

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.

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DATE: MAY 13, 2026

FEDERAL AID PROJECT NO. 0200(002)

STATE PROJECT NO. 0141-0158

REPLACEMENT OF BRIDGE NO. 03474, ROUTE 200 OVER INTERSTATE 395

Town of Thompson, CT

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 July 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. 03474, Route 200 over Interstate 395 in the Town of Thompson.

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 \$2400.00 per day shall be applied to each calendar day the work runs in excess of the 287 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.

LIQUIDATED DAMAGES PER HOUR

PROJECT 0141-0158

Route I-395 Northbound From M.P. 24.13 to M.P. 54.69 2 Lane Section		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1 st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 500	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500

LIQUIDATED DAMAGES PER HOUR

PROJECT 0141-0158

Route I-395 Southbound From M.P. 24.05 to M.P. 54.69 2 Lane Section		
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 1 Lane Closure
1 st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 500	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500

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

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.

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.

NOTICE TO CONTRACTOR - PRE-BID QUESTIONS AND ANSWERS

Questions pertaining to DOT advertised construction projects must be presented through the CTDOT Pre-Bid Q and A Website. The Department cannot guarantee that all questions will be answered prior to the bid date. **PLEASE NOTE - at 9:00 am Monday (i.e. typical Wednesday Bid Opening) the project(s) being bid will be closed for questions, at which time questions can no longer be submitted through the Q and A Website.**

Answers may be provided by the Department up to 12:00 noon, the day before the bid. At this time, the Q and A for those projects will be considered final, unless otherwise stated and/or the bid is postponed to a future date and time to allow for further questions and answers to be posted.

If a question needs to be asked the day before the bid date, please contact the Contracts Unit staff and email your question to dotcontracts@ct.gov immediately.

Contractors must identify their company name, contact person, contact email address and phone number when asking a question. The email address and phone number will not be made public.

The questions and answers (if any) located on the Q and A Website are hereby made part of the bid/contract solicitation documents (located on the State Contracting Portal), and resulting contract for the subject project(s). It is the bidder's responsibility to monitor, review, and become familiar with the questions and answers, as with all bid requirements and contract documents, prior to bidding. By signing the bid proposal and resulting contract, the bidder acknowledges receipt of, and agrees to the incorporation of the final list of Q and A, into the contract document.

Contractors will not be permitted to file a future claim based on lack of receipt, or knowledge of the questions and answers associated with a project. All bidding requirements and project information, including but not limited to contract plans, specifications, addenda, Q and A, Notice to Contractors, etc., are made public on the State Contracting Portal and/or the CTDOT website.

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 – FEDERAL WAGE DETERMINATIONS (Davis Bacon Act)

The following Federal Wage Determinations are applicable to this Federal- Aid contract and are hereby incorporated by reference. During the bid advertisement period, it is the bidder’s responsibility to obtain the latest Federal wage rates from the US Department of Labor website, as may be revised 10 days prior to bid opening. Any revisions posted 10 days prior to the bid opening shall be the wage determinations assigned to this contract.

Check Applicable WD# (DOT Use Only)	WD#	Construction Type	Counties
X	CT1	Highway	Fairfield, Litchfield, Middlesex, New Haven, Tolland, Windham
	CT2	Highway	New London
	CT3	Highway	Hartford
	CT5	Heavy Dredging (Hopper Dredging)	Fairfield, Middlesex, New Haven, New London
	CT6	Heavy Dredging	Statewide
	CT13	Heavy	Fairfield
	CT14	Heavy	Hartford
	CT15	Heavy	Middlesex, Tolland
	CT16	Heavy	New Haven
	CT17	Heavy	New London
	CT26	Heavy	Litchfield, Windham
	CT18	Building	Litchfield
	CT19	Building	Windham
	CT20	Building	Fairfield
	CT21	Building	Hartford
	CT22	Building	Middlesex
	CT23	Building	New Haven
	CT24	Building	New London
	CT25	Building	Tolland
	CT4	Residential	Litchfield, Windham
	CT7	Residential	Fairfield
	CT8	Residential	Hartford
	CT9	Residential	Middlesex
	CT10	Residential	New Haven
	CT11	Residential	New London
	CT12	Residential	Tolland

The Federal wage rates (Davis-Bacon Act) applicable to this Contract shall be the Federal wage rates that are current on the US Department of Labor website (<http://www.wdol.gov/dba.aspx>) as may be revised 10 days prior to bid opening. The Department will no longer physically include revised Federal wage rates in the bid documents or as part of addenda documents. These applicable Federal wage rates will be incorporated in the final contract document executed by both parties.

If a conflict exists between the Federal and State wage rates, the higher rate shall govern.

To obtain the latest Federal wage rates, go to the US Department of Labor website ([link above](#)). Under Davis-Bacon Act, choose “Selecting DBA WDs” and follow the instruction to search the latest wage rates for the State, County and Construction Type.

NOTICE TO CONTRACTOR – MINIMUM CONCRETE COMPRESSIVE STRENGTH

The concrete strength or allowable design stress specified in the General Notes is for design purposes only. The minimum compressive strength of concrete in constructed components shall comply with the requirements of Section 6.01 Concrete for Structures.

NOTICE TO CONTRACTOR – MAINTENANCE AND PROTECTION OF TRAFFIC

1.08.04– Limitation of Operations

Typical language “Lane Closure Restrictions” is now included in 1.08.04 in the Standard Specifications Form 819 July 2025 Supplements and is no longer included in the 1.08.04 special provision.

0971001A – Maintenance and Protection of Traffic

Typical requirements and guidance for Maintenance and Protection of Traffic are now included in Section 9.71 in the Standard Specifications Form 819 July 2025 Supplements and are no longer included in the 0971001A special provision.

Section 9.71 has been updated to include the Typical Construction Traffic Control Plans which have been updated to comply with the latest MUTCD.

Refer to updated requirements and guidance in the Standard Specifications Form 819 with July 2025 Supplements which can be found on the CTDOT web site: [Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 819](#).

Supplemental project specific requirements are still included in the special provisions for 1.08.04 and 0971001A.

NOTICE TO CONTRACTOR – SECTION 4.06 AND M.04
SPECIFICATION CHANGES, REV. DATE 12/18/2025

The Contractor is hereby notified that this Contract includes Special Provisions for Sections 4.06 and M.04. The following list of revisions is not all inclusive but highlights the significant updates.

M.04:

- M.04.01 Binder supplier split sample submission, save split, send upon request.
- M.04.01-1&2 Clarification that aggregate source(s) be qualified annually.
- M.04.01-4 a, d, e CTR, Certificate of Analysis (COA) submitted to Asphalt producer and Department, Anti-strip, Warm mix products listed on QPL, (link to QPL included in M.04.), WMA additive added at plant requires same testing and CTR as binder supplier.
- M.04.01-5b Daily tack coat delivery comes with Bill of Lading for Inspector to obtain.
- M.04.01-6 RAP - Producer submit monthly Materials Certification.
- M.04.02-1 Curb mix design - Table M.04.02-1 updated.
- M.04.02-2 Superpave mix design - 25% RAP S1.0 mixes.
- M.04.03-1 QCP requirement updates.
- M.04.03-2a, 2b Except curb mix, all sampling performed on Site by Contractor, S1.0 mix sample size 20,000 g, mix not meeting requirements evaluated under 1.06.04.
- M.04.03-2c Superpave Production – Table M.04.03-2 deleted, mix sample frequency is 1 per 500 ton, Table M.04.03-4 updated Pb \pm 0.3.

4.06:

- 4.06.03-3 Added hopper insert when MTV is used.
- 4.06.03-4 Test Section language update.
- 4.06.03-6 Tack coat update, always use, minor update to thermometer language.
- 4.06.03-7 Butt joint use polymer joint seal material, previously was rubber material.
- 4.06.03 -8 QCP update. Valid for two years.
- 4.06.03-9 Temperature Seasonal - three temperature ranges based on lift thickness.
- 4.06.03-10 Three days to cut cores.
- 4.06.03-11 Add determining Gmm when mix testing does not exist.
- 4.06.03-12 Updates to Density Dispute Resolution - Use Gsb results to determine how dispute results are used, location of dispute core, reduced days to cut dispute cores from 7 days to 5.
- 4.06.04-2b Density limit change to meet FHWA “Gold Standard.” Maximum bonuses increase from 2.5% to 3.0% (1.5% each Mat/Joint).

NOTICE TO CONTRACTOR - UTILITY SPECIFICATIONS

The contractor is hereby notified that all utility specifications contained elsewhere herein shall be made a part of this contract, and that the contractor shall be bound to comply with all requirements of such specifications. The requirements and conditions set forth in the subject specifications shall be binding on the contractor just as any other specification would be.

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_0141-0158.zip file (0141-0158 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 – SECTION 1.06 UPDATED BABA REQUIREMENTS

The Contractor is hereby notified that a Special Provision for Section 1.06 Control of Materials is included in this Contract due to updated Buy America, Build America Act (BABA) requirements.

A new “Buy America Preference [Source of Supply Self-Certification Form](#)” will need to be submitted with qualifying materials documenting that all iron or steel products, manufactured products, and construction materials used in the Project have been produced in the United States. This means all manufacturing processes including application of coating for iron or steel products occurred in the United States, the manufactured product was manufactured in the United States, and all manufacturing processes for the construction material occurred in the United States. The classification of the material shall be determined upon arrival at the job Site.

Any Materials Certificate (MC) shall also include certification from the source of supply stating compliance to Buy America requirements for the applicable iron or steel products, manufactured products and construction materials. A completed “Buy America Preference Source of Supply Self-Certification Form” shall be attached to the MC.

NOTICE TO CONTRACTOR – HAZARDOUS MATERIALS INVESTIGATIONS

A limited hazardous materials site investigation associated with the replacement of Bridge No. 03474, Route 200 Over Interstate 395 in Thompson, CT. The scope of inspection was limited to the representative components projected for impact.

Lead paint has been identified on the metal railing/railing support components and structural steel/metal bridge components at Bridge No. 03474. TCLP analysis determined the projected paint waste streams generated from the metal railing/railing support components and structural steel/metal bridge components from Bridge No. 03474 as **CTDEEP/RCRA hazardous waste**.

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.

All suspect asbestos-containing materials (various caulks, black asphaltic plug joint, black tar joint/curb filler, and tan bearing rope gasket) identified and sampled at Bridge No. 03474 were determined to be non-asbestos containing materials.

No bird/pigeon guano, mice droppings/nests, bloodborne pathogens (BBP) concerns, homeless activity, or other hazmat/regulated items were identified at Bridge No. 03474.

The Contractor is hereby notified that these hazardous 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. 0020903A – Lead Compliance for Miscellaneous Exterior Tasks

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 investigation discussed can be found in the document listed below. This document shall be available for review electronically.

- HazMat Inspection Letter, Replacement of Bridge No. 03474, Route 200 over Interstate 395, Thompson, CT, TRC Environmental Corporation, May 1, 2025.

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 - DETOUR

The Contractor is hereby notified that to facilitate the replacement of Bridge No. 03474, Route 200 (Thompson Hill Road) over Interstate 395, the Contractor will be allowed to close Route 200 and detour traffic as specified in 1.08.04 and 0971001A and on the Plans.

A schedule of special events shall be requested from the Town of Thompson, and Connecticut State Police, and shall form the basis of the Contractor's schedule for limited construction operations. Ongoing special events coordination throughout the construction project shall be the responsibility of the Contractor. **The Contractor must schedule work activities around any special event.**

NOTICE TO CONTRACTOR – ENVIRONMENTAL INVESTIGATIONS

The subject project involves various roadway and bridge improvements along a section of Route 200, which carries traffic over Interstate-395 (I-395) in Thompson, CT. The project will involve a variety of improvements, some of which will require intrusive/excavation work within the Project Limits. While no recent environmental investigations have been conducted specifically to characterize environmental media (e.g., soil and groundwater) within the Project Limits, historical investigations associated with roadway construction projects throughout the State have demonstrated general consistency in the presence of low levels of semi-volatile organic compounds (SVOCs), extractable petroleum hydrocarbons (ETPH), pesticides, and metals in project soils, in some instances at concentrations that may exceed Connecticut Remediation Standard Regulations (CT RSRs) soil cleanup criteria. It is the Department's opinion that, in general, the presence of these potential constituents-of-concern (COCs) are reflective of typical urban background conditions associated with historical roadway use (i.e., vehicle exhaust, tire wear, vehicle fluid drippage, etc.) and are typically at low levels. Soil within the limits of Project 0141-0158 should be considered the same for purposes of soil management and final disposition.

All material excavated from within the Project Limits, excluding existing pavement structure (asphalt and subbase), ballast, rock, ledge, and concrete, shall be reused to the maximum extent practicable at the point of origin. Such material that is suitable for reuse shall be managed at the point of origin for use as backfill within the Project Limits. In instances where such material cannot be reused directly at the point of origin or within several days of excavation, the material shall be managed, in a manner approved by the Engineer, to minimize generation of fugitive dust and erosion, and prevent physical interference with other Project activities.

Surplus excavated materials that cannot be reused at the point of origin shall be transported to reuse areas established by the Engineer for final deposition. Provisions will be added in the event excavated materials are deemed unsuitable for reuse by the Engineer due to physical indications of contamination.

In the event groundwater is encountered during construction, any dewatering associated with the construction shall be performed in accordance with the Connecticut Department of Energy and Environmental Protection's "*General Permit for the Discharge of Stormwater from Construction Activities*" unless physical evidence of contamination (e.g., oily sheen, free product, etc.) is observed by the Engineer. Provisions will be added for any discharges required to be managed under a permit other than that identified above.

The Contractor is hereby notified that materials requiring special management and/or disposal procedures may be encountered during various construction activities conducted within the Project Limits. Therefore, the Contractor will be required to implement appropriate health and safety measures for all construction activities to be performed within the areas of excavation within the Project Limits. 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 Sections which shall be reviewed by the Contractor include the following:

- Item No. 0101000A – Environmental Health and Safety

The Contractor is alerted to the fact that a Department environmental consultant will be on-site for excavation activities within the Project Limits, to collect soil (and groundwater if necessary) samples, and to observe site conditions for the State.

**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 - PROTECTION OF EXISTING UTILITIES

Existing utilities shall be maintained during construction except as specifically stated herein and/or noted on the plans and as coordinated with the utilities. The Contractor shall verify the location of underground, structure mounted and overhead utilities. Construction work within the vicinity of utilities shall be performed in accordance with current safety regulations.

The Contractor shall notify "Call Before You Dig", telephone 1-800-922-4455 for the location of public utility, in accordance with Sections 16-345 through 16-349 of the Public Utility Regulatory Agency (PURA).

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

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.

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.

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

The Contractor's attention is directed to the requirements of Section 1.07.13 – "Contractor's Responsibilities for Adjacent Property, Facilities, and Services".

Prior to opening an excavation, effort shall be made to determine whether underground installations, i.e., water, sanitary, gas, electric ducts, communication ducts, etc., will be encountered and, if so, where such underground installations are located. When the excavation approaches the estimated location of such an 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, as noted above.

In case of an emergency contact the following personnel from each utility company.

The Connecticut Light & Power Company dba Eversource Energy - Electric Distribution

Curtis Benashski
Construction Engineering
Field Engineering Designer II
48 Tolland Stage Rd.
curtis.benashski@eversource.com
Tolland, CT 06084
860-871-3447

Frontier, a Verizon Company

John Plikus – Field Engineering
john.m.plikus@ftr.com
Cell: 1-860-455-6030 | MERIDEN, CT

Crown Castle

Terence J. Shea
Senior Network Construction Manager
T: (203) 649-3905 | M: (860) 402-6471
Terence.Shea@crowncastle.com
CROWN CASTLE FIBER
1781 Highland Ave, Suite 102, Cheshire, CT 06410

Charter Communications

Nick Felix
Charter Communications
New England
Felix, Nick L <Nick.Felix@charter.com>
Construction Supervisor
Office: 475-444-5174
Cell: 860-617-5972
9 Commerce Rd Newtown CT 06470

NOTICE TO CONTRACTOR – UTILITY GENERATED SCHEDULE

The attached project specific utility work schedule was provided to the Connecticut Department of Transportation (Department) by the utility companies regarding their identified work on this project.

The utility scheduling information is provided to assist the Contractor in scheduling its activities. However, the Department does not ensure its accuracy and Section 1.05.06 of the Standard Specifications still is in force.

The utility scheduling information shall be incorporated into the Contractor's pre-award schedule in accordance with the Department's Bidding and Award Manual and Section 1.05.08 of the Contract.

After award, the Contractor shall conduct a utility coordination meeting or meetings to obtain contemporaneous scheduling information from the utilities prior to submitting its baseline schedule to the Department in accordance with Section (***1.05.08 – Schedules and Reports***) of the Contract.

The Contractor shall incorporate the contemporaneous utility scheduling information into its baseline schedule submittal. The baseline schedule shall include Contractor predecessor and successor activities to the utility work in such detail as acceptable to the Engineer.

Crown Castle Fiber LLC

UTILITY WORK SCHEDULE Rev 3/2015			
CTDOT Project Number:	0141-0158	Town:	THOMPSON
Project Description:	REPLACEMENT OF BRIDGE NO. 03474		
CTDOT Utilities Engineer:	DIONYS QUEZADA		
Phone:	(860)595-3390	Email:	Dquezada@chasolutions.com
Utility Company:	CROWN CASTLE FIBER		
Prepared By:	TERENCE J SHEA	Date Prepared:	3/12/2026
Phone:	(203)649-3905	Email:	terence.shea@crowncastle.com
Scope of Work			
<p>The following is a description of all utility work planned to be completed in conjunction with the CTDOT project. The narrative describes all work to be carried out by the utility or its contractor, including temporary and permanent work required by the project as well as any additional utility infrastructure work the utility intends on performing within the project limits during the construction of the project.</p> <p>Crown Castle's work will consist of placing strand to temporary poles, delashing cable, moving slack, shifting cable to tetmp poles, relashing cable and removing strand in phase 1. In phase 2 we will place strand to permanent poles, delash cable, shift cable to new strand, relash cable, create slack coil and remove old strand.</p>			
Special Considerations and Constraints			
<p>The following describes the limiting factors that must be planned for in the scheduling and performance of the utility work. For example, restrictions on cut-overs, outages, limitations on customer service interruptions (e.g. nights, weekends, holidays), seasonal and environmental shutdown periods, long lead material procurements, etc..</p> <p>PLEASE NOTE THAT ANY TIME FRAME GIVEN AS A START TIME OR DURATION OF WORK CAN BE AFFECTED BY MANY FACTORS INCLUDING, BUT NOT LIMITED TO, MAKE READY WORK, OTHER UTILITIES, PERMIT APPLICATIONS, CHANGES IN SCOPE, INCLEMENT WEATHER, HOLIDAYS AND EMERGENCY SITUATIONS.</p>			

UTILITY WORK SCHEDULE Rev 3/2015

CTDOT Project Number: **0141-0158**
 Utility Company: **CROWN CASTLE**
 Prepared By: **TERENCE J SHEA** Total Working Days: **4**

Schedule

The following schedule identifies each major activity of utility work in sequential order to be performed by the utility or its contractor. The location of each activity of work is identified by the baseline stationing on the CTDOT plans. All activities identify the predecessor activity which must be completed before a utility work activity may progress. The duration provided is the number of working days required to complete the utility work activity based on historical information and production rates.

Location (Station to Station)	Description of Utility Work Activity	Predecessor Activity	Duration (working days)
LIMITS	PLACE STRAND, DELASH, MOVE SLACK, SHIFT, RELASH, REMOVE STRAND-PHASE 1	POLES PLACED, POWER AND CATV OVER	2
LIMITS	PLACE STRAND, DELASH, SHIFT, RELASH, CREATE SLACK COIL, REMOVE STRAND-PHASE 2	POLES PLACED, POWER AND CATV OVER	2

Frontier Communications

rev. 5/20/2013				UTILITY WORK SCHEDULE			
CTDOT Project Number:		141-158		Town:		THOMPSON	
Project Description: ROUTE 200 & INTERSTATE 395							
CTDOT Utilities Engineer:		Quezada, Dionys					
Phone:		(860) 595.3390		Email:		DQuezada@chasolutions.com	
Utility Company:		FRONTIER COMMUNICATIONS					
Prepared By:		JOHN PLIKUS		Date Prepared:		4/12/2026	
Phone:		860.455.6030		Email:		john.m.plikus@ftr.com	
Scope of Work							
<p>The following is a description of all utility work planned to be completed in conjunction with the CTDOT project. The narrative describes all work to be carried out by the utility or its contractor, including temporary and permanent work required by the project as well as any additional utility infrastructure work the utility intends on performing within the project limits during the construction of the project.</p>							
<p>TEMPORARY RELOCATION</p> <p>Loc.1 P1989, Sta.17+40, Place 1-50ft/Class2 Pole.</p> <p>Loc.2 P1990, Sta.19+45,Place 1-50ft/Class2 Pole,1-ANC & 1-10M DWN Guy.</p> <p>Loc.3 Temp Pole 1, Sta.19+80,Place 1-50ft/Class2 Pole, 1-ANC & 1-10M DWN Guy.</p> <p>Loc.4 P1176 Sta.20+60,Place 1-50ft/Class2 Pole.</p> <p>Loc.5 P1177 Sta.23+60,20'S Place 1-50ft/Class2 Pole.</p> <p>Loc.6 Temp Pole Sta.24+80, Place 1-45ft/Class 3 Pole.</p> <p>Loc.7 Temp Pole Sta.25+00, Place 1-45ft/Class 2 Pole.</p> <p>Loc.1 P1989 Sta.+17,40'S to Loc 8 P2077 Sta.25+90,Place 960ft of BKMA-50 and 6M Strand.</p> <p>Loc.1.Sta.+17,40'S to Loc 8, Sta.25+90,RMV 4 Main Line Poles,2 Stub Poles & 1705ft of Cable.</p> <p>PERMANENT RELOCATION</p> <p>Loc.5 P1177 Sta.23+60 Place 1-50ft/Class2 Pole & 1-35ft Stub Pole 1-ANC & 1-10M DWN Guy.</p> <p>Loc.4 P1176 Sta.20+60,Place 1-50ft/Class2 Pole & 1-35ft Stub Pole 1-ANC & 1-10M DWN Guy.</p> <p>Loc.1 P1989 Sta.+17,40'S to Loc 8 P2077 Sta.25+90,Place 865ft of BKMA-50 and 6M Strand.</p>							
Special Considerations and Constraints							
<p>The following describes the limiting factors that must be planned for in the scheduling and performance of the utility work. For example, restrictions on cut-overs, outages, limitations on customer service interruptions (e.g. nights, weekends, holidays), seasonal and environmental shutdown periods, long lead material procurements, etc..</p>							
<p>1.Prior to any temporary/permanent relocation work CT. Dept. of Transportation to secure Temporary ROW as submitted for guying of temporary relocated poles in order to proceed.</p> <p>2. Frontier Communications will schedule its construction as it's workload permits, the DOT will schedule other utilities attached to the pole line (Power Co., CATV, etc... and all State or Municipal owned cables and fixtures). This UWS has been completed using only Semi-Final Design Plans. No mark out of edge of road, or construction limits provided and may be subject to change, and is valid six months from the day it was submitted.</p>							

UTILITY WORK SCHEDULE

CTDOT Project Number:	CTDOT # 141-158 - TE		
Utility Company:	Frontier Communications		
Prepared By:	John Plikus	Total Calendar Days:	18

Schedule

The following schedule identifies each major activity of utility work in sequential order to be performed by the utility or its contractor. The location of each activity of work is identified by the baseline stationing on the CTDOT plans. All activities identify the predecessor activity which must be completed before a utility work activity may progress. The duration provided is the number of calendar days required to complete the utility work activity based on historical information and production rates.

Location (Station to Station)	Description of Utility Work Activity	Predecessor Activity	Duration (calendar days)
	TEMPORARY RELOCATION		
Sta.17+40 - 25+90	Place 3-45ft Class 2 & 4-50ft Class 2 Poles and Required Guying.	EOR Markout	3
Sta.0+40 - 5+90	Place & Splice 960ft of BKMA-50 and 6M Strand, Shift Aerial Fiber.	EOR Markout	5
Sta.0+40 - 5+90	Remove 4 Mainline Poles & 2 Stub Poles.	All Other Utilities work complete.	1
Sta.0+40 - 5+90	Remove 1705ft of Aerial Copper Cable	All Other Utilities work complete.	1
	PERMANENT RELOCATION		
Sta.0+40 - 5+90	Place 2-45ft Class 2 & 2-35ft Class 2 Poles and Required Guying.	EOR Markout	2
Sta.0+40 - 5+90	Shift Aerial Fiber Cable	All Other Utilities work complete.	2
Sta.0+40 - 5+90	Remove 4 Temporary Mainline Poles & One Stub Pole.	All Other Utilities work complete.	1
Sta.0+40 - 5+90	Place and Splice 865ft of BKMA-50 and 6M Strand.	All Other Utilities work complete.	3

Eversource Energy – Electric

UTILITY WORK SCHEDULE			
CTDOT Project Number:	141-158	Town:	Thompson
Project Description: Replacement of bridge #03474 Route 200 over Interstate 395			
CTDOT Utilities Engineer:		Dionys Quezada CHA	
Phone:	860-595-3390	Email:	dquezada@chasolutions.com
Utility Company:		Eversource Energy-Electric	
Prepared By:	Curtis Benashski	Date Prepared:	3/16/2026
Phone:	860-871-3447	Email:	curtis.benashski@eversource.com
Scope of Work			
The following is a description of all utility work planned to be completed in conjunction with the CTDOT project. The narrative describes all work to be carried out by the utility or its contractor, including temporary and permanent work required by the project as well as any additional utility infrastructure work the utility intends on performing within the project limits during the construction of the project			
<p>The scope of work is relocating the existing power lines temporary away from the bridge so the construction company can do their work safely. Eversource to relocate poles, primary, and secondary to allow the replacement of bridge #03474 (Route 200) Thompson Hill Rd. over Interstate 395 in the Town of Thompson. This project has two moves. Stage 1 (move away from the bridge) and Stage 2 (permenent move), after the bridge has been rebuilt.</p>			
Special Considerations and Constraints			
The following describes the limiting factors that must be planned for in the scheduling and performance of the utility work. For example, restrictions on cut-overs, outages, limitations on customer service interruptions (e.g. nights, weekends, holidays), seasonal and environmental shutdown periods, long lead material procurements, etc...			
<p>Inclement weather. Crews working storm duty or emergency situations. Change in scope, night work, unable to secure traffic control, permits, other utilities, tree removals(by others). Summer Moratorium during high peak loads from June 1 to September 1.</p>			

UTILITY WORK SCHEDULE

CTDOT Project Number:	141-158
Utility Company:	Eversource Energy-Electric
Prepared By:	Curtis Benashski
Total Working Days: 96	

Schedule

The following schedule identifies each major activity of utility work in sequential order to be performed by the utility or its contractor. The location of each activity of work is identified by the baseline stationing on the CTDOT plans. All activities identify the predecessor activity which must be completed before a utility work activity may progress. The duration provided is the number of working days required to complete the utility work activity based on historical information and production rates.

Location (Station to Station)	Description of Utility Work Activity	Predecessor Activity	Duration (working days)
Phase 1	Attend preconstruction meeting, order material, schedule line resources	Notification from CDOT and or CHA to proceed	60
Phase 1	Finalize detailed design, stake new pole and anchor locations	Preconstruction meeting, Tree removals (complete by others)	5
Phase 1	Set poles, frame poles, relocate primary and secondary, arrange for outages	Pole & anchor location approved, access to poles (by others). State to provide traffic control for I-395 shut down. Ftr and ES poles set.	15
Phase 1	Pull poles	Communications have been removed	1
Phase 2	Finalize detailed design, stake new pole and anchor locations	Bridge has been rebuilt, and the state is ready for ES to relocate to permanent location	5
Phase 2	Set poles, frame poles, relocate primary and secondary, arrange for outages	Frontier and Eversource poles have been set	10

Charter Communications

UTILITY WORK SCHEDULE <small>Rev 3/2015</small>			
CTDOT Project Number:	0141-0158	Town:	Thompson
Project Description:	Bridge work on Bridge #03474		
CTDOT Utilities Engineer:	Dionys Quezada		
Phone:	(401)726-4084X123	Email:	dquezada@chasolutions.com
Utility Company:	Charter Communications		
Prepared By:	Daniel Brault	Date Prepared:	4/23/2025
Phone:	860-771-2374	Email:	daniel.brault@charter.com
Scope of Work			
<p>The following is a description of all utility work planned to be completed in conjunction with the CTDOT project. The narrative describes all work to be carried out by the utility or its contractor, including temporary and permanent work required by the project as well as any additional utility infrastructure work the utility intends on performing within the project limits during the construction of the project.</p>			
<p>Charter Communication's work will consist of placing strand to relocated poles, lashing new cable to new strand, splice and activation of new cable, and wreckout of old</p>			
Special Considerations and Constraints			
<p>The following describes the limiting factors that must be planned for in the scheduling and performance of the utility work. For example, restrictions on cut-overs, outages, limitations on customer service interruptions (e.g. nights, weekends, holidays), seasonal and environmental shutdown periods, long lead material procurements, etc..</p>			
<p>PLEASE NOTE THAT ANY TIME FRAME GIVEN AS A START TIME OR DURATION OF WORK CAN BE AFFECTED BY MANY FACTORS INCLUDING, BUT NOT LIMITED TO, MAKE READY WORK, OTHER UTILITIES, PERMIT APPLICATIONS, CHANGES IN SCOPE, INCLEMENT WEATHER, HOLIDAYS AND EMERGENCY SITUATIONS.</p>			

SECTION 1.02 - PROPOSAL REQUIREMENTS AND CONDITIONS

1.02.01—Contract Bidding and Award:

After the first sentence of the third paragraph, add the Following:

In accordance with the provisions of the Construction Contract Bidding and Award Manual, bidders must be prequalified for **Group No. 9 Intermediate Bridges** to be eligible to bid on this project. Bidders that are not prequalified for this work classification will not be approved to bid on this project.

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

Replace Section 1.06 in its entirety with the following:

SECTION 1.06 CONTROL OF MATERIALS

1.06.01—Source of Supply and Material Quality

1.06.02—Samples and Test

1.06.03—Storage

1.06.04—Defective Materials

1.06.05—Shipping Material

1.06.06—Vacant

1.06.07—Certified Test Reports and Materials Certificates

1.06.08—Warranties, Guarantees and Instruction Sheets

1.06.01—Source of Supply and Material Quality:

1. Source of Supply: A source of supply is defined as the original manufacturer of material(s) used within a project. A source of supply may fabricate material(s) such as precast concrete structures or hot mix asphalt from components originally manufactured by others. A broker, distributor, or subcontractor using the material(s) must not be identified as a source of supply.

The Contractor must notify the Engineer of the proposed source of supply for each of the materials listed on the Anticipated Source of Material (CON-083) Form within 30 days after bid opening. Should it become necessary for the Contractor to obtain material from sources other than those indicated in the submitted Anticipated Source of Material (CON-083) Form, the Contractor shall notify the Engineer and resubmit this document to the Department no later than seven (7) days prior to use of the material. The Engineer reserves the right to request additional information regarding such sources.

If, at any time, the Department discovers that materials from a source of supply do not consistently conform to the Contract specifications, the Engineer will notify the Contractor of its non-conformance and that source of supply shall no longer be used for said application.

- a. Buy America Act (BAA):** The BAA requires that all permanently incorporated steel and iron used in the construction of the Project must have been produced and fabricated in the United States. It is the intent of this specification to require that all manufacturing processes for all steel and iron materials and products to be used for the Project, from initial melting stage through the application of coating of steel and iron, occur within the United States, with the following exceptions:
1. The Contractor may request, in accordance with 635.410(b)(4) of Title 23 CFR, approval to include a minimal amount of foreign steel in the Project construction. This amount is defined as 0.1% of the total Contract cost or \$2,500.00, whichever is greater. The cost of the foreign steel or iron is defined as its Contract value when delivered to the Project site.
 2. Additionally, the FHWA has granted a nationwide waiver of the requirements of 23 CFR 635.410, Buy America Act requirements, to produce pig iron and

- processed, pelletized, and reduced iron ore. Items not specifically included in the waiver remain subject to the Buy America Act requirements. The Contractor may request the Engineer to seek from the FHWA a further waiver of said requirements, but it shall be at the sole discretion of the Engineer whether to seek such a waiver.
3. A 2021 amendment to BAA, BABA (as defined below) clarifies that (A) the term “construction materials” shall not include cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives and (B) shall not include cement and cementitious materials and aggregates such as stone, sand, or gravel, or aggregate binding agents or additives as inputs of the construction material.
- b. Build America, Buy America (BABA) Act:** BABA does not supersede the BAA iron and steel requirement, however it expands the requirements to include manufactured products and construction materials. Such products and materials permanently incorporated into projects “must be produced in the United States.” BABA requires the following:
1. All construction materials are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.
 2. All manufactured products used in the Project are produced in the United States. This means the manufactured product was manufactured in the United States, and, for projects obligated on or after October 1, 2026, the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55% of the total cost of all its components of the manufactured product. Manufactured products are considered to be in their final form upon arrival at the job Site.
 3. Construction materials include those listed on the Anticipated Source of Material (CON-083) Form.

2. Material Quality: Only materials conforming to the Contract and accepted by the Engineer shall be permanently incorporated into the Project.

Prior to installation, material that is damaged or otherwise changed in a way that it no longer meets Contract specifications shall not be incorporated into the Project.

When one manufacturer's product is specified in the Contract, it shall be understood that this represents the standard required. Unless otherwise stated, a comparable product of another manufacturer may be proposed by the Contractor unless the plans or special provisions indicate that no equal will be allowed. The Contractor shall submit a complete description of the proposed product, together with shop drawings, catalog cuts, product data or other descriptive literature for review in accordance with 1.05.02. Should a product be designated as an equal, this will not relieve the Contractor from any material testing requirements or a related Certified Test Report and/or Materials Certificate that may be required.

1.06.02—Samples and Test: The Contractor shall furnish all required samples without charge and provide secure facilities for their storage. The Contractor shall provide means for, and shall assist in the verification of, all scales, measures, and other devices that it operates or uses in connection with the Project. The Contractor shall provide calibration documentation when requested.

The minimum number and size of material samples per Contract item that are required

by the Department are listed in the "Minimum Schedule for Acceptance Testing" contained in the [Department's Materials Testing Manual](#). The acceptance methods used to determine compliance with the Contract are also listed. Should the Contract documents specify additional acceptance methods than those listed in the "Minimum Schedule for Acceptance Testing," the Contractor shall adhere to those additional requirements. Where applicable, physical testing will be performed in accordance with the test standards which are in effect at the time of bidding, unless otherwise indicated in the Contract. Any item or material not listed in the "Minimum Schedule for Acceptance Testing," or Contract shall be sampled and tested and/or certified, as directed by the Engineer.

Certification may be used as the basis for approval of such materials as the Contract documents specify or as the Engineer may require. With regard to such materials, the Contractor shall furnish the Engineer a Certified Test Report (CTR) and/or Materials Certificate (MC), in accordance with 1.06.07 for each type of material, as may be required in the "Minimum Schedule for Acceptance Testing." The Contractor shall bear any costs involved in furnishing the CTR and MC.

If the Contractor has purchased materials for use on a previous Department project and if they meet the requirements of this Contract, then those materials, with the approval of the Engineer, may be used for the Project, provided that the Contractor, acting as the "supplier," submits a related MC meeting the requirements of 1.06.07. This MC shall further identify the project for which the material was originally purchased and shall be accompanied by a copy of the original MC. Materials that require quality assurance inspection for acceptance such as structural steel and precast components will be subject to re-inspection.

Materials will be rejected by the Engineer whenever, in their judgment, they fail to meet Contract requirements. The Engineer may accept material or the combination of materials and thereby waive noncomplying test results, provided that the following conditions are met:

1. The Engineer finds results of prior and subsequent series of tests of the material or materials from the same source or sources to be satisfactory.
2. The incidence and degree of nonconformance with the Contract requirements are, in the Engineer's judgment, within reasonable limits.
3. The Contractor, in the Engineer's judgment, had diligently exercised material controls consistent with good practices.
4. No adverse effect on the value or serviceability of the completed work could result from said degree of nonconformance.

The Engineer may, in their discretion, waive testing of minor quantities of a particular material if said material was obtained from sources that have furnished supplies of the material that have consistently met Department testing standards.

1.06.03—Storage: The Contractor shall store all materials for the Project in a way that will prevent damage, deterioration, and loss, including theft and vandalism. The Engineer will have easy and prompt access to them for inspection purposes. Materials shall be kept on wooden platforms or on other hard, clean surfaces and not on the ground. When so directed by the Engineer, the Contractor shall store materials in a weatherproof building.

The Contractor shall not store materials in any way that would lead to a violation of these specifications including but not limited to 1.10. Stored materials, even if they have

been approved by the Engineer prior to their storage, must be inspected by the Engineer and meet all pertinent Contract requirements immediately prior to use of those materials for the Project.

The Contractor shall

1. store products in accordance with the manufacturer's recommendations;
2. store products at the Site in a manner that will facilitate inspection and measurement or counting of units;
3. store heavy materials away from Project structures so as not to endanger the supporting construction;
4. if the products are subject to damage by the elements, store them off the ground, under cover in a weatherproof enclosure, with ventilation adequate to prevent condensation; and
5. maintain temperature and humidity within any range recommended by the manufacturer.

Off-site staging and storage of materials and equipment may be required due to restrictive Project limits and other operational constraints. Arrangement for off-site staging and storage of materials and equipment shall be the responsibility of the Contractor. Payment for off-site staging and storage of material and equipment shall be in accordance with 1.09.06.

1.06.04—Defective Materials: Unless otherwise permitted by the Engineer, all materials not meeting Contract requirements shall be considered defective, shall be rejected, and shall be removed immediately from the Project site.

If deemed necessary, the Engineer may require retesting of materials previously tested, accepted and incorporated into the Project. If materials do not meet the Contract requirements after retesting, the Engineer will decide whether to allow materials to be left in place (with an equitable reduction of payment) or be removed and replaced. No rejected material, the defects of which have been subsequently corrected, shall be used until approval has been given by the Engineer. Should the Contractor fail to comply with these requirements, the Engineer has the authority to order the removal and replacement of defective material and deduct the cost of such removal and replacement from any future payments to the Contractor.

When a material is fabricated, or treated with another material, or when any combination of materials is assembled to form a product, any, or all of which are covered by the Contract specifications, the failure of any components of the product to meet the requirements of the specifications may be sufficient cause for the rejection of the whole combination or product.

1.06.05—Shipping Material: Any conveyance used for transporting materials must be clean when used, be in proper working condition, have a strong and substantial body that will prevent the loss of materials during transportation, and be approved by the Engineer.

1.06.06—Vacant

1.06.07—Certified Test Reports and Materials Certificates: The Contractor shall furnish the Engineer with any Certified Test Report and Materials Certificate required by the Contract and the "Minimum Schedule for Acceptance Testing" contained in the [Department's Materials Testing Manual](#).

The Contractor shall forward the Certified Test Report and Materials Certificate to the Engineer, and, in addition, shall deliver a copy of same to the Department's inspector at

the Site. Materials for which such documentation is required may be conditionally incorporated into the Project prior to the Engineer's acceptance of a Certified Test Report and a Materials Certificate; however, payment for such incorporated material may not be made prior to acceptance by the Department of a Certified Test Report and Materials Certificate indicating that the material meets the Contract requirements.

1. A Certified Test Report (CTR) is a document containing a list of the dimensional, chemical, metallurgical, electrical and physical results obtained from a physical test of the materials involved and shall demonstrate that the materials meet the requirements of the Contract. The CTR shall be signed by a duly authorized and responsible agent of the original manufacturer of the material(s), and the signature must include the date the CTR was signed.

The CTR shall also include the following information:

- a. Description of material(s)
- b. Date of manufacture of the material(s)
- c. Date of test(s)
- d. Name of organization to which the material has been consigned
- e. Quantity of material represented
- f. Means of identifying the consignment, such as label, marking, lot number, etc.
- g. Date and method of shipment
- h. Name of organization performing the test(s)

2. A Materials Certificate (MC) is a document certifying that the materials, components, and equipment furnished meet all requirements of the Contract, including the location where such material, components and equipment were produced. The MC shall be signed by a duly authorized and responsible agent of the organization assembling or fabricating the materials and the signature must include the date the MC was signed. When a CTR is also required, the means of identifying the consignment, such as label, marking, lot numbers, etc. in the MC and CTR shall be equivalent.

The MC shall also include the following information:

- a. Project for which the material has been consigned
- b. Name of Contractor to which material is supplied
- c. Item number and description of material
- d. Quantity of material represented by the MC
- e. Means of identifying the consignment, such as label, marking, lot numbers, etc.
- f. Identification of all sources of supply of material components
- g. Means of verifying Buy America requirements for steel and/or steel components
- h. Certification from the source of supply stating compliance to Buy America requirements of the applicable construction materials and manufactured products. Attach completed form "Buy America Preference [Source of Supply Self-Certification Form](#)."
- i. Date and method of shipment

1.06.08—Warranties, Guarantees and Instruction Sheets: Manufacturers' warranties and guaranties furnished for materials used for the Project, as well as instruction sheets and parts lists supplied with Project materials, shall be delivered to the Engineer prior to acceptance of the Project. Each warranty or guaranty so furnished shall indicate its commencement and expiration dates.

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.”

SECTION 1.08 - PROSECUTION AND PROGRESS

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 [AASHTOWare Training](#) 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:

I-395

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 on I-395 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 necessary work for minor items and/or moving barriers, as approved by the Engineer, between 12:01 a.m. and 5:00 a.m. during all non-Legal Holiday Periods.

Additional Restrictions:

- A. The Contractor shall be allowed to fully close I-395 and implement a detour as shown on the maintenance and protection of traffic and detour plan from 9:00 p.m. to 6:00 a.m., with the approval of the Engineer during non-Legal Holiday periods.
- B. The Contractor shall notify the Engineer at least 14 days in advance of the start of the closure.

I-395 Ramps

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

Route 200 (Thompson Hill Road)

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Except that:

- A. The Contractor will be allowed to close Route 200 (Thompson Hill Road) and detour traffic for a duration 198 days, and the dates shall be approved by the Engineer.
- B. The Contractor shall notify the Engineer at least 14 days in advance of the start of the Route 200 (Thompson Hill Road) closure.

All Other Roadways

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

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

Route: I-395 NB (Thompson) Bridge 03474 Number of Through Lanes: 2								Route: I-395 SB (Thompson) Bridge 03474 Number of Through Lanes: 2							
Hour Beginning	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Hour Beginning	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Mid	1*	1*	1*	1*	1*	1*	1*	Mid	1*	1*	1*	1*	1*	1*	1*
1 AM	1*	1*	1*	1*	1*	1*	1*	1 AM	1*	1*	1*	1*	1*	1*	1*
2 AM	1*	1*	1*	1*	1*	1*	1*	2 AM	1*	1*	1*	1*	1*	1*	1*
3 AM	1*	1*	1*	1*	1*	1*	1*	3 AM	1*	1*	1*	1*	1*	1*	1*
4 AM	1*	1*	1*	1*	1*	1*	1*	4 AM	1*	1*	1*	1*	1*	1*	1*
5 AM	1*	1*	1*	1*	1*	1*	1*	5 AM	1*	1*	1*	1*	1*	1*	1*
6 AM	0	0	0	0	0	1*	1*	6 AM	0	0	0	0	0	1*	1*
7 AM	0	0	0	0	0	1*	1*	7 AM	0	0	0	0	0	1*	1*
8 AM	0	0	0	0	0	1*	1*	8 AM	0	0	0	0	0	1*	1*
9 AM	1*	1*	1*	1*	1*	1*	1*	9 AM	1*	1*	1*	1*	1*	1*	1*
10 AM	1*	1*	1*	1*	1*	1*	1*	10 AM	1*	1*	1*	1*	1*	1*	1*
11 AM	1*	1*	1*	1*	1*	1*	1*	11 AM	1*	1*	1*	1*	1*	1*	1*
Noon	1*	1*	1*	1*	1*	1*	1*	Noon	1*	1*	1*	1*	1*	1*	1*
1 PM	1*	1*	1*	1*	1*	1*	1*	1 PM	1*	1*	1*	1*	1*	1*	1*
2 PM	1*	1*	1*	1*	1*	1*	1*	2 PM	1*	1*	1*	1*	1*	1*	1*
3 PM	0	0	0	0	0	1*	1*	3 PM	0	0	0	0	0	1*	1*
4 PM	0	0	0	0	0	1*	1*	4 PM	0	0	0	0	0	1*	1*
5 PM	0	0	0	0	0	1*	1*	5 PM	0	0	0	0	0	1*	1*
6 PM	1*	1*	1*	1*	1*	1*	1*	6 PM	1*	1*	1*	1*	1*	1*	1*
7 PM	1*	1*	1*	1*	1*	1*	1*	7 PM	1*	1*	1*	1*	1*	1*	1*
8 PM	1*	1*	1*	1*	1*	1*	1*	8 PM	1*	1*	1*	1*	1*	1*	1*
9 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*	10 PM	1*	1*	1*	1*	1*	1*	1*
11 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.

“*” = The hours that a rolling roadblock may be implemented with the approval of the Engineer.

SECTION 1.09—MEASUREMENT AND PAYMENT

Article 1.09.06—Partial Payments

Subarticle B. Payment for Stored Materials *is amended as follows:*

B. Payment for Stored Materials: Non-perishable materials that are required for Project construction and that the Contractor has produced or purchased specifically for incorporation into the Project, but which have not yet been so incorporated, may be included in a payment estimate if

- (i) the materials meet all applicable Contract specifications,
- (ii) the materials have been delivered to the Project site or to another location approved by the Engineer, and
- (iii) the Contractor has submitted to the Engineer, as evidence of the Contractor's purchase of the materials, copies of notarized receipted bills and a notarized Certificate of Title, lien waiver, and right of entry to the materials, in the form approved by the Department, duly executed by the Contractor, the Vendor and any other parties deemed necessary by the Engineer to satisfy proof of unencumbered ownership.

The Engineer will decide at what fair and appropriate fraction of the applicable Contract price such materials may be included in a payment estimate.

Offsite storage may be approved by the Engineer, provided that the materials proposed for payment are stored in a secure area, segregated from other materials, clearly labeled as being owned by the Department for use on the identified Project, otherwise handled in compliance with Article 1.06.03 and stored in accordance with the manufacturer's recommendations. All such materials must be readily available for inventory and inspection by the Engineer. Storage outside of the State of Connecticut may be considered only when a representative of the Department is able to verify that the above requirements have been satisfied.

For items requiring extended fabrication, manufacturing or assembly time, the Contractor may propose to the Engineer a schedule of values for completely fabricated portions of the related material. If the Engineer accepts such a schedule of values, it shall become the Basis of Payment for the stored materials, so long as all other pertinent Contract requirements have been satisfied.

Generic materials having a use on many projects will be considered for payment prior to their incorporation into the Project only if stored in unopened packaging or in large lots stored at the project site.

Stock and raw materials will not be considered for such advance payment without the Engineer's prior written consent thereto.

In no case shall material payments exceed the Contract unit price or lump sum price less the actual value of the remaining work under the item, including but not limited to delivery and

installation of the materials. If the proposed material costs do exceed such a price, the Engineer reserves the right to reduce any related payment accordingly. In such an instance the Contractor shall provide documentation of ownership and written acceptance of the amount to be paid in a form acceptable to the Engineer prior to any payments being made by the Engineer. Such reductions in payment shall in no way affect the Department's ownership interest in the stored materials or release the Contractor from any other requirements of the Contract.

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 (*Lasiurus 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 (NDDDB) Vertebrate Sheet ([Contribute Data to the NDDDB](#)). 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 4.06 - BITUMINOUS CONCRETE

Replace the entire Section with the following:

SECTION 4.06 BITUMINOUS CONCRETE

4.06.01—Description

4.06.02—Materials

4.06.03—Construction Methods

- 1. Material Documentation**
- 2. Transportation of Mixture**
- 3. Paving Equipment**
- 4. Test Section**
- 5. Transitions for Roadway Surface**
- 6. Spreading and Finishing of Mixture**
- 7. Longitudinal Joint Construction Methods**
- 8. Contractor Quality Control (QC) Requirements**
- 9. Temperature and Seasonal Requirements**
- 10. Field Density**
- 11. Acceptance Sampling and Testing**
- 12. Density Dispute Resolution Process**
- 13. Corrective Work Procedure**
- 14. Protection of the Work**
- 15. Cut Bituminous Concrete Pavement**

4.06.04—Method of Measurement

4.06.05—Basis of Payment

4.06.01—Description: Work under this Section shall include the production, delivery, placement and compaction of a uniform textured, non-segregated, smooth asphalt pavement to the grade and cross section shown on the plans.

The following terms as used in this specification are defined as:

Asphalt Mixture (formerly bituminous concrete): A composite material consisting of prescribed amounts of asphalt binder and aggregates. Asphalt binder may also contain additives engineered to modify specific properties and/or behavior of the composite material. References to asphalt mixture apply to all of its forms, such as those identified as hot-mix asphalt (HMA) or polymer-modified asphalt (PMA).

Asphalt Mixture Plant (Plant): A structure where aggregates and asphalt binder are combined in a controlled fashion into a asphalt mixture suitable for forming pavements and other paved surfaces.

Course: A continuous layer (a lift or multiple lifts) of the same asphalt mixture placed as part of the pavement structure.

Density Lot: The total tonnage of all asphalt mix placed in a single lift which are:

1. PWL density lots = When the project total estimated quantity per mixture is larger than 3,500 tons
2. Simple Average density lots = When the project total estimated quantity per mixture is 3,500 tons or less

Disintegration: Erosion or fragmentation of the pavement surface which can be described as polishing, weathering-oxidizing, scaling, spalling, raveling, or formation of potholes.

Dispute Resolution: A procedure used to resolve conflicts between the Engineer's and the Contractor's results that may affect payment.

Cool Weather Paving: Any asphalt paving that occurs when temperature is expected to be less than 50°F.

Hot Mix Asphalt (HMA): An asphalt mixture typically produced at 325°F.

Job Mix Formula (JMF): A recommended aggregate gradation and asphalt binder content to achieve the required mixture properties.

Leveling Course: A thin lift of HMA placed at an average consistent thickness, usually about an inch, as indicated on the plans to correct minor variations in the contour of the existing pavement surface.

Lift: An application of an asphalt mixture placed and compacted to a specified thickness in a single paver pass.

Percent Within Limits (PWL): The percentage of the lot falling between the Upper Specification Limit (USL) and the Lower Specification Limit (LSL).

Polymer Modified Asphalt (PMA): An asphalt mixture containing a polymer-modified asphalt binder and using a qualified warm mix technology.

Production Lot: The total tonnage of mixture from a single source that may receive an adjustment.

Production Sub Lot: Portion of the production lot typically represented by a single sample.

Quality Assurance (QA): All those planned and systematic actions necessary to provide CTDOT the confidence that a Contractor will perform the work as specified in the Contract.

Quality Control (QC): The sum total of activities performed by the vendor (Producer, Manufacturer, and Contractor) to ensure that a product meets contract specification requirements.

Superpave: A mix design used in mixtures designated as "S*" where "S" indicates Superpave and * indicates the sieve related to the nominal maximum aggregate size of the mix.

Segregation: A non-uniform distribution of a mixture in terms of gradation, temperature, or volumetric properties.

Warm Mix Asphalt (WMA) Technology: A qualified additive or technology that may be used to produce a mixture at reduced temperatures and/or increase workability of the mixture.

Wedge Course: A lift or multiple lifts of HMA placed at a varying thickness as indicated on the plans to increase or decrease the cross slope of the existing pavement surface.

4.06.02—Materials: All materials shall meet the requirements of M.04.

1. Materials Supply: The mixture must be from one source of supply and originate from one Plant unless authorized by the Engineer.

2. Recycled Materials: Reclaimed Asphalt Pavement (RAP), Crushed Recycled Container Glass (CRCG), Recycled Asphalt Shingles (RAS), or crumb rubber (CR) from recycled tires may be incorporated into the mixture in accordance with Project Specifications.

3. Tack Coat: Tack coat used for all applications shall be Non-Tracking Asphalt Tack Coat, meeting the requirements of M.04.01-5. Use of alternate tack coats conforming to Material for Tack Coat requirements may be requested by the Contractor. The request shall be submitted in writing to the Engineer for review prior to use.

4.06.03—Construction Methods:

1. Material Documentation: All vendors producing asphalt mix must have Plants with automated vehicle-weighing scales, storage scales, and material feeds capable of producing a delivery ticket containing the information below.

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

The net weight of mixture loaded into the vehicle must be equal to the cumulative measured weights of its

components.

The Contractor must notify the Engineer immediately if, during production, there is a malfunction of the weight recording system in the automated Plant. Manually written tickets containing all required information will be allowed for no more than 1 hour.

The State reserves the right to have an Inspector present to monitor batching and/or weighing operations.

2. Transportation of Mixture: The mixture shall be transported in vehicles that are clean of all foreign material, excessive coating or cleaning agents, and that have no gaps through which material might spill. Any material spilled during the loading or transportation process shall be quantified by re-weighing the vehicle. The Contractor shall load vehicles uniformly so that segregation is minimized. Loaded vehicles shall be tightly covered with waterproof covers acceptable to the Engineer. Mesh covers are prohibited. The cover must minimize air infiltration. Vehicles found not to be in conformance shall not be loaded. Vehicles with loads of mix being delivered to State projects must not exceed the statutory or permitted load limits referred to as gross vehicle weight (GVW). The Contractor shall furnish a list and allowable weights of all vehicles transporting mixture. The State reserves the right to check the gross and tare weight of any vehicle. If the gross or tare weight varies from that shown on the delivery ticket by more than 0.4%, the Engineer will recalculate the net weight. The Contractor shall correct the discrepancy to the satisfaction of the Engineer.

If a vehicle delivers mixture to the Project and the delivery ticket indicates that the vehicle is overweight, the load may not be rejected but a "Measured Weight Adjustment" will be taken in accordance with 4.06.04.

Vehicle body coating and cleaning agents must not have a deleterious effect on the mixture. The use of solvents or fuel oil, in any concentration, is prohibited for the coating of vehicle bodies.

For each delivery, the Engineer shall be provided a clear, legible copy of the delivery ticket.

3. Paving Equipment: The Contractor shall have the necessary paving and compaction equipment at the Project Site to perform the work. All equipment shall be in good working order and any equipment that is worn, defective, or inadequate for performance of the work shall be repaired or replaced by the Contractor to the satisfaction of the Engineer. During the paving operation, the use of solvents or fuel oil, in any concentration, is strictly prohibited as a release agent or cleaner on any paving equipment (i.e., rollers, pavers, transfer devices, etc.).

Refueling or cleaning of equipment is prohibited in any location on the Project where fuel or solvents might come in contact with paved areas or areas to be paved. Solvents used in cleaning mechanical equipment or hand tools shall be stored clear of areas paved or to be paved. Before any such equipment and tools are cleaned, they shall be moved off of areas paved or to be paved.

Pavers: Each paver shall have a receiving hopper with capacity to provide for a spreading operation and a distribution system that places the mix uniformly, without segregation. The paver shall be equipped with and use a vibratory screed system with heaters or burners. The screed system shall be capable of producing a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture. Pavers with extendible screed units as part of the system shall have auger extensions and tunnel extenders as necessary. Automatic screed controls for grade and slope shall be used at all times unless otherwise authorized by the Engineer. The controls shall automatically adjust the screed to compensate for irregularities in the preceding course or existing base. The controls shall maintain the proper transverse slope and be readily adjustable, and shall operate from a fixed or moving reference such as a grade wire or floating beam (minimum length 20 feet).

Rollers: All rollers shall be self-propelled and designed for compaction of asphalt mixtures. Roller types shall include steel wheeled, pneumatic, or a combination thereof. Rollers that operate in a dynamic mode shall have drums that use a vibratory or oscillatory system or combination. Vibratory rollers shall be equipped with indicators for amplitude, frequency, and speed settings/readouts to measure the impacts per foot during the compaction process. Oscillatory rollers shall be equipped with frequency indicators. Rollers can operate in the dynamic mode using the oscillatory system on concrete structures such as bridges and catch basins if at the lowest frequency setting.

Pneumatic tire rollers shall be equipped with wide-tread compaction tires capable of exerting an average contact pressure from 60 to 90 psi uniformly over the surface. The Contractor shall furnish documentation to the Engineer regarding tire size, pressure and loading to confirm that the proper contact pressure is being developed and that the loading and contact pressure are uniform for all wheels.

Tack Distributor Vehicle: The Contractor shall provide a distributor vehicle capable of heating, circulating, and spraying the tack coat at the required application temperature range per the tack manufacturer's recommendations. The spray bar shall maintain a constant height above the pavement and distribute the material in an overlapping spray pattern out of the nozzles to ensure uniform coverage on the surface. The distributor vehicle shall include a tachometer, pressure gauges, and an accurate volume measuring device or a calibrated tank. Volume measuring devices shall meet all applicable state or federal sale requirements.

Lighting for Operations: As needed for paving operations, the Contractor shall provide sufficient artificial lighting to enable the Engineer to thoroughly inspect every phase of the work. The type and number of lights to be used on each piece of equipment shall be documented by the Contractor in the Project Specific Quality Control Plan. A minimum of 10 foot candle (fc) (or approximately 108 lumens) within a twenty-five-foot radius from millers, pavers, and transfer vehicles shall be provided by the lighting at all times. A minimum of 1 fc (or approximately 11 lumens) within a sixty foot radius from rollers shall be provided at all times. Lighting shall be oriented to minimize glare to passing traffic.

Material Transfer Vehicle (MTV): A MTV shall be used when placing asphalt mixture surface course (a lift or multiple lifts) as indicated in the Contract except as noted on the plans or as directed by the Engineer. In addition, continuous paving lengths of less than 500 feet may not require the use of a MTV as determined by the Engineer.

The MTV must be a vehicle specifically designed for the purpose of delivering the mixture from the delivery vehicle to the paver. The MTV must continuously remix the asphalt mixture throughout the placement process. When the MTV is in use the paver must have a hopper insert to prevent mix from segregating due to drop height.

The use of a MTV will be subject to the requirements stated in 1.07.05 Load Restrictions. The Engineer may limit the use of the vehicle if it is determined that the use of the MTV may damage highway components, utilities, or bridges. The Contractor shall submit to the Engineer at time of pre-construction the following information:

1. The make and model of the MTV.
2. The individual axle weights and axle spacing for each piece of paving equipment (haul vehicle, MTV and paver).
3. A Working Drawing showing the axle spacing in combination with all pieces of equipment that will comprise the paving echelon.

4. Test Section: The Engineer may require the Contractor to place a test section whenever the requirements of this specification or M.04 are not met. The sampling and testing frequency for the mixture and density shall be in accordance with this specification and M.04.

The Contractor shall submit the anticipated quantity of mixture to be placed and the location of the test section for review and approval by the Engineer. The same equipment used in the construction of a passing test section shall be used throughout production.

If a test section fails to meet specifications, the Contractor shall stop production, make necessary adjustments to the job mix formula, Plant operations, or procedures for placement and compaction. The Contractor shall construct test sections, as allowed by the Engineer, until all the required specifications are met. All test sections shall also be subject to removal as set forth in 1.06.04.

5. Transitions for Roadway Surface: Transitions shall be formed at any point on the roadway where the pavement surface deviates, vertically, from the uniform longitudinal profile as specified on the plans. Whether formed by milling or by using an asphalt mixture, all transition lengths shall meet the criteria below unless otherwise specified.

Permanent Transitions: Defined as any gradual change in pavement elevation that remains as a permanent part of the work. A transition shall be constructed no closer than 75 feet from either side of a bridge expansion joint or parapet. All permanent transitions, leading and trailing ends shall meet the following length requirements:

Posted Speed Limit	Permanent Transition Length Required
> 35 mph	30 feet per inch of elevation change
35 mph or less	15 feet per inch of elevation change

In areas where it is impractical to use the above-described permanent transition lengths, the use of a shorter permanent transition length may be permitted when approved by the Engineer.

Temporary Transitions: Defined as a transition that does not remain a permanent part of the work.

All temporary transitions shall meet the following length requirements:

Posted Speed Limit	Temporary Transition Length Required
> 50 mph	Leading Transition: 15 feet per inch of vertical change (thickness) Trailing Transition: 6 feet per inch of vertical change (thickness)
40, 45 or 50 mph	Leading and Trailing: 4 feet per inch of vertical change (thickness)
35 mph or less	Leading and Trailing: 3 feet per inch of vertical change (thickness)

Note: Any temporary transition to be in place over the winter shutdown period or during extended periods of inactivity (more than 30 calendar days) shall meet the greater than 50 mph requirements shown above.

6. Spreading and Finishing of Mixture: Prior to the placement of the mixture, the underlying subbase and other courses shall be brought to the plan grade and cross section within the allowable tolerance. Subbase material shall be free of standing water prior to placement of the mixture.

Before placing mix on an existing pavement surface, a uniform coating of tack coat shall be applied to the underlying pavement surface and on the exposed surface of a wedge joint. Such pavement surfaces shall be clean and dry. Mechanical sweeping or other means acceptable to the Engineer shall be used to clean pavement surfaces.

Tack Coat Application: The placement of Tack Coat shall not commence or continue when forecasted or unforeseen precipitation or other conditions cause the tack to runoff or prevent conformance to this specification. The Contractor shall protect appurtenances from tracking or splattering of tack coat material. All tack coat material shall be applied by pressurized spray that results in a uniform application rate over the entire surface being paved.

