect to the authorization under this general permit is, as applicable, constructed and maintained in accordance with the *Connecticut Guidelines for Soil Erosion and Sediment Control*, published by the Connecticut Council on Soil and Water Conservation pursuant to section 22a-328 of the General Statutes and in accordance with the Connecticut Stormwater Quality Manual.

(2) A requester shall assure that all excavated or dredged material shall be staged and managed in accordance with all applicable laws including, but not limited to, the provisions of the most recently issued General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer).

### *(b) Reporting and Record Keeping Requirements*

(1) Contractor Notification

If the authorized activity will be constructed by a person(s) under contract to the requester, the requester shall (A) give a copy of this general permit and of requester's approval of authorization hereunder to such contractor(s) prior to the start of construction, and (B) for one year after completion of the authorized activity, retain a written receipt for such copy, signed and dated by such contractor(s).

(2) Record Keeping and Reporting of Maintenance Activities

With respect to maintenance plans as described in Section 3(a) (1), (2), (3), (4) and (5) of this general permit and authorized hereunder, the requester shall maintain a record of each action undertaken pursuant to such plan. Such record shall include the date(s) each such action was undertaken, a brief description thereof, the quantities of any material placed or removed in connection therewith, and the location of such activity. The requester shall submit a copy of such record

to the commissioner on January 30th of the year after the date the commissioner approved the request for authorization and shall continue every January 30th thereafter to submit to the commissioner a copy of such record, as it applies, to the preceding twelve months.

***(c) Recording and Reporting Violations***

Within 48 hours after the requester learns of a violation of this general permit, the requester shall report the same in writing to the commissioner. Such report shall be sent to the following e-mail address: DEEP.LWRDRegulatory@ct.gov

And include the following information:

(1) the provision(s) of this general permit that has been violated;

(2) the date and time the violation(s) was first discovered and by whom;

(3) the cause of the violation(s), if known;

(4) if the violation(s) has ceased, the duration of the violation(s) including exact date(s) and time(s) it was corrected;

(5) if the violation(s) has not ceased, the anticipated date when it will be corrected;

(6) steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented;

(7) the signature of the requester and of the individual(s) responsible for preparing such report, each of whom shall certify as follows:

> "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

***(d) Modification of Authorized Activity***

In conducting and maintaining the activity authorized by this general permit, the requester shall not make any alteration, except a de minimis alteration which does not change the footprint, character and nature of the regulated impacts.

***(e) Completion of Authorized Activity***

If the requester does not complete the authorized activity within five years after the date of the applicable authorization, said authorization shall be null and void.

## Section 6. General Conditions

### *(a) Reliance on Request for Authorization*

When evaluating a request for authorization, the commissioner relies on information provided by the requester. If such information proves to be false or incomplete, the authorization issued under this general permit may be suspended or revoked in accordance with law, and the commissioner may take any other legal action provided by law.

### *(b) Duty to Correct and Report Violations*

Upon learning of a violation of a condition of this general permit, a requester shall immediately take all reasonable action to determine the cause of such violation, correct such violation and mitigate its results, prevent further such violation, and report in writing in accordance with Section 5(c) of this general permit.

### *(c) Duty to Provide Information*

If the commissioner requests any information pertinent to the authorized activity or to determine compliance with this general permit or with the requester's approval of request for authorization, the request shall provide such information in writing within thirty (30) days of such request. Such information shall be certified in accordance with Section 6(d) of this general permit.

### *(d) Certification of Documents*

Any document, including but not limited to any notice, which is submitted to the commissioner under this general permit shall be signed by, as applicable, the requester in accordance with section 22a-430-3(b)(2) of the Regulations of Connecticut State Agencies, and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

> "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

***(e) Date of Filing***

For purposes of this general permit, the date of filing with the commissioner of any document is the date such document is received by the commissioner. The word "day" as used in this general permit means the calendar day; if any date specified in the general permit falls on a Saturday, Sunday, or legal holiday, such deadline shall be the next business day.

***(f) False Statements***

Any false statement in any information submitted pursuant to this general permit or the request for authorization may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, section 53a-157b of the General Statutes, and any other applicable statute.

***(g) Correction of Inaccuracies***

Within fifteen (15) days after the date a requester becomes aware of a change in any information in any material submitted pursuant to this general permit or becomes aware that any such information is inaccurate or misleading or that any relevant information has been omitted, such requester shall correct the inaccurate or misleading information or supply the omitted information in writing to the commissioner. Such information shall be certified in accordance with Section 6(d) of this general permit. The provisions of this subsection shall apply both while a request for authorization is pending and after the commissioner has approved such request.

***(h) Transfer of Authorization***

Authorization under this general permit is transferable only in accordance with the provisions of section 22a-6o of the General Statutes.

***(i) Other Applicable Law***

Nothing in this general permit shall relieve the requester of the obligation to comply with any other applicable federal, state, and local law, including but not limited to the obligation to obtain any other authorizations required by such law.

***(j) Other Rights***

This general permit is subject to and does not derogate any present or future rights or powers of the State of Connecticut and conveys no rights in real or personal property nor any exclusive privileges and is subject to all public and private rights and to any federal, state, and local laws pertinent to the property or activity affected by such general permit. In conducting any activity authorized hereunder, the requester may not cause pollution, impairment, or destruction of the air, water, or other natural resources of this state. The issuance of this general permit shall not create any presumption that this general permit should or will be renewed.

## Section 7. Commissioner's Powers

### *(a) Abatement of Violations*

The commissioner may take any action provided by law to abate a violation of this general permit, including the commencement of proceedings to collect penalties for such violation. The commissioner may, by summary proceedings or otherwise and for any reason provided by law, including violation of this general permit, revoke a requester's authorization hereunder in accordance with sections 22a-3a-2 through 22a-3a-6, inclusive, of the Regulations of Connecticut State Agencies. Nothing herein shall be construed to affect any remedy available to the commissioner by law.

### *(b) General Permit Revocation, Suspension, or Modification*

The commissioner may, for any reason provided by law, by summary proceedings or otherwise, revoke or suspend this general permit or modify it to establish any appropriate conditions, schedules of compliance, or other provisions which may be necessary to protect human health and the environment.

### *(c) Filing of an Individual Permit Application*

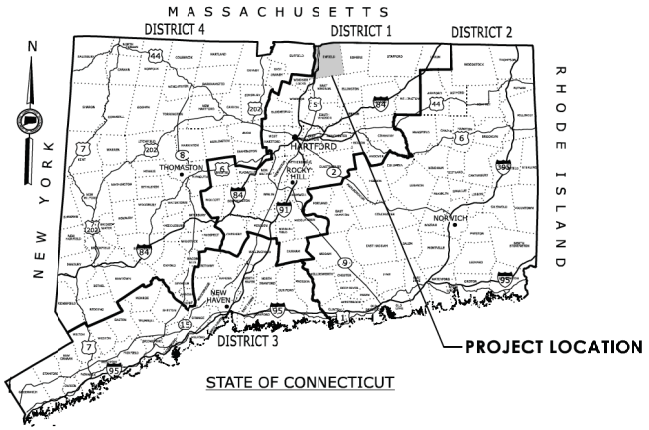
If the commissioner notifies a requester in writing that such requester must obtain an individual permit to continue lawfully conducting the activity authorized by this general permit, the requester may continue conducting such activity only if the requester files an application for an individual permit within sixty (60) days of receiving the commissioner's notice. While such an application is pending before the commissioner, the permittee shall comply with the terms and conditions of this general permit. Nothing herein shall affect the commissioner's power to revoke a requester's authorization under this general permit at any time.

Issued Date: June 4, 2024

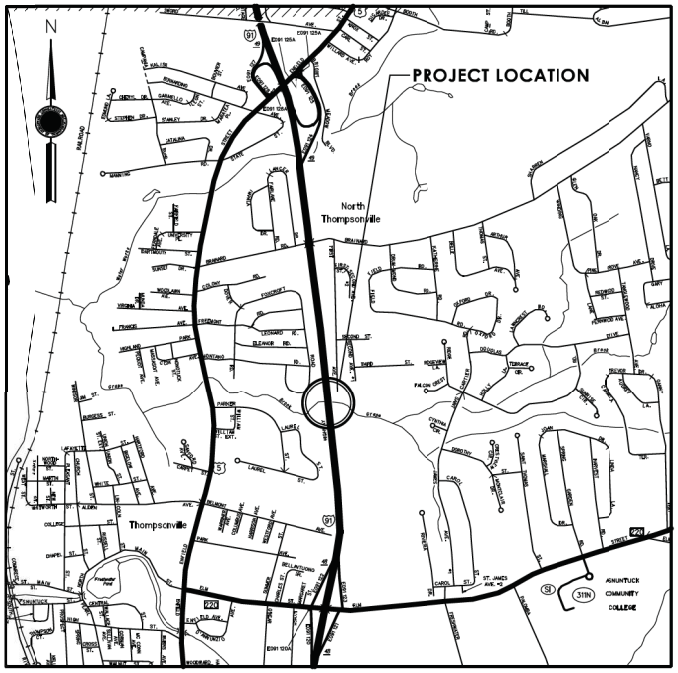
Emma Cimino

Emma Cimino
Deputy Commissioner

# ENVIRONMENTAL PERMIT PLANS
# STATE PROJECT NO. 0048-0200
# REPLACEMENT OF BRIDGE NO. 05585
# INTERSTATE 91 OVER GRAPE BROOK
# IN THE TOWN OF ENFIELD




STATE OF CONNECTICUT




LOCATION PLAN
SCALE: 1"=1000'

Digitally signed by Michael Steeves
Date: 2024.11.27 09:54:18 -05'00'

## 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 DEEP AND USACE FOR CHANGES TC THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSE, WETLANDS AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM NAD83, VERTICAL DATUM BASED ON NAVD OF 1988.
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES AND INCIDENTAL CONSTRUCTION, FORM 818, SECTION 1.10 AND WILL ALSO FOLLOW REQUIRED BEST MANAGEMENT PRACTICES (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE DEEP CONNECTICUT GUIDELINES FOR SOIL EROSION & SEDIMENT CONTROL AND DEEP CONNECTICUT STORMWATER QUALITY MANUAL.

| LIST OF DRAWINGS | |
|---|---|
| DRAWING NO. | DRAWING TITLE |
| PMT-01 | TITLE SHEET |
| PMT-02 | GENERAL SITE PLAN |
| PMT-03 | WETLAND/WATERCOURSE IMPACT PLAN |
| PMT-04 | 100 YEAR FLOOD IMPACT PLAN |
| PMT-05 | ELEVATIONS |
| PMT-06 | SECTION |
| PMT-07 | STAGING AND WATER HANDLING PLAN |
| PMT-08 | ROCK WEIR DETAILS |
| PMT-09 | PERMIT PLANTING PLAN |
| PMT-10 • PMT-12 | STAGE 1 DRAINAGE PLANS |
| PMT-13 • PMT-15 | STAGE2 DRAINAGE PLANS |
| PMT-16 • PMT-18 | STAGE3 DRAINAGE PLANS |

DESIGNED BY: A. DICESARE ASSOCIATES, P.C.
Arthur DiCesare 2024.11.26 13:21:26-05'00'

**PLAN DATE: NOVEMBER 25, 2024**

| BY: | DATE: | REVISION DESCRIPTION: |
|---|---|---|
| | | |

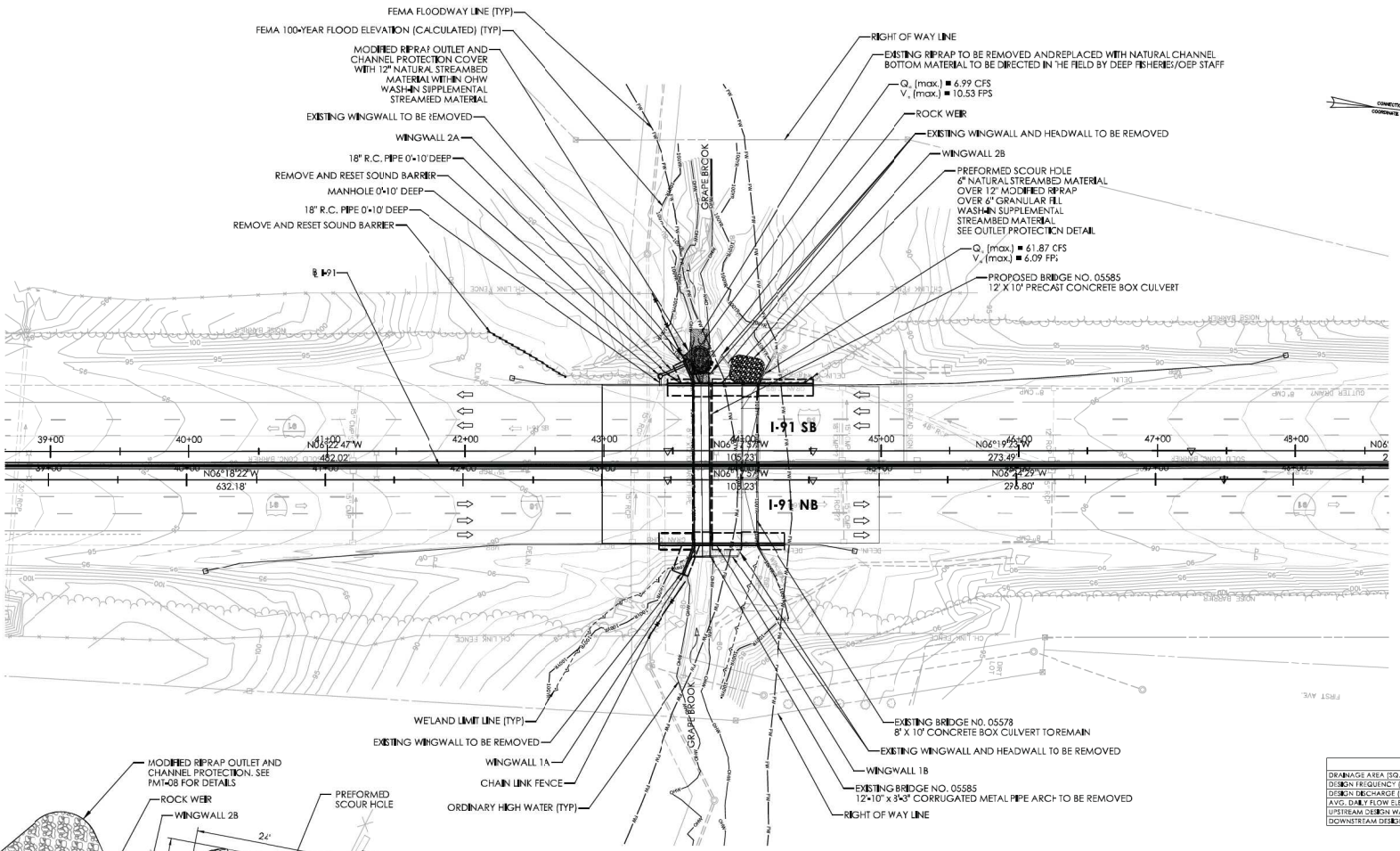
DESIGNER/DRAFTER: JPK CHECKED BY: JVS
LASTED SAVED BY: ADAG37 FILE NAME: R:\CT_Projects\0048-0200\Final\Contract_Plans\HW_CP_0048_0200_PMT01.dgn
PLOTTED DATE: 11/25/2024

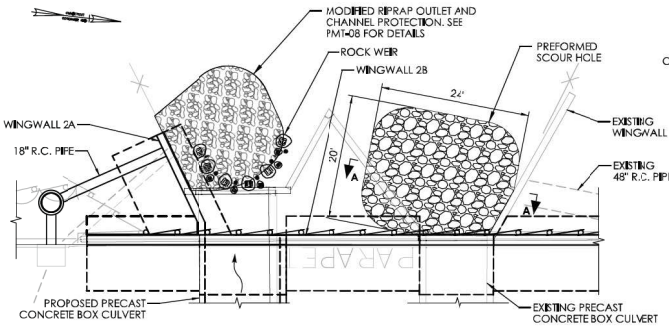
SIGNATURE/ BLOCK: ADA A.DiCesare Associates, P.C. 660 Clinton Avenue Bridgeport, CT 06605 203-996-0444 www.adicesarepc.com

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

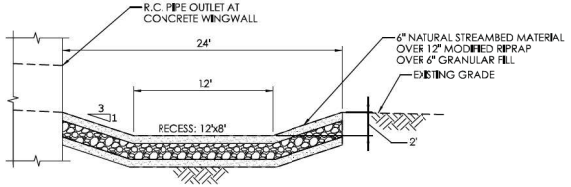
PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: TITLE SHEET

DRAWING NO.: PMT-01
SHEET NO.:




**OUTLET PROTECTION DETAIL**
NOT TO SCALE




**SECTION A-A**
NOT TO SCALE

| HYDRAULIC DATA | |
|---|---|
| DRAINAGE AREA (SQ. MI.) | 2.2 |
| DESIGN FREQUENCY (YR) | 100 |
| DESIGN DISCHARGE (CFS) | 610 |
| AVG. DAILY FLOW ELEV. (CALCULATED) (FT) | 78.1 |
| UPSTREAM DESIGN WATER SURFACE ELEV. (FT) | 82.8 |
| DOWNSTREAM DESIGN WATER SURFACE ELEV. (FT) | 79.6 |

## LEGEND

- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- FW — FEMA FLOODWAY
- NATURAL CHANNEL BOTTOM MATERIAL

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

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

SIGNATURE/ BLOCK:

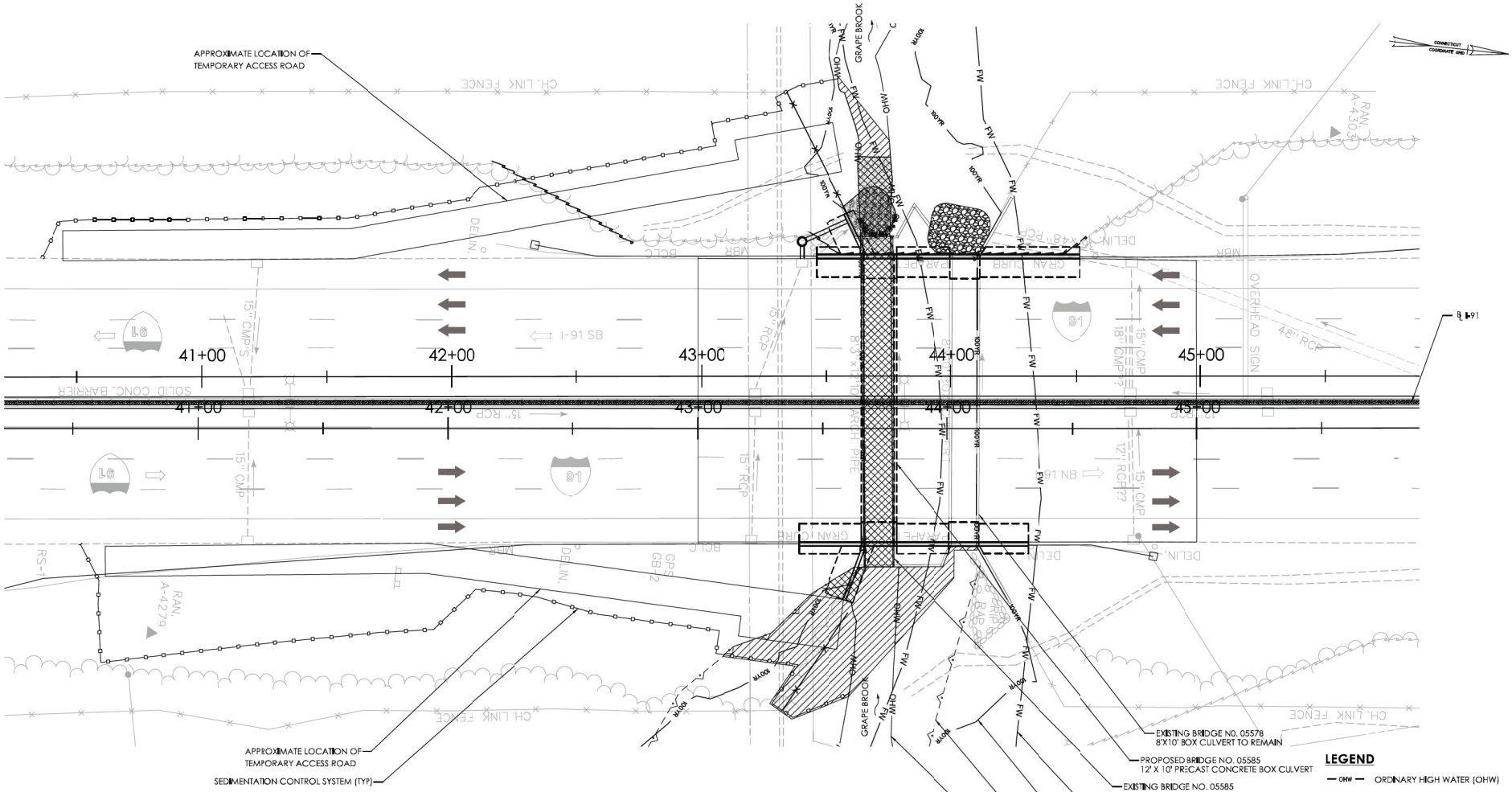
A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-02
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT02.dgn
PLOTTED DATE: 11/25/2024




**NOTE:**

THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND THE WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED TO THE EXISTING GRADES. REFER TO PERMIT PLANTING PLAN FOR DETAILS.

**INLAND WETLAND AND WATERCOURSE IMPACT TABLE**

| | WETLAND SITE NO. | WETLAND IMPACTS | WATERCOURSE IMPACTS | TOTAL |
|---|---|---|---|---|
| FERMANENT IMPACTS | 1 | 90 S.F. (0.002 AC.) | 2,085 S.F. (0.048 AC.) | 2,175 S.F. (0.050 AC.) |
| TEMPORARY IMPACTS | 1 | 1,880 S.F. (0.043 AC.) | 900 S.F. (0.021 AC.) | 2,780 S.F. (0.064 AC.) |
| TOTAL IMPACTS | 1 | 1,970 S.F. (0.045 AC.) | 2,985 S.F. (0.069 AC.) | 4,955 S.F. (0.114 AC.) |

**LEGEND**

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

**ENVIRONMENTAL PERMIT PLANS**

**PLAN DATE: NOVEMBER 25, 2024**

| REV. | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

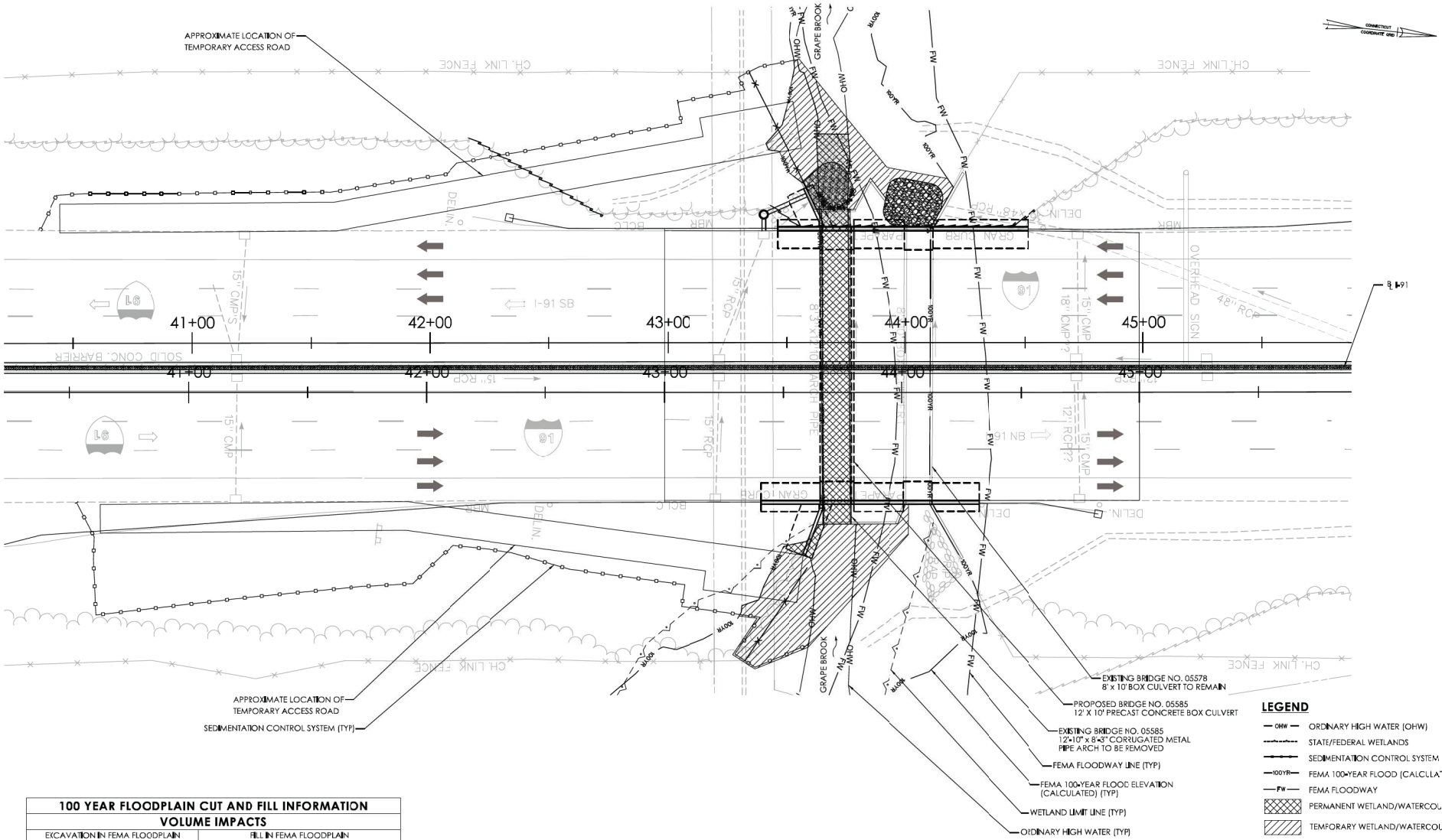
ADA — A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: WETLAND/WATERCOURSE IMPACT PLAN

DRAWING NO. PMT-03
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT03.dgn
PLOTTED DATE: 11/25/2024




**LEGEND**

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

| 100 YEAR FLOODPLAIN CUT AND FILL INFORMATION | |
|---|---|
| VOLUME IMPACTS | |
| EXCAVATION IN FEMA FLOODPLAIN | FILL IN FEMA FLOODPLAIN |
| 480 C.Y. | 360 C.Y. |

NOTE:
THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO THE DEEP FOR CHANGES TO THE DESIGN THAT WILL AFFECT THE NOTED REGULATORY AREAS.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

REV. | DATE | REVISION DESCRIPTION

DESIGNER/DRAFTER: JPK | CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

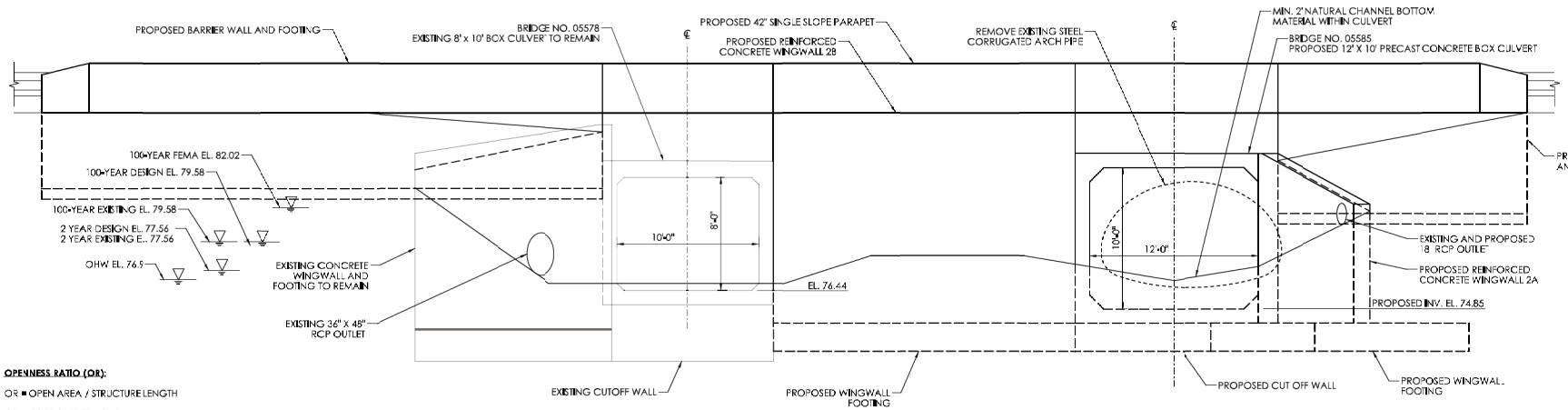
A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: 100 YEAR FLOOD IMPACT PLAN

DRAWING NO. PMT-04
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT04.dgn
PLOTTED DATE: 11/25/2024




**OUTLET ELEVATION**
SCALE: ¼" = 1'-0"

**OPENNESS RATIO (OR):**

OR = OPEN AREA / STRUCTURE LENGTH

OR = 89 SF / 117 FT = 0.67

0.67 FT < 0.82 FT

OR = (89 SF + 80 SF)/117 FT = 1.44 FT

1.44 FT > 0.82

**BANKFULL WIDTH (BFW):**

BFW = 18 FT

1.2 X BFW = 21.6 FT

21.6 FT > 12 FT PROPOSED CULVERT

21.6 FT < 22 FT PROPOSED CULVERT AND OVERFLOW BOX CULVERT

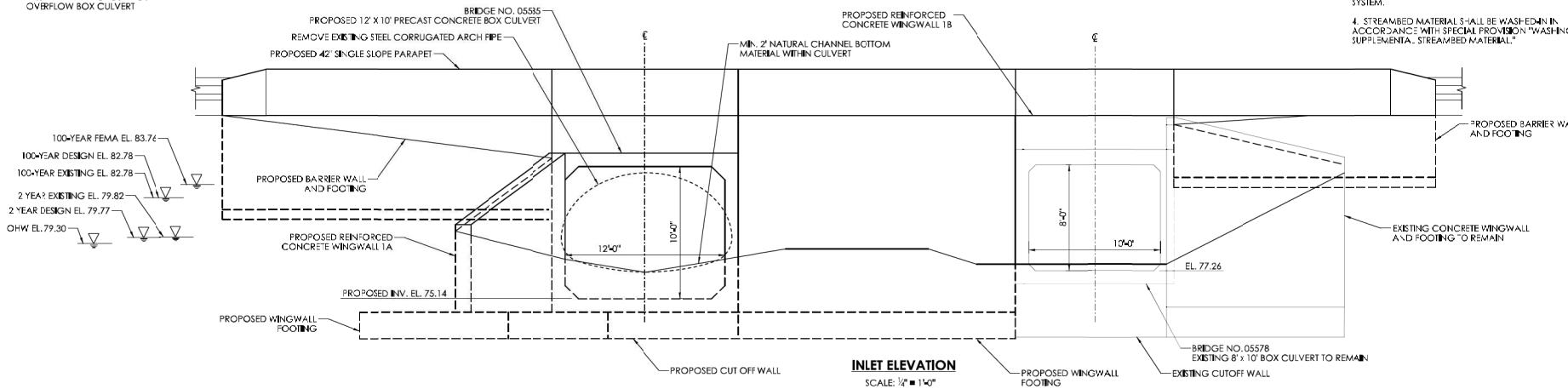
## NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE PRECAST CONCRETE BOX CULVERT SHALL BE STOCKPILED AND THEN REPLACED AT THE OUTLET 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 CHANNEL MATERIAL."

