

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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SEPTEMBER 11, 2019
FEDERAL AID PROJECT NO'S. 0014(150) & 0014(167)
STATE PROJECT NO'S. 0099-114 & 0099-0115

RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS
U.S. ROUTES 7 & 44 (MAIN STREET)

Town of North Canaan
Federal Aid Project No's. 0014(150) & 0014(167)

The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 817, 2016, as revised by the Supplemental Specifications dated July 2018 (otherwise referred to collectively as "ConnDOT Form 817") is hereby made part of this contract, as modified by the Special Provisions contained herein. Form 817 is available at the following DOT website link <http://www.ct.gov/dot/cwp/view.asp?a=3609&q=430362>. 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 Manual is available at the following DOT website link <http://www.ct.gov/dot/cwp/view.asp?a=2288&q=259258>. The Special Provisions relate in particular to the Railroad-Highway Grade Crossing Improvements U.S. Routes 7 & 44 (Main Street) in the Town of North Canaan.

COMBINED PROJECTS

There will be but one Contract for Federal Aid Project No. 0014(150) / State Project No. 0099-0114 and Federal Aid Project No. 0014(167) / State Project No.0099(0115). The two projects will be considered as a single contract in all respects.

CONTRACT TIME AND LIQUIDATED DAMAGES

For Federal Aid Project No. 0014(0142) State Project No. 0099-114 and Federal Aid Project No. 0014(144) State Project No. 0099-0115, Two Hundred Eight (208) calendar days will be allowed for completion of the work and the liquidated damages charge to apply will be One Thousand Five Hundred Dollars (\$1,500.00) per calendar day.

NOTICE TO CONTRACTOR – POTENTIAL MODIFIED AWARD SCHEDULE

The contractor is hereby given notice that this contract will not be awarded until all State and Federal funding approvals have been received. If funding approvals are not received, this Contract award may be delayed or the Contract may be withdrawn and re-advertised at the discretion of the Department, per section XIII of the Construction Contract Bidding and Award Manual. Any delay to the Contract award or failure to award shall not be the basis for any claims by any bidder.

NOTICE TO CONTRACTOR - 1.05 CONTROL OF THE WORK

1.05.03 - CONFORMITY WITH PLANS AND SPECIFICATIONS (INCLUDING QUALITY CONTROL)

The Contractor is hereby notified that a Quality Management Plan will be required for this Project in conformance with Standard Specifications (Supplemented July 2017) Article 1.05.03 – “Conformity with Plans and Specifications (including Quality Control).”

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 - CONTRACT DURATION

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

**NOTICE TO CONTRACTOR – VERIFICATION OF PLAN DIMENSIONS
AND FIELD MEASUREMENTS**

The Contractor is responsible for verifying all dimensions before any work is begun. Dimensions of the existing structures shown on the plans are for general reference only; they are not guaranteed. The Contractor shall take all field measurements necessary to assure proper fit of the finished work and shall assume full responsibility for their accuracy. When shop drawings and/or working drawings based on field measurements are submitted for approval and/or review, the field measurements shall also be submitted for reference by the reviewer.

In the field, the Contractor shall examine and verify all existing and given conditions and dimensions with those shown on the plans. If field conditions and dimensions differ from those shown on the plans, the Contractor shall use the field conditions and dimensions and make the appropriate changes to those shown on the plans as approved by the Engineer. All field conditions and dimensions shall be so noted on the drawings submitted for approval.

There shall be no claim made against the Department by the Contractor for work pertaining to modifications required by any difference between actual field conditions and those shown by the details and dimensions on the contract plans. The Contractor will be paid at the unit price bid for the actual quantities of materials used or for the work performed, as indicated by the various items in the contract.

NOTICE TO CONTRACTOR – VERIFICATION OF EXISTING CONDITIONS

Included in this contract is the modification, alteration, and/or addition to existing structures. The Contractor is cautioned that it is their responsibility to verify locations, conditions, and field dimensions of all existing features as actual conditions may vary from information shown on the design plans, the record plans or contained elsewhere in the Specifications.

The cost for this work and incorporation of information into the working drawings and shop drawings is part of the general cost of the work. Accordingly, no additional payment will be made for this work.