All tack coat material, as defined in M.04, shall be applied at an application rate of 0.04 to 0.06 gal./s.y. for a non-milled surface, and an application rate of 0.06 to 0.08 gal./s.y. for a milled surface.

The Engineer must approve the equipment and the method of measurement prior to use. The tack coat material shall be heated to 160°F ± 10°F and shall not be further diluted.

Tack coat shall be allowed sufficient time to break (cure) prior to any paving equipment or haul vehicles driving on it.

Placement: The mixture shall be placed and compacted to provide a smooth, dense surface with a uniform texture and no segregation at the specified thickness and dimensions indicated in the plans and specifications.

The placement of asphalt mixtures shall not commence or continue when forecasted or unforeseen precipitation may prevent conformance to this specification. The Engineer will not accept or pay for mixture that is placed in conditions that are not in conformance with these specifications.

In advance of paving, traffic control requirements shall be set up, maintained throughout placement, and shall not be removed until all associated work is completed, including quality control, sampling for density testing, and inspection activities.

The Contractor shall supply three infrared thermometers, acceptable to the Engineer, for mix delivery temperature verification by the Inspector and quality control personnel. At the beginning of each shift, the Engineer shall verify that the thermometers:

- have a minimum accuracy value of ±1% of reading or ± 2°F, whichever is greater.
- are in agreement within 5°F when measuring ambient, base, and mix temperature.

The Contractor shall include the thermometer verification process in the QCP, as well as the replacement or repair timeframe of a thermometer not meeting the above criteria or not functioning.

The placement temperature range shall be listed in the Quality Control Placement Plan and shall meet the requirements of Table M.04.03-4. Any material that falls outside the specified temperature range as measured by two of the three thermometers may be rejected.

The Contractor shall inspect the newly placed pavement for defects in mixture or placement before rolling is started. Any deviation from standard crown or section shall be immediately remedied by placing additional mixture or removing surplus mixture. Such defects shall be corrected to the satisfaction of the Engineer.

Where it is impractical due to physical limitations to operate the paving equipment, the Engineer may permit the use of other methods or equipment. Where hand spreading is permitted, the mixture shall be placed by means of suitable shovels and other tools, and in a uniformly loose layer at a thickness that will result in a completed pavement meeting the designed grade and elevation.

Placement Tolerances: Each lift of mix placed at a specified thickness shall meet the following requirements for thickness and area. Any pavement exceeding these limits shall be subject to an adjustment or removal. Lift tolerances will not relieve the Contractor from meeting the final designed grade. Lifts of specified non-uniform thickness, i.e. wedge course, shall not be subject to thickness and area adjustments.

1. Thickness: Where the average thickness of the lift exceeds that shown on the plans beyond the tolerances shown in Table 4.06-3, the Engineer will calculate the thickness adjustment in accordance with 4.06.04.

TABLE 4.06-3: Thickness Tolerances

Mixture Designation	Lift Tolerance
S1	+/- 3/8 inch
S0.25, S0.375, S0.5	+/- 1/4 inch

Where the thickness of the lift of mixture is less than that shown on the plans beyond the tolerances shown in Table 4.06-3, the Contractor, with the approval of the Engineer, shall take corrective action in accordance with this Section.

2. Area: Where the width of the lift exceeds that shown on the plans by more than the specified thickness, the Engineer will calculate the area adjustment in 4.06.04.
3. Delivered Weight of Mixture: When the delivery ticket shows that the truck exceeds the allowable gross weight for the vehicle type, the Engineer will calculate the weight adjustment in accordance with 4.06.04.

Transverse Joints: All transverse joints shall be formed by saw-cutting to expose the full thickness of the lift. Tack coat shall be applied to the sawn face immediately prior to additional mixture being placed.

Compaction: The Contractor shall compact the mixture to meet the density requirements as stated in 4.06.04 for any lift placed with a thickness of 1 1/2 inches or greater, and eliminate all roller marks without displacement, shoving, cracking, or aggregate breakage. This shall include wedge courses when the wedge thickness is 1 1/2 inches or greater within a single paver pass.

When placing a lift with a specified thickness less than 1 1/2 inches the Contractor shall provide a minimum rolling pattern as determined by the development of a compaction curve. This shall include wedge courses when the wedge or any portion of the wedge thickness is less than 1 1/2 inches within a single paver pass. The procedure to be used shall be documented in the Contractor’s QCP for placement and demonstrated on the first day of placement.

The use of the vibratory system on concrete structures is prohibited. When approved by the Engineer, the Contractor may operate a roller using an oscillatory system at the lowest frequency setting.

If the Engineer determines that the use of compaction equipment in the dynamic mode may damage highway components, utilities or adjacent property, the Contractor shall provide alternate compaction equipment.

Rollers operating in the dynamic mode shall be shut off when changing directions.

These allowances will not relieve the Contractor from meeting pavement compaction requirements.

Surface Requirements:

Each lift of the surface course shall not vary more than 1/4 inch from a Contractor-supplied 10 foot straightedge. For all other lifts of asphalt mixture, the tolerance shall be 3/8 inch. Such tolerance will apply to all paved areas.

Any surface that exceeds these tolerances shall be corrected by the Contractor at its own expense.

7. Longitudinal Joint Construction Methods: The Contractor shall use Method I - Notched Wedge Joint (see Figure 4.06-1) when constructing longitudinal joints where lift thicknesses are 1 1/2 inches to 3 inches. S1 mixtures shall be excluded from using Method I.

Method II - Butt Joint (see Figure 4.06-2) shall be used for lifts less than 1 1/2 inches or greater than 3 inches. Each longitudinal joint shall maintain a consistent offset from the centerline of the roadway along its entire length. The difference in elevation between the two faces of any completed longitudinal joint shall not exceed 1/4 inch at any location.

Method I - Notched Wedge Joint:

A notched wedge joint shall be constructed as shown in Figure 4.06-1 using a device that is attached to the paver screed and is capable of independently adjusting the top and bottom vertical notches. The device shall have an integrated vibratory system. The top vertical notch must be located at the centerline or lane line or as directed by the Engineer in the final lift. The requirement for paving full width “curb to curb” as described in Method II may be waived if addressed in the QC plan and approved by the Engineer.

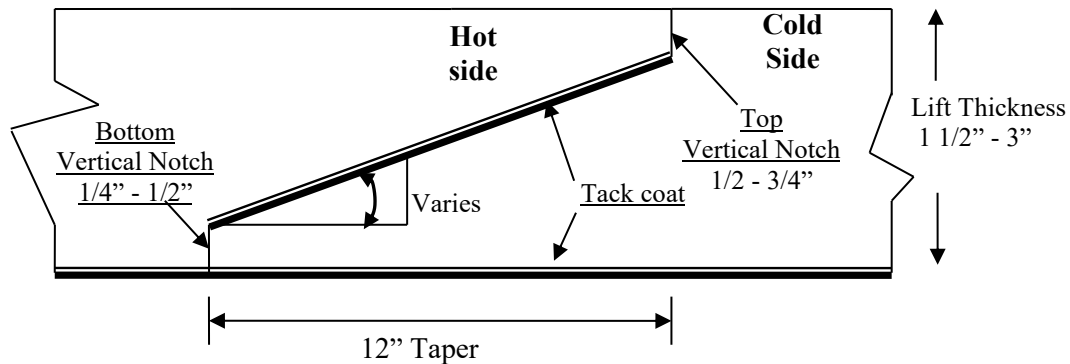
The taper portion of the wedge joint shall be evenly compacted using equipment other than the paver or notch wedge joint device. The compaction device shall be the same width as the taper and not reduce the angle of the wedge or ravel the top notch of the joint during compaction.

When placed on paved surfaces, the area below the sloped section of the joint shall be treated with tack coat. The top surface of the sloped section of the joint shall be treated with tack coat prior to placing the completing pass.

The taper portion of the wedge joint shall not be exposed to traffic for more than 5 calendar days.

Figure 4.06-1: Method I, Notched Wedge Joint

(Not to Scale)



Any exposed wedge joint must be located to allow for the free draining of water from the road surface.

The Engineer reserves the right to define the paving limits when using a wedge joint that will be exposed to traffic.

If Method I cannot be used on those lifts which are 1 1/2 inches to 3 inches, Method III may be substituted according to the requirements below for “Method III - Butt Joint with Hot Poured Rubberized Asphalt Treatment.”

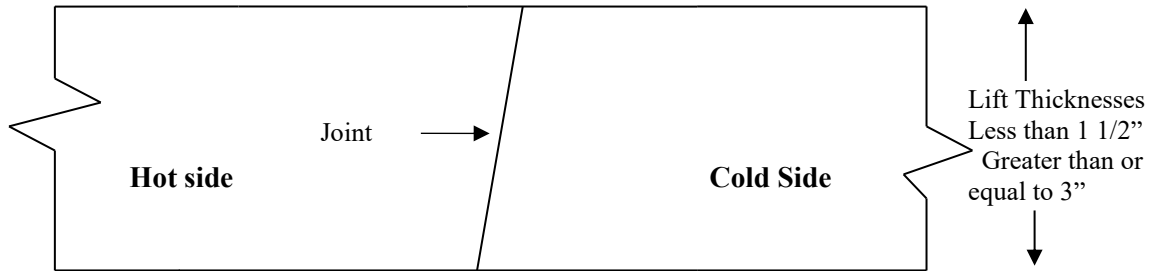
Method II - Butt Joint:

When adjoining passes are placed, the Contractor shall use the end gate to create a near vertical edge (refer to Figure 4.06-2). The completing pass (hot side) shall have sufficient mixture so that the compacted thickness is not less than the previous pass (cold side). During placement of multiple lifts, the longitudinal joint shall be constructed in such a manner that it is located at least 6 inches from the joint in the lift immediately below. The joint in the final lift shall be at the centerline or at lane lines or as directed by the Engineer. The end gate on the paver shall be set so there is an overlap onto the cold side of the joint.

When using this method, the Contractor must complete full width “curb to curb” paving when the vertical

edge exposed to traffic would be greater than one inch, unless otherwise allowed by the Engineer.

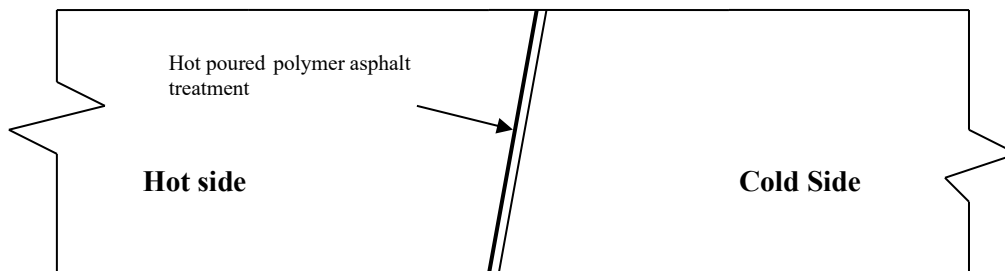
Figure 4.06-2: Method II, Butt Joint
(Not to Scale)



Method III - Butt Joint with Hot Poured Rubberized Asphalt Treatment:

If Method I cannot be used due to physical constraints in certain limited locations, the Contractor may submit a request in writing for approval by the Engineer to use Method III as a substitution in those locations. There shall be no additional measurement or payment made when Method III is substituted for Method I. When required by the Contract or approved by the Engineer, Method III (see Figure 4.06-3) shall be used.

Figure 4.06-3: Method III, Butt Joint with Hot Poured Rubberized Asphalt Treatment
(Not to Scale)



All of the requirements of Method II must be met with Method III. In addition, the longitudinal vertical edge must be treated with a joint seal material meeting the requirements of ASTM D6690, Type 2 with polymer. The joint sealant shall be placed on the face of the “cold side” of the butt joint as shown above prior to placing the “hot side” of the butt joint. The joint seal material shall be applied in accordance with the manufacturer’s recommendation so as to provide a uniform coverage and avoid excess bleeding onto the newly placed pavement.

8. Contractor Quality Control (QC) Requirements: The Contractor shall be responsible for maintaining adequate quality control procedures throughout the production and placement operations. Therefore, the Contractor must ensure that the materials, mixture, and work provided by Subcontractors, Suppliers, and Producers also meet Contract specification requirements.

This effort must be documented in Quality Control Plans (QCP) and must address the actions, inspection, or sampling and testing necessary to keep the production and placement operations in control, to determine when an operation has gone out of control, and to respond to correct the situation in a timely fashion.

There are two QCP submittals required for the production and placement of asphalt mixture, one for Plant Production and the other for Mix Placement. The QCP requirements for Plant Production can be found in Section M.04.03-1.

The QCP for production shall be specific to the production facility.

There are 2 required components to the QCP for Placement: a General QCP that is applicable to all projects, and a Project Summary Pre-Pave Form that supplements the standard QCP and details Project-specific information. The General QCP shall include a cool weather paving section that addresses project operations expected to occur when ambient temperature or pavement temperature is less than 50°F. This shall include a list of potential adjustments to be considered and made when paving below 50°F.

The General QCP for Placement shall be valid for two (2) years following acceptance by the Department. The Contractor shall submit updated equipment lists and personnel, if necessary, to the Department in January of year two (2) which will be appended to the accepted General QCP for HMA Placement.

The Project Summary Pre-Pave Form shall be submitted at least 7 days prior to the scheduling of any pre-pave meeting or pavement event.

Production or placement shall not occur until all QCP components have been accepted by the Engineer.

Each QCP shall include the name and qualifications of a Quality Control Manager (QCM). The QCM shall be responsible for the administration of the QCP, and any modifications that may become necessary.

The QCM shall have the ability to direct all Contractor personnel on the Project during paving operations.

The QCPs shall also include the name and qualifications of any outside testing laboratory performing any QC functions on behalf of the Contractor. The QC Technician performing in-place density testing shall be NETTCP certified as a paving inspector.

Acceptance of any QCP does not relieve the Contractor of its responsibility to comply with the Project specifications. The Contractor may propose modifications to their QCP as work progresses and must document the changes in writing prior to resuming operations. These modifications include changes in quality control procedures, equipment, or personnel.

QCP for Production: Refer to M.04.03-1.

QCP for Placement: The General QCP for HMA Placement and Project Summary Pre-Pave Form shall include the information listed on the [Pavement Advisory Team](#) website.

The Contractor shall perform all quality control sampling and testing, provide inspection, and exercise management control to ensure that all mixture placement meets the requirements as outlined in its QCP during all phases of the work. The Contractor shall document these activities for each day of placement.

The Contractor shall submit complete field density testing and inspection records to the Engineer within 48 hours in a format acceptable to the Engineer.

The Contractor may obtain one mat core and one joint core per day for process control, provided this process is detailed in the QCP. The results of these process control cores shall not be used to dispute the Department's determinations from the acceptance cores. The Contractor shall submit the location of each process control core to the Engineer for acceptance prior to taking the core. The core holes shall be filled to the same requirements described in 4.06.03-10.

9. Temperature and Seasonal Requirements: The following requirements shall apply to all asphalt concrete pavements (including temporary pavements) unless otherwise authorized or directed by the Engineer:

1. Mixtures shall not be placed on subbase material that is frozen.
2. Mixture or tack coat placement is limited to the following temperature ranges:
 - a. Mixtures placed at lift thickness of 2 1/2 inches or more shall not be placed when the air or pavement surface temperature is 35°F or less.
 - b. Mixtures placed at lift thicknesses between 1 1/2 and 2 1/2 inches shall not be placed when the air or pavement surface temperature is 40°F or less.
 - c. Mixtures placed at lift thickness of less than 1 1/2 inches shall not be placed when the air or pavement surface temperature is 45°F or less.
 - d. Should paving operations be scheduled during temperatures of 50°F or less, all asphalt mixes delivered shall meet the minimum delivered mix temperatures shown in Table M.04.03-4. When paving below 50°F the Contractor shall follow the cool weather paving procedures outlined in their accepted General QCP for HMA Placement and also as reflected in their accepted Project Summary Pre-pave Form.

10. Field Density:

1. The Contractor shall obtain cores in accordance with AASHTO R 67 for the determination of mat and longitudinal joint density of asphalt pavements. The Contractor's representative obtaining samples must be a certified NETTCP HMA Paving Inspector, NETTCP HMA Plant Technician, or must have successfully completed the HMA Field Sampling Course administered by The Connecticut Advanced Pavement Laboratory (CAP Lab). Within three (3) calendar days of placement, mat and joint cores shall be extracted on each lift with a specified thickness of 1 1/2 inches or more. Joint cores shall not be extracted on HMA S1 lifts.

The Contractor shall extract cores from random locations determined by the Engineer in

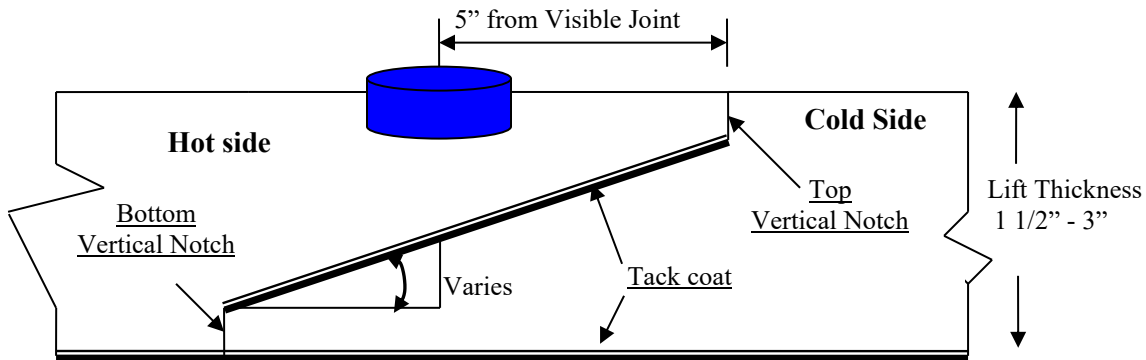
accordance with ASTM D3665. Six (6) inch diameter cores shall be extracted for all mixes. The number and location of the cores is specified in 4.06.03-10-2 Density Lots. The Contractor shall coordinate with the Engineer to witness the extraction, labeling of cores, and filling of the core holes. The size, shape, and weight of the cores shall not be modified, altered, or manipulated by the Contractor or its representative in any way after extraction from the pavement.

After the lift has been compacted and cooled, the Contractor shall cut cores to a depth equal to or greater than the lift thickness and shall remove them without damaging the lift(s) to be tested. The Contractor and Inspector witnessing the extraction shall check each core for damage or obvious defects while being obtained. Any core determined to be damaged or defective at the time of extraction will be replaced immediately with a new core from a location within 2 feet measured in a longitudinal direction. The size, shape, and weight of the cores shall not be modified, altered, or manipulated by the Contractor or its representative in any way after extraction from the pavement.

A mat core shall not be located any closer than 1 foot from the edge of a paver pass. If a random number locates a core less than 1 foot from any edge, the location will be adjusted by the Engineer so that the outer edge of the core is 1 foot from the edge of the paver pass.

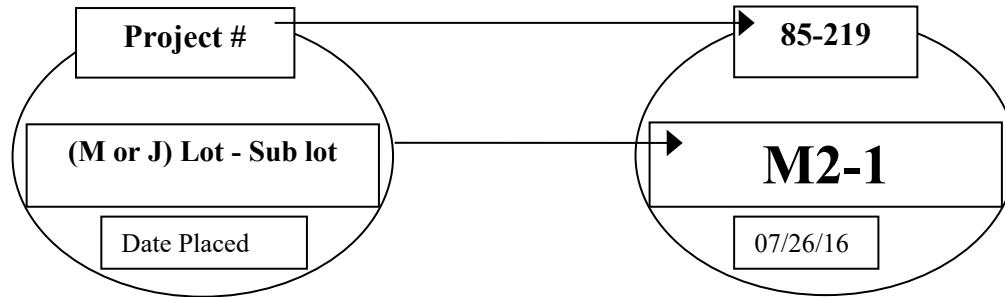
Method I, Notched Wedge Joint cores shall be taken so that the center of the core is 5 inches from the visible joint on the hot mat side (Figure 4.06-4). When Method II or Method III Butt Joint is used, cores shall be taken from the hot side so the edge of the core is within 1 inch of the longitudinal joint.

Figure 4.06-4: Notched Wedge Joint Cores (Not to Scale)



The cores shall be labeled by the Contractor with the Project number, date placed, lot number, and sub-lot number. The core's label shall include "M" for a mat core and "J" for a joint core. For example, a mat core from the first lot and the first sub-lot shall be labeled with "M1-1." A mat core from the second lot and first sub-lot shall be labeled "M2-1" (see Figure 4.06-5). The Engineer will fill out a MAT-109 form to accompany the cores. The Contractor shall deliver the cores and MAT-109 to the Department's Central Lab. The Contractor shall use a container approved by the Engineer. The container shall have a lid capable of being locked shut and tamper proof. The Contractor shall use foam, bubble wrap, or another suitable material to prevent the cores from being damaged during handling and transportation. Once the cores and MAT-109 are in the container the Engineer will secure the lid using security seals at the removable hinge(s) and at the lid opening(s). The security seals' identification number must be documented on the MAT-109. All sealed containers shall be delivered to the Department's Central Lab within two working days from time of extraction. Central Lab personnel will break the security seal and take possession of the cores.

Figure 4.06-5: Labeling of Cores



Each core hole shall be filled within 4 hours upon core extraction. Prior to being filled, the hole shall be prepared by removing any free water and applying tack coat using a brush or other means to uniformly cover the cut surface. The core hole shall be filled using an asphalt mixture at a minimum temperature of 240°F containing the same or smaller nominal maximum aggregate size as the paved surface and compacted with a hand compactor or other mechanical means to the maximum compaction possible. The asphalt mixture shall be compacted to 1/8 inch above the finished pavement.

2. Density Lots

a. Simple Average:

A standard simple average density lot evaluated using the Simple Average method is the quantity of material placed in a single lift within a defined area excluding any bridge decks less than 3,500 tons. For total individual mix quantities estimated on the Project below 2,000 tons, the lot will include all the material between the curb lines. For total individual mix quantities estimated on the Project between 2,000 and 3,500 tons, the lift will be evaluated as two lots each consisting of half of the total tonnage of material placed between the curb lines.

The number of cores per lot shall be determined in accordance with Table 4.06-4. For combo lots, if a randomly located mat or joint core location is on a bridge deck, the core is to be obtained on the bridge deck in addition to the core(s) required on the bridge deck.

A combo simple average density lot is the quantity of material placed within a defined area including bridge decks that are less than or equal to 500 feet long.

A bridge simple average density lot is the quantity of material placed on a bridge deck longer than 500 feet.

Bridge density lots will always be analyzed as using the simple average lot methodology. The number of cores per lot shall be determined in accordance with Table 4.06-5. Multiple bridge decks can be combined into one lot if the paving and underlying conditions are comparable. If multiple bridge decks are combined into a single bridge lot, at least one mat and joint core shall be obtained on each bridge.

The longitudinal locations of mat cores within a standard, combo, or bridge lot containing multiple paving passes will be determined using the combined length of the paving passes within the lot.

TABLE 4.06-4: Number of Cores per Lot (Simple Average)

Lot Type	No. of Mat Cores		No. of Joint Cores	
Standard Lot < 500 Tons	3		3	
Standard Lot ≥ 500 Tons	4		4	
Combo Lot < 500 Tons	2 plus	1 per bridge (≤ 300')	2 plus	1 per bridge (≤ 300')
Combo Lot ≥ 500 Tons ⁽¹⁾	4 plus	2 per bridge (301' – 500')	4 plus	2 per bridge (301' – 500')

TABLE 4.06-5: Number of Cores per Bridge Density Lot (Simple Average)

Length of Bridge(s) (Feet)	Minimum No. of Mat Cores	Minimum No. of Joint Cores
< 500	2	2
501 – 1,500	3	3
1,501 – 2,500	4	4
2,501 and greater	5	5

b. *PWL Density Lots:*

When total individual mix quantity estimated on the Project is 3,500 tons or more, the lot shall be evaluated by PWL method.

A PWL mat density lot is 3,500 tons of material placed within 30 calendar days excluding any bridges. One randomly located mat core will be obtained per every 500 tons subplot. Should the final subplot be less than 500 tons, a randomly located mat core is still required.

A PWL joint density lot consists of seven sublots defined by the linear feet of longitudinal joint excluding any joints on bridge decks. One randomly located joint core shall be obtained per every 1,500 lineal feet when a lot includes one longitudinal joint. One randomly located joint core shall be obtained per every 2,000 linear feet of joint when a lot includes two or more longitudinal joints.

A partial PWL mat or joint lot is a lot with four to six samples due to completion of the course, or spanning past 30 calendar days.

11. Acceptance Sampling and Testing: Sampling shall be performed in accordance with ASTM D3665 or a statistically-based procedure of stratified random sampling approved by the Engineer.

Plant Material Acceptance: The Contractor shall provide the required sampling and testing during all phases of the work in accordance with M.04. The Department will verify the Contractor's acceptance test results. Should any test results exceed the specified tolerances in the Department's current QA Program for Materials, the Contractor's test results for a subject lot or sub lot may be replaced with the Department's results for the purpose of calculating adjustments. The verification procedure is included in the Department's current QA Program for Materials.

Density Acceptance: The Engineer will perform all acceptance testing in accordance with AASHTO T 331. Test specimens will be prepared from the cores by the Engineer. The density of each specimen will be determined using the daily production's average maximum theoretical specific gravity (Gmm) established during the testing of the parent material at the Plant. When there was no testing of the parent material or any Gmm exceeds the specified tolerances in the Department's current QA Program for Materials, the Engineer will determine the maximum theoretical density value to be used for density calculations in accordance with the Department's Quality Assurance Manual for Materials.

12. Density Dispute Resolution Process: The Contractor and Engineer will work in partnership to avoid potential conflicts and to resolve any differences that may arise during quality control or acceptance testing for density. Both parties will review their sampling and testing procedures and results and share their findings. If the Contractor disputes the Engineer's test results, the Contractor must submit in writing a request to initiate the Dispute Resolution Process within five calendar days of the notification of the test results. No request for dispute resolution will be allowed unless the Contractor provides quality control results from samples taken prior to and after finish rolling, and within the timeframe described in 4.06.03-8 supporting its position. No request for dispute resolution will be allowed for a density lot in which any core was not taken in accordance with 4.06.03-10. Should the dispute not be resolved through evaluation of existing testing data or procedures, the Engineer may authorize the Contractor to re-core the disputed lot. The core samples must be extracted no later than 5 calendar days from the date of the Engineer's authorization. All such core samples shall be extracted and the core hole filled using the procedure outlined in 4.06.03-10. The location of each core in the lot shall be located three (3) feet from the original acceptance core located along a line parallel to the base line that results in the same type (mat, joint, or structure) of core.

The bulk specific gravity (Gsb) result of each dispute core will be compared to the original core to determine how the dispute results will be used. If the Gsb results are outside of AASHTO T 331 multilaboratory precision range of two results, the dispute result will be averaged with the original result to calculate the adjustment. When the two Gsb results are equal to or less than the acceptable range of two

results, the dispute result will not be used in the adjustment calculation.

1. Simple Average Lots: The Contractor may only dispute any simple average lot that is adjusted at or below 95% payment.
2. PWL Lots: The Contractor may dispute any PWL lot when the PWL falls below 50% calculated in accordance with 4.06.04-2b.

13. Corrective Work Procedure:

If pavement placed by the Contractor does not meet the specifications, and the Engineer requires its replacement or correction, the Contractor shall:

- (a) Propose a corrective procedure to the Engineer for review and approval prior to any corrective work commencing. The proposal shall include:
 - Limits of pavement to be replaced or corrected, indicating stationing or other landmarks that are readily distinguishable.
 - Proposed work schedule.
 - Construction method and sequence of operations.
 - Methods of maintenance and protection of traffic.
 - Material sources.
 - Names and telephone numbers of supervising personnel.
- (b) Any corrective courses placed as the final wearing surface shall match the specified lift thickness after completion.

14. Protection of the Work: The Contractor shall protect all sections of the newly finished pavement from damage that may occur as a result of the Contractor’s operations for the duration of the Project.

15. Cut Bituminous Concrete Pavement: Work under this item shall consist of making a straight-line cut in the asphalt pavement to the lines delineated on the plans or as directed by the Engineer. The cut shall provide a straight, clean, vertical face with no cracking, tearing or breakage along the cut edge.

4.06.04—Method of Measurement:

1. HMA S* or PMA S*: The mixture will be measured for payment as the amount of material in tons placed as determined by the net weight on the delivered tickets and adjusted by area, thickness and weight as follows:

Quantity Adjustments: Adjustments may be applied to the placed quantities that will be measured for payment using the following formulas:

Yield Factor for Adjustment Calculation = 0.0575 tons/SY/inch

Actual Area (SY) = [(Measured Length (ft)) × (Avg. of width measurements (ft))] ÷ 9 s.f./SY

Actual Thickness (t) = Total tons delivered / [Actual Area (SY) × 0.0575 tons/SY/inch]

- (a) Area: If the average width exceeds the allowable tolerance, an adjustment will be made using the following formula. The tolerance for width is equal to the specified thickness (inch) of the lift being placed.

Quantity Adjusted for Area (TA) = [(L × W_{adj})/9] × (t) × 0.0575 Tons/SY/inch = (-) tons

Where: L = Length (ft)

(t) = Actual thickness (inches)

W_{adj} = (Designed width (ft) + tolerance /12) - Measured Width

- (b) Thickness: If the actual average thickness is less than the allowable tolerance, the Contractor shall submit a repair procedure to the Engineer for approval. If the actual thickness exceeds the allowable tolerance, an adjustment will be made using the following formula:

Quantity Adjusted for Thickness (TT) = A × t_{adj} × 0.0575 = (-) tons

Where: A = Area = {[L × (Design width + tolerance (lift thickness)/12)] / 9}

t_{adj} = Adjusted thickness = [(Dt + tolerance) - Actual thickness]

Dt = Designed thickness (inches)

- (c) Weight: If the quantity representing the mixture delivered to the Project is in excess of the allowable gross vehicle weight (GVW) for each vehicle, an adjustment will be made using the following formula:

Quantity Adjusted for Weight (Tw) = GVW – DGW = (-) tons

Where: DGW = Delivered gross weight as shown on the delivery ticket or measured on a certified scale

2. Bituminous Concrete Adjustment Cost:

- (a) Production Lot Adjustment: An adjustment may be applied to each production lot as follows:
- i. Non-PWL Production Lot in accordance with article M.04.03-2c:
 - The adjustment values in Tables 4.06-6 and 4.06-7 will be calculated for each sub lot based on the Air Void (AV) and Asphalt Binder Content (PB) test results for that sub lot. The total adjustment for each day’s production (lot) will be computed as follows:
Tons Adjusted for Superpave Design (T_{SD}) = [(AdjAV_t + AdjPB_t) / 100] × Tons
 Where: AdjAV_t: Percent adjustment for air voids
 AdjPB_t: Percent adjustment for asphalt binder
 Tons: Weight of material (tons) in the lot adjusted by 4.06.04-1
 - Percent Adjustment for Air Voids = AdjAV_t = [AdjAV₁ + AdjAV₂ + AdjAV_i + ... + AdjAV_n] / n
 Where: AdjAV_t = Total percent air void adjustment value for the lot
 AdjAV_i = Adjustment value from Table 4.06-6 resulting from each sub lot or the average of the adjustment values resulting from multiple tests within a sub lot, as approved by the Engineer.
 n = number of sub lots based on Table M.04.03-2

TABLE 4.06-6: Adjustment Values for Air Voids

Adjustment Value (AdjAV _i) (%)	S0.25, S0.375, S0.5, S1 Air Voids (AV)
+2.5	3.8 - 4.2
+3.125*(AV-3)	3.0 - 3.7
-3.125*(AV-5)	4.3 - 5.0
20*(AV-3)	2.3 - 2.9
-20*(AV-5)	5.1 - 5.7
-20.0	≤ 2.2 or ≥ 5.8

- Percent Adjustment for Asphalt Binder = AdjPB_t = [(AdjPB₁ + AdjPB₂ + AdjPB_i + ... + AdjPB_n) / n]
 Where: AdjPB_t = Total percent liquid binder adjustment value for the lot
 AdjPB_i = Adjustment value from Table 4.06-7 resulting from each sub lot
 n = number of binder tests in a production lot

TABLE 4.06-7: Adjustment Values for Binder Content

Adjustment Value (AdjAV _i) (%)	S0.25, S0.375, S0.5, S1 Pb
0.0	JMF Pb ± 0.3
- 10.0	≤ JMF Pb - 0.4 or ≥ JMF Pb + 0.4

- ii. PWL Production Lot (3,500 tons or more):
 - For each lot, the adjustment values will be calculated using PWL methodology based on AV, VMA, and PB test results. The results will be considered as being normally distributed and all applicable equations in AASHTO R 9 and AASHTO R 42 Appendix X4 will apply.
 - Only one test result will be considered for each sub lot. The specification limits are listed in M.04.
 - For AV, PB, and voids in mineral aggregate (VMA), the individual material quantity characteristic adjustment (Adj) will be calculated as follows:
 For PWL between 40 and 90%: Adj(AV_t or PB_t or VMA_t) = (55 + 0.5 PWL) - 100
 For PWL at and above 90%: Adj(AV_t or PB_t or VMA_t) = (77.5 + 0.25 PWL) - 100
 Where: AdjAV_t = Total percent AV adjustment value for the lot
 AdjPB_t = Total percent PB adjustment value for the lot
 AdjVMA_t = Total percent VMA adjustment value for the lot
 - A lot with PWL less than 40% in any of the 3 individual material quality characteristics shall be removed and replaced at the Contractor’s expense..
 - The total adjustment for each production lot will be computed using the following formula:
Tons Adjusted for Superpave Design (T_{SD}) = [(0.5AdjAV_t + 0.25AdjPB_t + 0.25 AdjVMA_t) / 100] × Tons

Where : Tons = Weight of material (tons) in the lot adjusted by 4.06.04-1

iii. Partial Lots:

Lots with less than 4 sub lots will be combined with the prior lot. If there is no prior lot with equivalent material or if the last test result of the prior lot is over 30 calendar days old, the adjustment will be calculated as indicated in 4.06.04-2(a)i.

Lots with 4 or more sub lots will be calculated as indicated in 4.06.04-2(a)ii.

Production Lot Adjustment: $T_{SD} \times \text{Unit Price} = \text{Est. (Pi)}$

Where: Unit Price = Contract unit price per ton per type of mixture

Est. (Pi) = Pay Unit in dollars representing incentive or disincentive per lot

(b) **Density Lot Adjustment:** An adjustment may be applied to each density lot as follows:

i. Simple Average Density Lot (less than 3,500 tons) and Bridge Lots:

The final lot quantity shall be the difference between the total payable tons for the Project and the sum of the previous lots. If either the Mat or Joint adjustment value is “remove and replace,” the density lot shall be removed and replaced (curb to curb).

No positive adjustment will be applied to a density lot in which any core was not taken within the required 3 calendar days of placement.

Tons Adjusted for Density (T_D) = $[\{(PA_M \times 0.50) + (PA_J \times 0.50)\} / 100] \times \text{Tons}$

Where: T_D = Total tons adjusted for density for each lot

PA_M = Mat density percent adjustment from Table 4.06-8

PA_J = Joint density percent adjustment from Table 4.06-9

Tons: Weight of material (tons) in the lot adjusted by 4.06.04-1

TABLE 4.06-8: Adjustment Values for Pavement Mat density

Average Core Result Percent Mat Density	Percent Adjustment (Bridge and Non-Bridge) ⁽¹⁾⁽²⁾
98.6 - 100	-1.667*(ACRPD-98.5)
97.1 – 98.5	-2.0*(ACRPD-98.5)
95.0-97.0	+3.0
93.6 – 94.9	+2.0*(ACRPD-93.5)
93.0 – 93.5	0
92.0-92.9	-0.5*(93.0-ACRPD)
90.0 – 91.9	-5*(92-ACRPD)
88.0 – 89.9	-10*(91-ACRPD)
87.9 or less	Remove and replace (curb to curb)

⁽¹⁾ ACRPD = Average Core Result Percent Density.

⁽²⁾ All Percent Adjustments to be rounded to the second decimal place; for example round 1.667 to 1.67

TABLE 4.06-9: Adjustment Values for Pavement Joint Density

Average Core Result Percent Joint Density	Percent Adjustment (Bridge and Non-Bridge) ⁽¹⁾⁽²⁾
98.6 - 100	-1.667*(ACRPD-98.5)
97.1 – 98.5	-2.0*(ACRPD-98.5)
94.5 – 97.0	+3.0
92.6 – 94.4	+1.5*(ACRPD-92.5)
92.0– 92.5	0
91.0 – 91.9	-0.5(92.0-ACRPD)
89.0 – 90.9	-7.5*(91-ACRPD)
88.0 – 88.9	-15*(90-ACRPD)

87.9 or less	Remove and Replace (curb to curb)
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(1) ACRPD = Average Core Result Percent Density

(2) All Percent Adjustments to be rounded to the second decimal place; for example round 1.667 to 1.67

Additionally, any simple average subplot with a density result below 88% is subject to remove and replace.

ii. PWL Density Lot (3,500 tons or more):

For each lot, the adjustment values will be calculated using PWL methodology based on mat and joint density test results. Only one result will be included for each subplot. The results will be considered as being normally distributed and all applicable equations in AASHTO R 9 and AASHTO R 42 Appendix X4 will apply.

The specification limits for the PWL determination are as follows:

Mat Density: 92.0 – 98%

Joint Density: 90.5 – 98%

For mat and joint density, the individual percent adjustment (PA) will be calculated as follows:

For PWL between 50 and 90%: $PA_{(M \text{ or } J)} = 0.25 * PWL - 22.50$

For PWL at and above 90%: $PA_{(M \text{ or } J)} = 0.15 * PWL - 13.5$

Where: PA_M = Total percent mat density adjustment value for the PWL mat density lot

PA_J = Total percent joint density adjustment value for the PWL joint density lot

No positive adjustment will be applied to a density lot in which any core was not taken within the required 3 calendar days of placement.

A lot with PWL less than 50%, the lot shall, after final evaluation and dispute resolution if approved, be removed and replaced at the Contractor's expense. The total adjustment for each PWL mat density lot will be computed as follows:

Tons Adjusted for Mat Density (T_{MD}) = $(PA_M / 100) \times \text{Tons}$

Where: Tons = Weight of material (tons) in the lot adjusted by 4.06.04-1.

The total adjustment for each PWL joint density lot will be computed as follows:

Tons Adjusted for Joint Density (T_{JD}) = $(PA_J / 100) \times J_Tons$

(Tons Adjusted for Joint Density will be calculated at the end of each project or project phase.)

Where: J_Tons = Tons in project or phase adjusted by 4.06.4 – $1 \times \frac{\text{Lot joint length}}{\text{Joint length in project or phase}}$

All bridge density lot adjustments will be evaluated in accordance with 4.06.04-2(b)i.

Additionally, any bridge deck subplot with a density result below 88% is subject to remove and replace.

iii. Partial Lots:

Lots with less than 4 sub lots will be combined with the prior lot. If there is no prior lot with equivalent material and placement conditions or if the last test result of the prior lot is over 30 calendar days old, the mat and joint individual adjustments will be calculated in accordance to Tables 4.06-8 and 4.06-9. T_{MD} and T_{JD} will be calculated as indicated in 4.06.04-2(b)i.

Lots with 4 or more sub lots will be calculated as indicated in 4.06.04-2(b)ii.

Density Lot Adjustment (Simple Average Lots): $T_D \times \text{Unit Price} = \text{Est. (Di)}$

Density Lot Adjustment (PWL Lots): $(T_{MD} \text{ or } T_{JD}) \times \text{Unit Price} = \text{Est. (DMi or DJi)}$

Where: Unit Price = Contract unit price per ton per type of mixture

Est. (Di) = Pay Unit in dollars representing incentive or disincentive per simple average density lot

Est. (DMi) = Pay Unit in dollars representing incentive or disincentive per PWL mat lot

Est. (DJi) = Pay Unit in dollars representing incentive or disincentive per PWL joint lot

Additionally, any PWL subplot with a density result below 88% is subject to remove and replace.

3. Transitions for Roadway Surface: The installation of permanent transitions will be measured under the appropriate item used in the formation of the transition.

The quantity of material used for the installation of temporary transitions will be measured for payment under the appropriate item used in the formation of the transition. The installation and removal of a bond breaker and the removal and disposal of any temporary transition formed by milling or with asphalt pavement is not measured for payment.

4. Cut Bituminous Concrete Pavement: The quantity of asphalt pavement cut will be measured in accordance with 2.02.04.

5. Non-Tracking Asphalt Tack Coat and Material for Tack Coat: The quantity of tack coat will be

measured for payment by the number of gallons furnished and applied on the Project and approved by the Engineer. No tack coat material shall be included that is placed in excess of the tolerance described in 4.06.03.

- a. Container Method – Material furnished in a container will be measured to the nearest 1/2 gallon. The volume will be determined by either measuring the volume in the original container by a method approved by the Engineer or using a separate graduated container capable of measuring the volume to the nearest 1/2 gallon. The container in which the material is furnished must include the description of material, including lot number or batch number and manufacturer or product source.
- b. Vehicle Method
 - i. Measured by Weight: The number of gallons furnished will be determined by weighing the material on calibrated scales furnished by the Contractor. To convert weight to gallons, one of the following formulas will be used:
 - 1. Tack Coat (gallons at 60°F) = Measured Weight (pounds) / Weight per gallon at 60°F
 - 2. Tack Coat (gallons at 60°F) = 0.996 × Measured Weight (pounds) / Weight per gallon at 77°F
 - ii. Measured by automated metering system on the delivery vehicle:
 - Tack Coat (gallons at 60°F) = 0.976 × Measured Volume (gallons)

6. Material Transfer Vehicle (MTV): The furnishing and use of a MTV will be measured separately for payment based on the actual number of surface course tons delivered to a paver using the MTV.

4.06.05—Basis of Payment:

1. HMA S* or PMA S*: The furnishing and placing of Asphalt mix will be paid for at the Contract unit price per ton for " HMA S*" or " PMA S*."

All costs associated with providing illumination of the work area are included in the general cost of the work.

All costs associated with cleaning the surface to be paved, including mechanical sweeping, are included in the general cost of the work. All costs associated with constructing longitudinal joints are included in the general cost of the work

All costs associated with obtaining cores for acceptance testing and dispute resolution are included in the general cost of the work.

2. Bituminous Concrete Adjustment Costs: This adjustment will be calculated using the formulas shown below if all of the measured adjustments in 4.06.04-2 are not equal to zero. A positive or negative adjustment will be applied to monies due the Contractor.

Production Lot: $\Sigma \text{ Est (Pi)} = \text{Est. (P)}$

Density Lot (Simple Average Lots): $\Sigma \text{ Est (Di)} = \text{Est. (D)}$

Density Lot (PWL): $\Sigma \text{ Est (DMi)} + \Sigma \text{ (DJi)} = \text{Est. (D)}$

Bituminous Concrete Adjustment Cost= Est. (P) + Est. (D)

Where: Est. ()= Pay Unit in dollars representing incentive or disincentive in each production or density lot calculated in 4.06.04-2

The Bituminous Concrete Adjustment Cost item, if included in the bid proposal or estimate, 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 estimated cost will be used for the Contract.

3. Transitions for Roadway Surface: The installation of permanent transitions will be paid under the appropriate item used in the formation of the transition. The quantity of material used for the installation of temporary transitions will be paid under the appropriate pay item used in the formation of the transition. The installation and removal of a bond breaker, and the removal and disposal of any temporary transition formed by milling or with asphalt pavement is included in the general cost of the work.

4. The cutting of asphalt pavement will be paid in accordance with 2.02.05.

5. Non-tracking asphalt tack coat will be paid for at the Contract unit price per gallon for "Non-Tracking Asphalt Tack Coat."

6. Material for tack coat will be paid for at the Contract unit price per gallon for "Material for Tack Coat."

7. The Material Transfer Vehicle (MTV) will be paid at the Contract unit price per ton for "Material Transfer Vehicle."

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Pay Item	Pay Unit
HMA S*	ton
PMA S*	ton
Bituminous Concrete Adjustment Cost	est.
Non-Tracking Asphalt Tack Coat	gal.
Material for Tack Coat	gal.
Material Transfer Vehicle	ton

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.

<u>Field Number</u>	<u>Type</u>	<u>size</u>	<u>Description</u>
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.

SECTION M.04 - BITUMINOUS CONCRETE MATERIALS

Replace the entire Section with the following:

SECTION M.04 BITUMINOUS CONCRETE MATERIALS

M.04.01—Asphalt Materials and Facilities

M.04.02—Mix Design and Job Mix Formula (JMF)

M.04.03—Production Requirements

M.04.01— Asphalt Materials and Facilities: Each source of asphalt binder, emulsion, aggregate, and production facility used to manufacture asphalt mixture, and laboratory testing the mixture must be qualified on an annual basis by the Engineer.

The basis of qualification for asphalt binder sources is participation in AASHTO Product Evaluation and Audit Solutions (formerly NTPEP), Asphalt Binder Suppliers (ABS) program and review of the sources' Quality System Manual and on-site audit report from AASHTO Product Evaluation and Audit Solutions by the Department. The supplier shall save a split sample of binder supplied to Department projects which shall be provided to the Department upon request.

The basis of qualification for emulsion sources is the submittal of a "Quality Control Plan for Emulsified Asphalt" (Tack Coat) formatted in accordance with AASHTO R 77 to the Engineer for review. The supplier shall save a split sample of binder supplied to Department projects which shall be provided to the Department upon request.

The basis of source qualification for aggregates is indicated in M.01

The basis of qualification for production facilities is indicated in M.04.01-10.

The basis of testing laboratory qualification for mixture testing is all testing equipment, supplies, and safety equipment shall be capable of performing all the applicable tests in their entirety that are referenced in AASHTO R 35 and AASHTO M 323 and requirements indicated in M.04.01-11

AASHTO/ASTM Standards noted with an (M) have been modified and are detailed in Table M.04.03-5.

Aggregates from multiple sources of supply must not be blended or stored in the same stockpile.

1. Coarse Aggregate: All coarse aggregate shall meet the requirements listed in M.01 and be qualified annually.

2. Fine Aggregate: All fine aggregate shall meet the requirements in M.01 and be qualified annually.

3. Mineral Filler: Mineral filler shall meet the requirements of AASHTO M 17.

4. Performance Graded (PG) Asphalt Binder:

(a) General:

- i. PG asphalt binder shall be uniformly mixed and blended and be free of contaminants such as fuel oils and other solvents. Binder shall be properly heated and stored to prevent damage or separation.
- ii. The binder shall meet the requirements of AASHTO M 332 and shall be graded or verified in accordance with AASHTO R 29. The binder supplier shall submit a Certified Test Report and bill of lading representing each delivery in accordance with AASHTO R 26(M) to the asphalt producer and the Department. The Certified Test Report must also indicate the binder specific gravity at 77°F; rotational viscosity at 275°F and 329°F; and the mixing and compaction viscosity-temperature chart for each shipment.
- iii. The asphalt mix producer shall submit the name(s) of personnel responsible for receipt, inspection, and record keeping of PG binder. Asphalt mix producer personnel shall document specific storage tank(s) where binder will be transferred and stored until used and provide binder samples from the storage tank to the Engineer upon request. The person(s) shall assure that each shipment is accompanied by a statement certifying that the transport vehicle was inspected before loading, was found acceptable for the material shipped and that the binder is free of contamination from any residual material, along with 2 copies of the bill of lading.
- iv. The blending or combining of PG binders in one storage tank at the Plant from different suppliers, grades, or additive percentages is prohibited.

- v. PG binders stored at the asphalt mix plant shall be at temperatures not to exceed the manufacturer's recommendation and each tank shall have a calibrated thermometer to monitor storage temperature.
- (b) Standard Performance Grade (PG) Binder:
 - i. Standard PG binder shall be defined as "Neat." Neat PG binders shall be free from modification with: fillers, extenders, reinforcing agents, adhesion promoters, thermoplastic polymers, acid modification and other additives such as re-refined motor oil, and shall indicate such information on each bill of lading and Certified Test Report.
 - ii. The standard asphalt binder shall be PG 64S-22.
- (c) Modified Performance Grade (PG) Binder: The modified asphalt binder shall be Performance Grade PG 64E-22 asphalt modified solely with a Styrene-Butadiene-Styrene (SBS) polymer. The polymer modifier shall be added at either the refinery or terminal and delivered to the asphalt production facility as homogenous blend. The stability of the modified binder shall be verified in accordance with ASTM D7173 using the Dynamic Shear Rheometer (DSR). The DSR $G^*/\sin(\delta)$ results from the top and bottom sections of the ASTM D7173 test shall not differ by more than 10%. The results of ASTM D7173 shall be included on the Certified Test Report. The binder shall meet the requirements of AASHTO M 332 (including Appendix X1) and AASHTO R 29.
- (d) Anti-strip and Warm Mix Additive:
 - i. The additive to be used must be prequalified and listed on the Department's Qualified Products List (QPL). The QPL can be found on the Department's website. [Policy on New Product Evaluation at Connecticut DOT](#)
 - ii. The additive shall be blended with the asphalt binder in accordance with the manufacturer's recommendations.
 - iii. The blended binder shall meet the requirements of AASHTO M 332 and shall be graded or verified in accordance with AASHTO R 29 for the specified binder grade. The Binder Supplier or Mix Producer shall submit a Certified Test Report showing the results of the testing demonstrating the binder grade. In addition, it must include the grade of the virgin binder, the brand name of the additive, the manufacturer's suggested rate for the additive, and the Technology manufacturer's recommended mixing and compaction temperature range for the dose rate.
- (e) Foaming Technology: Foaming shall be blended with the mix during production in accordance with the manufacturer's recommendations and at the water injection rate on the mix design. Qualification of the foaming equipment is based on the mixture meeting all requirements of M.04.

5. Emulsified Asphalts:

- (a) General:
 - i. The emulsified asphalt shall meet the requirements of AASHTO M 140(M), AASHTO M 208, or as applicable herein.
 - ii. The emulsified asphalts shall be free of contaminants such as fuel oils and other solvents.
 - iii. The blending at mixing Plants of emulsified asphalts from different suppliers is prohibited.
 - iv. Materials used for tack coat shall not be diluted.
 - v. The emulsion supplier shall submit a Certificate of Analysis (COA) in accordance with AASHTO R 77 to the Department's Central Laboratory for every lot or batch used on Department projects. This is to be submitted upon testing being complete.
- (b) Basis of Approval:
 - i. Each shipment of emulsified asphalt delivered to the Project site shall be accompanied with the corresponding Bill of Lading in accordance with AASHTO R 77 listing residue by evaporation, penetration of residue, and weight per gallon at 77°F or 60°F, lot number, and grade.
 - ii. Non-Tracking Asphalt Tack Coat
 - Emulsion for Non-Tracking Asphalt Tack Coat shall meet the requirements of Table M.04.01-1 below.

Table M.04.01-1: Asphalt Emulsion for Non-Tracking Tack Coat

Property	Specification	Test Procedure
Viscosity, SFS, 77°F	20-100	AASHTO T 72
Sieve, %	0.3 maximum	AASHTO T 59
Asphalt Residue, %	50 minimum	AASHTO T 59
Oil Distillate, %	1.0 maximum	AASHTO T 59
Residue Penetration, at 77°F	10-40	AASHTO T 49
Original Dynamic Shear (G*/sin δ), kPa at 70°C (Base Asphalt)	1.0 minimum	AASHTO T 315
Ash, %	1.0 maximum	AASHTO T 111

- iii. Material for Tack Coat
 - Anionic emulsified asphalts shall meet the requirements of AASHTO M 140. Materials used for anionic tack coat shall meet grade RS-1 or RS-1h. When ambient temperatures are 80°F and rising, grade SS-1 or SS-1h may be substituted if permitted by the Engineer.
 - Cationic emulsified asphalt shall meet the requirements of AASHTO M 208. Materials used for cationic tack coat shall meet grade CRS-1. The settlement and demulsibility test will not be performed unless deemed necessary by the Engineer. When ambient temperatures are 80°F and rising, grade CSS-1 or CSS-1h may be substituted if permitted by the Engineer.

6. Reclaimed Asphalt Pavement (RAP):

- (a) **General:** RAP is a material obtained from the cold milling or removal and processing of asphalt mixture. RAP material shall be crushed to 100% passing the 1/2 inch sieve and free from contaminants such as joint compound, wood, plastic, and metals.
- (b) **Basis of Approval:** The RAP material will be accepted on the basis of one of the following criteria:
 - i. When the source of all RAP material is from pavements previously constructed on Department projects, the asphalt producer shall provide a monthly Materials Certificate listing the detailed locations and lengths of those pavements and that the RAP is only from those locations listed.
 - ii. When the RAP material source or quality is not known, the Contractor shall request approval from the Engineer at least 30 calendar days prior to the start of the paving operation. The request shall include a Materials Certificate and applicable test results stating that the RAP consists of aggregates that meet the specification requirements of M.04.01-1 through M.04.01-3 and that the binder in the RAP is substantially free of solvents, tars and other contaminants. The Contractor is prohibited from using unapproved material on Department projects and shall take necessary action to prevent contamination of approved RAP stockpiles. Stockpiles of unapproved material shall remain separate from all other RAP materials at all times. The request for approval shall include the following:
 - 1. A 50-lb. sample of the RAP to be incorporated into the recycled mixture.
 - 2. A 25-lb. sample of the extracted aggregate from the RAP.

7. Crushed Recycled Container Glass (CRCG):

- (a) **Requirements:** The Contractor may propose to use clean and environmentally-acceptable CRCG in an amount not greater than 5% by weight of total aggregate.
- (b) **Basis of Approval:** The Contractor shall submit to the Engineer a request to use CRCG. The request shall state that the CRCG contains no more than 1% by weight of contaminants such as paper, plastic, and metal and meets the following gradation:

CRCG Grading Requirements	
Sieve Size	Percent Passing
3/8 inch	100
No. 4	35-100
No. 200	0.0-10.0

The Contractor shall submit a Materials Certificate to the Engineer stating that the CRCG complies with all the applicable requirements in this Section.

8. Joint Seal Material: Joint seal material must meet the requirements of ASTM D6690 - Type 2. The Contractor shall submit a Materials Certificate in accordance with 1.06.07 or 1.20-1.06.07 certifying that the joint seal material meets the requirements of this Section.

9. Recycled Asphalt Shingles (RAS): RAS shall consist of processed asphalt roofing shingles from post-consumer asphalt shingles or from manufactured shingle waste. The RAS under consideration for use in asphalt mixtures must be certified as being asbestos-free and shall be entirely free of whole, intact nails. The RAS shall meet the requirements of AASHTO MP 23.

RAS shall be tested to determine the asphalt content and the gradation at a frequency acceptable to the Engineer. RAS stockpiles shall be maintained to prevent contamination.

The Contractor shall submit a Materials Certificate to the Engineer stating that the RAS complies with all the applicable requirements.

10. Plant Requirements:

(a) General: The Plant producing asphalt mixtures shall comply with AASHTO M 156.

(b) Storage Silos: The Contractor may use silos for short-term storage with the approval of the Engineer. A storage silo must have heated cones and an unheated silo cylinder if it does not contain a separate internal heating system. When multiple silos are filled, the Contractor shall discharge 1 silo at a time. Simultaneous discharge of multiple silos for the same Project is not permitted.

Type of silo cylinder	Maximum storage time for all classes (hr)	
	64S-22 Mixes	64E-22 Mixes
Open Surge	4	Mfg Recommendations*
Unheated - Non-insulated	8	Mfg Recommendations*
Unheated - Insulated	18	Mfg Recommendations*
Heated - No inert gas	24	Mfg Recommendations*

*Not to exceed HMA limits

(c) Documentation System: The mixing Plant documentation system shall include equipment for accurately proportioning the components of the mixture by weight and in the proper order, controlling the cycle sequence, and timing the mixing operations. The plant documentation system shall monitor the batching sequence of each component of the mixture and produce an electronic record of these operations as specified herein. All electronic records shall be available to the Engineer upon request.

If recycled materials are used, the electronic record shall include their dry weight, percentage, and daily moisture content.

If an additive or warm mix foaming technology is added at the Plant, the Plant electronic record shall include the actual dosage rate.

For drum Plants, the electronic record shall be produced at 5 minute intervals and maintained by the vendor for a period of 3 years after the completion of the Project.

For batch Plants, the electronic record shall be produced for each batch and maintained by the vendor for a period of 3 years after the completion of the Project. In addition, an asterisk (*) shall be automatically printed next to any individual batch weight(s) exceeding the following tolerances:

Each Aggregate Component	±1.5% of individual or cumulative target weight for each bin
Mineral Filler	±0.5% of the total batch
PG Binder Material	±0.1% of the total batch
Zero Return (Aggregate)	±0.5% of the total batch
Zero Return (PG Binder Material)	±0.1% of the total batch

The entire batching and mixing interlock cut-off circuits shall interrupt and stop the automatic batching

operations when an error exceeding the acceptable tolerance occurs in proportioning.

The scales shall not be manually adjusted during the printing process. In addition, the system shall be interlocked to allow printing only when the scale has come to a complete rest. A unique printed character (m) shall automatically be printed on the truck and batch plant printout when the automatic batching sequence is interrupted or switched to auto-manual or full manual during proportioning.

(d) Aggregates: Aggregate stockpiles shall be managed to prevent segregation and cross contamination. For drum Plants only, the percent moisture content, at a minimum prior to production and halfway through production, shall be determined.

(e) Mixture: The plant dry and wet mix times shall provide a uniform mixture with a minimum particle coating of 95% as determined by AASHTO T 195(M).

Asphalt mixtures shall contain no more than 0.5% moisture when tested in accordance with AASHTO T 329.

(f) RAP: RAP moisture and binder content shall be updated in the plant settings prior to production.

(g) Asphalt Binder: A binder log shall be maintained by the asphalt producer and submitted to the Department's Central Lab on a monthly basis. The log shall include the grade and tank loaded for each shipment. Asphalt binder plant setting shall not be set below the minimum binder content specified in Table M.04.02-5.

(h) Warm mix additive: For mechanically foamed WMA, the water injection rate shall be monitored during production, not to exceed 2.0% by total weight of binder, and must be documented on the electronic record.

11. Testing Laboratory: The laboratory performing acceptance testing on box samples shall be provided with functioning equipment and adequate supplies to test asphalt mixtures in accordance with Table M.04.03. The laboratory shall have a minimum of 300 s.f., have a potable water source and drainage in accordance with the CT Department of Public Health. The laboratory shall have a PC with internet connection capable of submitting electronic test results to the Engineer.

The laboratory shall be equipped with a heating system capable of maintaining a minimum temperature of 65°F. It shall be clear and free of all materials and equipment not associated with the laboratory. Sufficient light and ventilation must be provided. During summer months adequate cooling or ventilation must be provided so the indoor air temperature shall not exceed the ambient outdoor temperature.

The laboratory shall maintain a list of equipment used in the acceptance testing processes including, but not limited to, balances, scales, manometer/vacuum gauge, thermometers, and gyratory compactor, clearly showing calibration and/or inspection dates, in accordance with AASHTO R 18.

M.04.02—Mix design and Job Mix Formula (JMF)

1. Curb Mix:

(a) Requirements: The Contractor shall use asphalt mixture that meets the requirements of Table M.04.02-1. RAP may be used in 5% increments by weight up to 30%.

(b) Basis of Approval: Annually, an approved JMF based on a mix design for curb mix must be on file with the Engineer prior to use.

The Contractor shall test the mixture for compliance with the submitted JMF and Table M.04.02-1. The maximum theoretical density (Gmm) will be determined by AASHTO T 209. If the mixture does not meet the requirements, the JMF shall be adjusted within the ranges shown in Table M.04.02-1 until an acceptable mixture is produced.

An accepted JMF from the previous operating season may be acceptable to the Engineer provided that there are no changes in the sources of supply for the coarse aggregate, fine aggregate, recycled material (if applicable) and the Plant operation had been consistently producing acceptable mixture.

Any change in component source of supply or consensus properties must be approved by the Engineer. A revised JMF shall be submitted prior to use.

TABLE M.04.02-1: Control Points for Curb Mix Mixtures

Mix	Curb Mix	Production Tolerances from JMF Target
Grade of PG Binder content %	PG 64S-22 6.50 - 9.00	0.30
Sieve Size: No. 200	3.0 - 8.0 (b)	2.0
No. 50	10 - 30	4
No. 30	20 - 40	5
No. 8	40 - 70	6
No. 4	65 - 87	7
1/4 inch		
3/8 inch	95 - 100	8
1/2 inch	100	8
3/4 inch		8
1 inch		
2 inch		
Additionally, the fraction of material retained between any 2 consecutive sieves shall not be less than 4%.		
Mixture Temperature	265-325°F	
Mixture Properties	Air Voids (VA) %	0 – 4.0 (a)
Notes:	(a) Compaction Parameter 50 gyrations (N_{des}) (b) The percent passing the No. 200 sieve shall not exceed the percentage of PG asphalt binder.	

2. Superpave Mix Design Method – S0.25, S0.375, S0.5, and S1:

(a) **Requirements:** All designated mixes shall be designed using the Superpave mix design method in accordance with AASHTO R 35. A JMF based on the mix design shall meet the requirements of Tables M.04.02-2 to M.04.02-5. Each JMF and component samples must be submitted no less than 14 days prior to production and must be approved by the Engineer prior to use. All JMFs expire at the end of the calendar year.

All aggregate properties listed in tables M.01.02-1 through M.01.03-2, Table M.04.02-3, and specific gravities including absorption shall be tested at an AASHTO re:source accredited laboratory by a NETTCP Soil and Aggregate Laboratory Technician Certified technician(s) annually and submitted to the Engineer.