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

4. STREAMBED MATERIAL SHALL BE WASHED-IN IN ACCORDANCE WITH SPECIAL PROVISION "WASHING-IN SUPPLEMENTAL STREAMBED MATERIAL."




**INLET ELEVATION**
SCALE: ¼" = 1'-0"

## ENVIRONMENTAL PERMIT PLANS

**PLAN DATE: NOVEMBER 25, 2024**

| REV. | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

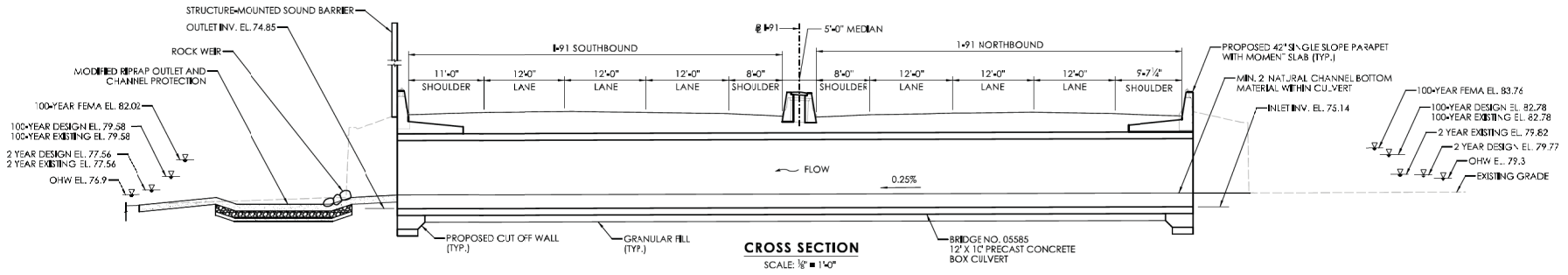
ADA — A.DiCesare Associates, P.C., 990 Clinton Avenue, Bridgeport, CT 06605, 203-696-0444, www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: ELEVATIONS

DRAWING NO. P.MT-05
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_E23C_PMTC5.dgn
PLOTTED DATE: 11/25/2024




**CROSS SECTION**

SCALE: ⅛" = 1'-0"

**ENVIRONMENTAL PERMIT PLANS**

**PLAN DATE: NOVEMBER 25, 2024**

| REV. | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |

SCALE AS NOTED

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SIGNATURE/ BLOCK:

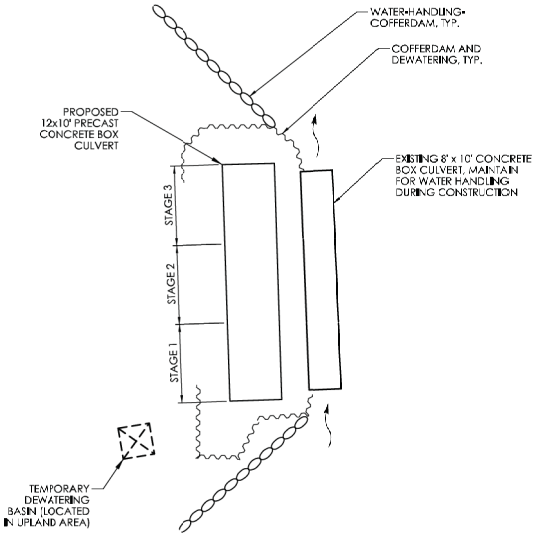
ADA
A.DiCesare Associates, P.C.
680 Clinton Avenue
Bridgeport, CT 06605
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: SECTION

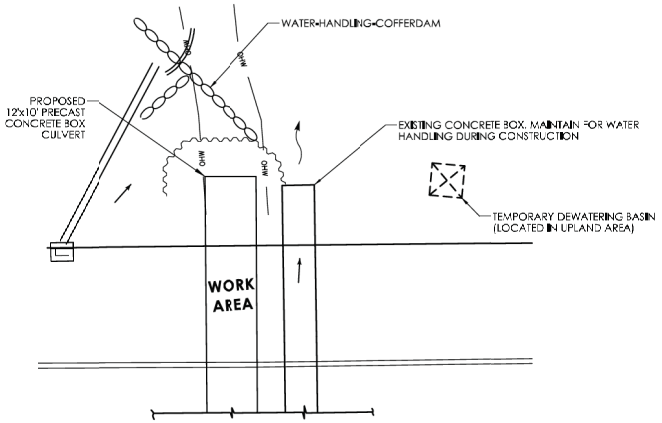
DRAWING NO. P.MT-06
SHEET NO.

LASTED SAVED BY: ADAG39 FILE NAME: R:\CT_Projects\0048-0200\Envir\Contract_Plans\HW_CP_0048_E20C_PMTCA.dgn
PLOTTED DATE: 11/25/2024




**EXISTING STRUCTURE AS BYPASS FOR HANDLING WATER**

NOT TO SCALE




**ANCILLARY STORM DRAINAGE NEAR WORK AREA**

NOT TO SCALE

## SUGGESTED CONSTRUCTION SEQUENCING (STAGE 1)

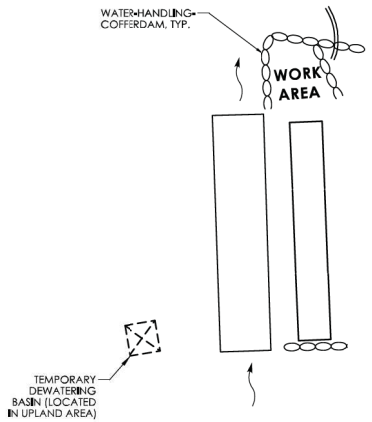
1. CLEAR AND GRUB AND INSTALL SEDIMENTATION CONTROL SYSTEM.
2. CONSTRUCT TEMPORARY ACCESS ROADS.
3. INSTALL TEMPORARY WATER-HANDLING-COFFERDAM AND COFFERDAM AND DEWATERING TO REDIRECT BROOK THROUGH EXISTING 8' x 10' BOX CULVERT.
4. SHIFT TRAFFIC LANES, INSTALL TEMPORARY EARTH RETAINING SYSTEMS AT APPROACHES, EXCAVATE, AND REMOVE HEADWALL, WINGWALL AND EXISTING CULVERT, STAGE 1 SECTION.
4. INSTALL PROPOSED 12'x10' PRECAST CONCRETE BOX CULVERT, STAGE 1 SECTION.
5. INSTALL HEADWALLS, WINGWALLS, BARRIER WALLS AND PARAPETS FOR STAGE 1.
6. BACKFILL AND RECONSTRUCT ROADWAY, STAGE 1 SECTION.

## SUGGESTED CONSTRUCTION SEQUENCING (STAGE 2)

1. SHIFT TRAFFIC LANES FOR WORK AT STAGE 2.
2. INSTALL TEMPORARY EARTH RETAINING SYSTEM AT APPROACHES, EXCAVATE, AND REMOVE EXISTING CULVERT, STAGE 2 SECTION.
3. INSTALL PROPOSED 12'x10' PRECAST CONCRETE BOX CULVERT, STAGE 2 SECTION.
4. BACKFILL AND RECONSTRUCT ROADWAY, STAGE 2 SECTION.

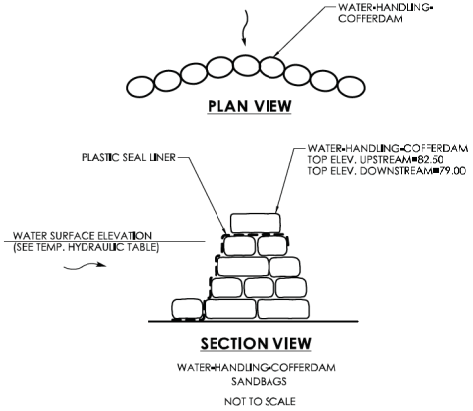
## SUGGESTED CONSTRUCTION SEQUENCING (STAGE 3)

1. SHIFT TRAFFIC LANES FOR WORK AT STAGE 3.
2. INSTALL TEMPORARY EARTH RETAINING SYSTEM AT APPROACHES, EXCAVATE, AND REMOVE HEADWALL, WINGWALL, AND EXISTING CULVERT, STAGE 3 SECTION.
3. INSTALL PROPOSED 12'x10' PRECAST CONCRETE BOX CULVERT, STAGE 3 SECTION.
4. INSTALL HEADWALL, WINGWALLS, BARRIER WALLS AND PARAPETS FOR STAGE 3.
5. BACKFILL AND RECONSTRUCT ROADWAY, STAGE 3 SECTION.
6. REMOVE TEMPORARY EARTH RETAINING SYSTEM, AND INSTALL NATURAL STREAMBED MATERIAL, PREFORMED SCOUR HOLE, AND ROCK WEIRS.
7. REMOVE TEMPORARY WATER-HANDLING-COFFERDAM.
8. INSTALL TEMPORARY WATER-HANDLING-COFFERDAM AT EXISTING CULVERT OUTLET AND INSTALL PREFORMED SCOUR HOLE.
9. REMOVE TEMPORARY EARTH RETAINING SYSTEMS AT TEMPORARY ACCESS ROADS.
10. PERFORM DRAINAGE WORK AT SOUTHWEST QUADRANT.
11. FURNISH TOPSOIL, PROVIDE TURF ESTABLISHMENT AND INSTALL PLANTINGS AT DISTURBED AREAS.
12. REMOVE EROSION CONTROL MEASURES UPON STABILIZATION.




**USE OF NEW STRUCTURE DURING WORK AT EXISTING STRUCTURE OUTLET**

NOT TO SCALE




NOT TO SCALE

## WATER HANDLING NOTES:

1. THE 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/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. IF A PUMP SYSTEM IS PROPOSED DURING LOW FLOW CONDITIONS, THE PUMP SYSTEM SHALL BE DESIGNED BY THE CONTRACTOR. PUMP SYSTEM PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. 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 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 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.

| TEMPORARY HYDRAULIC DATA | |
|---|---|
| AVERAGE DAILY FLOW (CFS) | 4.1 |
| AVERAGE SPRING FLOW (CFS) | 7.9 |
| TEMPORARY DESIGN FREQUENCY | 2-YEAR STORM |
| 2-YEAR FREQUENCY DISCHARGE (CFS) | 140 |
| LOW FLOW PUMPING TEMPORARY DESIGN DISCHARGE ■ ASF (CFS) | 7.9 |
| GRAVITY FLOW BYPASS PIPE TEMPORARY DESIGN DISCHARGE ■ 2-YEAR FREQUENCY (CFS) | 140 |
| 2-YEAR WATER SURFACE ELEVATION UPSTREAM (FT) | 81.9 |
| 2-YEAR WATER SURFACE ELEVATION DOWNSTREAM (FT) | 77.6 |

NOTE:
VALUES AND ELEVATIONS MAY VARY SLIGHTLY FROM THE CONTRACT PLANS

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV. | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |

SCALE AS NOTED

SIGNATURE/ BLOCK:

ADA

A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, CT 06605
203-696-0444
www.adicesarepc.com

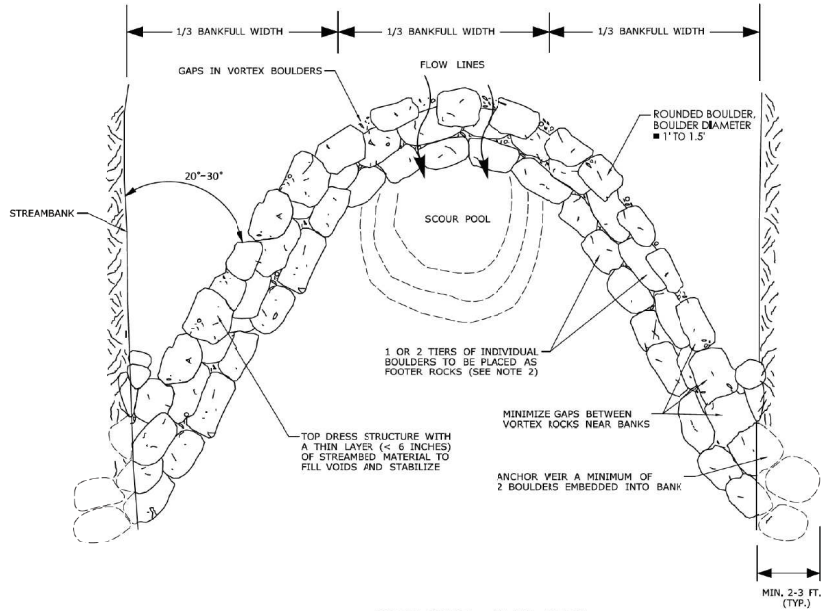
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGING AND WATER HANDLING PLAN

DRAWING NO. PMT-07
SHEET NO.

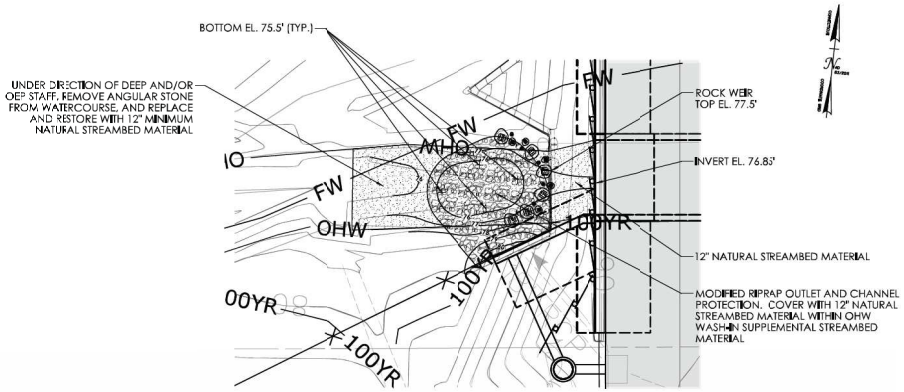
DESIGNER/DRAFTER: JPK CHECKED BY: JVS

LASTED SAVED BY: ADAG37 FILE NAME: R:\CT_Projects\0048-0200\Envir\Contract_Plans\HW_CP_0048_E23C_PMT07.dgn
PLOTTED DATE: 11/25/2024



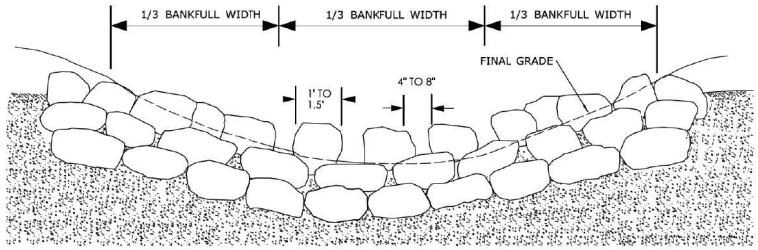

**ROCK WEIR - PLAN VIEW**

N.T.S.



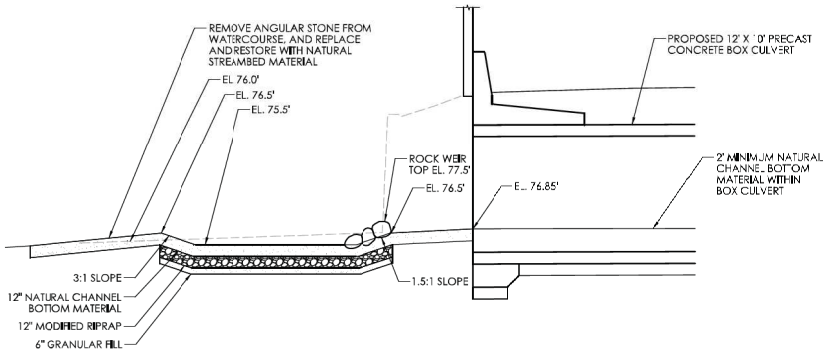

**ROCK WEIR AND OUTLET PROTECTION - PLAN VIEW**

N.T.S.




**ROCK WEIR - SECTION VIEW (UPSTREAM)**

N.T.S.




**ROCK WEIR AND OUTLET PROTECTION - PROFILE VIEW**

N.T.S.

## ROCK WEIR NOTES:

1. PLACEMENT OF THE ROCK WEIR SHALL BE UNDER THE SUPERVISION OF CTDEEP FISHERIES DIVISION STAFF (OR THEIR AUTHORIZED DELEGATE). THE CONTRACTOR SHALL COORDINATE THROUGH THE ENGINEER A MINIMUM OF 10-DAYS IN ADVANCE OF THE WEIR INSTALLATION TO ALLOW FOR CTDEEP FISHERIES DIVISION TO BE PRESENT ON SITE.
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. BOULDERS SHALL BE ROUNDED, 1' TO 1.5' IN DIAMETER AS SPECIFIED BY DEEP FISHERIES OR AS RECOMMENDED BY THE OFFICE OF ENVIRONMENTAL PLANNING (OEP). CONTRACTOR SHALL COORDINATE TYPE AND SIZE WITH DEEP FISHERIES OR OEP.
4. ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE ROCK WEIR SHALL BE PAID FOR UNDER THE ITEM FOR "ROCK WEIR , EXISTING OR NATURAL STREAMBED MATERIAL SHALL BE PAID FOR UNDER THE ITEM FOR "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL" AND "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."
5. BOULDERS SHALL BE PLACED WITHIN THE DEPARTMENT'S RIGHT-OF-WAY OR EASEMENT.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV. | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK | CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

A.DiCesare Associates, P.C. 990 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

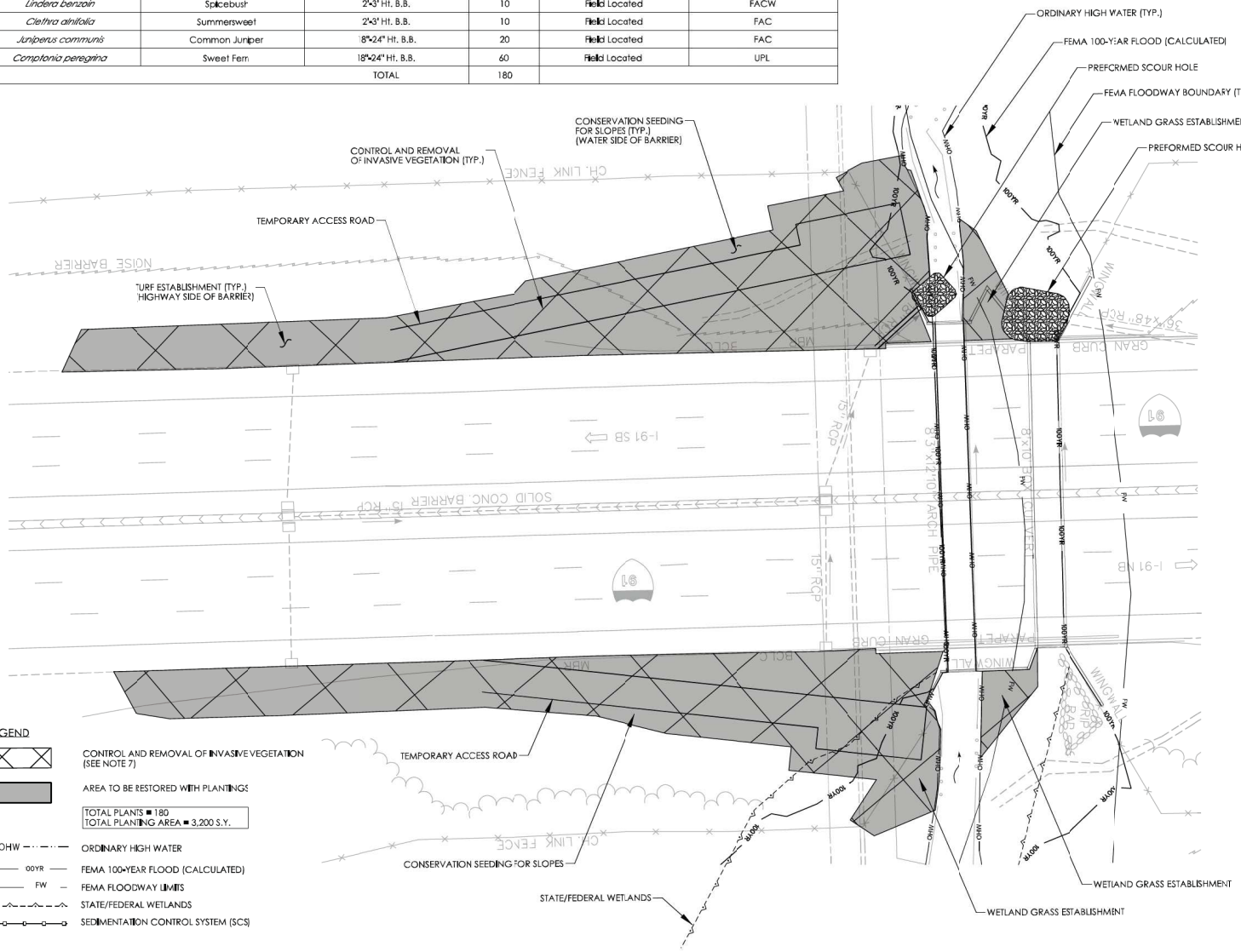
PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: ROCK WEIR DETAILS

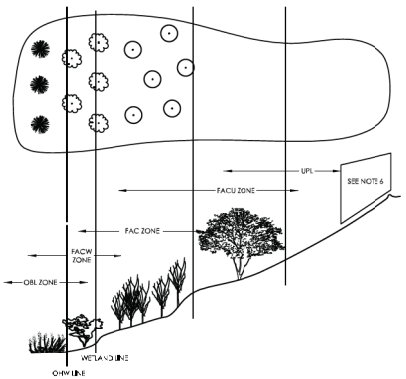
DRAWING NO. PMT-08
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT08.dgn
PLOTTED DATE: 11/25/2024

PERMIT PLANT LIST

| BOTANICAL NAME | COMMON NAME | SIZE | QTY. | SPACING | WETLAND INDICATOR |
|---|---|---|---|---|---|
| *Asclepicas incarnata* | Swamp Milkweed | 2" Plug | 40 | Field Located | OBL |
| *Asclepias tuberosa* | Butterfly Milkweed | 2" Plug | 40 | Field Located | NI |
| *Lindera benzoin* | Spicebush | 2'-3' Ht. B.B. | 10 | Field Located | FACW |
| *Clethra alnifolia* | Summersweet | 2'-3' Ht. B.B. | 10 | Field Located | FAC |
| *Juniperus communis* | Common Juniper | 18"-24" Ht. B.B. | 20 | Field Located | FAC |
| *Comptonia peregrina* | Sweet Fern | 18"-24" Ht. B.B. | 60 | Field Located | UPL |
| | | TOTAL | 180 | | |




SCHEMATIC PLANTING

LEGEND

- CONTROL AND REMOVAL OF INVASIVE VEGETATION (SEE NOTE 7)
- AREA TO BE RESTORED WITH PLANTINGS
- TOTAL PLANTS = 180
  TOTAL PLANTING AREA = 3,200 S.Y.
- OHW — ORDINARY HIGH WATER
- 00YR — FEMA 100-YEAR FLOOD (CALCULATED)
- FW — FEMA FLOODWAY LIMITS
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)

NOTES

1. THE PLANTINGS ON THIS SHEET ARE FOR ENVIRONMENTAL PERMITTING. ANY SUBSTITUTIONS TO THE PERMIT PLANTINGS SHALL BE COORDINATED WITH THE DEPARTMENTS 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 DISTURBED 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 AER TO BE PLACED WITHIN A MOWED AREA.

7. AREA TO BE TREATED FOR INVASIVES AND PROPERLY PREPARED FOR FINAL PLANTING, SEEDING, AND RESTORATION.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

REV. | DATE | REVISION DESCRIPTION

DESIGNER/DRAFTER: CMB CHECKED BY: DMC

HORIZONTAL SCALE 1" = 20'

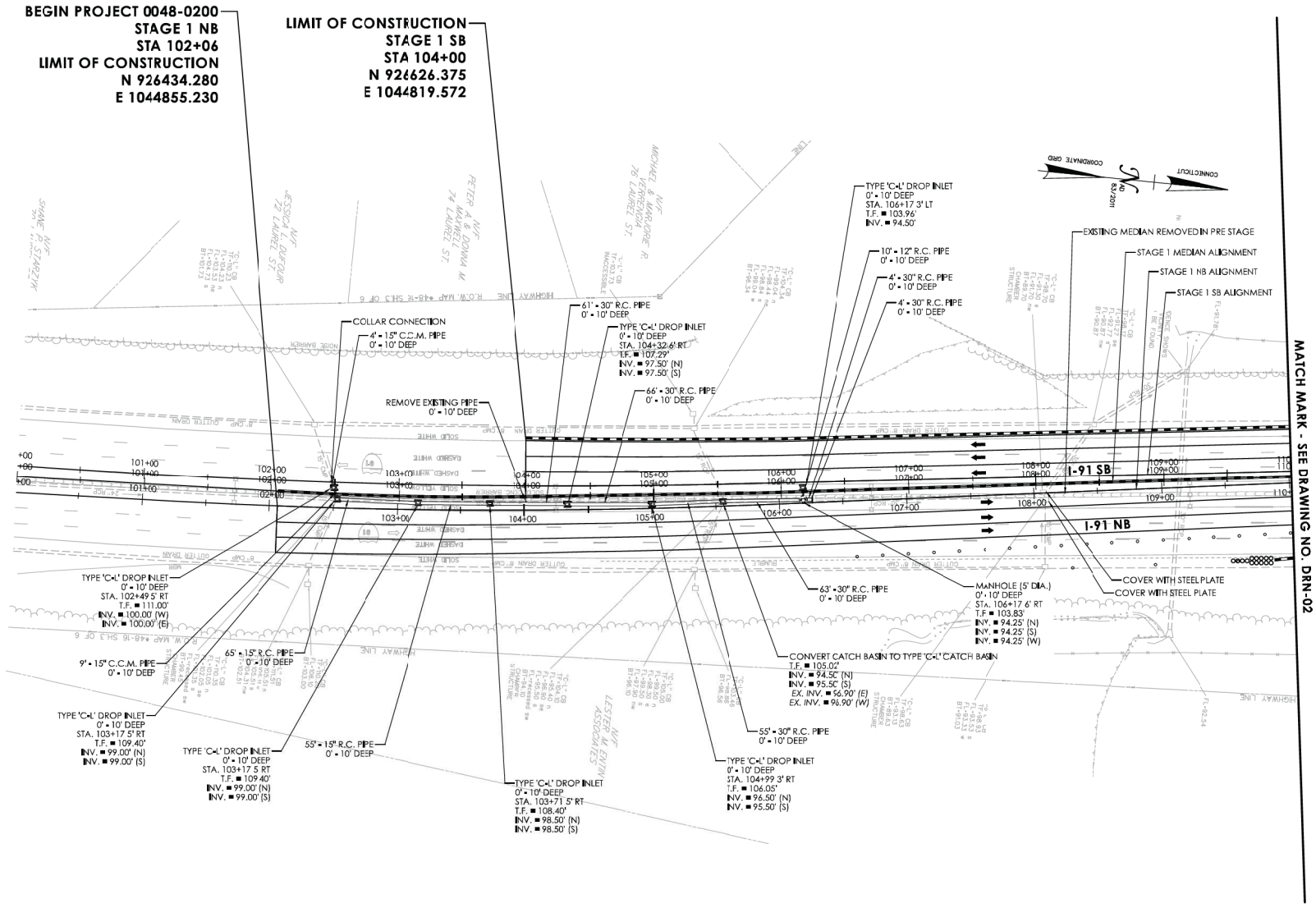
SIGNATURE/ BLOCK:

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-09
SHEET NO.