NOTICE TO CONTRACTOR – COORDINATION WITH EXISTING UTILITIES

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

Utility relocation work, by others, is required within the project limits. The Contractor shall schedule their operations in such a manner as to minimize interferences with utility relocation/protection activities. There are utility relocations for aerial utilities. The proposed pole relocations are shown on the utility plan for information purposes only and are subject to change.

The contractor is hereby notified that the utility work schedules will have to be accommodated prior to proceeding. The Contractor shall coordinate with utility companies to accommodate their schedule with all utility company schedules. This includes, but is not limited to, providing access staging, and sequencing prior to proceeding. Any inconvenience or delay that may result from utility company work shall be included in the contract bid for the work. The work to repair or replace any damage to utilities caused by the Contractor's operations will be solely at the Contractor's expense, in accordance with Form 817, Section 1.07.

As required by State Law, the Contractor shall contact "Call Before You Dig." Telephone 1-800-922-4455 for the location of public underground facilities in accordance with Section 16-345 of the Regulations of the Department of Public Utility Control. The underground activities should be clearly delineated within all areas of proposed excavation prior to performing actual excavation. The notification of "Call Before You Dig" must be made at least 48 hours in advance.

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 information shown on the plans or continued elsewhere in the specifications.

**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). Contact Mr. Barry A. Schilling at (860) 594-2769 of the Division of Traffic Engineering regarding any SIMS or GPS questions. Refer to the special provision for Section 12.00 General Clauses For Highway Signing.

NOTICE TO CONTRACTOR – COORDINATION WITH RAILROAD CONTRACTOR/WORK

The Contractor is hereby alerted that at the same time or immediately prior to the work being done as part of this contract, work will be performed at the railroad-highway grade crossing by others. The Housatonic Railroad Company (the “Railroad”) and/or their subcontractor(s) will be installing vehicular gates, railroad flashing lights, removing a portion of the rubber crossing surface and installing other miscellaneous railroad appurtenances as indicated on the project plans.

The Contractor is to coordinate the work involved with this project with the Railroad and/or their subcontractors working in the same area. Specifically, the Contractor shall coordinate earthwork and drainage installation with the Railroad when the detour pattern is erected.

No claims shall be allowed by the Contractor by reason of delays caused by railroad traffic operations or by the construction being performed by the Railroad as part of the railroad related items depicted on the project plans.

The Contractor’s attention is directed to the attached requirements of the Housatonic Railroad Company for work in the railroad right-of-way. The Contractor shall comply with these requirements, coordinate his/her work with the Railroad company, and be responsible for all damages to the Railroad or to adjacent properties as a result of damages to the Railroad, that may be incurred as a result of his/her operations.

The State of Connecticut will conduct a pre-construction meeting prior to the start of construction to coordinate the work related with this project.

NOTICE TO CONTRACTOR - RAILROAD SPECIFICATIONS

The contractor is hereby notified that all railroad 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 - PROCUREMENT OF MATERIALS

Upon award, the Contractor shall proceed with shop drawings, working drawings, procurement of materials, and all other submittals required to complete the work in accordance with the contract documents.

NOTICE TO CONTRACTOR - PROTECTION OF EXISTING UTILITIES

The Contractor's attention is directed to the need for the protection of the existing utilities during the construction of the proposed rehabilitation work.

The Contractor shall be responsible for protecting existing utilities prior to and during the construction operation. The Contractor shall be liable for all damage 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.

The Contractor's means and method of jacking the girders shall be such that it will not cause damage to existing utilities or their support brackets. Damages to utilities associated with the girder jacking operation shall be the Contractor's responsibility and shall bear the cost to repair or replace damaged elements.

Any damage to any existing utility shall be repaired including all materials, labor, etc., to the Engineer's satisfaction at no cost to the State.

NOTICE TO CONTRACTOR – CONTRACTOR TRAINING REQUIREMENT FOR 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

In accordance with Connecticut General Statute 31-53b and Public Act No. 08-83, the Contractor is required to furnish proof that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53, 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.

Proof of compliance with the provisions of the statute shall consist of a student course completion card issued by the federal Occupational Safety and Health Administration, or other such proof as deemed appropriate by the Commissioner of the Connecticut Department of Labor, dated no earlier than five years prior to the commencement of the project. Each employer shall affix a copy of the construction safety course completion card for each applicable employee to the first certified payroll submitted to the Department of Transportation on which the employee's name first appears.