All asphalt mixes shall be tested for stripping susceptibility by performing the TSR test procedure in accordance with AASHTO T 283(M) at a minimum every 36 months. A JMF revision requires a new mix design TSR test. The compacted specimens may be fabricated at the Plant and then tested at an AASHTO re:source accredited laboratory by NETTCP HMA Plant Certified Technicians and submitted to the Engineer. The test report shall include Job Mix Formula blend percentages and anti-strip dosage, if applicable. The design TSR test can be performed on either laboratory or plant produced mixture. A minimum of 45,000 grams of laboratory or plant blended mixture and the corresponding complete Form MAT-412s shall be submitted to the Department's Central Laboratory for design TSR testing verification. The mixture submitted shall be representative of the corresponding mix design as determined by the Engineer.

1. Superpave Mixtures with RAP: RAP may be used with the following conditions:

- RAP amounts up to 15% may be used with no binder grade modification.
- RAP amounts over 15% and up to 20% may be used provided a new JMF is approved by the Engineer. The JMF submittal shall include the grade of virgin binder added. The JMF shall be accompanied by a blending chart and supporting test results in accordance with AASHTO M 323 Appendix X1, or by testing that shows the combined binder (recovered binder from

the RAP, virgin binder at the mix design proportions, warm mix asphalt additive and any other modifier if used) meets the requirements of the specified binder grade. RAP amounts over 20% and up to 25% may be used in S1 or P1 mixes only provided a new JMF is accepted by the Engineer. The virgin binder grade shall be a PG 58S-28 or PG 64E-28 based on final PG grade of mix specified. In accordance with M.04.01-4, the virgin binder grade selected shall be “neat” or modified with SBS only. The JMF submittal shall include the true grade of the virgin binder and extracted rap binder. The JMF shall be accompanied by a blending chart and supporting test results in accordance with AASHTO M 323 Appendix X1, or by testing that shows the combined binder (recovered binder from the RAP, virgin binder at the mix design proportions, warm mix asphalt additive and any other modifier if used) meets the requirements of the specified binder grade.

- A representative sample of RAP shall be tested for binder content in accordance with AASHTO T 164 and in accordance with AASHTO T 308. A split sample shall be submitted to the Engineer.
 - RAP material shall not be used with any other recycling option.
2. Superpave Mixtures with RAS: RAS may be used solely in HMA S1 mixtures with the following conditions:
- RAS amounts up to 3% may be used.
 - RAS total binder replacement up to 15% may be used with no binder grade modification.
 - RAS total binder replacement up to 20% may be used provided a new JMF is approved by the Engineer. The JMF submittal shall include the grade of virgin binder added. The JMF shall be accompanied by a blending chart and supporting test results in accordance with AASHTO M 323 Appendix X1, or by testing that shows the combined binder (recovered binder from the RAP, virgin binder at the mix design proportions, warm mix asphalt additive and any other modifier if used) meets the requirements of the specified binder grade.
 - Superpave Mixtures with RAS shall meet AASHTO PP 78 design considerations.
- iii. Superpave Mixtures with CRCG: CRCG may be used solely in HMA S1 mixtures. One percent (1%) of hydrated lime, or other accepted non-stripping agent, shall be added to all mixtures containing CRCG. CRCG material shall not be used with any other recycling option.
- (b) Basis of JMF Approval: The following information must be included in the JMF submittal:
- i. Gradation, consensus properties, durability tests (Abrasion and Soundness), and specific gravities of the aggregate, RAP or RAS.
 - ii. Average asphalt content of the RAP or RAS by AASHTO T 164.
 - iii. RAP or RAS and percentage to be used.
 - iv. Warm mix technology and additive rate.
 - v. TSR test report and anti-strip manufacturer and dosage rate if applicable.
 - vi. Mixing and compaction temperature ranges for the mix with/without warm-mix technology.
 - vii. JMF ignition oven correction factor by AASHTO T 308.

With each JMF submittal, the following samples shall be submitted to the Central Lab:

- 4 - one (1) quart cans of PG binder with anti-strip and/or warm mix additive as applicable, with corresponding Safety Data Sheet (SDS) and PG binder lot Certified Test Report
- 1 - 50 lbs. bag of RAP
- 2 - 50 lbs. bags of Plant-blended virgin aggregate

A JMF may not be approved if any of the properties of the aggregate components or mix do not meet the verification tolerances as described in the Department’s current QA Program for Materials, Acceptance and Assurance Testing Policies and Procedures.

Any material based on a JMF, once approved, shall only be acceptable for use when it is produced by the designated Plant, it utilizes the same components, and the production of material continues to meet all criteria as specified in Tables M.04.02-2, M.04.02-3 M.04.02-4 and M.04.02-5. A new JMF must be submitted to the Engineer for approval whenever a new component source is proposed.

Only 1 mix with 1 JMF will be approved for production at a time. Switching between approved JMF mixes with different component percentages or sources of supply is prohibited.

TABLE M.04.02-2: Superpave Asphalt Mixture Design Target Values

	S0.25		S0.375		S0.5		S1	
Sieve	Control Points		Control Points		Control Points		Control Points	
inches	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)
2.0	-	-	-	-	-	-	-	-
1.5	-	-	-	-	-	-	100	-
1.0	-	-	-	-	-	-	90	100
3/4	-	-	-	-	100	-	-	90
1/2	100	-	100	-	90	100	-	-
3/8	97	100	90	100	-	90	-	-
No. 4	72	90	-	72	-	-	-	-
No. 8	32	67	32	67	28	58	19	45
No. 16	-	-	-	-	-	-	-	-
No. 30	-	-	-	-	-	-	-	-
No. 50	-	-	-	-	-	-	-	-
No. 100	-	-	-	-	-	-	-	-
No. 200	2.0	10.0	2.0	10.0	2.0	10.0	1.0	7.0
VMA (%)	16.5 -0.5, +1.0		16.0 -0.5, +1.0		15.0 -0.5, +1.0		13.0 -0.5, +1.0	
VA (%)	4.0 ±0.5		4.0 ±0.5		4.0 ±0.5		4.0 ±0.5	
Dust / effective binder	0.6 - 1.2		0.6 - 1.2		0.6 - 1.2		0.6 - 1.2	
TSR	≥ 80%		≥ 80%		≥ 80%		≥ 80%	
T-283 Stripping	2 or less							

(c) **Mix Status:** Each facility will have each type of asphalt mixture rated based on the results of the previous year of production. Mix status will be developed for each facility prior to the beginning of the paving season.

The rating criteria are based on compliance with Air Voids and Voids in Mineral Aggregate (VMA) as indicated in Table M.04.03-4 and are calculated as follows:

Criteria : Percentage of acceptance test results with compliant air voids, VMA, VFA, Density to Nini and dust to Pbe.

Mix status is defined as:

“A” – Approved: Assigned to each mixture type from a production facility with a current rating of 70% or greater, or to each mixture type completing a successful PPT.

“U” – Not Approved: Status assigned to a type of mixture that does not have an approved JMF.

Asphalt mixtures with a “U” status cannot be used on Department projects.

“PPT” – Pre-Production Trial: Temporarily assigned to each mixture type from a production facility when:

1. no compliant acceptance production test results have been submitted to the Department from the previous year;
2. there is a source change in one or more aggregate components;
3. there is a component percentage change of more than 5% by weight;
4. there is a change in RAP percentage;
5. the mixture has a rating of less than 70% from the previous season;
6. it is a new JMF not previously submitted; or

7. mixture being evaluated under “U” status.

Asphalt mixtures rated with a “PPT” status cannot be used on Department projects until modifications are made at the facility. Sufficient testing by NETTCP certified personnel must confirm that specification requirements in Tables M.04.02-2 through M.04.02-4 are met and the binder content (Pb) meets the requirements in Table M.04.03-2 before material can be used. One of the following methods must be used to verify the test results:

- Option A: Schedule a day when a Department Inspector can be at the facility to witness testing
- Option B: When the Contractor or their representative performs testing without being witnessed by an Inspector, the Contractor shall submit the test results and a split sample including 2 gyratory molds, 5,000 grams of boxed mixture, and 5,000 grams of cooled loose mixture for verification testing and acceptance

Department Witness or verification of compliant test results will change the mix’s status to “A”
 The differences between the Department’s test results and the Contractor’s must be within the “C” tolerances included in the Department’s QA Program for Materials and meet all requirements in Table M.04.02-2, Table M.04.02-4 and Table M.04.02-5 in order to be verified.

TABLE M.04.02-3: Superpave Consensus Properties Requirements for Combined Aggregate

Traffic Level	Design ESALs (80kN) Millions	Coarse Aggregate Angularity ⁽¹⁾ ASTM D5821, Minimum %	Fine Aggregate Angularity AASHTO T 304, Method A Minimum %	Flat and Elongated Particles ⁽²⁾ ASTM D4791, Maximum %	Sand Equivalent AASHTO T 176, Minimum %
1	< 0.3	55/- -	40	10	40
2	0.3 to < 3.0	75/- -	40	10	40
3	≥ 3.0	95/90	45	10	45

Notes:
 (1) 95/90 denotes that a minimum of 95% of the coarse aggregate, by mass, shall have one fractured face and that a minimum of 90% shall have two fractured faces.
 (2) Criteria presented as maximum Percent by mass of flat and elongated particles of materials retained on the No. 4 sieve, determined at 5:1 ratio.

TABLE M.04.02-4: Superpave Traffic Levels and Design Volumetric Properties

Traffic Level	Design ESALs (million)	Number of Gyration by Superpave Gyratory Compactor			Percent Density of Gmm from HMA/ WMA Specimen			Voids Filled with Asphalt (VFA) Based on Nominal Mix Size - Inch			
		N _{ini}	N _{des}	N _{max}	N _{ini}	N _{des}	N _{max}	0.25	0.375	0.5	1
1	<0.3	6	50	75	≤91.5	96.0	≤98.0	63-78	73-76	71-75	67-71
2	0.3 to <3.0	7	75	115	≤90.5	96.0	≤98.0				
*3	≥3.0	7	75	115	≤90.5	96.0	≤98.0				

*Note 1- All Traffic Level 3 mixes shall include polymer modified asphalt.

**TABLE M.04.02-5:
Superpave Minimum Binder Content by Mix Type and Level**

Mix Type	Level	Binder Content Minimum
S0.25	1	5.80
S0.25	2	5.70
S0.25	3	5.70
S0.375	1	5.70
S0.375	2	5.60
S0.375	3	5.60
S0.5	1	5.10
S0.5	2	5.00
S0.5	3	5.00
S1	1	4.60
S1	2	4.50
S1	3	4.50

M.04.03—Production Requirements:

1. Standard Quality Control Plan (QCP) for Production: The QCP for production shall describe the organization and procedures, which the Contractor shall use to administer quality control. The QCP shall include the procedures used to control the production process, to determine when immediate changes to the processes are needed, and to implement the required changes. The QCP must detail the inspection, sampling and testing protocols to be used, and the frequency for each.

Control Chart(s) shall be developed and maintained for critical aspect(s) of the production process as determined by the Contractor. The control chart(s) shall identify the material property, applicable upper and lower control limits, and be updated with current test data. As a minimum, the following quality characteristics shall be included in the control charts:

- percent passing No. 4 sieve
- percent passing No. 200 sieve
- binder content
- air voids
- Gmm
- Gse
- VMA

The control chart(s) shall be used as part of the quality control system to document variability of the production process. The control chart(s) shall be submitted to the Engineer the first day of each month.

The QCP shall document the Contractors Reclaimed Asphalt Pavement (RAP) management practices, including stockpile management, and sampling and testing frequencies. At a minimum, RAP moisture, binder content and gradation shall be tested daily when asphalt mixture is being produced for the Department. The Contractor shall maintain control charts for RAP binder content.

The QCP shall also include the name and qualifications of a Quality Control Manager. The Quality Control Manager shall be responsible for the administration of the QCP, including compliance with the plan and any plan modifications.

The Contractor shall submit complete production testing records to the Engineer within 24 hours in a manner acceptable to the Engineer including all testing records, RAP binder and moisture content, and testing equipment print outs, such is gyratory compactors and ignition oven print outs. These records must be maintained for a minimum of three years after project completion.

The QCP shall also include the name and qualifications of any outside testing laboratory performing any

QC functions on behalf of the Contractor. The QCP must also include a list of sampling and testing methods and frequencies used during production, and the names of all Quality Control personnel and their duties.

Approval of the QCP does not imply any warranty by the Engineer that adherence to the plan will result in production of asphalt mix that complies with these specifications. The Contractor shall submit any changes to the QCP as work progresses.

2. Acceptance Requirements:

(a) General:

All mixtures except for curb mix shall be sampled at the Project site by the Contractor as directed by the Engineer. A Contractor representative shall obtain a field sample of the material placed at the Project site in accordance with AASHTO R 97 or an alternate procedure acceptable to the Engineer. The Contractor's representative obtaining mix samples must be a certified NETTCP HMA Paving Inspector, NETTCP HMA Plant Technician, or has successfully completed the HMA Field Sampling Course administered by the Connecticut Advanced Pavement Laboratory. The bulk sample shall be quartered by the Contractor in accordance with AASHTO R 47 using a Type A Mechanical Splitter and placed into four new cardboard containers acceptable to the Engineer. The cardboard container shall be sealed with security tape provided by the Department and labelled to include the Project number, date of paving, mix type, lot and subplot numbers and daily tonnage. The minimum weight of each quartered sample shall be 14,000 grams with the exception of 1.0 mixes which require minimum sample size of 20,000 grams. If needed, more than four boxes can be used for 1.0 mixes. The Contractor shall transport one of the containers to the Department's Central Laboratory in Rocky Hill, retain one of the sealed containers for potential use in dispute resolution and test the remaining sample for acceptance in accordance with past practice within 2 days of sampling.

The Contractor shall submit all acceptance tests results to the Engineer within 24 hours or prior to the next day's production. All acceptance test specimens and supporting documentation must be retained by the Contractor and may be disposed of with the approval of the Engineer. All quality control specimens shall be clearly labeled and separated from the acceptance specimens.

Contractor QC personnel must be present at the facility prior to, during, and until completion of production, and be certified as a NETTCP HMA Plant Technician and be in good standing. Production of material for use on State projects must be suspended by the Contractor if such personnel are not present. Technicians found by the Engineer to be non-compliant with NETTCP policies and procedures or Department policies may be removed by the Engineer from participating in the acceptance testing process for Department projects until their actions can be reviewed.

Verification and dispute resolution testing will be performed by the Engineer in accordance with the Department's QA Program for Materials.

If the Contractor disputes the Engineer's test results, the Contractor must submit in writing a request to initiate the dispute resolution process within 24 hours of receiving the adjustment and must include supporting documentation or test results to justify the request. If the dispute resolution is granted by the Engineer, all sublots for the disputed lot(s) shall be transported by the Contractor to the Department's Central Laboratory for testing.

(b) Curb Mix Acceptance Sampling and Testing Procedures: Curb Mixes may be sampled and tested by Central Laboratory personnel at any time. When these mix designs are specified, the following acceptance procedures and AASHTO test methods shall be used:

TABLE M.04.03-1: Curb Mix Acceptance Test Procedures

Protocol	Reference	Description
1	AASHTO T 30(M)	Mechanical Analysis of Extracted Aggregate
2	AASHTO R 97	Sampling Asphalt Mixtures
3	AASHTO R 47	Reducing samples of Asphalt Mixtures to Testing Size
4	AASHTO T 308	Asphalt Binder Content of Asphalt Mixtures by Ignition Oven Method (Method A)
5	AASHTO T 209(M) ⁽²⁾	Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures (average of 2 tests)
6	AASHTO T 312 ⁽²⁾	⁽¹⁾ Density of Asphalt Mixture Specimens by Means of Superpave Gyratory Compactor (1 set Compacted to N _{des})
7	AASHTO T 166	Bulk Specific Gravity of Compacted Asphalt Mixtures Using Saturated Surface Dry Specimens
8	AASHTO T 329	Moisture Content of Asphalt Mixtures by Oven Method
9	AASHTO R 35	Air voids (average 2 specimens)

Notes: ⁽¹⁾ One (1) set equals 2 each of 6 inch molds. Molds to be compacted to 50 gyrations.

i. Determination of "U" Status:

1. Curb Mix is considered on "U" status when test results indicate that any single value for bitumen content, Va, or gradation are not within the tolerances shown in Table M.04.02-1 for that mixture. If the mix is on "U" status the Contractor must take action to correct the deficiency. A passing PPT and supporting documentation must be submitted and approved by the Engineer prior to the next day of production.
2. Material not meeting the requirements of Table M.04.02-1 will be evaluated under Article 1.06.04.

ii. JMF Revisions

1. Any modification to the JMF shall not exceed 50% of the JMF tolerances indicated in Table M.04.02-1 for any given component of the mixture without approval of the Engineer. When such an adjustment is made to the bitumen, the corresponding production percentage of bitumen shall be revised accordingly.

(c) Superpave Mix Acceptance:

i. Sampling and Testing Procedures

Production Lot: All mixture will begin as a PWL Production Lot. A PWL Lot will be defined as each 3,500 tons of mixture produced within 30 calendar days.

If a Lot is closed before reaching four (4) acceptance tests it will be processed as Non-PWL.

Lots will be closed due to:

- completion of the course;
- a Job Mix Formula revision due to changes in:
 - o cold feed percentages over 5%,
 - o target combined gradation over 5%,
 - o target binder over 0.15%,
 - o any component specific gravity; or
- a lot spanning 30 calendar days.

Production Sub Lot:

- 500 tons or portions thereof for last sub-lot. Last sub-lot may be less than 500 tons. For Project quantities under 75 tons no sample will be required. For quantities produced over 500 ton, the final acceptance test shall always be performed with material from the last sub lot regardless of the predetermined random location.

Partial Production Lots (For PWL only): A Lot with four (4) or more acceptance tests, but less than 3,500 tons.

The acceptance sample(s) location(s) shall be selected using stratified - random sampling in accordance with ASTM D3665.

The payment adjustment will be calculated as described in 4.06.

The following test procedures shall be used for acceptance:

TABLE M.04.03-3: Superpave Acceptance Testing Procedures

Protocol	Procedure	Description
1	AASHTO R 97	Sampling of Asphalt Mixtures
2	AASHTO R 47	Reducing Samples of Asphalt Mixtures to Testing Size
3	AASHTO T 308	Asphalt Binder Content of Asphalt Mixtures by Ignition Oven Method (Method A)
4	AASHTO T 30(M)	Mechanical Analysis of Extracted Aggregate
5	AASHTO T 312	⁽¹⁾ Density of Asphalt Mixture Specimens by Means of Superpave Gyrotory Compactor (Compacted to N_{des})
6	AASHTO T 166	⁽²⁾ Bulk Specific Gravity of Compacted Asphalt Mixtures Using Saturated Surface Dry Specimens
7	AASHTO R 35	⁽²⁾ Air voids, VMA
8	AASHTO T 209(M)	Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures (average of 2 tests)
9	AASHTO T 329	Moisture content of Asphalt Mixtures

Notes: ⁽¹⁾ One (1) set equals 2 each of 6 inch molds. Molds to be compacted to N_{max} for PPTs and to N_{des} for production testing. The first sub lot of the year shall be compacted to N_{max} .

⁽²⁾ Average value of 1 set of 6 inch molds.

If the average ignition oven corrected binder content differs by 0.3% or more from the average of the Plant ticket binder content in 5 consecutive tests regardless of the production date (moving average), the Contractor shall immediately investigate, determine an assignable cause, and correct the issue. When 2 consecutive moving average differences are 0.3% or more and no assignable cause has been established, the Engineer may require a new ignition oven aggregate correction factor to be performed or to adjust the current factor by the average of the differences between the corrected binder content and production Plant ticket for the last 5 acceptance results.

Asphalt mixtures may be randomly sampled and tested by the Central Lab personnel at any time to verify compliance with the TSR requirements in Table M.04.02-2. If the material fails to meet specification requirements, The Central Laboratory will issue a notification to the Project, including test data, stating that the material does not meet Contract specification requirements.

If the Contractor receives a Non-Conformance Notice from the Engineer, the Contractor shall submit a corrective action plan within 24 hours to address the deficiency. The corrective action plan must be accepted by the Engineer prior to continued paving operations.

Supporting documentation demonstrating that the corrective action was implemented and resolved the issue, including test results, shall be submitted to the Engineer within 7 business days to allow completion of TSR testing on plant or lab produced mixture.

All deficient mixture will be evaluated in accordance with Article 1.06.04. The mix will be assigned a "U" (Unapproved) status if additional tests performed by the Department demonstrate that the mixture does not meet Contract specification requirements.

Determination of "U" Status: Superpave mixes shall be considered on "U" status when any control point sieve, binder content, VA, VMA, VFA, N_{ini} , dust to effective binder ratio, and Gmm value is outside of the limits specified in Table M.04.03-4 on four (4) consecutive tests in any combinations, or the target binder content at the Plant is below the minimum binder content stated in Table M.04.02-5. In addition the average of 10 consecutive acceptance results for VFA, Density to N_{ini} or dust to effective binder ratio does not meet the criteria in tables M.04.02-2 and M.04.02-4. Note that further testing of samples or portions of samples not initially tested for this purpose cannot be used to change the status.

1. Any time the asphalt mixture is designated as "U" status:

- A. The Contractor shall notify the Engineer.
- B. The Contractor must take immediate actions to correct the deficiency, minimize material shipped to the Project, and obtain an additional Process Control (PC) test after any corrective action to verify production is in conformance with the specifications. A PC test will not be used for acceptance and is solely for the use of the Contractor in its quality control process.

As a result of a U status, upon the submittal of an acceptable revised JMF, the mix status will be changed to PPT until the mix is corrected and a passing PPT is successfully completed.

2. JMF revisions:

JMF revisions are only permitted prior to or after a production shift. A JMF revision is effective from the time it was submitted and is not retroactive to the previous test(s).

JMF revisions shall be justified by a documented trend of test results.

Revisions to aggregate or RAP specific gravities are only permitted when testing is performed at an AASHTO re:source certified laboratory by NETTCP certified technicians.

A JMF revision is required when the Plant target RAP or bin percentage deviates by more than 5% or the Plant target binder content deviates by more than 0.15% from the active JMF.

TABLE M.04.03-4: Superpave Mixture Production Requirements

Sieve	S0.25		S0.375		S0.5		S1		Tolerances
	Control Points		Control Points		Control Points		Control Points		From JMF Targets ⁽²⁾
inches	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)	+/- Tolerance
1.5	-	-	-	-	-	-	100	-	
1.0	-	-	-	-	-	-	90	100	
3/4	-	-	-	-	100	-	-	90	
1/2	100	-	100	-	90	100	-	-	
3/8	97	100	90	100	-	90	-	-	
No. 4	72	90	-	72	-	-	-	-	
No. 8	32	67	32	67	28	58	19	45	
No. 16	-	-	-	-	-	-	-	-	
No. 200	2.0	10.0	2.0	10.0	2.0	10.0	1.0	7.0	
Pb	JMF value		JMF value		JMF value		JMF value		0.30
VFA	JMF value		JMF value		JMF value		JMF value		5
VMA (%)	16.5		16.0		15.0		13.0		1.0 ⁽³⁾
VA (%)	4.0		4.0		4.0		4.0		1.0 ⁽⁴⁾
Gse	JMF value		JMF value		JMF value		JMF value		0.030
Gmm	JMF value		JMF value		JMF value		JMF value		0.030
Mix Temp. – HMA ⁽⁵⁾	265-325°F ⁽¹⁾		265-325°F ⁽¹⁾		265-325°F ⁽¹⁾		265-325°F ⁽¹⁾		
Mix Temp. – PMA ⁽⁵⁾	285-335°F ⁽¹⁾		285-335°F ⁽¹⁾		285-335°F ⁽¹⁾		285-335°F ⁽¹⁾		

Prod. TSR	N/A	N/A	≥80%	N/A	
T 283 Stripping	N/A	N/A	2 or less	N/A	

Notes: ⁽¹⁾ 300°F minimum when temperature is below 50°F.

⁽²⁾ JMF tolerances shall be defined as the limits for production compliance.

⁽³⁾ 1.30 for all PWL lots except S/P 0.25 mixes. 1.10 for S/P 0.25 Non-PWL lots. 1.40 for S/P 0.25 PWL lots

⁽⁴⁾ 1.2 for PWL lots

⁽⁵⁾ Also applies to placement

Table M.04.03-5:

Modifications to Standard AASHTO and ASTM Test Specifications and Procedures

AASHTO Standard Method of Test	
Reference	Modification
T 30	Section 7.2 through 7.4 Samples are not routinely washed for production testing *Wash gradation required for mix design and PPT
T 209	Section 7.2 The average of 2 bowls is used proportionally in order to satisfy minimum mass requirements. 8.3 Omit Pycnometer method.
T 283	When foaming technology is used, the material used for the fabrication of the specimens shall be cooled to room temperature, and then reheated to the manufacturer’s recommended compaction temperature prior to fabrication of the specimens.
AASHTO Standard Recommended Practices	
Reference	Modification
R 26	All laboratory technician(s) responsible for testing PG binders shall be certified or Interim Qualified by NETTCP as a PG Asphalt Binder Lab Technician. All laboratories testing binders for the Department are required to be accredited by AASHTO re:source. Sources interested in being approved to supply PG binders to the Department by use of an “in-line blending system” must record properties of blended material and additives used. Each source of supply of PG binder must indicate that the binders contain no additives used to modify or enhance their performance properties. Binders that are manufactured using additives, modifiers, extenders, etc., shall disclose the type of additive, percentage and any handling specifications or limitations required. All AASHTO M 320 references shall be replaced with AASHTO M 332. Once a month, 1 split sample and test results for each asphalt binder grade and each lot shall be submitted by the PG binder supplier to the Department’s Central Lab. Material remaining in a certified lot shall be re-certified no later than 30 days after initial certification. Each April and September, the PG binder supplier shall submit test results for 2 BBR tests at 2 different temperatures in accordance with AASHTO R 29.

ITEM # 0020903A – LEAD COMPLIANCE FOR MISCELLANEOUS EXTERIOR TASKS

Description:

Work under this item shall include the special handling measures and work practices required for miscellaneous exterior tasks that impact materials containing or covered by lead paint. Lead paint includes paint found to contain **any** detectable amount of lead by Atomic Absorption Spectrophotometry (AAS) or X-Ray Fluorescence (XRF). Examples of typical miscellaneous exterior tasks includes; work impacting signs, guiderails, minor bridge rehabilitation, catenary structures, canopy structures, spot/localized paint removal, etc.

All activities shall be performed in accordance with the OSHA Lead in Construction Regulations (29 CFR 1926.62), the USEPA RCRA Hazardous Waste Regulations (40 CFR Parts 260 through 274), and the CTDEEP Hazardous Waste Regulations (RCSA 22a-209-1 and 22a-449(c)).

All activities shall be performed by individuals with appropriate levels of OSHA lead awareness and hazard communication training and shall supervised by the Contractors Competent Person on the job site at all times. The Contractors Competent Person is one who is capable of identifying existing and predictable 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 them.

Deviations from these Specifications require the written approval of the Engineer.

Materials:

All materials shall be delivered to the job site in the original packages, containers, or bundles bearing the name of the manufacturer, the brand name and product technical description, with MSDS sheets as applicable.

No damaged or deteriorating materials shall be used. If material becomes contaminated with lead, the material shall be decontaminated or disposed of as lead-containing waste material. The cost to decontaminate and dispose of this material shall be at the expense of the Contractor.

The following material requirements are to be met if to be used during the work:

Fire retardant polyethylene sheet shall be in roll size to minimize the frequency of joints, with factory label indicating minimum six (6) mil thickness.

Polyethylene disposable bags shall be minimum six (6) mils thick.

Tape (or equivalent) product capable of sealing joints in adjacent polyethylene sheets and for the attachment of polyethylene sheets to finished or unfinished surfaces must be capable of adhering under both dry and wet conditions.

Cleaning Agents and detergent shall be lead specific, such as TriSodium Phosphate (TSP).

Chemical strippers and chemical neutralizers shall be compatible with the substrate as well as with each other. Such chemical stripper shall contain less than 50% Volatile Organic Compounds (VOCs) by weight in accordance with RCSA 22a-174-40 Table 40-1.

Labels and warning signs shall conform to 29 CFR 1926.62, 40 CFR 260 through 274 and 49 CFR 172 as appropriate.

Air filtration devices and vacuum units shall be equipped with High-Efficiency Particulate Air (HEPA) filters.

Construction Methods:

(1) Pre-Abatement Submittals and Notices

A. Prior to the start of **any** work on a contiguous per site basis that will generate hazardous lead waste above conditionally exempt small quantities (greater than 100 kg/month or greater than 1000 kg at any time), the Contractor shall obtain from the Engineer on a contiguous per site basis a temporary EPA Hazardous Waste Generators ID number, unless otherwise directed by the Engineer. Temporary EPA ID numbers are good for six months from the date they are issued and can be extended once, for a maximum of six months and can't be used for longer than one year. The Contractor will be responsible for notifying the Engineer when an extension is needed.

B. Fifteen (15) working days prior to beginning work that impacts lead paint, the Contractor shall submit the following to the Engineer:

1. Work plan for work impacting lead paint including engineering controls, methods of containment of debris and work practices to be employed, as needed, to minimize employee exposure and prevent the spread of lead contamination outside the Regulated Area.
2. Copies of all employee certificates, dated within the previous twelve (12) months, relating to OSHA lead awareness and hazard communication training and training in the use of lead-safe work practices. SSPC training programs may be accepted as meeting these requirements if it can be demonstrated that such training addressed all required topics.

This information shall be updated and resubmitted annually, or as information changes, for the duration of the activities impacting lead to verify continued compliance.

3. Name and qualifications of Contractor's OSHA Competent Person under 29 CFR 1926.62.
4. Documentation from the Contractor, typed on company letterhead and signed by the Contractor, certifying that all employees listed therein have received the following:
 - a. medical monitoring within the previous twelve (12) months, as required in 29 CFR 1926.62;
 - b. biological monitoring within the previous six (6) months, as required in 29 CFR 1926.62;
 - c. respirator fit testing within the previous twelve (12) months, as required in 29 CFR 1910.134 (for those who don a tight-fitting face piece respirator)

This information shall be updated and resubmitted annually, or as information changes, for the duration of the activities impacting lead to verify continued compliance.

5. Names of the proposed non-hazardous construction and demolition (C&D) lead debris bulky waste disposal facility (CTDEEP-permitted Solid Waste landfill).
6. Names of the proposed scrap metal recycling facilities. The Contractor shall submit to the Engineer all documentation necessary to demonstrate the selected facility is able to accept lead-painted scrap metal.
7. Names of the proposed hazardous waste disposal facility (selected from the Department approved list provided herein), and copies of each facilities acceptance criteria and sampling frequency requirements.
8. Copies of the proposed hazardous waste transporters current USDOT Certificate of Registration for Hazardous Materials Transport, and the proposed transporters current Hazardous Waste Transporter Permits for the State of Connecticut and the waste destination State.
9. Negative exposure assessments conducted within the previous 12 months documenting that employee exposure to lead for each task is below the OSHA Action Level of $30 \mu\text{g}/\text{m}^3$. If a negative exposure assessment has not been conducted, the Contractor shall submit its air monitoring program for the work tasks as part of the Work Plan. Until a negative exposure assessment is developed for each task impacting lead paint, the Contractor shall ensure that all workers and authorized persons entering the Regulated Area wear protective clothing and respirators in accordance with OSHA 29 CFR 1926.62.

No activity shall commence until all required submittals have been received and found acceptable to the Engineer. Those employees added to the Contractor's original list will be allowed to perform work only upon submittal of acceptable documentation to, and review by, the Engineer.

Contractor shall provide the Engineer with a minimum of 48 hours notice in advance of scheduling, changing or canceling work activities.

(2) Lead Abatement Provisions

A. General Requirements:

All employees of the Contractor who perform work impacting lead paint shall be properly trained to perform such duties. In addition, the Contractor shall instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment including procedures unique to this project.

Contractor shall provide all labor, materials, tools, equipment, services, testing, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these Specifications.

Prior to beginning work, the Engineer and Contractor shall perform a visual survey of each work area and review conditions.

As necessary, the Contractor shall:

Shut down and lock out electrical power, including all receptacles and light fixtures, where feasible. The use or isolation of electrical power will be coordinated with all other ongoing uses of electrical power at the site.

If adequate electrical supply is not available at the site, the Contractor shall supply temporary power. Such temporary power shall be sufficient to provide adequate lighting and power the Contractor's equipment. The Contractor is responsible for proper connection and installation of electrical wiring and shall ensure safe installation of electrical equipment in compliance with applicable electrical codes and OSHA requirements.

If water is not available at the site for the Contractor's use, the Contractor shall supply sufficient water for each shift to operate the wash facility/decontamination shower units in addition to the water needed at the work area.

The Engineer may provide a Project Monitor to monitor compliance of the Contractor and protect the interests of the Department. In such cases, no activity impacting lead paint shall be performed until the Project Monitor is on-site. Where no Project Monitor will be provided, Contractor shall proceed at the direction of the Engineer. Environmental sampling, including ambient air sampling, TCLP waste stream sampling, and dust wipe sampling, will be conducted by the State as it deems necessary throughout the project. Air monitoring to comply with the Contractor's obligations under OSHA remains solely responsibility of the Contractor.

If at any time, procedures for engineering, work practice, administrative controls or other topics

are anticipated to deviate from those documented in the submitted and accepted Lead Work Plan, the Contractor shall submit a modification of its existing plan for review and acceptance by the Engineer prior to implementing the change.

If air samples collected outside of the Regulated Area during activities impacting lead paint indicate airborne lead concentrations greater than original background levels or $30 \mu\text{g}/\text{m}^3$, whichever is larger, or if at any time visible emissions of lead paint extend out from the Regulated Area, an examination of the Regulated Area shall be conducted and the cause of such emissions corrected. Cleanup of surfaces outside the Regulated Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming work.

Work outside the initial designated area(s) will not be paid for by the Engineer. The Contractor will be responsible for all costs incurred from these activities including repair of any damage.

B. Regulated Area

The Contractor shall establish a Regulated Area through the use of appropriate barrier tape or other means to control unauthorized access into the area where activities impacting lead paint are occurring. Warning signs meeting the requirements of 29 CFR 1926.62 shall be posted at all approaches to Regulated Areas. These signs shall read:

DANGER
LEAD WORK AREA
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK, OR SMOKE IN THIS AREA

The Contractor shall implement appropriate engineering controls such as poly drop cloths, local exhaust ventilation, wet dust suppression methods, etc. as necessary, and as approved by the Engineer, to prevent the spread of lead contamination beyond the Regulated Area in accordance with the Contractor's approved work plan. Should the previously submitted work plan prove to be insufficient to contain the contamination, the Contractor shall modify its plan and submit it for review by the Engineer.

C. Wash Facilities:

The Contractor shall provide handwash facilities in compliance with 29 CFR 1926.51(f) and 29 CFR 1926.62 regardless of airborne lead exposure.

If employee exposure to airborne lead exceeds the OSHA Permissible Exposure Limit of 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), shower rooms must be provided. The Shower Room shall be of sufficient capacity to accommodate the number of workers. One shower stall shall be provided for each eight (8) workers. Showers shall be equipped with hot and cold or warm running water. Shower water shall be collected and filtered using best available technology and disposed of in accordance with all Federal, State and local laws, regulations and ordinances.

D. Personal Protection:

The Contractor shall initially determine if any employee performing construction tasks impacting lead paint may be exposed to lead at or above the OSHA Action Level of 30 $\mu\text{g}/\text{m}^3$. Assessments shall be based on initial air monitoring results as well as other relevant information. The Contractor may rely on historical air monitoring data obtained within the past 12 months under workplace conditions closely resembling the process, type of material, control methods, work practices and environmental conditions used and prevailing in the Contractors current operations to satisfy the exposure assessment requirements. Monitoring shall continue as specified in the OSHA standard until a negative exposure assessment is developed.

Until a negative exposure assessment is developed for each task impacting lead paint, the Contractor shall ensure that all workers and authorized person entering the Regulated Area wear protective clothing and respirators in accordance with OSHA 29 CFR 1926.62. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Sufficient quantities shall be provided to last throughout the duration of the project.

Protective clothing provided by the Contractor and used during chemical removal operations shall be impervious to caustic materials. Gloves provided by the Contractor and used during chemical removal shall be of neoprene composition with glove extenders.

Respiratory protective equipment shall be provided and selection shall conform to 42 CFR Part 84, 29 CFR Part 1910.134, and 29 CFR Part 1926.62. A formal respiratory protection program must be implemented in accordance with 29 CFR Part 1926.62 and Part 1910.134.

E. Air Monitoring Requirements

The Contractor shall:

1. Provide air monitoring equipment including sample filter cassettes of the type and quantity required to properly monitor operations and personnel exposure surveillance throughout the duration of the project.
2. Conduct initial exposure monitoring to determine if any employee performing construction tasks impacting lead paint may be exposed to lead at or above the OSHA Action Level of 30 micrograms per cubic meter. Monitoring shall continue as specified in the OSHA standard until a negative exposure assessment is developed.
3. Conduct personnel exposure assessment air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.62. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.

F. Lead Abatement Procedures

The Contractor's Competent Person shall be at the job site at all times during work impacting lead.

Work impacting lead paint shall not begin until authorized by the Engineer, following a pre-work visual inspection by the Project Monitor or Engineer to verify existing conditions.

Any activity impacting lead painted surfaces shall be performed in a manner which minimizes the spread of lead dust contamination and generation of airborne lead.

The Contractor shall conduct exposure assessments for all tasks which impact lead paint in accordance with 29 CFR 1926.62(d) and shall implement appropriate personal protective equipment until negative exposure assessments are developed.

All work impacting the materials identified below shall be conducted within an established Regulated Area with a remote wash facility/decontamination system in accordance with "C. Wash Facilities" and the OSHA Lead in Construction Standard. In accordance with 29 CFR 1926.62, engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the Regulated Area and limit the generation of airborne lead. All wastes containing lead paint shall be properly contained and secured for storage, transportation and disposal.

The Contractor shall ensure proper entry and exit procedures for workers and authorized persons who enter and leave the Regulated Area. All workers and authorized persons shall leave the Regulated Area and proceed directly to the wash or shower facilities where they will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Lead chips and dust must not be removed by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with Federal, State and local water discharge standards. Any permit required for such discharge shall be the responsibility of the Contractor.

No one shall eat, drink, smoke, chew gum or tobacco, or apply cosmetics while in the Regulated Area.

Data from the limited lead testing performed by the Engineer is documented in the reports listed in the "Notice to Contractor – Hazardous Materials Investigations" or is presented herein. Under no circumstances shall this information be the sole means used by the Contractor for determining the extent of lead painted materials. The Contractor shall be responsible for verification of all field conditions affecting performance of the work as described in these Specifications in accordance with OSHA, USEPA, USDOT and CTDEEP standards. Compliance with the applicable requirements is solely the responsibility of the Contractor.

The following details the extent of each phase of operation designated for this project. Phase areas may be combined or divided at the direction of the Engineer. Proceed through the sequencing of the work phases under the direction of the Engineer.

Bridge No. 03474, Route 200 over Interstate 395, Thompson, CT

- **Lead paint was identified on the metal railings/railing support components and structural steel/metal bridge components of Bridge No. 03474.**

Bridge No. 03474	Substrate	Color	Results
Railings/railing support components	Metal	Grey	0.0 – 13.7 mg/cm²
Girders, Bearings, Rockers, Diaphragms, Crossbeams, Connection Plates, Structural, etc.	Metal	Grey	0.0 – 26.1 mg/cm²

- **The paint waste stream generated from the metal railings/railing support components and structural steel/metal bridge components was characterized as CTDEEP/RCRA hazardous waste.**

Paint debris (metal railings/railing support components)	11 mg/L
Paint debris (structural steel/metal bridge components)	540 mg/L

While conducting work on Bridge No. 03474, where it is necessary to impact the lead painted metal, the Contractor shall either:

- a. **Remove the paint to be impacted prior to impacting the metal/concrete in accordance with OSHA Lead in Construction Standard 29CFR 1926.62, or**
- b. **Impact the metal/concrete using mechanical means with the paint in place in accordance with OSHA Lead in Construction Standard 29CFR 1926.62.**

The Contractor shall submit a Work Plan to ConnDOT outlining the exact procedures that will be used to perform the work, contain the spread of lead debris and protect the employees performing the required renovation work impacting the lead paint. No work shall be started by the Contractor until the Work Plan is approved by the Engineer.

All work impacting the lead paint materials shall be conducted within an established Regulated Area with a remote wash facility/decontamination system in accordance with “C. Wash Facilities” and the OSHA Lead in Construction Standard. In accordance with

29 CFR 1926.62, engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the Regulated Area and limit the generation of airborne lead. All wastes containing lead paint shall be properly contained and secured for storage, transportation and disposal.

The Engineer has characterized the paint waste stream associated with the metal railings/railing support components and structural steel/metal bridge components at Bridge No. 03474 as CTDEEP/RCRA hazardous waste. If the paint is removed from the metal surfaces of the railing/railing support components or structural steel bridge components, the paint shall be handled and disposed of as CTDEEP/RCRA hazardous waste as described under this Item 0020903A.

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

Should lead contamination be discovered outside of the Regulated Area, the Contractor shall immediately stop all work in the Regulated Area, eliminate causes of such contamination and take steps to decontaminate non-work areas.

Special Requirements:

1. Demolition/Renovation:
 - a. Demolish/renovate in a manner which minimizes the spread of lead contamination and generation of lead dust.
 - b. Implement dust suppression controls, such as misters, local exhaust ventilation, etc. to minimize the generation of airborne lead dust.
 - c. Segregate work areas from non-work areas through the use of barrier tape, drop cloths, etc.
 - d. Clean up immediately after renovation/demolition has been completed
2. Chemical Removal:
 - a. Apply chemical stripper in quantities and for durations specified by manufacturer.
 - b. Where necessary, scrape lead paint from surface down to required level of removal (i.e. stabilized surface, bare substrate with no trace of residual pigment, etc.). Use sanding, hand scraping, and dental picks to supplement chemical methods as necessary.

- c. Apply neutralizer compatible with substrate and chemical agent to substrate following removal in accordance with manufacturer's instructions.
 - d. Protect adjacent surfaces from damage from chemical removal.
 - e. Maintain a portable eyewash station in the work area.
 - f. Wear respirators that will protect workers from chemical vapors.
 - g. Do not apply caustic agents to aluminum surfaces.
3. Mechanical Paint Removal:
- a. Provide sanders, grinders, rotary wire brushes, or needle gun removers equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
 - b. Provide HEPA vacuums that are high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. The HEPA vacuum shall be equipped with a pivoting vacuum head.
 - c. Remove lead paint from surface down to required level of removal (i.e. stabilized surface, bare substrate with no trace of residual pigment, etc.). Use chemical methods, hand scraping, and dental picks to supplement abrasive removal methods as necessary.
 - d. Protect adjacent surfaces from damage from abrasive removal techniques.
 - e. "Sandblasting" type removal techniques shall not be allowed.
4. Component Removal/Replacement:
- a. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
 - b. Remove components utilizing hand tools and follow appropriate safety procedures during removal. Remove the components by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.

- c. Clean up immediately after component removals have been completed. Remove any dust located behind the component removed.

G. Prohibited Removal Methods:

The use of heat guns in excess of 700 degrees Fahrenheit to remove lead paint is prohibited.

The use of sand, steel grit, air, CO₂, baking soda, or any other blasting media to remove lead or lead paint without the use of a HEPA ventilated contained negative pressure enclosure is prohibited.

Power/pressure washing shall not be used to remove lead paint.

Compressed air shall not be utilized to remove lead paint.

Chemical strippers containing Methylene Chloride are prohibited. Any chemical stripping may be prohibited on a project by project basis.

Power tool assisted grinding, sanding, cutting, or wire brushing of lead paint without the use of cowled HEPA vacuum dust collection systems is prohibited.

Lead paint burning, busting of rivets painted with lead paint, welding of materials painted with lead paint, and torch cutting of materials painted with lead paint is prohibited. Where cutting, welding, busting, or torch cutting of materials is required, lead paint in the affected area must be removed first.

Chemical stripping of coatings from bridge components is generally prohibited unless specifically allowed on a project by project basis.

H. Clean-up and Visual Inspection:

The Contractor shall remove and containerize all lead waste material and visible accumulations of debris, paint chips and associated items.

During clean-up the Contractor shall utilize rags and sponges wetted with lead-specific detergent and water as well as HEPA filtered vacuum equipment.

The Engineer will conduct a visual inspection of the work areas in order to document that all surfaces have been maintained as free as practicable of accumulations of lead in accordance with 29 CFR 1926.62(h). If visible accumulations of waste, debris, lead paint chips or dust are found in the work area, the Contractor shall repeat the cleaning, at the Contractor's expense, until the area is in compliance. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate clean up of the work site.

I. Post-Work Regulated Area Deregulation:

Following an acceptable visual inspection, any engineering controls implemented may be removed.

A final visual inspection of the work area shall be conducted by the Competent Person and the Project Monitor or Engineer to ensure that all visible accumulations of suspect materials have been removed and that no equipment or materials associated with the lead paint removal remain. If this final visual inspection is acceptable, the Contractor will reopen the Regulated Area and remove all signage.

The Contractor shall restore all work areas and auxiliary areas utilized during work to conditions equal to or better than original. Any damage caused during the performance of the work activity shall be repaired by the Contractor at no additional expense to the State.

J. Waste Disposal/Recycling:

Non-metallic building debris waste materials tested and found to be non-hazardous Construction and Demolition (C&D) bulky waste shall be disposed of properly at a CTDEEP approved Solid Waste landfill as described under this Item 0020903A.

Metallic debris shall be segregated and recycled as scrap metal at an approved metal recycling facility.

Concrete, brick, etc. coated with any amount of lead paint cannot be crushed, recycled or buried on-site to minimize waste disposal unless tested and found to meet the RSR GA/Residential standards.

Hazardous lead debris shall be disposed of as described under this Item 0020903A.

The Contractor shall comply with the latest requirements of the USEPA RCRA Hazardous Waste Regulations 40 CFR 260-274 and the DEEP Hazardous/Solid Waste Management Standards 22a-449(c).

Hazardous lead debris shall be transported from the Project by a licensed hazardous waste transporter approved by the Department and disposed of at an EPA-permitted and Department-approved hazardous waste landfill within 90 days from the date of generation.

The Contractor must use one or more of the following Department-approved disposal facilities for the disposal of hazardous waste:

Clean Earth of North Jersey, Inc., (CENJ) 115 Jacobus Avenue, South Kearny, NJ 07105 Phone: (973) 344-4004; Fax: (973) 344-8652	Clean Harbors Environmental Services, Inc. 2247 South Highway 71, Kimball, NE 69145 Phone: (308) 235-8212; Fax: (308) 235-4307
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Clean Harbors of Braintree, Inc. 1 Hill Avenue, Braintree, MA 02184 Phone: (781) 380-7134; Fax: (781) 380-7193	ACV Enviro(CycleChem)(General Chem Co) 217 South First Street, Elizabeth, NJ 07206 Phone: (908) 355-5800; Fax (908) 355-0562
Triumverate (EnviroSafe Corp Northeast) (Jones Environmental Services (NE), Inc.) 263 Howard Street, Lowell, MA 01852 Phone: (978) 453-7772; Fax: (978) 453-7775	US Ecology Environmental Quality Detroit, Inc. 1923 Frederick Street, Detroit, MI 48211 Phone: (800) 495-6059; Fax: (313) 923-3375
Stericycle (Republic Environmental Systems) 2869 Sandstone Drive, Hatfield, PA 19440 Phone: (215) 822-8995; Fax: (215) 997-1293	Clean Harbors – Spring Grove Facility 4879 Spring Grove Ave, Cincinnati OH 45322 Phone: (513) 681-6242; Fax: (513) 681-0869
Envirite of PA (US Ecology) 730 Vogelsong Road, York, PA 17404 Phone: (717) 846-1900; Fax: (717) 854-6757	Stablex, Canada, Inc. 760 Industrial Bl, Blainville Quebec J7C3V4 Phone: (451) 430-9230; Fax: (451) 430-4642
Environmental Quality Company: Wayne Disposal Facility 49350 North I-94 Service Drive Belleville, MI 48111 Phone: (800) 592-5489; Fax: (800) 592-5329	Stericycle (Northland Environmental, Inc.) (PSC Environmental Systems) 275 Allens Avenue, Providence, RI 02905 Phone: (401) 781-6340; Fax: (401) 781-9710

No facility may be substituted for the one(s) designated in the Contractor's submittal without the Engineer's prior approval. If the material cannot be accepted by any of the Contractor's designated facilities, the Department will supply the Contractor with the name(s) of other acceptable facilities.

Prior to the generation of any hazardous waste, the Contractor shall notify the Engineer of its selected hazardous waste transporter and disposal facility. The Contractor must submit to the Engineer (1) the transporter's current US DOT Certificate of Registration and (2) the transporter's current Hazardous Waste Transporter Permits for the State of Connecticut, the hazardous waste destination state and any other applicable states. The Engineer will then obtain on a contiguous per site basis a temporary EPA Generators ID number for the site that he will forward to the Contractor. Any changes in transporter or facility shall be immediately forwarded to the Engineer for review.

Handling, storage, transportation and disposal of hazardous waste materials generated as a result of execution of this project shall comply with all Federal, State and Local regulations including the USEPA RCRA Hazardous Waste Regulations (40 CFR Parts 260-271), the CTDEEP Hazardous Waste Regulations (22a-209 and 22a-449(c)), and the USDOT Hazardous Materials Regulations (49 CFR Part 171-180).

All debris shall be contained and collected daily or more frequently as directed by the Engineer, due to debris buildup. Debris shall be removed by HEPA vacuum collection. Such debris and paint chips shall be stored in leak-proof storage containers in the secured storage site, or as directed by the Engineer. The storage containers and storage locations shall be reviewed by the Engineer and shall be located in areas not subject to ponding. Storage containers shall be placed

on pallets and closed and covered with tarps at all times except during placement, sampling and disposal of the debris.

Hazardous waste materials are to be properly packed and labeled for transport by the Contractor in accordance with EPA, CTDEEP and USDOT regulations. The disposal of debris characterized as hazardous waste shall be completed within 90 calendar days of the date on which it began to be accumulated in the lined containers. Storage of containers shall be in accordance with current DEEP/EPA procedures.

The Contractor shall label hazardous waste storage containers with a 6-inch square, yellow, weatherproof, Hazardous Waste sticker in accordance with USDOT regulations.

Materials other than direct paint related debris which are incidental to the paint removal work activities (tarps, poly, plywood, PPE, gloves, decontamination materials, etc.) which may be contaminated with lead, shall be stored separately from the direct paint debris, and shall be sampled by the Engineer for waste disposal characterization testing. Such materials characterized as hazardous shall be handled/disposed of as described herein, while materials characterized as non-hazardous shall be disposed of as non-hazardous CTDEEP Solid Waste.

Direct paint related debris materials not previously sampled and characterized for disposal, which may be originally presumed to be hazardous waste, shall also be stored separately and sampled by the Engineer for ultimate waste disposal characterization testing and handled/disposed of based on that testing.

Project construction waste materials unrelated to the paint removal operations shall NOT be combined/stored with paint debris waste and/or incidental paint removal materials as they are not lead contaminated and shall NOT be disposed of as hazardous waste. The Engineer's on-site Inspectors shall conduct inspections to verify materials remain segregated.

The Contractor shall obtain and complete all paperwork necessary to arrange for material disposal, including disposal facility waste profile sheets. It is solely the Contractor's responsibility to co-ordinate the disposal of hazardous materials with its selected treatment/recycling/disposal facility(s). Upon receipt of the final approval from the facility, the Contractor shall arrange for the loading, transport and treatment/recycling/disposal of the materials in accordance with all Federal and State regulations. **No claim will be considered based on the failure of the Contractor's disposal facility(s) to meet the Contractor's production rate or for the Contractor's failure to select sufficient facilities to meet its production rate.**

The Contractor shall process the hazardous waste such that the material conforms with the requirements of the selected treatment/disposal facility, including but not limited to specified size and dimension. Refusal on the part of the treatment/disposal facility to accept said material solely on the basis of non-conformance of the material to the facility's physical requirements is the responsibility of the Contractor and no claim for extra work shall be accepted for reprocessing of said materials to meet these requirements.

All DOT shipping documents, including the Uniform Hazardous Waste Manifests utilized to accompany the transportation of the hazardous waste material shall be prepared by the Contractor and reviewed/signed by an authorized agent representing ConnDOT, as Generator, for each load of hazardous material that is packed to leave the site. The Contractor shall not sign manifests on behalf of the State as Generator. The Contractor shall forward the appropriate original copies of all manifests to the Engineer the same day the material leaves the Project site.

Materials not related to lead paint removal and/or characterized as non-hazardous waste shall NOT be shipped for hazardous waste disposal in accordance with USEPA RCRA hazardous waste minimization requirements.

A load-specific certificate of disposal, signed by the authorized agent representing the waste disposal facility, shall be obtained by the Contractor and promptly delivered to the Engineer for each load.

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 hazardous materials off-site:

- All vehicles departing the site are to be properly logged to show the vehicle identification, driver's name, time of departure, destination, and approximate volume, and contents of materials carried. Vehicles shall display the proper USDOT placards for the type and quantity of waste;
- No materials shall leave the site unless a disposal facility willing to accept all of the material being transported has agreed to accept the type and quantity of waste;
- Documentation must be maintained indicating that all applicable laws have been satisfied and that the materials have been successfully transported and received at the disposal facility; and,
- The Contractor shall segregate the waste streams (i.e. concrete, wood, etc.) as directed by the receiving disposal facility.

Any spillage of debris during disposal operations during loading, transport and unloading shall be cleaned up in accordance with EPA 40 CFR 265 Subparts C & D, at the Contractor's expense.

The Contractor is liable for any fines, costs or remediation costs incurred as a result of their failure to be in compliance with this Item and all Federal, State and Local laws.

K. Project Closeout Data:

Provide the Engineer, within thirty (30) days of completion of the project site work, a compliance package; which shall include, but not be limited to, the following:

1. Competent persons (supervisor) job log;
2. OSHA-compliant personnel air sampling data;
3. Completed waste shipment papers for non-hazardous lead construction and demolition (C&D) waste disposal or recycling and scrap metal recycling.
4. Copies of completed Hazardous Waste Manifests (signed by authorized disposal facility representative).

Method of Measurement:

The completed work shall be paid as a lump sum. This item will include all noted services, equipment, facilities, testing and other associated work for up to three (3) ConnDOT project representatives. Services provided to any ConnDOT project representatives in excess of three (3) representatives will be measured for payment in accordance with Article 1.09.04 – “Extra and Cost-Plus Work.”

Basis of Payment:

The lump sum price bid for this item shall include: services, materials, equipment, all permits, notifications, submittals, personal air sampling, personal protection equipment, temporary enclosures, incidentals, fees and labor incidental to activities impacting lead removal, treatment and handling of lead contaminated materials, and the transport and disposal of any hazardous and/or non-hazardous, non-RCRA lead waste.

Final payment will not be made until all project closeout data submittals have been completed and provided to the Engineer. Once the completed package has been received in its entirety and accepted by the Engineer, final payment will be made to the Contractor.

<u>Pay Item</u>	<u>Pay Unit</u>
Lead Compliance for Miscellaneous Exterior Tasks	Lump Sum

END OF SECTION

ITEM #0100600A – CONSTRUCTION ACCESS

Description:

The item “Construction Access” shall consist of the design, construction, maintenance, and restoration of a temporary staging area within the project limits to facilitate construction of the bridge as shown on the contract documents. This item shall include all site preparation, ground improvements, temporary fill, access roads, anti-tracking pads and drainage control and any other items that the Contractor requires in order to facilitate using the area as a construction site. The staging area and limits referenced on the plans are schematic. Also included in this item are any geotechnical investigations (e.g. borings, etc.), tests, analyses, etc. that the Contractor needs to perform in support of this work. Also included is the removal of all Construction Access facilities upon completion of the work and restoring the site to its original conditions. The item also includes the cost of protecting any existing utilities in the staging area that may be impacted by the construction.

Maintenance of the access roads and staging area shall include daily housekeeping and sweeping of travel surfaces in order to minimize dust.

The information shown on the plans pertaining to construction access, sequence of construction and erection procedures conveys the assumptions made by the designer in designing the structure and is for information only. The Contractor shall be responsible for selecting the means and methods for construction, subject to the restrictions shown here and elsewhere in the specifications. The Contractor shall also submit information including design calculations, construction schematics, construction sequences and procedures to the Engineer for review. The design of the construction access shall comply with water pollution control requirements of Article 1.10.03 of the Standard Specifications.

Construction Methods:

The Contractor shall, at least 30 calendar days prior to the start of construction of the staging area, submit to the Engineer, for review and approval, detailed final construction access drawings and methodology working drawings of their proposal, in accordance with the requirements of Article 1.5.02. The working drawings shall be prepared, stamped and signed by a Professional Engineer licensed in the State of Connecticut. These plans shall include, but shall not be limited to:

- 1) The limits of excavation, temporary fill, site preparation and ground improvements to facilitate demolition of the existing superstructure and substructures, including the results of any geotechnical investigations, drainage control methods, traffic control plans and site access plans.
- 2) The sequence and method of erection of the new structure and the demolition of existing structures and all limitations of operations outlined in these specifications.

The design of all staging components, including but not limited to, temporary access roads and site preparation shall be done in accordance with the latest edition, including interims, of the *AASHTO Guide Design Specifications for Bridge Temporary Works*.

The furnishing of such plans, methods and calculations shall not serve to relieve the Contractor of the responsibility for the safety of the work and the successful completion of the project.

As indicated elsewhere in the Special Provisions, the Contractor shall accurately locate the position of all underground utilities, piles, etc. prior to excavation and locating heavy equipment during demolition and erection.

Removal of all temporary works shall be done in such a way as not to disturb or otherwise damage any permanent construction.

The Contractor is responsible to incorporate best management practices required in Article 1.10.03, such as surfacing the construction staging area with gravel, compacted base rock material or other measures to prevent tracking or deposition of mud, dirt, dust and debris onto the travel lanes of I-395 or areas outside of the staging area.

Method of Measurement:

Within sixty (60) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for review a schedule of values showing the cost breakdown of the lump sum bid price. The submission must include substantiation showing that the cost breakdown submitted is reasonable based on the work to be accomplished.

Basis of Payment

Construction Access will be paid for at the contract lump sum price for “Construction Access” which price shall include the design, construction, maintenance, repair, and removal of environment protection, temporary staging areas, crane mats, temporary fill, access roads, approach ramps, utility protection, restoring the area to original conditions and all materials, tools, equipment, labor and work incidental thereto. This item also includes provision and maintenance of anti-tracking pads and any work associated with protecting any existing utilities.

Pay Item

Pay Unit

Construction Access

Lump Sum

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 intrusive construction activities performed within the Project Limits. Work under this Item consists of the development and implementation of a written Health and Safety Plan (HASP) that addresses the relative risk of exposure to potential 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 HASP, which is compatible with the Contractor's HASP, and will be responsible for the health and safety of all of its Project Inspectors and Department employees.

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

A. Existing Information

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 discussed in the "Notice to Contractor – Environmental Investigations" to develop the HASP.

B. 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 intrusive 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.

C. 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.

D. Submittals

An electronic copy 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 intrusive work within 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, 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 intrusive work activities within the Project Limits, as shown on the Plans, 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 determined to conform to the requirements of this specification 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.**

E. HASP Provisions

1. 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 to that topic.**

2. Elements

a. 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.

b. 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.

c. 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.

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, including current 8-hour refresher training, and OSHA 8-hour HAZWOPER Supervisor training; a minimum of one year of working experience with the regulated compounds that have been documented to exist within the 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:

- i. Directing and implementing the HASP;
- ii. 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;
- iii. Authorizing Stop Work Orders, which shall be executed upon the determination of an imminent health and safety concern;
- iv. 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;
- v. Authorizing work to resume, upon approval from the Contractor's HSM;
- vi. Directing activities, as defined in the Contractor's written HASP, during emergency situations; and
- vii. Providing personal monitoring where applicable, and as identified in the HASP.

d. 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.

e. 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 PPE to ensure 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.

f. 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.

g. 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.

h. 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).

i. Communications

Written procedures for routine and emergency communications procedures shall be included in the Contractor's HASP.

j. Personal Hygiene, Personal Decontamination and Equipment Decontamination

Decontamination facilities and procedures for PPE, sampling equipment, and heavy equipment shall be discussed in detail in the HASP.

k. 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.

l. 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.

m. 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 an accident report to the Engineer.

n. Confined Space Entry Procedures

Confined space entry procedures, both permit required and non-permit required, shall be discussed in detail.

o. 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 is being followed.

p. 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.

F. 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 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 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.) that 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 a secure area of the Project, to be approved by the Engineer, for management by others.

G. 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

- A. 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:

1. The development costs associated with preparing the HASP in accordance with these Specifications.
 2. The cost per month for the duration of the Project to implement the HASP and provide the services of the HSM and the HSO.
- B. If the lump sum bid price breakdown is unacceptable to the Engineer, substantiation showing that the submitted costs are reasonable shall be required.
- C. Upon acceptance of the payment schedule by the Engineer, payments for work performed will be made as follows:
1. The lump sum HASP development cost will be certified for payment.
 2. 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.
 3. 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.
 4. 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 shall be paid for at the Contract lump sum price for “ENVIRONMENTAL HEALTH AND SAFETY,” which 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, CPC, 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.

<u>Pay Item</u>	<u>Pay Unit</u>
Environmental Health and Safety	LS

ITEM #0202491A – REMOVAL OF GRANITE STONE CURBING

Description: Work under this item shall consist of the removing of existing stone curbing in accordance with the plans or as directed by the Engineer.