LASTED SAVED BY: DCain FILE NAME: G:\JOB\519\15C\15C5403\BRIDGES\STATE\Enfield_05585\DGN\Hydro\SB_MSH_0048-0200_PMT02.dgn
PLOTTED DATE: 11/25/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV. | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

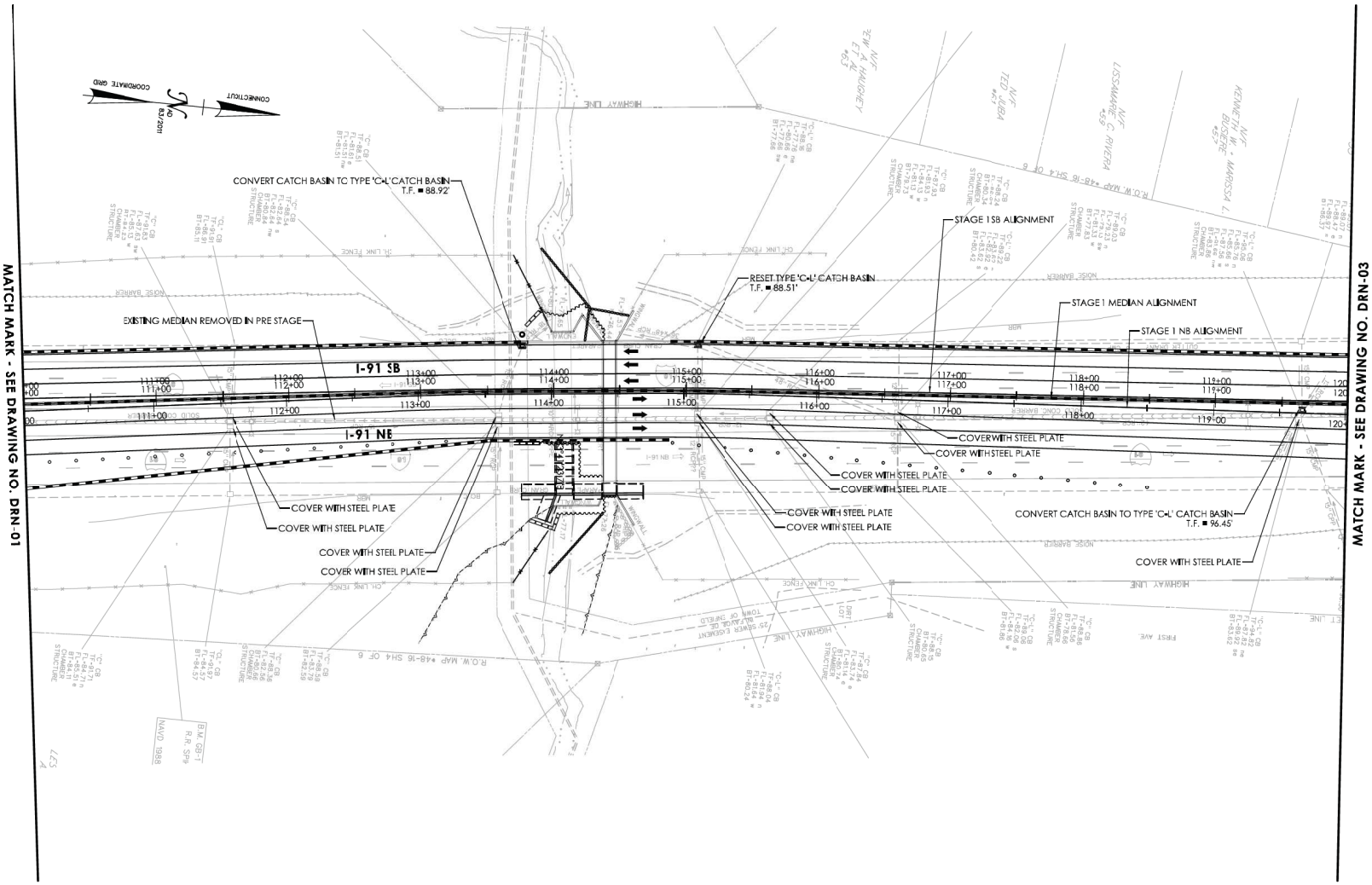
ADA — A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 1 DRAINAGE PLAN - 1

DRAWING NO. PMT-10
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-10_12.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| BY: | DATE: | REVISION DESCRIPTION: |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

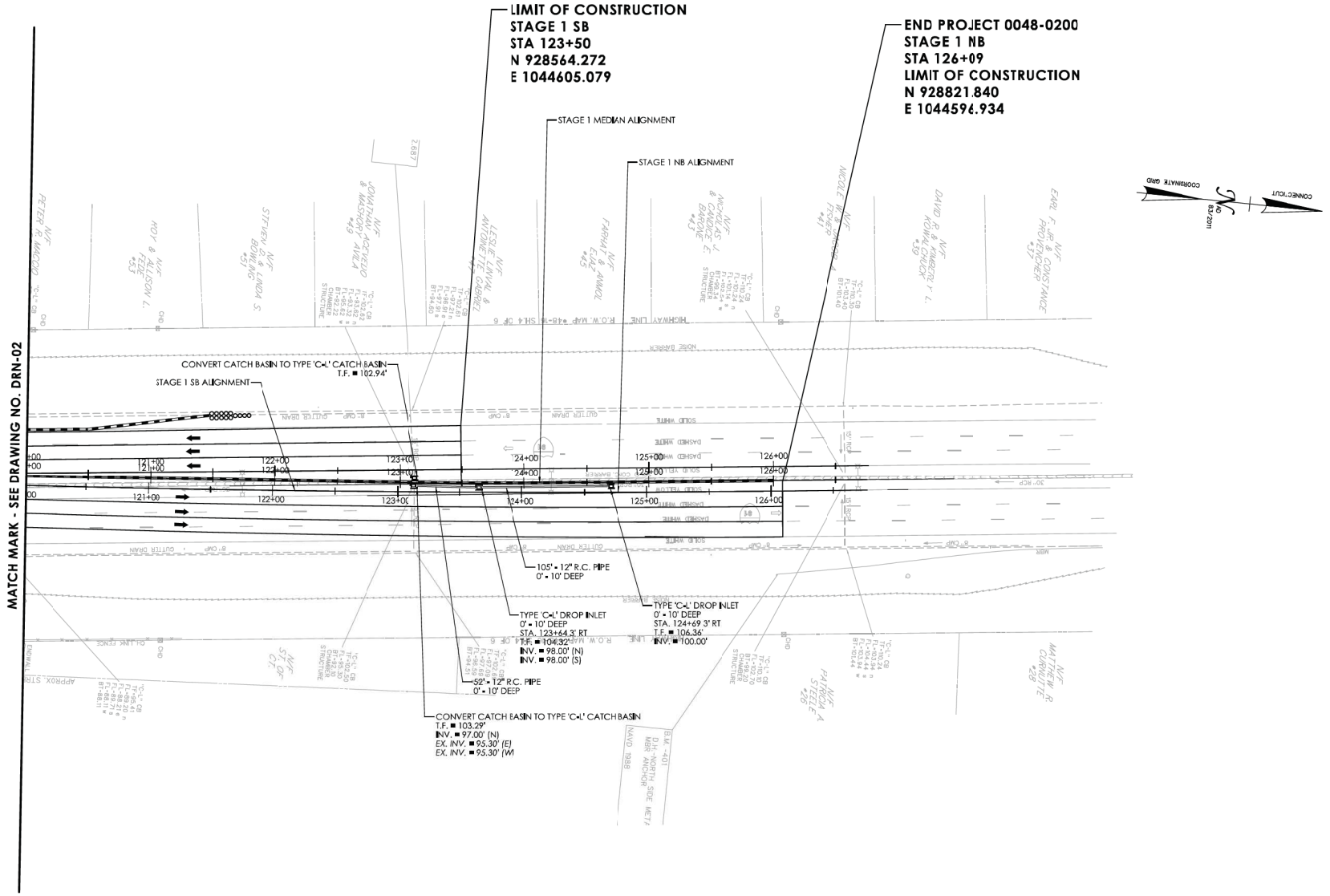
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, Ct 06605
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 1 DRAINAGE PLAN - 2

DRAWING NO. PMT-1
SHEET NO.

LASTED SAVED BY: ADAG37 FILE NAME: R:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-10_12.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| BY: | DATE: | REVISION DESCRIPTION: |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

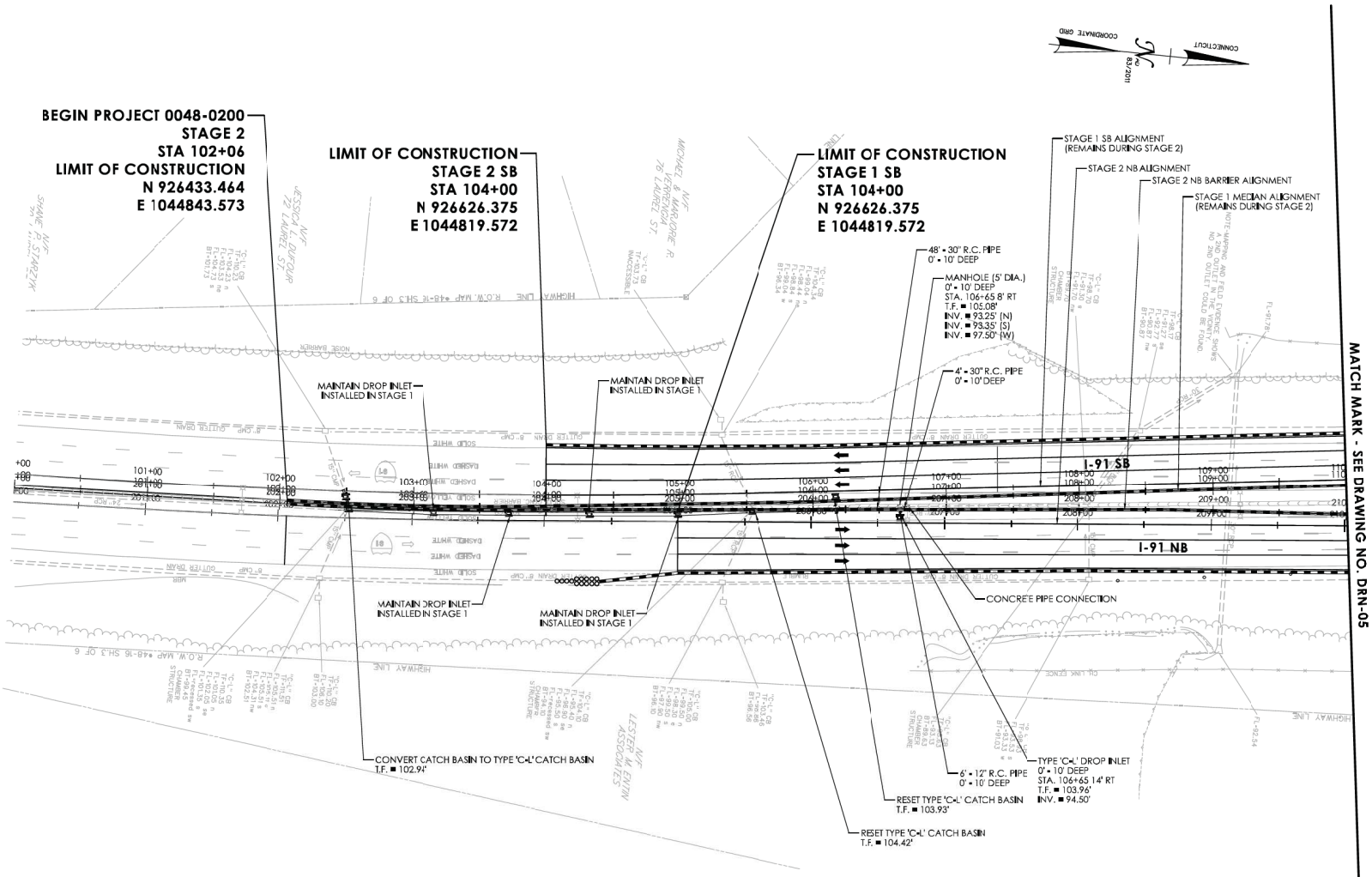
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, CT 06605
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 1 DRAINAGE PLAN - 3

DRAWING NO. PMT-12
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-10_12.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

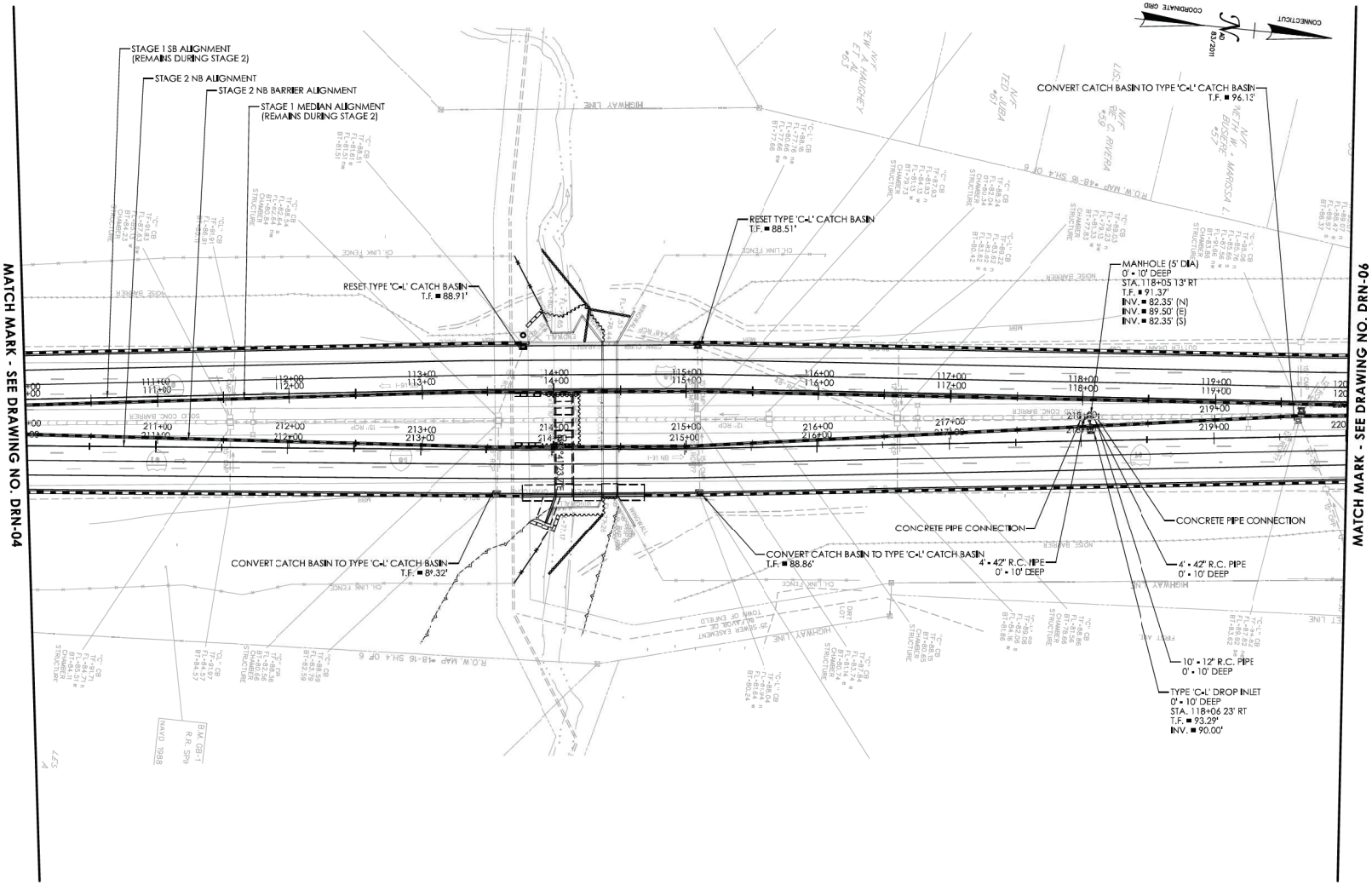
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, Ct. 06605
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 2 DRAINAGE PLAN - 1

DRAWING NO. PMT-13
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-13_15.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE
0 20' 40'
1" = 20'

SIGNATURE/ BLOCK:

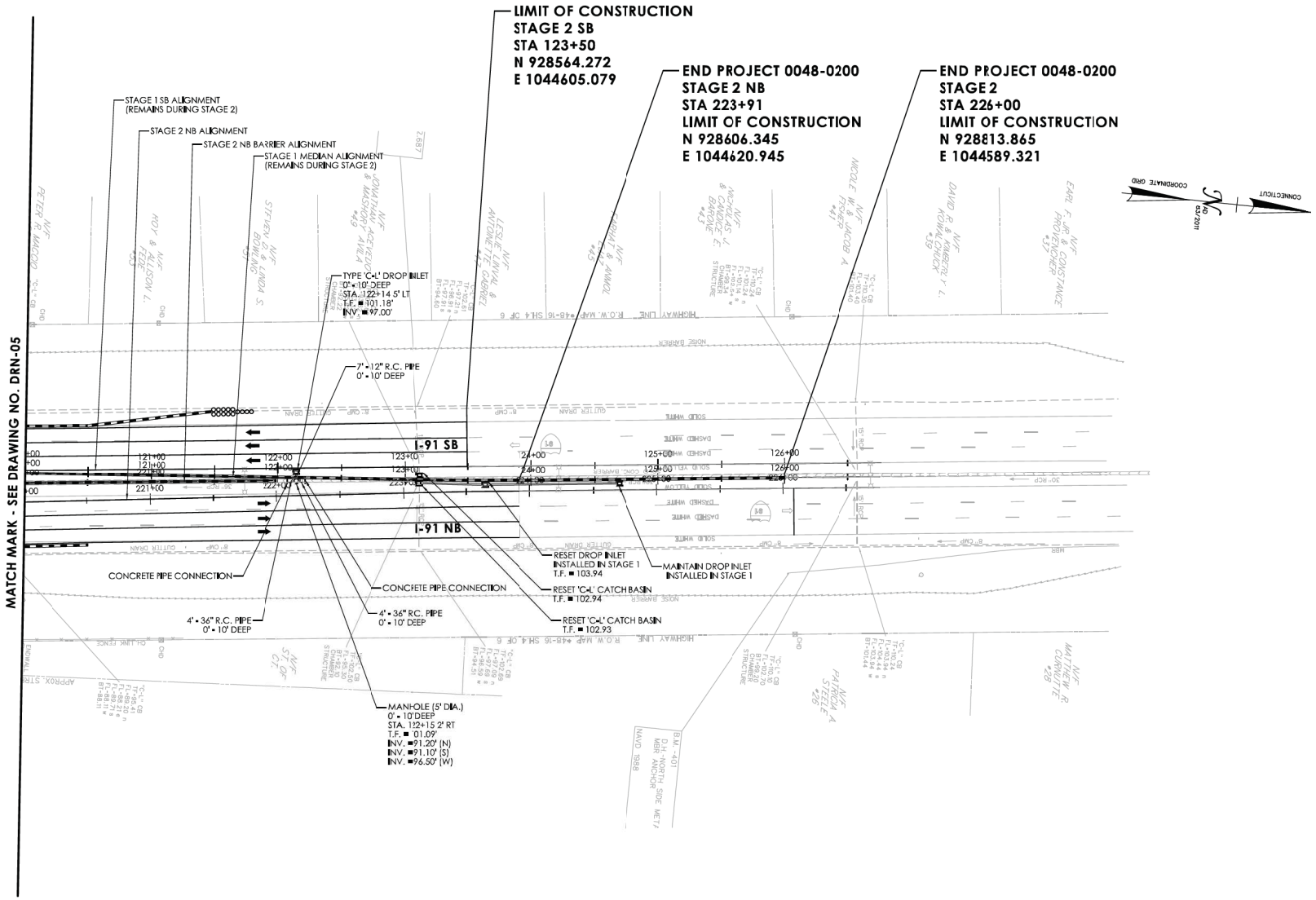
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, Ct. 06604
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 2 DRAINAGE PLAN - 2

DRAWING NO. PMT-14
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-13_15.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| BY | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

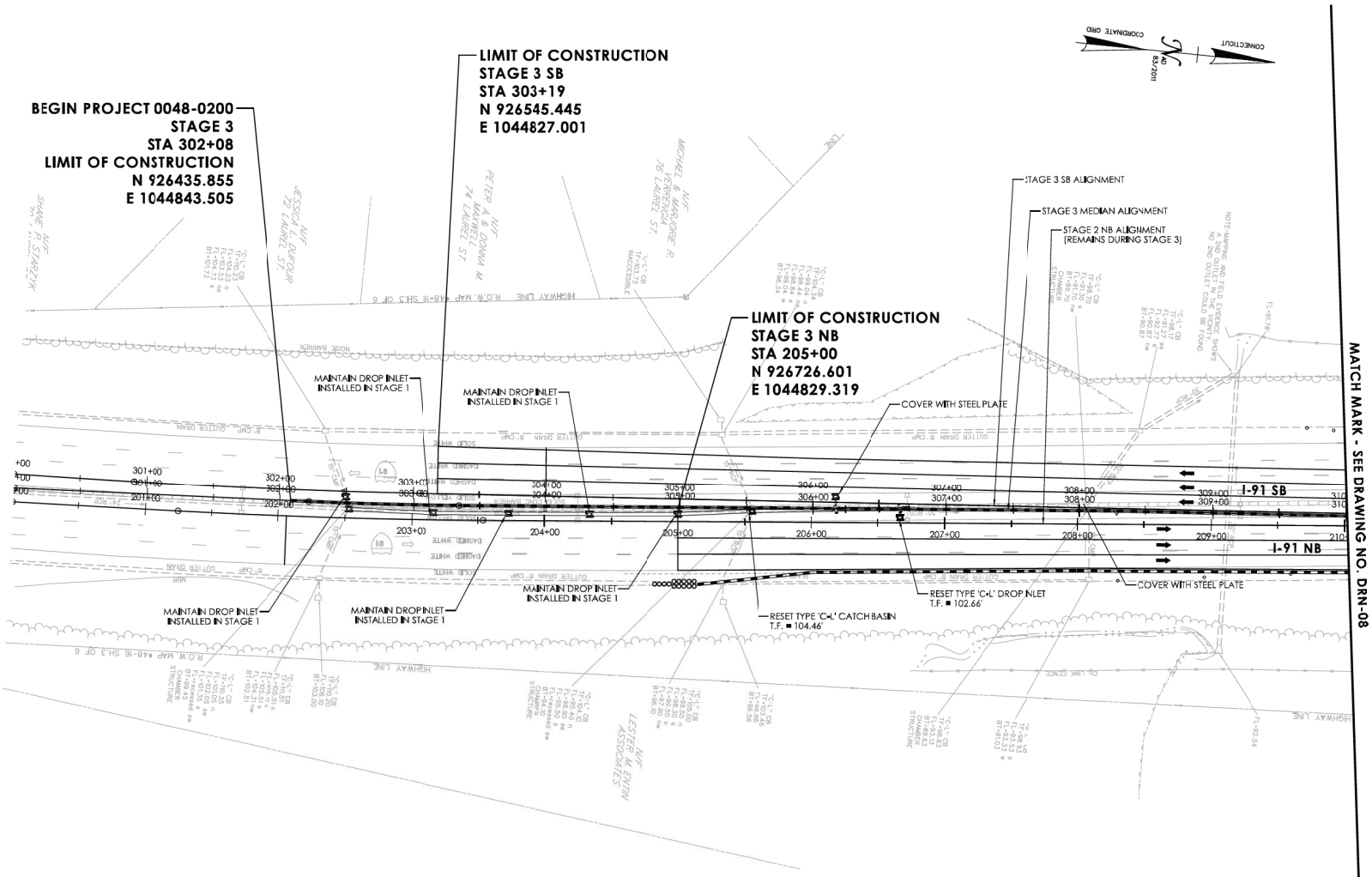
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, Ct. 06606
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 2 DRAINAGE PLAN - 3

DRAWING NO. PMT-15
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-13_15.dgn
PLOTTED DATE: 9/17/2024




**NOTES:**

1. FINAL DRAINAGE WILL BE REVERTED BACK TO EXISTING CONDITIONS AFTER THE COMPLETION OF STAGE 3.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| BY | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" ■ 20'

SIGNATURE/ BLOCK:

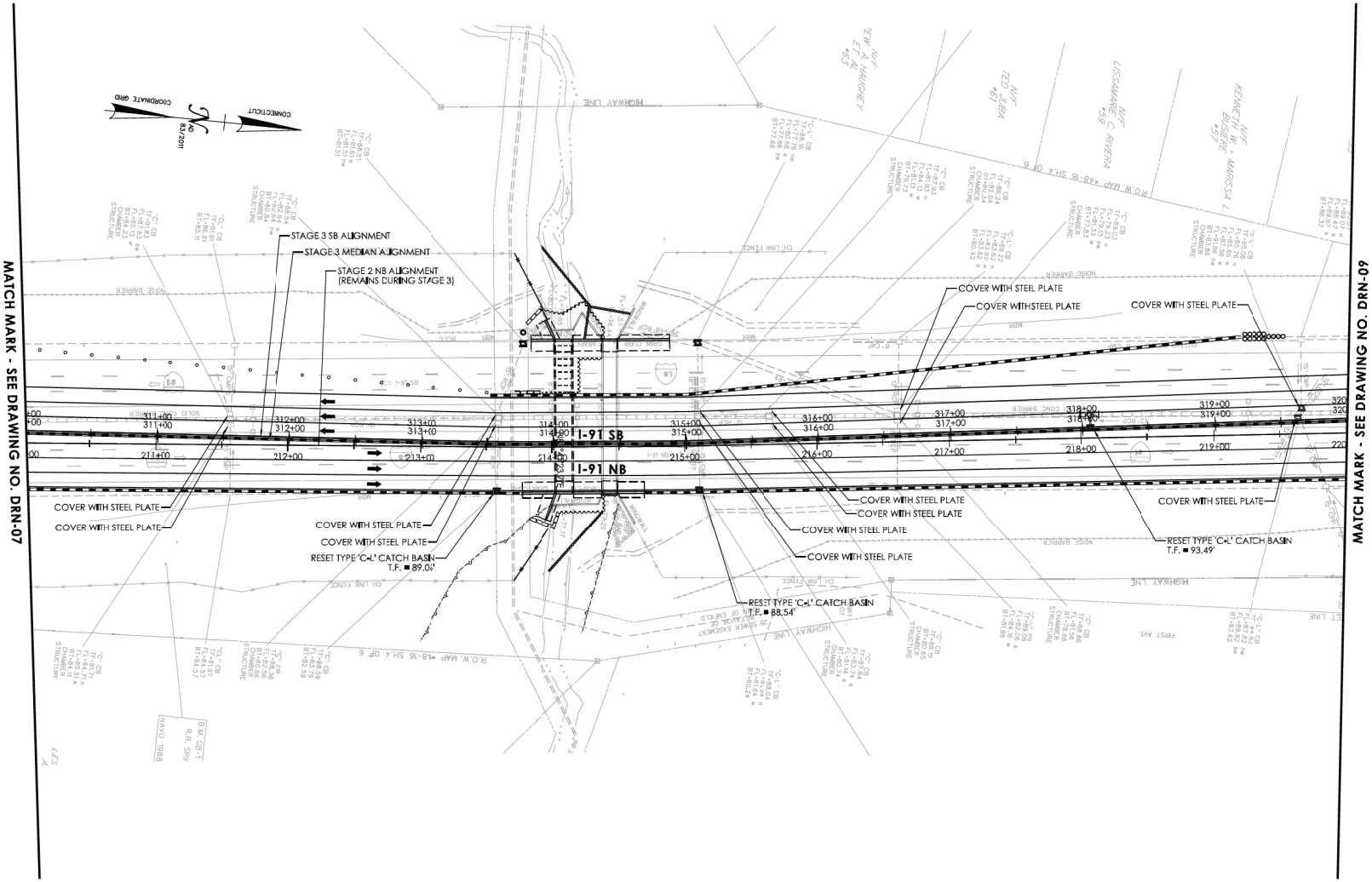
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, Ct. 06605
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 3 DRAINAGE PLAN - 1

DRAWING NO. PMT-16
SHEET NO.

LASTED SAVED BY: ADM039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-16_18.dgn
PLOTTED DATE: 9/17/2024




**NOTES:**

1. FINAL DRAINAGE WILL BE REVERTED BACK TO EXISTING CONDITIONS AFTER THE COMPLETION OF STAGE 3.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| BY: | DATE: | REVISION DESCRIPTION: |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

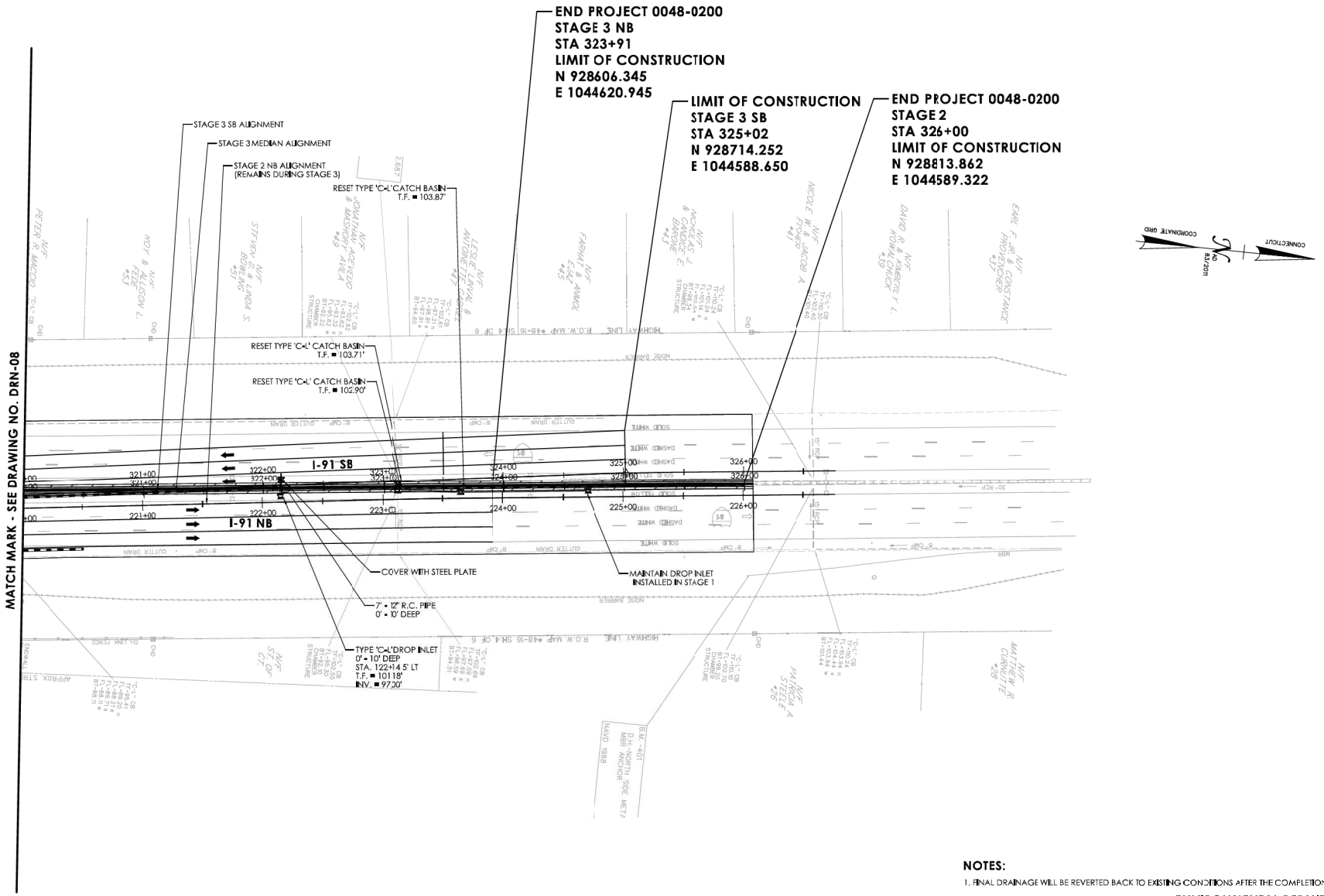
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, Ct. 06604
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 3 DRAINAGE PLAN - 2

DRAWING NO. PMT-17
SHEET NO.