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.

This section does not apply to employees of public service companies, as defined in section 16-1 of the 2008 supplement to the General Statutes, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

The internet website for the federal Occupational Safety and Health Training Institute is <http://www.osha.gov/fso/ote/training/edcenters>.

Additional information regarding this statute can be found at the Connecticut Department of Labor website, <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>.

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".

NOTICE TO CONTRACTOR – SITE CLEANLINESS

The Contractor is hereby notified that all areas utilized for construction activities including all onsite and offsite facilities shall be maintained so as to be free of rubbish, trash and deleterious construction debris at all times. The use of covered and secured trash receptacles is required. All receptacles will be regularly emptied and maintained.

There will be no direct payment for maintaining the site cleanliness of the construction areas under the contract.

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 two formats:

- 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)

For a complete list of EED files, see the EED file manifest (PDF) located in the EED_XXXX-XXXX.zip file (XXXX-XXXX is the project number) which is posted with the contract PS&E's on the State Contracting portal.

NOTICE TO CONTRACTOR - CONSTRUCTION CONTRACTOR
DIGITAL SUBMISSIONS

Upon execution of the Contract, the Contractor acknowledges and agrees that contractual submittals for this Project shall be submitted and handled through a system of paperless electronic means as outlined in the special provision for Section 1.05 herein.

Shop drawings, working drawings, and product data shall be created, digitally signed and delivered by the Contractor in accordance with the Department's [Contractor Digital Submission Manual](#) (CDSM). Other deliverables that are required by other special provisions shall be similarly submitted.

Access credentials will be provided to the Contractor by the Department.

The Department will provide the Contractor with a list of email addresses that are to be used for each submittal type.

The Department shall not be held responsible for delays, lack of processing or response to submittals that do not follow the specified guidelines in the CDSM.

NOTICE TO CONTRACTOR – USE OF STATE POLICE OFFICERS

The Department will reimburse services of State Police Officers as a direct payment to the Department of Emergency Services and Public Protection. Payment for State Police Officers must be approved by the Engineer. Any State Police Officers used by the Contractor for its convenience is the responsibility of the Contractor. A separate payment item for State Police Officers is not included in this Contract.

Any costs associated with coordination and scheduling of State Police Officers shall be included in the lump sum bid price for Item No. 0971001A – Maintenance and Protection of Traffic.

NOTICE TO CONTRACTOR – RELOCATION OF EXISTING UTILITIES

It is the responsibility of the Contractor to completely coordinate his operations with the utility companies/agencies and to ensure that the required utility relocations and/or removals are completed prior to the proposed construction. The Contractor shall notify the Engineer immediately of any utility that conflicts with the construction proposed under this contract.

The Contractor's attention is also directed to the requirements of the "Notice to Contractor – Protection of Existing Utilities," Section 1.05.06 – "Cooperation with Utilities (Including Railroads)" and Section 1.05.07 – "Coordination with Work by Other Parties."

NOTICE TO CONTRACTOR – PERMITS

It is the responsibility of the Contractor to ensure all construction activities follow the approved permits that are listed below:

1. CT DOT – Flood Management General Certification
2. USACE – Self Verification Form
3. CT DEEP – 401 Water Quality Certification (automatic via USACE SVF)
4. CT DEEP – Inland Wetlands General Permit
5. CT DEEP – Stormwater Discharge Permit

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 – UTILITY GENERATED SCHEDULE

The attached project specific utility work schedule(s) 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.

UTILITY WORK SCHEDULE Rev 08 02 2016			
CTDOT Project Number:	99-114/115	Town:	North Canaan
Project Description: East Main St			
CTDOT Utilities Engineer:			
Phone:		Email:	
Utility Company: Frontier Communications			
Prepared By: Tom DeLorenzo		Date Prepared: 5/23/2019	
Phone: 203-238-5202		Email: thomas.a.delorenzo@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>All Work to be done by Frontier, and it's contractors. All conduit material will be supplied by Frontier. Frontier contractor will adjust frame and covers after all final grades are met.</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>			

UTILITY WORK SCHEDULE Rev 3/2015

CTDOT Project Number: 99-114/115
 Utility Company: Frontier Communications
 Prepared By: Tom DeLorenzo Total Working Days: 2.5