Construction Methods: The stone curbing shall be removed with care to avoid damage. Curbing shall remain the property of the State unless otherwise ordered by the Engineer and shall be transported to: *Putnam Maintenance Facility; 3 Industrial Park Road; Putnam, CT 06260; General Supervisor – Jeff Tatro – (860)928-6525*. Removals shall be made to neat lines. Partial removals shall generally be at existing joints except when a location other than a joint is set as the limit by the Engineer due to construction staging limits. At removal limits where a joint is not present, the Contractor shall cut the stone curbing full depth to create a neat line.

Any surplus excavated material shall be used where directed by the Engineer. Any surplus or unsuitable material not required, nor permitted for use, shall be disposed of in accordance with Subarticle 2.02.03-10 of the Standard Specifications.

Method of Measurement: This work will be measured for payment by the actual number of linear feet of granite stone curbing removed. Measurement shall be made along the top arris line of face of curb.

Basis of Payment: This work will be paid for at the contract unit price per linear foot for “Removal of Granite Stone Curbing”, which price shall include all excavation, backfilling, and disposal. The price shall also include all materials, equipment, tools and labor incidental to the completion of the removal of granite stone curbing. There will be no direct payment for removing the curbing and hauling it to the specified location; but the cost of the hauling shall be considered as included in the general cost of the work.

<u>Pay Item</u>	<u>Pay Unit</u>
Removal of Granite Stone Curbing	l.f.

ITEM #0202634A - GEOTECHNICAL INSTRUMENTATION

DESCRIPTION:

General: This work shall consist of furnishing all instruments, tools, materials, labor, and equipment necessary to furnish, install, maintain, and monitor optical survey monitoring points on the GRS-IBS abutments in accordance with the plans and specifications. The survey monitoring points shall be installed and monitored during and after construction of the GRS-IBS abutments.

The work shall include the following:

- A. Providing a third-party Land Surveyor, Licensed in the State of Connecticut, for baseline readings, monitoring readings, and certification of vertical and horizontal displacement monitoring data. All submittals and reports shall be prepared and stamped by the Contractor's third-party Land Surveyor.
- B. Providing and installing survey targets and benchmarks.
- C. Monitoring and reporting of the survey data.

The survey targets and benchmarks shall be protected by the Contractor during the term of the contract and shall be replaced or restored at the Contractor's expense and to the satisfaction of the Engineer if damaged during construction. The installation and monitoring of the survey targets and benchmarks shall be coordinated with the construction of the GRS-IBS abutments.

Experience Requirements and Working Drawings Submittals: The Contractor shall submit in writing to the Engineer:

- A. Name of the licensed third-party surveyor.
- B. Proposed products and materials for the survey targets, reference points, and benchmarks.
- C. Proposed locations for reference points and benchmarks.
- D. Proposed survey instrument and survey procedures.

Monitoring Documentation: Unless otherwise provided by the Engineer, submit proposed forms to be used for recording observations and monitoring data. Submit a sample showing proposed format for recording of readings, calculations, and plots. Submit the following within 12 hours after monitoring any survey target:

- A. A copy of the data sheet containing a cumulative history of all readings.
- B. A copy of the plot of measured value versus time, which also includes a time history of construction activity (i.e. current elevation of top of GRS-IBS abutment).

Provide site benchmark and reference point information to the Engineer before GRS-IBS construction begins.

MATERIALS:

1 - Survey Targets: The targets shall be Long Distance Retro Reflective Survey Target w/ 60 x 60 mm Reflector in a Grey Carrier Plate, manufactured by Bernsten International or an approved equal. Provide survey targets and accompanying survey instruments capable of measuring horizontal and vertical displacement. Attach the survey targets to the facing blocks using a UV-6800 Adhesive, manufactured by Eclectic Products, Inc., or an approved equal.

CONSTRUCTION METHODS:

1 – General: The Engineer shall be notified prior to any work on survey target installation, baseline measurements, and monitoring.

2 – Instrumentation Layout: Locations and type of instruments to be installed shall be as shown on the Plans, as described within this specification, or as approved by the Engineer. The Engineer reserves the right to modify the instrument layout as is deemed necessary.

3 – Survey Targets: All survey targets shall be installed in accordance with the manufacturer’s recommendations utilizing the approved adhesive product. Install a minimum of sixteen (16) survey targets, four (4) on the transverse face of each abutment as follows:

- A. Install a lower and upper target at the approximate 1/3-points along the face of each abutment.
- B. Install the lower target approximately 2 feet above the finished grade level in front of the abutment.
- C. Install the upper target approximately 2 feet below the bearing level of the bridge.
- D. Install each target within 48 hours after placing the facing block on which the target is installed.

4 – Baseline Measurement: Determine the initial location of each survey target with respect to at least two benchmarks (primary and backup) outside the influence of the construction zone. Baseline measurements shall be taken within 24 hours of installation of each survey target.

5 – Survey Instruments: Perform survey using reflective survey targets and a total station with at least 3-sec angular accuracy. Vertical and horizontal readings shall be reported to the nearest 0.001 feet.

6 – Monitoring Schedule: Survey all survey targets at the following monitoring frequency:

Time Period	Monitoring Frequency
During active abutment construction	Once per week
During first month after abutment is topped out	Once per week
After the first month following abutment top-out (for a minimum of two months, and until there is no change over the last three readings)	Twice per month

METHOD OF MEASUREMENT:

No separate measurement will be made for the materials and work specified in this Section. The unit of measurement for Geotechnical Instrumentation will be lump sum.

BASIS OF PAYMENT:

Geotechnical Instrumentation will be paid for at the contract lump sum amount for the item Geotechnical Instrumentation. Payment will be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the work as specified in this Specification and as shown on the Plans.

<u>Pay Item</u>	<u>Pay Unit</u>
Geotechnical Instrumentation	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 #0216012A - CONTROLLED LOW STRENGTH MATERIAL

Description: Controlled Low Strength Material (CLSM) is a self consolidating, rigid setting material to be used in backfills, fills, structural fills and elsewhere as indicated on the plans, or as directed by the Engineer. The flow and set time characteristics of CLSM shall be designed to meet the specific job conditions. All CLSM material covered by this specification shall be designed to be hand excavatable at any time after placement. It shall be composed of a mixture of portland cement, aggregate, and water with the option of using fly ash, slag cement, air-entraining agents, and other approved admixtures.

Materials: All materials utilized in the CLSM mix design shall be in accordance with the applicable requirements of Article M.03.01

Composition: The composition of the CLSM shall be in accordance with the requirements set forth in Article M.03.01-General Composition of Concrete Mixes, as well as the applicable sections of ACI 229R. The Contractor shall submit each proposed mix design, with all supporting data, to the Engineer for review and approval at least two weeks prior to its use.

The setting time of CLSM materials shall be designed so as to achieve the strength necessary to comply with the time constraints called for under the Maintenance and Protection of Traffic requirements of the project specifications. The use of chloride accelerators is not permitted.

The minimum compressive strength of the CLSM material shall be 30 pounds per square inch (psi) and the maximum compressive strength of the CLSM shall be 150 pounds per square inch (psi) when tested in accordance with ASTM D4832 after 56 days.

The CLSM mix design shall utilize a nominal maximum size of No. 8 aggregate as specified in M.01.01.

CLSM mixes shall have a minimum of 20% entrained air when tested in accordance with AASHTO T152.

Construction Methods: CLSM shall only be placed when the ambient temperature is at least 32° F and rising. CLSM material shall be deposited within 2 hours of initial mixing.

CLSM may be placed by chutes, conveyors, buckets or pumps depending upon the application and accessibility of the site. Should voids or cavities remain after the placement of the CLSM, the Contractor shall modify the placement method or flow characteristics of the CLSM. Voids or cavities which have not been filled properly shall be corrected as directed by the Engineer and at the Contractor's expense.

Method of Measurement: This work will be measured for payment by the actual number of cubic yards of "Controlled Low Strength Material installed and accepted within the pay limits shown on the contract plans or as directed by the Engineer.

Basis of Payment: This work will be paid at the contract unit price per cubic yard “Controlled Low Strength Material,” which price shall include all materials, equipment, tools and labor incidental thereto.

Pay Item

Pay Unit

Controlled Low Strength Material

CY

ITEM #0219011A – SEDIMENT CONTROL SYSTEM AT CATCH BASIN

Description: This work shall consist of furnishing, installing, cleaning, maintaining, replacing, and removing sedimentation control at catch basins at the locations and as shown on plans and as directed by the Engineer.

Materials: Sack shall be manufactured by one of the following or an approved equal.

Inlet Pro® Sediment Bags
Hanes Geo Components
www.hanesgeo.com
815 Buxton Street
Winston-Salem, NC 27101

Dandy Sack™
Dandy Products Inc.
www.dandyproducts.com
P.O. Box 1680
Powell, OH 43065

HD Series Inlet Bags
U.S. Silt & Site Supply Corporation
www.ussilt.com
P.O. Box 2461
Concord, NH 03302

Construction Methods: Sediment Control Systems At Catch Basin shall be installed per manufacturer instructions by the Contractor in locations shown on the plans or as directed by the Engineer.

The installations shall be maintained or replaced until they are no longer necessary for the purpose intended or are ordered removed by the Engineer. Accumulated sediment shall be removed when filled per the manufacturer’s recommendation or as ordered by the Engineer. The systems will be completely removed from the project at the completion of the project, unless specifically authorized by the Engineer to be left in place.

Method of Measurement: This work will be measured for payment by the number of Sediment Control Systems at Catch Basin, installed, maintained, accepted and removed. Double catch basins (catch basins with two (2) grates) shall have a unit installed for each grate. There will be no separate measurement for maintenance or replacement associated with this item.

Basis of Payment: Payment for this work will be made at the contract unit price each for "Sediment Control System at Catch Basin" complete in place, which price shall include all materials, equipment, tools and labor incidental to the installation, maintenance, emptying, replacement, removal and disposal of the system and surplus material. No payment shall be made for the clean out of accumulated sediment.

Pay Item	Pay Unit
Sediment Control System at Catch Basin	Ea.

ITEM #0406002A – TEMPORARY PAVEMENT

Description: This work shall consist of the installation and removal of temporary pavement at the locations shown on the Plans or as directed by the Engineer. The work shall include the following:

1. Excavation, removal, and disposal of all existing materials within the limits of the temporary pavement including sawcutting of any existing pavement,
2. Grading and compacting remaining subbase or subgrade,
3. Furnishing, installation, and compaction of new subbase,
4. Application of tack coat as required on the vertical edges of any sawcut areas and between pavement lifts,
5. Placement and compaction of bituminous concrete pavement,
6. Removal of all materials associated with the temporary pavement work as shown in the Contract documents or determined by the Engineer.

This work does not include restoration of the area to a permanent condition after temporary pavement is removed, including turf establishment or final paving, which shall be performed under separate items.

Materials: Materials for this work shall consist of the following:

1. Processed Aggregate Base shall meet the requirements of Article M.05.01.
2. Bituminous concrete meeting the requirements of Section M.04. The bituminous concrete mix used shall be HMA S0.5 Traffic Level 2 unless indicated otherwise on the Plans, or when an equivalent mix type is requested by the Contractor and approved by the Engineer at least 5 days in advance.
3. Tack coat meeting the requirements of Section M.04.

Construction Methods: Equipment for this work shall include pavement cutting as required, excavation, removal, handling, grading, placement, and compaction equipment for existing or new materials to perform all temporary pavement installation and removal operations. The Contractor shall also provide a 10-foot straightedge.

1. The limits of temporary pavement shall be identified as shown on the Plans or as directed by the Engineer.
2. Any existing pavement shall be sawcut as required. All existing materials within the temporary pavement limits (including but not limited to asphalt or concrete pavement, granular base, subbase, subgrade, fill, topsoil, and curbing) shall be excavated to the depth indicated on the Plans in accordance with Section 2.02. Excavated materials shall be removed and properly disposed of in accordance with Article 1.10.03.
3. Remaining subbase or subgrade shall be graded and compacted in accordance with Section 2.09. A minimum of four (4) passes, or coverages, shall be made by any one compaction device.
4. Processed Aggregate Base shall be installed and compacted in accordance with Article 3.04.03 to the depth shown on the Plans.
5. When applicable, the sawcut sides of any excavated areas shall be wiped or swept clean, and tack coat shall be applied covering the entire area of the vertical pavement faces and allowed to cure in accordance with Section 4.06.

6. HMA S0.5, or other approved mix type, shall be placed and compacted in accordance with Article 4.06.03 and as shown on the Plans.
7. The Contractor shall confirm that the surface elevation of the finished temporary pavement matches the elevation of the surrounding pavement surface to within ¼ inch using the 10-foot straightedge when applicable.
8. Each lift of the temporary pavement surface course shall not vary more than ¼ inch from a Contractor-supplied 10-foot straightedge. Any surface that exceeds this tolerance shall be corrected by the Contractor at their own expense.
9. All materials associated with the temporary pavement work shall be removed and properly disposed of in accordance with Article 1.10.03 at a time specified within the Contract documents or as directed by the Engineer.
10. All temporary pavement work shall be maintained in a safe and satisfactory condition until the temporary pavement area has been restored to its preexisting condition or replaced with the construction of permanent pavement or other surface type as shown in the Contract documents. All temporary pavement repairs shall be provided by the Contractor at no additional cost to the State.

Method of Measurement: This work will be measured by the number of square yards of temporary pavement installed and removed at the locations shown on the Plans or as directed by the Engineer.

Basis of Payment: This work will be paid for at the Contract unit price per square yard for “Temporary Pavement,” completed and accepted. The price shall include all tools, materials, labor, and equipment including sawcutting, excavation, removal, and disposal of all materials, grading and compacting existing subbase or subgrade, placement, grading, and compacting new subbase, application of tack coat, and placement and compaction of bituminous concrete materials.

Restoration of the area to a permanent condition after temporary pavement is removed, including turf establishment or final paving, will be paid under separate items.

There will be no additional payment for correction of temporary pavements that do not meet the specified surface tolerance when measured with the 10-foot straightedge. There will be no additional payment for repair of temporary pavements.

Pay Item	Pay Unit
Temporary Pavement	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 40°F 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
Gutter Line Sealing for Bridges

Pay Unit
l.f.

ITEM #0406314A – 80 MIL PAVEMENT MARKING GROOVE 5” WIDE
ITEM #0406315A – 80 MIL PAVEMENT MARKING GROOVE 7” WIDE
ITEM #0406317A – 80 MIL PAVEMENT MARKING GROOVE 13” 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
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 5” Wide	l.f.
80 Mil Pavement Marking Groove 7” Wide	l.f.
80 Mil Pavement Marking Groove 13” 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),
- V. Balanced Mix Design (BMD), and
- VI. 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, SMA, and BMD mixtures:
 - a. The HMA, PMA, TFWC, BRIC, SMA, or BMD 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, SMA, and BMD 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: $HMA \times [PG\%/100] \times [(Period\ Price - Base\ Price)] = \\$ \underline{\hspace{2cm}}$
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Where:

- **HMA:**
 1. For HMA, PMA, UTB-HMA, UTB-PMA, TFWC, BRIC, SMA, and BMD mixtures with pay units of tons:
The quantity in tons of accepted HMA, PMA, UTB-HMA, UTB-PMA, TFWC, BRIC, SMA, or BMD 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, SMA, or BMD 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, SMA, and BMD 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 #0503918A - JACKING AND ADJUSTING SUPERSTRUCTURE

Description: Work under this item shall consist of designing, furnishing, installing, maintaining and removing a temporary jacking systems (false-work bents, towers, or devices) that can raise the superstructure members the minimum amount necessary to permit installation of shims to attain the top of deck elevations shown on the contract plans, in accordance with these specifications, and as directed by the Engineer.

Materials: Steel, timber or any other material or combination of materials may be used for the temporary jacking and supporting of the beams.

The materials used shall be of satisfactory quality, and capable of safely carrying the anticipated loads. All materials shall be approved by the Engineer before use.

Construction Methods: Prior to construction, the Contractor shall submit working drawings, design computations and catalog cuts for review in accordance with Article 1.05.02. The design shall conform to the AASHTO LRFD Bridge Design Specifications, latest edition and interims, and the AASHTO Guide Design Specifications for Bridge Temporary Works.

The design computations shall include, but not be limited to, the following:

1. Material designations and material lists.
2. Allowable loads or capacities for all structural members and components. Appropriate reductions in allowable stresses and loads shall be used in design when other than new or undamaged materials are used in the construction of the temporary jacking system.
3. Soil or pavement bearing capacities, if applicable.
4. Anticipated lifting loads.
5. Anticipated design loads and stresses on structural members and components.
6. References for all design equations.

The working drawings shall include, but not be limited to, the following:

1. General Notes.
2. Model number and capacity for each jack. The rated capacity shall be at least 1.5 times the anticipated lifting load shown on the plans and each jack shall have its rated capacity clearly shown on the attached manufacturer's name plate. The jacks shall be hydraulically operated.
3. Schematic diagram showing the jack hoses, pumps and gages and any other jacking equipment. Pressure gages or other load measuring devices shall be used to monitor the applied lifting pressure. The jacks shall be individually employed or joined to operate collectively.
4. Conversion table listing hydraulic pressures and their equivalent lifting forces.

5. Jacking procedures outlining the complete sequence of operations to be followed when jacking, supporting, and lowering the beam-ends.
6. Jacking point locations shall be below the jacking stiffeners. Jacks shall be set level.

The working drawings and design calculations shall be sealed by a Professional Engineer licensed in the State of Connecticut, who shall also be available for consultation interpreting the drawings and calculations, and in the resolution of any problem that may occur during the performance of the work. Please note that each working drawing must be sealed.

The furnishing of calculations and working drawings shall not serve to relieve the Contractor of any responsibility for the safety of the work or the successful completion of the work.

The catalog cuts shall contain the specifications for the jacks.

The jacking system, once installed, shall not prohibit the Contractor from performing any work required by the contract plans. The Engineer may require that any lifting equipment which they deem to be inadequate or faulty be removed from the project site. If part of the jacking system (false-work bents, etc.) is placed adjacent to vehicular traffic, the Contractor shall take adequate precautions to protect the system. Temporary barriers shall be placed around the system as directed by the Engineer, and in accordance with the plans.

Jacking against the concrete deck or any portion thereof shall not be permitted.

The beam ends shall be uniformly jacked the minimum amount necessary to complete the work detailed on the contract plans.

The applied lifting force at each jacking point location shall not exceed the maximum anticipated lifting load without approval by the Engineer. The Contractor shall carefully inspect and maintain the jacking system during its use. After the beams are raised, shims shall be installed under the beam ends to support the superstructure at the correct elevation.

After the bearings have been installed and accepted, the beam-ends shall be uniformly lowered until all loads are carried by the shims.

When the jacking system is no longer required, the Contractor shall promptly remove and dispose of the equipment and materials. The area shall be restored to its original condition and to the satisfaction of the Engineer.

The Contractor shall be responsible for any damage caused to any part of the structure; utilities including, but not limited to, conduits in the parapet or on the bridge; pavement below; or vehicular traffic as a result of the work required by this special provision. The Contractor shall

repair and/or replace any such damage at no cost to the State, and to the satisfaction of the Engineer.

Method of Measurement: This work shall not be measured for payment but shall be paid at the contract lump sum price.

Basis of Payment: This work shall be paid for at the contract lump sum price for "Jacking and Adjusting Superstructure", complete and accepted, which price shall include all materials, tools; equipment, and labor incidental thereto.

Pay Item
Jacking and Adjusting Superstructure

Pay Unit
L.S.

ITEM #0686100.24A - 24" C.C.M. PIPE - 0' - 10' DEEP

Section 6.86 is supplemented as follows.

Article 6.86.01 — Description:

Add the following:

This work shall include providing pipe anchors on pipes with steep slopes as shown on the plans or as directed by the Engineer.

Article 6.86.02 — Materials:

Add the following.

Concrete used for Pipe Anchors for Steep Pipes shall be Class PCC04460 Concrete meeting the requirements of M.03. Reinforcing steel used for Pipe Anchor for Steep Pipes shall meet the requirements of M.06.01.

Article 6.86.03 - Construction Methods:

Add the following to (3) Drainage Pipe Installation.

New pipe installed at a steep slope as defined by the table within the plans for the pipe type, shall include pipe anchors at a spacing as specified by the plans or as directed by the Engineer. The Contractor shall construct the cast-in-place concrete pipe anchors as shown in the plans, or by an alternate pipe anchor design provided from the pipe manufacturer approved by the Engineer.

Article 6.86.04 - Method of Measurement:

*Add the following to **New Pipes and Pipe Arches.***

Pipe Anchor for Steep Pipes will not be measured for payment.

ITEM # 0686250.06A - 6' HIGH DENSITY POLYETHYLENE PIPE - PERFORATED (SMOOTH INTERIOR)- 0' - 10' DEEP
ITEM# 0686252.15A - 15' RCP - PERFORATED - 0' - 10' DEEP

Section 6.86 is supplemented as follows.

Article 6.86.01 — Description:

Add the following:

This Section shall also include furnishing, preparing and installing perforated pipes which shall consist of pipe pervious to water, laid in a trench refilled with pervious material as shown on the plans or as directed by the Engineer.

Article 6.86.02 — Materials:

Add the following.

Reinforced concrete pipe - perforated shall meet the requirements of M.08.01-9.

High density polyethylene pipe – perforated (smooth interior) shall meet the requirements of M.08.01-18 and be Type S.

Aggregates specified for filling the perforated pipe trench shall meet the requirements of M.08.03 for Aggregates for Underdrains, Sand, and No. 8 (3/8 inch) stone

Geotextile specified for use in the perforated pipe trench shall be as specified in M.08.01-19 Geotextiles.

Article 6.86.03 - Construction Methods:

Add the following.

(5) Perforated Pipes: The construction methods for perforated pipes shall meet the requirements of 7.51.03 except where underdrain is mentioned perforated pipe shall apply.

Article 6.86.04 - Method of Measurement:

Add the following.

Perforated Pipes will be measured for payment by the actual number of linear feet of pipe of the various sizes and types, completed and accepted and measured in place along the invert. Coupling bands and fittings for pipes will not be measured for payment.

Article 6.86.05 - Basis of Payment:

Add the following.

Perforated Pipes will be paid for at the Contract unit price per linear foot for "(Size and Type) -Perforated – 0' to 10' Deep," or "(Size and Type) -Perforated (Smooth Interior) – 0' to 10' Deep" complete in place, including materials, drainage trench excavation, equipment, tools, and labor incidental thereto. The work required for connecting new pipe into a drainage structure shall be included in the cost of the pipe.

Add the following pay items:

<u>Pay Item</u>	<u>Pay Unit</u>
(Size and Type) - Perforated (Smooth Interior)- 0' - 10' Deep	1.f.
(Size and Type) - Perforated - 0' - 10' Deep	1.f.

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:

Prior to submission, the Contractor shall ensure that the Manufacturer and Supplier are fully informed regarding any site constraints or specific structural materials on which the membrane system is to be installed on.

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, including the manufacturer's recommendation for primer based on substrate material or environmental conditions

- 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 #0712021A – GRS ABUTMENT AND WINGWALL

ITEM #0712022A – ABUTMENT AND WINGWALL CMU WALL FACE

ITEM #0712023A – REINFORCED SOIL FOUNDATION (RSF)

ITEM #0712024A – REINFORCED INTEGRATED APPROACH

DESCRIPTION:

This work consists of furnishing materials and constructing geosynthetic reinforced soil-integrated bridge system (GRS-IBS) abutments and wingwalls in the locations, grades, and to the dimensions and details shown on the plans, and in accordance with these Specifications.

Where called for on the plans or as ordered by the Engineer, this work shall also include furnishing and constructing a geosynthetic reinforced soil foundation (RSF).

The following are definitions of key elements in the GRS-IBS specification and details:

CMU: Concrete Masonry Units as defined in this specification and as specified on the plans.

CMU Height: The vertical dimension of the CMU measured from the bottom of the block to the top of the block. The small size block is defined as CMU with maximum height of 8-inches and large block is defined as CMU with height larger than 8 inches.

CMU Width: The horizontal dimension of the CMU measured along the face of the wall or abutment. For CMU with irregular side surfaces or interlocking surfaces, the width is the center to center horizontal spacing measured parallel to the face of the wall.

CMU Thickness: The horizontal dimension measured perpendicular from the front face of the wall to the rear face of the CMU. For CMUs with irregular rear surfaces, the thickness is the distance between the furthest surfaces of the block.

CMU Abutment and Wingwall Wall Face: The portion of the system that comprises the CMU wall face elements.

Beam Seat Zone: The portion of the system that is directly below the beam seat without a concrete distribution slab. Beam Seat Zones are not required for bridges with distribution slabs cast on top of the GRS Abutment.

Bearing Bed Reinforcement Zone: The portion of the system that is directly below the Beam Seat or a concrete distribution slab.

Setback Distance: The distance between the back of the CMU's and the beam seat.

Reinforced Integrated Approach: The portion of the system that is placed under the roadway approach pavement behind the rear face of the superstructure.

GRS Abutment and Wingwall: The portion of the system that makes up the reinforced soil mass of the system, including the No. 8 coarse aggregate and the geosynthetic reinforcement.

GRS Foundation: The portion of the system that is below the reinforced soil mass of the GRS Abutment. It is used to properly seat the system on the substrate.

MATERIALS:

1. **Concrete Masonry Units (CMU):** CMU shall be wet cast concrete blocks. Dry cast CMU blocks will not be permitted. The CMU shall have facing texture and color(s) as specified on the plans. The CMU shall be constructed of Class PRC04060 concrete that meets the requirements of Section M.14.01.

The CMU nominal dimensions shall be as shown on the plans. Minor variations due to the manufacturing process are acceptable provided that the Contractor accounts for these variations in the construction. The CMU dimensions shall be selected such that the geometric limits of the GRS Abutment and Wingwalls as shown on the plans are not exceeded.

The exposed surface of the blocks shall be manufactured with an architectural finish and color as shown on the plans. The block details including concrete alignment tabs shall be removed or modified as required on the plans.

CMU blocks used for the construction of sacrificial walls shall meet the same material specifications noted here, except architectural finish is not required. Sacrificial wall CMU blocks must match the dimensions of the CMU blocks used for the abutment and wingwalls

2. **Reinforced Soil Foundation (RSF) Backfill:** Backfill shall meet the requirements of Article M.01.02, No. 8 Gradation.

3. **GRS Abutment and Wingwall Backfill:** Backfill shall meet the requirements of Article M.01.02, No. 8 Gradation.
4. **Reinforced Integrated Approach Backfill:** Backfill shall meet the requirements of Article M.05.01, Processed Aggregate Base.
5. **Geotextile:** Geosynthetic reinforcement shall consist of geotextile or geogrid meeting the design requirements for a GRS abutment and wingwalls. Minimum service life for the geosynthetic reinforcement shall be 75 years. Only geotextile meeting the design requirements are allowed for encapsulation of the RSF, beam seat and primary reinforcement for the integrated approach. The contractor has the option to select either geotextile or geogrid as reinforcement for the GRS Abutment and Wingwall but a combination of both is not acceptable.

Geotextile: Geotextile shall be a biaxial, polypropylene geotextile. The Geotextile is required to have a minimum ultimate tensile strength of 4,800 lbs/ft and the reinforcement strength at 2% strain shall be greater than 960 lbs/ft in both the cross-machine and machine directions, in accordance with ASTM D4595 .

Geogrid: Geogrid material shall be a biaxial geogrid. The geogrid is required to have a minimum ultimate tensile strength of 4800 lbs/ft and the reinforcement strength at 2% strength shall be greater than 550 lbs/ft in both machine direction and cross machine direction, in accordance with ASTM D6637.

The geosynthetic reinforcement Manufacturer is responsible for establishing and maintaining a Quality Control (QC) program to ensure compliance with these requirements.

Testing shall be performed as part of the manufacturing process and may vary for each type of product. Sampling and conformance testing shall be in accordance with ASTM D4354, with conformance testing procedures established as noted in the specification. Geosynthetic product acceptance shall be based on ASTM D4759. Refer to FHWA publication No. FHWA-HRT-17-080 – Section 3.3 Table 3 for minimum conformance requirements.

The Certified Test Report and/or Materials Certificate shall include roll number and identification, sampling procedures, and results of control test (including a description of test methods used). The Certificate Test Report and/or Materials Certificate shall be submitted in accordance with 1.06.07.

6. **Portland Cement Concrete:** Concrete shall be as shown on the plans and shall meet the requirements of Section M.03 for Class PCC04462.

7. **Concrete Reinforcement:** Reinforcement shall either be Glass Fiber Reinforced Polymer (GFRP) or Steel Reinforcement as shown on the plans.

Reinforcing glass fiber reinforced polymer (GFRP) bars shall be in accordance with ACI 440.6, "Specification for Carbon and Glass Fiber-Reinforced Polymer Bar Materials for Concrete Reinforcement." All GFRP reinforcement shall be deformed or sand coated.

Reinforcing Steel shall meet the requirements of Article M.06.01.

8. **Fine Aggregate:** Fine Aggregate shall meet the requirements of Article M.01.03.
9. **Mortar:** Mortar shall meet the requirements of Article M.11.04
10. **Grout:** Grout shall meet the requirements of Article M.03.05
11. **Polystyrene Foam Board:** Polystyrene Foam Board when called for at the beam seat, shall meet the requirements of AASHTO M 230, Type VI.
12. **Geotextile:** Geotextile shall meet the requirements of M.08.1-19.
13. **Waterproofing membrane or paving fabric:** Waterproofing membrane and paving fabric shall meet the requirements of M.12.04.

Construction Methods:

- a. Shop Drawings:
 - b. Preliminary Submissions: Prior to the start of fabrication or construction, the Contractor shall submit to the Engineer a construction package, which shall include the following:
 - i. Plan sheets shall be prepared per 1.05.02-2.
 - ii. Full plan view of each GRS abutment and wingwall drawn to scale. The plan view must show the reinforcement lengths the Contractor plans on using for each lift height in accordance with the minimum lengths provided on the plans. Beginning and ending stations/offsets of each GRS abutment and wingwall, all utilities, signs, fence posts, etc. located within the footprint of the reinforcement layers.
 - iii. Full elevation view of the GRS abutment and wingwall CMU wall face drawn to scale. Elevation views shall indicate the elevation at the top and bottom of the GRS abutments and wingwalls including the top of the cast-in-place copings, horizontal and vertical control joints, and the location of finished grade.
 - iv. Typical cross sections drawn to scale including all appurtenances. Detailed cross sections shall be provided at significant reinforcement transitions.
 - v. Material designations for all materials to be used.

vi. Detailed construction methods including a Quality Control Plan, which shall include the following. The Quality Control Plan should be specific for each abutment and wingwall to address the specific requirements for each abutment and wingwall.

- 1) Methods of delivery and placement of backfill materials including the proposed equipment. Accommodation of limited vertical and horizontal clearances and their impact on the equipment shall be addressed.
- 2) Methods to control horizontal line and 0 degree batter of the front face of the wall including methods to adjust the line and batter as the wall layers are set. The methods shall account for the possibility of minor shifting of the CMUs during compaction of the backfill.
- 3) Methods for making final grade adjustments at the top of the CMU wall face caused by the buildup of tolerances. (e.g. cast-in-place copings)
- 4) Methods of accommodating stage construction joints. This may require the use of temporary wall sections that are left in place in the backfill material.

vii. Details of sloping top of GRS abutments and wingwalls where required.

viii. Details of corner treatments where required.

ix. Details of cast-in-place copings, where called for on the plans, including finished elevations, construction/contraction joints, reinforcement, and method of casting concrete against architectural treatments, where required.

x. Details of Temporary Earth Retaining Systems where required.

xi. Details of wall treatment where the wall abuts other structures. Detail the facing on the plans to account for corners between abutment and wingwall faces. Corner details shall be submitted to accommodate corners other than right angles, if shown on the plans.

The Shop Drawings shall be processed in accordance with Article 1.05.02. Acceptance of final submission shall not relieve the Contractor of any responsibility for the successful completion of the work.

2. Pre-Installation Field Meeting: A pre-installation field meeting will be scheduled by the Engineer and held prior to the start of any GRS-IBS construction. The Engineer, Contractor and all Subcontractors involved in the construction of the GRS-IBS shall attend the meeting. Attendance is mandatory. The pre-installation field meeting will be conducted to clarify the construction requirements for the work, to coordinate the construction schedule and activities, to identify contractual relationships, and to delineate responsibilities amongst the

Engineer, the Contractor and the various Subcontractors. The meeting will be held, after acceptance of the Shop Drawings, on a date to be determined by the Engineer.

3. Excavation: Excavation shall be accomplished and maintained in accordance with Section 2.03. Any backfilling of the excavation outside the limits of the GRS-IBS Abutment/ Wingwalls and RSF shall be in accordance with Section 2.02. The backfilling outside the limits of GRS-IBS abutment and wingwall shall be separated with geotextile as shown on the plans.
4. GRS Foundation: The GRS Foundation shall consist of either in-situ soil, Granular Fill, a Reinforced Soil Foundation (RSF), a concrete leveling pad or other foundation system as called for on the plans.

GRS Foundations placed on in-situ soil shall be prepared in accordance with Section 2.03.

GRS Foundations placed on Granular Fill shall be prepared in accordance with Section 2.13.

GRS Foundations placed on a concrete leveling pad shall be prepared in conformance with Section 6.01.

GRS Foundations placed on a RSF shall meet the requirements of the plans and as specified herein. The base shall be level-graded and compacted to 1 foot beyond the abutment and wingwall footing limits on all sides, or to the limits shown on the plans. The RSF shall be constructed with backfill placed from the face of abutment and wingwall towards the back, in order to roll folds or wrinkles to the free end of the reinforcement layer. The material shall be placed in nominal 6 inch lifts, graded, leveled and compacted before encapsulating the RSF. A minimum of 4 passes of the compaction equipment will be required per lift. The Engineer will visually inspect the RSF to confirm proper placement and compaction.

Geosynthetic reinforcement shall be installed in accordance with the manufacturer's recommendations and to the limits shown on the plans or as directed by the Engineer. The geosynthetic shall be placed with the strongest direction perpendicular to the face of the abutment and wingwall, and coverage shall be 100% of the RSF area unless otherwise shown on the plans. Adjacent section of the geosynthetic shall not be overlapped.

The RSF shall be encapsulated in the geotextile reinforcement and placed perpendicular to the abutment face to protect it from possible erosion. The geotextile shall be sized to fully enclose the RSF on the face and wingwall sides. The wrapped corners of the RSF shall be tight and without exposed soil within the RSF to complete the encapsulation. Further, 'Section 7.4 RSF' of the "*Design and Construction Guidelines for Geosynthetic Reinforced Soil Abutments and Integrated Bridge Systems*", FHWA-HRT-17-080 may be referenced for construction methods of the RSF only.

If steel sheet piling is used for earth retention or Cofferdam, provide a minimum of 1 foot of space between the RSF geotextile encapsulation and the steel sheet piling to avoid snagging the geotextile reinforcement during sheet piling removal.

5. GRS Abutment and Wingwalls: The GRS Abutment and Wingwalls shall be placed in lifts that are compacted in lift heights equal to the vertical spacing of geosynthetic reinforcement as shown on the plans, or the nominal height of CMU blocks for smaller blocks, whichever is less. For larger blocks, lift heights will be 6 to 8 inches depending on the height of the blocks. Within 3 feet of the front of the abutment and wingwall face, hand operated equipment such as lightweight mechanical tampers, plates or rollers shall be used to avoid damage or displacement of facing elements. Beyond the abutment and wingwall front face, compaction shall be performed using vibratory rollers or other similar methods. A minimum of 4 passes will be required per lift. The Engineer will visually inspect the No. 8 Crushed Stone to confirm proper placement and compaction.

Geosynthetic reinforcement shall be installed in accordance with the manufacturer's recommendations and to the limits shown on the plans or as directed by the Engineer. The geosynthetic shall be placed with the strongest direction perpendicular to the abutment facing, and coverage shall be 100% of the embedment area unless otherwise shown on the plans. Adjacent sections of the geosynthetic shall not be overlapped, except when exposed in the wrap-around facing system.

The geosynthetic shall be laid from the CMU blocks towards the back to be taut and free of wrinkles prior to backfilling, and it shall extend between the layers of the CMU. The geotextile shall cover a minimum of 85% of the top surface of the CMU and shall not extend out beyond any portion of the front face of the CMU. Any excess geotextile shall be trimmed back prior to placement of the next level of CMU. Overlaps of adjacent geosynthetic shall be trimmed where they are in contact with the surface of the CMU to avoid varying geosynthetic thicknesses. Any seams in the geosynthetic shall be staggered with each successive layer of the GRS abutment. All seams between adjacent sheets of geosynthetic located in the area beneath the footprint of the bridge seat shall be perpendicular to the abutment wall face.

When the plans show super elevation for the bridge, the geosynthetic reinforcement terminates along the angle surface of the superelevation. Refer to FHWA-HRT-17-080, Section 7.6.3.

No equipment shall be placed on the geosynthetic until at least 6 inches of material is placed on it. Tracked equipment shall use caution while turning on the backfill to avoid damaging the geotextile. The Engineer shall inspect the geosynthetic at each course to ensure that the geosynthetic is laid from CMU blocks back and there are no wrinkles or bubbles.

6. Abutment and Wingwall CMU Wall Face: The first course of the CMU shall be set level and to grade. A thin leveling layer of fine aggregate, not more than 0.5 inch, may be used on top of the prepared subgrade to facilitate construction of the first course of the CMU. If the leveling layer required exceeds 0.5 inch, mortar shall be used for the leveling layer between the prepared subgrade and the first CMU course.

CMU construction shall begin at the lowest point of the face and each layer shall be placed horizontally, and each CMU block shall be placed tightly against the adjoining blocks without any gaps. The vertical GRS wall plumbness shall be checked by the Contractor at least every other layer, and any deviations shall be corrected. Before placement of the backfill, every other row of CMU blocks alignment shall be checked with a string line referenced off the back face of the CMU block from wall corner to corner. Each layer of CMU blocks shall be completely constructed and brushed cleaned of any debris and fill material prior to placing the next layer of reinforcement and CMU. CMU out of required alignment during construction shall be carefully moved back into position by methods that will not cause damage to other CMU or other work. Any damaged CMU shall be replaced. Facing wall and wing wall courses shall be staggered to form a tight interlocking stable corner. All cuts shall be performed to maintain the standard running or stretcher bond between the rows of the dry-stacked CMU, with the vertical joints of each course midway between those of adjoining courses. When the plans show a super elevation for the bridge, the top courses of CMU beneath the superstructure shall either be trimmed or stepped to match the elevation difference and clear space across the abutment, refer to FHWA-HRT-07-080, Section 7.6.3.

The top three courses of the CMU blocks shall be filled with Portland cement concrete and an epoxy coated No. 4 rebar shall be used to pin the top three courses as shown on the plans. When the plans show a super elevation for the bridge, the top three courses at each step or trimmed section shall be filled with Portland cement concrete and No. 4 rebar to pin the top three courses.

A cast-in-place concrete coping, where called for, shall be formed and placed on the top course of the CMU wall facing.

7. **Bearing Bed Reinforcement:** The Bearing Bed Reinforcement zone shall be compacted with a minimum of 6 passes per lift, with lift height equal to the vertical spacing of geosynthetic reinforcement as shown on the plans or 3 inches, whichever is less. Hand operated equipment such as lightweight mechanical tampers, plates or rollers shall be used within 3 feet of the wall face to avoid damage or displacement of CMU blocks. The Engineer will visually inspect the work to confirm proper placement and compaction.
8. **Beam Seat:** Before construction of the beam seat and if called for on the plans, the top course of CMU wall facing will be topped with a cast-in-place concrete coping. The beam seat shall consist of 4 inch lifts of No. 8 Crushed Stone and wrapped face geotextile. A precut 4 inch thick polystyrene foam board shall be placed on the top of the Bearing Bed Reinforcement, butted against the back face of the CMU. The width of the Polystyrene Foam Board shall be equal to twice the setback distance from the back of the CMUs, as shown on the plans. Set half or full height CMU, as shown on the plans, on top of the foam board and across the entire length of the bearing area. Use the first 4 inch wrapped layer of

compacted fill as the thickness to the top of the foam board. Place the remaining 4 inch wrapped layers of compacted fill to the top of the CMU placed in the setback zone. Before folding the final wrap, it may be necessary to grade the surface aggregate of the beam seat slightly high, to about 0.5 inch, to aid in seating the superstructure or bearing pad and to maximize contact with the bearing area. Compaction for each lift shall be performed using vibratory roller compaction equipment or other similar methods. A minimum of 6 passes will be required per lift. Hand operated equipment such as lightweight mechanical tampers, plates or rollers shall be used within 3 feet of the wall face to avoid damage or displacement of CMU blocks. The Engineer will visually inspect the work to confirm proper placement and compaction.

9. Superstructure Placement: A crane used for placement of the superstructure can be positioned on the GRS abutment provided the outrigger pads are sized less than the factored bearing resistance of the GRS mass. The outrigger pads shall be sized to impose a maximum surface load of 4,000 psf near the abutment face, with greater loads able to be supported with increasing distance from the abutment face not exceeding the factored bearing resistance noted on the plans and geotechnical report.

The bearing surface for placement of superstructure shall be square and even without any voids. The superstructure shall be placed without dragging the superstructure elements across the GRS mass, and beam seat surface or CIP concrete distribution slab. Extra care shall be taken when the superstructure is to be set without distribution slab and on beam seat.

10. Reinforced Integrated Approach: After placement of the superstructure, the Reinforced Integrated Approach shall be constructed. The Reinforced Integrated Approach shall consist of primary reinforcement comprised of wrapped face geotextile and intermediate reinforcement with processed aggregate base placed and compacted per Section 3.04, with lift dimensions as specified below.

The wrapped geotextile reinforcement spacing shall be 12 inches, with intermediate geotextile reinforcement layers spaced at 6 inches. The processed aggregate base shall be placed and compacted in 6 inch lifts. The top wrap fold shall increase in length with each successive wrapped layer until the fill is 4 inches below the top of the superstructure beam grade. The top layer of geotextile reinforcement shall be at least 4 inches below the top of superstructure beam grade. Place a 2 inch (minimum thickness) layer of processed aggregate on top layer of geosynthetic reinforcement to prevent the reinforcement from contacting the asphalt pavement.

Extend the paving fabric or waterproof membrane 3 feet over the beam approach interface.

11. Site Drainage: The GRS-IBS construction area shall be protected from surface runoff. The Site shall be graded at the end of every work shift to avoid saturation of soil. An acceptable alternative to grading is to construct diversion trenches around the perimeter of the GRS-IBS construction area. Any loose soil placed to construct GRS shall be graded and compacted

before stoppage of work for the day. Onsite stockpiles of fill material containing fines shall be protected.

12. Where gas, electric, cable or fiber-optic utilities are anticipated to be carried by the bridge, utility conduit may be built into the Integrated Approach. Ensure that an access point in form of a handhole or other access outside the limits of Integrated Approach is installed to provide space for repair or maintenance of those utilities. In this case, the plans should show the details regarding the installation of the conduit and access.

Water utilities will be allowed to be installed within the integrated approached if the water line would be concrete encased. The handhole or other access shall be installed minimum 10 feet away from the limits of reinforced zone.

13. Miscellaneous: Where fencing, wood posts or metal beam rail is called for within the limits of the reinforced soil mass, the posts shall be installed mechanically using a metal driving cap to puncture the layers of geotextile cleanly. Prefabricated concrete fence post foundations shall be installed as the GRS-IBS is constructed. Wood posts shall not be driven through the geotextile. No holes shall be drilled through the geosynthetic at any stage of construction.

Where plantings are called for, they shall be installed outside the limits of the GRS-IBS soil mass.

METHOD OF MEASUREMENT:

1. **GRS Abutment and Wingwall:** The GRS Abutment and Wingwall structures, including geosynthetic reinforcement, will be measured for payment by the number of cubic yards of No.8 crushed stone, including the Bearing Bed Reinforcement Zone, measured in place after compaction within the payment lines on the plans and accepted by the Engineer. The measurement shall not include the volume of the CMU blocks. The geosynthetic reinforcement will not be measured separately for payment.
2. **Abutment and Wingwall CMU Wall Face:** The CMU will be measured for payment by the number of square feet of wall face completed and accepted within the pay limits shown on the plans, measured by the actual horizontal and vertical dimensions of the wall face. The CMU blocks placed within the GRS reinforced to facilitate staged construction shall be measured and paid separately under the item "Temporary Earth Retaining System".
3. **Reinforced Soil Foundation (RSF):** The Reinforced Soil Foundation including geosynthetic reinforcement and geotextile encapsulation will be measured for payment by the number of cubic yards of No. 8 crushed stone measured in place after compaction within the payment

lines as shown on the plans and accepted by the Engineer. The geotextile reinforcement will not be measured separately for payment.

4. **Reinforced Integrated Approach:** The Reinforced Integrated Approach including geosynthetic reinforcement will be measured for payment by the number of cubic yards of processed aggregate base measured in place after compaction within the payment lines as shown on the plans and accepted by the Engineer. The geosynthetic reinforcement will not be measured separately for payment.

BASIS OF PAYMENT:

1. **GRS Abutment and Wingwall:** “GRS Abutment and Wingwall” will be paid at the Contract unit price per cubic yard which shall include the cost of furnishing and installing No. 8 crushed stone, and geotextile reinforcement within the backfill behind the CMU wall face and within the Bearing Bed Reinforcement Zone. The price shall also include all labor, materials and equipment necessary to complete the work.
2. **Abutment and Wingwall CMU Wall Face:** “Abutment and Wingwall CMU Wall Face” will be paid at the Contract unit price per cubic yard which shall include the cost of furnishing and installing No. 8 crushed stone, and geotextile reinforcement within the backfill behind the CMU wall face and within the Bearing Bed Reinforcement Zone. The price shall also include all labor, materials and equipment necessary to complete the work.
3. **Reinforced Soil Foundation (RSF):** “Reinforced Soil Foundation (RSF)” will be paid at the Contract unit price per cubic yard which shall include furnishing and installing No. 8 crushed stone, geotextile reinforcement within the RSF, and all labor, materials and equipment necessary to complete the work.
4. **Reinforced Integrated Approach:** “Reinforced Integrated Approach” will be paid at the Contract unit price per cubic yard which shall include furnishing and installing processed aggregate base, geosynthetic reinforcement within the reinforced integrated approach, and all labor, materials and equipment necessary to complete the work.

<u>Pay Items</u>	<u>Pay Units</u>
GRS Abutment and Wingwall	C.Y.
Abutment and Wingwall CMU Wall Face	S.F.
Reinforced Soil Foundation (RSF)	C.Y.
Reinforced Integrated Approach	C.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 #0913952A - PROTECTIVE FENCE (5' HIGH)

Description: Work under this item consists of furnishing and installing chain link fencing on vertical concrete parapets in accordance with the details shown on the plans.

Materials: Materials for this work shall be as follows:

1. **Chain Link Fabric:** The fabric shall be a black Poly(Vinyl Chloride) (PVC) - coated steel chain link type, conforming to the specifications of ASTM F668, Class 2b, thermally fused and bonded. The #9 gage core wire shall be galvanized, PVC-coated, then woven to create a continuous fabric having a two inch mesh, knuckled at both top and bottom. The PVC coating shall be the color black as described in ASTM F934.
2. **Posts and Rails:** The material used to manufacture framework for color chain link fencing systems shall be galvanized sheet steel, in coils, meeting the general requirements of ASTM A924 and the specific product requirements of ASTM A653, quality level HSLA (high strength, low alloy), Type I, Grade 50 (50,000 psi minimum yield strength), coating designation Z600 (2.0 oz./ft²) applied by the hot-dip process. The framework shall be manufactured in accordance with commercial standards to meet the requirements of ASTM F1043, Group IC, electrical resistance welded round steel pipe.
3. The manufactured framework shall be subjected to a complete thermal stratification coating process (multi-stage, high temperature, multi-layer) including a pretreatment wash with zinc phosphate, an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The color of the finish coat shall be black.
4. The material used for the base coat shall be a zinc-rich thermosetting epoxy. The minimum thickness of the base coat shall be 2 mils. The material used for the finish coat shall be a thermosetting “no mar” TriGlycidyl IsoCyanurate (TGIC) polyester powder. The minimum thickness of the finish coat shall be 2-3 mils.
5. The coated framework shall demonstrate the ability to endure a salt spray resistance test conducted in accordance with ASTM B117 without loss of adhesion for a minimum exposure time of 3,500 hours. Additionally, the coated framework shall demonstrate the ability to withstand exposure in a weatherometer apparatus for 1,000 hours without failure in accordance with Practice D1499 and to show satisfactory adhesion when subjected to the cross-hatch test in accordance with ASTM D3359. The polyester finish coat shall not fade, crack, blister or split under normal use.
6. **Fence Fittings:** All materials and coating requirements shall conform to the specifications of ASTM F626. All fittings shall receive the same coating system as the posts and rails. The ties used to fasten the fabric to the post and rails shall not be less than #6 and #9 gage respectively.

7. **Preset Anchorage:** The preset anchorage when specified on the plans shall conform to the requirements listed below.

The preset anchorage shall be fabricated as detailed on the contract plans. Preset anchorages configured differently from those detailed on the plans may be used provided they utilize the same materials described below and are approved by the Engineer prior to fabrication. The wire struts shall be cold-drawn and conform to ASTM A510, Grade 1030 with minimum tensile strength of 100,000 psi. These wire struts shall be securely welded to the ferrules with the welds capable of developing the tensile strength of the struts and the ferrules.

The ferrules, either open end or closed end, shall conform to ASTM A108, Grade 12 L. A plastic cap shall be provided for sealing the bottom of each open end ferrule before placing concrete. Closed end ferrules shall provide a minimum full thread length of 2". Removable plastic washers of the same diameter as the ferrules and approximately 3/32" in thickness shall be provided for the top of each ferrule and shall be left in place until the temporary supporting bolts are removed. Removable plastic caps shall be provided for sealing the top of each ferrule until the erection of fence posts.

After fabrication, the preset anchorage shall be hot-dip galvanized in accordance with ASTM A123.

A sample anchorage, including bolts and washers, shall be submitted to the Engineer for approval prior to incorporation into the project.

Bolts for the preset anchorage shall conform to the requirements of ASTM A307. The washers shall be standard circular washers conforming to ASTM F844. The bolts and washers shall be hot-dip galvanized in accordance with ASTM A153.

8. **Expansion Anchors:** Expansion anchors for attaching an angle to end face of vertical concrete parapet for fence attachment shall be stainless steel Hilti Kwik Bolt TZ2 expansion anchors or approved alternative.
9. **Base Plates and Angles:** Base plates and angles shall conform to the requirements of ASTM A709 Grade 36. All burrs and sharp edges shall be removed and smoothed before galvanizing.
10. **Threaded Rod, Bolts, Nuts and Washers:** Threaded rod and bolts shall conform to the requirements of ASTM A307, Grade C. Nuts shall be hex style, Grade A, conforming to the requirements of ASTM A563 and washers shall be standard, circular plain washers conforming to the requirements of ASTM F844. Threaded rods, bolts, nuts and washers shall be hot-dip galvanized after fabrication in accordance with the requirements of ASTM A153, Class C.

11. **Molded Pads:** All molded pads shall be manufactured from new unvulcanized elastomer and unused synthetic fibers, with a weight proportion of fiber content equal to approximately one-half of the total weight of the pad. The pads shall be formed into single sheets of 1/8 inch minimum thickness with a tolerance of plus or minus 10 percent. The pads shall have a Durometer hardness within the range of 70 to 90.
12. **Galvanizing Compound:** Galvanizing compound shall conform to the requirements of MIL-DTL-24441/20 or Military Specification MIL-P-21035.
13. **Silicone Joint Seal:** Joint seal shall be placed around the base of the posts to seal the interface between the post and the non-shrink grout. Silicone joint sealant shall comply with M.03.08 – 5(b)2.ii.

Before placement of the sealing material, the joint shall be thoroughly cleaned of all scale, loose concrete, dirt, dust or other foreign matter. Projections of concrete into the joint space shall be removed. The joint shall be clean and dry before the sealing compound is applied.

The joint sealant shall be prepared and placed in accordance with the manufacturer's directions and with the equipment prescribed by the manufacturer. The sealing compound shall be flush with, or not more than 1/8 inch above the adjacent surface of concrete, cutting off all excess compounds after the application. The joints shall be sealed in a neat and workmanlike manner and when the work is completed, the joints shall effectively seal against infiltration of moisture and water.

The Contractor shall arrange for, and have present at the commencement of the joint-sealing operation a technically competent manufacturer's representative knowledgeable in the methods of installation of the sealant. The Contractor shall also arrange to have representative present at such other times as the Engineer may request.

All components of the chain link fence shall be the color black as described in ASTM F934. Coating which exhibits peeling or chipping will be cause for rejection of the shipment.

Materials Certification and Testing: The Contractor shall furnish a Materials Certificate in accordance with Article 1.06.07 for the fabric, posts, rails, all fittings and for the chemical anchoring material. A sample of PVC-coated fabric shall be submitted to the Department for testing the bond of the coating in accordance with the requirements of ASTM F668, Class 2b.

Shop Drawings: Before fabricating any materials, the Contractor shall submit shop drawings to the Engineer for approval in accordance with Article 1.05.02. These drawings shall include but not be limited to the following information: a layout plan showing all post and rail spacing, all fence and anchorage details, means of attaching chain link fabric and tension wire to vertical face of parapet, material lists and material designations and the name and telephone number of a person to contact who can answer questions about the shop drawings.

Construction Methods: The protective fence shall be accurately fabricated and installed in accordance with the plans and as directed by the Engineer.

The preset anchorage where specified on the plans shall be installed perpendicular to the grade of the parapet. The preset anchorage shall be accurately positioned and restrained against movement during the placement of the concrete.

All base plates shall provide full contact with the bearing surface when the posts are plumb and shall be caulked all around with a waterproof silicone rubber sealant.

All rails shall be erected to produce a smooth, continuous appearance with posts placed vertically and with all rails parallel to the grade of the parapets. The fabric shall be stretched tightly between end posts and securely fastened with stretcher bar bands. The fabric shall be attached to the rails and line posts as shown on the plans. Dome caps shall be installed on top of all posts.

PVC- coated fabric, fence posts, rails and fittings shall be handled with care so the coating is not damaged. Damage to the coating below the finish coating shall be repaired in accordance with ASTM A780 with two coats of galvanizing compound. The final dry film thickness of the galvanizing compound shall be a minimum of 2 to 3 mils.

Method of Measurement: This work will be measured for payment by the number of linear feet of completed and accepted fence, measured horizontally from centerline to centerline of posts.

Basis of Payment: This work will be paid for at the contract unit price per linear foot for "Protective Fence (5' High)", complete and accepted in place, which price includes all materials, equipment, tools and work incidental thereto.

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.

<u>Pay Item</u>	<u>Pay Unit</u>
Repair Guiderail	est. (est.)

ITEM #0945006A - WILDFLOWER ESTABLISHMENT

Description: The work included in this item shall consist of providing an accepted uniform stand of established wildflower seed mixture by furnishing and placing seed and cover crop as shown on the plans, permits, or as directed by the Engineer within the wetland mitigation Sites(s) or other areas when required.

Materials: All wildflower seed mixture sources shall be obtained within the New England States, New York, Pennsylvania, New Jersey, Delaware, Maryland or Virginia to preserve and enhance the diversity of native wildflower grass and plant species.

Four qualified wildflower seed mixtures are detailed below.

1. **New England Wildflower Seed Mix**, New England Wetland Plants, Inc. 800 Main Street Amherst, MA 01002, or equal. Rate shall be 23 lbs. PLS per acre (1 lb. PLS per 1,900 sq. ft.)
2. **Showy Northeast Native Wildflower Mix**, Ernst Conservation Seeds Inc. 8884 Mercer Pike, Meadville, PA, 16335, or equal. Rate shall be 10 lbs. PLS per acre (1 lb. PLS per 4,356 sq. ft.)
3. **Vermont Native Wildflower & Grass Mix**, Vermont Wetland Plant Supply, LLC, P.O. Box 153, Orwell, VT, 05760, or equal. Rate shall be 18 lbs. PLS per acre (1 lb. PLS per 1600 sq. ft.)
4. **Virginia Pollinator Smart Open Area Mixture**, Chesapeake Valley Seed, 8869 Greenwood Place, Suite C, Savage, MD 20763, or equal. Rate shall be 20 lbs. PLS per acre (1 lb. PLS per 2,420 sq. ft.)

The Contractor must apply 30 lbs. of cover crop per acre in conjunction with the qualified wildflower seed mixture selected. The 30 lbs. of cover crop shall consist of grain oats when seeding between March 15 to June 30 or grain rye when seeding between August 15 to October 31.

Fertilizer, if required, shall meet the requirements of Article M.13.03.

Mulch shall meet the requirements of Article M.13.05.

Erosion control matting shall be bio-degradable and meet the requirements of Article M.13.09.

The Contractor shall submit the selected qualified wildflower seed mixture or equal including cover crop seed mixture information to the Engineer for review and acceptance in advance of purchase and prior to application.

The Materials Certificate for all seed mixtures shall have a statement that certifies that the seed mixture does not include any invasive species pursuant to Connecticut General Statutes Sec. 22a-381d or any State Threatened or State Endangered species pursuant to Connecticut General

Statutes Sec. 26-303. The seed tags from the bags are to be removed by the Engineer upon delivery and attached to the Materials Certificate. Seeding shall not occur if these 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 accepted by the Engineer.

Preparation of Seedbed Areas:

- a. Level Areas, Median Areas, Interchanges and Lawns: These areas shall be made friable and receptive for seeding by discing or by other accepted methods to the satisfaction of the Engineer. The final prepared surface which has been seeded shall meet the lines and grades for such surface areas as shown on the plans, permits or as directed by the Engineer. In no event, will seeding be permitted on hard or crusted soil surface.
- b. Slope and Embankment Areas: These areas shall be made friable and receptive to seeding by accepted methods which will not disrupt the line and grade of the slope surface. In no event, will seeding be permitted on hard or crusted soil surface.

All areas to be seeded shall be reasonably free from weeds taller than 3 inches. Level Areas, Median Areas, Interchanges and Lawns: Seeding shall not be permitted until substantial weed growth is removed and accepted by the Engineer. Slope and Embankment Areas: Removal of weed growth shall be those methods which do not rut or scar the slope surface or cause excessive damage of the slope line or grade as accepted by the Engineer.

Wildflower seeding for wetland mitigation Site(s): Seeding shall occur during the fall season immediately following construction of the wetland mitigation Site(s). Seeding for wetland mitigation Site(s) must occur from August 15 to October 31.

For non-wetland mitigation Site(s), seeding shall occur during the dates specified in Article 9.50.03-2.

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 as determined by the following formula based off the information provided on the seed tags at delivery.

$(\text{Germination Percentage} \times \text{Purity Percentage}) / 100 = \text{Percentage PLS}$

The Engineer will verify that the seed is applied at a rate that will allow for 100 percent PLS.

Mowing will not be allowed within areas that are seeded with wildflower seed mix, unless authorized by the Engineer.

Method of Measurement: The work will be measured for payment by the number of square yards of surface area of accepted established wildflower grasses as specified.

Basis of Payment: This work will be paid for at the Contract unit price per square yard for “Wildflower Establishment,” which price shall include all materials, maintenance, equipment, tools, labor, and 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
Wildflower Establishment	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 x 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 68°-80° 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 <u>Field Office Technology</u>	1	1	1	1
Field Office Internet Service and Hardware as specified below under <u>Field Office Technology</u>	1	1	1	1
Digital Camera as specified below under <u>Field Office Technology</u>	1	1	3	3
Teleconferencing Equipment as specified below under <u>Field Office Technology</u>	-	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 <u>Computer Related Hardware and Software</u> .	-	-	-	-

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:

I-395

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.

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.

During Stage construction, the Contractor shall maintain and protect traffic as shown on the Maintenance and Protection of Traffic Plans in the contract plans.

I-395 Ramps

The Contractor shall maintain and protect existing traffic 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 a minimum of 1 lane of traffic on a paved travel path not less than 12 feet in width.

Route 200 (Thompson Hill Road)

The Contractor shall maintain and protect a minimum of 1 lane of traffic in each direction with each lane on a paved travel path not less than 11 feet in width, 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 at least an alternating one-way traffic operation on a paved travel path not less than 11 feet in width and no more than 300 feet in length, unless specified elsewhere in the Contract. There shall be no more than one alternating one-way traffic operation within the Project limits without prior approval of the Engineer.
2. The Contractor will be permitted to close Route 200 (Thompson Hill Road) to through traffic and detour traffic as shown on the Detour Plans. The Contractor shall notify the Engineer at least 14 days in advance of implementing the detour.

All Other Roadways

The Contractor shall maintain and protect a minimum of 1 lane of traffic in each direction with each lane on a paved travel path not less than 11 feet in width, 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 at least an alternating one-way traffic operation on a paved travel path not less than 11 feet in width and no more than 300 feet in length, unless specified elsewhere in the Contract. There shall be no more than one alternating one-way traffic operation within the Project limits without prior approval of the Engineer.

Commercial and Residential Driveways

The Contractor shall maintain access to and egress from all commercial and residential driveways throughout the Project limits. The Contractor will be permitted to temporarily close affected driveways while actively working with coordination and permission from the owner or proprietor.

General

The Contractor shall schedule operations so that pavement removal and roadway resurfacing shall be completed full width across a roadway or bridge section by the end of a work shift, or as directed by the Engineer.

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.

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 2-1/2" 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 1-1/2 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 wave length, 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 5/8" thru bolts on 9 1/2" centers starting 4" below the top of the pole. A 1/2" 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 2-3/8" 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 Article 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
Temporary Illumination Unit

Pay Unit
ea.