LASTED SAVED BY: ADM039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-17_18.dgn
PLOTTED DATE: 9/17/2024




**NOTES:**

1. FINAL DRAINAGE WILL BE REVERTED BACK TO EXISTING CONDITIONS AFTER THE COMPLETION OF STAGE 3.

**ENVIRONMENTAL PERMIT PLANS**

**PLAN DATE: NOVEMBER 25, 2024**

| BY | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, Ct. 06605 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 3 DRAINAGE PLAN - 3

DRAWING NO. PMT-18
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-16_18.dgn
PLOTTED DATE: 9/17/2024

# LWRD Work Commencement Form

**To:** DEEP.LWRDRegulatory@ct.gov or
Regulatory Section
Department of Energy and Environmental Protection
Land & Water Resources Division
79 Elm Street
Hartford, CT 06106-5127

**Licensee Name:** Connecticut Department of Transportation

**Municipality in which the project is occurring:** Enfield

**DEEP License No(s):** 202411737-PCN & 202411739-GPCST

**CONTRACTOR(s):**

# 1 Name: _____
Address: _____
Telephone: _____
E-mail: _____

# 2 Name: _____
Address: _____
Telephone: _____
E-mail: _____

# 3 Name: _____
Address: _____

Date Contractor(s) received a copy
of the license and approved plans: _____

EXPECTED DATE OF COMMENCEMENT OF WORK: _____

EXPECTED DATE OF COMPLETION OF WORK: _____

LICENSEE: _____ _____
(Signature) (Date)

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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

Regulatory and Enforcement Branch
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Attn: Dan Breen, Chief Transportation & Utilities Section

Re: 202411737-PCN, Concurrence of Eligibility
NAE-2024-02893
I-91 over Grape Brook (Bridge 05585), Enfield, CT 06082

Dear Mr. Breen:

The above-referenced Pre-Construction Notification ("PCN") was submitted to the Connecticut Department of Energy and Environmental Protection ("DEEP") on December 5, 2024 by the Connecticut Department of Transportation, for eligibility screening under the Department of the Army Regional General Permit for the State of Connecticut ("CT RGP") dated December 15, 2021, and authorized and conditioned pursuant to Section 401 of the Federal Clean Water Act.

**Project**: The applicant proposes activities in Waters of the United States which will result in the following impacts, as shown on attached plans titled *"Environmental Permit Plans State Project No. 0048-0200 Replacement of Bridge No. 05585 Interstate 91 over Grape Brook in the Town of Enfield,"* dated November 25, 2024, and prepared by State of Connecticut Department of Transportation:

1. Installing a temporary access road with associated temporary sedimentation and erosion controls at the culvert inlet from I-91 Northbound (temporary access road from I-91 Southbound to the outlet is outside of the regulatory area) as depicted on site plan set sheets PMT-03 and PMT-04;
2. Installing temporary water handling cofferdams to temporarily divert the flows of Grape Brook through the adjacent Bridge 05578 during construction as depicted on site plan set sheets PMT-03, PMT-04, PMT-07, PMT-11, PMT-14, and PMT-17;
3. Replace the existing 132' long, 12'10" wide by 8' 4" high corrugated squashed metal pipe (CMP) (also referred to as Bridge 05585) conveying Grape Brook under I-91 with a 117' long, 12' wide by 10' high box culvert embedded 2'and backfilled with 2' of natural streambed material in the structure as depicted on site plan set sheets PMT-02, PMT-03, PMT-04, PMT-05, PMT-06, PMT-07, and PMT-08;
4. Installing 12" of natural streambed material in the footprint of the existing CMP which is being shortened as depicted on site plan set sheets PMT-06 and PMT-08;

5. Replace the existing culvert wingwalls and headwalls with four new wingwalls and a new inlet and outlet headwall to accommodate the new, shortened Bridge 05585 as depicted on site plan set PMT-02 and PMT-05;
6. Installing a rock weir comprised of approximately 1' to 1.5' diameter rounded boulders downstream of the outlet of Bridge 05585 as depicted in site plan set sheet PMT-08; and
7. Installing a 20' long by 18' wide (bottom dimensions of 12.5' long by 7' wide) and 1' deep scour hole directly downstream of the rock weir comprised of a 6" granular fill base layer covered by 12" modified rip rap and top-dressed with 12" of washed-in natural streambed material at and below ordinary high water (OHW) as depicted on site plan set sheets PMT-02 and PMT-08.

| | Waterway | Wetland | Total |
|---|---|---|---|
| Temporary: | 900 sf | 1,880 sf | 2,780 sf |
| Permanent: | 2,085 sf | 90 sf | 2,175 sf |
| Total: | 2,985 sf | 1,970 sf | 4,955 sf |

**Adaptive Best Management Practices.** The Best Management Practices described in Attachment A included with this letter were found to be insufficient to protect existing and designated uses of waters such as propagation of fish, shellfish and wildlife, recreation, public water supply, and agriculture, industrial use and navigation, and the water quality necessary for their protection. Therefore, the following adaptive best management practices shall also be employed to protect water quality and designated uses of waters:

1. **Fisheries Notification.** The Project Proponent shall notify the DEEP Fisheries Division at least ten (10) days prior to the commencement of Authorized Activity 6 (rock weir installation).
2. **Removal of Angular Stone and Stream Channel Restoration.** The Project Proponent shall remove the existing angular stone located downstream of the outlet of Bridge 05585 and restore the channel with natural streambed material as depicted in site plan set sheet PMT-08 herein.
3. **Stockpile of Native Streambed Material.** The Project Proponent shall stockpile native streambed material excavated from Grape Brook during the installation of the replacement of Bridge 05585. The Project Proponent shall locate this stockpile outside of wetlands and/or watercourses. The Project Proponent shall utilize the stockpiled native streambed material when restoring the outlet area downstream of the culvert, top-dressing the outlet scour pool, and/or installing 2' of native streambed material through the new box culvert. The Project Proponent shall utilize supplemental streambed materials which substantially matches the material present within Grape Brook if additional material is needed.
4. **Invasive Species Management and Plantings.** The Project Proponent shall manage invasive vegetation and install native plantings to restore the construction area as depicted on site plan set sheet PMT-09 herein.

Staff of the Land & Water Resources Division (the "Division") have reviewed the project and determined that the proposed regulated work is eligible for PCN coverage under CT RGP #19.

Therefore, an individual application to DEEP is not required at this time, provided that the project receives approval from the U.S. Army Corps of Engineers under the CT RGP and that the authorized activities proceed as described in the PCN documentation provided to the Division in the above-referenced notification.

Please be advised that conducting regulated activities without the required state Section 401 Water Quality Certification (WQC) and federal Section 404 WQC is a violation of law and is subject to enforcement proceedings and legal action under 33 CFR Part 326 and citations thereunder.

If you have any questions or need additional information, please contact Farrah Ashe at 860-424-3169 or Farrah.Ashe@ct.gov.

Jeff Caiola

Jeff Caiola, Assistant Director
Land and Water Resources Division
Bureau of Water Protection and Land Reuse

06/10/2025
Date

CC (via email):
CT DOT, Kevin.Carifa@ct.gov
CT DOT, Christine.Xenelis@ct.gov
CT DOT, Amanda.Saul@ct.gov
CT DOT, Phoebe.Mrozinski@ct.gov
USACE, Matthew.R.Hackett@usace.army.mil

## ATTACHMENT A
## GENERAL TERMS AND CONDITIONS

1. **Best Management Practices.** In constructing or maintaining the activities authorized herein, the permittee shall employ best management practices in accordancewithSection22a-426-1of the Regulations for Connecticut State Agencies, consistent with the terms and conditions of this certificate, to control storm water discharges and erosion and sedimentation and to prevent pollution. Such practices to be implemented by the permittee at the site include, but are not necessarily limited to:

   a. Prohibiting dumping of any quantity of oil, chemicals or other deleterious material on the ground;

   b. Immediately informing the Commissioner's Oil and Chemical Spill Response Division at (860) 424-3338 (24- hour phoneline) of any adverse impact or hazard to the environment, including any discharges, spillage, or loss of oil or petroleum or chemical liquids or solids, which occurs or is likely to occur as the direct or indirect result of the activities authorized herein;

   c. Separating staging areas at the site from the regulated areas by silt fences or straw/hay bales at all times;

   d. Prohibiting storage of any fuel and refueling of equipment within twenty-five (25) feet from any wetland or watercourse;

   e. Preventing pollution of wetlands and watercourses in accordance with the document "Connecticut Guidelines for Soil Erosion and Sediment Control" as revised. Said controls shall be inspected by the permittee for deficiencies at least once per week and immediately after each rainfall and at least daily during prolonged rainfall. The permittee shall correct any such deficiencies within 48 hours of said deficiencies being found;

   f. Stabilizing disturbed soils in a timely fashion to minimize erosion. If a grading operation at the site will be suspended for a period of thirty (30) or more consecutive days, the permittee shall, within the first seven (7) days of that suspension period, accomplish seeding and mulching or take such other appropriate measures to stabilize the soil involved in such grading operation. Within seven (7) days after establishing final grade in any grading operation at the site the permittee shall seed and mulch the soil involved in such grading operation or take such other appropriate measures to stabilize such soil until seeding and mulching can be accomplished.

   g. Prohibiting the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five hundred (500) year flood. Any other material or equipment stored at the site below said elevation by the permittee or the permittee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one da y.

   h. Immediately informing the Commissioner's Land & Water Resources Division at (860) 424-3019 and the U.S. Army Corps of Engineers' Permit Compliance Section at (617) 647-8674, of the occurrence of pollution or other environmental damage resulting from construction or maintenance of the authorized activity or any construction associated therewith in violation of this certificate. The permittee shall, no later than 48 hours after the permittee learns of a violation of this certificate, report same in writing to the Commissioner. Such report shall contain the

following information:

(i) the provision(s) of this certificate that has/have been violated;
(ii) the date and time the violation(s) was first observed and by whom;
(iii) the cause of the violation(s), if known
(iv) if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;
(v) if the violation(s) has not ceased, the anticipated date when it will be corrected;
(vi) steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented;
(vii) the signatures of the permittee and of the individual(s) responsible for actually preparing such report, each of whom shall certify said report in accordance with condition 8 of this certificate.

For information and technical assistance, contact the Land & Water Resources Division at (860) 424-3019.

2. **Inspection of the Facility or Activity, Adaptive Best Management Practices & Compliance with Conditions**. The concurrence of eligibility letters for Pre- Construction Notifications will be considered the initial inspection of the facility or activity for the purpose of determining whether the discharge from the certified project may violate WQC-202108351 (Non-Tidal) of the Department of the Army Regional General Permit for the State of Connecticut. The concurrence of eligibility letters may also address the remedial actions necessary in order to be considered to be compliance with this certification.

   In the event that Best Management Practices employed to maintain compliance with the conditions of this Water Quality Certificate, as described in paragraph 1 above, have been found to be insufficient to protect existing and designated uses of waters such as propagation of fish, shellfish and wildlife, recreation, public water supply, and agriculture, industrial use and navigation, and the water quality necessary for their protection, such permittee shall employ additional or alternative adaptive best management practices to protect water quality.

   All work and all activities authorized herein conducted by the permittee at the site shall be consistent with the terms and conditions of this certificate. Upon initiation of the activities authorized herein, the permittee thereby accepts and agrees to comply with the terms and conditions of this Water Quality Certificate.

3. **Rights.** This certificate is subject to and does not derogate any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material nor any exclusive privileges and is further subject to any and all public and private rights and to any federal, state, or local laws or regulations pertinent to the property or activity affected hereby. This certification does not comprise the permits or approvals as may be required by Chapters 440, 446i, 446j and 446k of the Connecticut General Statutes.

4. **Expiration of Certificate.** The Section 401 Water Quality Certifications contained herein shall be valid until such time as the Department of the Army Regional General Permits for the State of Connecticut expires or is modified, suspended, revoked or reissued.

5. **Transfer of Certificate.** This authorization is not transferable without the written consent of the Commissioner

6. **Reliance on Application.** In evaluating the permittee's application, the Commissioner has relied on information provided by the permittee. If such information subsequently proves to be false, deceptive, and incomplete or in accurate, this certificate may be modified, suspended or revoked.

7. **Installation and Removal of Confining Structures.** Confinement of a work area by cofferdam techniques using sandbag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed any time of the year unless specifically prohibited by a permit condition. The removal of such confinement devices is allowed any time of the year unless specifically prohibited by a permit condition. Once a work area has been confined, in-water work within the confined area is allowed any time of the year. The confinement technique used shall completely isolate and protect the confined area from all flowing water. The use of silt boom/curtain or similar technique as a means for confinement is prohibited.

8. **Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this certificate shall be signed by the permittee, a responsible corporate officer of the permittee, a general partner of the permittee, or a duly authorized representative of the permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

   "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief , and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense in accordance with Section 22a-6 under Section 53a-157 of the Connecticut General Statutes."

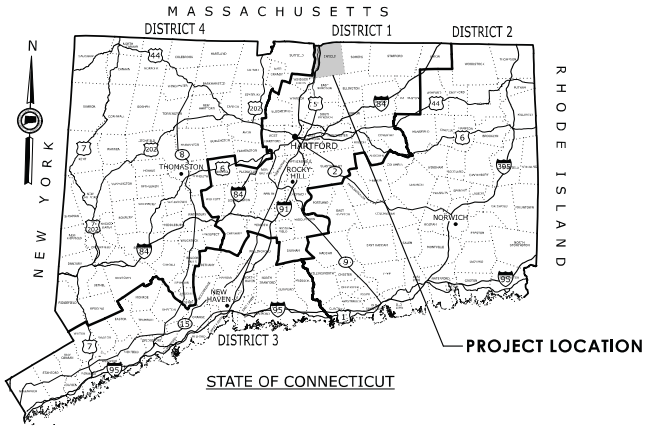
9. **Submission of Documents.** The date of submission to the Commissioner of any document required by this certificate shall be the date such document is received by the Commissioner. Except as otherwise specified in this certificate, the word "day" as used in this certificate means the calendar day. Any document or action which falls on a Saturday, Sunday, or legal holiday shall be submitted or performed by the next business day thereafter.

   Any document or notice required to be submitted to the Commissioner under this certificate shall, unless otherwise specified in writing by the Commissioner, be directed to:

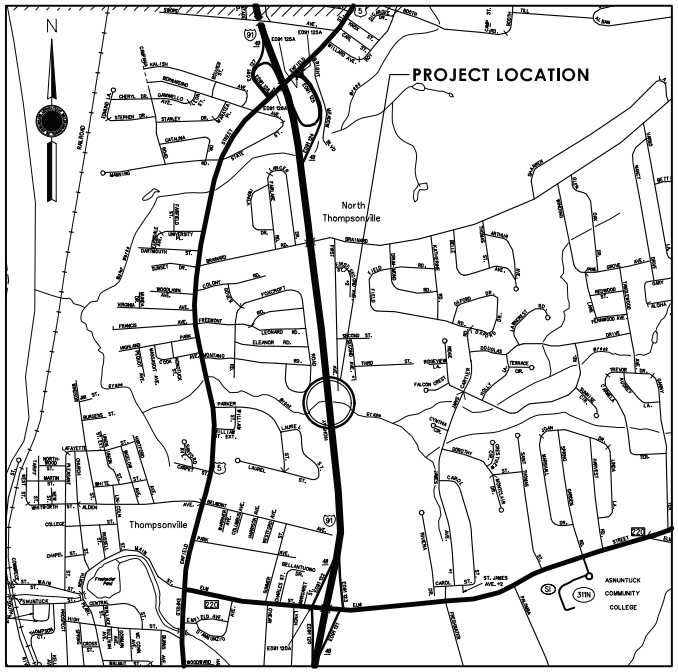
   Director, Land & Water Resources Division
   Bureau of Water Protection and Land Reuse
   Department of Energy & Environmental Protection
   79 Elm Street
   Hartford, Connecticut 06106-5127

10. **Work Commencement.** Not later than two (2) weeks prior to the commencement of any work authorized herein, the Licensee shall submit to DEEP.LWRDRegulatory@ct.gov, on the Work Commencement Form attached hereto, the name(s) and address(es) of all contractor(s) employed to conduct such work and the expected date for commencement and completion of such work, if any.

# ENVIRONMENTAL PERMIT PLANS
# STATE PROJECT NO. 0048-0200
# REPLACEMENT OF BRIDGE NO. 05585
# INTERSTATE 91 OVER GRAPE BROOK
# IN THE TOWN OF ENFIELD




STATE OF CONNECTICUT




LOCATION PLAN
SCALE: 1"=1000'

Digitally signed by Michael Steeves
Date: 2024.11.27 09:54:18 -05'00'

## 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 DEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSE, WETLANDS AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM NAD83, VERTICAL DATUM BASED ON NAVD OF 1988.
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES AND INCIDENTAL CONSTRUCTION, FORM 818, SECTION 1.10 AND WILL ALSO FOLLOW REQUIRED BEST MANAGEMENT PRACTICES (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE DEEP CONNECTICUT GUIDELINES FOR SOIL EROSION & SEDIMENT CONTROL AND DEEP CONNECTICUT STORMWATER QUALITY MANUAL.

| LIST OF DRAWINGS | |
|---|---|
| DRAWING NO. | DRAWING TITLE |
| PMT-01 | TITLE SHEET |
| PMT-02 | GENERAL SITE PLAN |
| PMT-03 | WETLAND/WATERCOURSE IMPACT PLAN |
| PMT-04 | 100 YEAR FLOOD IMPACT PLAN |
| PMT-05 | ELEVATIONS |
| PMT-06 | SECTION |
| PMT-07 | STAGING AND WATER HANDLING PLAN |
| PMT-08 | ROCK WEIR DETAILS |
| PMT-09 | PERMIT PLANTING PLAN |
| PMT-10 - PMT-12 | STAGE 1 DRAINAGE PLANS |
| PMT-13 - PMT-15 | STAGE 2 DRAINAGE PLANS |
| PMT-16 - PMT-18 | STAGE 3 DRAINAGE PLANS |

DESIGNED BY: A. DICESARE ASSOCIATES, P.C.

Arthur DiCesare 2024.11.26 13:21:26-05'00'

**PLAN DATE: NOVEMBER 25, 2024**

REVISION DESCRIPTION | DATE | BY

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

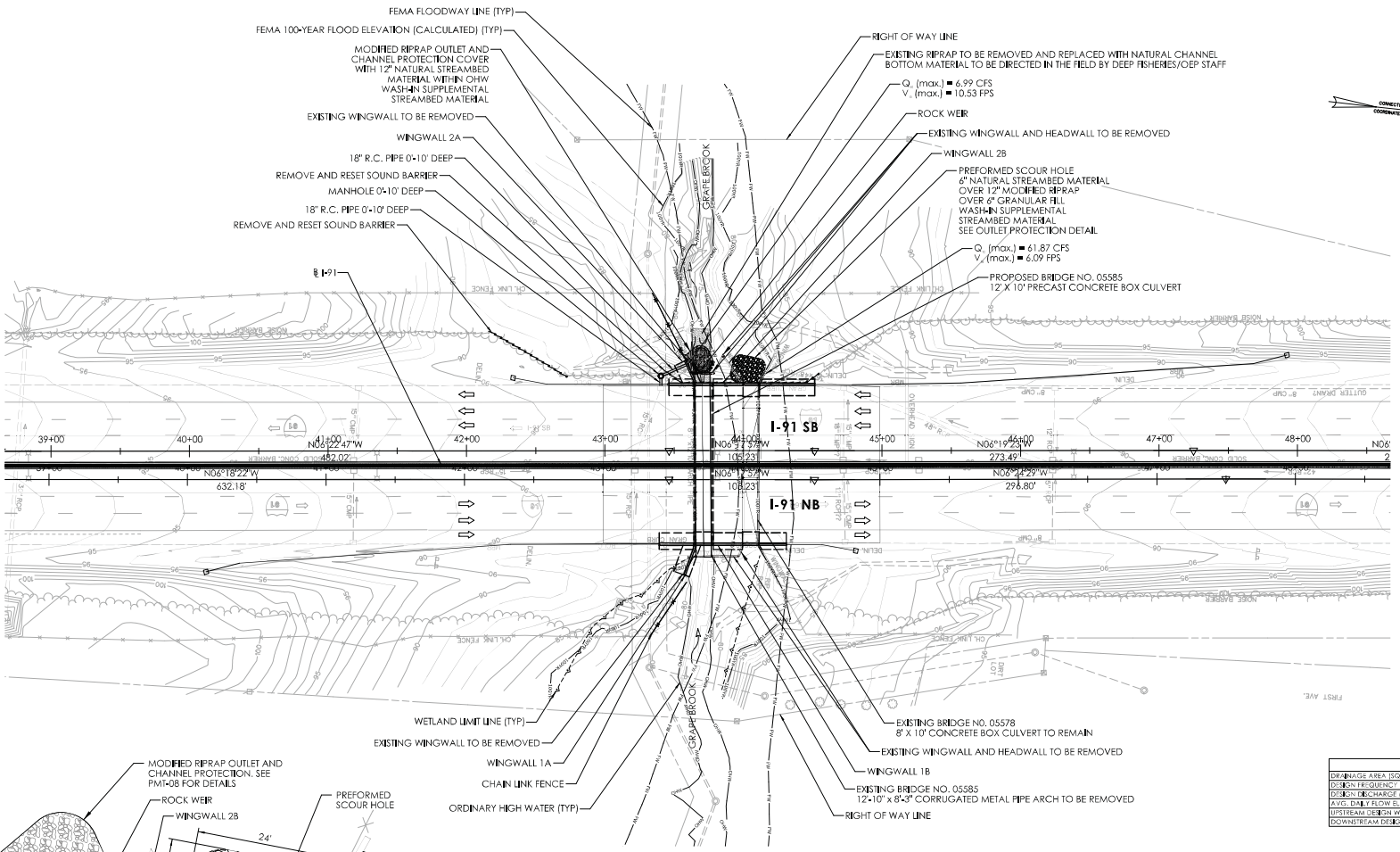
SIGNATURE/ BLOCK: ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0444 www.adicesarepc.com

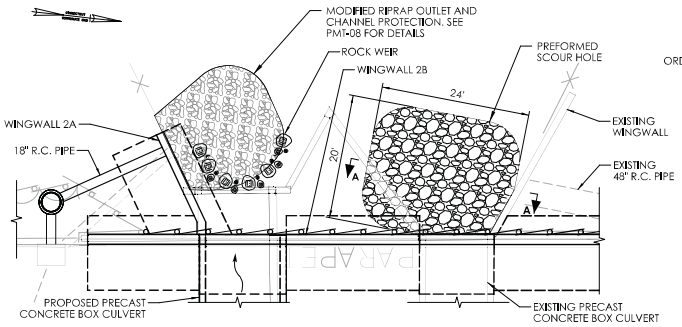
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: TITLE SHEET

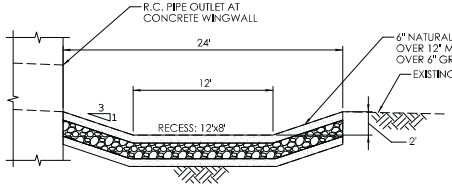
DRAWING NO. PMT-01
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-01.dgn
PLOTTED DATE: 11/25/2024




**OUTLET PROTECTION DETAIL**
NOT TO SCALE




**SECTION A-A**
NOT TO SCALE

| HYDRAULIC DATA | |
|---|---|
| DRAINAGE AREA (SQ. MI.) | 2.2 |
| DESIGN FREQUENCY (YR) | 100 |
| DESIGN DISCHARGE (CFS) | 610 |
| AVG. DAILY FLOW ELEV. (CALCULATED) (FT) | 78.1 |
| UPSTREAM DESIGN WATER SURFACE ELEV. (FT) | 82.8 |
| DOWNSTREAM DESIGN WATER SURFACE ELEV. (FT) | 79.6 |

## LEGEND

- OHW — ORDINARY HIGH WATER (OHW)
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- FW — FEMA FLOODWAY
- NATURAL CHANNEL BOTTOM MATERIAL

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

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

SIGNATURE/ BLOCK:

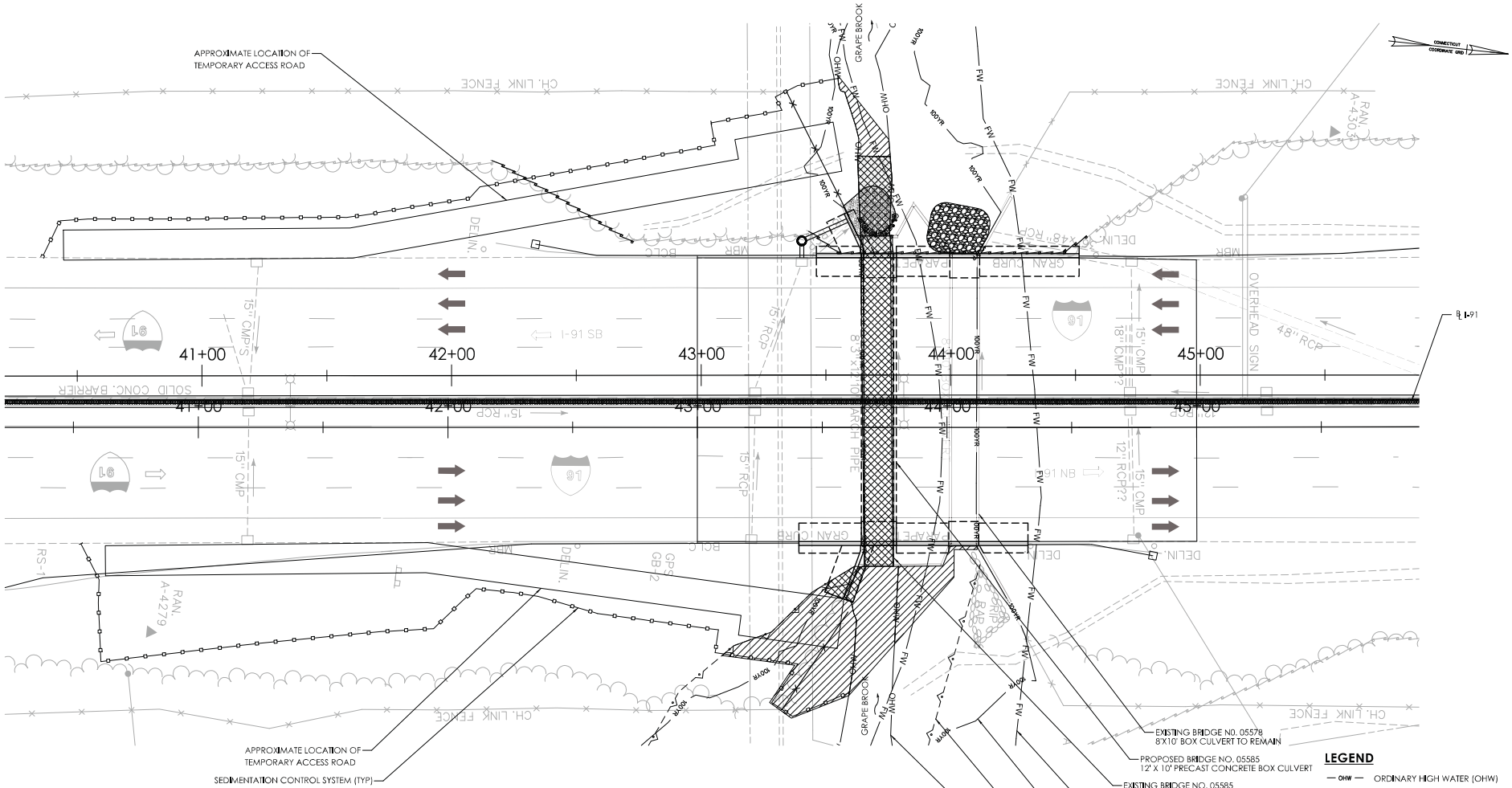
A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: GENERAL SITE PLAN

DRAWING NO. PMT-02
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\NHW_CP_0048_0200_PMT-02.dgn
PLOTTED DATE: 11/25/2024




## NOTE:

THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND THE WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED TO THE EXISTING GRADES. REFER TO PERMIT PLANTING PLAN FOR DETAILS.