ITEM #1131015A – RADAR SPEED DISPLAY – TRAILER MOUNT, TOW BEHIND

Description: This item shall consist of furnishing and maintaining a dynamic, Radar Speed Display – Trailer Mount, Tow Behind unit. The radar speed display shall provide motorists real-time feedback of their vehicle’s speed via radar speed detection from a radar module mounted within the trailer assembly. The trailer assembly will also collect and store speed data for future analysis.

Materials:

1. Physical Characteristics of the Radar Speed Display trailer

- (a) Trailer frame shall be fully welded, steel or aluminum construction, and rust resistant.
- (b) Trailer shall contain stabilizer jacks: 2 front and 2 rear, adjustable.
- (c) Trailer tongue shall be a ball type hitch with safety chains and a removable wiring cable. The trailer tongue must be removable.
- (d) The minimum height of the trailer with display panel lowered shall be 5.5 feet.
- (e) The maximum height of the trailer with the display panel raised shall be 9 feet.
- (f) Trailer width shall not be greater than 6 feet.
- (g) Trailer length including tongue shall not be greater than 9 feet.
- (h) Trailer finish shall be powder coated and resistant to chemical solvents and graffiti.
- (i) Trailer shall be equipped with an effective wheel lock to resist theft when in use.
- (j) Storage box shall have a covered 110V AC receptacle for connecting an extension cord for re-charging. Trailer tires must have enclosed fenders that protect the storage box and display unit.
- (k) Trailer shall meet all applicable motor vehicle requirements as per turn signals, rear brake lights, and taillights with wiring connection provided via a single 4-prong flat plug connector.

2. Physical Characteristics of the Radar Speed Display and Unit

- (a) The LED speed feedback display shall:
 - i. Be two-digit, amber, wide angle LED with auto dimming and a readable angle of 60 degrees to 120 degrees that is on a black background with a minimum 16 inch character height that allows it to be visible and readable at expressway speeds per the MUTCD.
 - ii. Display a blank screen when not displaying the speed of approaching traffic.
 - iii. Have a violator alert that flashes “SLOW DOWN” when speeds exceed 15 miles per hour (MPH) above the legal speed limit.
 - iv. Have characters that are covered in impact resistant shatterproof Lexan at least 3/8 inch thick.
 - v. Be clearly legible from a minimum distance of 800 feet during the day and night.
 - vi. Be installed no less than 7 feet above the roadway when in use.
 - vii. Have display controls that include programming for violator speed select, over speed cut-off select, and internal test mode. If the LED speed feedback display

control is via a physical control panel, then the control panel shall be located within the speed feedback display unit box.

- (b) The LED speed feedback display unit shall:
- i. Be contained in a lockable weather-sealed box of steel construction.
 - ii. Have an internal test mode to ensure the system is working properly.
 - iii. Fold down and be securable for travel.
 - iv. Include an MUTCD compliant speed limit sign (Sign Designation R2-1) that is mounted immediately above or to the left of the “Your Speed” plaque described below and displays the existing OSTA approved speed limit. The speed limit sign shall be 48 inches wide by 60 inches tall (Sign No. 31-5506).
 - v. Include a MUTCD compliant plaque with white background and black legend that reads “YOUR SPEED.” The plaque shall be a minimum of 24 inch high, equal width to the R2-1 speed limit sign, and mounted immediately above the LED speed feedback display. A Radar Speed Limit sign with the “YOUR SPEED” plaque and LED speed feedback display described above integrated into a single sign may also be used.

3. Power Supply

- (a) Solar Power:
- i. Solar powered display shall be capable of fully autonomous operation 24 hours per day, 365 days per year.
 - ii. Batteries shall be a standard 12 volt deep cycle battery suitable for the application and operating environment.
 - iii. Batteries must be capable of providing 10 days of continuous operation without sunlight.
 - iv. Charging system shall use a solar charge controller with temperature compensation. Charging system shall provide automatic battery charging, overcharge protection and have indications that display current status and faults.
- (b) AC Power:
- i. AC powered displays shall be capable of operation from 89-135 volts with a frequency of 60 Hz \pm 3.
 - ii. Fluctuations in line of voltage shall have no visible effect on the appearance of the display.
 - iii. Display power supply shall consist of 12V DC that provides enough capacity for at least 7 continuous days of operation with an approaching traffic volume of 99,999 vehicles per day.
 - iv. Battery charger must be provided that is ready to plug into an 110V AC commercial power source.

4. Radar Unit

- (a) Radar unit must be a programmable stationary directional Doppler radar that monitors speed of vehicles coming toward the speed display trailer.
- (b) Radar beam width shall be approximately 12 to 18 degrees.
- (c) Radar unit effective range shall be adjustable up to 1000 feet.
- (d) Speed measurement shall be displayed in MPH.

- (e) Accuracy of the radar speed measurement shall be within ± 1 MPH.
- (f) Radar target speed range shall be 5 MPH to 99 MPH.
- (g) Radar unit shall be enclosed within the display unit box.

5. Data Collection

- (a) The vendor's data collection software shall be able to run under a version compatible with existing agency field equipment and software.
- (b) Vehicle speed and count data shall be collected and stored either via a removable data module that connects to a desktop or laptop computer via a USB port or via a wireless Bluetooth connection between the speed display unit and a mobile device. If data storage is via a removable data module, then it shall have a minimum storage capacity capable of saving 2 weeks of data. One extra module shall be included for each trailer.
- (c) If the data download connection requires a mobile device, then a mobile device must be included for each trailer and the vendor's software must be installed on the mobile device.
- (d) Vehicular volume/speed statistics must be capable of being retrieved in 15 to 60 minute intervals. The vehicle data shall include speed/volume data distribution in 5 MPH bin's, 85th percentile speed, percent and MPH over the speed limit, and hourly/daily traffic counts. The time frame of the statistics shall be adjustable.
- (e) Data shall be provided to the Engineer of Record and CTDOT weekly or as requested by CTDOT.

6. Manuals and Training

Upon delivery of the radar speed display - trailer-mount, tow behind unit, the Contractor shall supply the following for each trailer unit purchased:

- 3 factory shop manuals,
- 3 parts manuals,
- 3 schematic drawings of the complete electrical wiring system, or
- electronic copies of the abovementioned documents

The Contractor shall arrange training by a qualified technician from the vendor for a period of at least 1 full working day to provide training and instruction concerning the operation and preventive maintenance of the Radar Speed Display – Trailer-Mount, Tow Behind unit.

Construction Requirements: The Contractor is responsible for installing the radar speed display trailer as needed to adhere to the below requirements.

The Contractor shall be responsible for relocating each unit as needed to meet the needs of the Project and shall be responsible for the management and distribution of data collected by each radar speed display unit as requested by the Engineer of Record or CTDOT.

The Radar Speed Display – Trailer Mount, Tow Behind unit shall only be used:

- While the Contractor is actively working.
- For stationary work zones that will be in place for the entire length of a working period. The work zone shall not be a mobile operation that requires relocation while the Contractor is working.

The Radar Speed Display – Trailer Mount, Tow Behind unit, when not installed behind guiderail, should be located off the roadway a minimum of 5 feet from the edge of pavement when in use. If this is not possible, then the Radar Speed Display – Trailer Mount, Tow Behind unit may be installed in the shoulder as long as there is a 2 foot minimum clearance separating the Radar Speed Display Trailer and the edge of the nearest travel lane. When protected by guiderail, the Radar Speed Display – Trailer Mount, Tow Behind unit shall be installed outside of the deflection zone of the guiderail.

The Radar Speed Display – Trailer Mount, Tow Behind unit shall be placed within the signing pattern after the “Road Work Ahead – Fines Doubled” sign when in use. Appropriate spacing shall be identical to other advance construction warning signs. Refer to the applicable Temporary Traffic Control Plans found within the special provision for Item No. 0971001A: Maintenance and Protection of Traffic for required spacing.

The Radar Speed Display – Trailer Mount, Tow Behind unit shall be removed from the clear zone and the display and speed limit sign turned 90 degrees away from the roadway when the unit is not in use. When no longer required, the unit shall be removed from the Project and shall remain the property of the Contractor.

Method of Measurement: This item will be measured for payment by the number of calendar days that each unit is in place and in operation. A calendar day is considered to be any day, or part thereof, that a Radar Speed Display – Trailer Mount, Tow Behind unit is in use.

Payment will include delivery and operation measured to the nearest day.

There will be no measurement for mobilization, demobilization or relocation of units, furnishing of software and devices for data collection, or management or distribution of the data.

Basis of Payment: This work will be paid at the Contract unit price per day for each “Radar Speed Display – Trailer Mount, Tow Behind” unit provided and in operation, and shall include the cost of furnishing all labor, materials, equipment, shipping, and training necessary for use of these devices as specified.

The costs associated with the mobilization, demobilization or relocation of the units, the furnishing of software and devices for data collection, management and distribution of the data, and the furnishing, maintaining, and installation of the signs, plaques, and flashing beacons associated with the display unit shall be included in the cost of the item.

Pay Item	Pay Unit
Radar Speed Display – Trailer Mount, Tow Behind	day

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.

<u>Pay Item</u>	<u>Pay Unit</u>
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 at the end of the special provision.

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:

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.

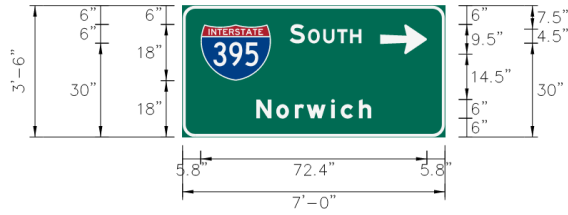
Pay Factor Scale: Work shall be considered defective whenever the base post length or base post embedment depth is less than the specified length by more than 2 inches. If the number of defects results in rejection, the Contractor shall remove and replace all metal sign base posts on the Project, at 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

SIGN DETAIL
1:40



SIGN NUMBER	395S-141-R075-A
PANEL SIZE	7'-0" x 3'-6"
TOTAL AREA	24.5 Sq.Ft.
MOUNTED	Ground
BDR INSET/WIDTH	0" / 1"
CORNER RADIUS	4"
SHEETING TYPE	XI
BACKGROUND COLOR(S)	Green
LEGEND/BORDER COLOR(S)	White/White

SYMBOL	ANGLE	X	Y	WID	HT
AR_Type A	270	63.25	26.5	9.5	14.97
M1_1	0	5.79	18	22.5	18

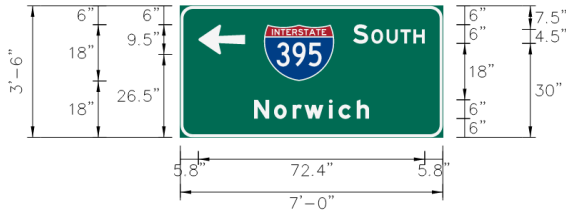
Material: 0.125" Thick Sheet Aluminum
 Sign Support No. N/A
 Location: Thompson Route 395 S.B. Ramp no. 75
 Project No. 0141-158

REV'D /

File name: 395S-141-R075-A Printed: 3/25/2026

LETTER POSITIONS (X)													LENGTH	SERIES(FONT)/SIZE
S	O	U	T	H										EM 2000
34.29	40.15	45.01	49.46	53.6									22.96	6,4,5
N	o	r	w	l	c	h								EM 2000
23.61	29.97	35.91	39.69	47.55	50.61	56.43							36.78	6/4,5

SIGN DETAIL
1:40



SIGN NUMBER	395S-141-R075-B
PANEL SIZE	7'-0" x 3'-6"
TOTAL AREA	24.5 Sq.Ft.
MOUNTED	Ground
BDR INSET/WIDTH	0" / 1"
CORNER RADIUS	4"
SHEETING TYPE	XI
BACKGROUND COLOR(S)	Green
LEGEND/BORDER COLOR(S)	White/White

SYMBOL	ANGLE	X	Y	WID	HT
AR_Type A	90	5.79	26.5	9.5	14.97
M1_1	0	26.75	18	22.5	18

Material: 0.125" Thick Sheet Aluminum
 Sign Support No. N/A
 Location: Thompson Route 395 S.B. Ramp no. 75
 Project No. 0141-158

REV'D /

File name: 395S-141-R075-B Printed: 3/25/2026

LETTER POSITIONS (X)														LENGTH	SERIES(FONT)/SIZE	
S	O	U	T	H											EM	2000
55.26	61.11	65.97	70.43	74.57											22.96	6/4,5
N	o	r	w	l	c	h									EM	2000
23.61	29.97	35.91	39.69	47.55	50.61	56.43									36.78	6/4,5

SIGN DETAIL
1:40



SIGN NUMBER	395S-141-R077-A1
PANEL SIZE	7'-0" x 3'-6"
TOTAL AREA	24,5 Sq.Ft.
MOUNTED	Ground
BDR INSET/WIDTH	0" / 1"
CORNER RADIUS	4"
SHEETING TYPE	XI
BACKGROUND COLOR(S)	Green
LEGEND/BORDER COLOR(S)	White/White

SYMBOL	ANGLE	X	Y	WID	HT
AR_Type A	90	5,94	26,5	9,5	14,97
M1_1	0	26,91	18	22,5	18

Material: 0.125" Thick Sheet Aluminum
 Sign Support No. N/A
 Location: Thompson Route 395 N.B. Ramp no. 77
 Project No. 0141-158

REV'D /

File name: 395S-141-R077-A1 Printed: 3/25/2026

LETTER POSITIONS (X)														LENGTH	SERIES(FONT)/SIZE	
N	O	R	T	H												EM 2000
55,41	61,27	66,13	70,27	74,41												22,65 6,4.5
W	o	r	c	e	s	t	e	r								EM 2000
18,96	26,22	32,16	36,06	41,34	46,5	51,72	56,22	62,04								46,08 6/4,5

SIGN DETAIL
1:40



SIGN NUMBER	395N-141-R077-A2
PANEL SIZE	7'-0" x 3'-6"
TOTAL AREA	24.5 Sq.Ft.
MOUNTED	Ground
BDR INSET/WIDTH	0" / 1"
CORNER RADIUS	4"
SHEETING TYPE	XI
BACKGROUND COLOR(S)	Green
LEGEND/BORDER COLOR(S)	White/White

SYMBOL	ANGLE	X	Y	WID	HT
AR_Type A	270	63.09	26.5	9.5	14.97
M1.1	0	5.94	18	22.5	18

Material: 0.125" Thick Sheet Aluminum
 Sgn Support No. N/A
 Location: Thompson Route 395 N.B. Ramp no. 77
 Project No. 0141-158

REV'D /

File name: 395N-141-R077-A2 Printed: 3/25/2026

LETTER POSITIONS (X)														LENGTH	SERIES(FONT)/SIZE
N	O	R	T	H										EM 2000	
34.45	40.3	45.16	49.3	53.44										22.64	6,4,5
W	o	r	c	e	s	t	e	r						EM 2000	
18.96	26.22	32.16	36.06	41.34	46.5	51.72	56.22	62.04						46.08	6/4,5

ITEM # 1210110A—4” (WHITE) TYPE I EPOXY RESIN PAVEMENT MARKINGS

ITEM # 1210111A—4” (YELLOW) TYPE I EPOXY RESIN PAVEMENT MARKINGS

ITEM # 1210112A—12” (WHITE) TYPE I EPOXY RESIN PAVEMENT MARKINGS

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 \pm 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

<u>Length of line</u>	<u>Number of Lots</u>	<u>Length of Test Lot</u>
< 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
4” (White) Type I Epoxy Resin Pavement Markings	l.f.
4” (Yellow) Type I Epoxy Resin Pavement Markings	l.f.
12” (White) Type I Epoxy Resin Pavement Markings	l.f.
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:

Blue (RBG COLOR: 0-1-101)
0.67" Font: 0.66" Century Gothic (B&W)
U.S. Department of Transportation
Federal Highway Administration
Font: 1.11" Century Gothic (B&W)

Blue (RBG COLOR: 0-1-101)
0.67" Font: 0.66" Century Gothic (B&W)
U.S. Department of Transportation
FTA
Font: 1.11" Arial Black (B&W)

Blue (RBG COLOR: 0-1-101)
0.67" Font: 0.66" Century Gothic (B&W)
U.S. Department of Transportation
FRA
Font: 1.11" Arial Black

Blue (RBG COLOR: 0-1-101)
0.67" Font: 0.66" Century Gothic (B&W)
U.S. Department of Transportation
NHTSA
Font: 1.11" Arial Black (B&W)

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".	

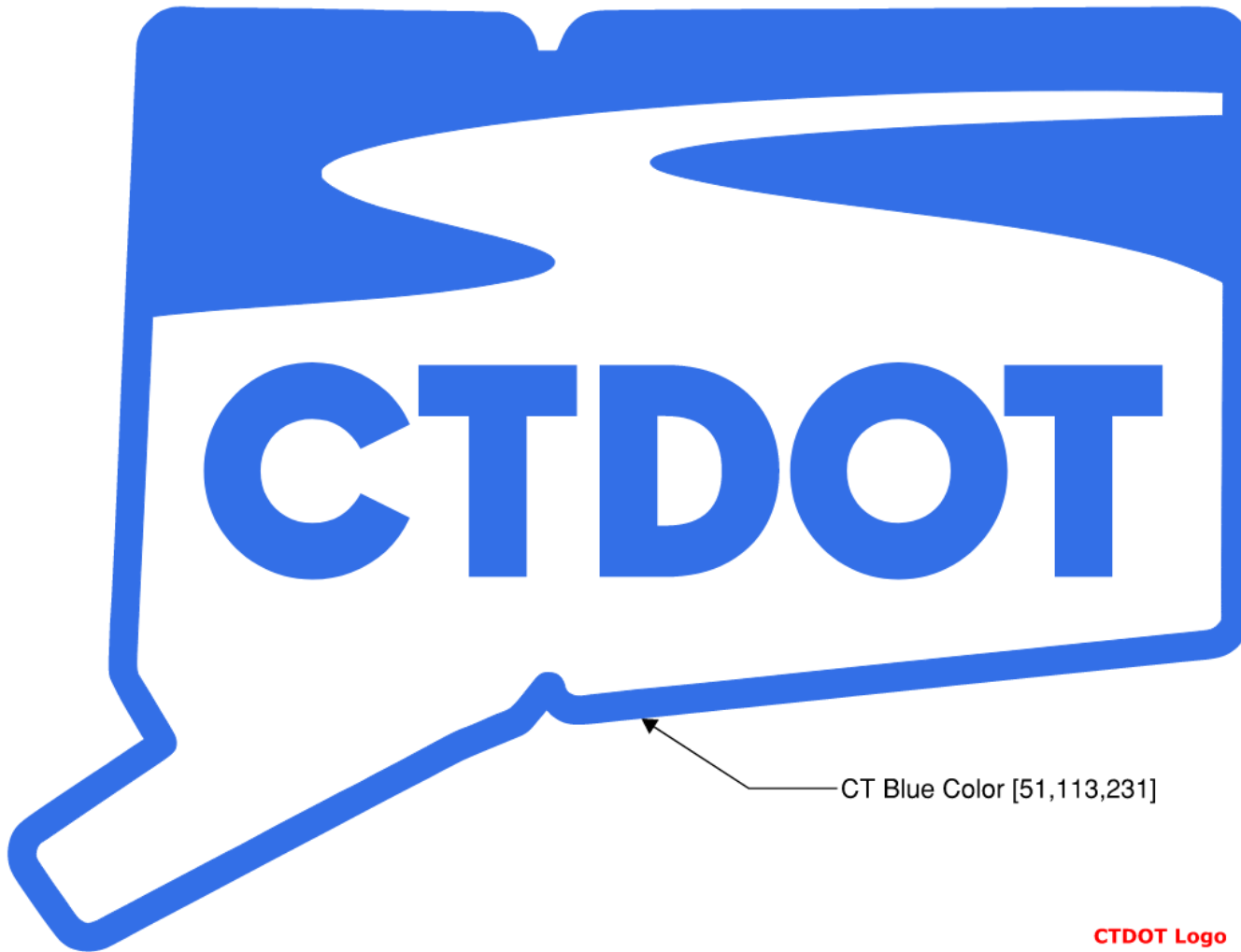
SYMBOL	ROT	X	Y	WID	HT
CT DOT LOGO	0	3.5	3.5	9.21	7
US DOT LOGO	0	75.0	3.5	17.5	7

REV'D 7/24

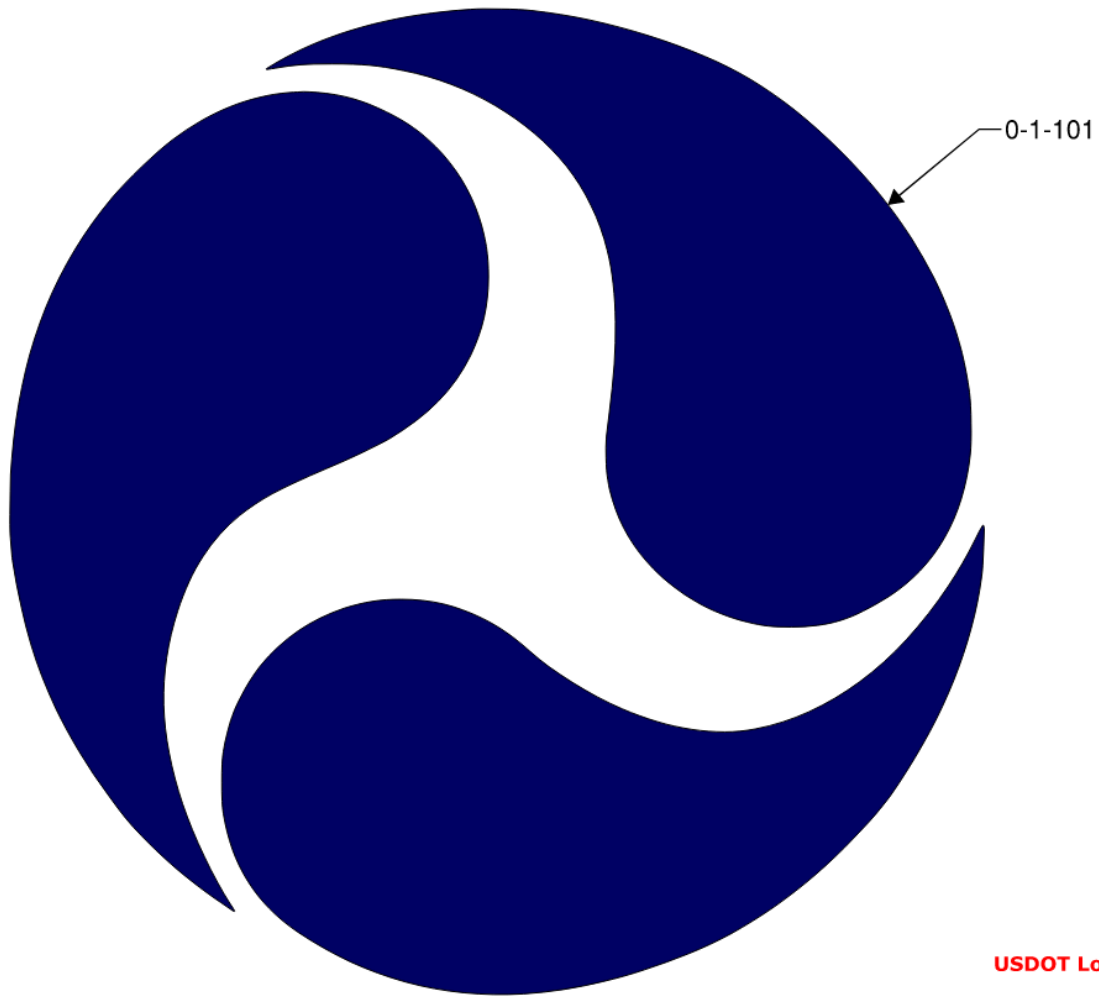
Dimensions are In Inches
Material : 0.125" Thick Sheet Aluminum
Ground Mounted

File name: 80-5957 Printed: 9/13/2024

LETTER POSITIONS (X)															LENGTH	SERIES/SIZE								
P	R	O	J	E	C	T	F	U	N	D	E	D	B	Y	T	H	E					D 2000		
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	5	
B	I	p	a	r	t	I	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



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, removal, and labor incidental thereto.

Catch basins to be reset after being uncovered, as specified on the plans, will be paid for in accordance with Section 5.86.

Pay Item
Standard Steel Road Plate

Pay Unit
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
Pre-Warning Vehicle

Pay Unit
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 Stormwater Discharge Permit




Registration Prior to NTP

- **Construction Contracts - Required Contract Provisions (Contracts Funded by FHWA and State)**

Natural Diversity Data Base Areas

THOMPSON, CT

December 2025

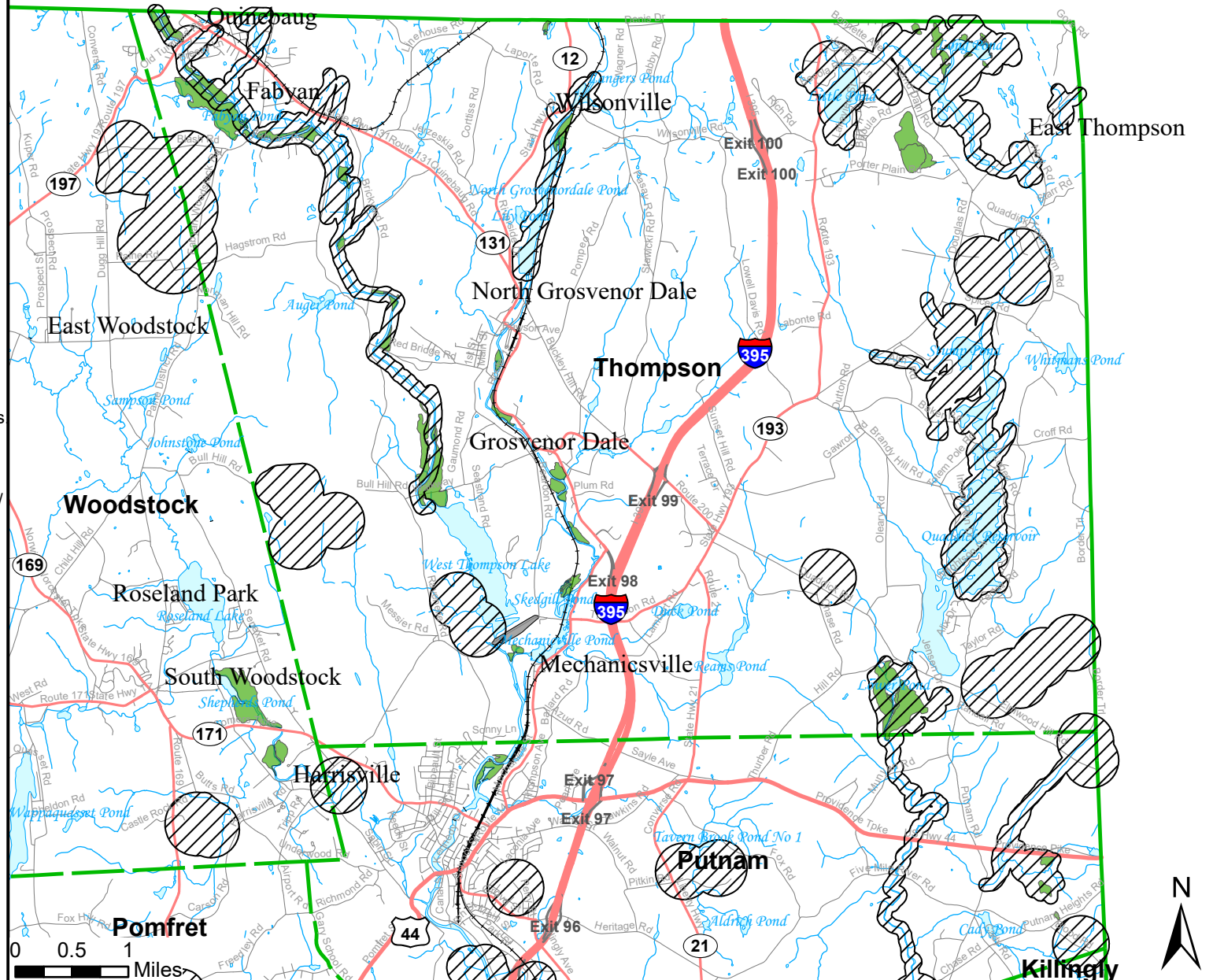
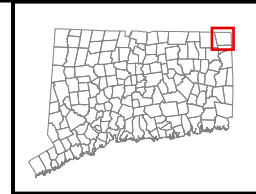
-  State and Federal Listed Species
-  Critical Habitat
-  Town Boundary

NOTE: This map shows known locations of State and Federal Listed Species and Critical Habitats. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a variety of data sources. Exact locations of species have been buffered to produce the generalized locations.

This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a hatched area there may be a potential conflict with a listed species. For more information, use DEEP ezFile <https://filings.deep.ct.gov/DEEPPortal/> to submit a Request for Natural Diversity Data Base State Listed Species Review or Site Assessment. More detailed instructions are provided along with the request form on our website. <https://portal.ct.gov/deep-nddbrequest>

Use the CTECO Interactive Map Viewers at <http://cteco.uconn.edu> to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St, Hartford, CT 06106
email: deep.nddbrequest@ct.gov
Phone: (860) 424-3011



**STORMWATER POLLUTION CONTROL PLAN
(SWPCP)**

**Replacement of Bridge. No. 03474, Route 200 over I-395
Thompson, CT**

**State Project No.: 0141-0158
ezFile No. 148274**



Connecticut Department of Transportation

5/12/2026

Stormwater Pollution Control Plan
Connecticut Department of Transportation

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Development & Contents of Plan

The Plan shall consist of site plan drawings and a narrative. The Plan shall be prepared in accordance with sound engineering practices, and shall be consistent with the [Connecticut Guidelines for Soil Erosion and Sediment Control](#), as amended, the [Connecticut Stormwater Quality Manual](#), as amended, and any applicable requirements of the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.

Site Description

Site Description

The location of the project corridor is mostly undeveloped outside of I-395 and Route 200. The existing soil in the project area is well drained soil. Land use along the project corridor includes woods, brush, grass, and impervious area. Route 200 (Thompson Hill Road) has a functional classification of “Rural – Major Collector” and posted speed limit of 40 mph (within the project

limits). According to the Rehabilitation Study Report (RSR), the bi-directional Average Daily Traffic (ADT) is reported at approximately 4,800 vehicles per day. The existing roadway has a width of 40 feet with a 6-foot sidewalk on the south side and a safety walk on the north side ranging approximately from 1.5 feet to 3.5 feet. The eastern and western Route 200 approaches Bridge No. 03474 are curbed with at-grade Type ‘C’ catch basins.

The proposed two-span replacement bridge with GRS-IBS abutments will be constructed over the course of three stages. Stage 1 involves the removal of the existing bridge; in which vehicles traversing Interstate 395 from both Northbound (NB) and Southbound (SB) approaches will be directed to their respective off ramps to which they can re-enter I-395 via their respective on ramps. Stages 2 and 3 consist of shifting traffic away and towards the median while maintaining two lanes of traffic for both I-395 NB and SB. Stormwater modeling and analysis show that temporary drainage structures and piping are not necessary for stage 2 and stage 3 because the spread will not exceed the maximum spread conditions for the roadway. Additionally, all precast concrete barrier curb proposed for staged construction will be slotted to allow for the flow of stormwater to pass through the barrier and into the existing drainage systems and/or work zone.

The system on I-395 Southbound begins just north of Bridge No. 03474 and discharges approximately 1,500 south of the bridge in a wooded area (EO-1/PO-1). This drainage system conveys stormwater from the I-395 Southbound shoulders and the median area through existing catch basins, piping, and roadside ditches.

The system on I-395 Northbound begins just south of Bridge No. 03474 and discharges approximately 1,750 south of the bridge in the I-395 median from where it’s picked by a paved channel (EO-2/ PO-2). This drainage system also conveys stormwater from the I-395 Northbound shoulders and the median area through existing catch basins piping, and roadside ditches. Additionally, the I-395 northbound drainage system captures runoff from the on-ramps and off-ramps at the intersection of Route 200 east of Bridge No. 03474 and stretches approximately 2500’ east of the bridge. Both the I-395 Southbound and Northbound drainage systems are currently separated in the median through an existing berm that constitutes as a highpoint within this section of I-395 thus separating the two drainage systems and their associated roadside median ditches.

The third drainage system in the vicinity of project is currently located on Route 200 and is west of Bridge No. 03474 (EO-3/PO-3). This drainage system conveys stormwater from the I-395 Southbound on-ramps and off-ramps as well as roadway drainage from Route 200.

Estimated Disturbed Area

The total area for this project site is 5.84 acres. Of this area, 1.65 acres will be disturbed by construction activities regardless of phasing.

Estimated Runoff Coefficient

All pavement drainage areas use 0.90

Grass areas use 0.30

Pre-Construction

$$\frac{(3.86 \text{ ac.} \times 0.3) + (1.98 \text{ ac.} \times 0.9)}{3.86 \text{ ac.} + 1.98 \text{ ac.}} = 0.503$$

Post-Construction

$$\frac{(3.77 \text{ ac.} \times 0.3) + (2.07 \text{ ac.} \times 0.9)}{3.77 \text{ ac.} + 2.07 \text{ ac.}} = 0.513$$

Receiving Waters

The drainage system discharging to (EO-1/PO-1) conveys stormwater flows to a wooded area west of I-375 approximately 1500 ft south of the project area.

The drainage system discharging to (EO-2/PO-2) conveys stormwater flows to the median of I-395 approximately 1750 ft south of the project area.

The third drainage system in the vicinity of project is currently located on Route 200 and is west of Bridge No. 03474 (EO-3/PO-3). This drainage system conveys stormwater from the I-395 Southbound on-ramps and off-ramps as well as roadway drainage from Route 200.

Extent of Wetlands on Site

There are approximately 0.15 acres of wetlands present at the project site. These exist primary in the median between I-395 Sb and I-395 NB. There is no FEMA regulated floodplain or floodway present at the project location.

Construction Sequencing

The Contractor will be given approximately 2 construction seasons for the construction of all phases of the project, which shall be revised as necessary to keep the Plan current.

The suggested sequence of construction is as follows:

1. Mobilization
2. Install erosion/sedimentation controls where soil will be exposed or susceptible to erosion
3. Tree removal, clearing and grubbing
4. Install detour on Thompson Hill Road
5. Demo bride (Middle, West and then East portion)
6. Install median drainage
7. Alter drainage (Thompson Hill Road)
8. Milling and Resurfacing on I-395
9. Construct Thompson Hill Road widening
10. Milling Pavement
11. Stabilize the disturbed areas. Establish with appropriate seeding mixture.
12. Remove erosion and sedimentation controls when it has been determined that the disturbed

- areas have been stabilized
13. All post-construction stormwater structures shall be cleaned of construction sediment and any remaining sediment control systems shall be removed prior to the filing of the “Notice of Termination Form: Non-Solar Projects”
 14. Ensure the project area is cleaned, free of debris, and catch basins have been cleaned, etc

The requirement for sediment traps or basins shall not apply to flows from off-site areas and flows from areas of the site that are either undisturbed or have undergone final stabilization.

If the areas of disturbance have a contributing drainage area that contains 2-5 acres of disturbed soils per discharge point, a temporary sedimentation trap must be provided. The Contractor must submit to the Qualified Inspector a revised SWPCP for review and approval.

If the areas of disturbance have a contributing drainage area that contains greater than five acres of disturbed soils per discharge point, a temporary engineered sedimentation basin must be provided. The Contractor must submit to the Qualified Inspector a revised SWPCP for review and approval. The SWPCP must include locations of the temporary engineered sedimentation basin designed and installed in accordance with the E&S Guidelines, as amended. The Contractor shall provide an inspection and maintenance plan for the engineered sedimentation basin as part for the amended SWPCP.

Control Measures

Soil erosion and sediment control for the project will follow the Connecticut Guidelines for Soil Erosion and Sediment Control (SESC) Guidelines. The project will utilize multiple structural control measures for soil erosion and sediment control. The project will also implement stormwater management BMP’s to convey, treat and manage stormwater flows to minimize the discharge of pollutants from the site. The individual controls as installed will divert flows, temporarily store flows, control offsite discharges, and minimize the transport of sediment and other pollutants from the site to adjacent waterways.

The following is a summary list of structural erosion control measures and devices that will be applied in the project.

Temporary Measures

- Temporary Construction Entrance (Anti-Tracking Pad)
- Siltation Barriers (Sedimentation Control System)

The location of these features is shown on the project design plans. Limits of temporary control measures shown on the design plans are required to be installed prior to the initiation of land disturbing activities. The temporary control measures may not be removed until the upgradient disturbed land areas have achieved permanent stabilization.

The inspection, maintenance, and specifics of each measure are further described in the following

sections of this SWPCP. The maintenance and repair of structural measures will be accomplished with adequate supplies of materials including siltation fence, haybales, and stone to be stored onsite for immediate repair when required.

Stabilization of disturbed land will be implemented within the General Permit Required time frames and procedures for permanent and temporary stabilization. Where construction activities are complete to final grades permanent stabilization will be implemented. Areas that are to be inactive for 14 days will receive temporary stabilization measures. In all cases stabilization of disturbed land shall be completed as quickly as possible.

Emergency Spill Response

Spills of oil, grease, or other harmful chemicals must immediately be cleaned by the removal of and containment of contaminated soil or emergency spill kit. An emergency spill kit, or alternative proprietary device, must be present and accessible on site for emergency removal of oil, grease, or chemical spills. Contact the CTDEEP Emergency Response Unit at (860) 424-3338.

Impaired Waters

There is no discharge to impaired waters at the project location.

Erosion and Sedimentation Controls

The Department of Transportation (Department) will have a Qualified Inspector assigned to the project to oversee the Contractor's operations and to ensure compliance with the provisions of the Contract. Further Department oversight is provided by the District 2 Environmental Coordinator and the Office of Environmental Planning.

The following timelines will be followed for the proposed construction activities:

- The Contractor shall stabilize disturbed areas with temporary or permanent measures as quickly as possible after the land is disturbed.
- Areas that remain disturbed but inactive for at least 14 days shall receive temporary seeding or soil protection within seven (7) days.
- Areas that will be disturbed past the planting season will be covered with a long-term, non-vegetative stabilization method that will provide protection through the winter.
- If construction activities are completed to final grade, permanent stabilization measures shall take place within seven (7) days.

The Department projects are required to have Preconstruction Meetings with the Contractor. The Contractor is required to review and understand the Contract Plans and Specifications as well as to develop an E&S Plan for review and approval by the Engineer. The Contractor's E&S plan shall

demonstrate compliance with the Stormwater Permit requirement for a double row of sediment control barriers at all disturbed locations.

Double Row of Erosion and Sediment Control Barriers

- A double row of sediment control barrier shall be utilized between any disturbed area and downgradient wetland or watercourse within 50 feet, unless there would be an adverse impact to adjacent wetlands/watercourses due to installation of a double row (i.e., would result in larger wetland/watercourse impact.)
- Additional erosion control barriers (double row of SCS) may also be required within the project area. Factors to be reviewed by the Engineer include but are not limited to: the contributing disturbed area, drainage area, slope, length of slope, and flow conditions to maintain sheet flow. If determined necessary, the Engineer will direct the Contractor to install and maintain additional rows of erosion control barrier (or equivalent).

Soil Stabilization and Protection

Project work is divided into discrete stages as shown on plans. The stages are described in the section Construction Sequencing. Disturbed areas will be managed by phase to maintain the minimum disturbed area of site while maintain operations of the existing highway. Designated areas will be used for soil stockpiles.

General Permit requirements for the temporary and permanent stabilization of the site and portions thereof will be performed. Stabilization of pervious surfaces will be achieved by turf establishment with topsoil placement and seeding. Temporary measures will include erosion control matting and temporary seeding where required.

Temporary Stabilization Practices

- Erosion Control Matting: On slopes steeper than 2:1 erosion control matting shall be used to stabilize the topsoil or as necessary and directed by the Qualified Inspector. ECM type shall be disclosed and selected from the Department's [Qualified Products List](#), as amended.
- Sedimentation Control System (SCS): SCS shall be placed at the toe of the slope or as directed by the Qualified Inspector.
- Anti-Tracking Pads: Construction entrances (gravel anti-tracking pads) shall be constructed at truck access/exit points to off-road route. Access road(s) should grade away from the main roadway or waterbody.
- Dust Control: Routine sweeping and application of dust suppression agents, including but not limited to, water and calcium chloride, over exposed subbase shall be completed for dust control. Additional measures may be necessary to minimize dust within the project limits and within staging and stockpile areas.
- Temporary Seeding: Areas that will remain disturbed but inactive for at least 14 calendar

days shall receive temporary seeding or soil protection within 7 days,

Stabilization practices shall be implemented after completion, as final grades are reached, within seven (7) days.

Temporary seeding shall be spread over any disturbed areas which will remain inactive for at least 14 days. Areas to remain disturbed through winter shall be protected with non-vegetative stabilization measures. The Contractor must provide an Erosion and Sedimentation Control plan for each winter season during construction operations.

The Contractor may elect to utilize other controls in conformance with the E&S Guidelines as amended, as approved by the Qualified Inspector. The Contractor will be required to provide the necessary details for any erosion controls not specifically called for on the project plans.

During construction, all areas disturbed by the construction activity that have not been stabilized, structural control measures, and locations where vehicles enter or exit the site shall be inspected at least once a week and within 24 hours of the end of a storm that generates a discharge. For storms that end on a weekend, holiday, or other time in which normal working hours will not commence within 24 hours, an inspection is required within 24 hours following any storm in which 0.5 inches or greater of rain occurs. For lesser storms, inspection shall occur immediately upon the start of subsequent normal working hours.

Permanent Stabilization Practices

During construction, the following methods of permanent stabilization shall be installed:

- **Topsoiling**: Once final grades have been established, topsoil shall be applied to provide a suitable growth medium for vegetation, if required.
- **Permanent Stabilization**: Once soils have been brought to final grade; permanent stabilization shall be used to stabilize the soil with a vegetative cover or, with crushed stone for slope protection or riprap, shall be applied, if required. Disturbed areas below the wetland limit shall be seeded with the appropriate seed mix. The Qualified Inspector will verify compliance with this requirement on the Notice of Termination Form: Non-Solar Projects.
- **Landscaping**: Wood chip mulch shall be placed around the plants. Plantings (trees, shrubs, etc.) and permanent seeding may be established together. Wood chip mulch shall NOT be utilized in wetland areas.

All new embankments and unpaved areas that are graded or disturbed by construction will receive erosion control matting, topsoil and/or seed establishment. The Contractor may use other permanent stabilization practices that have been accepted by the Qualified Inspector or CTDOT that are in conformance to the E&S Guidelines.

Structural Measures

The project proposes structural measures identified in the control measures of this section to divert stormwater flows and prevent erosion and sediment transport. Runoff limitation and pollutant discharge are achieved by the proposed structural BMP's including siltation barriers and temporary tracking pads.

Maintenance

A long-term Operation and Maintenance Plan, which identifies required inspection and maintenance activities for structural stormwater BMPs will be included in the CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.

All construction activities and related activities shall conform to the requirements of Section 1.10 "Environmental Compliance" of the Department's Standard Specifications. In general, all construction activities shall proceed in such a manner so as not to pollute any wetlands, watercourses, water body, and conduit carrying stormwater. The Contractor shall limit, in so far as possible, the surface area of earthen materials exposed by construction activity and immediately provide temporary and permanent pollution control to prevent soil erosion and contamination on the site. Water pollution control provisions and Required Best Management Practices per Section 1.10, Environmental Compliance of the Standard Specifications shall be administered during construction. Control measures shall be inspected and maintained in accordance with the E&S Guidelines and as directed by the Qualified Inspector.

Dewatering Wastewaters

Dewatering Guidelines

When dewatering is necessary, pumps used shall not be allowed to discharge directly into a wetland, watercourse, or stormwater drainage system. Prior to any dewatering, the Contractor must submit to the Engineer a written proposal for specific methods and devices to be used on site. Written approval must be obtained from the Engineer for methods and devices, including, but not limited to, the pumping of water into a temporary sedimentation basin, providing surge protection at the inlet or outlet of pumps, floating the intake of a pump, or any other method for minimizing and retaining the suspended solids. If the Qualified Inspector determines that a pumping operation is causing turbidity problems, the Contractor shall halt said operation until a means of controlling the turbidity is submitted by the Contractor in writing to the Engineer. Once written acceptance is received from the Engineer with the concurrence of CTDOT, the Contractor may implement the turbidity control measures.

No discharge of dewatering wastewater shall contain or cause a visible oil sheen, floating solids or foaming in the receiving water. If required, all activities are to be performed in compliance with the Department's Standard Specifications.

Turbidity Monitoring for Dewatering Activities

When construction dewatering operations result in a discharge beyond project limits, the Qualified Inspector will sample and document turbidity levels in accordance with 40 CFR 136 at the point where flows exit project limits initially within 30 minutes of commencement of dewatering activities and weekly thereafter for the duration of dewatering. Turbidity Monitoring Reports will be submitted to the CTDEEP on the first day of each month via email at DEEP.StormwaterConstruction@ct.gov for as long as the discharge exists. The email to the CTDEEP will be submitted with the subject line “Construction Turbidity Monitoring” with reference to the CTDEEP permit number.

Post-Construction Stormwater Management

- Minimal Curbing: Curbing shall be avoided wherever possible to maximize overland sheet flow and encourage infiltration.
- Catch Basins: Catch basins shall be used, especially adjacent to outlets, to intercept pollutants and debris.
- MS4 Measures: Refer to the completed [CTDOT MS4 Maximum Extent Possible \(MEP\) sheet](#) in Appendix E of the Plan.

Post-Construction Guidelines

After the project is complete, the Department will perform the following maintenance and restorative measures:

- Litter/debris and sweepings will be removed from the site, as needed.
- Mowing and maintenance of the seeded areas and vegetated areas will occur, as needed.
- Riprap outlet protection will be inspected and cleaned, as needed.
- Stormwater drainage system will be cleaned of sediment/debris, as needed.
- Identify, inspect, and maintain all stormwater quality BMPs included within the project, as per the MS4 or manufacturer recommendations.

Post Construction Performance Standards and Control Measure

Redevelopment:

Redevelopment:

In order to comply with the Department’s MS4 Permit requirements, projects shall seek to reduce the effective impervious cover to the maximum extent practicable. The following is a description

of how the project will comply with the 2024 Stormwater Quality Manual (SWQ) Manual Performance Standards for the General Permit for the Discharge of Stormwater

Effective Impervious Cover % Pre-Construction – 1.98 acres

Effective Impervious Cover % Post-Construction – 2.07 acres

The preconstruction DCIA of the project is less than 40% for redevelopment and accordingly the required retention volume is 100% of water quality volume. The water quality volume is computed per the SWQ manual as calculated from the following equation.

$$WQV=(P*R*I)/12$$

where,

P = 1.3 Inches

R = Volumetric Runoff Coefficient = 0.355

I = Post Development Impervious Area (percent) = 34%

A = Drainage Area (Acres) = 5.84 acres

For the project site the following results are obtained: 0.224 Ac-Ft

The computed water quality volume is 0.224 Ac-Ft. The project is unable to retain the WQV onsite due to the nature of the project scope and ROW restrictions. The proposed project will add 3,364 square feet of impervious area for the proposed widening of Route 200. Refer to Appendix E for the CT DOT MS4 MEP Design worksheet for more information.

Other Development:

Runoff Reduction and LID Practices

Due to the linear nature of the project and limited available ROW, runoff reduction and LID practices have been incorporated to the maximum extent practicable.

Suspended Solids and Floatable Removal

Due to limited scope of project and minimal change in impervious area, standard 2 ft catch basin sumps are proposed.

Velocity Dissipation:

All pipe outlets located outside project limits and outside scope of project.

Other Controls (Non-Structural)

Waste Disposal

Construction site waste shall be properly managed and disposed of during the entire construction period.

The following is applicable:

- A waste collection area will be designated. The selected area will minimize truck travel through the site and will not drain directly to the adjacent wetlands.
- Waste collection shall be scheduled regularly to prevent the containers from overflowing.
- Spills shall be cleaned up immediately.
- Defective containers that may cause leaks or spills will be identified through regular inspection. Any found to be defective will be repaired or replaced immediately.
- Any stockpiling of materials should be confined to the designated area as approved by the Qualified Inspector.

Washout Areas

Washout of applicators, containers, vehicles, and equipment for concrete shall be conducted in a designated washout area. No surface discharge of washout wastewaters from the area will be allowed. All concrete wash water will be directed into a container or pit such that no overflows can occur. Washout shall be conducted in an entirely self-contained system and will be clearly designed and flagged or signed where necessary. The washout area shall be located outside of any buffers and at least 50 feet from any stream, wetland or other sensitive water or natural resources as determined or designated by the Department's Office of Environmental Planning or the project's Qualified Inspector.

Washout Area(s) will be site located by the Contractor, approved by the Qualified Inspector and the SWPCP revised, as appropriate. The "Concrete Washout Area" detail the recommended method of construction for the washout area. The designated area shall be designed and maintained such that no overflows can occur during rainfall or after snowmelt.

Anti-tracking Pads and Dust Control

(Form 819- Sections 2.11, 9.39, 9.42, and 9.43)

Off-site vehicle tracking of sediments and the generation of dust shall be minimized. Temporary anti-tracking pads from the active work site to the existing pavement will be installed and maintained at the locations shown on the plans.

The Contractor shall:

- Maintain the entrance in a condition which will prevent tracking and washing of sediment onto paved surfaces.

- Provide periodic top dressing with additional stone or additional length as conditions demand.
- Repair any measures used to trap sediment, as needed.
- Immediately remove all sediment spilled, dropped, washed, or tracked onto paved surfaces.
- Ensure roads adjacent to a construction site are left clean at the end of each day.

If the construction entrance is being properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment, then the contractor shall either:

- Increase the length of the construction entrance,
- Modify the construction access road surface, or
- Install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.

For construction activities which cause airborne particulates, wet dust suppression shall be utilized. Construction site dust will be controlled by sprinkling the ground surface with water until it is moist on an as-needed basis. The volume of water sprayed shall be such that it suppresses dust yet also prevents the runoff of water.

Maintaining and Storing Vehicles and Equipment- Storage of Chemicals & Petroleum Products

The Contractor shall take measures to prevent any contamination to wetlands and watercourses while maintaining and storing construction equipment on the site. All chemical and petroleum containers stored on site shall be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment area. All chemicals and their containers shall be stored under a roofed area except for those stored in containers of 100-gallon capacity or more, in which case double-walled tanks will suffice. Accumulation of rainwater within secondary containment must be visually inspected for sheen prior to being discharged. If any sheen is identified; the accumulated water must be removed by the Contractor to an appropriate off-site location.

Cold Water Stream Habitat

There is no Cold Water Stream Habitat at the project location.

Notice of Construction Activities

The following notice of permit coverage shall be placed at a safe, publicly accessible location near or within the Project limits. The sign shall be two (2) feet by three (3) feet in dimension, weatherproof, and written in English and Spanish:

1. The notice of coverage is to include:

- The name of the Permittee (State of Connecticut Department of Transportation).

- The DEEP permit number.
- The site address.
- District name (CTDOT District 2).
- District general email box and phone number.
- Estimated start date and completion date.
- The CTDOT-hosted website or email where the SPCP and application are available or can be obtained.
- The following statement: “If you observe indicators of stormwater pollutants in the discharge from this site or in the receiving water, please contact the CTDEEP through the link for Reporting Water Pollution at: www.ct.gov/deep/stormwater”.

Inspections

The Qualified Inspector will conduct site inspections once a week or after any rain event of 0.1 inches or greater during normal working hours. The Qualified Inspector conducting inspections shall fill out a [Construction Site Environmental Inspection Report \(CSEIR\)](#) for each inspection described below.

Each report shall be retained as a part of the SWPCP and shall be uploaded to the COMPASS Environmental subfolder available for CTDEEP request. The report shall include a statement that, in the judgment of the Qualified Inspector(s) conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the Plan and permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance, review Keeping Plans Current.

Plan Implementation Inspections

For each phase of construction, the site shall be inspected at least once within the first 30 days of construction activity and at least three times, with 7 or more days between inspections, within the first 90 days of construction activity to confirm compliance and proper initial implementation of all control measures.

Routine Inspections

The Permittee will maintain a rain gauge on-site to document rainfall amounts. During construction, all areas disturbed by the construction activity that have not been stabilized, all erosion and sediment control measures, structural control measures, soil stockpile areas, washout areas, and locations where vehicles enter or exit the site shall be inspected for evidence of or the potential for pollutant entering the drainage systems and impacts to the receiving waters at least every seven (7) calendar days and within 24 hours of the end of a storm that generates a discharge.

For storms that end on a weekend, holiday, or other time in which normal working hours will not commence within 24 hours, an inspection is required within 24 hours following any storm in which

0.5 inches or greater of rain occurs. For lesser storms, inspection shall occur immediately upon the start of subsequent normal working hours.

Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least weekly until final stabilization has been achieved.

Qualified Inspectors provided by the Department's District 2 Office shall conduct inspections.

The following items shall be inspected as described below:

<u>Item</u>	<u>Procedure</u>
Sedimentation Control System (SCS)	The SCS shall be inspected to ensure that the fence line is intact with no breaks or tears. The fence shall be firmly anchored to the ground. Areas where the fence is excessively sagging or where support posts are broken or uprooted shall be noted. Depth of sediment behind the fence shall be noted if sediment needs to be removed.
Catch Basin Protection	Protective measures shall be inspected to ensure that sediment is not entering the catch basins. Catch basin sumps shall be monitored for sediment deposition.
Erosion Control Matting	Inspect erosion control matting and repair any dislodged or failed blankets immediately. Replace any washed out seed or topsoil.
Anti-tracking Pad	Locations where vehicles enter or exit the site shall be inspected for evidence of off-site tracking.
Dust Control	Measures shall be taken for the purpose of allaying (diminishing) dust conditions. Measures may include the use of sweeping equipment and/or the application of water or calcium chloride.
General	Construction areas and the perimeter of the site shall be inspected for any evidence of debris that may blow or wash off-site or that has blown or washed off site. Construction areas shall be inspected for any spills or unsafe storage of materials that could pollute off site waters.

Post-Construction Inspection

Upon completion of construction activities and stabilization of the site, all post-construction stormwater structures, including catch basins shall be cleaned of construction sediment or debris and the site inspected to confirm compliance with all post-construction stormwater management requirements. Sediment shall be properly disposed of in accordance with all applicable laws,

regulations, and guidelines. Any remaining sediment control system(s) SCS shall be removed prior to acceptance of the project by the Department.

Final Stabilization Inspection

Once CTDOT has made a determination that the site has achieved final stabilization, the site shall be inspected, and photo documented by the District Environmental Coordinator (DEC) to confirm that no active erosion or sedimentation is present and site stabilization has been maintained.

Final stabilization is achieved when a full growing season is completed. A **full growing season** is defined as the timeframe encompassed by **two consecutive full seeding seasons**: April 1 through June 15, and August 15 through October 1. If final stabilization is achieved during a seeding season, the following seeding season will be considered the first full seeding season after final stabilization has been achieved, the DEC will verify compliance with this requirement on the Notice of Termination: Non-Solar Projects.

Keeping Plans Current

Revisions to Stormwater Pollution Control Plans

The Department will amend the Plan if the actions required by the Plan fail to prevent pollution or otherwise comply with provisions of the General Permit. The Plan shall also be amended whenever there is a change in contractors or sub-contractors at the site, or a change in design, construction, operation, or maintenance at the site which has not otherwise been addressed in the plan. The Plan shall also be amended whenever there is a change in contractors or sub-contractors at the site, or a change in design, construction, operation, or maintenance at the site which has not otherwise been addressed in the plan.

If the results of the inspections require modifications to the Stormwater Pollution Control Plan, the plans shall be revised as soon as practicable after the inspection. Such modifications shall provide for a timely implementation of any changes to non-engineered controls on the site within 24 hours and implementation of any changes to the plan within 3 (three) calendar days following the inspection. For Engineered measures, corrective actions shall be implemented on site within 7 (seven) days and incorporated into a revised Plan within 10 (ten) days of the date of inspection.

In no event shall the requirements to keep the Plan current or update a Plan, relieve the permittee and their contactor(s) of the responsibility to properly implement any actions required to protect the waters of the State and to comply with all conditions of the General Permit.

Notice of Change

A Notice of Change will be submitted electronically to the CTDEEP at: DEEP.StormwaterConstruction@ct.gov should any of the following changes occur:

- Change of contractor.
- Changes to name of the project or site.
- Changes to the disturbed area on the site that reduces the distance to impaired waters, high quality waters, cold water habitat, endangered or threatened species habitat, or aquifer protection areas from those in the original SPCP.
- Changes to engineered or non-engineered construction or post-construction Control Measures that have the potential to increase the rate or volume of stormwater discharged.

Contractors

General

This section shall identify all Contractors and Subcontractors who will perform on site actions which may reasonably be expected to cause or have the potential to cause pollution of the waters of the State.

Certification Statement

All contractors and subcontractors must sign the attached statement. All certifications will be included in the Stormwater Pollution Control Plan.

State Project No. 0148-0158

Replacement of Bridge No. 03474 Route 200 over I-395
Thompson, CT

“I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as Contractor on the project, I am covered by this General Permit, and must comply with the terms and conditions of this permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for this project.”

GENERAL CONTRACTOR

Signed: _____

Date: _____

Title: _____

Firm: _____

Telephone: _____

Address: _____

SUBCONTRACTOR

Signed: _____

Date: _____

Title: _____

Firm: _____

Telephone: _____

Address: _____

General:

This Stormwater Pollution Control Plan (SWPCP) is prepared to comply with the requirements for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. Also, to be considered part of the SWPCP are the proposed construction plans, special provisions, and the Connecticut Department of Transportation's "Standard Specifications for Roads, Bridges, Facilities and Incidental Construction" (Form 819) including supplements thereto and the Connecticut Guidelines for Erosion and Sediment Control (E&S Guidelines) and Stormwater Quality Manual (SWQ Manual), as amended.