### INLAND WETLAND AND WATERCOURSE IMPACT TABLE

| | WETLAND SITE NO. | WETLAND IMPACTS | WATERCOURSE IMPACTS | TOTAL |
|---|---|---|---|---|
| PERMANENT IMPACTS | 1 | 90 S.F. (0.002 AC.) | 2,085 S.F. (0.048 AC.) | 2,175 S.F. (0.050 AC.) |
| TEMPORARY IMPACTS | 1 | 1,880 S.F. (0.043 AC.) | 900 S.F. (0.021 AC.) | 2,780 S.F. (0.064 AC.) |
| TOTAL IMPACTS | 1 | 1,970 S.F. (0.045 AC.) | 2,985 S.F. (0.069 AC.) | 4,955 S.F. (0.114 AC.) |

## LEGEND

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

## ENVIRONMENTAL PERMIT PLANS

**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

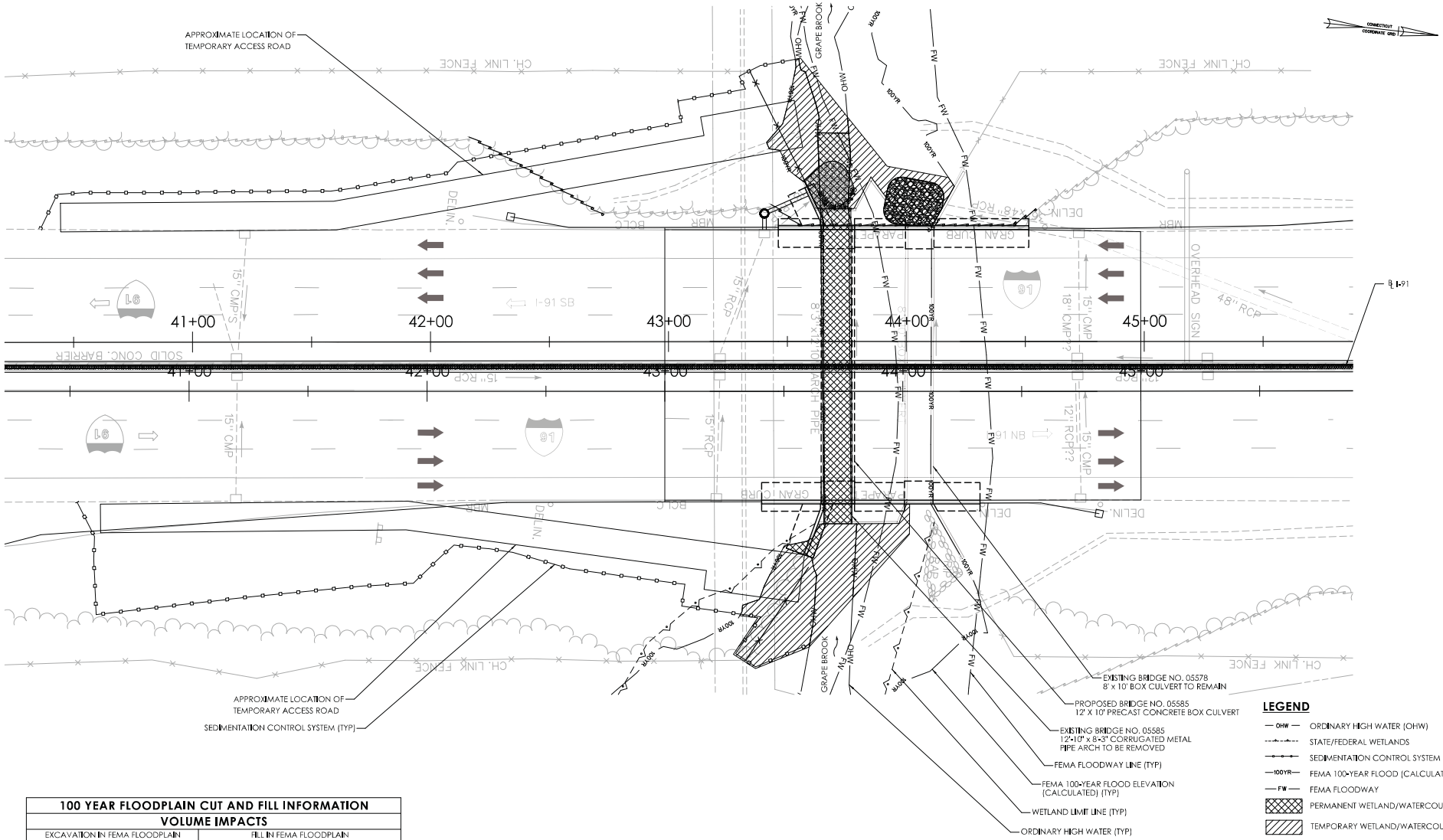
A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: WETLAND/WATERCOURSE IMPACT PLAN

DRAWING NO. PMT-03
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-03.dgn
PLOTTED DATE: 11/25/2024




## LEGEND

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

| 100 YEAR FLOODPLAIN CUT AND FILL INFORMATION | |
|---|---|
| VOLUME IMPACTS | |
| EXCAVATION IN FEMA FLOODPLAIN | FILL IN FEMA FLOODPLAIN |
| 480 C.Y. | 360 C.Y. |

NOTE:
THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO THE DEEP FOR CHANGES TO THE DESIGN THAT WILL AFFECT THE NOTED REGULATORY AREAS.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

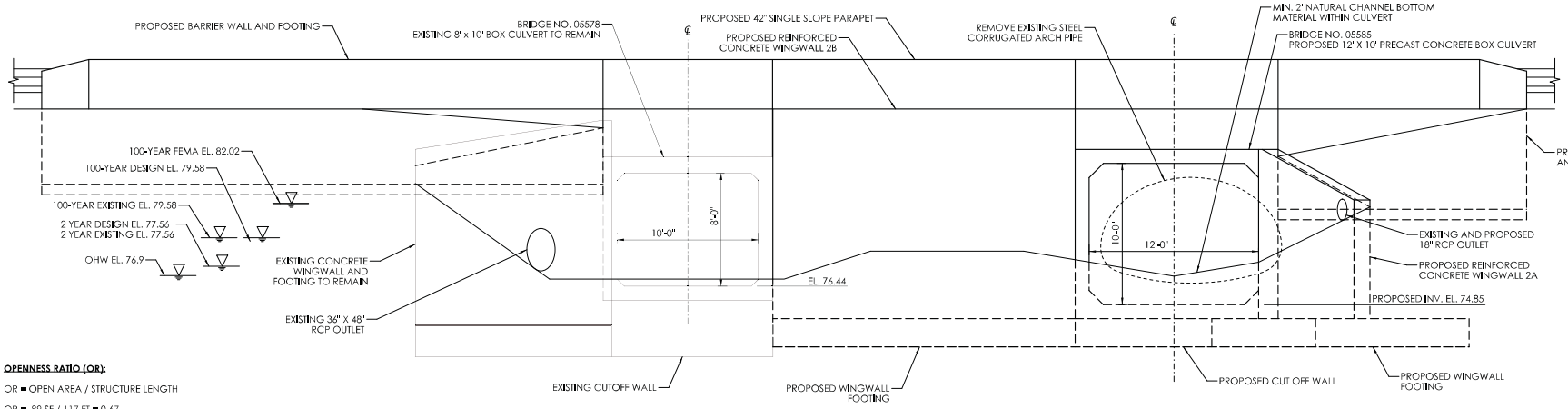
ADA A.DiCesare Associates, P.C. 890 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: 100 YEAR FLOOD IMPACT PLAN

DRAWING NO. PMT-04
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-04.dgn
PLOTTED DATE: 11/25/2024




**OUTLET ELEVATION**
SCALE: ¼" = 1'-0"

**OPENNESS RATIO (OR):**

OR = OPEN AREA / STRUCTURE LENGTH

OR = 89 SF / 117 FT = 0.67

0.67 FT < 0.82 FT

OR = (89 SF + 80 SF)/117 FT = 1.44 FT

1.44 FT > 0.82

**BANKFULL WIDTH (BFW):**

BFW = 18 FT

1.2 X BFW = 21.6 FT

21.6 FT > 12 FT PROPOSED CULVERT

21.6 FT < 22 FT PROPOSED CULVERT AND OVERFLOW BOX CULVERT

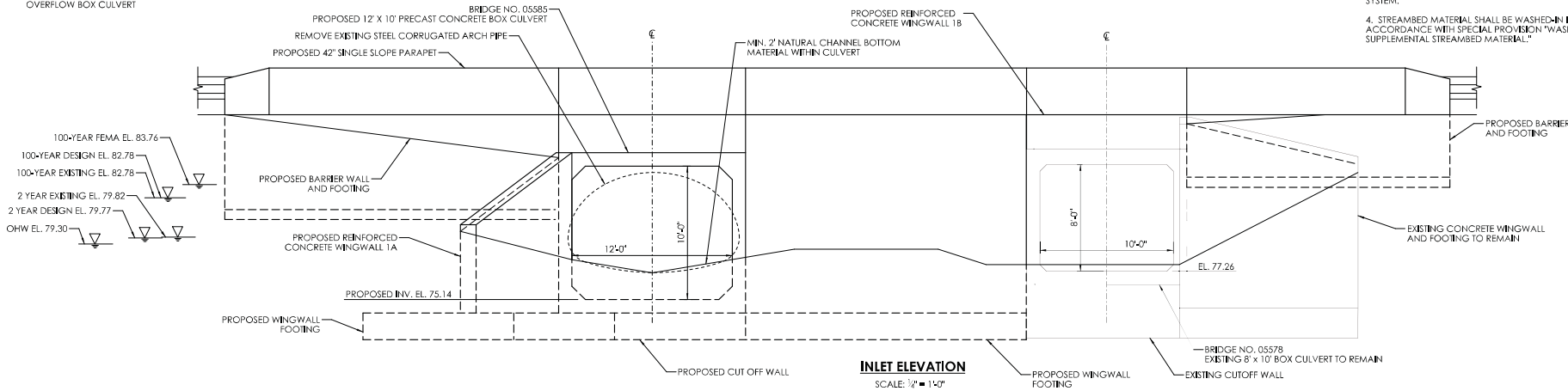
## NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE INSTALLATION OF THE PRECAST CONCRETE BOX CULVERT SHALL BE STOCKPILED AND THEN REPLACED AT THE OUTLET 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 CHANNEL MATERIAL."

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

4. STREAMBED MATERIAL SHALL BE WASHED-IN IN ACCORDANCE WITH SPECIAL PROVISION "WASHING-IN SUPPLEMENTAL STREAMBED MATERIAL."




**INLET ELEVATION**
SCALE: ¼" = 1'-0"

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

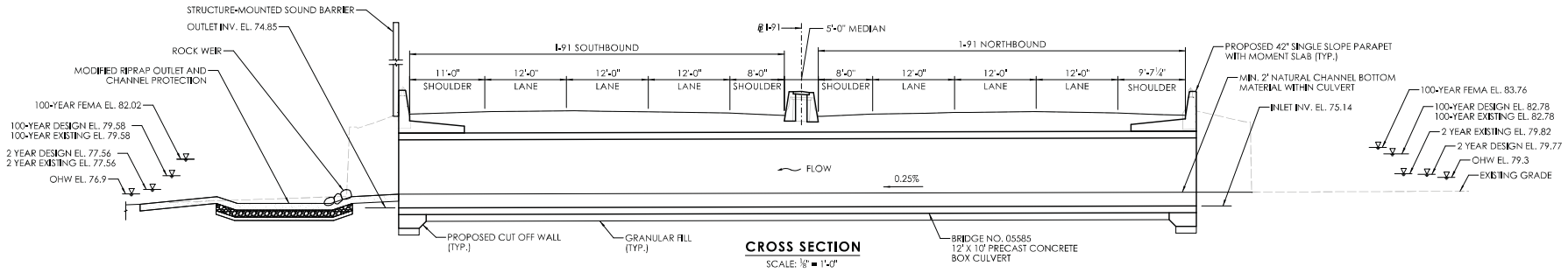
ADA A.DiCesare Associates, P.C. 890 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: ELEVATIONS

DRAWING NO. PMT-05
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-05.dgn
PLOTTED DATE: 11/25/2024




**CROSS SECTION**

SCALE: ⅛" = 1'-0"

**ENVIRONMENTAL PERMIT PLANS**

**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

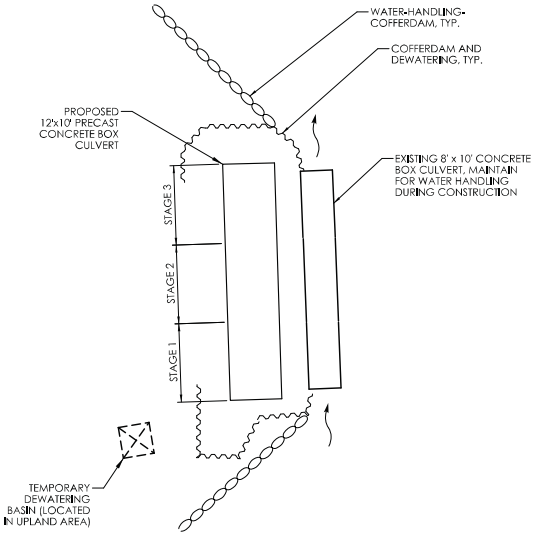
ADA A.DiCesare Associates, P.C. 890 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: SECTION

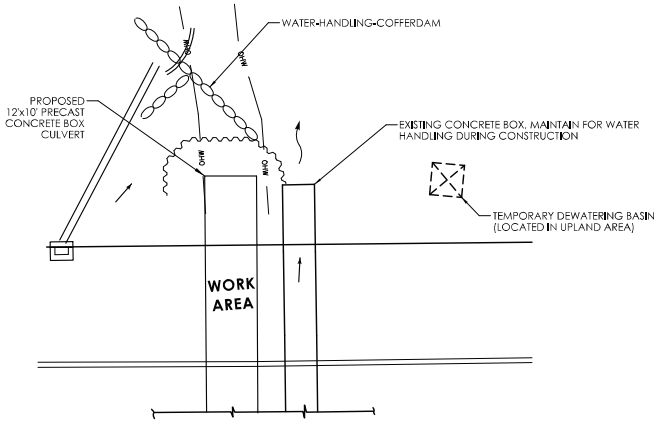
DRAWING NO. PMT-06
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\NHW_CP_0048_0200_PMT-06.dgn
PLOTTED DATE: 11/25/2024




**EXISTING STRUCTURE AS BYPASS FOR HANDLING WATER**

NOT TO SCALE




**ANCILLARY STORM DRAINAGE NEAR WORK AREA**

NOT TO SCALE

## SUGGESTED CONSTRUCTION SEQUENCING (STAGE 1)

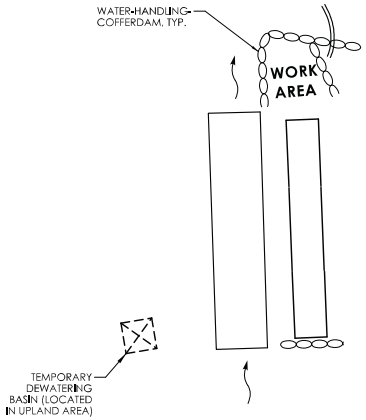
1. CLEAR AND GRUB AND INSTALL SEDIMENTATION CONTROL SYSTEM.
2. CONSTRUCT TEMPORARY ACCESS ROADS.
3. INSTALL TEMPORARY WATER-HANDLING-COFFERDAM AND COFFERDAM AND DEWATERING TO REDIRECT BROOK THROUGH EXISTING 8' x 10' BOX CULVERT.
4. SHIFT TRAFFIC LANES, INSTALL TEMPORARY EARTH RETAINING SYSTEMS AT APPROACHES, EXCAVATE, AND REMOVE HEADWALL, WINGWALL AND EXISTING CULVERT, STAGE 1 SECTION.
4. INSTALL PROPOSED 12'x10' PRECAST CONCRETE BOX CULVERT, STAGE 1 SECTION.
5. INSTALL HEADWALLS, WINGWALLS, BARRIER WALLS AND PARAPETS FOR STAGE 1.
6. BACKFILL AND RECONSTRUCT ROADWAY, STAGE 1 SECTION.

## SUGGESTED CONSTRUCTION SEQUENCING (STAGE 2)

1. SHIFT TRAFFIC LANES FOR WORK AT STAGE 2.
2. INSTALL TEMPORARY EARTH RETAINING SYSTEM AT APPROACHES, EXCAVATE, AND REMOVE EXISTING CULVERT, STAGE 2 SECTION.
3. INSTALL PROPOSED 12'x10' PRECAST CONCRETE BOX CULVERT, STAGE 2 SECTION.
4. BACKFILL AND RECONSTRUCT ROADWAY, STAGE 2 SECTION.

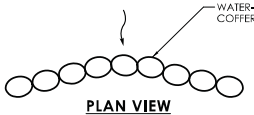
## SUGGESTED CONSTRUCTION SEQUENCING (STAGE 3)

1. SHIFT TRAFFIC LANES FOR WORK AT STAGE 3.
2. INSTALL TEMPORARY EARTH RETAINING SYSTEM AT APPROACHES, EXCAVATE, AND REMOVE HEADWALL, WINGWALL, AND EXISTING CULVERT, STAGE 3 SECTION.
3. INSTALL PROPOSED 12'x10' PRECAST CONCRETE BOX CULVERT, STAGE 3 SECTION.
4. INSTALL HEADWALL, WINGWALLS, BARRIER WALLS AND PARAPETS FOR STAGE 3.
5. BACKFILL AND RECONSTRUCT ROADWAY, STAGE 3 SECTION.
6. REMOVE TEMPORARY EARTH RETAINING SYSTEM AND INSTALL NATURAL STREAMBED MATERIAL, PREFORMED SCOUR HOLE, AND ROCK WEIRS.
7. REMOVE TEMPORARY WATER-HANDLING-COFFERDAM.
8. INSTALL TEMPORARY WATER-HANDLING-COFFERDAM AT EXISTING CULVERT OUTLET AND INSTALL PREFORMED SCOUR HOLE.
9. REMOVE TEMPORARY EARTH RETAINING SYSTEMS AT TEMPORARY ACCESS ROADS.
10. PERFORM DRAINAGE WORK AT SOUTHWEST QUADRANT.
11. FURNISH TOPSOIL, PROVIDE TURF ESTABLISHMENT AND INSTALL PLANTINGS AT DISTURBED AREAS.
12. REMOVE EROSION CONTROL MEASURES UPON STABILIZATION.

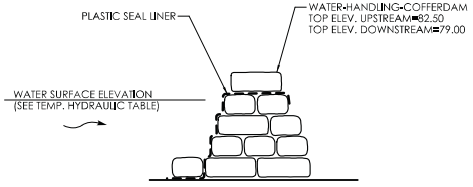



**USE OF NEW STRUCTURE DURING WORK AT EXISTING STRUCTURE OUTLET**

NOT TO SCALE




**PLAN VIEW**




**SECTION VIEW**

WATER-HANDLING-COFFERDAM SANDBAGS

NOT TO SCALE

## WATER HANDLING NOTES:

1. THE 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/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. IF A PUMP SYSTEM IS PROPOSED DURING LOW FLOW CONDITIONS, THE PUMP SYSTEM SHALL BE DESIGNED BY THE CONTRACTOR. PUMP SYSTEM PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
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 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 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.

| TEMPORARY HYDRAULIC DATA | |
|---|---|
| AVERAGE DAILY FLOW (CFS) | 4.1 |
| AVERAGE SPRING FLOW (CFS) | 7.9 |
| TEMPORARY DESIGN FREQUENCY | 2-YEAR STORM |
| 2-YEAR FREQUENCY DISCHARGE (CFS) | 140 |
| LOW FLOW PUMPING TEMPORARY DESIGN DISCHARGE = ASF (CFS) | 7.9 |
| GRAVITY FLOW BYPAS PIPE TEMPORARY DESIGN DISCHARGE = 2-YEAR FREQUENCY (CFS) | 140 |
| 2-YEAR WATER SURFACE ELEVATION UPSTREAM (FT) | 81.9 |
| 2-YEAR WATER SURFACE ELEVATION DOWNSTREAM (FT) | 77.6 |

NOTE:
VALUES AND ELEVATIONS MAY VARY SLIGHTLY FROM THE CONTRACT PLANS

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

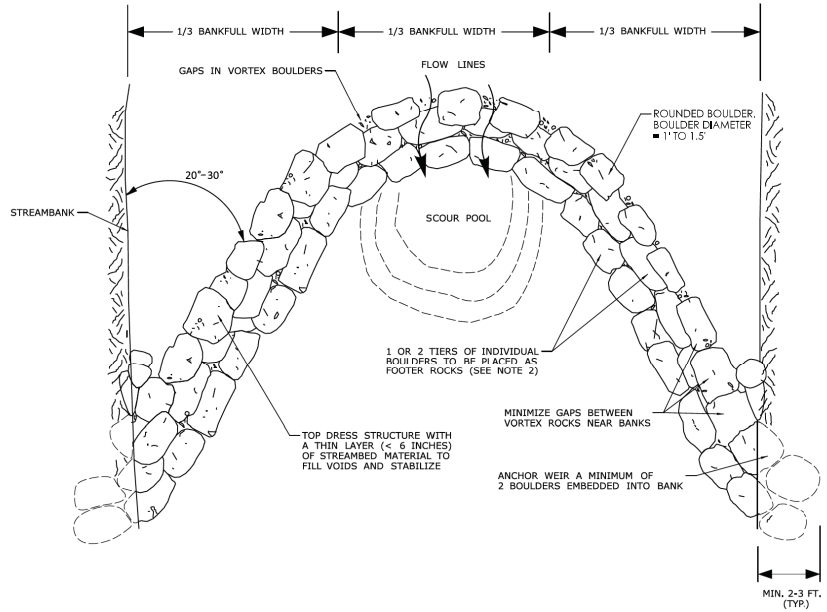
ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGING AND WATER HANDLING PLAN

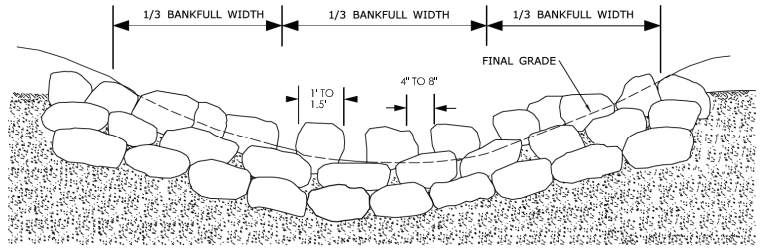
DRAWING NO. PMT-07
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-07.dgn
PLOTTED DATE: 11/25/2024



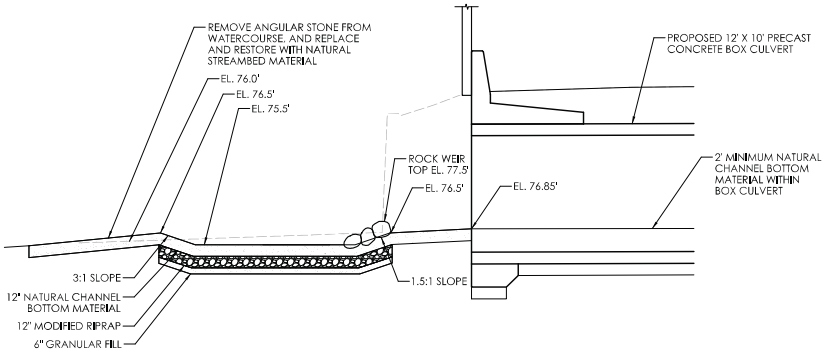

**ROCK WEIR - PLAN VIEW**

N.T.S.



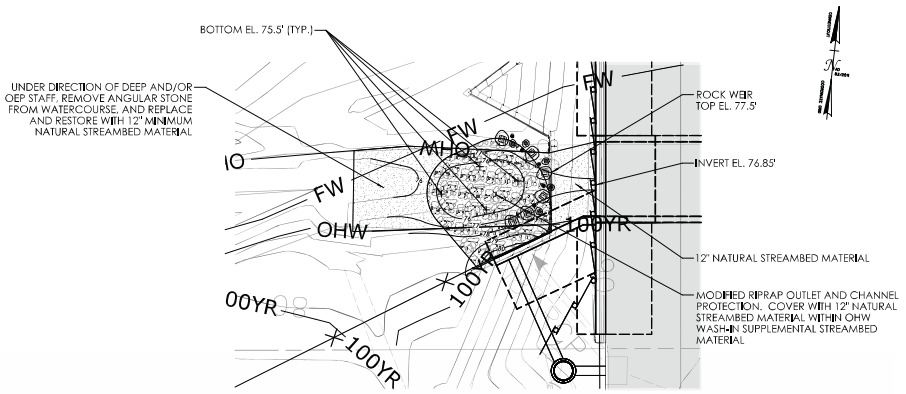

**ROCK WEIR - SECTION VIEW (UPSTREAM)**

N.T.S.




**ROCK WEIR AND OUTLET PROTECTION - PROFILE VIEW**

N.T.S.




**ROCK WEIR AND OUTLET PROTECTION - PLAN VIEW**

N.T.S.

## ROCK WEIR NOTES:

1. PLACEMENT OF THE ROCK WEIR SHALL BE UNDER THE SUPERVISION OF CTDEEP FISHERIES DIVISION STAFF (OR THEIR AUTHORIZED DELEGATE). THE CONTRACTOR SHALL COORDINATE THROUGH THE ENGINEER A MINIMUM OF 10-DAYS IN ADVANCE OF THE WEIR INSTALLATION TO ALLOW FOR CTDEEP FISHERIES DIVISION TO BE PRESENT ON SITE.
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. BOULDERS SHALL BE ROUNDED, 1' TO 1.5' IN DIAMETER AS SPECIFIED BY DEEP FISHERIES OR AS RECOMMENDED BY THE OFFICE OF ENVIRONMENTAL PLANNING (OEP). CONTRACTOR SHALL COORDINATE TYPE AND SIZE WITH DEEP FISHERIES OR OEP.
4. ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE ROCK WEIR SHALL BE PAID FOR UNDER THE ITEM FOR "ROCK WEIR". EXISTING OR NATURAL STREAMBED MATERIAL SHALL BE PAID FOR UNDER THE ITEM FOR "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL" AND "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL."
5. BOULDERS SHALL BE PLACED WITHIN THE DEPARTMENT'S RIGHT-OF-WAY OR EASEMENT.

**ENVIRONMENTAL PERMIT PLANS**

**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

SCALE AS NOTED

SIGNATURE/ BLOCK:

ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06605 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

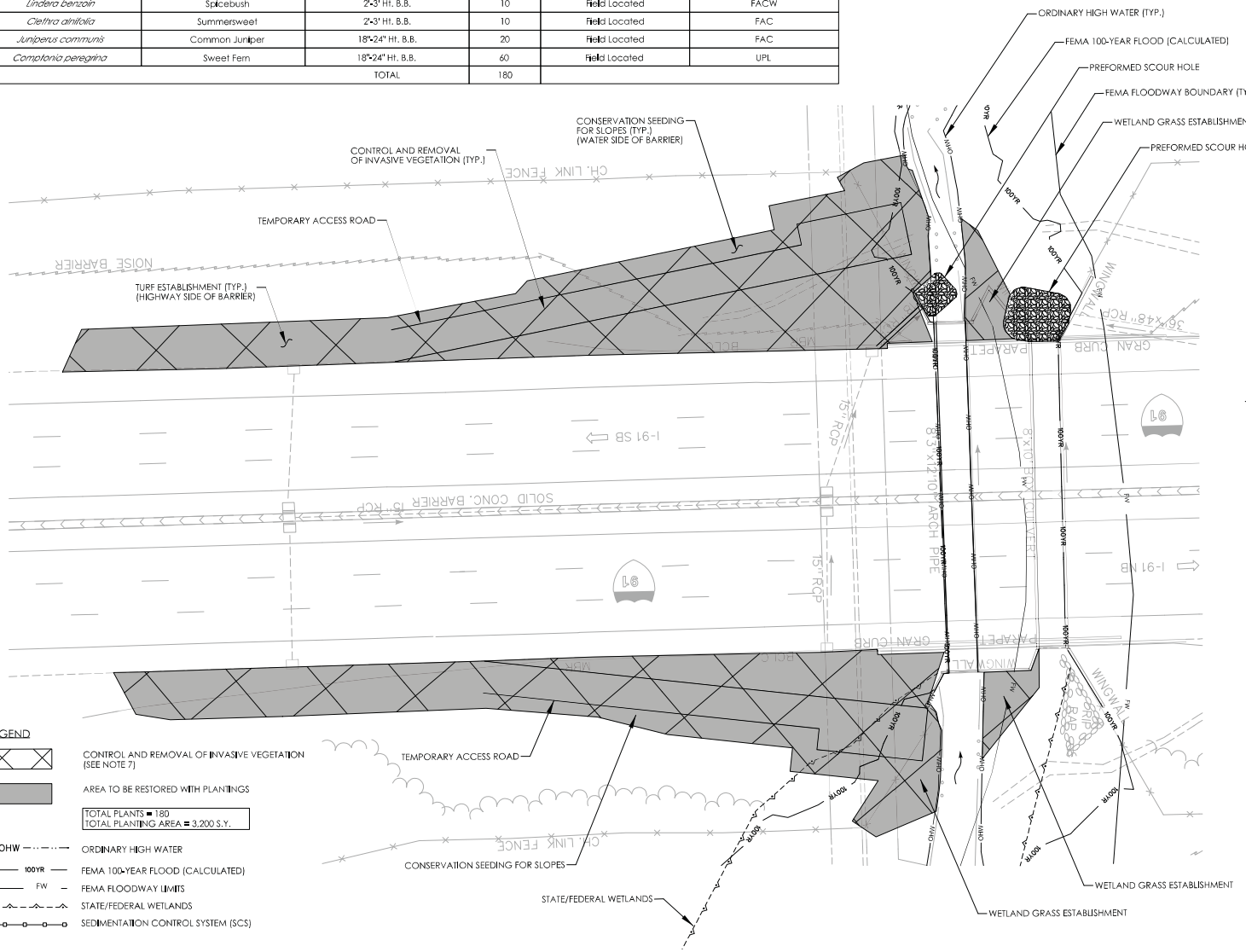
PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: ROCK WEIR DETAILS

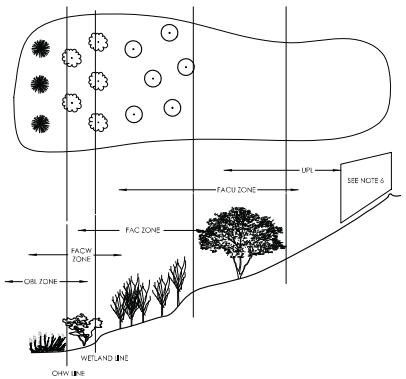
DRAWING NO. PMT-08
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-08.dgn
PLOTTED DATE: 11/25/2024

PERMIT PLANT LIST

| BOTANICAL NAME | COMMON NAME | SIZE | QTY. | SPACING | WETLAND INDICATOR |
|---|---|---|---|---|---|
| *Asclepicas incarnata* | Swamp Milkweed | 2" Plug | 40 | Field Located | OBL |
| *Asclepias tuberosa* | Butterfly Milkweed | 2" Plug | 40 | Field Located | NI |
| *Lindera benzoin* | Spicebush | 2'-3' Ht. B.B. | 10 | Field Located | FACW |
| *Clethra alnifolia* | Summersweet | 2'-3' Ht. B.B. | 10 | Field Located | FAC |
| *Juniperus communis* | Common Juniper | 18"-24" Ht. B.B. | 20 | Field Located | FAC |
| *Comptonia peregrina* | Sweet Fern | 18"-24" Ht. B.B. | 60 | Field Located | UPL |
| | | TOTAL | 180 | | |




SCHEMATIC PLANTING

LEGEND

- CONTROL AND REMOVAL OF INVASIVE VEGETATION (SEE NOTE 7)
- AREA TO BE RESTORED WITH PLANTINGS

TOTAL PLANTS = 180
TOTAL PLANTING AREA = 3,200 S.Y.

- OHW — ORDINARY HIGH WATER
- 100YR — FEMA 100-YEAR FLOOD (CALCULATED)
- FW — FEMA FLOODWAY LIMITS
- STATE/FEDERAL WETLANDS
- SEDIMENTATION CONTROL SYSTEM (SCS)

NOTES

1. THE PLANTINGS ON THIS SHEET ARE 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 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 DISTURBED 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 AER TO BE PLACED WITHIN A MOWED AREA.