List of Applicable Figures / Plans:

Appendix A – Figures

- Disturbed Erodible Areas
- Site Drainage Patterns

Appendix B – Drainage Calculations

- Water Quality Computations

Appendix C – Plan Sheets

Appendix D – CTDOT MS4 Project Design Maximum Extent Practicable Worksheet

Appendix E – Construction Site Environmental Inspection Report (CSEIR)

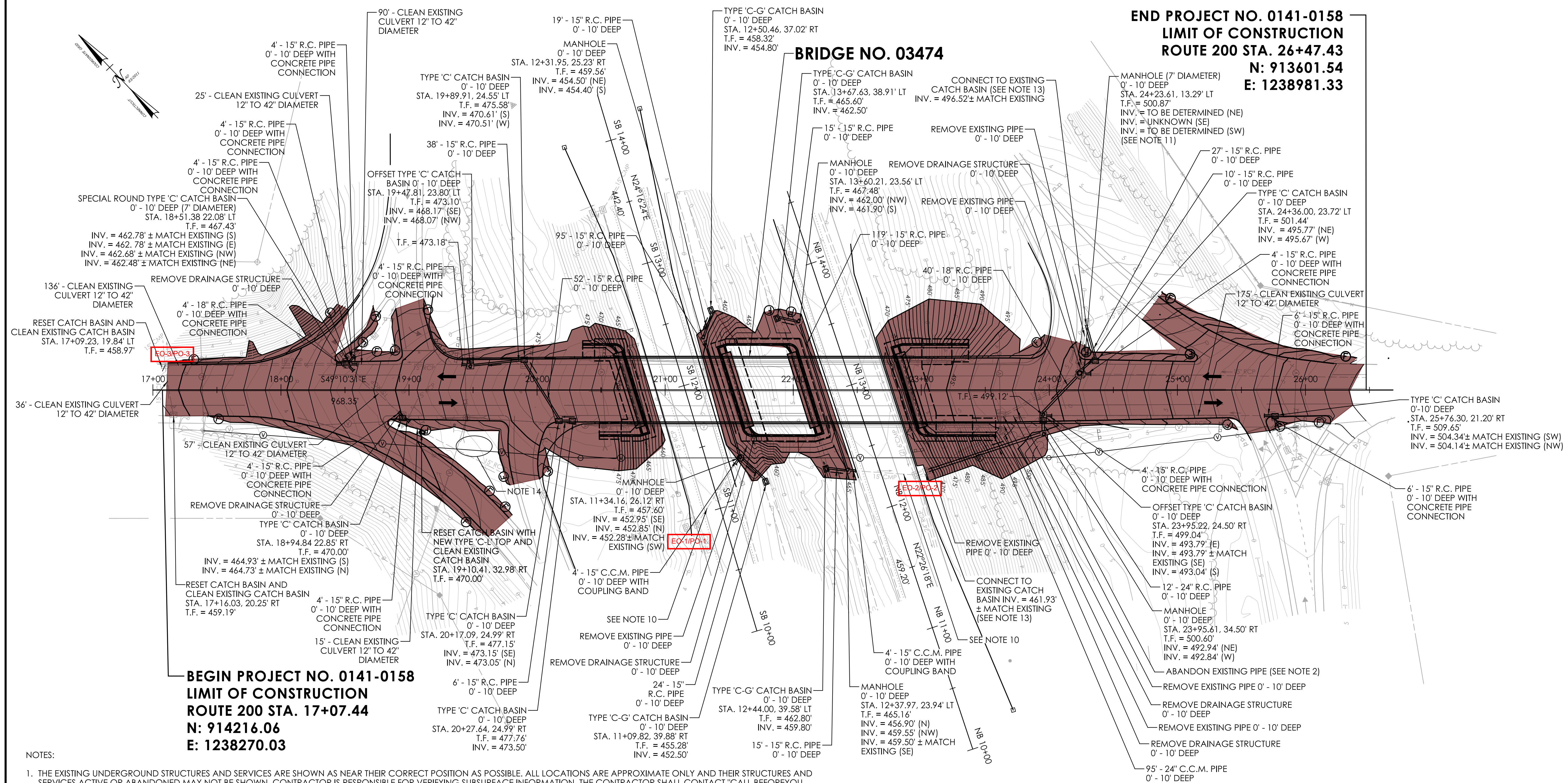
Appendix F – Notice of Termination Form: Non-Solar Projects

Appendix G – 2026 Construction Stormwater Permit Additional Requirements

Appendix A – Figures

END PROJECT NO. 0141-0158
LIMIT OF CONSTRUCTION
ROUTE 200 STA. 26+47.43
N: 913601.54
E: 1238981.33

BRIDGE NO. 03474



BEGIN PROJECT NO. 0141-0158
LIMIT OF CONSTRUCTION
ROUTE 200 STA. 17+07.44
N: 914216.06
E: 1238270.03

TOTAL DISTURBED AREA: 72,034 sq ft

NOTES:

1. THE EXISTING UNDERGROUND STRUCTURES AND SERVICES ARE SHOWN AS NEAR THEIR CORRECT POSITION AS POSSIBLE. ALL LOCATIONS ARE APPROXIMATE ONLY AND THEIR STRUCTURES AND SERVICES ACTIVE OR ABANDONED MAY NOT BE SHOWN. CONTRACTOR IS RESPONSIBLE FOR VERIFYING SUBSURFACE INFORMATION. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" TOLL FREE (1-800-922-4455) IN ACCORDANCE WITH STATE REQUIREMENTS.
2. ALL EXISTING PIPES TO BE ABANDONED SHALL UTILIZE ITEM NO. 0216012A CONTROLLED LOW STRENGTH MATERIAL. EXISTING PIPES TO BE REMOVED ARE AS CALLED FOR ON THE DRAINAGE PLANS OR AS DIRECTED BY THE ENGINEER. LIMITS OF EXISTING PIPES TO BE ABANDONED SHALL BE OUTSIDE OF DRAINAGE TRENCH EXCAVATION LIMITS, AS DEFINED IN SUBARTICLE 2.86.03-1, OR AS DIRECTED BY THE ENGINEER.
3. PIPE LENGTHS ARE ROUNDED TO THE NEAREST 1 FOOT AND MEASURED WITH 3D LENGTH. THE LENGTH FOR END TREATMENTS IS NOT INCLUDED IN PIPE LENGTH. PIPE LENGTHS ARE FOR ESTIMATING PURPOSES ONLY.
4. USE APPROPRIATE CATCH BASIN CONCRETE TOP AS SHOWN FOR TYPE 'C' CATCH BASINS ON HIGHWAY STANDARD SHEET NO. HW-586_07g FOR THE ADJACENT CURBING TYPE AS SHOWN ON THE CURBING PLAN OR TO MATCH THE ADJACENT EXISTING CURBING TYPE. IF CURBING IS NOT SPECIFIED ON THE PLANS PROVIDE TOP AS DIRECTED BY THE ENGINEER.
5. EXISTING DRAINAGE SYSTEMS, CATCH BASINS, AND CULVERTS SHALL BE CLEANED AS CALLED FOR ON THE DRAINAGE PLANS OR AS DIRECTED BY THE ENGINEER AFTER WORK WITHIN THAT SYSTEM IS COMPLETE PURSUANT TO ITEM NO. 0653010 - CLEAN EXISTING CATCH BASIN AND 0653100 - CLEAN EXISTING CULVERT 12" TO 42" DIAMETER IN ACCORDANCE WITH FORM 819 ARTICLE 1.08.11.
6. ALL BASELINE OFFSETS SHALL BE APPLIED AT THE CENTER OF THE GRATE FOR TYPE 'C-L' AND TYPE 'C-G' CATCH BASINS AND AT THE CENTER OF THE COVER FOR MANHOLES. ALL BASELINE OFFSETS FOR TYPE 'C' CATCH BASINS SHALL BE APPLIED AT THE CENTER OF THE GRATE AT THE GUTTER LINE AND SHALL BE ROTATED TO ALIGN WITH THE PROPOSED CURBLINE.
7. CATCH BASIN AND MANHOLE FRAMES, GRATES, AND COVERS SHALL BE STANDARD DOT ITEMS UNLESS OTHERWISE NOTED.
8. TOP OF FRAME ELEVATIONS REFLECT THE FINISHED GRATE WITHOUT THE REQUIRED DEPRESSION. REFER TO THE STANDARD DRAINAGE DETAILS FOR ADDITIONAL ELEVATION ADJUSTMENTS AS REQUIRED.

9. UNLESS OTHERWISE STATED, CATCH BASIN SUMPS ARE ASSUMED TO BE 2 FEET DEEP.
10. THE CONTRACTOR SHALL CLEAN AND INSPECT THE EXISTING 15" CMP FOR THE FULL LENGTH OF THE PIPE. WORK SHALL BE PAID UNDER ITEM NO. 0653102A - VIDEO AND DYE TEST DRAINAGE SYSTEM. IF THE EXISTING PIPE IS FOUND TO BE DETERIORATED OR STRUCTURALLY UNDERMINED, THEN ADDITIONAL WORK TO REHABILITATE OR REPLACE THE PIPE WILL BE ADDED AS A CHANGE ORDER.
11. THE CONTRACTOR SHALL LOCATE EXISTING MANHOLE AT 24+24.13 ± LT AND PROVIDE EXISTING PIPE INFORMATION (INVERTS AND DIAMETERS) TO THE ENGINEER PRIOR TO PROCUREMENT OF PROPOSED MANHOLE AT 24+23.61, 13.29' LT. INVERTS AT PROPOSED MANHOLE TO BE DETERMINED BASED ON THE INVERTS OF THE EXISTING MANHOLE. PAYMENT FOR LOCATION OF EXISTING MANHOLE TO BE INCLUDED IN ITEM NO. 0980020 - CONSTRUCTION SURVEYING.
12. COUPLINGS BANDS SHALL NOT BE MEASURED FOR PAYMENT AND SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE ASSOCIATED COATED CORRUGATED METAL (C.C.M.) PIPE.
13. CLEAN EXISTING CATCH BASIN AFTER CONNECTION IS COMPLETE.
14. REFER TO THE TEMPORARY ACCESS RAMP PLAN SHEET TPP-01 FOR TEMPORARY DISTURBANCE AREAS.


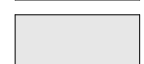
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DESIGNER/DRAFTER: MDK	CHECKED BY: FHB	CONNECTICUT DEPARTMENT OF TRANSPORTATION								SHEET NO.:	

**END PROJECT NO. 0141-0158
LIMIT OF CONSTRUCTION
ROUTE 200 STA. 26+47.43
N: 913601.54
E: 1238981.33**

BRIDGE NO. 03474

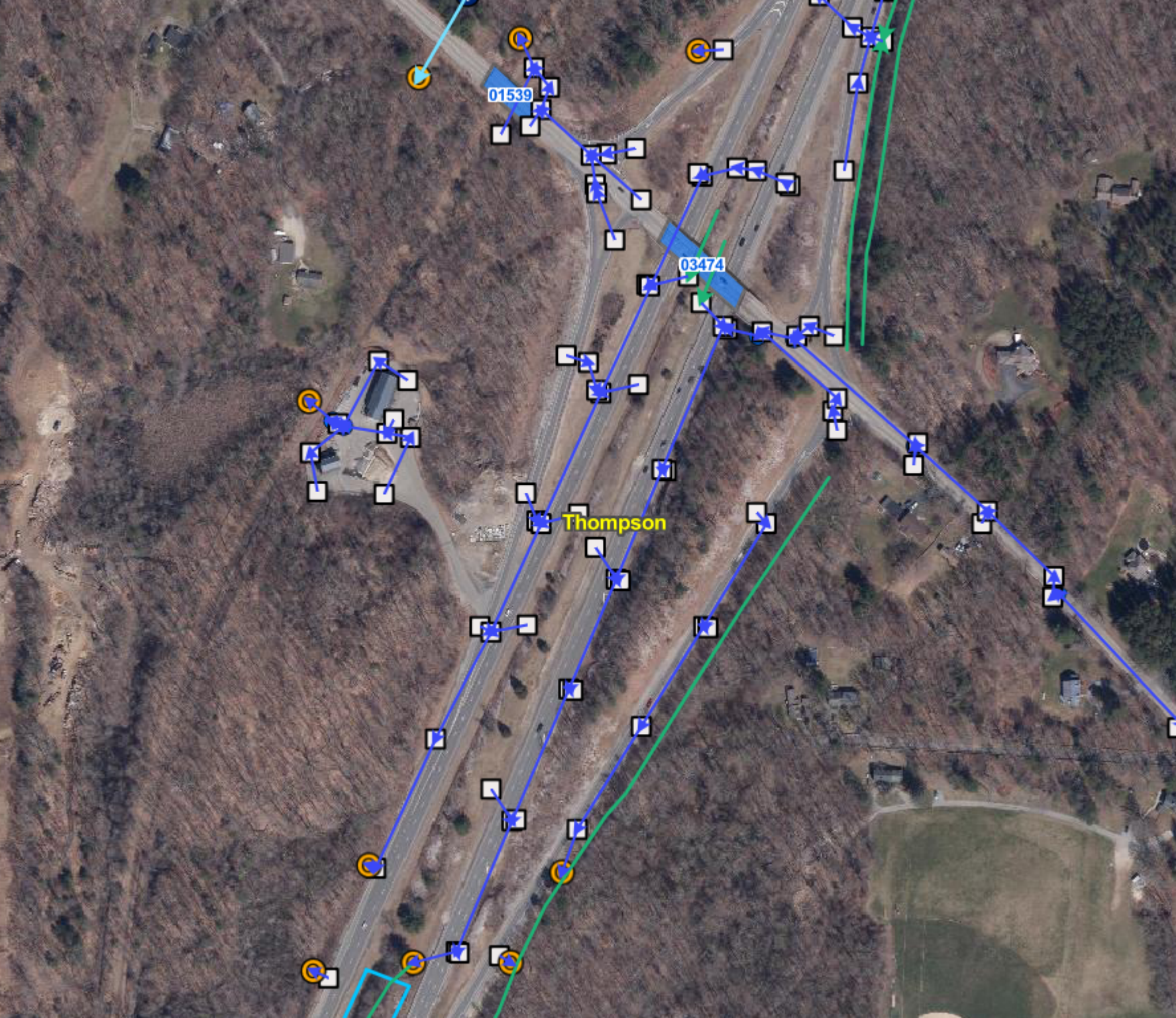
**BEGIN PROJECT NO. 0141-0158
LIMIT OF CONSTRUCTION
ROUTE 200 STA. 17+07.44
N: 914216.06
E: 1238270.03**

**NEW IMPERVIOUS AREA
3,364.46 SF**

LEGEND
 ROADWAY WIDENING AREAS
 LIMITS OF MILL AND OVERLAY

NOTES
 1. REMOVAL OF EXISTING GRANITE CURB IS BASED ON THE LIMITS SHOWN FOR PROPOSED CONCRETE CURBING. REMOVED GRANITE IS TO BE SALVAGED AND DELIVERED TO PUTNAM MAINTENANCE FACILITY, 3 INDUSTRIAL PARK ROAD, PUTNAM, CT. 06260.

DESIGNER/DRAFTER: MDK	CHECKED BY: FHB	PROJECT TITLE: REPLACEMENT OF BRIDGE No. 03474, ROUTE 200 OVER INTERSTATE 395	TOWN(S): TOWN OF THOMPSON	DRAWING TITLE: CURBING PLAN	PROJECT NO.: 0141-0158	DRAWING NO.: PLN-04
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01539

03474

Thompson

Appendix B – Drainage Calculations

Water Quality Volume (WQV) Calculation

PROJECT 0141-0158 I-395 Thompson
 DATE 12/4/2024
 SUBJECT Replacement of Bridge No. 03474 Route 200 over I-395
 Notes:

PREPARED BY TGC
 CHECKED BY LRC

TOTAL SITE AREA (A) = 5.84 acres

DRAINAGE AREAS

Drainage Area	Impervious Area
Subcatchment-1	1.98
Subcatchment-2	0.00
Subcatchment-3	0.00
Total Impervious	1.98

197.7%

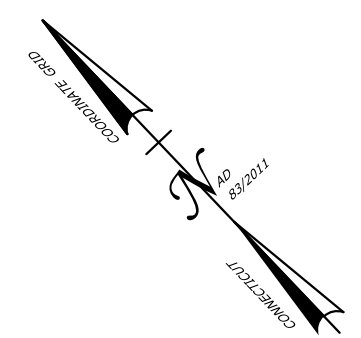
WATER QUALITY VOLUME (WQV) CALCULATION

Design Precipitation (P) = 1.30 inch
 % Impervious Cover (I) = 34
 Volumetric Runoff Coefficient (R) = 0.355

WQV =	0.224	ac-ft
	9774	cu-ft

1/2 WQV=	0.112	ac-ft
=	4887	cu-ft

Appendix C – Plan Sheets



END PROJECT NO. 0141-0158
LIMIT OF CONSTRUCTION
ROUTE 200 STA. 26+47.43
N: 913601.54
E: 1238981.33

BRIDGE NO. 03474

BEGIN PROJECT NO. 0141-0158
LIMIT OF CONSTRUCTION
ROUTE 200 STA. 17+07.44
N: 914216.06
E: 1238270.03

LEGEND

FULL DEPTH CONSTRUCTION

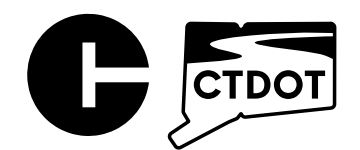
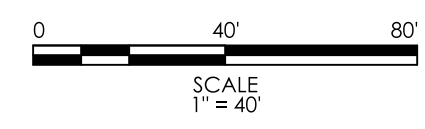
MILL AND OVERLAY

- NOTES**
- HORIZONTAL ALIGNMENT AND LOCATION OF ROADWAY ARE BASED ON SURVEY.
 - CATCH BASINS WITHIN THE PROJECT LIMITS THAT ARE IMPACTED BY CONSTRUCTION AND/OR MILL AND OVERLAY OPERATIONS WILL BE ADJUSTED AS PER THE DRAINAGE SHEETS.
 - FOR CURB DETAILS REFER TO PLN-03.
 - FOR METAL BEAM RAIL DETAILS REFER TO PLN-04.
 - REFER TO MAINTENANCE & PROTECTION OF TRAFFIC - PATTERN 2 PLANS (MPT-08 - MPT-11) FOR DETAILS REGARDING THE LIMITS OF MILLING AND RESURFACING ON I-395.

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
100% DESIGN REVIEW

DESIGNER/DRAFTER: MDK CHECKED BY: FHB



CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE:
REPLACEMENT OF BRIDGE No. 03474, ROUTE 200 OVER INTERSTATE 395

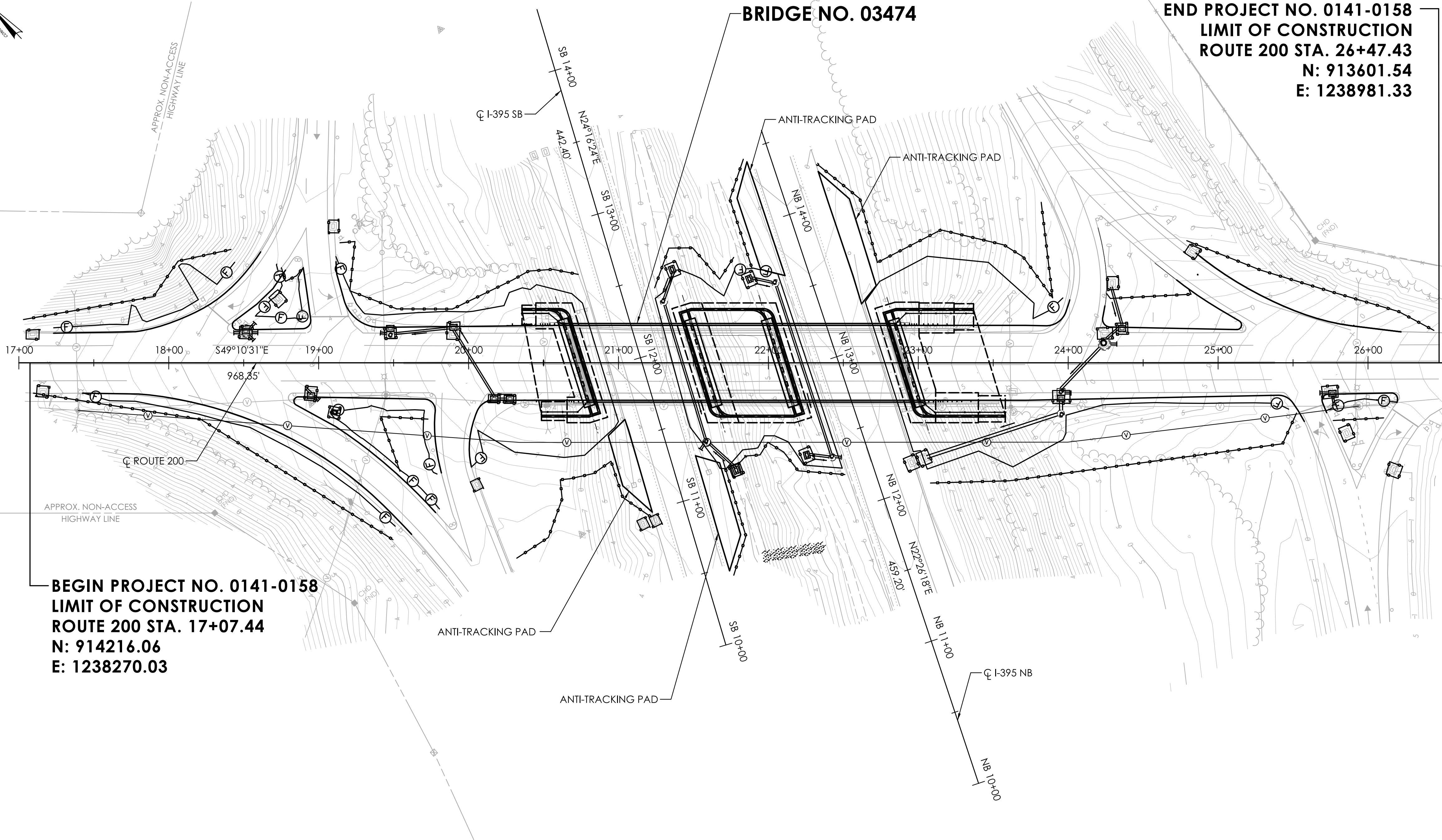
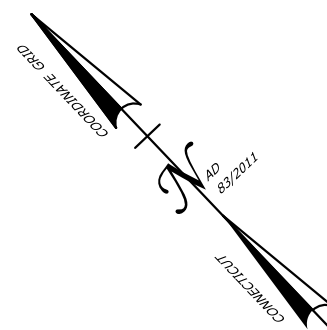
TOWN(S):
TOWN OF THOMPSON

DRAWING TITLE:
GENERAL PLAN

PROJECT NO.:
0141-0158

DRAWING NO.:
PLN-01

SHEET NO.:



END PROJECT NO. 0141-0158
LIMIT OF CONSTRUCTION
ROUTE 200 STA. 26+47.43
N: 913601.54
E: 1238981.33

BEGIN PROJECT NO. 0141-0158
LIMIT OF CONSTRUCTION
ROUTE 200 STA. 17+07.44
N: 914216.06
E: 1238270.03

NOTES

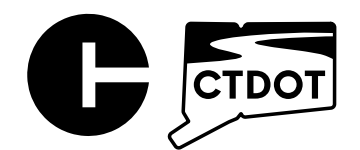
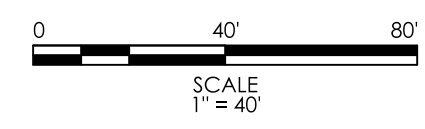
1. SEDIMENT CONTROL SYSTEM AT CATCH BASIN SHALL BE INSTALLED AT ALL EXISTING AND PROPOSED CATCH BASINS WITHIN THE LIMITS OF CONSTRUCTION. ADDITIONALLY, EXISTING CATCH BASINS DOWN GRADIENT OF PROPOSED WORK AND DISTURBED AREAS SHALL RECEIVE A SEDIMENT CONTROL SYSTEM. PAYMENT SHALL UTILIZE ITEM NO. 0219011A - SEDIMENT CONTROL SYSTEM AT CATCH BASIN.

LEGEND

- SEDIMENTATION CONTROL SYSTEM
- SEDIMENT CONTROL SYSTEM AT CATCH BASIN
- SEDIMENT CONTROL HAY BALE SYSTEM

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
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CONNECTICUT
DEPARTMENT OF
TRANSPORTATION

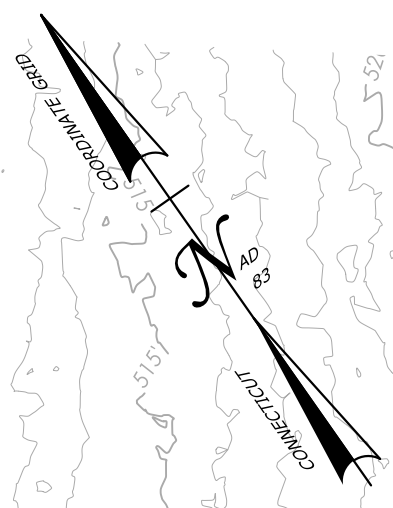
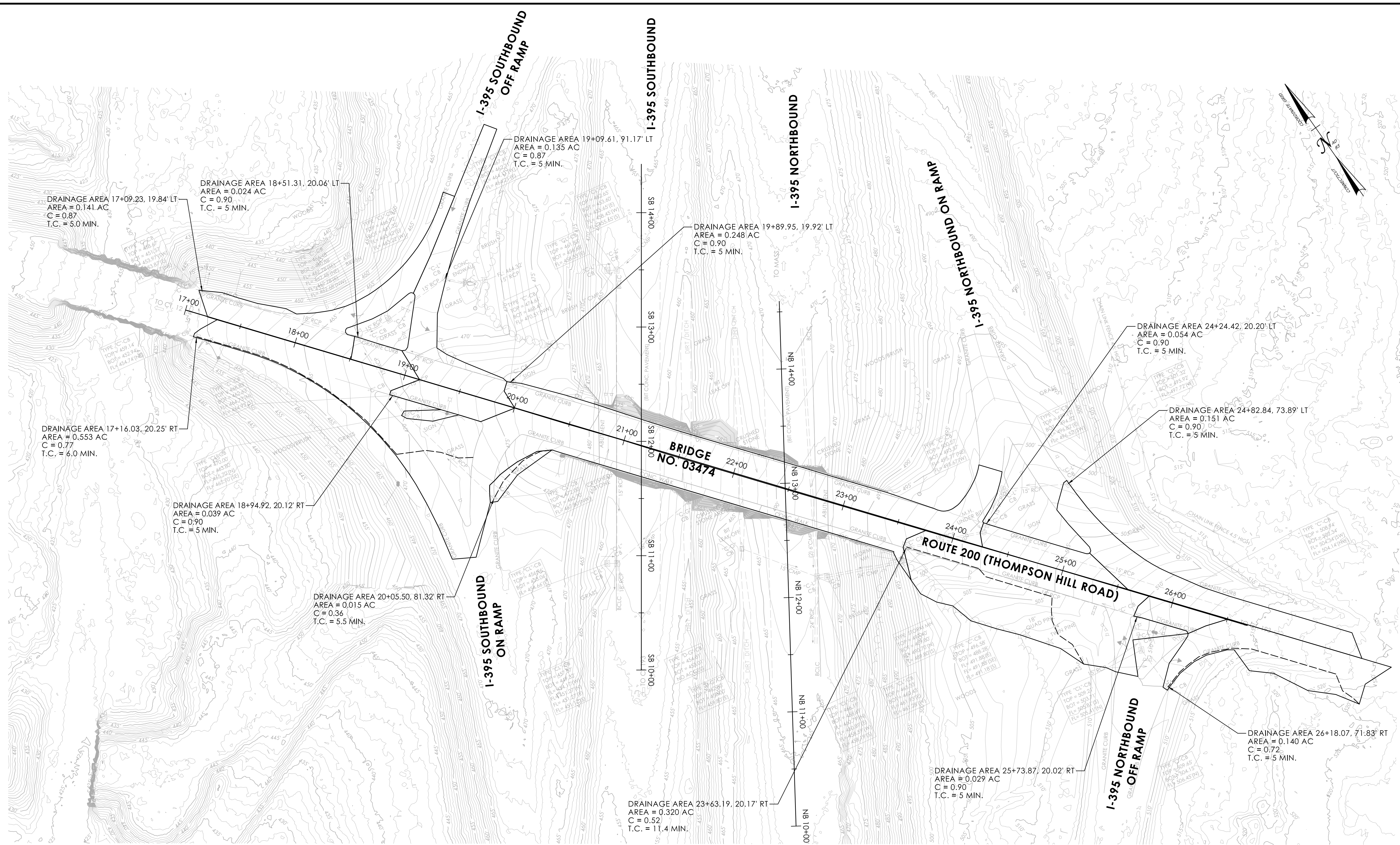
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REPLACEMENT OF BRIDGE No. 03474, ROUTE 200 OVER
INTERSTATE 395

TOWN(S):
TOWN OF THOMPSON

DRAWING TITLE:
SEDIMENT AND EROSION
CONTROL PLAN

PROJECT NO.:
0141-0158

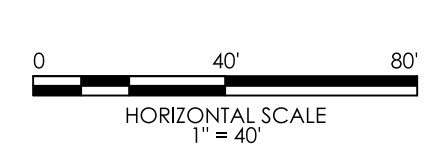
DRAWING NO.:
SED-01
 SHEET NO.:



LEGEND
 INLET DRAINAGE AREA _____
 TIME OF CONCENTRATION (T.C.) LINE - - - - -

REV.	DATE	REVISION DESCRIPTION

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 DESIGNER/DRAFTER: TC CHECKED BY: LC



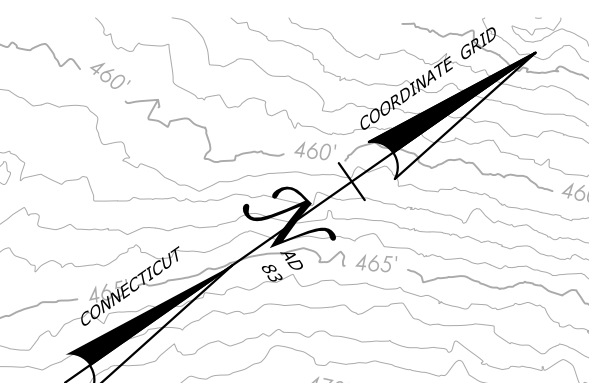
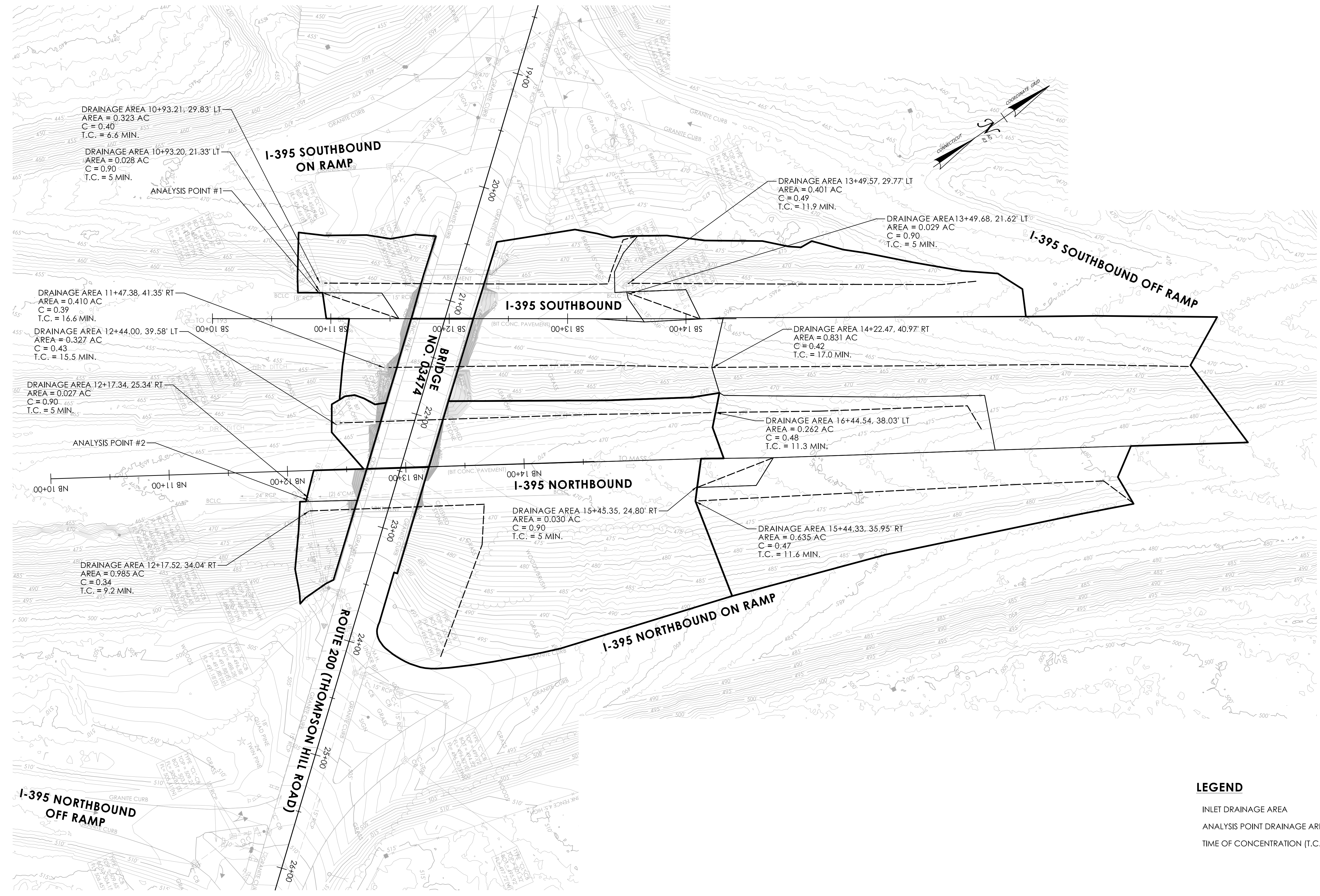
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REPLACEMENT OF BRIDGE NO. 03474, ROUTE 200 OVER INTERSTATE 395

TOWN(S):
THOMPSON

DRAWING TITLE:
EXISTING DRAINAGE AREA PLAN - ROUTE 200

PROJECT NO.:
0141-0158

DRAWING NO.:
EDAP-01
 SHEET NO.:

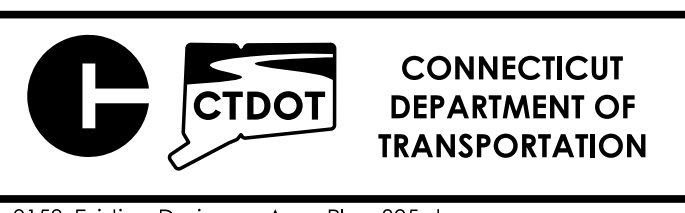
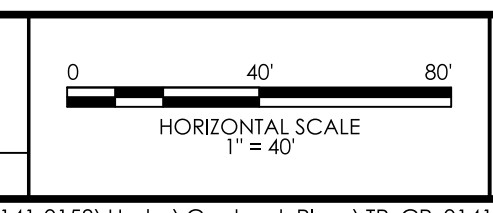


LEGEND

- INLET DRAINAGE AREA
- ANALYSIS POINT DRAINAGE AREA
- TIME OF CONCENTRATION (T.C.) LINE

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
 DESIGNER/DRAFTER: IC CHECKED BY: LC



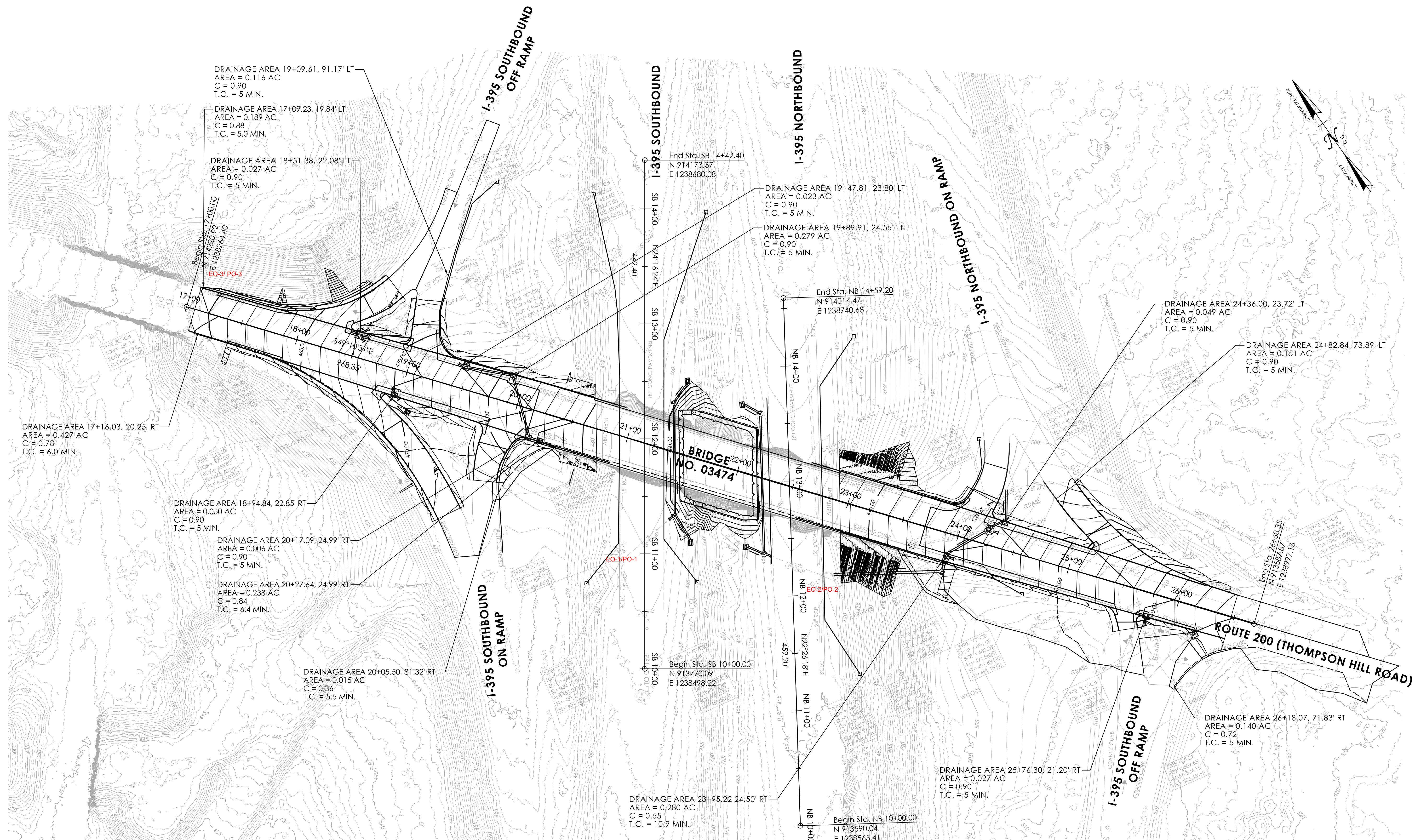
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REPLACEMENT OF BRIDGE NO. 03474, ROUTE 200 OVER INTERSTATE 395

TOWN(S):
THOMPSON

DRAWING TITLE:
EXISTING DRAINAGE AREA PLAN - INTERSTATE 395

PROJECT NO.:
0141-0158

DRAWING NO.:
EDAP-02
 SHEET NO.:



DRAINAGE AREA 19+09.61, 91.17' LT
 AREA = 0.116 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 17+09.23, 19.84' LT
 AREA = 0.139 AC
 C = 0.88
 T.C. = 5.0 MIN.

DRAINAGE AREA 18+51.38, 22.08' LT
 AREA = 0.027 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 17+16.03, 20.25' RT
 AREA = 0.427 AC
 C = 0.78
 T.C. = 6.0 MIN.

DRAINAGE AREA 18+94.84, 22.85' RT
 AREA = 0.050 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 20+17.09, 24.99' RT
 AREA = 0.006 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 20+27.64, 24.99' RT
 AREA = 0.238 AC
 C = 0.84
 T.C. = 6.4 MIN.

DRAINAGE AREA 20+05.50, 81.32' RT
 AREA = 0.015 AC
 C = 0.36
 T.C. = 5.5 MIN.

DRAINAGE AREA 23+95.22, 24.50' RT
 AREA = 0.280 AC
 C = 0.55
 T.C. = 10.9 MIN.

DRAINAGE AREA 19+47.81, 23.80' LT
 AREA = 0.023 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 19+89.91, 24.55' LT
 AREA = 0.279 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 24+36.00, 23.72' LT
 AREA = 0.049 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 24+82.84, 73.89' LT
 AREA = 0.151 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 26+18.07, 71.83' RT
 AREA = 0.140 AC
 C = 0.72
 T.C. = 5 MIN.

DRAINAGE AREA 25+76.30, 21.20' RT
 AREA = 0.027 AC
 C = 0.90
 T.C. = 5 MIN.

LEGEND
 INLET DRAINAGE AREA ————
 TIME OF CONCENTRATION (T.C.) LINE - - - - -

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
 DESIGNER/DRAFTER: TC CHECKED BY: LC

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

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE:
REPLACEMENT OF BRIDGE NO. 03474, ROUTE 200 OVER INTERSTATE 395

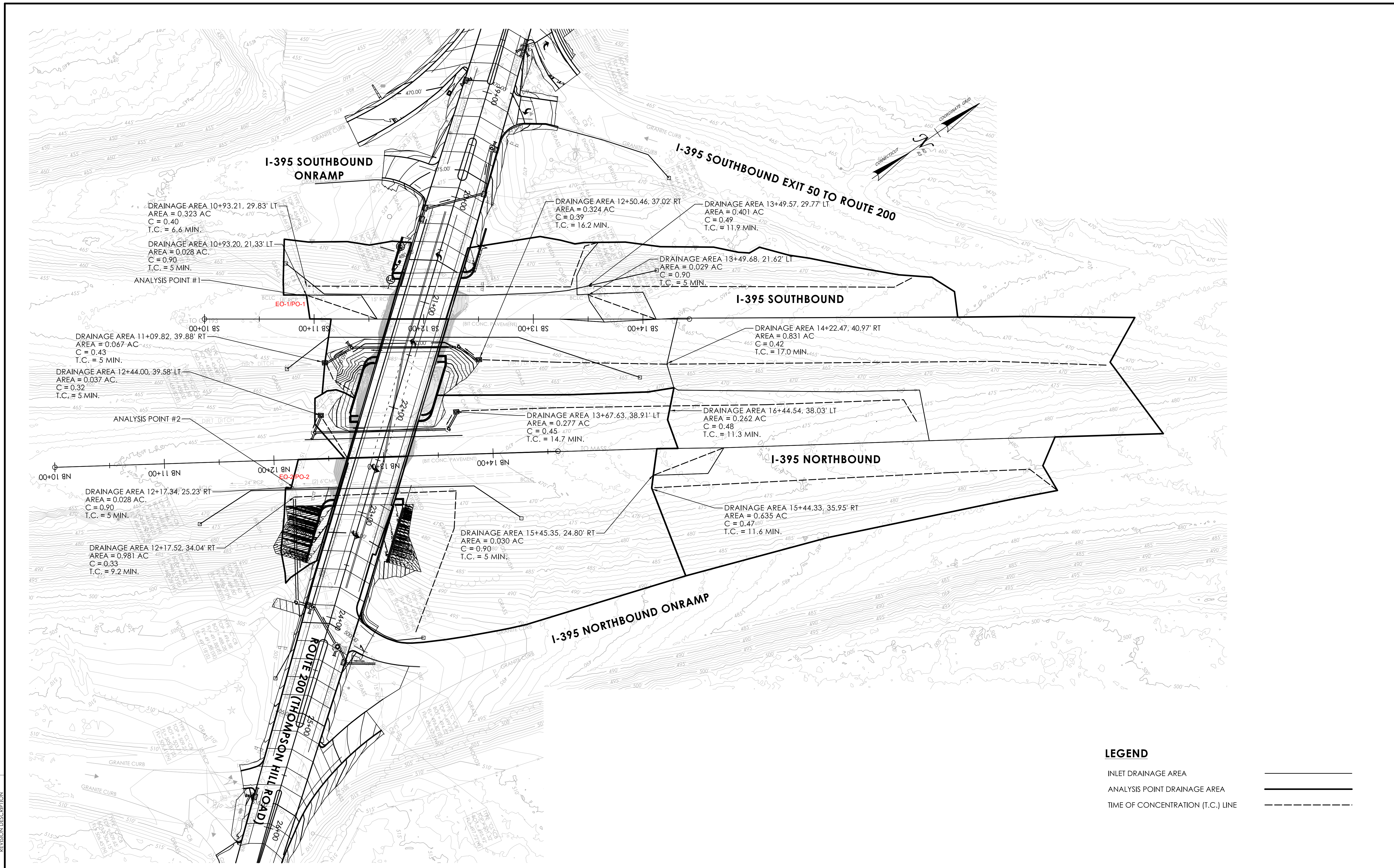
TOWN(S):
THOMPSON

DRAWING TITLE:
PROPOSED DRAINAGE AREA PLAN - ROUTE 200

PROJECT NO.:
0141-0158

DRAWING NO.:
PDAP-01

SHEET NO.:



DRAINAGE AREA 10+93.21, 29.83' LT
 AREA = 0.323 AC
 C = 0.40
 T.C. = 6.6 MIN.

DRAINAGE AREA 10+93.20, 21.33' LT
 AREA = 0.028 AC
 C = 0.90
 T.C. = 5 MIN.

ANALYSIS POINT #1

DRAINAGE AREA 12+50.46, 37.02' RT
 AREA = 0.324 AC
 C = 0.39
 T.C. = 16.2 MIN.

DRAINAGE AREA 13+49.57, 29.77' LT
 AREA = 0.401 AC
 C = 0.49
 T.C. = 11.9 MIN.

DRAINAGE AREA 13+49.68, 21.62' LT
 AREA = 0.029 AC
 C = 0.90
 T.C. = 5 MIN.

I-395 SOUTHBOUND

DRAINAGE AREA 11+09.82, 39.88' RT
 AREA = 0.067 AC
 C = 0.43
 T.C. = 5 MIN.

DRAINAGE AREA 12+44.00, 39.58' LT
 AREA = 0.037 AC
 C = 0.32
 T.C. = 5 MIN.

ANALYSIS POINT #2

DRAINAGE AREA 13+67.63, 38.91' LT
 AREA = 0.277 AC
 C = 0.45
 T.C. = 14.7 MIN.

DRAINAGE AREA 14+22.47, 40.97' RT
 AREA = 0.831 AC
 C = 0.42
 T.C. = 17.0 MIN.

I-395 NORTHBOUND

DRAINAGE AREA 12+17.34, 25.23' RT
 AREA = 0.028 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 12+17.52, 34.04' RT
 AREA = 0.981 AC
 C = 0.33
 T.C. = 9.2 MIN.

DRAINAGE AREA 15+45.35, 24.80' RT
 AREA = 0.030 AC
 C = 0.90
 T.C. = 5 MIN.

DRAINAGE AREA 16+44.54, 38.03' LT
 AREA = 0.262 AC
 C = 0.48
 T.C. = 11.3 MIN.

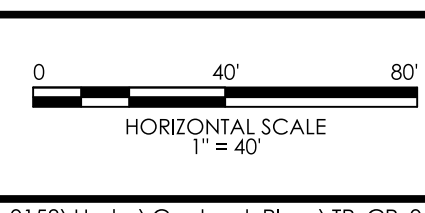
I-395 NORTHBOUND ONRAMP

LEGEND

- INLET DRAINAGE AREA
- ANALYSIS POINT DRAINAGE AREA
- TIME OF CONCENTRATION (T.C.) LINE

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
 DESIGNER/DRAFTER: IC CHECKED BY: LC



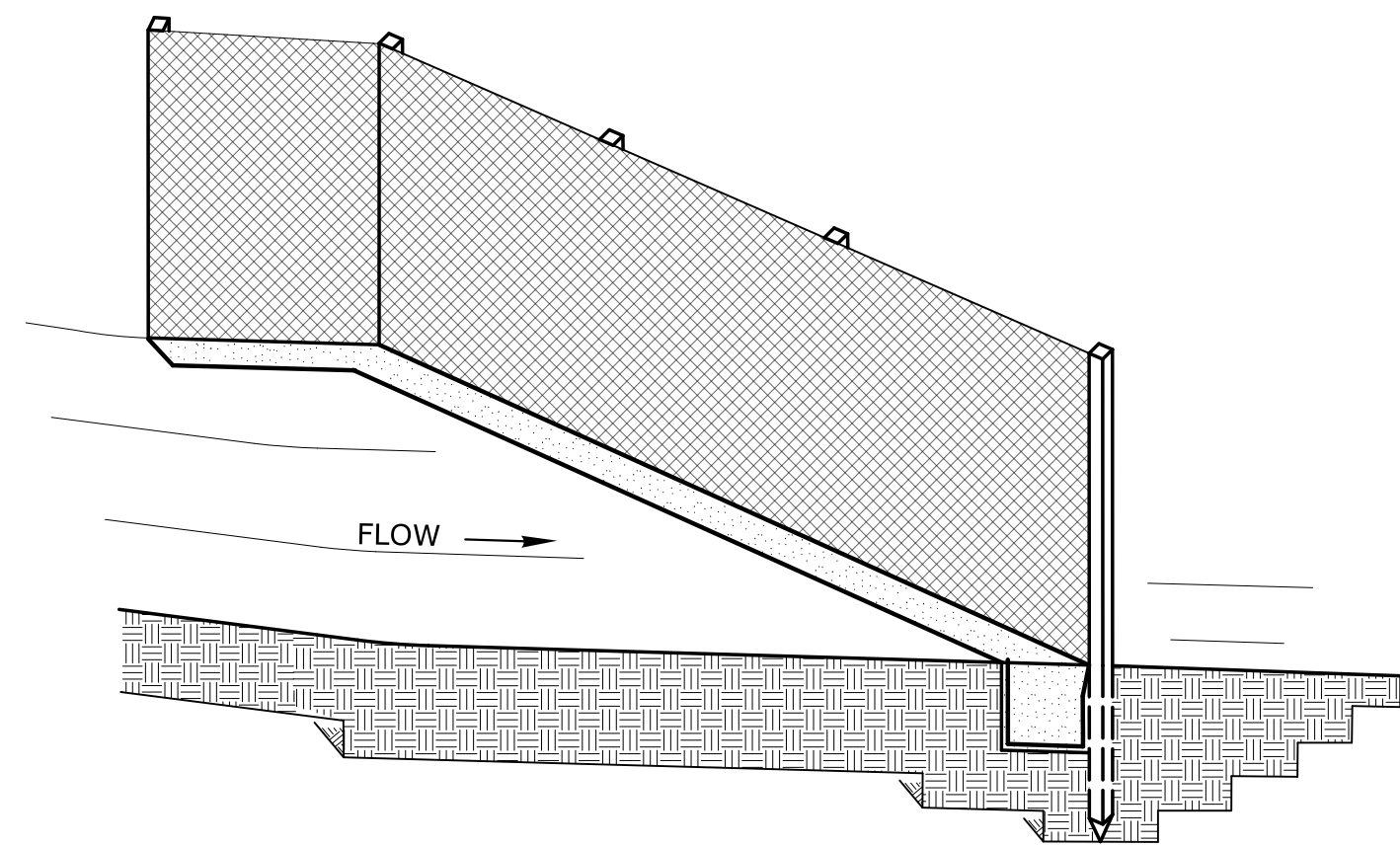
PROJECT TITLE:
REPLACEMENT OF BRIDGE NO. 03474, ROUTE 200 OVER INTERSTATE 395

TOWN(S):
THOMPSON

DRAWING TITLE:
PROPOSED DRAINAGE AREA PLAN - INTERSTATE 395

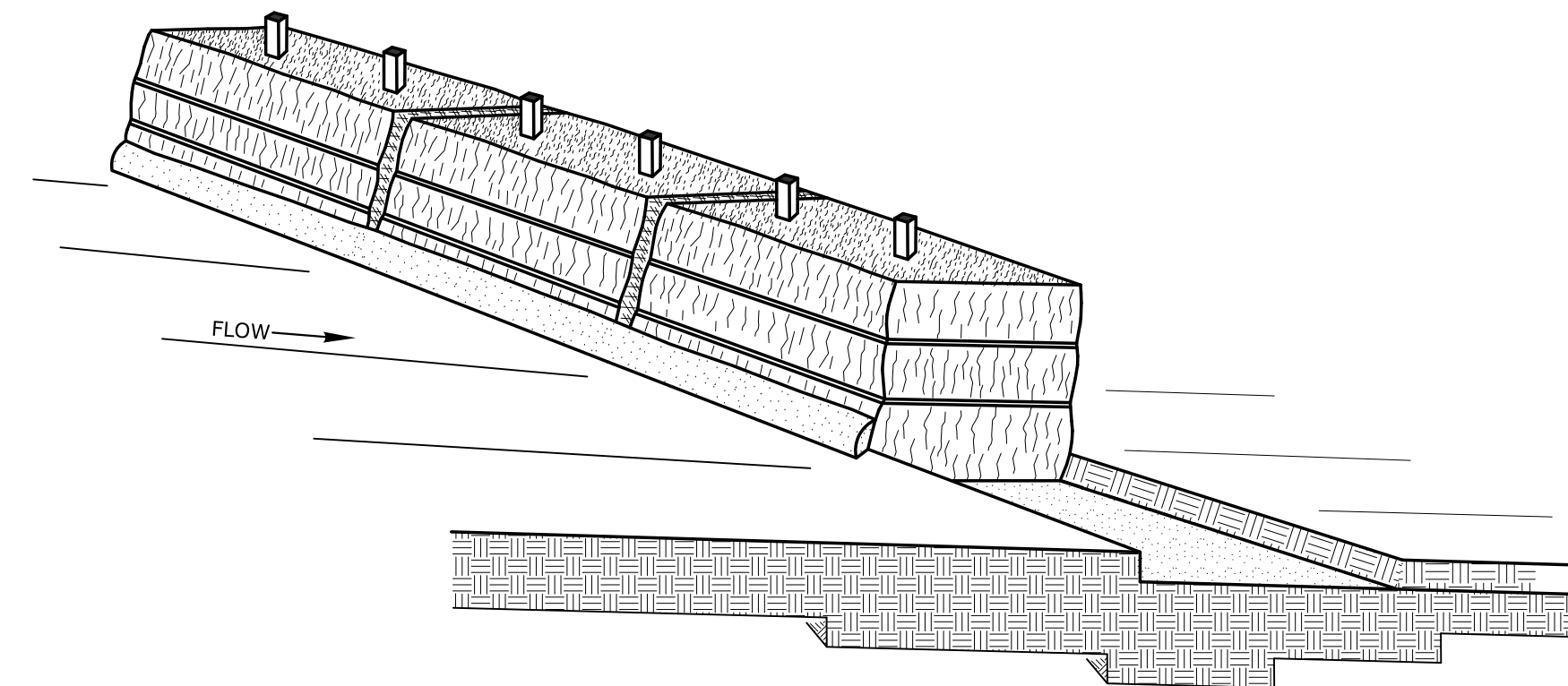
PROJECT NO.:
0141-0158

DRAWING NO.:
PDAP-02
 SHEET NO.:

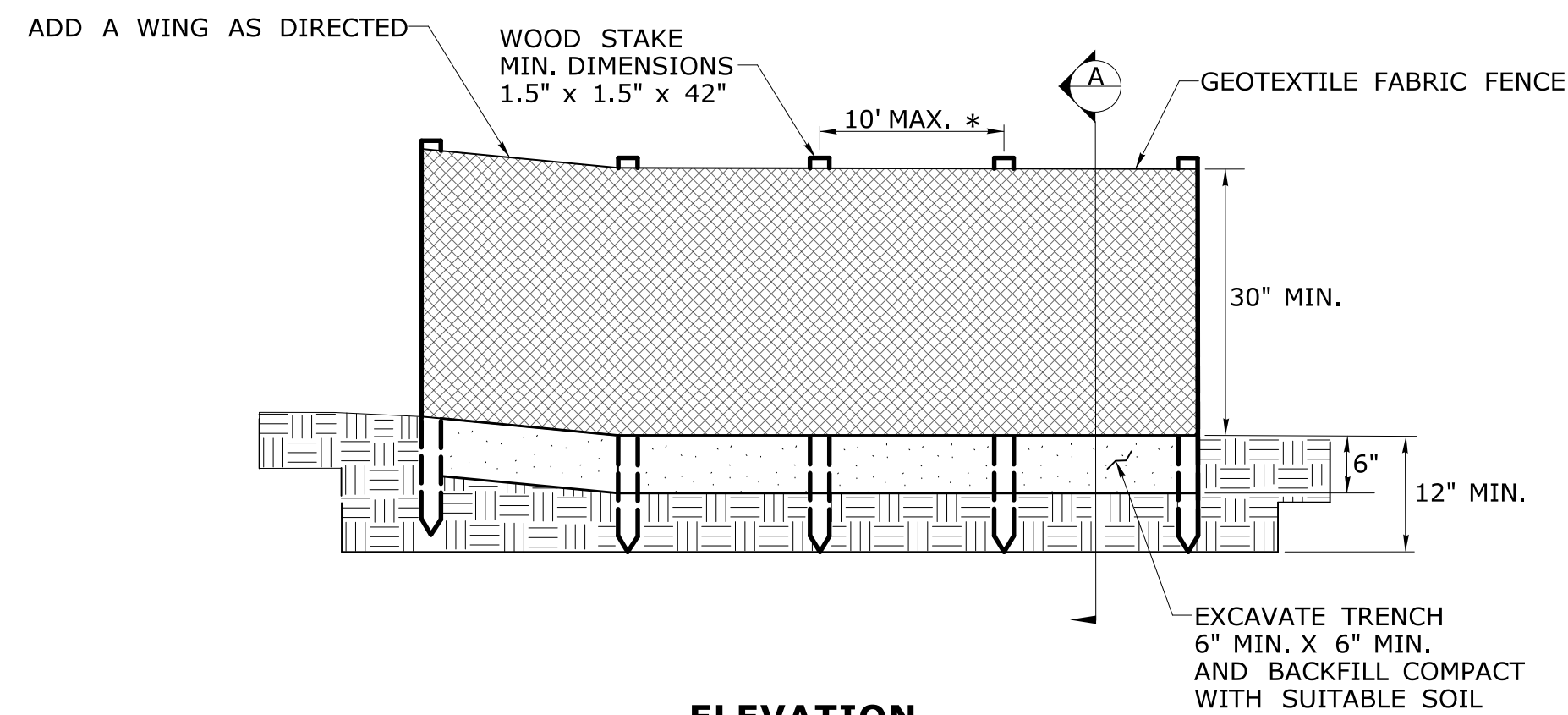


SEDIMENTATION CONTROL SYSTEM

INSTALL THE WING WHEN THE FENCE IS MORE THAN 4' FROM THE TOE OF SLOPE AND THE FENCE LINE GRADIENT IS 5% OR MORE

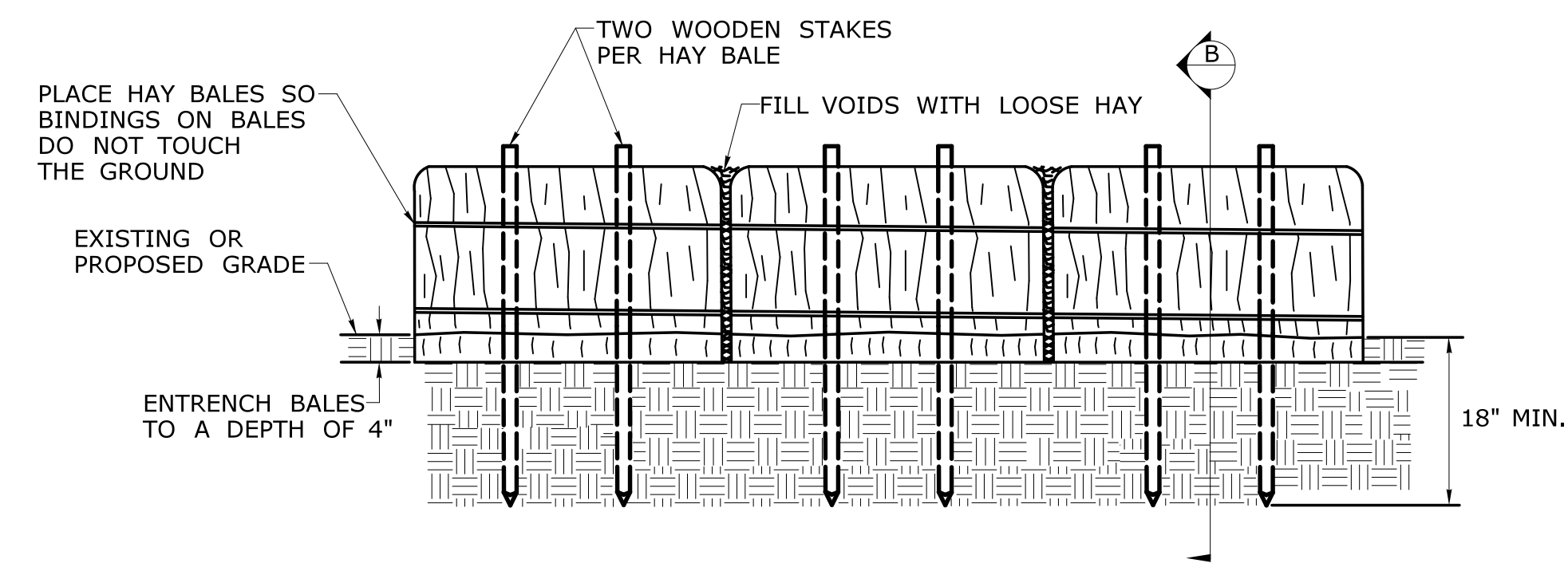


SEDIMENTATION CONTROL SYSTEM

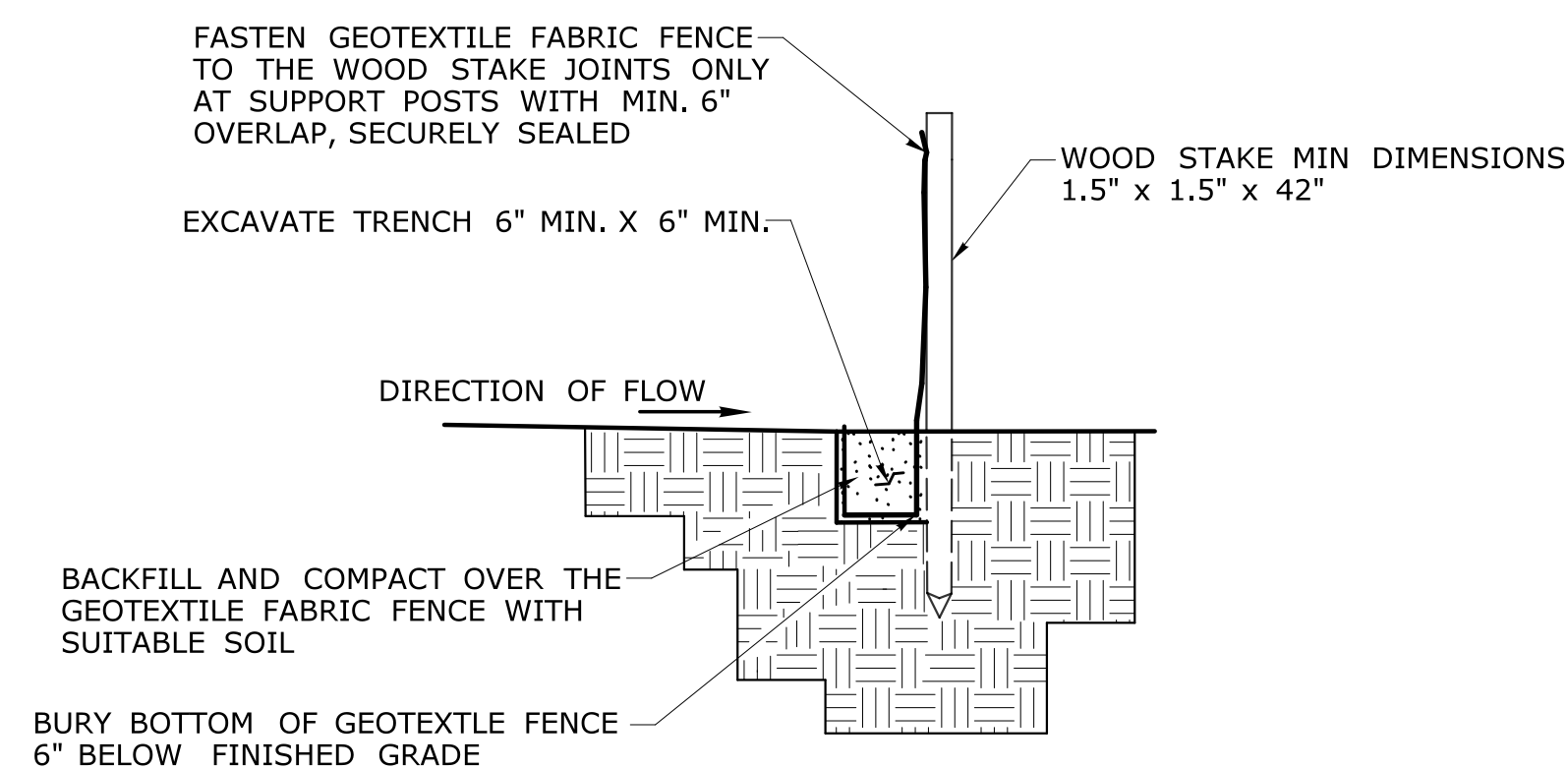


ELEVATION

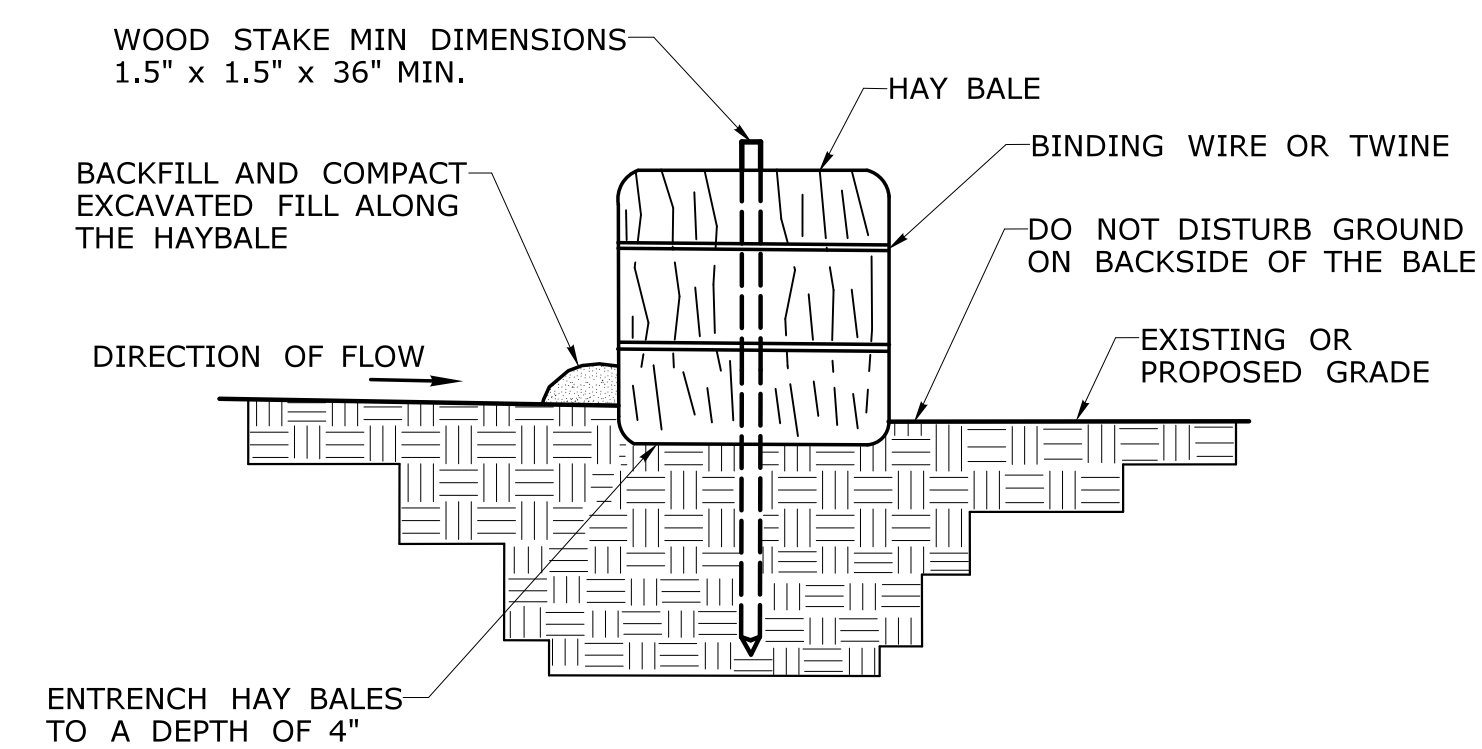
* FOR SLOPES STEEPER THAN 2:1 USE A 5' POST SPACING OR AS DIRECTED BY THE ENGINEER