7. AREA TO BE TREATED FOR INVASIVES AND PROPERLY PREPARED FOR FINAL PLANTING, SEEDING, AND RESTORATION.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

REV | DATE | REVISION DESCRIPTION

DESIGNER/DRAFTER: CMB CHECKED BY: DMC

HORIZONTAL SCALE SCALE 1" = 20'

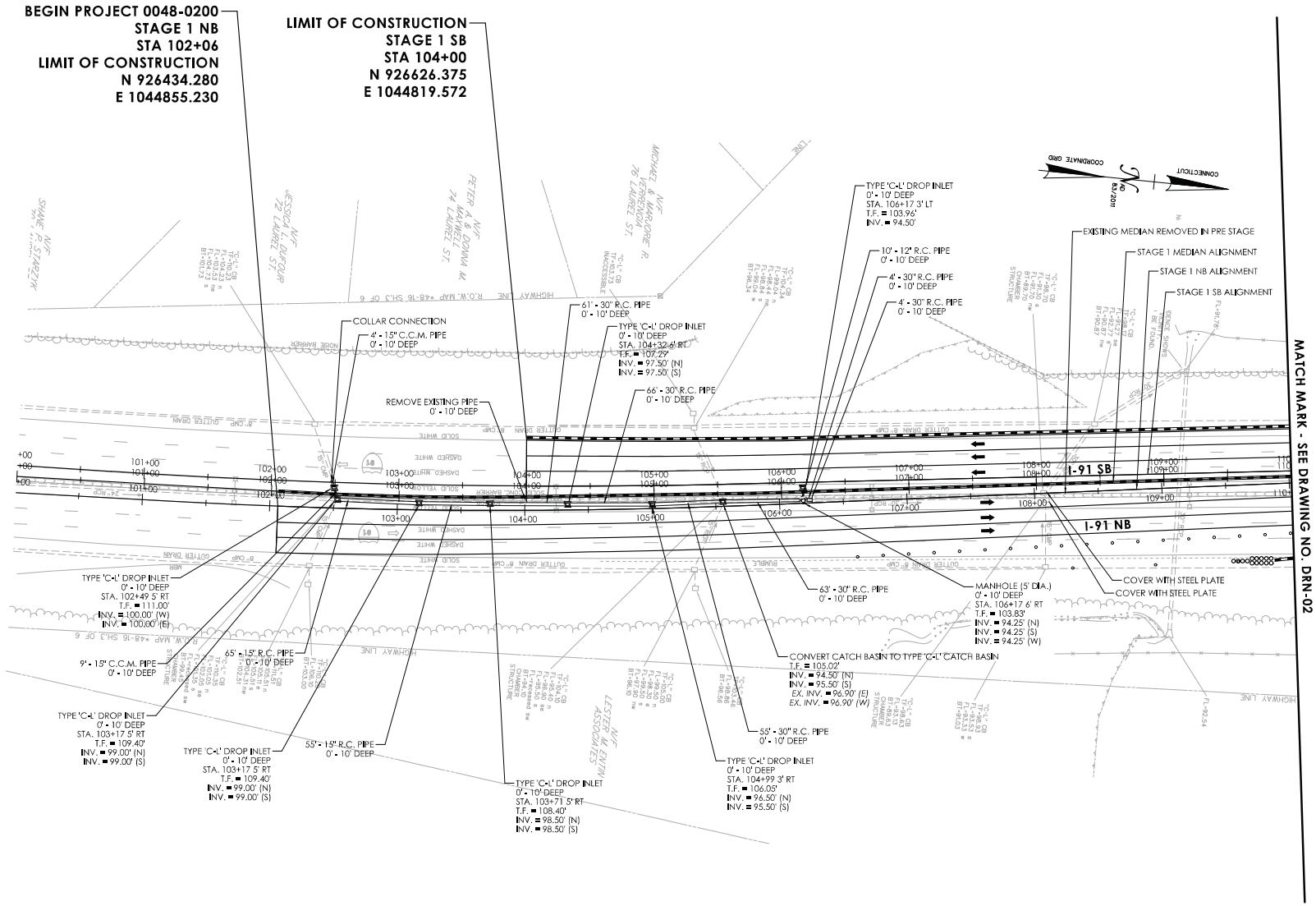
SIGNATURE/ BLOCK:

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: PERMIT PLANTING PLAN

DRAWING NO. PMT-09
SHEET NO.

LASTED SAVED BY: DOUG FILE NAME: G:\JOBS1\5\C\15C5403\BRIDGES\DATA\Enfield_05585\DGN\Hydro\SR_MSH_0048-0200_PMT-02.dgn
PLOTTED DATE: 11/25/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

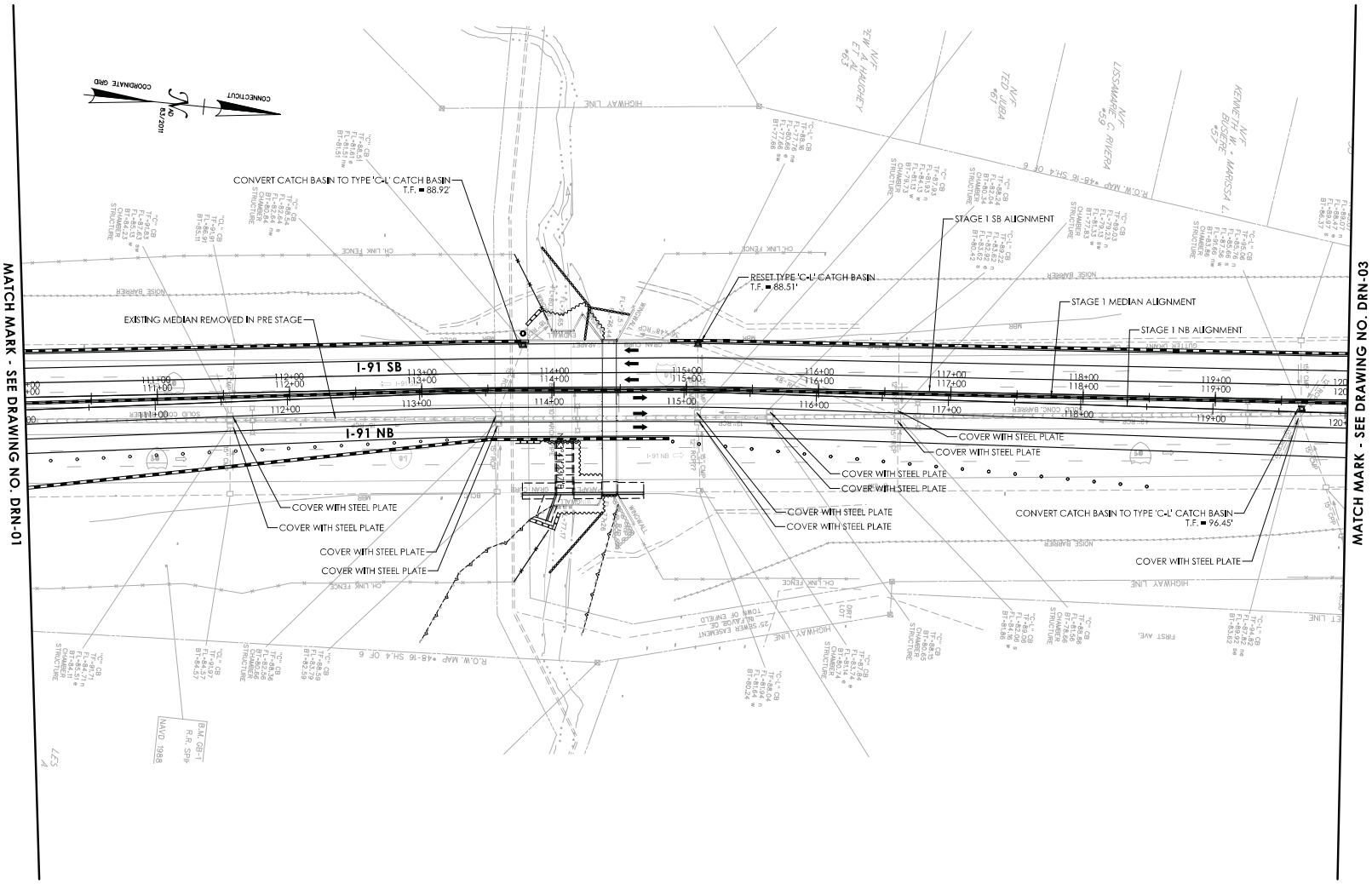
ADA A.DiCesare Associates, P.C. 890 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 1 DRAINAGE PLAN - 1

DRAWING NO. PMT-10
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-10_12.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| NO. | REVISION DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

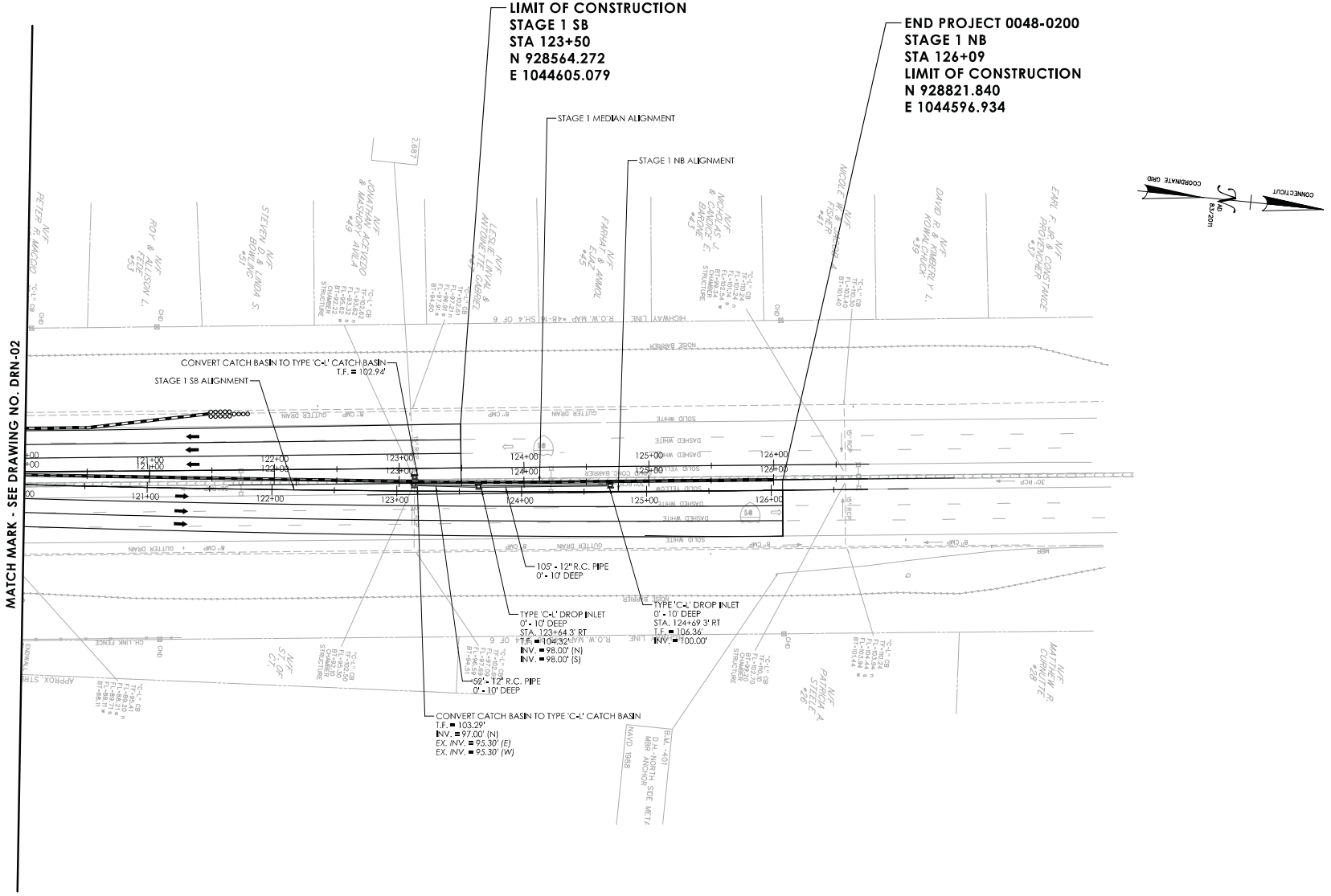
ADA — A.DiCesare Associates, P.C. 890 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 1 DRAINAGE PLAN - 2

DRAWING NO. PMT-11
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-10_12.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

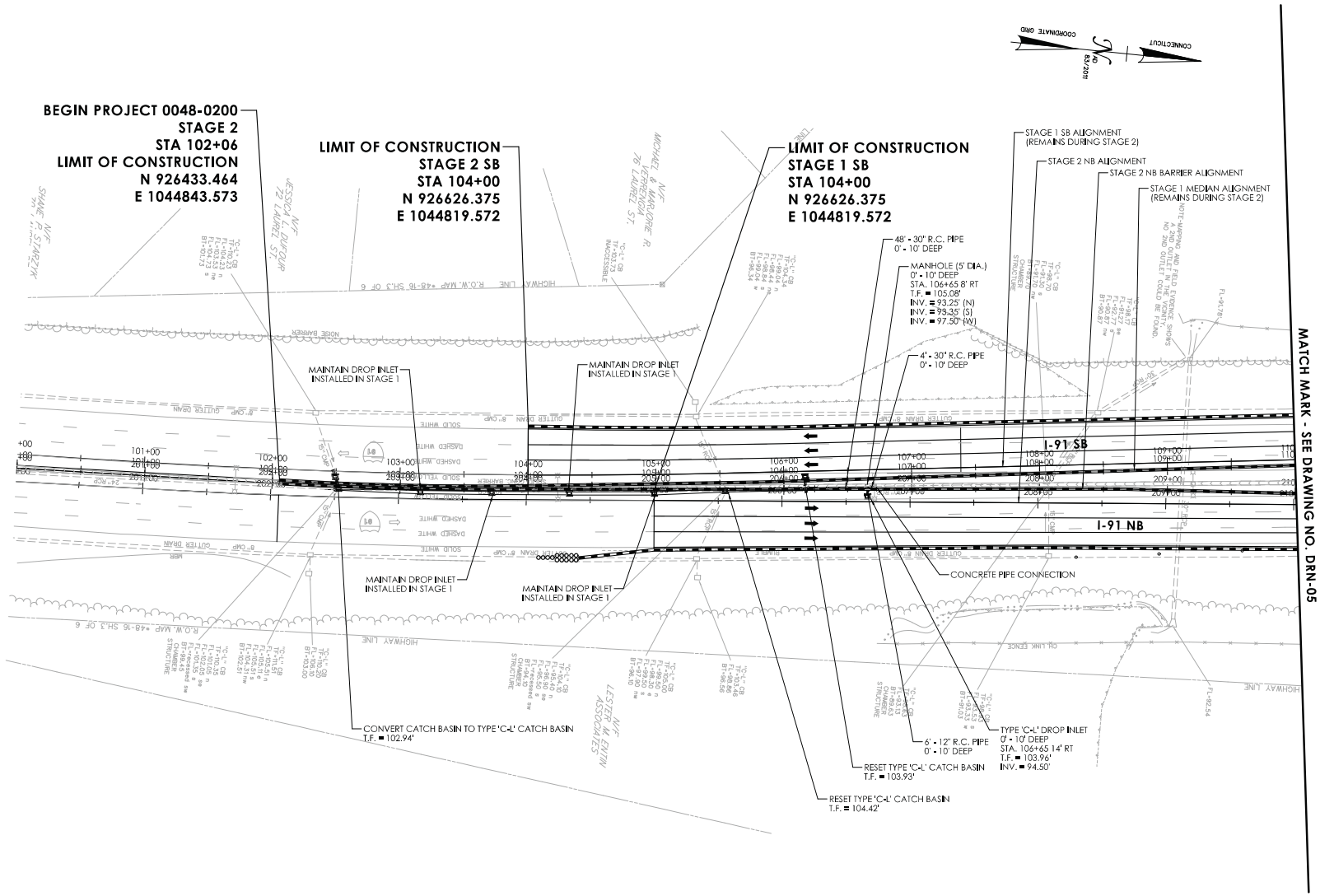
ADA — A.DiCesare Associates, P.C., 890 Clinton Avenue, Bridgeport, CT 06604, 203-696-0444, www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 1 DRAINAGE PLAN - 3

DRAWING NO. PMT-12
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\NW_CP_0048_0200_PMT-10_12.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

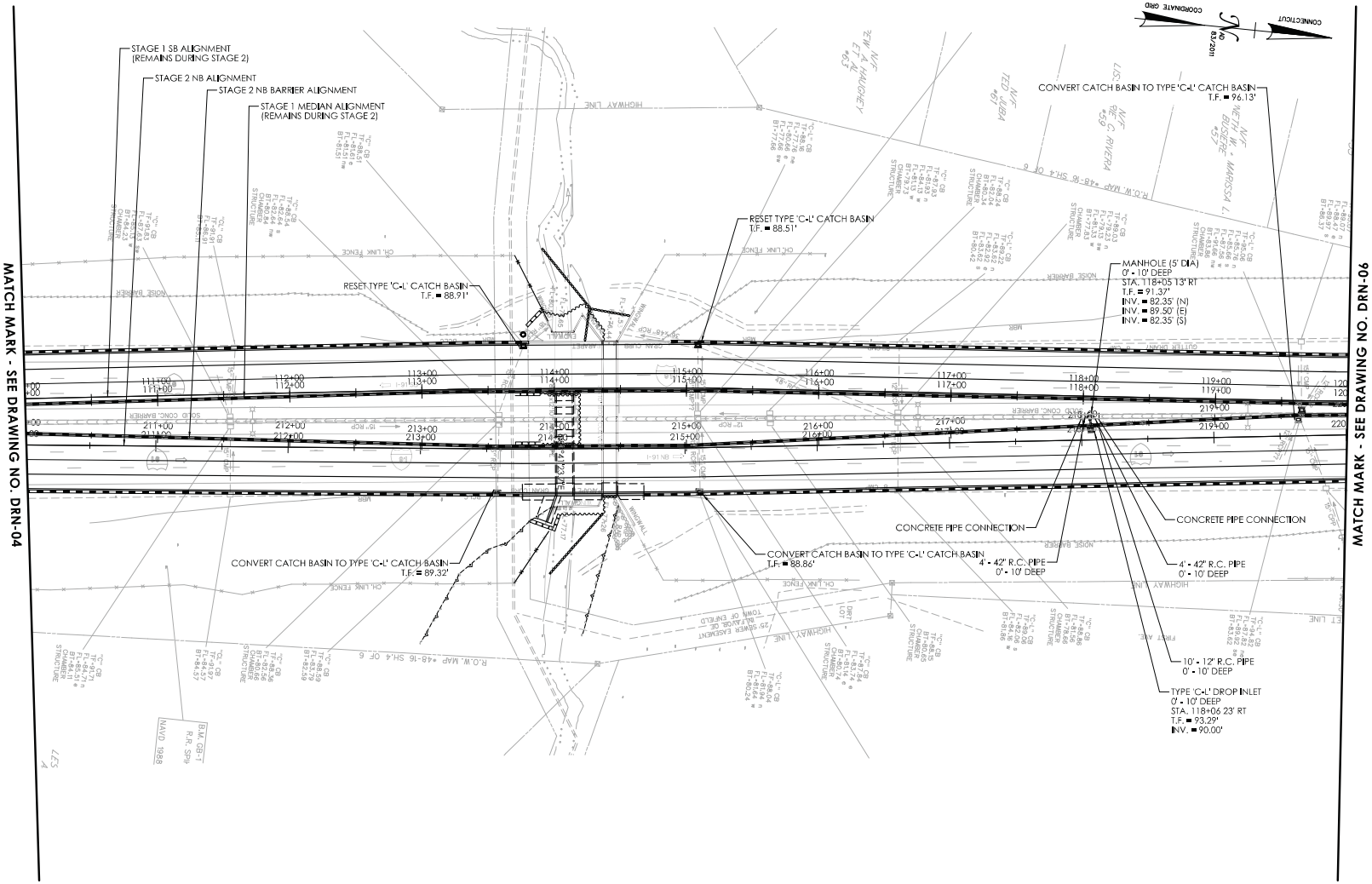
ADA A.DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 2 DRAINAGE PLAN - 1

DRAWING NO. PMT-13
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-13_15.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE
1" = 20'

SIGNATURE/
BLOCK:

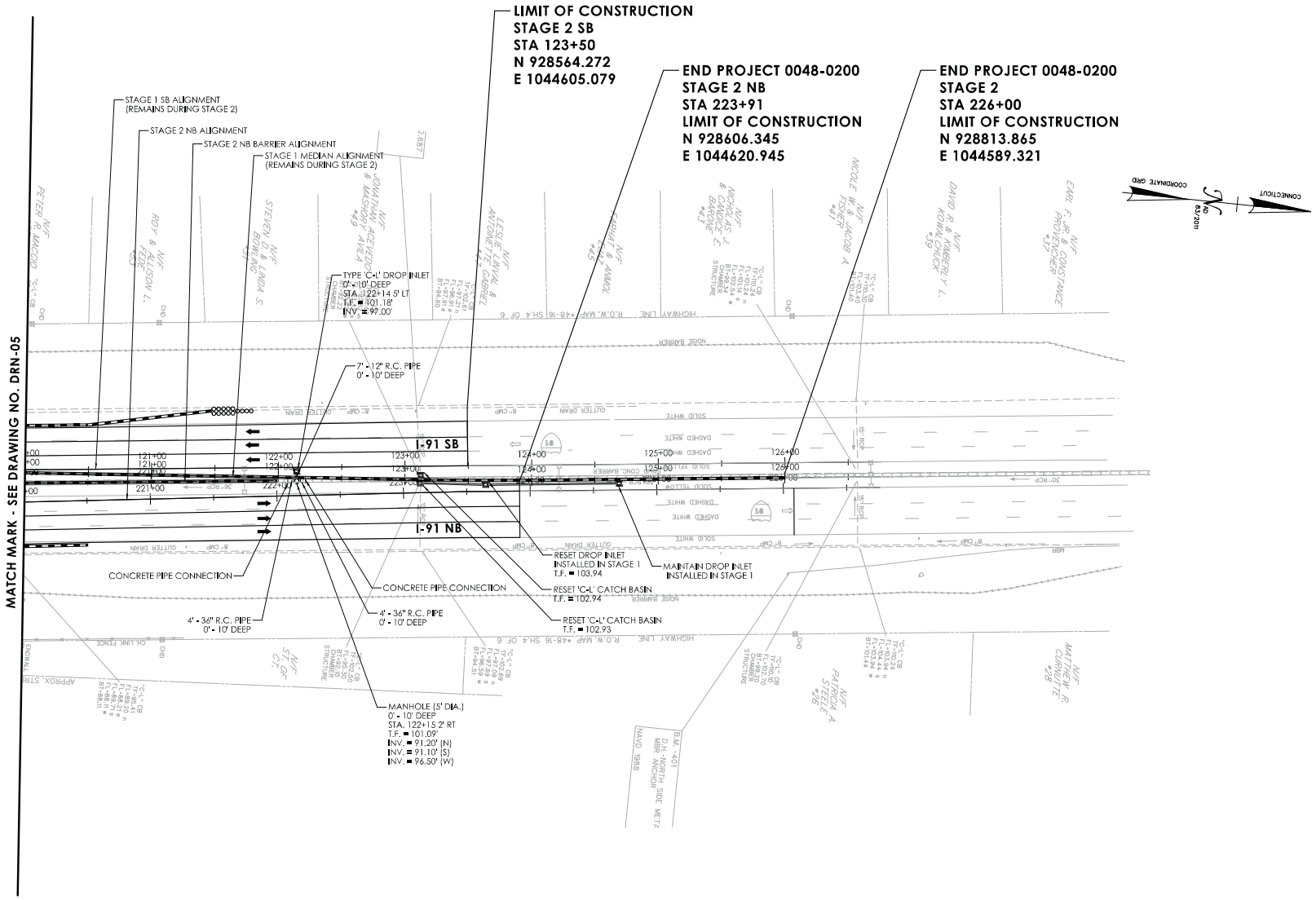
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, CT 06604
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT
OF
TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 2 DRAINAGE PLAN - 2

DRAWING NO.
PMT-14
SHEET NO.

LASTED SAVED BY: ADAG039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-13_15.dgn
PLOTTED DATE: 9/17/2024




**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE
0 20' 40'
1" = 20'

SIGNATURE/ BLOCK:

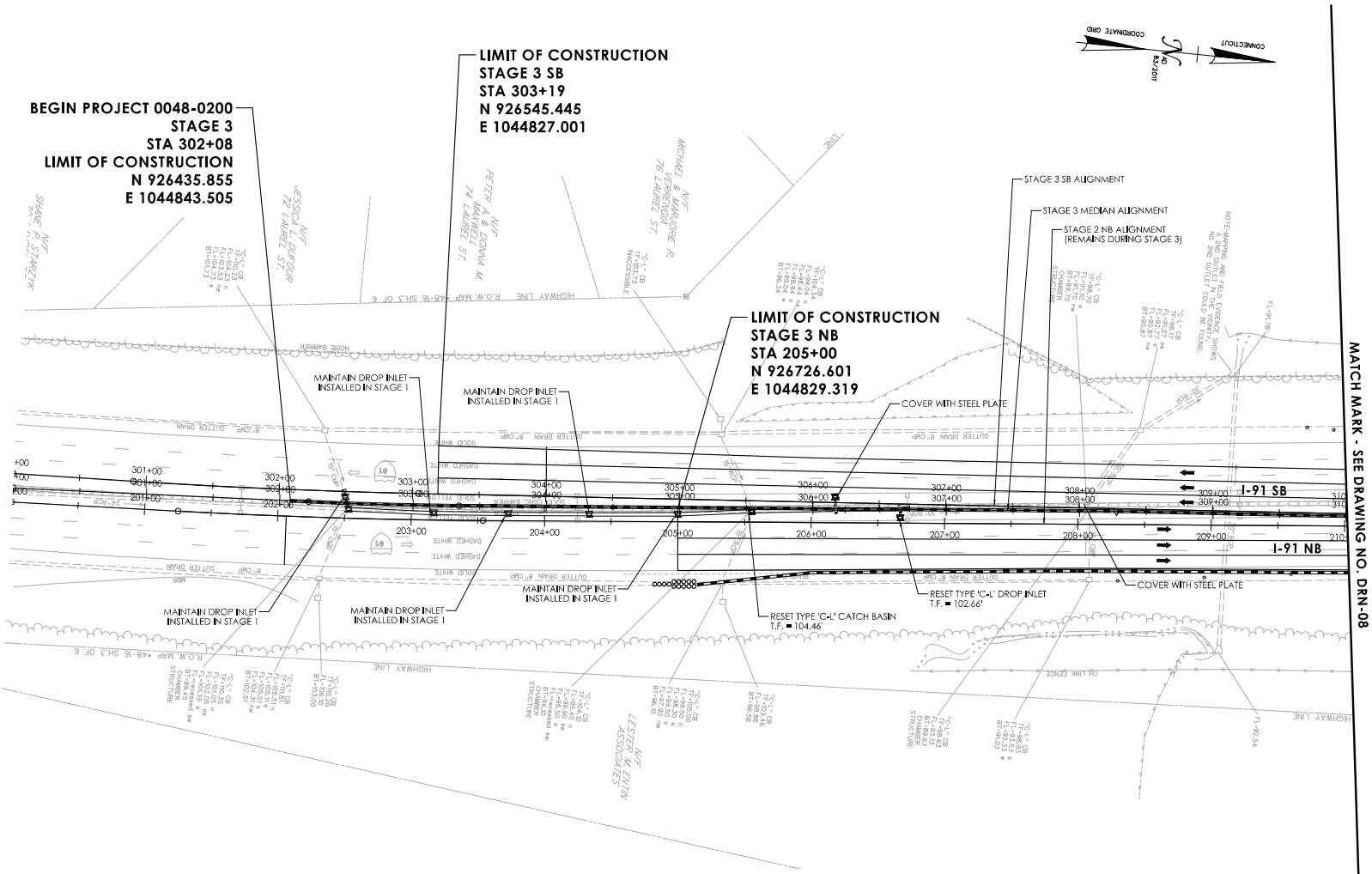
ADA
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, CT 06604
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 2 DRAINAGE PLAN - 3

DRAWING NO. PMT-15
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-13_15.dgn
PLOTTED DATE: 9/17/2024




**NOTES:**

1. FINAL DRAINAGE WILL BE REVERTED BACK TO EXISTING CONDITIONS AFTER THE COMPLETION OF STAGE 3.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|
| | | |

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20'

SIGNATURE/ BLOCK:

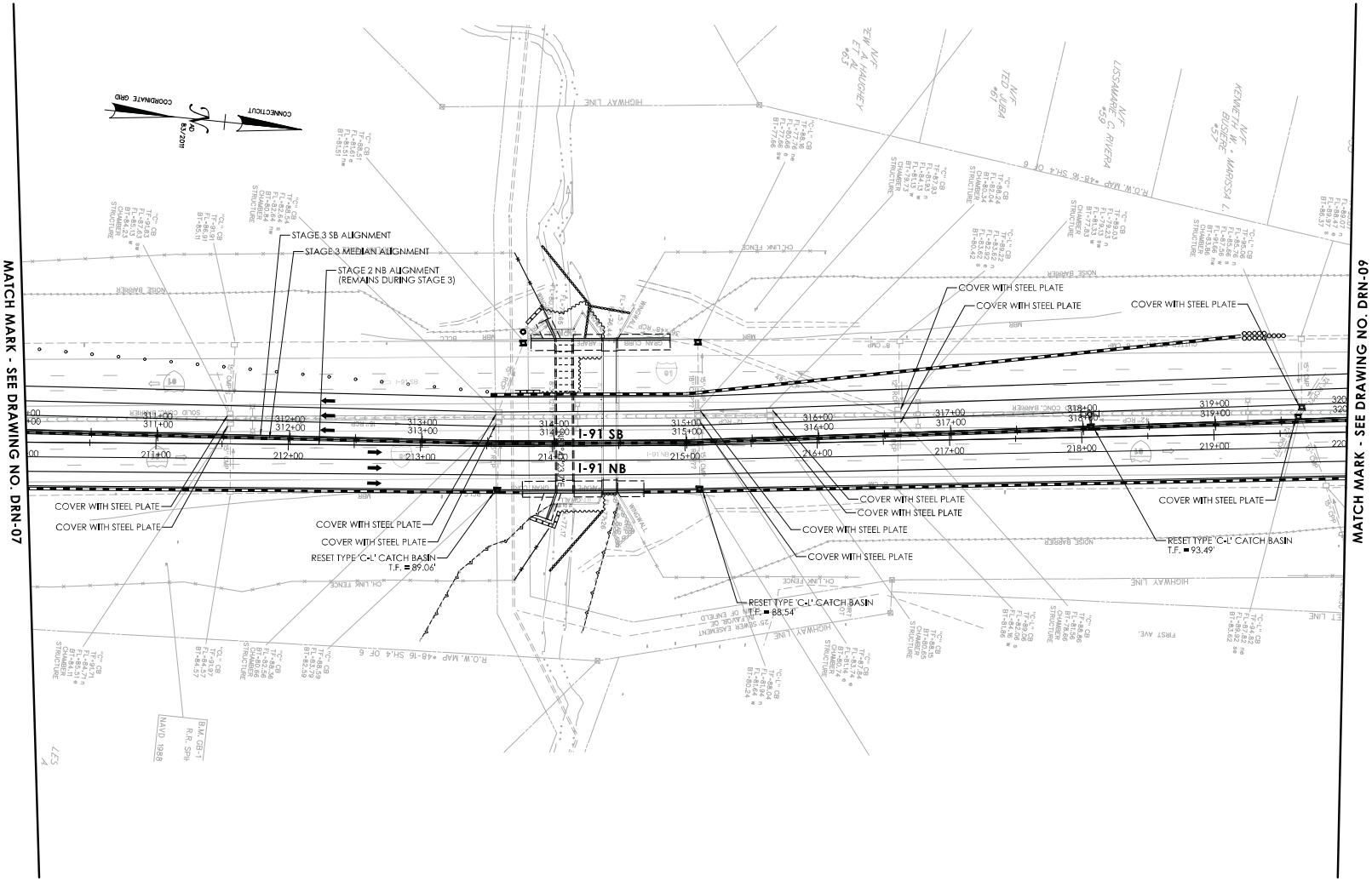
ADA DiCesare Associates, P.C. 690 Clinton Avenue Bridgeport, CT 06604 203-696-0444 www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 3 DRAINAGE PLAN - 1

DRAWING NO. PMT-16
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\4\Contract_Plans\HW_CP_0048_0200_PMT-16_18.dgn
PLOTTED DATE: 9/17/2024




**NOTES:**

1. FINAL DRAINAGE WILL BE REVERTED BACK TO EXISTING CONDITIONS AFTER THE COMPLETION OF STAGE 3.

**ENVIRONMENTAL PERMIT PLANS**
**PLAN DATE: NOVEMBER 25, 2024**

| REV | DATE | REVISION DESCRIPTION |
|---|---|---|

DESIGNER/DRAFTER: JPK CHECKED BY: JVS

HORIZONTAL SCALE 1" = 20' (0, 20', 40')

SIGNATURE/ BLOCK:

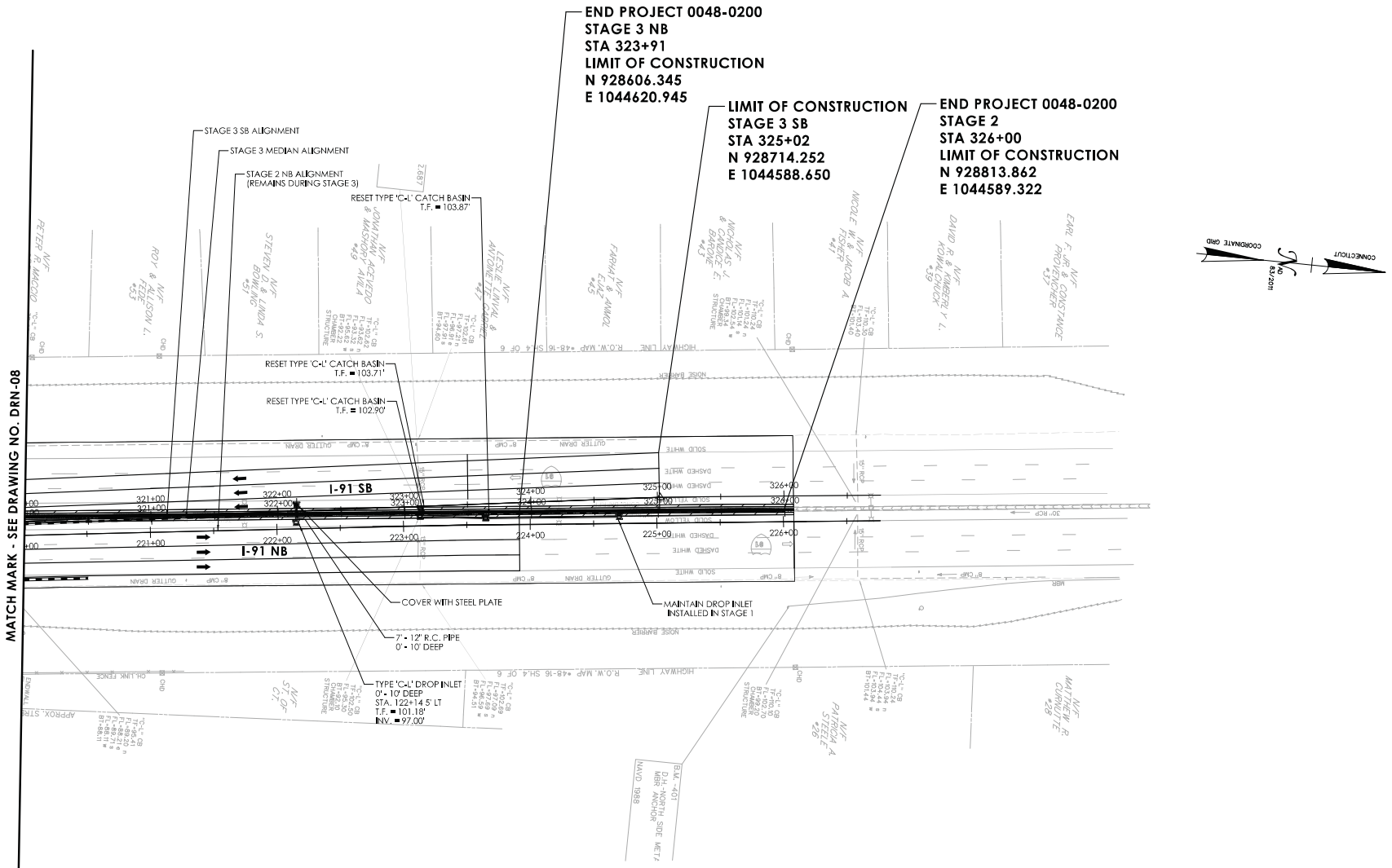
A.DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, CT 06604
203-696-0444
www.adicesarepc.com

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER: 0048-0200
PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE NO. 05585 - INTERSTATE 91 OVER GRAPE BROOK
TOWN(S): ENFIELD
DRAWING TITLE: STAGE 3 DRAINAGE PLAN - 2

DRAWING NO. PMT-17
SHEET NO.

LASTED SAVED BY: ADA039 FILE NAME: K:\CT_Projects\0048-0200\Env\Contract_Plans\HW_CP_0048_0200_PMT-16_18.dgn
PLOTTED DATE: 9/17/2024


END PROJECT 0048-0200
STAGE 3 NB
STA 323+91
LIMIT OF CONSTRUCTION
N 928606.345
E 1044620.945
LIMIT OF CONSTRUCTION
STAGE 3 SB
STA 325+02
N 928714.252
E 1044588.650
END PROJECT 0048-0200
STAGE 2
STA 326+00
LIMIT OF CONSTRUCTION
N 928813.862
E 1044589.322
MATCH MARK - SEE DRAWING NO. DRN-08
STAGE 3 SB ALIGNMENT
STAGE 3 MEDIAN ALIGNMENT
STAGE 2 NB ALIGNMENT
(REMAINS DURING STAGE 3)
RESET TYPE 'C-L' CATCH BASIN
T.F. = 103.87'
RESET TYPE 'C-L' CATCH BASIN
T.F. = 103.71'
RESET TYPE 'C-L' CATCH BASIN
T.F. = 102.90'
I-91 SB
I-91 NB
COVER WITH STEEL PLATE
MAINTAIN DROP INLET
INSTALLED IN STAGE 1
7' - 12" R.C. PIPE
0' - 10' DEEP
TYPE 'C-L' DROP INLET
0' - 10' DEEP
STA. 122+14.5' LT
T.F. = 101.18'
INV. = 97.00'
PETER M. NF PIZZUTO
ROY & NF KATHLEEN J. FEST
STEVEN C. & NF LINDA S. BRUNO
JONATHAN NF ACEVEDO & MARSHORY ANA
NF
NF
FARHAT & NF ANMOL EJAZ
NICHOLAS Y. & NF CANDACE Y. GAMBLE
NICOLE M. & NF JACOB A. FISHER
DAVID R. & NF KIMBERLY Y. KOMARCHUCK
EARL F. JR. & NF CONSTANCE PROVENCHER
MATTHEW R. & NF CURRIVAN
NF
NF
NF

# LWRD Work Commencement Form

**To:** DEEP.LWRDRegulatory@ct.gov or
Regulatory Section
Department of Energy and Environmental Protection
Land & Water Resources Division
79 Elm Street
Hartford, CT 06106-5127

**Licensee Name:** Connecticut Department of Transportation

**Municipality in which the project is occurring:** Enfield

**DEEP License No(s):** 202411737-PCN & 202411739-GPCST

**CONTRACTOR(s):**

# 1 Name: _____
Address: _____
Telephone: _____
E-mail: _____

# 2 Name: _____
Address: _____
Telephone: _____
E-mail: _____

# 3 Name: _____
Address: _____

Date Contractor(s) received a copy
of the license and approved plans: _____

EXPECTED DATE OF COMMENCEMENT OF WORK: _____

EXPECTED DATE OF COMPLETION OF WORK: _____

LICENSEE: _____ _____
(Signature) (Date)

**DEPARTMENT OF THE ARMY**
**U.S. ARMY CORPS OF ENGINEERS**
**NEW ENGLAND DISTRICT**
**696 VIRGINIA ROAD**
**CONCORD, MASSACHUSETTS 01742-2751**

June 13, 2025

Regulatory Division
Transportation & Utility Section
File Number: NAE-2024-02893

Kevin Carifa
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, Connecticut 06111
Via Email: kevin.carifa@ct.gov

Dear Mr. Carifa:

This letter is in response to the application you submitted to the U.S. Army Corps of Engineers (USACE), New England District on December 5, 2024, for a Department of the Army general permit verification for Connecticut Department of Transportation Project 0048-0200, Replacement of Bridge No. 05585. We have assigned this project file number NAE-2024-02893, which you should reference in all correspondence with this office. This letter follows a provisional notification letter issued by this office on February 3, 2025.

The project will replace Bridge No. 05585, a 132-foot-long corrugated metal plate arch culvert that is 12 feet 10 inches wide and 8 feet 4 inches high, with a new 12-foot by 10-foot concrete box culvert. The work will also install wingwalls on spread footings and parapets, connecting Bridge No. 05585 to the existing overflow box culvert (Bridge No. 05587). Additionally, the existing cut stone riprap will be removed, and scour holes will be created using modified riprap, granular fill, and natural streambed materials at the outlet drainage pipe outlets. A rock weir will be constructed to create backwater for the new box culvert. The project will permanently discharge 360 cubic yards (cy) of fill, including 136 cy of concrete, 180 cy of natural streambed materials, 22 cy of modified riprap, and 22 cy of granular fill within 2,085 square feet (SF) and 250 linear feet below the ordinary high water mark (OHWM) of a freshwater perennial stream, Grape Brook, and in 90 SF of wetlands. There will also be temporary fill discharged in 900 SF below the OHWM of Grape Brook for cofferdams to divert flow into an overflow box culvert located to the north and in 1,880 SF of wetlands for work areas, access roads, and sedimentation control and earth-retaining systems. The project is located in Grape Brook, which flows into Waterworks Brook and then into the Connecticut River, under Interstate 91 at Latitude 42.006944º and Longitude -72.5855560º, in Enfield, Hartford County, Connecticut. The work is shown on the enclosed plans titled “Environmental Permit Plans State Project No. 05585 Interstate 91 Over Grape Brook In the Town of Enfield,” on 18 sheets and dated 9/17/2024.

Based on the information you have provided, we verify that the activity is authorized under General Permit 19 of the December 15, 2021, federal permit known as the Connecticut General Permits (GPs). If the extent of the project area and/or nature of the authorized impacts to waters are modified, a revised application must be submitted to this office for written approval before work is initiated. You can find a copy of these permits at: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/.

Any deviation from the terms and conditions of the permit, or your submitted plans, may subject the permittee to the enforcement provisions of our regulations. Therefore, in the event changes to this project are contemplated, it is recommended you coordinate with this office prior to proceeding with the work. This office must approve any changes before you undertake them. You must perform this work in compliance with the terms and conditions of the GPs listed above, and also in compliance with the following special conditions:

**Project Specific Special Conditions:**

1. The permittee shall complete and return the enclosed Work-Start Notification Form to this office at least two weeks prior to the anticipated construction start date.

2. The permittee shall complete and return the enclosed Completion Certification Form to this office at least one month following the completion of the authorized work.

3. Appropriate soil erosion, sedimentation, and turbidity controls shall be used and maintained in effective operating condition during in-water construction. Activities capable of producing greater than minimal turbidity or sedimentation shall be done during periods of low-flow or no-flow or when controls are used to obtain dry work conditions.

4. All construction shall be completed in accordance with the limits of construction and construction sequences detailed on the enclosed plan drawings, titled "Environmental Permit Plans State Project No. 05585 Interstate 91 Over Grape Brook In the Town of Enfield," on a total of 18 sheets and dated September 17, 2024. If you change the plans or construction methods for work within or adjacent to Grape Brook, please contact us immediately to discuss modification of this authorization. USACE must approve any changes before you undertake them.

This verification is valid until December 15, 2026. You must commence or be under contract to commence the work authorized herein by December 15, 2026 and complete the work by December 15, 2027. If not, you must contact this office to determine the need for further authorization before beginning or continuing the activity. It is recommended that you contact this office before this authorization expires to discuss if permit reissuance is a possibility.

This GP verification and any associated authorizations does not preclude the necessity to obtain any other federal, state, or local permits, licenses, and/or certifications, which may be required.

This determination becomes valid only after the Connecticut Department of Energy & Environmental Protection (DEEP) issues or waives the following applicable State permits: Certificate of Permission (COP); General Permit (LIS-GP); Tidal Wetlands Permit; Structures and Dredging and Filling Permit; Water Quality Certification (WQC) as required under Section 401 of the Clean Water Act; and/or a Section 307 Coastal Zone Management Act consistency determination. In the event the DEEP denies any of these permits, this determination becomes null and void. The address of the DEEP office for your area is provided in the enclosed GP.

If you have any questions related to this verification or have issues accessing documents referenced in this letter, please contact Matthew Hackett, Project Manager at 978-318-8321, or by email at matthew.r.hackett@usace.army.mil. This agency continually strives to improve our customer service. To better serve you, please complete the Customer Service Survey located at: https://regulatory.ops.usace.army.mil/customer-service-survey/.

Sincerely,

Stephen Rochette
Acting Chief, Technical Support
Branch Regulatory Division

Enclosures

cc (w/enclosures):
Christine Xenelis, CT DOT (via christine.xenelis@ct.gov)
Phoebe Mrozinski, CT DOT, phoebe.mrozinski@ct.gov
Amanda Saul, CT DOT, Amanda.Saul@ct.gov
William Sigmund, CT DEEP, Chief, Land & Water Resources Division; William.Sigmund@ct.gov
Caitlin Daddona, Connecticut Department of Energy and Environmental Protection (via: Caitlin.Daddona@ct.gov)
Farrah Ashe, Connecticut Department of Energy and Environmental Protection (via: Farrah.Ashe@ct.gov)
Nathan Margason, US EPA (via: margason.nathan@epa.gov)

# Work-Start Notification Form

**File Number: NAE-2024-02893 State: Connecticut County: Tolland**

**Permittee: Connecticut Department of Transportation, Kevin Carifa**
**Date Verification Issued: 6/13/2025**
**Project Manager: Matthew Hackett**

At least two weeks prior to commencing the activity authorized by this permit, sign this certification and return it to the following address:

**US ARMY CORPS OF ENGINEERS**
**New England District**
**Attn: Matthew Hackett**
**696 Virginia Road**
**Concord, Massachusetts 01742**
**or**
**cenae-r-tu@usace.army.mil**
**978-318-8321**

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers (USACE) representative. Failure to comply with any terms or conditions of this authorization may result in the USACE suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

**The people (e.g. contractor) listed below will do the work, and they understand the permit's conditions and limitations.**

**Contractor Name/Contractor Firm: _____**
**Business Address: _____**
**_____**
**Contractor Phone and Email: _____**

**Proposed Construction Dates: Start: _____ Finish: _____**

**_____ _____**
**Signature of Permittee Date**

U.S. Army Corps of Engineers (USACE)

# CERTIFICATION OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT

For use of this form, see Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research, and Sanctuaries Act; the proponent agency is CECW-COR.

*Form Approved -*
*OMB No. 0710-0003*
*Expires 2027-10-31*

**The Agency Disclosure Notice (ADN)**

The Public reporting burden for this collection of information, 0710-0003, is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

**PURPOSE**: This form is used by recipients of U.S. Army Corps of Engineer Regulatory permits to certify compliance with the permit terms and conditions.

Your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the U.S. Army Corps of Engineers, New England District, Regulatory Office.

The certification can be submitted by email at matthew.r.hackett @usace.army.mil or by mail at the below address:

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the U.S. Army Corps of Engineers, New England District, Regulatory Office.

U.S. Army Corps of Engineers
New England District Office
Street Address: 696 Virginia Road
City: Concord State: Massachusetts Zip Code: 01742

## COMPLETED BY THE CORPS

Corps Action Number: NAE-2024-02893
Permit Type: General Permit
General Permit Number and Name (*if applicable*): NAE-2024-02893
Name of Permittee: Connecticut Department of Transportation
Project Name: Project 0048-0200, Replacement of Bridge No. 05585
Project Location (*physical address*): Grape Brook, Interstate 91
Enfield, Hartford County, Connecticut
Latitude 42.006944º and Longitude -72.5855560º

## PERMITTEE'S CERTIFICATION

Date Work Started: _____
Date Work Completed: _____

Enclose photographs showing the completed project (*if available*).

I _____ hereby certify that the work authorized by the above referenced permit has been completed in accordance with all of the permit terms and conditions, and that any required compensatory mitigation has been completed in accordance with the permit conditions.

| Name | Date | Signature |
|---|---|---|
| | | |

# Construction Contracts - Required Contract Provisions
**(State Funded Only Contracts)**

## Index


1. Contract Wage Rates

2. Americans with Disabilities Act of 1990, as Amended

3. Connecticut Statutory Labor Requirements

    a. Construction, Alteration or Repair of Public Works Projects; Wage Rates
    b. Debarment List - Limitation on Awarding Contracts
    c. Construction Safety and Health Course
    d. Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited
    e. Residents Preference in Work on Other Public Facilities (Not Applicable to Federal Aid Contracts)

4. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)

5. Executive Orders (State of CT)

6. Non-Discrimination Requirement and Certification (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised)

7. Whistleblower Provision

8. Connecticut Freedom of Information Act

    a. Disclosure of Records
    b. Confidential Information

9. Service of Process

10. Substitution of Securities for Retainages on State Contracts and Subcontracts

11. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

12. Forum and Choice of Law

13. Summary of State Ethics Laws

14. Audit and Inspection of Plants, Places of Business and Records

15. Campaign Contribution Restriction

16. Tangible Personal Property
17. Bid Rigging and/or Fraud – Notice to Contractor
18. Consulting Agreements Representation
19. Sovereign Immunity
20. Large State Contract Representation for Contractor
21. Large State Contract Representation for Official or Employee of State Agency
22. Iran Investment Energy Certification
23. Access to Contract and State Data
24. Affirmative Action Policy Statement
25. Compliance with Consumer Data Privacy and Online Monitoring

**Index of Exhibits**

EXHIBIT A - Affirmative Action Policy Statement (page 14)
EXHIBIT B - Health Insurance Portability and Accountability Act of 1996 (HIPAA) (page 18)
EXHIBIT C - State Wage Rates and Other Related Information (Begins on page 26)

## 1. Contract Wage Rates

The Contractor shall comply with:

The State wage rate requirements indicated in Exhibit D hereof are hereby made part of this Contract.

Prevailing Wages for Work on State Highways; Annual Adjustments. With respect to contracts for work on state highways and bridges on state highways, the Contractor shall comply with the provisions of Section 31-54 and 31-55a of the Connecticut General Statutes, as revised.

As required by section 1.05.12 (Payrolls) of the State of Connecticut, Department of Transportation's Standard Specification for Roads, Bridges and Incidental Construction (FORM 819), as may be revised, every Contractor or subcontractor performing project work on a federal aid project is required to post the relevant prevailing wage rates as determined by the United States Secretary of Labor. The wage rate determinations shall be posted in prominent and easily accessible places at the work site.

## 2. Americans with Disabilities Act of 1990, as Amended

This provision applies to those Contractors who are or will be responsible for compliance with the terms of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. 12101 et seq.), (Act), during the term of the Contract. The Contractor represents that it is familiar with the terms of this Act and that it is in compliance with the Act. Failure of the Contractor to satisfy this standard as the same applies to performance under this Contract, either now or during the term of the Contract as it may be amended, will render the Contract voidable at the option of the State upon notice to the contractor. The Contractor warrants that it will hold the State harmless and indemnify the State from any liability which may be imposed upon the State as a result of any failure of the Contractor to be in compliance with this Act, as the same applies to performance under this Contract.

## 3. Connecticut Statutory Labor Requirements

**(a) Construction, Alteration or Repair of Public Works Projects; Wage Rates.** The Contractor shall comply with Section 31-53 of the Connecticut General Statutes, as revised. The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of section 31-53 of the Connecticut General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

**(b) Debarment List. Limitation on Awarding Contracts.** The Contractor shall comply with Section 3l-53a of the Connecticut General Statutes, as revised.

**(c) Construction Safety and Health Course.** The Contractor shall comply with section 31-53b of the Connecticut General Statutes, as revised. The contractor shall furnish proof to the Labor Commissioner with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 of the Connecticut General Statutes, as revised, on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

Any employee required to complete a construction safety and health course as required that has not completed the course, shall have a maximum of fourteen (14) days to complete the course. If the employee has not been brought into compliance, they shall be removed from the project until such time as they have completed the required training.

Any costs associated with this notice shall be included in the general cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – "Claims".

**(d) Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited.** The Contract is subject to Section 31-57b of the Connecticut General Statutes, as revised.

**(e) Residents Preference in Work on Other Public Facilities. NOT APPLICABLE TO FEDERAL AID CONTRACTS.** Pursuant to Section 31-52a of the Connecticut General Statutes, as revised, in the employment of mechanics, laborers or workmen to perform the work specified herein, preference shall be given to residents of the state who are, and continuously for at least six months prior to the date hereof have been, residents of this state, and if no such person is available, then to residents of other states.

**4. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)**

The Contractor shall comply with Chapter 219 of the Connecticut General Statutes pertaining to tangible personal property or services rendered that is/are subject to sales tax. The Contractor is responsible for determining its tax liability. If the Contractor purchases materials or supplies pursuant to the Connecticut Department of Revenue Services' "Contractor's Exempt Purchase Certificate (CERT-141)," as may be revised, the Contractor acknowledges and agrees that title to such materials and supplies installed or placed in the project will vest in the State simultaneously with passage of title from the retailers or vendors thereof, and the Contractor will have no property rights in the materials and supplies purchased

Forms and instructions are available anytime by: Internet: Visit the DRS website at www.ct.gov/DRS to download and print Connecticut tax forms; or Telephone: Call 1-800-382- 9463 (Connecticut calls outside the Greater Hartford calling area only) and select Option 2 or call 860-297-4753 (from anywhere).

**5. Executive Orders and Other Enactments**

**(a)** All references in this Contract to any Federal, State, or local law, statute, public or special act, executive order, ordinance, regulation or code (collectively, "Enactments") shall mean Enactments that apply to the Contract at any time during its term, or that may be made applicable to the Contract during its term. This Contract shall always be read and interpreted in accordance with the latest applicable wording and requirements of the Enactments. Unless otherwise provided by Enactments, the Contractor is not relieved of its obligation to perform under this Contract if it chooses to contest the applicability of the Enactments or the Client Agency's authority to require compliance with the Enactments.

**(b)** This Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of this Contract as if they had been fully set forth in it.

**(c)** This Contract may be subject to (1) Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services; and (2) Executive Order No. 61 of Governor Dannel P. Malloy promulgated December 13, 2017, concerning the Policy for the Management of State Information Technology Projects, as issued by the Office of Policy and Management, Policy ID IT-SDLC-17-04. If any of the Executive Orders referenced in this subsection is applicable, it is deemed to be incorporated into and made a part of this Contract as if fully set forth in it.

**6. Non-Discrimination**

**(a)** For purposes of this Section, the following terms are defined as follows:

i. "Commission" means the Commission on Human Rights and Opportunities;

ii. "Contract" and "contract" include any extension or modification of the Contract or contract;

iii. "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;

iv. "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the

v. gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose;

vi. "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;

vii. "good faith efforts" includes, but is not limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;

viii. "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced;

ix. "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;

x. "minority business enterprise" means any small contractor (1) fifty-one per cent or more of the capital stock, if any, or assets of which are owned by a person or persons who (a) exercise operational authority over the daily affairs of the enterprise, (b) have the power to direct the management and policies and receive the beneficial interest of the enterprise, (c) possess managerial and technical competence and experience directly related to the principal business activities of the enterprise, and (d) are members of a minority, as defined in C.G.S. § 32-9n, or are individuals with a disability, or (2) which is a nonprofit corporation in which fifty-one per cent or more of the persons who exercise operational authority over the enterprise, (a) possess managerial and technical competence and experience directly related to the principal business activities of the enterprise, (b) have the power to direct the management and policies of the enterprise, and (c) are member of a minority, as defined in C.G.S. § 32-9n, or are individuals with a disability; and

xi. "public works contract" means any agreement (A) for construction, rehabilitation, conversion, extension, demolition or repair of changes or improvements in real property, and (B) that is financed in whole or in part by the state, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees where such funding equals one hundred fifty thousand dollars or more.

For purposes of this Section, the terms “Contract” and “contract” do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, unless the contract is a public works contract, (2) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in C.G.S. § 1-267, (3) the federal government, (4) a foreign government, or (5) an agency of a subdivision, state or government described in the immediately preceding enumerated items (1), (2), (3),or (4).

**(b)** (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, sexual orientation, gender identity or expression, status as a veteran, status as a victim of domestic violence, status as a victim of sexual assault or status as a victim of trafficking in persons, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to

ensure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, sexual orientation, status as a veteran, status as a victim of domestic violence, status as a victim of sexual assault or status as a victim of trafficking in persons, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved;

(2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission;

(3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers’ representative of the Contractor's commitments under this Section and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e, 46a-68f and 46a-86; and

(5) the Contractor agrees to provide the Commission with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he or she will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

**(c)** Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; the timing and value of bids; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

**(d)** The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

**(e)** The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State, and in every subcontract entered into in order to fulfill any obligation of a public works contract, and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions, including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

**(f)** The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

**(g)** Pursuant to subsection (c) of section 4a-60 of the Connecticut General Statutes, the Contractor, for itself and its authorized signatory of this Contract, affirms that it understands the obligations of this Section and that it will maintain a policy for the duration of the Contract to assure that the Contract will be performed in compliance with the nondiscrimination requirements of such section. The Contractor and its authorized signatory of this Contract demonstrate their understanding of this obligation by (A) having provided an affirmative response in the required online bid or response to a proposal question which asks if the contractor understands its obligations under such sections, (B) signing this Contract, or (C) initialing this nondiscrimination affirmation in the following box: ☐

**7. Whistleblower Provision**

The following clause is applicable if the Contract has a value of Five Million Dollars ($5,000,000) or more. Whistleblowing. This Contract may be subject to the provisions of Section 4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the

contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Contract.
Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.

**8. Connecticut Freedom of Information Act**

**(a) Disclosure of Records**. This Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this statute, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files
related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes,

**(b) Confidential Information.** The State will afford due regard to the Contractor's request for the protection of proprietary or confidential information which the State receives from the Contractor. However, all materials associated with the Contract are subject to the terms of the FOIA and all corresponding rules, regulations and interpretations. In making such a request, the Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the Contractor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract conflicts or is in any way inconsistent with this section, this section controls and shall apply, and the conflicting provision or part shall not be given effect. If the Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking the documentation as "CONFIDENTIAL," DOT will first review the Contractor's claim for consistency with the FOIA (that is, review that the documentation is actually a trade secret or commercial or financial information and not required by statute), and if determined to be consistent, will endeavor to keep such information confidential to the extent permitted by law. See, *e.g.*, Conn. Gen. Stat. §1- 210(b)(5) (A-B). The State, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. Should the State withhold such documentation from a Freedom of Information requester and a complaint be brought to the Freedom of Information Commission, the Contractor shall have the burden of cooperating with DOT in

defense of that action and in terms of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall the State have any liability for the disclosure of any documents or information in its possession which the State believes are required to be disclosed pursuant to the FOIA or other law.

**9. Service of Process**

The Contractor, if not a resident of the State of Connecticut, or, in the case of a partnership, the partners, if not residents, hereby appoints the Secretary of State of the State of Connecticut, and his successors in office, as agent for service of process for any action arising out of or as a result of this Contract; such appointment to be in effect throughout the life of this Contract and six (6) years thereafter.

**10. Substitution of Securities for Retainages on State Contracts and Subcontracts**

This Contract is subject to the provisions of Section 3-ll2a of the General Statutes of the State of Connecticut, as revised.

**11. Health Insurance Portability and Accountability Act of 1996 (HIPAA)**

The Contractor shall comply, if applicable, with the Health Insurance Portability and Accountability Act of 1996 and, pursuant thereto, the provisions attached at Exhibit B, and hereby made part of this Contract.

**12. Forum and Choice of Law**

The parties deem the Contract to have been made in the City of Hartford, State of Connecticut. Both parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

**13. Summary of State Ethics Laws**

Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes (a) the State has provided to the Contractor the summary of State ethics laws developed by the Office of State Ethics pursuant to section 1-81b of the Connecticut General Statutes, which summary is incorporated by reference into and made a part of this Contract as if the summary had been fully set forth in this Contract; (b) the Contractor represents that the chief executive officer or authorized signatory of the Contract and all key employees of such officer or signatory have read and understood the summary and agree to comply with the provisions of state ethics law; (c) prior to entering into a contract with any subcontractors or consultants, the Contractor shall provide the summary to all subcontractors and consultants and each such contract entered into with a subcontractor or consultant on or after July 1, 2021, shall include a representation that each subcontractor or consultant and the key employees of such subcontractor or consultant have read and understood the summary and agree to comply with the provisions of state ethics law; (d) failure to include such representations in such contracts with subcontractors or consultants shall be

cause for termination of the Contract; and (e) each contract with such contractor, subcontractor or consultant shall incorporate such summary by reference as a part of the contract terms.

**14. Audit and Inspection of Plants, Places of Business and Records**

**(a)** The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, may, at reasonable hours, inspect and examine all of the parts of the Contractor's an involved in, the performance of this Contract. For the purposes of this Section, "Contractor Parties" means the Contractor's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity. The Contractor shall maintain and shall require each of the Contractor Parties to maintain, accurate and complete Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.

**(b)** The State shall make all requests for any audit or inspection in writing and shall provide the Contractor with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.

**(c)** The Contractor shall keep and preserve or cause to be kept and preserved all of its and Contractor Parties' Records until three (3) years after the latter of (i) final payment under this Agreement, or (ii) the expiration or earlier termination of this Agreement, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Contractor shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.

**(d)** The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct, and the Contractor shall cooperate with an exit conference.

**(e)** The Contractor shall incorporate this entire Section verbatim into any contract or other agreement that it enters into with any Contractor Party.

**15. Campaign Contribution Restriction**

Campaign Contribution Restriction. For all State contracts, defined in section 9-612 of the Connecticut General Statutes as having a value of $50,000 or more, or a combination or series of such agreements or contracts having a value of $100,000 or more in a calendar year, the authorized signatory to this Agreement represents that they have received the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice.

**16. Tangible Personal Property**

(a) The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:

(1) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;

(2) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;

(3) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or

before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;

(4) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and

(5) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.

(b) For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a
security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.

(c) The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of Chapter 219 of the Connecticut General Statutes, including, but not limited to, §12-411b.

**17. Bid Rigging and/or Fraud – Notice to Contractor**

The Connecticut Department of Transportation is cooperating with the U.S. Department of Transportation and the Justice Department in their investigation into highway construction contract bid rigging and/or fraud.