ELEVATION



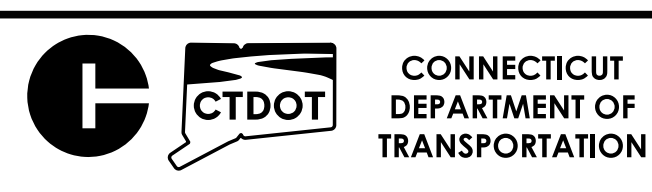
SECTION A



SECTION B

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
100% DESIGN REVIEW
 DESIGNER/DRAFTER: _____ CHECKED BY: _____



PROJECT TITLE:
REPLACEMENT OF BRIDGE No. 03474, ROUTE 200 OVER INTERSTATE 395

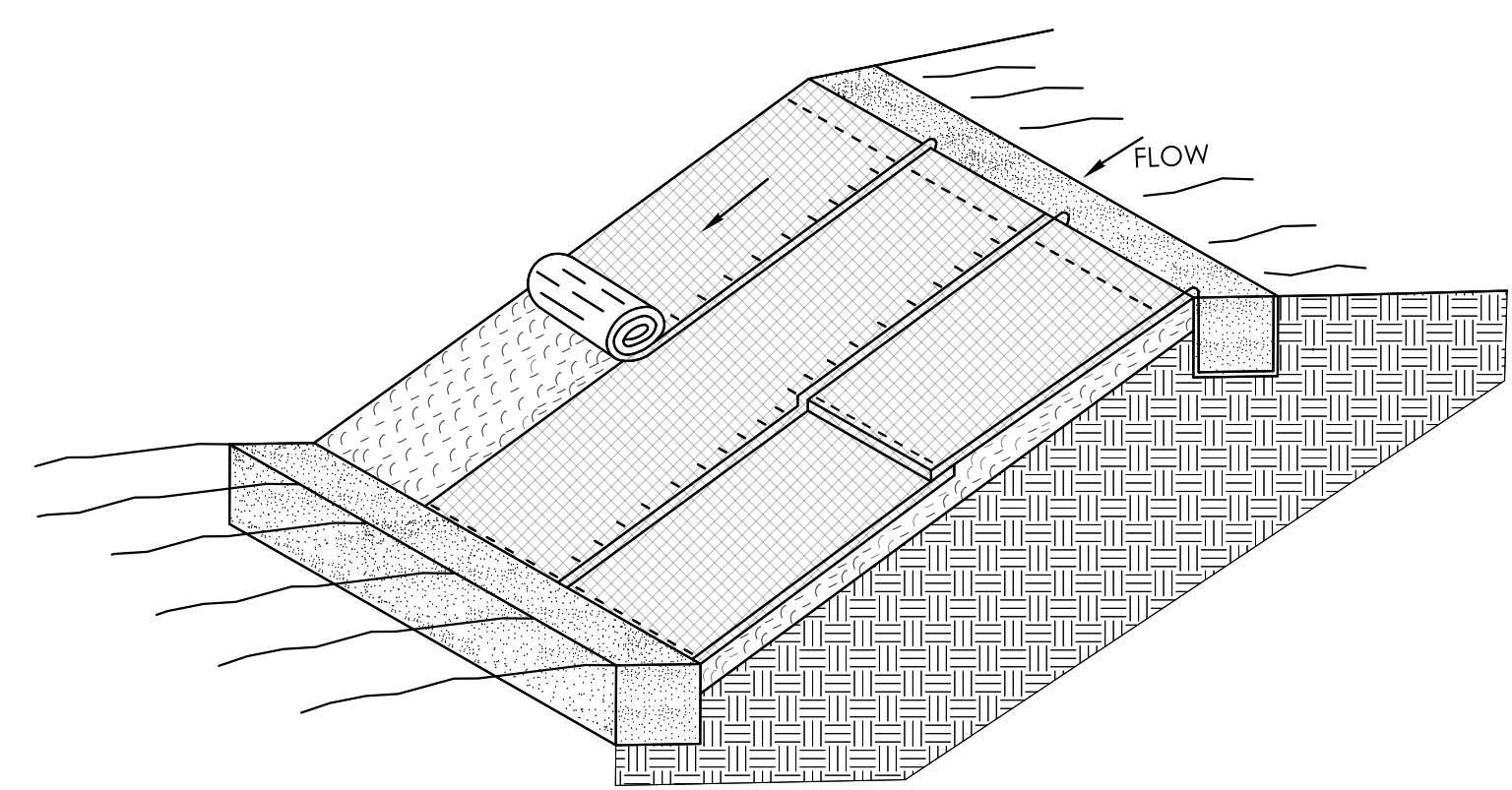
TOWN(S):
TOWN OF THOMPSON

DRAWING TITLE:
SEDIMENTATION CONTROL SYSTEMS

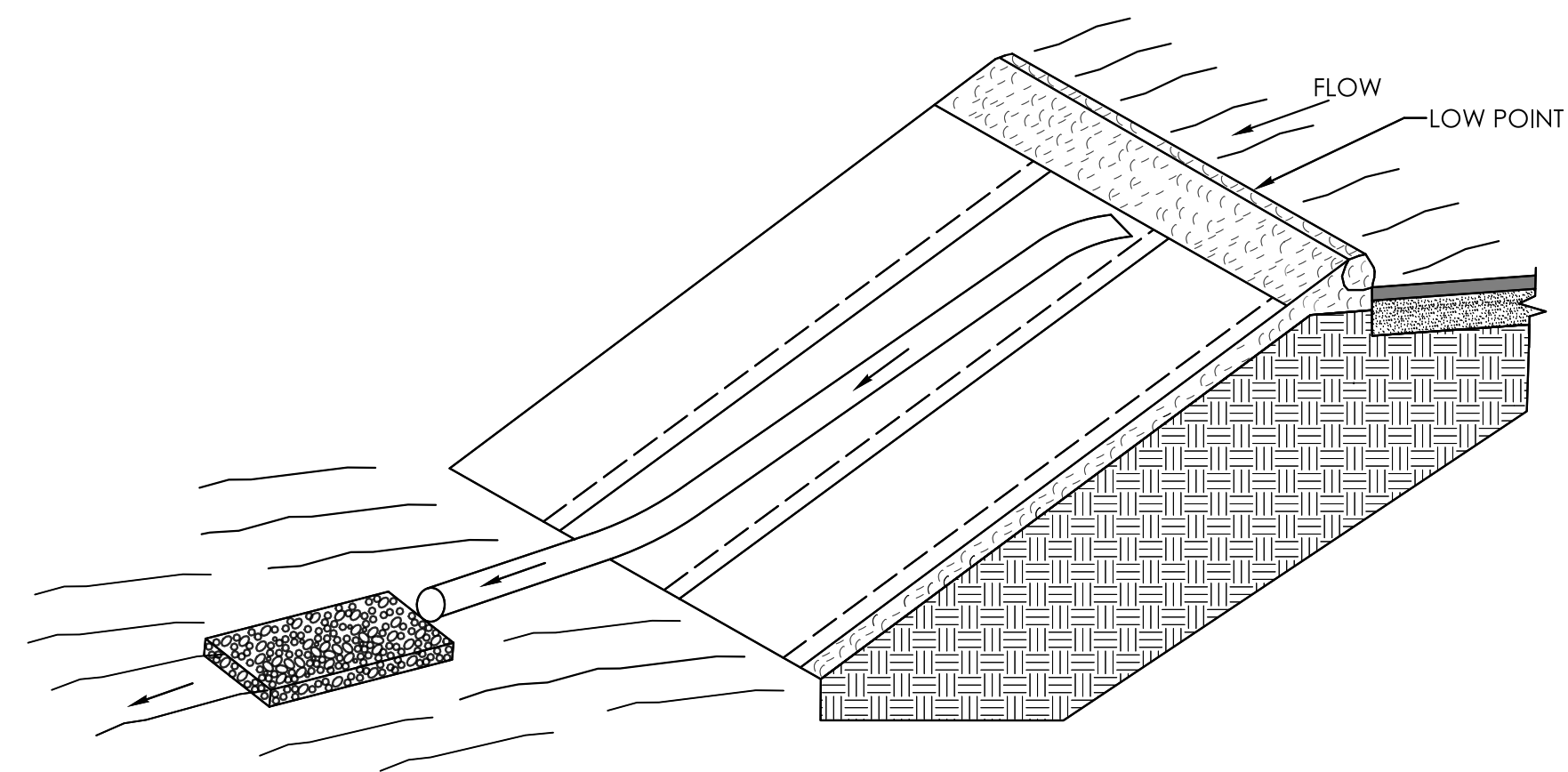
PROJECT NO.:
0141-0158

DRAWING NO.:
MDS-03
 SHEET NO.:

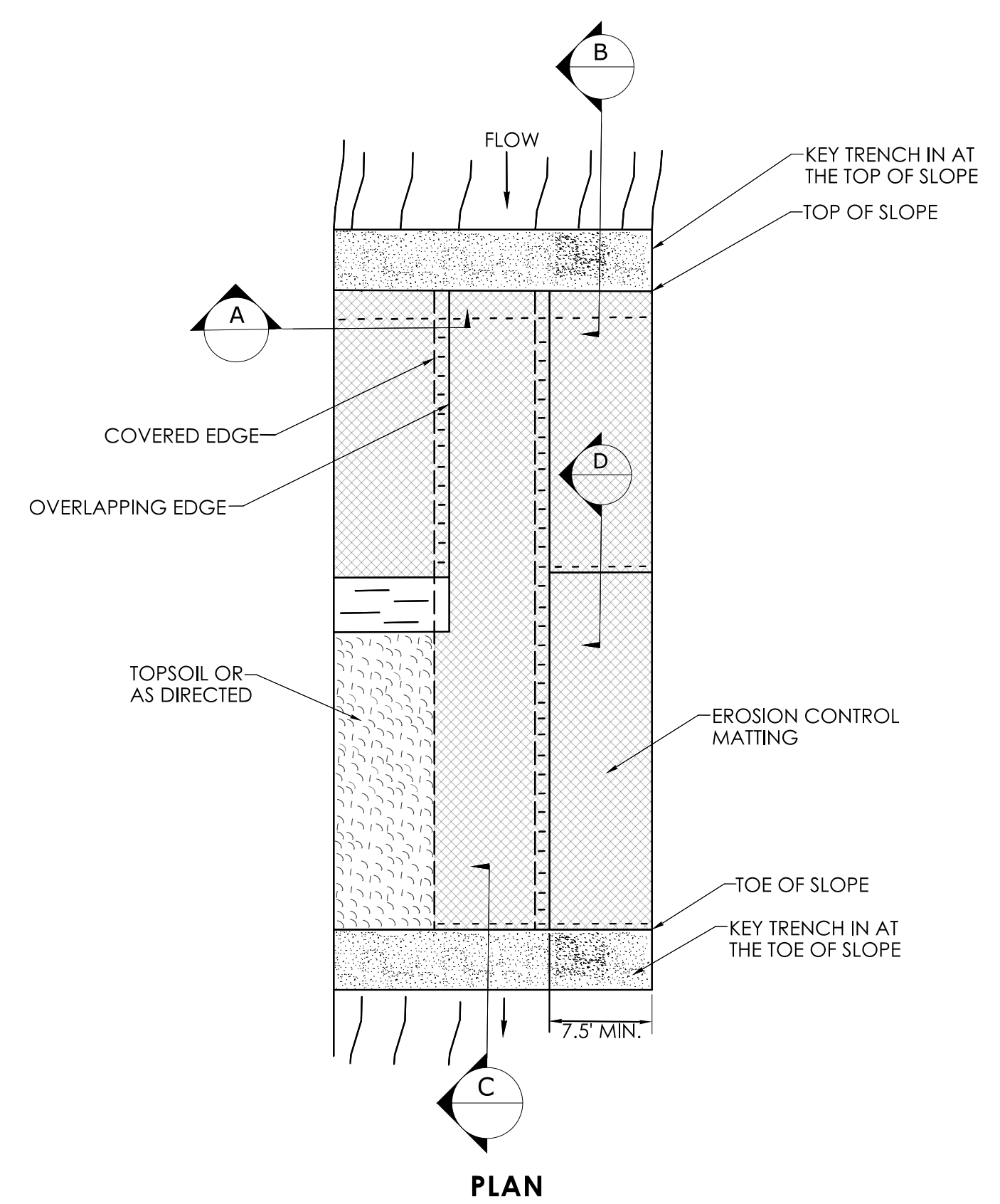
GENERAL NOTE:
 1. USE THE MINIMUM DIMENSIONS SHOWN OR AS RECOMMENDED BY THE MANUFACTURER



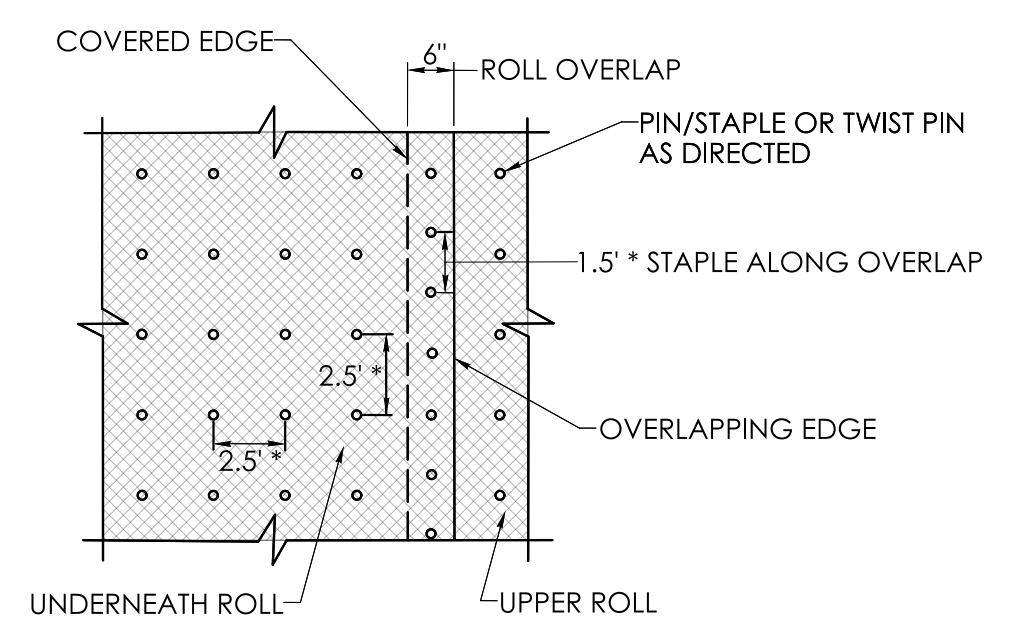
TYPICAL EROSION CONTROL MATTING



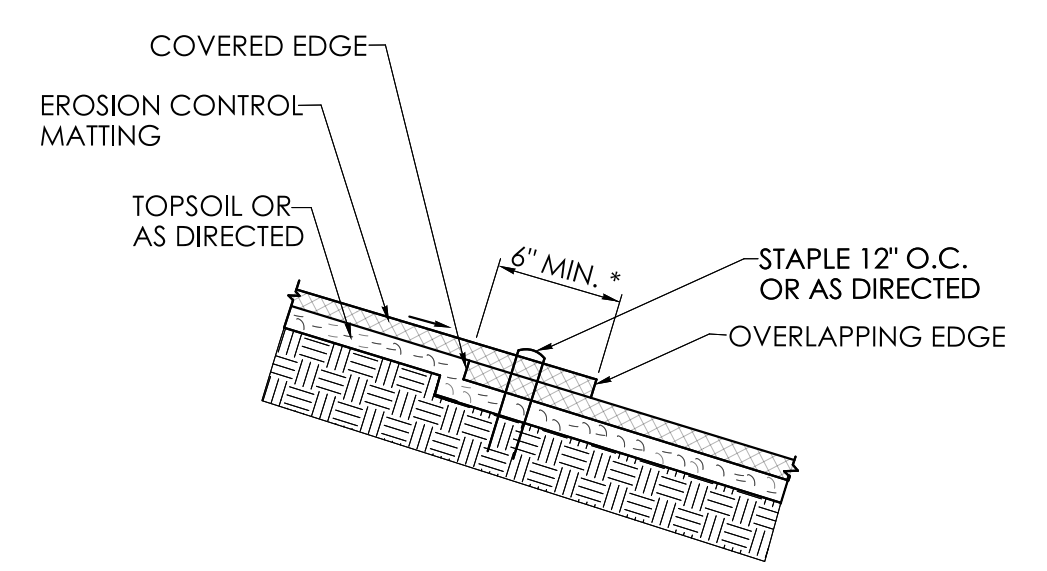
TEMPORARY SLOPE DRAIN



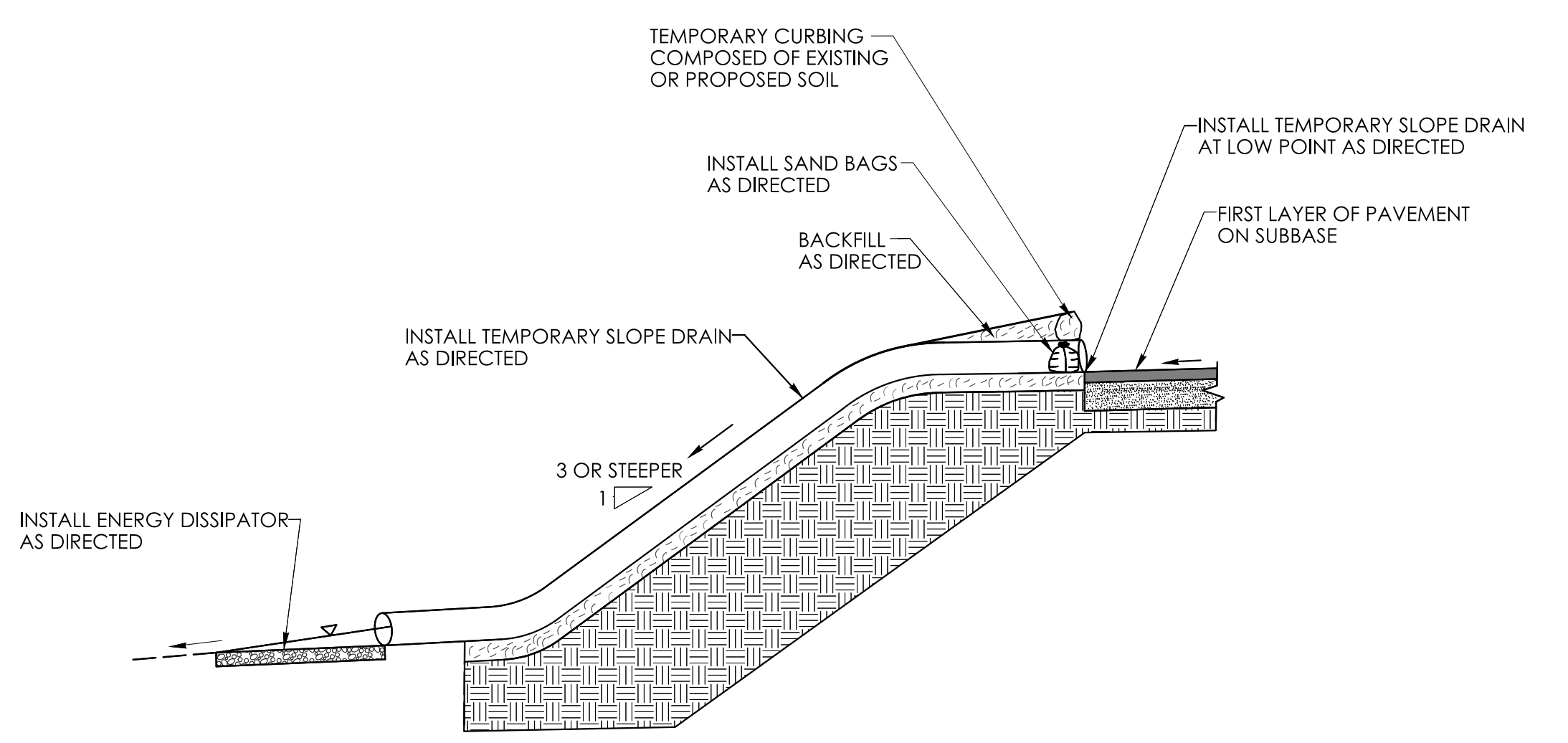
PLAN



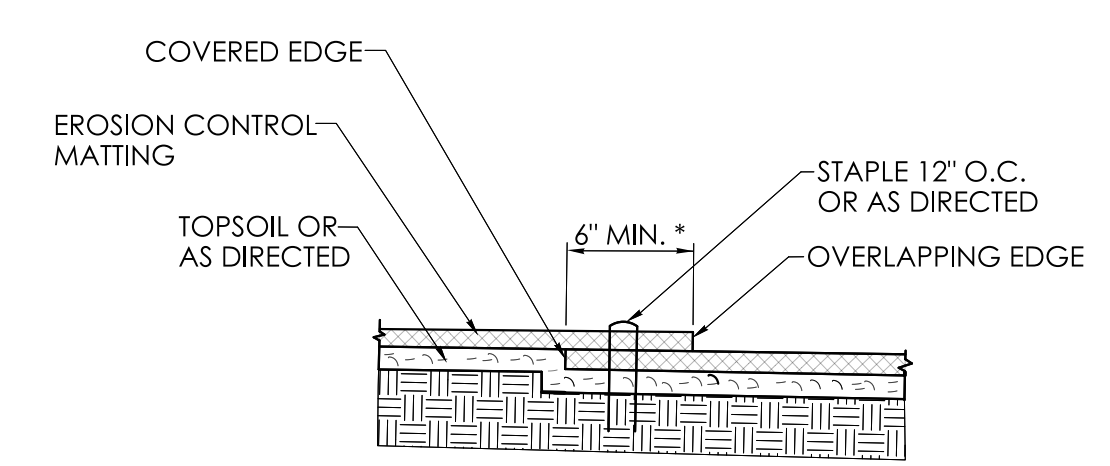
STAPLE PATTERN
 * SEE NOTE 1



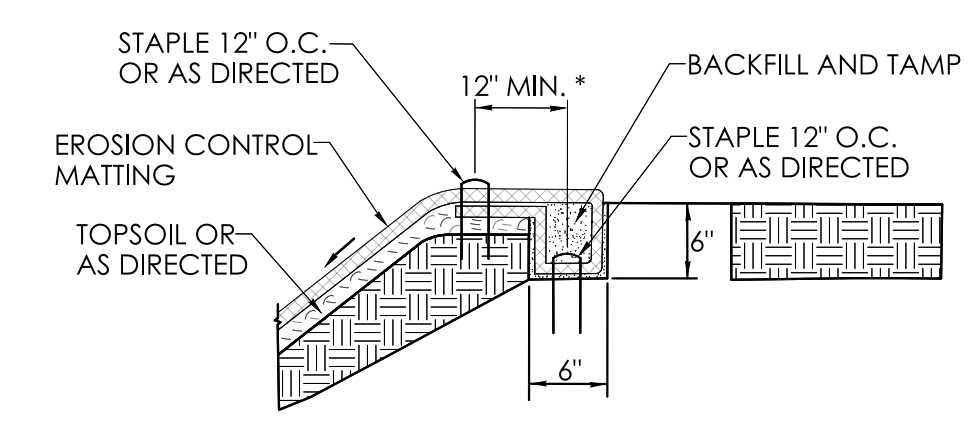
SECTION D



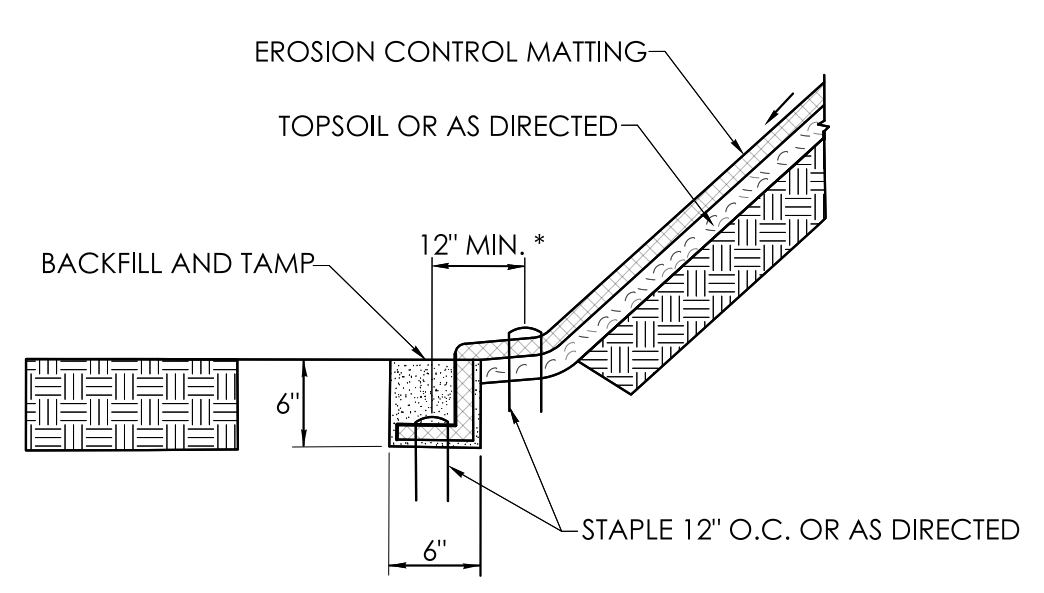
SECTION



SECTION A



SECTION B



SECTION C

KEY IN TRENCH AT TOP OF SLOPE
 * SEE NOTE 1

KEY TRENCH AT TOE OF SLOPE

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
100% DESIGN REVIEW
 DESIGNER/DRAFTER: _____ CHECKED BY: _____

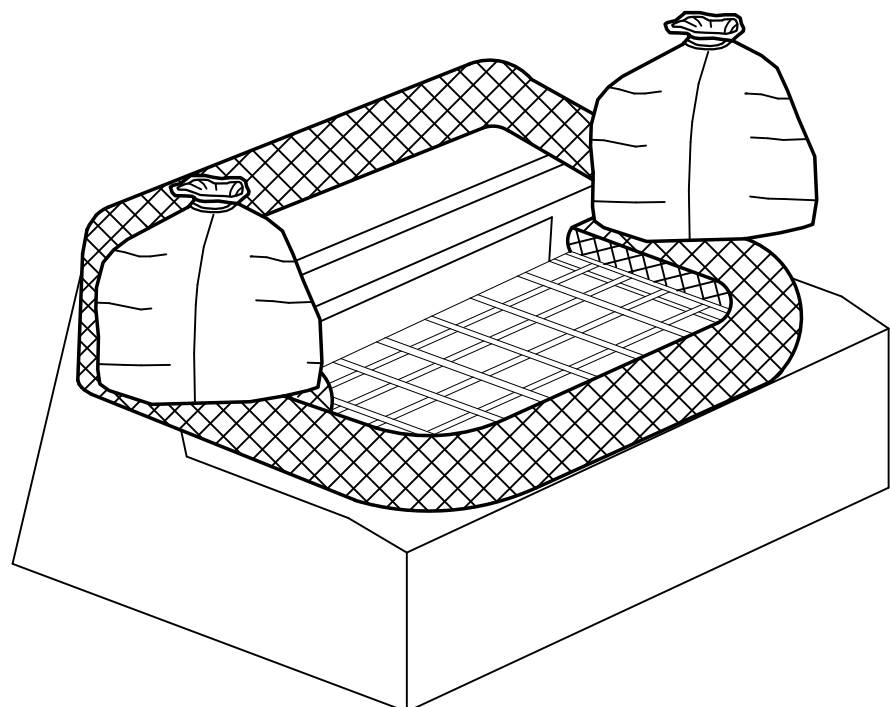


PROJECT TITLE:
REPLACEMENT OF BRIDGE No. 03474, ROUTE 200 OVER INTERSTATE 395

TOWN(S):
TOWN OF THOMPSON

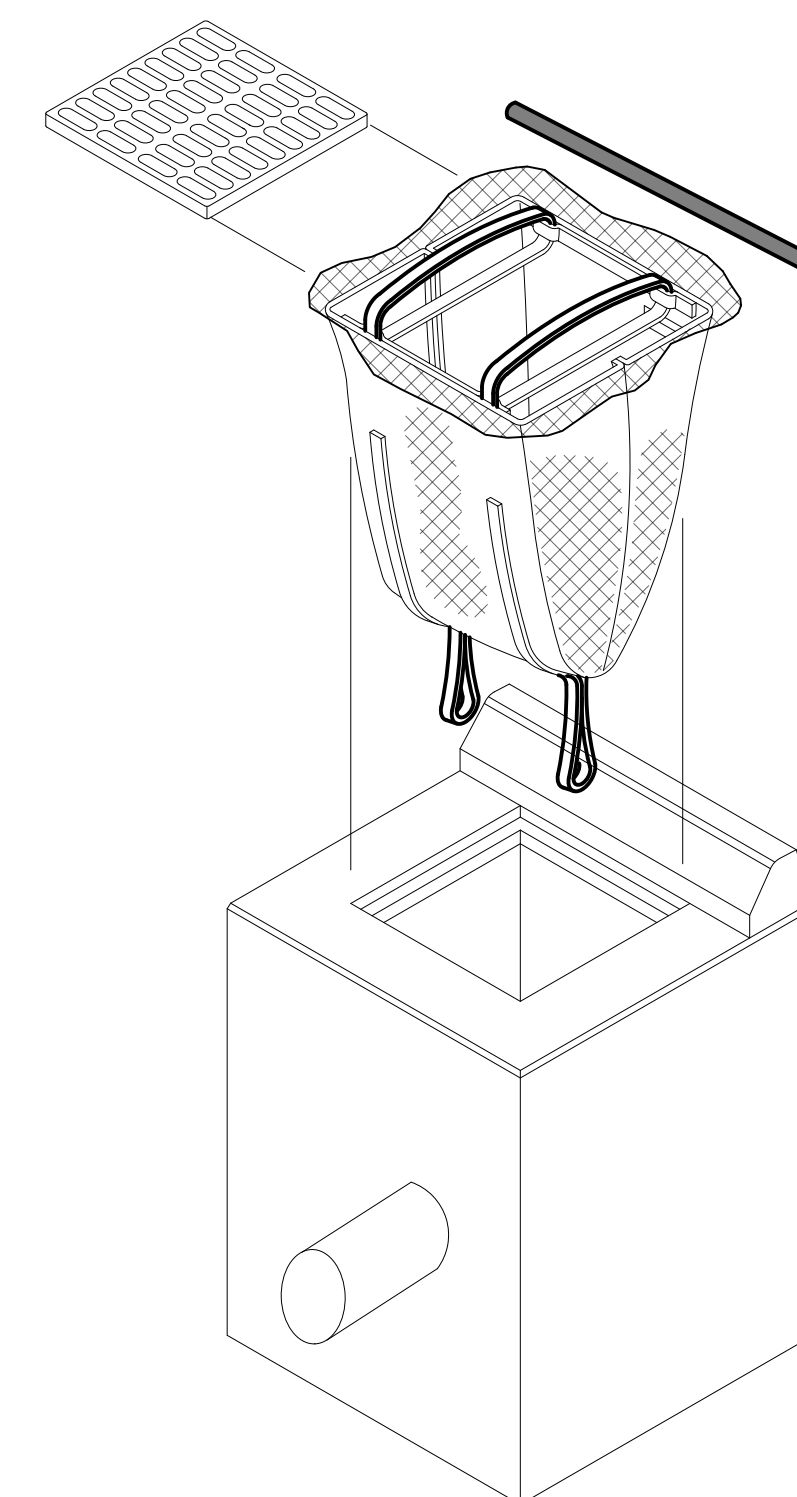
DRAWING TITLE:
EROSION CONTROL MATTING AND TEMPORARY SLOPE DRAIN

PROJECT NO.:
0141-0158
 DRAWING NO.:
MDS-04
 SHEET NO.:



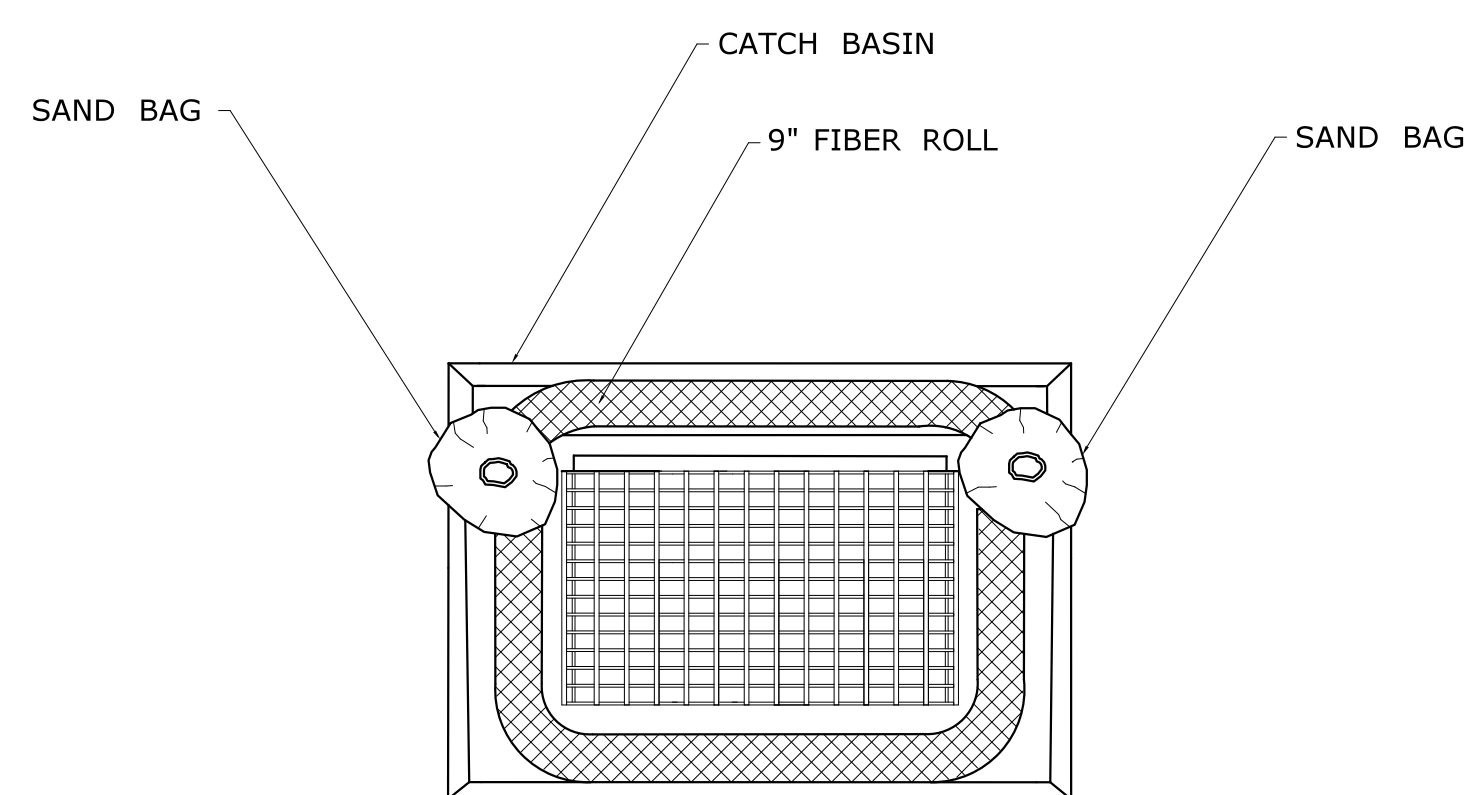
**FIBER ROLL AROUND
TYPE "C" OR "C-L" CATCH BASIN TOP**

NOTE: THIS ITEM WILL BE MEASURED BY EACH SEDIMENT CONTROL SYSTEM AT CATCH BASIN

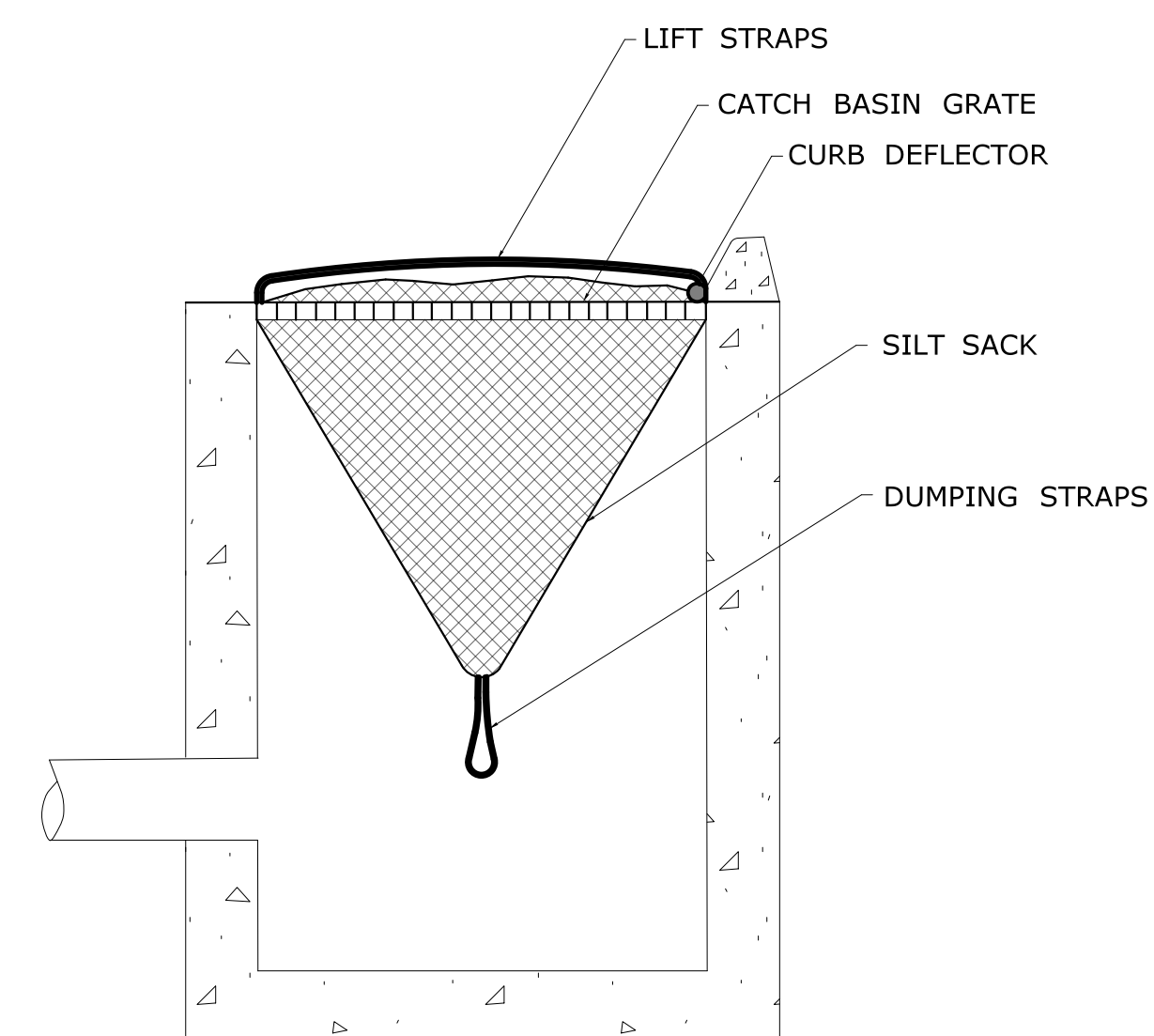


**INLET SEDIMENT CONTROL DEVICE
AT TYPE "C" OR "C-L" CATCH BASIN**

NOTE: THIS ITEM WILL BE MEASURED BY EACH SEDIMENT CONTROL SYSTEM AT CATCH BASIN



PLAN



SECTION

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
100% DESIGN REVIEW

DESIGNER/DRAFTER: _____ CHECKED BY: _____



PROJECT TITLE:
**REPLACEMENT OF BRIDGE No. 03474, ROUTE 200 OVER
INTERSTATE 395**

TOWN(S):
TOWN OF THOMPSON

DRAWING TITLE:
**EROSION CONTROL MEASURES AT
CATCH BASINS - FIBER ROLL
AND SILT SACK**

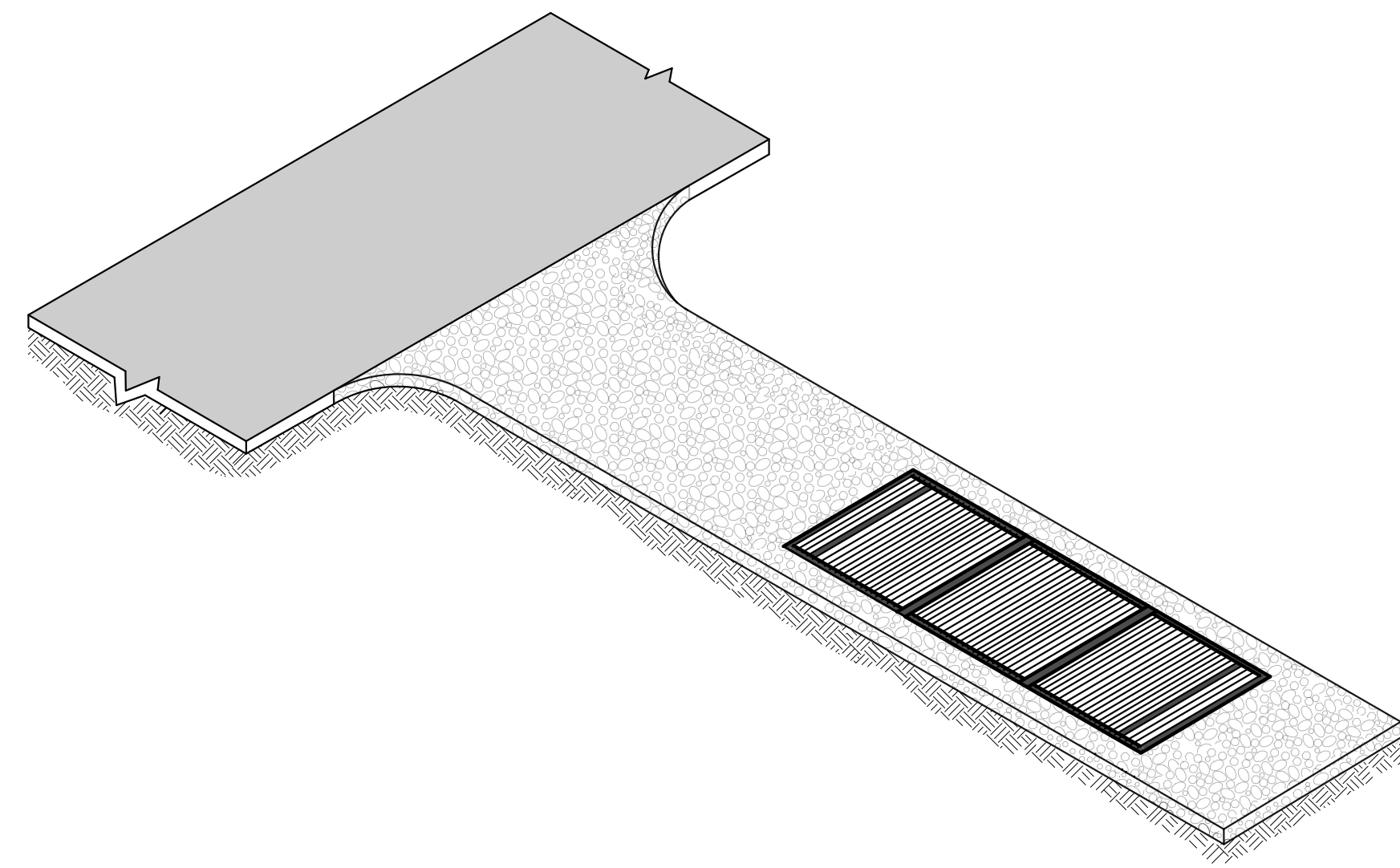
PROJECT NO.:
0141-0158

DRAWING NO.:
MDS-05

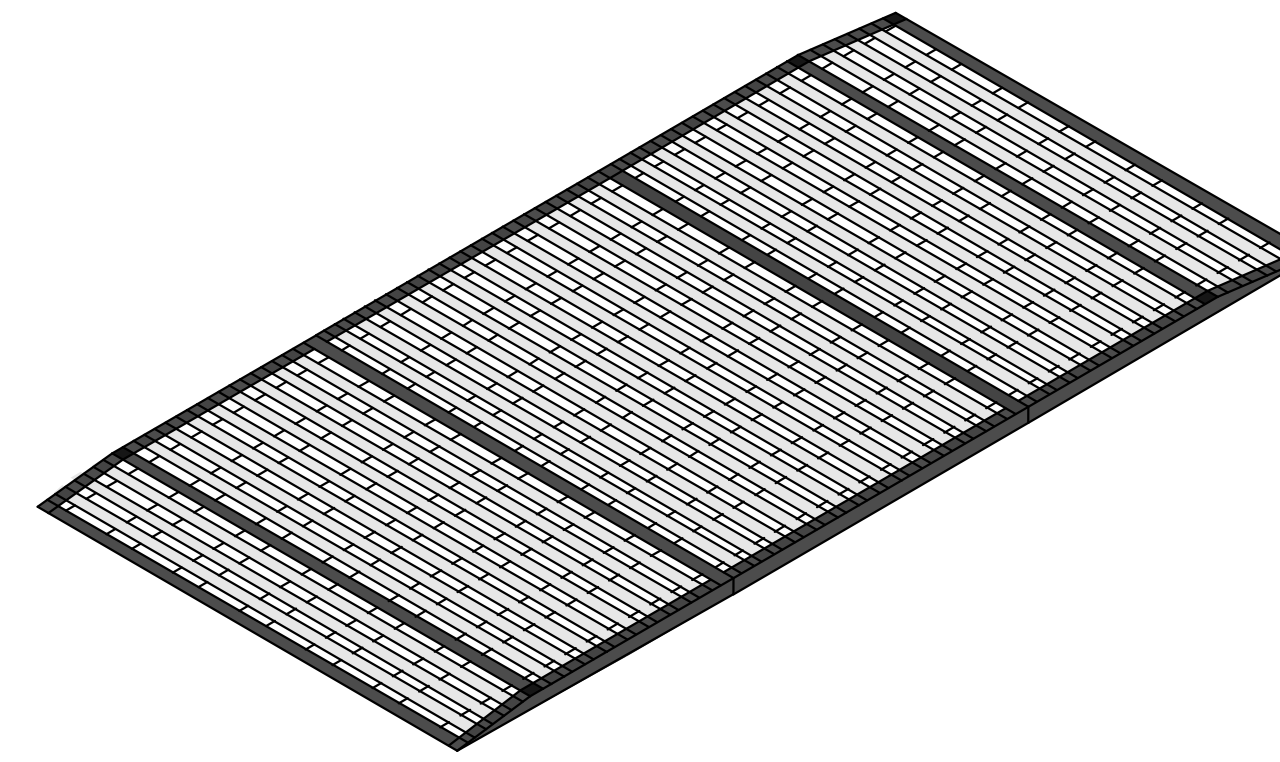
SHEET NO.: _____

GENERAL NOTE

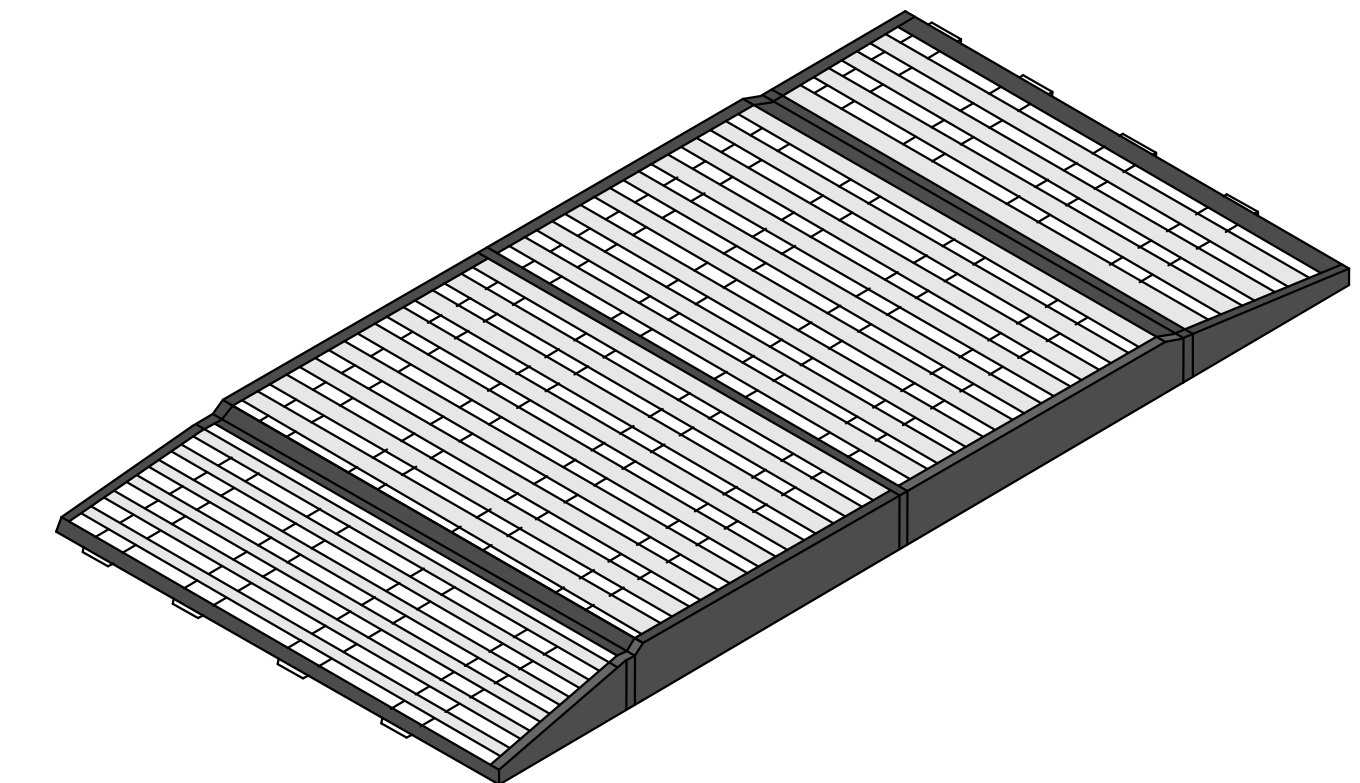
1. THE CONTRACTOR SHALL CREATE A CROSS SLOPE FOR THE CONSTRUCTION ENTRANCE AND THE ANTI-TRACKING PAD TO ENCOURAGE STORMWATER INFILTRATION.