A toll-free "HOT LINE" telephone number 800-424-9071 has been established to receive information from contractors, subcontractors, manufacturers, suppliers or anyone with knowledge of bid rigging and/or fraud, either past or current. The "HOT LINE" telephone number will be available during normal working hours (8:00 am – 5:00 pm EST).
Information will be treated confidentially, and anonymity respected.

**18. Consulting Agreement Representation**

Pursuant to section 4a-81 of the Connecticut General Statutes, the person signing this Contract on behalf of the Contractor represents, to their best knowledge and belief and subject to the penalty of false statement as provided in section 53a-157b of the Connecticut General Statutes, that the Contractor has not entered into any consulting agreements in connection with this Contract, except for the agreements listed below or in an attachment to this Contract. "Consulting agreement" means any written or oral agreement to retain the services, for a fee, of a consultant for the purposes of (A) providing counsel to a contractor, vendor, consultant or other entity seeking to conduct, or conducting, business with the State,
(B) contacting, whether in writing or orally, any executive, judicial, or administrative office
of the State, including any department, institution, bureau, board, commission, authority, official or employee for the purpose of solicitation, dispute resolution, introduction, requests for information, or (C) any other similar activity related to such contracts. "Consulting agreement" does not include any agreements entered into with a consultant who is registered under the provisions of chapter 10 of the Connecticut General Statutes as of the date such contract is executed in accordance with the provisions of section 4a-81 of the Connecticut General Statutes.

_____

Consultant's Name and Title Name of Firm (if applicable)

_____ _____ _____

Start Date End Date Cost

The basic terms of the consulting agreement are: _____

_____

_____

Description of Services Provided:

Is the consultant a former State employee or former public official? ☐ YES ☐ NO If YES: _____ _____

Name of Former State Agency Termination Date of Employment

**19. Sovereign Immunity**

The parties acknowledge and agree that nothing in the Solicitation or the Contract shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by Federal law or the laws of the State of Connecticut to the State or any of its officers and employees, which they may have had, now have or will have with respect to all matters arising out of the Contract. To the extent that this section conflicts with any other section, this section shall govern.

**20. Large State Contract Representation for Contractor**

Pursuant to section 4-252 of the Connecticut General Statutes and Acting Governor Susan Bysiewicz Executive Order No. 21-2, promulgated July 1, 2021, the Contractor, for itself and on behalf of all of its principals or key personnel who submitted a bid or proposal, represents:

That no gifts were made by (A) the Contractor, (B) any principals and key personnel of the Contractor, who participate substantially in preparing bids, proposals or negotiating State contracts, or (C) any agent of the Contractor or principals and key personnel, who participates substantially in preparing bids, proposals or negotiating State contracts, to (i) any public official or State employee of the State agency or quasi- public agency soliciting bids or proposals for State contracts, who participates substantially in the preparation of bid solicitations or requests for proposals for State contracts or the negotiation or award of State contracts, or (ii) any public official or State employee of any other State agency, who has supervisory or appointing authority over such State agency or quasi-public agency;

(1) That no such principals and key personnel of the Contractor, or agent of the Contractor or of such principals and key personnel, knows of any action by the Contractor to circumvent such prohibition on gifts by providing for any other principals and key personnel, official, employee or agent of the Contractor to provide a gift to any such public official or State employee; and

(2) That the Contractor is submitting bids or proposals without fraud or collusion with any person.

**21. Large State Contract Representation for Official or Employee of State Agency**

Pursuant to section 4-252 of the Connecticut General Statutes and Acting Governor Susan Bysiewicz Executive Order No. 21-2, promulgated July 1, 2021, the State agency official or employee represents that the selection of the person, firm or corporation was not the result of collusion, the giving of a gift or the promise of a gift, compensation, fraud or inappropriate influence from any person.

**22. Iran Investment Energy Certification**

(a) Pursuant to section 4-252a of the Connecticut General Statutes, the Contractor certifies that it has not made a direct investment of twenty million dollars or more in the energy sector of Iran on or after October 1, 2013, as described in Section 202 of the Comprehensive Iran Sanctions, Accountability and Divestment Act of 2010, and has not increased or renewed such investment on or after said date.

(b) If the Contractor makes a good faith effort to determine whether it has made an investment described in subsection (a) of this section, then the Contractor shall not be deemed to be in breach of the Contract or in violation of this section. A "good faith effort" for purposes of this subsection includes a determination that the Contractor is not on the list of persons who engage in certain investment activities in Iran created by the Department of General Services of the State of California pursuant to Division 2, Chapter 2.7 of the California Public Contract Code. Nothing in this subsection shall be construed to impair the ability of the State agency or quasi-public agency to pursue a breach of contract action for any violation of the provisions of the Contract.

**23. Access to Contract and State Data**

The Contractor shall provide to the Client Agency access to any data, as defined in Conn. Gen Stat. Sec. 4e-1, concerning the Contract and the Client Agency that are in the possession or control of the Contractor upon demand and shall provide the data to the Client Agency in a format prescribed by the Client Agency and the State Auditors of Public Accounts at no additional cost.

**24. Affirmative Action Policy Statement**

The Contractor shall comply with the Affirmative Action Policy Statement, as applicable, attached at Exhibit B and hereby made part of this Contract.

**25. Compliance with Consumer Data Privacy and Online Monitoring**

Pursuant to section 4e-72a of the Connecticut General Statutes, Contractor shall at all times comply with all applicable provisions of sections 42-515 to 42-525, inclusive, of the Connecticut General Statutes, as the same may be revised or modified.

# EXHIBIT A

## AFFIRMATIVE ACTION POLICY STATEMENT (October 2023)

It is the policy of this firm to assure that applicants are employed, and that employees are treated during employment, without regard to an individual's race, color, religion, creed, sex, gender identity or expression, marital status, national origin, age, ancestry, status as a veteran, intellectual disability, mental disability, learning disability or physical disability, including but not limited to blindness, unless such disability prevents performance of the work involved and to promote the full realization of equal employment opportunity through positive and continuous affirmative efforts. Such action shall include employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or terminations, rates of pay or other forms of compensation, selection for training/apprenticeship, pre- apprenticeship opportunities, and on-the-job training opportunities.

This firm will implement, monitor, enforce and achieve full compliance with this Affirmative Action Policy Statement in conjunction with the applicable Federal and State laws, regulations, executive orders, and contract provisions, including but not limited to those listed below:

Dissemination of Policy:
All members of the firm who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, this firm's Equal Employment Opportunity (EEO) policy and contractual responsibilities to provide EEO in each grade and classification of employment. These actions shall include:

1. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the firm's EEO policy and its implementation will be reviewed and explained. These meetings will be conducted by the EEO officer.
2. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
3. All personnel who are engaged in direct recruitment for the firm will be instructed by the EEO Officer of the contractor's procedures for locating and hiring minority group employees.
4. Notices and posters setting forth the firm's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
5. The firm's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
6. Sexual Harassment Prevention Resources including training and remedies must be available to all employees. See Connecticut General Assembly Public Acts 19–16 and 19–93.

Recruitment:
When advertising for employees, the firm will include in all advertisements the notation; "An Affirmative Action/Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area where the workforce would normally be derived.

1. The firm will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority and female applicants. To meet this requirement, the firm will identify referral sources and establish procedures for recruitment to obtain the referral of minority and female applicants.
2. In the event the firm has a valid bargaining agreement providing for exclusive hiring referrals, he/she is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The United States Department of Labor has held that where implementation of such agreements has had the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.) The firm will encourage his/her present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

Personnel Actions:
Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to an individual's race, color, religion, creed, sex, gender identity or expression, marital status, national origin, age, ancestry, status as a veteran, intellectual disability, mental disability, learning disability or physical disability, including but not limited to blindness, unless such disability prevents performance of the work involved. The following procedures shall be followed:

1. The firm will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of personnel.
2. The firm will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take correction action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
3. The firm shall periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
4. The firm will promptly investigate all complaints of alleged discrimination made to the firm and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective actions shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

Training and Promotion:
The firm will assist in locating, qualifying, and increasing the skills of minorities and women. The firm will utilize the following tools to identify training and promotional opportunities in the firm:

1. The firm will advise employees and applicants for employment of available training programs and the entrance requirements.
2. The firm will periodically review the training and promotion of minority group and female employees and will encourage eligible employees to apply for such training and promotion.

Unions:
If the firm relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the firm either directly or through a contractor's association acting as agent will include the procedures set forth below:

1. The firm will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
2. The firm will use best efforts to incorporate an EEO clause into each union agreement to the extent that such union will be contractually bound to refer applicants without regard to their to an individual's race, color, religion, creed, sex, gender identity or expression, marital status, national origin, age, ancestry, status as a veteran, intellectual disability, mental disability,

   learning disability or physical disability, including but not limited to blindness, unless such disability prevents performance of the work involved.
3. The firm is to obtain information as to the referral practices and policies of the labor union except that to the extent that such information is within the exclusive possession of the labor union and such labor union refuses to furnish the information to the contractor, the contractor shall notify the Connecticut Department of Transportation (CTDOT) of the efforts made to obtain the information.
4. In the event the union is unable to provide the firm with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies. (The United States Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations under Executive Order 11246 as amended, and in compliance with 23 CFR Part 230, the firm will notify CTDOT.

Selection of Subcontractors:
The firm will not discriminate on the grounds race, color, religion, sex, sexual orientation, gender identity or expression, marital status, national origin, ancestry, age, intellectual

disability, learning disability, physical disability, including, but not limited to, blindness, or status as a veteran in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

1. The firm shall use his/her best efforts to ensure subcontractor/subconsultant compliance with Federal and State Equal Opportunity (EO) and EEO requirements.

Records and Reports:
The Contractor shall keep records as necessary to document compliance with EO/EEO requirements. Such reports shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of CTDOT and/or the United States Department of Transportation. The following records should be maintained:

6. The number of minority and non-minority group members and women employed in each work classification;
7. The progress and efforts being made in cooperation with unions, when applicable to increase the employment opportunities for minorities and women;
8. The documentation showing progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
9. Complaints of Discrimination.

In implementing this policy and ensuring that affirmative action is being provided, each time a hiring opportunity occurs this firm will contact and request referrals from minority and female organizations, referral sources, and media sources. All advertising will emphasize that the firm is "An Affirmative Action/Equal Opportunity Employer."

In order to substantiate this firm's efforts and affirmative actions to provide equal opportunity, the firm will maintain and submit, as requested, documentation such as referral request correspondence, copies of advertisements utilized and follow-up documentation to substantiate that efforts were made in good faith. This firm will maintain the necessary internal audit procedures and record keeping systems to report the firm's affirmative action efforts.

It is understood by Owner/CEO/President of the firm and the firm's Equal Employment Opportunity Officer and supervisory and managerial personnel that failure to effectively implement, monitor and enforce this firm's affirmative action program and/or failure to adequately document and submit as required, the affirmative actions taken and efforts made to recruit and hire minority and female applicants in accordance with our affirmative action program in each instance of hire, will result in this firm being required to recommit itself to a modified and more stringent affirmative action program as a condition of approval. It is recognized that this policy is a contractual requirement and is a prerequisite for performing services for the contracting agency. This policy in addition to CTDOT's EO/EEO contract provisions and requirements, shall constitute the CTDOT Affirmative Program requirements.

The ultimate responsibility for the full implementation of this firm's Affirmative Action Program rests with the Chief Executive Officer of this firm.

# EXHIBIT B

**Health Insurance Portability and Accountability Act of 1996 ("HIPAA").**

(a) If the Contactor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.

(b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and

(c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter the "Department") is a "covered entity" as that term is defined in 45 C.F.R. § 160.103; and

(d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of "individually identifiable health information," as that term is defined in 45 C.F.R. § 160.103; and

(e) The Contractor is a "business associate" of the Department, as that term is defined in 45 C.F.R. § 160.103; and

(f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (hereinafter the HITECH Act), (Pub. L. 111-5, sections13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.

(g) Definitions

(1) "Breach shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1))

(2) "Business Associate" shall mean the Contractor.

(3) "Covered Entity" shall mean the Department of the State of Connecticut named on page 1 of this Contract.

(4) “Designated Record Set” shall have the same meaning as the term “designated record set” in 45 C.F.R. § 164.501.

(5) “Electronic Health Record” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5))

(6) “Individual” shall have the same meaning as the term “individual”’ in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).

(7) “Privacy Rule” shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and parts 164, subparts A and E.

(8) “Protected Health Information” or “PHI” shall have the same meaning as the term “protected health information” in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.

(9) “Required by Law”’ shall have the same meaning as the term “required by law” in 45 C.F.R. § 164.103.

(10) “Secretary” shall mean the Secretary of the Department of Health and Human Services or his designee.

(11) “More stringent” shall have the same meaning as the term “more stringent” in 45 C.F.R. § 160.202.

(12) “This Section of the Contract” refers to the HIPAA Provisions stated herein, in their entirety.

(13) “Security Incident” shall have the same meaning as the term “security incident” in 45 C.F.R.§ 164.304.

(14) “Security Rule” shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and parts 164, subpart A and C.

(15) “Unsecured protected health information” shall have the same meaning as the term as defined in section 13402(h)(1)(A) of HITECH. Act. (42 U.S.C. §17932(h)(1)(A)).

(h) Obligations and Activities of Business Associates.

(1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.

(2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.

(3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.

(4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.

(5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.

(6) Business Associate agrees to ensure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.

(7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.

(8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.

(9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.

(10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.

(11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an

accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder. Business Associate agrees at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.

(12)Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.

(13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.

(14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.

(15) Business Associate agrees that it shall not, directly or indirectly, receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations

(16) Obligations in the Event of a Breach

A. The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. 17932(b) and the provisions of this Section of the Contract.
B. Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of HITECH (42 U.S.C. 17932(g)). A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.
C. The Business Associate agrees to include in the notification to the Covered Entity at

least the following information:

1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.

2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).

3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.

4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.

5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and; if so, include contact information for said official.

D. Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.

E. Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notification's requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.

(i) Permitted Uses and Disclosure by Business Associate.

(1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity or the minimum necessary policies and procedures of the Covered Entity.

(2) Specific Use and Disclosure Provisions

(A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.

(B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.

(C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).

(j) Obligations of Covered Entity.

(1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.

(2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.

(3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.

(l) Term and Termination.

(1) Term. The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such

information, in accordance with the termination provisions in this Section. Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:

(A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or

(B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or

(C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.

(2) Effect of Termination

(A) Except as provided in (l)(2) of this Section of the Contract, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.

(B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

(1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.

(2) Amendment. The Parties agree to take such action as in necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.

(3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract. Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.

(4) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.

(5) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.

(6) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

**EXHIBIT C**

**State Wages and Other Related Information**

Please refer to the Department of Labor website for the latest updates, annual adjusted wage rate increases, certified payroll forms and applicable statutes.
**http://www.ctdol.state.ct.us/wgwkstnd/prevailwage.htm**

## Prevailing Wage Law Poster Language

**THIS IS A PUBLIC WORKS PROJECT Covered by the PREVAILING WAGE LAW CT General Statutes Section 31-53**

**If you have QUESTIONS regarding your wages CALL (860) 263-6790**

**Section 31-55 of the CT State Statutes requires every contractor or**

**subcontractor**
**performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.**

## Informational Bulletin

**THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE**
(applicable to
public building contracts entered into on or after July 1, 2007, where the total cost of all work to be performed is at least $100,000)

(1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);

(2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007; It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least $100,000;

(3) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;

The internet website for the federal OSHA Training Institute is
http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html
;

(4) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;

(5) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;

(6) Proof of completion may be demonstrated through either: (a) the presentation of a bona fide student course completion card issued by the federal OSHA Training Institute; or (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;

(7) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

(8) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31- 53(f) on which such employee's name first appears;

(8) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;

(9) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;

(10) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;

(11) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and Regulations clarifying the statute are currently in the regulatory process and shall be posted on the CTDOL website as soon as they are adopted in final form.

(12) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm; or by telephone at (860)263-6790.

**THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTMATELY ARISE CONCERNIG THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.**

November 29, 2006

# Notice

**To All Mason Contractors and Interested Parties Regarding Construction Pursuant to Section 31-53 of the Connecticut General Statutes (Prevailing Wage)**

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute. Over the past few years, the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute. The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

**Forklift Operator:**

**- Laborers (Group 4) Mason Tenders -** operates forklift solely to assist a mason to a maximum height of nine feet only.

**- Power Equipment Operator (Group 9) -** operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut, but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

**Since this is a classification matter and not one of jurisdiction, effective January 1, 2007, the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.**

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

**CONNECTICUT DEPARTMENT OF LABOR WAGE AND WORKPLACE STANDARDS**
**DIVISION CONTRACTORS WAGE**
**CERTIFICATION FORM**
**Construction Manager at Risk/General Contractor/Prime Contractor**

I, of _____,

Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

_____
Street

_____
City

and all of its subcontractors will pay all workers on the

_____
Project Name and Number

_____
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

_____
Signature

Subscribed and sworn to before me this _____ day of _____, _____.

_____
Notary Public

Return to: Connecticut Department of Labor
Wage & Workplace Standards
Division 200 Folly Brook Blvd.
Wethersfield, CT 06109

Rate Schedule Issued (Date): _____

# Information Bulletin
## *Occupational Classifications*

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53(d).

***Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification. If unsure, the employer should seek guidelines for CTDOL.***

**Below are additional clarifications of specific job duties performed for certain classifications:**

- **ASBESTOS WORKERS**

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- **ASBESTOS INSULATOR**

Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

- **BOILERMAKERS**

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- **CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

## LABORER, CLEANING

• The clean up of any construction debris and the general (heavy/light) cleaning, including sweeping, wash down, mopping, wiping of the construction facility and its furniture, washing, polishing, and dusting.

## DELIVERY PERSONNEL

If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site, then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer or tradesman, and not a delivery personnel.

## ELECTRICIANS

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. *License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.

## ELEVATOR CONSTRUCTORS

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ***License required by Connecticut General Statutes: R-1, 2, 5, 6.**

## FORKLIFT OPERATOR

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

## GLAZIERS

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers, which require equal composite workforce.

## IRONWORKERS

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which require equal composite workforce.

## INSULATOR

Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings.

## LABORERS

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), decorative security fence (non-metal).

installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

## PAINTERS

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of

any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic artw o r k and drywall hhg for any and all types of building and residential work.

## LEAD PAINT REMOVAL

Painter's Rate 1. Removal of lead paint from bridges. 2. Removal of lead paint as preparation of any surface to be repainted. 3. Where removal is on a Demolition project prior to reconstruction. • Laborer's Rate 1. Removal of lead paint from any surface NOT to be repainted. 2. Where removal is on a TOTAL Demolition project only.

## PLUMBERS AND PIPEFITTERS

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ***License required per Connecticut General Statutes: P-1,2,6,7,8,9 J1,2,3,4 SP-1,2 S- 1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.**

## POWER EQUIPMENT OPERATORS

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment.
***License required, crane operators only, per Connecticut General Statutes.**

## ROOFERS

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (demolition or removal of any type of roofing and or clean-up of any and all areas where a roof is to be relaid.)

## SHEETMETAL WORKERS

Fabricate, assembles, installs and repairs sheet metal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheet metal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, facia, louvers, partitions, canopies, cornice, column covers, awnings, beam covers, cladding, sunshades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and

composite lockers and shelving, kitchen equipment, and walk-in coolers. To include testing and air –balancing ancillary to installation and construction.

- **SPRINKLER FITTERS**

Installation, alteration, maintenance and repair of fire protection sprinkler systems.
***License required per Connecticut General Statutes: F-1, 2, 3, 4.**

- **TILE MARBLE AND TERRAZZO FINISHERS**

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

~How to pay truck drivers delivering asphalt is under REVISION~

Truck Drivers are required to be paid prevailing wage for time spent "working" directly on the site. These drivers remain covered by the prevailing wage for any time spent transporting between the actual construction location and facilities (such as fabrication, plants, mobile factories, batch plant, borrow pits, job headquarters, tool yards, etc.) dedicated exclusively, or nearly so, to performance of the contract or project, which are so located in proximity to the actual construction location that it is reasonable to include them. ***License required, drivers only, per Connecticut General Statutes**.
**For example:**

• Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
• Hauling material off site is not covered provided they are not dumping it at a location outlined above.
• Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

- Any questions regarding the proper classification should be directed to:

**Public Contract Compliance Unit**
**Wage and Workplace Standards**
**Division**
**Connecticut Department of Labor**
**200 Folly Brook Blvd, Wethersfield, CT**
**06109 (860) 263-6543.**

# Connecticut Department of Labor
# Wage and Workplace Standards
# Division

## FOOTNOTES

Please Note: If the "Benefits" listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the "Benefits" section for the occupation lists only a dollar amount, disregard the information below.

**Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons** (Building Construction) and (Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

**Elevator Constructors:**
**Mechanics**

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.

b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

**Glaziers**

a. Paid Holidays: Labor Day and Christmas Day.

**Power Equipment Operators**
**(Heavy and Highway Construction & Building Construction)**

a. Paid Holidays: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

**Ironworkers**

a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

**Laborers (Tunnel Construction)**

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

**Roofers**

a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

**Sprinkler Fitters**

a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

**Truck Drivers**

(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Rev. 7/1/19

**SEE BELOW FOR STATE WAGE RATES**

## Insert State Wages Here

Minimum Rates and Classifications for
Heavy/Highway Construction

ID#: 25-10234

Connecticut Department of Labor
Wage and Workplace Standards Division

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
Project Town: Enfield
State#: 0048-0200
FAP#:
Project: Replacement of Bridge No. 05585

| CLASSIFICATION | Hourly Rate | Benefits |
|---|---|---|
| 1) Boilermaker | 48.21 | 30.01 |
| 1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons | 43.14 | 34.74 |
| 2) Carpenters, Piledrivermen | 42.03 | 29.19 |
| 2a) Diver Tenders | 42.03 | 29.19 |
| 2b) Divers Effluent | 67.52 | 29.19 |
| 3) Divers | 50.49 | 29.19 |
| 03a) Millwrights | 43.25 | 29.13 |
| 03b) Carpenter-Welder | 42.53 | 29.19 |
| 03c) Carpenter: Working with creosote lumber or acid | 43.03 | 29.19 |

As of: October 6, 2025

| | | |
|---|---|---|
| 4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray | 59.7 | 26.65 |
| 4a) Painters: Brush and Roller | 39.57 | 26.50 |
| 4b) Painters: Spray | 42.57 | 26.50 |
| 4bc) Painters: Spray Helper | 40.57 | 26.50 |
| 4c) Painters: Steel Only | 41.57 | 26.50 |
| 4d) Painters: Blast | 44.57 | 26.50 |
| 4de) Painter: Blast Helper | 40.57 | 26.50 |
| 4e) Painters: Tanks, Tower and Swingstage etc. | 41.57 | 26.50 |
| 4f) Elevated Tanks (60 feet and above) | 48.57 | 26.50 |
| 5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9) | 48.25 | 35.22+3% of gross wage |
| 6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection | 45.25 | 43.62 + a |
| 7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9) | 50.58 | 36.30 |
| ----LABORERS---- - | | |
| 8) Group 1: General Laborers and concrete specialist | 35.7 | 28.85 |

As of: October 6, 2025

| | | |
|---|---|---|
| 8) Group 1a: Acetylene Burners (Hours worked with a torch) | 36.7 | 28.85 |
| 9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen | 35.95 | 28.85 |
| 10) Group 3: Pipelayers | 36.2 | 28.85 |
| 11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators | 36.2 | 28.85 |
| 12) Group 5: Toxic waste removal (non-mechanical systems) | 37.7 | 28.85 |
| 13) Group 6: Blasters | 37.45 | 28.85 |
| Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe) | 38.7 | 28.85 |
| Group 8: Traffic control signalmen | 21.42 | 28.85 |
| Group 9: Hydraulic Drills | 36.45 | 28.85 |
| Group 10: Toxic Waste Removers A or B With PPE | 38.7 | 28.85 |
| ----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.---- | | |
| 13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders | 37.93 | 28.85 + a |
| 13b) Brakemen, Trackmen, Miners' Helpers and all other men | 36.96 | 28.85 + a |

As of: October 6, 2025

| | | |
|---|---|---|
| ----CLEANING, CONCRETE AND CAULKING TUNNEL---- | | |
| 14) Concrete Workers, Form Movers, and Strippers | 36.96 | 28.85 + a |
| 15) Form Erectors | 37.29 | 28.85 + a |
| ----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:---- | | |
| 16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers, Miners Helpers | 36.96 | 28.85 + a |
| 17) Laborers Topside, Cage Tenders, Bellman | 36.85 | 28.85 + a |
| 18) Miners | 37.93 | 28.85 + a |
| ----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ---- | | |
| 18a) Blaster | 44.42 | 28.85 + a |
| 19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders | 44.22 | 28.85 + a |
| 20) Change House Attendants, Powder Watchmen, Top on Iron Bolts | 42.24 | 28.85 + a |
| 21) Mucking Machine Operator, Grout Boss, Track Boss | 45.01 | 28.85 + a |
| ----TRUCK DRIVERS----(*see note below) | | |
| Block Truck | 37.48 | 32.68 + a |

| | | |
|---|---|---|
| 2 Axle | 36.16 | 32.68 + a |
| Helpers | 34.66 | 32.68 + a |
| Three Axle Trucks; Two Axle Mixer | 36.27 | 32.68 + a |
| Three Axle Mixer | 36.33 | 32.68 + a |
| Four Axle Trucks | 36.39 | 32.68 + a |
| Four Axle Mixer | 37.19 | 32.68 + a |
| 5 Axle | 36.39 | 32.68 + a |
| 5 Axle Mixer | 37.19 | 32.68 + a |
| Heavy Duty Trailer (40 tons and over) | 38.66 | 32.68 + a |
| Heavy Duty Trailer (up to 40 tons) | 37.39 | 32.68 + a |
| Snorkle Truck | 36.54 | 32.68 + a |
| Swivel Dump and Tack Truck | 36.39 | 32.68 + a |
| Euclids and Semi Trailer | 36.44 | 32.68 + a |

----POWER EQUIPMENT OPERATORS----

| | | |
|---|---|---|
| Group 1: Crane Handling or Erecting Structural Steel or Stone, Hoisting Engineer (2 drums or over). (Trade License Required) | 58.19 | 29.80 + a |
| Group 1a: Front End Loader (7 cubic yards or over); Work Boat 26 ft. and over. | 53.33 | 29.80 + a |
| Group 2: Cranes (100 ton rate capacity and over); Bauer Drill/Caisson. (Trade License Required) | 57.78 | 29.80 + a |
| Group 2a: Cranes (under 100 ton rated capacity). | 56.79 | 29.80 + a |
| Group 2b: Excavator over 2 cubic yards; Pile Driver ($3.00 premium when operator controls hammer). | 52.92 | 29.80 + a |
| Group 3: Excavator; Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required) | 51.92 | 29.80 + a |
| Group 4: Trenching Machines; Lighter Derrick; CMI Machine or Similar; Koehring Loader (Skooper). | 51.42 | 29.80 + a |
| Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" mandrel) | 50.63 | 29.80 + a |
| Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller. | 50.63 | 29.80 + a |
| Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer). | 50.22 | 29.80 + a |
| Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrel) | 49.77 | 29.80 + a |

As of: October 6, 2025

| | | |
|---|---|---|
| Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine. | 49.25 | 29.80 + a |
| Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder), Vacuum Excavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater). | 48.67 | 29.80 + a |
| Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc. | 45.96 | 29.80 + a |
| Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment. | 45.96 | 29.80 + a |
| Group 12: Wellpoint Operator. | 45.87 | 29.80 + a |
| Group 13: Compressor Battery Operator. | 45.12 | 29.80 + a |
| Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain). | 43.6 | 29.80 + a |
| Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator. | 43.06 | 29.80 + a |
| Group 16: Maintenance Engineer. | 42.2 | 29.80 + a |
| Group 17: Portable Asphalt Plant Operator; Portable Crusher Plant Operator; Portable Concrete Plant Operator., Portable Grout Plant Operator, Portable Water Filtration Plant Operator. | 47.91 | 29.80 + a |
| Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license). | 44.7 | 29.80 + a |
| Surveyor: Chief of Party | 48.16 | 29.80 + a |
| Surveyor: Assistant Chief of Party | 44.41 | 29.80 + a |

As of: October 6, 2025

| | | |
|---|---|---|
| Surveyor:  Instrument Man | 42.73 | 29.80 + a |
| Surveyor:  Rodman or Chairman | 36.78 | 29.80 + a |

**NOTE:  SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----

| | | |
|---|---|---|
| 20) Lineman, Cable Splicer, Technician | 57.6 | 32.85 |
| 21) Heavy Equipment Operator | 51.84 | 29.95 |
| 22) Equipment Operator, Tractor Trailer Driver, Material Men | 48.96 | 29.01 |
| 23) Driver Groundmen | 43.2 | 26.84 |
| 23a) Groundman Experienced | 31.68 | 13.91 |

----OUTSIDE LINE CONSTRUCTION----

| | | |
|---|---|---|
| 24) Driver Groundmen | 42.09 | 26.84 |
| 25) Groundmen | 30.87 | 13.91 |
| 26) Heavy Equipment Operators | 50.51 | 29.95 |
| 27) Linemen, Cable Splicers, Dynamite Men | 56.12 | 32.85 |

As of: October 6, 2025

| | | |
|---|---|---|
| 28) Material Men, Tractor Trailer Drivers, Equipment Operators | 47.7 | 29.01 |
| 29) Technician | 56.12 | 32.85 |
| ----COMMUNICATION---- | | |
| Sales & Service Technician: To include but not limited to: Installation, Repair, Splicing and Maintenance | 48.84 | 18.07 |
| ----DREDGING---- | | |
| Class A1: Mechanical Dredge Operator | 45.26 | 17.22+a+b |
| Class B1: Maintenance Engineer | 39.14 | 16.78+a+b |
| Class C1: Mate/Welder | 35.83 | 16.54+a+b |
| Class D: Deckhand | 28.81 | 16.03+a+b |

Welders: Rate for craft to which welding is incidental.
Surveyors: Hazardous material removal: $3.00 per hour premium.
*Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.
**Note: Hazardous waste premium $3.00 per hour over classified rate.
Truck Drivers: Trainers Premium: $3.00 over wage rate.
Truck Drivers: Night Premium - Mixer Drivers: $2.00 over wage rate.

Crane with 150 ft. boom (including jib) - $1.50 extra
Crane with 200 ft. boom (including jib) - $2.50 extra
Crane with 250 ft. boom (including jib) - $5.00 extra
Crane with 300 ft. boom (including jib) - $7.00 extra
Crane with 400 ft. boom (including jib) - $10.00 extra

As of: October 6, 2025

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.
Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.
The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol. For those without internet access, please contact the division listed below.
The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.
All subsequent annual adjustments will be posted on our Web Site for contractor access.
Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: October 6, 2025