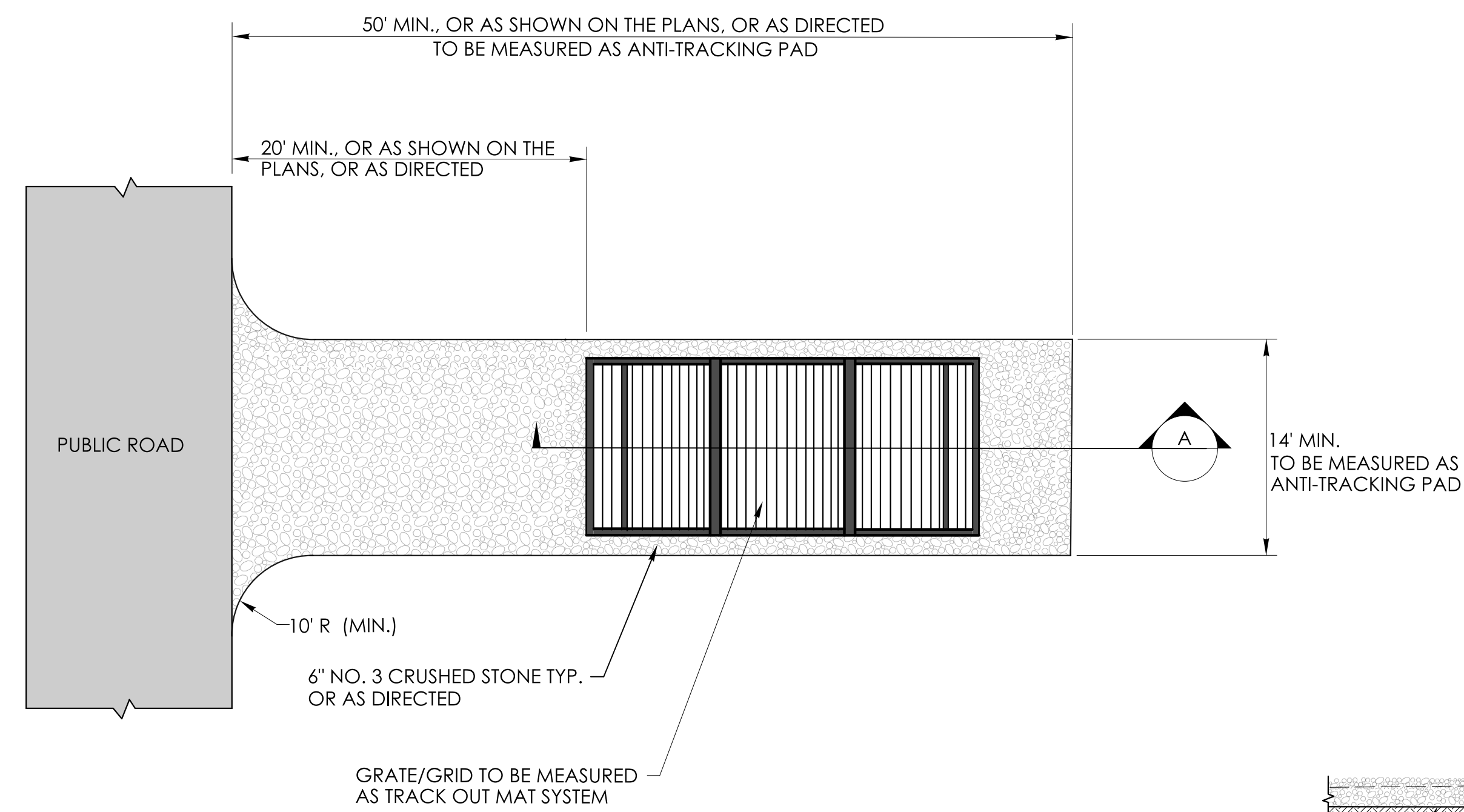
ANTI-TRACKING PAD WITH TRACK OUT MAT SYSTEM



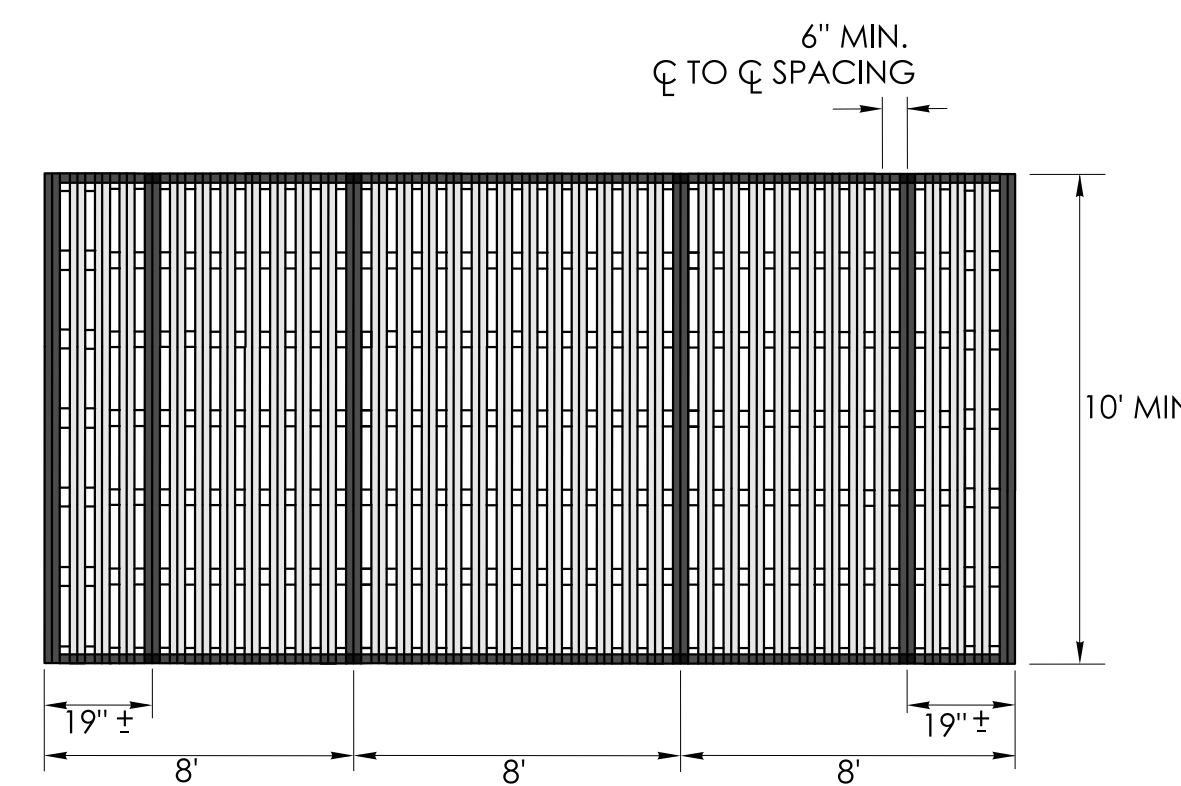
RUMBLE GRATE SYSTEM



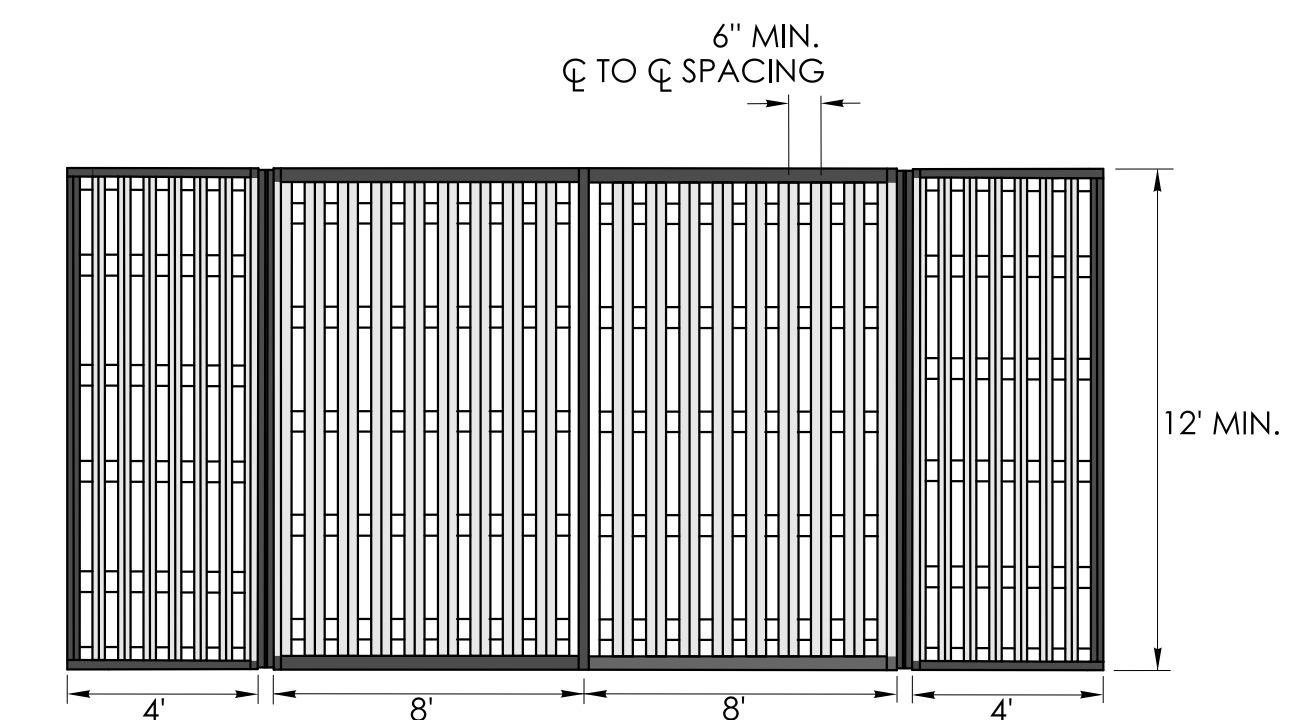
EXIT GRID SYSTEM



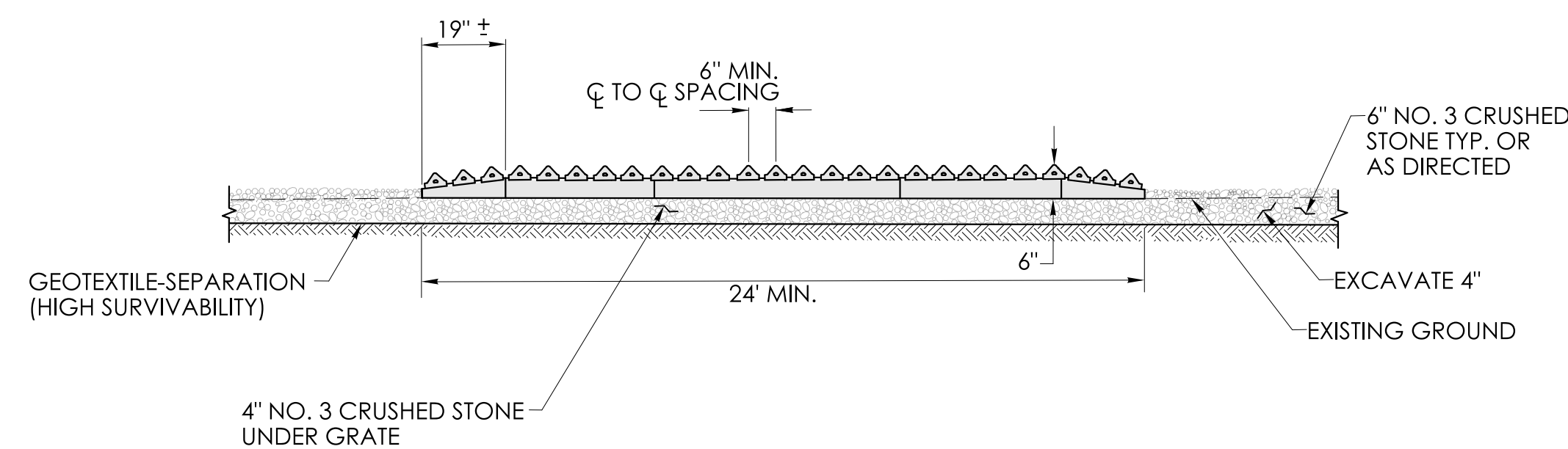
PLAN



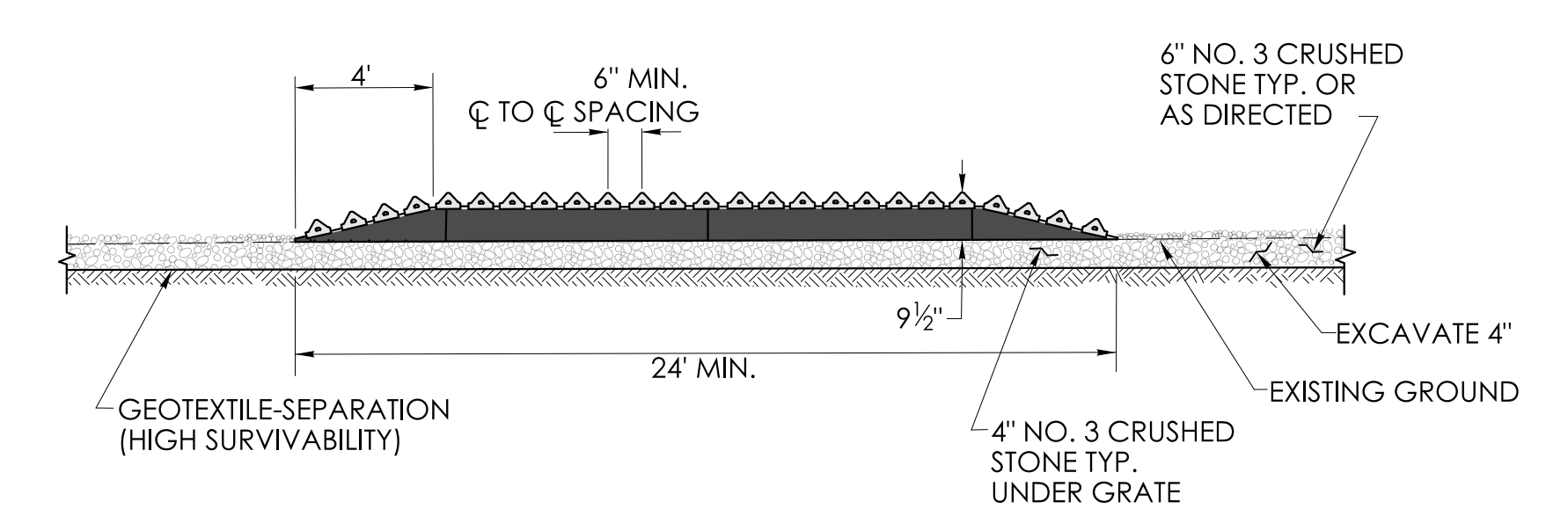
RUMBLE GRATE SYSTEM PLAN



EXIT GRID SYSTEM PLAN



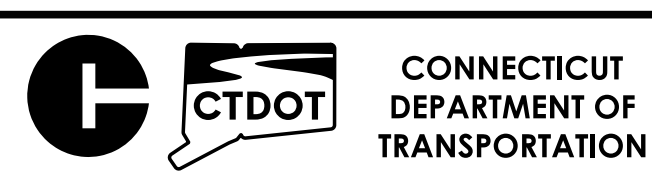
RUMBLE GRATE SYSTEM SECTION A



EXIT GRID SYSTEM SECTION A

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
100% DESIGN REVIEW
 DESIGNER/DRAFTER: _____ CHECKED BY: _____



PROJECT TITLE:
REPLACEMENT OF BRIDGE No. 03474, ROUTE 200 OVER INTERSTATE 395

TOWN(S):
TOWN OF THOMPSON

DRAWING TITLE:
TRACK OUT MAT SYSTEM AND ANTI-TRACKING PAD

PROJECT NO.:
0141-0158
 DRAWING NO.:
MDS-06
 SHEET NO.:

Appendix D - CTDOT MS4
Project Design Maximum
Extent Practicable Worksheet

**CTDOT MS4 Project Design
Maximum Extent Practicable (MEP) Worksheet**

Section 1: Project Information

Project Number:

Title/Description:

Location:

Section 2: Existing Conditions

EC1	Total Project Area	_____ acres			
EC2	Pre-construction Total Impervious Area	_____ acres			
EC3	Pre-Construction Disconnected Impervious Area	_____ acres			
EC4	Pre-construction DCIA for the Project (<i>EC2 minus EC3</i>)	_____ acres	_____ % (EC4/EC1)		
EC5	Soil Infiltration Potential	Data Source: Existing Report / Soils Map Field Verified	Good/Fair	Poor	Mixed
EC6	Depth to Maximum Groundwater	TBD	_____ to _____ ft below grade		
EC7	Depth to Bedrock	TBD	_____ to _____ ft below grade		
EC8	Aquifer Protection Area? (from PNDP)	Yes	No		
EC9	MS4 Priority Area? (from PNDP)	Yes (See Below)		No	
<i>Check All That Apply</i> Urbanized Area DCIA >11% Impaired Waterbody (See Below)					
<i>Select All Impairments That Apply</i>					
EC10	Contamination known or suspected to be present? (From Environmental Compliance)	Yes		No	
EC11	Adjoining DOT ROW beyond project limits available for stormwater quality management	_____ acres			

NOTES:

Worksheet users should refer to the current *CT DOT MS4 Project Design MEP Worksheet V4 Instructions*

Reference the CT DEEP Stormwater Quality Manual (SWQM) for design and the New England Stormwater Retrofit Manual for Crediting

**CTDOT MS4 Project Design
Maximum Extent Practicable (MEP) Worksheet**

Section 3: Designed Conditions

Section 3A: Document Water Quality Volume (WQV) Retained and/or Treated (ac-ft)

Water Quality Volume Documentation			30% Design		60% Design	90% Design	FDP
DC1	WQV design goal	Full ½-WQV (Full = EC4 % ≤ 40%)	ac-ft	TBD	ac-ft	ac-ft	ac-ft
DC2	WQV goal retained (refer to page 3)		ac-ft		ac-ft	ac-ft	ac-ft
DC3	WQV goal treated (refer to page 3)		ac-ft		ac-ft	ac-ft	ac-ft

Did the Project Retain and/or Treat the Entire WQV Goal? Yes No

Section 3B: Document Changes in Directly Connected Impervious Area (DCIA) Pre to Post Construction (acres)

DCIA Documentation		30% Design		60% Design	90% Design	FDP
DC4	Post-construction Total Impervious Area	ac.	TBD	ac.	ac.	ac.
DC5	Post-construction DCIA before new BMPs	ac.	TBD	ac.	ac.	ac.
DC6	DCIA Disconnected by new BMPs (from Pg 3)	ac.	TBD	ac.	ac.	ac.
DC7	Final Post-construction DCIA (DC5 minus DC6)	ac.	TBD	ac.	ac.	ac.
DC8	Pre-construction DCIA (refer to EC4 from Pg 1)	ac.		ac.	ac.	ac.
DC9	Change in DCIA from pre- to post-construction (DC7 minus DC8) Can be positive (DCIA gained) or negative (DCIA lost)	ac.	TBD	ac.	ac.	ac.
Date completed						
Completed by (initials)						
Reviewed by (initials)						

NOTES:

Worksheet users should refer to the current *CT DOT MS4 Project Design MEP Worksheet V4 Instructions*

Reference the CT DEEP Stormwater Quality Manual (SWQM) for design and the New England Stormwater Retrofit Manual for Crediting

Section 4: Stormwater BMP Selection Summary

Design Phase 30% 60% 90% FDP	BMP Type	WQV	WQV	DCIA	Runoff	HSG	DCIA	DCIA	(TP)	(TSS)	(TN)
		Retained* (ac-ft)	Treated* (ac-ft)	Captured by BMP (ac)	Depth from DCIA Captured by BMP (in)	Soil Type	Disconnection Credit (%)**	Disconnection Credit (ac)	reduction %**	reduction %**	reduction %*
BMP Category											
TOTAL											
		<i>To Row DC2</i>	<i>To Row DC3</i>					<i>To Row DC6</i>			
Describe Site Constraints Limiting BMP Implementation if applicable:											
Other Notes:											

* List the amount of the WQV the BMP is designed to retain or treat.

** Refer to the CT DEEP Stormwater Quality Manual (SWQM) [Stormwater Manual \(ct.gov\)](#) and New England Stormwater Retrofit Manual [Stormwater Retrofit Manual \(sneppnetwork.org\)](#) to determine disconnection and pollutant removal percentages. BMPs should be designed to meet specific TP, TN and TSS pollutant reductions to the maximum extent practicable when the entire WQV cannot be retained. Pollutant Reduction Targets are: New Development TP 60%, TN 40%, TSS 90%. Redevelopment TP 50%, TN, 30% TSS 80%. (Page 48 of the SWQM)

Appendix E – Construction Site Environmental Inspection Report (CSEIR)

DOT Environmental Inspection Report

Instructions

The following Construction Site Environmental Inspection Report (CSEIR) is to be used on all Department of Transportation (DOT) construction projects. A new form must be filled out at a minimum of once a week and within twenty four (24) hours after any storm event with precipitation greater than .10 inches. For projects that hold an Individual Inland Wetlands Permit from the Connecticut Department of Environmental Protection (DEP), a monthly submittal including all the completed CSEIRs will need to be sent to DEP. For all other DOT projects the CSEIRs must be kept in the field office as part of the Stormwater Pollution Control Plan (SWPCP).

Using the Inspection Report:

This CSEIR is designed to be customized according to the SWPCP that has been developed for each individual construction project. It will need to be adjusted to match the existing site conditions and indicate the most current Best Management Practices (BMPs) being implemented at any given date. At the beginning of construction for each project, a site plan shall be developed that identifies, by number, all potential discharge locations that will collect runoff from a disturbed area during the current phase of construction. Once the discharge locations have been identified by number, a brief description of the BMP will need to be listed in the site specific section of the CSEIR. Examples of a site specific BMPs include construction entrances, temporary sediment traps, temporary sediment basins, or localized areas of silt fence (e.g., silt fence along Main Street; silt fence along toe of slope at Wetland A, etc.). All areas that will be used for construction operations need to be included in the site specific BMPs section including Staging Areas, Waste Stockpile Areas, and Field Office locations.

To facilitate simpler inspections, the “General Information” section and “BMP and Location” section can be filled out on a blank inspection report at the beginning of construction and then copied for re-use as long as the site specific locations remain the same. Any additional BMPs or other changes that result from staged construction or corrective actions need to be included on the site plan and CSEIR within three (3) days following an inspection.

During the site inspection the inspector will need to walk the site with a copy of the site map and CSEIR. Each numbered location will need to be inspected and any deficiencies or maintenance issues identified and documented.

The “Overall Site Issues Reference Checklist” should be consulted when completing the CSEIR to help identify any locations where maintenance or additional BMPs may be required. This checklist is not submitted with the CSEIR but should be kept on file for future reference.

Overall Site Issues Reference Checklist

Below are some general site issues that should be assessed during inspections. This Check List should be consulted during the site inspection and used to determine the appropriate BMP corrective actions required in BMP Maintenance section above. Not required to be included with CSEIR submission or as part of certification

BMP/activity	Completed	Maint. Required	Corrective Action by Contractor- Note completion date and action taken
Are all slopes and disturbed areas not actively being worked properly stabilized?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is there any evidence of erosion occurring throughout the project site?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are discharge points and receiving waters free of any sediment deposits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are storm drain inlets properly protected?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is the construction exit preventing sediment from being tracked into the street?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is trash/litter from work areas collected and placed in covered dumpsters?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are vehicle and equipment fueling, cleaning, and maint. areas free of spills, leaks, or any other deleterious material?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
(Other) Describe	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**State of Connecticut
Department of Transportation
Construction Site Environmental Inspection Report**

This Form Must Be Completed At Least Once a Week and within Twenty Four (24) Hours Of the End of a Storm Event That Is 0.1 inches or Greater * Next Working Day as Directed by Engineer*

General Information			
Project Number		Date	
Permit Number(s)		Location	
Contractor			
Project Engineer		Phone No	
Type of Inspection: Check all that apply <input type="checkbox"/> Weekly <input type="checkbox"/> Pre-storm event <input type="checkbox"/> Post-storm event			
Weather at time of this inspection? <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds Temperature: _____			
Start Date: _____ Time: _____ Duration (hrs): _____ Precipitation (in) ≈ _____			

Site-specific BMPs - Number the structural and non-structural BMPs on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map for reference with you during your inspections. Note- If have additional locations add rows. Site Map Attached Yes No

Location	BMPs Installed	BMP Maint. Required	Remedial Action Required	Remedial Action* If yes, provide description and date contractor notified	Date Fixed	Repeat Failure
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				<input type="checkbox"/> Yes <input type="checkbox"/> No

Are there any sediment discharges to a regulated area or potential wetland occurring or have any occurred since the last inspection? Yes No

If yes, contact the District Environmental Coordinator immediately and submit project incident report (include description of the discharge including location, time identified, and the approximate amount of sediment)

Incident report attached to this CSEIR? Yes No

Appendix F – Notice of Termination Form



**Connecticut Department of
Energy & Environmental Protection**
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

**General Permit for the Discharge of Stormwater and Dewatering Wastewaters from
Construction Activities**

Notice of Termination Form: Non-Solar Projects

This Notice serves as a request to terminate the below listed permit as well as any applicable Letter(s) of Credit.

Part I: Permittee Information

The below information is required in accordance with Section 6(b) of the General Permit.

1. Permit Number: GSN

2. Registrant:

3. Site Address:

City/Town: State: Zip Code:

4. Date of completion of construction:

Date all storm drainage structures were cleared of construction
sediment and debris:

Beginning and Ending Dates of post-construction inspections:

Date of final stabilization inspection(s)*:

Qualified Inspector who conducted
the Final Stabilization Inspection:
(This person must sign Part III)

5. Check the post-construction activity(ies)** at the site (check all that apply):

Industrial Residential Capped Landfill

Commercial Solar Array Other:

* The Final Stabilization Inspection must occur at least one full growing season after final stabilization has been achieved. A full growing season is defined as the timeframe encompassed by two consecutive full seeding seasons: April 1 through June 15, and August 15 through October 1. If final stabilization is achieved during a seeding season, the following seeding season will be considered the first full seeding season after final stabilization has been achieved.

** If the post-construction activity involves solar arrays, the Department may require that the "Solar Projects: Notice of Termination Form" be used. Any questions regarding the necessity of such a form for the project can be sent via email to DEEP.StormwaterStaff@ct.gov.

Locally Approvable Projects Must Complete the following Part II - (Attach additional sheets as needed)

Part II: Locally Approvable Post-Construction Inspection Certification

The below information is required in accordance with Section 5(b)(4)(C)(i) of the General Permit.

Certification by a Qualified Professional Engineer / Qualified Soil Erosion and Sediment Control Professional / District Representative

“I hereby certify that I am a qualified professional engineer / a qualified soil erosion and sediment control professional / a representative of the District in which the site is located as defined in Section 2 of the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (general permit). I am familiar with the site described in this Notice of Termination and the requirements of the general permit. I certify, based on my personal inspection of the site pursuant to Section 6(a) of the general permit that all post-construction measures have been installed as specified in the permittee’s Stormwater Pollution Control Plan and in accordance with Section 5(b)(2)(C) of the general permit and that all such measures have been cleaned of construction sediment and debris. I understand that this certification is part of a registration submitted in accordance with section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law.”

Signature of Qualified Professional Engineer / Qualified Soil Erosion and Sediment Control Professional / Representative of the District

Date

Printed Name of Qualified Professional Engineer / Qualified Soil Erosion and Sediment Control Professional / Representative of the District

Title

Check off the qualifications of the signatory of the above part:

- Qualified Professional Engineer Qualified Soil Erosion and Sediment Control Professional Representative of the District

Locally Exempt Projects Must Complete the following Part II - (Attach additional sheets as needed)

Part II: Locally Exempt Post-Construction Inspection Certification

The below information is required in accordance with Section 5(b)(4)(C)(ii) of the General Permit.

Certification by a Qualified Professional Engineer / Qualified Soil Erosion and Sediment Control Professional

"I hereby certify that I am a qualified professional engineer / a qualified soil erosion and sediment control professional as defined in Section 2 of the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (general permit). I am familiar with the site described in this Notice of Termination and the requirements of the general permit. I certify, based on my personal inspection of the site pursuant to Section 6(a) of the general permit that all post-construction measures have been installed as specified in the permittee's Stormwater Pollution Control Plan and in accordance with Section 5(b)(2)(C) of the general permit and that all such measures have been cleaned of construction sediment and debris. I understand that this certification is part of a registration submitted in accordance with section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

Signature of Qualified Professional Engineer / Qualified Soil Erosion and Sediment Control Professional

Date

Printed Name of Qualified Professional Engineer / Qualified Soil Erosion and Sediment Control Professional

Title

Check off the qualifications of the signatory of the above part:

Qualified Professional Engineer



Qualified Soil Erosion and Sediment Control Professional

Part II: State Agency Post-Construction Inspection Certification

The below information is required in accordance with Section 5(b)(4)(C)(iii) of the General Permit.


Certification by a DOT District Engineer or his/her designee / a DOT District Environmental Coordinator / a designated employee of another state agency

“I hereby certify that I am a DOT District Engineer or his/her designee / a DOT District Environmental Coordinator / a designated employee of another state agency as defined in Section 2 of the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (general permit). I am familiar with the site described in this Notice of Termination and the requirements of the general permit. I certify, based on my personal inspection of the site pursuant to Section 6(a) of the general permit that all post-construction measures have been installed as specified in the permittee’s Stormwater Pollution Control Plan and in accordance with Section 5(b)(2)(C) of the general permit and that all such measures have been cleaned of construction sediment and debris. I understand that this certification is part of a registration submitted in accordance with section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law.”

<hr/> 	<hr/> 
---	--

Signature

Date

<hr/> 	<hr/> 
---	--

Printed Name

Title

Check off the qualifications of the signatory of the above part:

- Qualified Professional Engineer Qualified Soil Erosion and Sediment Control Professional Representative of the District

All Projects Must Complete the following Part III - (Attach additional sheets as needed)

Part III: Final Stabilization Inspection Certification

The below information is required in accordance with Section 5(b)(4)(D) of the General Permit.

Certification by a Qualified Inspector

"I hereby certify that I am a qualified inspector as defined in Section 2 of the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (general permit). I am familiar with the site described in this Notice of Termination and the requirements of the general permit. I certify, based on my personal inspection of the site pursuant to Section 6(a) of the general permit that the site has been stabilized, as defined in Section 2 of the general permit, for a period of no less than one full growing season following the cessation of construction activities. I further certify that there is no active erosion or sedimentation present on site and no disturbed areas remain exposed. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

Signature of Qualified Inspector

Date

Printed Name of Qualified Inspector

Title



All Projects Must Complete the following Part IV - (Attach additional sheets as needed)

Part IV: Permittee Certification

The below information is required in accordance with Section 5(b)(4)(D) of the General Permit.

Certification by the Permittee

“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 Connecticut General Statutes, pursuant to section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute.”

Signature of Permittee	Date
	
Printed Name of Permittee	Title

All Projects Must Complete the following Part V - (Attach additional documentation as needed)

Part V: Additional Submittals

The following attachments are required to be submitted along with the Notice of Termination Form:

- Post-Construction Inspection Report (must contain photos with time stamps)
- Final Stabilization Inspection Report (must contain photos with time stamps)

Complete and submit this form in accordance with the general permit (DEEP-WPED-GP-015) to ensure the proper handling of the termination. Print or type unless otherwise noted.

Submit this Notice of Termination Form to the address below, as well as via email to DEEP.StormwaterStaff@ct.gov:

WATER PERMITTING AND ENFORCEMENT DIVISION/STORMWATER GROUP
DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Appendix G - 2026 Construction Stormwater Permit Additional Requirements

APPENDIX H: 2026 Construction Stormwater Permit Additional Requirements

I. Turbidity Monitoring for Dewatering Activities

For construction dewatering operations that will result in a discharge to a wetland or watercourse, the Qualified Inspector will sample and document turbidity levels in accordance with 40 CFR 136 at the discharge point to the receiving waterbody initially within 30 minutes of commencement of dewatering activities and weekly thereafter for the duration of dewatering. Turbidity Monitoring Reports will be submitted to the CTDEEP on the first day of each month via email at DEEP.StormwaterConstruction@ct.gov for as long as the discharge exists. The email to the CTDEEP will be submitted with the subject line “Construction Turbidity Monitoring” with reference to the CTDEEP permit number starting with **GSN-XXXXXX**.

II. Pollutants of Concern

Possible pollutants expected at the Project site include, but are not limited to:

- Construction sediment and debris
- Concrete slurry/grout
- Fluorescent Lighting Fixtures
- Fuel
- Lead
- Millings
- Oil
- Paint
- Solvents / Cleaning Solvents
- Trash
- Vehicle / Equipment Maintenance Fluids

The Contractor shall provide protection measures for project activities with chemical pollutants as outlined in CTDOT’s Section 1.10.03- required Best Management Practices and 1.10.07 - Controlled and Hazardous Materials. If any containers are observed to be leaking or control measures require maintenance, the Qualified Inspector will promptly notify the Contractor of required corrective action.

III. Notice of Construction Activities

The following notice of permit coverage shall be placed at a safe, publicly accessible location near or within the Project limits. The sign shall be two (2) feet by three (3) feet in dimension, weatherproof, and written in English and Spanish:

The notice of coverage is to include:

- The name of the Permittee (State of Connecticut Department of Transportation).
- The DEEP permit number (GSN-XXXXXX).
- The site address.
- District name (CTDOT District 2).
- District general email box and phone number.
- Estimated start date and completion date.
- The CTDOT-hosted website or email where the SPCP and application are available or can be obtained.
- The following statement: “If you observe indicators of stormwater pollutants in the discharge from this site or in the receiving water, please contact the CTDEEP through the link for Reporting Water Pollution at: www.ct.gov/deep/stormwater”.

IV. Emergency Spill Response

Spills of oil, grease, or other harmful chemicals must immediately be cleaned by the removal of and containment of contaminated soil or emergency spill kit. An emergency spill kit, or alternative proprietary device, must be present and accessible on site for emergency removal of oil, grease, or chemical spills. Contact the CTDEEP Emergency Response Unit at (860) 424-3338.



General Permit Application Form for the Discharge of Stormwater from Construction Activities, effective 01/01/2026

Prior to completing this form, you **must** read the instructions for the subject general permit available at Stormwater Construction GP webpage (<https://portal.ct.gov/deep/water-regulating-and-discharges/stormwater/construction-stormwater-gp>).

Part I: Application Type

Select the appropriate boxes identifying the registration type and registration deadline.

Application Type		Application Timeline	
<input checked="" type="checkbox"/>	New Registration	<input checked="" type="checkbox"/> Locally Approvable Size of soil disturbance: _____	New registration - Sixty (60) days prior to the initiation of the construction activity for: For sites with a total soil disturbance area of 5 or more acres
		<input type="checkbox"/> Locally Exempt Size of soil disturbance: _____	<input type="checkbox"/> New registration - Sixty (60) days prior to the initiation of the construction activity for: Sites with a total disturbance area of one (1) to twenty (20) acres except those with discharges to impaired waters or tidal wetlands
			<input type="checkbox"/> New registration - Ninety (90) days prior to the initiation of the construction activity for: (i) Sites with a total soil disturbance area greater than twenty (20) acres, or (ii) Sites discharging to a tidal wetland (that is not fresh-tidal and is located within 500 feet), or (iii) Sites discharging to the impaired water listed in the "Impaired Waters Table for Construction Stormwater Discharges"

Part II: Fee Information

1. New Applications

a. Locally approvable projects:

\$1250

b. Locally exempt projects (application and Plan):

\$3,000 total soil disturbance area ≤ twenty (20) acres.

\$4,000 total soil disturbance > twenty (20) acres and ≤ fifty (50) acres.

\$5,000 total soil disturbance > fifty (50) acres.

c. Is Renewal

\$1250

Total Fee: _____ \$1,250.00

The fees for municipalities shall be half of those indicated in subsections 1.a and 1.b above pursuant to Section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection. The application will not be processed without the fee. The fee shall be non-refundable and shall be paid by certified check or money order payable to the Department of Energy and Environmental Protection.

Part III: Registrant Information

- If a registrant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of the State. If applicable, the registrant's name shall be stated **exactly** as it is registered with the Secretary of the State online Business Records Search at: <https://service.ct.gov/business/s/onlinebusinesssearch>
- If a registrant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).

1. Registrant /Client Name: STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

Registrant Type: State Agency

Secretary of the State business ID #: _____

Mailing Address: 171 SALEM TPKE

City/Town: NORWICH State: CT Zip Code: 06360

Business Phone: (860) 823-3204 ext.: _____

Example:(xxx) xxx-xxxx

Contact Person: John Deliberto, P.E. Title : District Engineer

E-Mail: john.deliberto@ct.gov

2. List billing contact:

Name: STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

Mailing Address: 171 SALEM TPKE

City/Town: NORWICH State: CT Zip Code: 06360

Business Phone: (860) 823-3204 ext.: _____

Contact Person: John Deliberto, P.E. Title : District Engineer

3. List primary contact for departmental correspondence and inquiries:
 Name: STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION
 Mailing Address: 171 SALEM TPKE
 City/Town: NORWICH State: CT Zip Code: 06360
 Business Phone: (860) 823-3204 ext. _____
 Contact Person: John Deliberto, P.E. Title: District Engineer

4. List owner of the property on which the activity will take place:
 Name: STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION
 Mailing Address: 171 SALEM TPKE
 City/Town: NORWICH State: CT Zip Code: 06360
 Business Phone: (860) 823-3204 ext. _____
 Contact Person: John Deliberto, P.E.

5. List preparer:
 Name: Michael Villano
 Mailing Address: 400 Capital Blvd
 City/Town: Rocky Hill State: CT Zip Code: 06067
 Business Phone: (860) 885-1068 ext. _____
 Contact Person: Michael Villano Title: Project Scientist

6. List design professional:
 Name: CHUCK EATON
 Mailing Address: 400 Capital Blvd
 City/Town: Rocky Hill State: CT Zip Code: 06067
 Business Phone: (860) 595-3379 ext. _____
 Contact Person: CHUCK EATON Title: DESIGN PROFESSIONAL

7. List Reviewing Qualified Professional (for locally approvable projects only):
 Name: _____
 Mailing Address: _____
 City/Town: _____ State: _____ Zip Code: _____
 Business Phone: _____ ext. _____
 Contact Person: _____ Title: _____

Additional Contacts

1.	Name: <u>Peter Parent</u>
	Mailing Address: <u>400 Capital Blvd</u>
	City/Town: <u>Rocky Hill</u> State: <u>CT</u> Zip Code: <u>06067</u>
	Business Phone <u>(860) 885-1052</u> ext. _____
	Contact Person: _____ Title: _____
	Association (e.g. developer, general or site contractor, etc.): <u>Professional Engineer</u>
2.	Name: _____
	Mailing Address: _____
	City/Town: _____ State: _____ Zip Code: _____
	Business Phone: _____ ext. _____
	Contact Person: _____ Title: _____
	Association (e.g. developer, general or site contractor, etc.): _____
3.	Name: _____
	Mailing Address: _____
	City/Town: _____ State: _____ Zip Code: _____
	Business Phone: _____ ext. _____
	Contact Person: _____ Title: _____
	Association (e.g. developer, general or site contractor, etc.): _____
4.	Name: _____
	Mailing Address: _____
	City/Town: _____ State: _____ Zip Code: _____
	Business Phone: _____ ext. _____
	Contact Person: _____ Title: _____
	Association (e.g. developer, general or site contractor, etc.): _____
5.	Name: _____
	Mailing Address: _____
	City/Town: _____ State: _____ Zip Code: _____
	Business Phone: _____ ext. _____
	Contact Person: _____ Title: _____
	Association (e.g. developer, general or site contractor, etc.): _____
6.	Name: _____
	Mailing Address: _____
	City/Town: _____ State: _____ Zip Code: _____
	Business Phone: _____ ext. _____
	Contact Person: _____ Title: _____
	Association (e.g. developer, general or site contractor, etc.): _____
7.	Name: _____
	Mailing Address: _____
	City/Town: _____ State: _____ Zip Code: _____
	Business Phone: _____ ext. _____
	Contact Person: _____ Title: _____
	Association (e.g. developer, general or site contractor, etc.): _____

Part IV: Site Information

Site Name: _____ Bridge No. 03474

Street Address or Description of Location: _____ Thompson Hill Rd

City/Town: _____ Thompson State: _____ CT Zip Code: _____ 06277

Longitude: _____ -71.872521 Latitude: _____ 41.965958

Brief Description of construction activity:
Replacement of Bridge No. 03474

Project Start Date: _____ 30 Jun 2026 Anticipated Completion Date: _____ 1 Nov 2027

Normal working hours: _____ 9 to _____ 5

- 1. What type of the project is this? Locally Approvable Project
 Locally Exempt Project

a. Locally Approvable Project

Is this application for the site design phase of a design-build project conducted by a State entity? Yes No NA

a. Locally Exempt Project

Is this application for the site design phase of a design-build project conducted by a Federal entity? Yes No NA

b. Is this application a renewal of a previously permitted Stormwater Construction Activity? Yes No NA

i. If yes, provide the previously approved permit number: _____

ii. Is this application for a Change of Permittee? Yes No NA

iii. Is this application for the final design of a design-build project? Yes No NA

2. **MINING** : Is the activity on the site in question part of mining operations (i.e. sand and gravel)? Yes No

If yes, mining is not authorized by this general permit. You must submit the Registration Form for the General Permit for the Discharge of Stormwater Associated with Industrial Activity.

3. **COMBINED OR SANITARY SEWER**: Does all of the stormwater from the proposed activity discharge to a combined or sanitary sewer (i.e. a sewage treatment plant)? Yes No

If yes, this activity is not regulated by this permit. Contact the Water Permitting & Enforcement Division at 860-424-3018.

4. **INDIAN LANDS**: Is or will the facility be located on federally recognized Indian lands? Yes No

5. **COASTAL BOUNDARY**: Is the activity which is the subject of this registration located within the coastal boundary as delineated on DEEP approved coastal boundary maps? Yes No

6. ENDANGERED OR THREATENED SPECIES:

Each application must perform a review of the Department's Natural Diversity Database maps to determine if the site of the construction activity is located within or in proximity (within ¼ mile) to a shaded area.

- a. Provide the date of the NDDB maps were reviewed: 24 Apr 2026 (Print a copy of the NDDB map you viewed since it must be submitted with this registration as part of Attachment C.)
- b. For an applicant using a two-year determination to register for this General Permit, provide the Department's Wildlife Division NDDB identification number for any such determination:
_____ (The number is on the determination issued by the Department's Wildlife Division).
- c. I verify that I have completed Attachment C to this Registration Form. Yes

7. WILD AND SCENIC RIVERS: Is the proposed project within the watershed of a designated Wild and Scenic River? (See Appendix H for guidance) Yes No

8. AQUIFER PROTECTION AREAS: Is the site located within a mapped [Aquifer Protection Area](#) , as defined in Section 22a-354h of the CT General Statutes? (For additional guidance, please refer to Appendix C of the General Permit) Yes No

9. Connecticut Guidelines for Soil Erosion and Sediment Control Guidelines: Is the activity in accordance with Connecticut Guidelines for Soil Erosion and Sediment Control Guidelines and local erosion & sediment control ordinances, where applicable? Yes No

10. HISTORIC AND/OR ARCHAEOLOGICAL RESOURCES:

Has the site of the proposed activity been reviewed (using the process outlined in Appendix G of this permit) for historic and/or archaeological resources? Yes No

- a. The review indicates the proposed site does not have the potential for historic/ archaeological resources, OR Yes No
- b. The review indicated historic and/ or archaeological resource potential exists and the proposed activity is being or has been reviewed by the Offices of Culture and Tourism, OR NA Yes No
- c. The proposed activity has been reviewed and authorized under an Army Corps of Engineers Section 404 wetland permit. NA Yes No

11. CONSERVATION OR PRESERVATION RESTRICTION:

Is the property subject to a conservation or preservation restriction? Yes No

If Yes, proof of written notice of this registration to the holder of such restriction or a letter from the holder of such restriction verifying this registration is in compliance with the terms of the restriction, must be submitted as Attachment D.

Part V: Stormwater Discharge Information

Table 1

Outfall #	a) Type	b) Pipe Material	c) Pipe Size			e) What method was used to obtain your latitude/longitude information?
				Longitude (Format: -xx.xxxxx)	Latitude (Format: xx.xxxxx)	
EO-1	Pipe	Concrete	18"	-71.872996	41.965836	ezFile Portal Map
PO-1	Pipe	Concrete	18"	-71.872996	41.965836	ezFile Portal Map
EO-2	Pipe	Concrete	24"	-71.872406	41.965603	ezFile Portal Map
PO-2	Pipe	Concrete	24"	-71.872406	41.965603	ezFile Portal Map
EO-3	Pipe	Concrete	15"	-71.873812	41.966853	ezFile Portal Map

Part V: Stormwater Discharge Information Continued

Table 2

2. Provide the following information about the receiving water(s)/wetland(s) that receive stormwater runoff from your site, either directly or through the storm sewer system:							
Outfall #	Dates when this outfall will be active:	a) To what system or receiving water does your stormwater runoff discharge? either "storm sewer or wetlands" or "waterbody"	b) What is your watershed ID (freshwater) or 305b ID (estuary)?	c.1) Is your receiving water identified as an impaired water in the "Impaired Waters Table for Construction Stormwater Discharges"?	c.2) Has any Total Maximum Daily Load (TMDL) been approved for your receiving waterbody?	For the drainage area associated with each outfall: Effective Impervious Area Before Construction (sq ft)	For the drainage area associated with each outfall: Effective Impervious Area After Construction (sq ft)
EO-1	Start: 30 Jun 2026 End:	Storm Sewer or Wetlands		<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	16640	0
PO-1	Start: 30 Jun 2026 End:	Storm Sewer or Wetlands		<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	0	13422
EO-2	Start: 30 Jun 2026 End:	Storm Sewer or Wetlands		<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	55987	0
PO-2	Start: 30 Jun 2026 End:	Storm Sewer or Wetlands		<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	0	58631
EO-3	Start: 30 Jun 2026 End:	Storm Sewer or Wetlands		<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	44033	0
Provide the total effective impervious area for the entire site(sq ft):						116660	123990

Part V: Stormwater Discharge Information

Table 1

Outfall #	a) Type	b) Pipe Material	c) Pipe Size			e) What method was used to obtain your latitude/longitude information?
				Longitude (Format: -xx.xxxxx)	Latitude (Format: xx.xxxxx)	
PO-3	Pipe	Concrete	15"	-71.873812	41.966853	ezFile Portal Map

Part V: Stormwater Discharge Information Continued

Table 2

2. Provide the following information about the receiving water(s)/wetland(s) that receive stormwater runoff from your site, either directly or through the storm sewer system:							
Outfall #	Dates when this outfall will be active:	a) To what system or receiving water does your stormwater runoff discharge? either "storm sewer or wetlands" or "waterbody"	b) What is your watershed ID (freshwater) or 305b ID (estuary)?	c.1) Is your receiving water identified as an impaired water in the "Impaired Waters Table for Construction Stormwater Discharges"?	c.2) Has any Total Maximum Daily Load (TMDL) been approved for your receiving waterbody?	For the drainage area associated with each outfall: Effective Impervious Area Before Construction (sq ft)	For the drainage area associated with each outfall: Effective Impervious Area After Construction (sq ft)
PO-3	Start: 30 Jun 2026 End: _____	Storm Sewer or Wetlands	_____	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA	0	51937
_____	Start: _____ End: _____	Select One	_____	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	_____	_____
_____	Start: _____ End: _____	Select One	_____	Y N NA	Y N NA	_____	_____
_____	Start: _____ End: _____	Select One	_____	Y N NA	Y N NA	_____	_____
_____	Start: _____ End: _____	Select One	_____	Y N NA	Y N NA	_____	_____
Provide the total effective impervious area for the entire site(sq ft):						116660	123990

Part V: Stormwater Discharge Information (continued)

1. **If the impaired water does not have a TMDL**, confirm compliance by selecting 1.a. or 2.b. below:

a. No more than 3 acres is disturbed at any time; Yes

OR

b. Stormwater runoff from a 2 yr, 24 rain event is **retained**. Yes

2. **If the impaired water has a TMDL**, confirm compliance by selecting 2.a. and 2.b. below and either question 2.c.1. or 2.c.2. below:

a. The Plan documents there is sufficient remaining Waste Load Allocations (WLA) in the TMDL for the proposed discharge, Yes

AND

b. Control measures shall be implemented to assure the WLA will not be exceeded, Yes

AND

c. 1. Stormwater discharges will be monitored for the indicator pollutant identified in the TMDL, Yes

OR

2. The Plan documents specific requirements for stormwater discharges specified in the TMDL. Yes

Part VI: Pollution Control Plan Availability

I have attached the Stormwater Pollution Control Plan (SPCP) to this application.

I have provided a URL to the webpage that has or will have the SPCP and application posted for public viewing and review.

URL to webpage:
<https://portal.ct.gov/>

Part VII: Registrant Certification

The registrant *and* the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all required signatures are provided.

For New Applicants:

"I hereby certify that I am making this certification in connection with an application under the General Permit for the discharge of Stormwater from Construction Activities (general permit) submitted to the commissioner by E OF CONNECTICUT DEPARTMENT OF TRANSPORTA for an activity located at Thompson Hill Rd, Thompson, CT 06277

and that all terms and conditions of the general permit will be met for all discharges which will be initiated and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the application filed pursuant to this general permit is on complete and accurate forms as prescribed by the Commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 2.2.13.1 of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 2.2.13.2 of this general permit. I understand that the application filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Conn. Gen. Stat. I also understand that knowingly making any false statement in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Conn. Gen. Stat. and any other applicable law."

For Applications for previously approved construction activities:

"I hereby certify that I am making this certification in connection with an application under the General Permit for the Discharge of Stormwater from Construction Activities, submitted to the commissioner by _____ for an activity located at _____

and that all terms and conditions of the general permit will be met for all discharges which will be initiated and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the application filed pursuant to this general permit is on complete and accurate forms as prescribed by the Commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 2.2.13.1 of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 2.2.13.2 of this general permit. I understand that the application filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Conn. Gen. Stat. I also understand that knowingly making any false statement in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Conn. Gen. Stat. and any other applicable law."

Signature of Registrant	
John Deliberto, P.E.	District Engineer
Name of Registrant (print or type)	Title (if applicable)

Signature of Preparer and Date (if different than above)	
Michael Villano	Project Scientist
Name of Preparer (print or type)	Title (if applicable)

Part VIII: Professional Engineer (or Landscape Architect, where appropriate) Design Certification (for publically approvable and exempt projects)

The following certification must be signed by a Professional Engineer, or Landscape Architect where appropriate.

<p>"I hereby certify that I am a _____ licensed in the State of Connecticut. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by <u>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</u> for an activity located at <u>Thompson Hill Rd, Thompson, CT 06277</u> .</p> <p>I certify that I have thoroughly and completely reviewed the Stormwater Pollution Control Plan for the project or activity covered by this certification. I further certify, based on such review and on the standard of care for such projects, that the Stormwater Pollution Control Plan has been prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, the Stormwater Quality Manual, as amended, and the conditions of the general permit, and that the controls required for such Plan are appropriate for the site. I further certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement in this certification may subject me to sanction by the Department and/or be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."</p>	
<p>_____</p>	
<p>Signature of Design Professional and Date</p>	
<p><u>CHUCK EATON</u></p>	<p>_____</p>
<p>Name of Professional (print or type)</p>	<p>License Number</p>
<p>Affix P.E./L.A Stamp Here</p>	

Part IX: Reviewing Qualified Professional Certification

The following certification must be signed by a) a Conservation District reviewer OR, b) a qualified soil erosion and sediment control and/ or professional engineer

Review Certification by Conservation District:

1.) District: _____
Date of Affirmative Determination: _____

"I am making this certification in connection with an application under General Permit for the Discharge of Stormwater from Construction Activities, submitted to the commissioner by _____ for an activity located at _____.

I have personally examined and am familiar with the information that provides the basis for this certification, and I affirm, based on the review described in this general permit and on the standard of care for such projects, that the Stormwater Pollution Control Plan is adequate to assure that the activity authorized under this general permit will comply with the terms and conditions of such general permit and that all stormwater management systems: (i) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable and that conform to those in the Guidelines and the Stormwater Quality Manual; (ii) will function properly as designed; (iii) are adequate to ensure compliance with the terms and conditions of this general permit; and (iv) will protect the waters of the state from pollution."

Signature of District Professional and Date

Name of District Professional

License Number (if applicable)

Or

Review Certification by Qualified Professional:

Company Name: _____
Name: _____
License #: _____

Level of independency of professional:

Required for all projects disturbing over 1 acre:

1. I verify I am not an employee of the registrant. Yes

2. I verify I have no ownership interest of any kind in the project for which the registration is being submitted. Yes

Required for projects with more than 20 acres of site disturbance (in addition to questions 1&2):

3. I verify I did not engage in any activities associated with the preparation, planning, designing or engineering of the soil erosion and sediment control plan or stormwater management systems plan for this registrant. Yes

4. I verify I am not under the same employ as any person associated with the preparation, planning, designing or engineering of the soil erosion and sediment control plan or stormwater management systems plan for this registrant. Yes

Part IX: Reviewing Qualified Professional Certification (continued)

"I hereby certify that I am a Qualified Professional engineer licensed in the state of Connecticut and in good standing or qualified soil erosion and sediment control professional, or both, as defined in the General Permit for Discharge of Stormwater from Construction Activities (general permit) and as further specified in Sections 2.2.16.1.a and 2.2.16.1.b of the general permit, submitted to the Commissioner by

_____ for an activity located at

_____ .
I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 2.2.16.3 of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I further certify that I have made the affirmative determination in accordance with Sections 2.2.13.1 and 2.2.13.2 of this general permit. I understand that this certification is part of an application submitted in accordance with Section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a Qualified Professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."

Signature of Reviewing Qualified Professional

Name of Reviewing Qualified Professional

License No.

Affix P.E./ L.A. Stamp Here

Construction Contracts - Required Contract Provisions (FHWA and State Funded Contracts)

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Index of Exhibits

- EXHIBIT A - FHWA Form 1273 (Begins on page 17)
- EXHIBIT B - Title VI Contractor Assurances (page 31)
- EXHIBIT C - Health Insurance Portability and Accountability Act of 1996 (HIPAA) (page 33)
- EXHIBIT D - Affirmative Action Policy Statement (page 41)
- EXHIBIT E - State Wage Rates & Other Related Information (Attached at the end)
- EXHIBIT F - Federal Wage Rates (Attached at the end)

1. Federal Highway Administration (FHWA) Form 1273

The Contractor shall comply with the Federal Highway Administration (FHWA), Form 1273 attached at Exhibit A, as revised, which is hereby made part of this contract. The Contractor shall also require its subcontractors to comply with the FHWA – Form 1273 and include the FHWA – Form 1273 as an attachment to all subcontracts and purchase orders.

2. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements

The Contractor shall comply with Title VI of the Civil Rights Act of 1964 as amended (42 U.S.C. 2000 et seq.), all requirements imposed by the regulations of the United States Department of Transportation (49 CFR Part 21) issued in implementation thereof, and the Title VI Contractor Assurances attached hereto at Exhibit B, all of which are hereby made a part of this Contract.

3. Requirements of Title 49, Code of Federal Regulations (CFR), Part 26, Participation by DBEs, as may be revised.

Pursuant to 49 CFR 26.13, the following paragraph is part of this Contract and shall be included in each subcontract the Contractor enters into with a subcontractor:

“The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26, Participation by DBEs, in the award and administration of U.S. DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this contract or such other remedy as ConnDOT (recipient) deems appropriate, which may include, but is not limited to: (1) Withholding monthly progress payments, (2) Assessing sanctions, (3) Liquidated damages; and/or, (4) Disqualifying the contractor from future bidding as non-responsible.”

4. Contract Wage Rates

The Contractor shall comply with:

The Federal and State wage rate requirements indicated in Exhibits F and G hereof, as revised, are hereby made part of this Contract. The Federal wage rates (Davis-Bacon Act) applicable to this Contract shall be the Federal wage rates that are current on the US Department of Labor website (<http://www.wdol.gov/dba.aspx>) as may be revised 10 days prior to bid opening. These applicable Federal wage rates will be physically incorporated in the final contract document executed by both parties. The Department will no longer physically include revised Federal wage rates in the bid documents or as part of addenda documents, prior to the bid opening date. During the bid advertisement period, bidders are responsible for obtaining the appropriate Federal wage rates from the US Department of Labor website.

To obtain the latest Federal wage rates go to the US Department of Labor website (link above). Under Davis-Bacon Act, choose “Selecting DBA WDs” and follow the instruction to search the latest wage rates for the State, County and Construction Type. Refer to the Notice to Contractor (NTC) - Federal Wage Determinations (Davis Bacon Act).

If a conflict exists between the Federal and State wage rates, the higher rate shall govern.

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.

5. 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.

6. 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 31-53a 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.

7. 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).

8. 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.

9. Non-Discrimination Requirement and Certification (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised): References to “minority business enterprises” in this Section are not applicable to Federal-aid projects/contracts. Federal-aid projects/contracts are instead subject to the Federal Disadvantaged Business Enterprise Program.

- (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 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;
 - v. “good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;

- vi. "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;
- vii. "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced;
- viii. "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;
- ix. "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
- x. "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:

10. 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.

11. 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.

12. 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.

13. Substitution of Securities for Retainages on State Contracts and Subcontracts

This Contract is subject to the provisions of Section 3-112a of the General Statutes of the State of Connecticut, as revised.

14. 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 D, and hereby made part of this Contract.

15. 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.

16. 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.

17. 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 and Contractor Parties' plants and places of business which, in any way, are related to, or 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.
- (b) 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.

- (c) 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.
- (d) 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.
- (e) 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.
- (f) The Contractor shall incorporate this entire Section verbatim into any contract or other agreement that it enters into with any Contractor Party.

18. 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.

19. 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.

20. 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.

21. 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.

bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

- (3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

23. 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.

24. 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:

- (1) 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;
- (2) 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
- (3) That the Contractor is submitting bids or proposals without fraud or collusion with any person.

25. 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.

26. 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.

27. 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.

28. Affirmative Action Policy Statement

The Contractor shall comply with the Affirmative Action Policy Statement, as applicable, attached at Exhibit E and hereby made part of this Contract.

29. 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

FHWA-1273 – Revised October 23, 2023

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. 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 contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. 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 to duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor'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.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. 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 race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor 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 corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, 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 action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants /

Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:

The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act ([29 CFR part 3](#))), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901–3907](#).

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in [29 CFR part 3](#); and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH-347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature*. The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification*. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention*. The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents*. The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers*. The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements*. If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures*. Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay*. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits*. Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio*. The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates*. Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity*. The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;

- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and

health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335.;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or

cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

EXHIBIT B
TITLE VI CONTRACTOR ASSURANCES
APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Regulations relative to Nondiscrimination in Federally assisted programs of the United States Department of Transportation Federal Highway Administration and Federal Transit Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Nondiscrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin, sex, age, disability, income or Limited English Proficiency in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration or Federal Transit Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor will so certify to the Recipient or the Federal Highway Administration or the Federal Transit Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Non-compliance:** In the event of the contractor's non-compliance with the non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration or the Federal Transit Administration may determine to be appropriate, including, but not limited to:

- a. withholding contract payments to the contractor under the contract until the contractor complies; and/or
- b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration or the Federal Transit Administration may direct as a means of enforcing such provisions including sanctions for non-compliance. Provided, that if the contractor becomes involved in, or is threatened with, litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX B

TITLE VI CONTRACTOR ASSURANCES

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following nondiscrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. § 2000d et seq.), (prohibits discrimination on the basis of race, color, national origin), as implemented by 49 C.F.R. § 21.1 et seq. and 49 C.F.R. part 303;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973 (23 U.S.C. § 324 et seq.) (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794 et seq.) (prohibits discrimination on the basis of disability); and 49 C.F.R. part 27;
- The Age Discrimination Act of 1975, as amended (42 U.S.C. § 6101 et seq.) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (Pub. L. 97-248 (1982)), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (102 Stat. 28) ("*... which restore[d] the broad scope of coverage and to clarify the application of Title IX of the Education Amendments of 1972, section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and Title VI of the Civil Rights Act of 1964.*");
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 --12189), as implemented by Department of Justice regulations at 28 C.F.R. parts 35 and 36, and Department of Transportation regulations at 49 C.F.R. parts 37 and 38;

- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. § 1681 et seq).

EXHIBIT C

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, sections 13400 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.
- (2) 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.
- (3) Effect of Termination
 - (A) Except as provided in (1)(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 is 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.
- (4) 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.
- (5) 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.
- (6) 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.
- (7) 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 D
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.)
3. 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 E

(Federal wage rate package will be inserted at the end after State wages for the final executed contract only. Refer to NTC – Federal Wage Determinations)

EXHIBIT F
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;
- (3) 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;
- (4) 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;
- (5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;

(6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;

(7) 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;

(8) 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;

(9) 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;

(10) 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;

(11) 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 non-compliance;

(12) 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;

(13) 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;

(14) 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

(15) 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.

(16) 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/wgmenu.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 ULTIMATELY ARISE CONCERNING 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).

Signed

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 FLOORLAYERS. 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 artwork 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 re-laid.)

☐ 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, Sheetmetal 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, fascia, 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

EXHIBIT E

INSERT FEDERAL WAGES HERE
EXHIBIT F

Minimum Rates and Classifications for
Heavy/Highway Construction

ID#: 26-6205

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: Thompson

State#: 0141-0158

FAP#: 0200(002)

Project: Replacement of Bridge No. 03474 Route 200 Over Interstate 395

CLASSIFICATION	Hourly Rate	Benefits
1) Boilermaker	50.21	30.01
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	46.09	36.29
2) Carpenters, Piledrivermen	44.48	29.74
2a) Diver Tenders	44.48	29.74
2b) Divers Effluent	67.52	29.74
3) Divers	52.94	29.74
03a) Millwrights	45.14	30.24
03b) Carpenter-Welder	44.98	29.74
03c) Carpenter: Working with creosote lumber or acid	45.48	29.74

4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	61.85	27.65
4a) Painters: Brush and Roller	41.17	27.65
4b) Painters: Spray	44.17	27.65
4bc) Painters: Spray Helper	42.17	27.65
4c) Painters: Steel Only	43.17	27.65
4d) Painters: Blast	46.17	27.65
4de) Painter: Blast Helper	42.17	27.65
4e) Painters: Tanks, Tower and Swingstage etc.	43.17	27.65
4f) Elevated Tanks (60 feet and above)	50.17	27.65
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)	50.25	37.47+3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	45.25	46.62 + 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)	52.08	36.80
----LABORERS-----		
8) Group 1: General Laborers and concrete specialist	37.0	30.47

As of: June 4, 2026

8) Group 1a: Acetylene Burners (Hours worked with a torch)	38.0	30.47
9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	37.25	30.47
10) Group 3: Pipelayers	37.5	30.47
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	37.5	30.47
12) Group 5: Toxic waste removal (non-mechanical systems)	39.0	30.47
13) Group 6: Blasters	38.75	30.47
Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	40.0	30.47
Group 8: Traffic control signalmen	22.2	30.47
Group 9: Hydraulic Drills	37.75	30.47
Group 10: Toxic Waste Removers A or B With PPE	40.0	30.47
----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	39.23	30.47 + a
13b) Brakemen, Trackmen, Miners' Helpers and all other men	38.26	30.47 + a

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----CLEANING, CONCRETE AND CAULKING TUNNEL----

14) Concrete Workers, Form Movers, and Strippers	38.26	30.47 + a
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15) Form Erectors	38.59	30.47 + a
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----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers, Miners Helpers	38.26	30.47 + a
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17) Laborers Topside, Cage Tenders, Bellman	38.15	30.47 + a
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18) Miners	39.23	30.47 + a
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----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ---

18a) Blaster	45.72	30.47 + a
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19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	45.52	30.47 + a
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20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	43.54	30.47 + a
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21) Mucking Machine Operator, Grout Boss, Track Boss	46.31	30.47 + a
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----TRUCK DRIVERS----(*see note below)

Block Truck	39.98	33.00 + a
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2 Axle	38.66	33.00 + a
Helpers	36.16	33.00 + a
Three Axle Trucks; Two Axle Mixer	38.77	33.00 + a
Three Axle Mixer	38.83	33.00 + a
Four Axle	38.89	33.00 + a
Four Axle Mixer	40.69	33.00 + a
5 Axle	38.89	33.00 + a
5 Axle Mixer	40.69	33.00 + a
Heavy Duty Trailer (40 tons and over)	41.16	33.00 + a
Heavy Duty Trailer (up to 40 tons)	39.89	33.00 + a
Snorkle Truck	39.04	33.00 + a
Swivel Dump and Tack Truck	38.89	33.00 + a
Euclids and Semi Trailer	38.94	33.00 + a

----POWER EQUIPMENT OPERATORS----

As of: June 4, 2026

Group 1: Crane Handling or Erecting Structural Steel or Stone, Hoisting Engineer (2 drums or over), Caisson Drilled Shaft over 14". (Trade License Required)	60.66	30.95 + a
Group 1a: Front End Loader (7 cubic yards or over); Work Boat 26 ft. and over.	55.6	30.95 + a
Group 2: Cranes (100 ton rate capacity and over). (Trade License Required)	60.24	30.95 + a
Group 2a: Cranes (under 100 ton rated capacity), Magni Type-360 Rotating Forklift.	59.2	30.95 + a
Group 2b: Excavator over 2 cubic yards; Pile Driver (\$3.00 premium when operator controls hammer), HF-1 Forklift, Drills with self contained power units, Micropile up to 14 inches helical pile.	55.17	30.95 + 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)	54.13	30.95 + a
Group 4: Trenching Machines; Lighter Derrick; CMI Machine or Similar; Koehring Loader (Skooper), Goldhofer.	53.61	30.95 + 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)	52.78	30.95 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller, Geothermal Drill.	52.78	30.95 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	52.35	30.95 + 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)	51.89	30.95 + a

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Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine, Rigger Foreman.	51.34	30.95 + 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).	50.74	30.95 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	47.91	30.95 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	47.91	30.95 + a
Group 12: Wellpoint Operator.	47.82	30.95 + a
Group 13: Compressor Battery Operator.	47.04	30.95 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	45.45	30.95 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	44.89	30.95 + a
Group 16: Maintenance Engineer and Articulating End Dump.	43.99	30.95 + a
Group 17: Portable Asphalt Plant Operator; Portable Crusher Plant Operator; Portable Concrete Plant Operator., Portable Grout Plant Operator, Portable Water Filtration Plant Operator.	49.95	30.95 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license), Rigger, Signalman.	46.6	30.95 + a
Surveyor: Chief of Party	50.21	30.95 + a

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Surveyor: Assistant Chief of Party	46.3	30.95 + a
Surveyor: Instrument Man	44.55	30.95 + a
Surveyor: Rodman or Chairman	38.34	30.95 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----

20) Lineman, Cable Splicer, Technician	59.91	34.00
21) Heavy Equipment Operator	53.92	31.88
22) Equipment Operator, Tractor Trailer Driver, Material Men	50.92	30.84
23) Driver Groundmen	44.93	28.47
23a) Groundman Experienced	32.95	13.99

----OUTSIDE LINE CONSTRUCTION----

24) Driver Groundmen	43.78	28.42
25) Groundmen	32.1	13.95
26) Heavy Equipment Operators	52.53	31.83

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27) Linemen, Cable Splicers, Dynamite Men	58.37	33.94
28) Material Men, Tractor Trailer Drivers, Equipment Operators	49.61	30.79
29) Technician	56.12	32.85
----COMMUNICATION----		
Sales & Service Technician: To include but not limited to: Installation, Repair, Splicing and Maintenance	52.07	20.62
----DREDGING----		
Class A1: Mechanical Dredge Operator	48.48	17.32+a+b
Class B1: Maintenance Engineer	41.93	16.87+a+b
Class C1: Mate/Welder	38.38	16.62+a+b
Class D: Deckhand	30.86	16.09+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: June 4, 2026

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 journeyman 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
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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.