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)
12+00 to 21+00	Adjust frame & covers after final grade is completed.		2.5

UTILITY WORK SCHEDULE Rev 3/2015	
CTDOT Project Number: 99-115	Town: North Canaan
Project Description: Railroad - Highway Grade Crossing Improvements	
CTDOT Utilities Engineer: Xiuyun Cai	
Phone: 860 594-3269	Email: xiuyun.cai@ct.gov
Utility Company: Aquarion Water Company	
Prepared By: Carlos J. Vizcarrondo	Date Prepared: Jan-19
Phone: 203 337-5950	Email: cvizcarrondo@aquarionwater.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>Relocate the existing 6 inch water main along the south side of Main Street (Rtes. 7 & 44) between Railroad Street and the Housatonic Valley Railroad crossing to avoid storm drainage conflicts.</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>With the exception of scheduled overnight outage(s), all existing water mains must remain in service.</p>	

UTILITY WORK SCHEDULE Rev 3/2015

CTDOT Project Number:	99-115
Utility Company:	Aquarion Water Company
Prepared By:	Carlos Vizcarrondo
Total Working Days:	12

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)
11+43 to 11+78 LT	Excavate & restrain pipe joints from proposed cap @ 11+78 westerly for 35 +/- feet.	Establish required traffic control.	2
11+74 to 12+23 LT	Install proposed 6 inch water main (dry) with plugs and air vents.	None.	2
11+74 to 12+23 LT	Fill, chlorinate and pressure test the dry 6 inch water main.	Installation of the dry water main segment.	6
11+78 to 12+30 LT	Utilize an overnight shutdown to cut & cap the 6 inch water main, install gate valves and activate new main.	Aquarion acceptance of the new water main segment test results.	1
11+78 to 12+30 LT	Switch over three services to the offset water main.	Activation of the offset water main.	1

UTILITY WORK SCHEDULE Rev 08 02 2016	
CTDOT Project Number: 99-114/99-115	Town: North Canaan
Project Description: CTDOT RR Crossing Improvements Rt44/Rt 7 North Canaan	
CTDOT Utilities Engineer: Xiuyun Cai	
Phone: 860-594-3269	Email: Xiuyun.Cai@ct.gov
Utility Company: Comcast	
Prepared By: Mark Rohssler	Date Prepared: 12/6/2018
Phone: 860-883-6026	Email: Mark_Rohssler@cable.comcast.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>Rebuild 4 spans of strand and cable to reach relocated pole #762 and shift 2 poles that are being replaced in place. Delash, shift and relash 3 fiber bundles. Raise span of strand and cable at easterly crossing to obtain clearance for new gates. We will shift, if we have the height on pole on south side of street, or shift to new pole if needed for height.</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>	

UTILITY WORK SCHEDULE Rev 3/2015

CTDOT Project Number: CT DOT 99-114/99-115
 Utility Company: Comcast
 Prepared By: Mark Rohssler Total Working Days: 6

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)
Pole 2078 to 899	delash 3 fiber bundles and hang on rollers. Build new stand and cable Splice over and wreck out old strand	New poles set and Eversource work Completed	3
Pole 2078 to 899	Shift and relash fiber	New poles set and Eversource work completed	2
Pole 2473 to 2957	Shift and raise span	Will shift if we have height or shift to new pole if one needs to be set	1

UTILITY WORK SCHEDULE Rev 3/2015	
CTDOT Project Number: 99-114/115	Town: NORTH CANAAN
Project Description: CDOT RR CORSSING IMPROVEMENTS RT # 7/44 NORTH CANAAN	
CTDOT Utilities Engineer: STEVEN FRAYSIER	
Phone: 203-608-2453	Email: SFRAYSIER@BLCOMPANIES.COM
Utility Company: EVERSOURCE ENERGY	
Prepared By: S. WASILUS	Date Prepared: 11/28/2018
Phone: 860-496-5128	Email: SUSAN.WASILIS@EVERSOURCE.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>Eversource's work involves replacement/relocation of 3 poles. Installing and removing of primary/secondary conductors, crossarms, risers, anchors, guys and other appentences. Transferring of our facilities from existing poles to new pole sets. This work will require overtime work due to the interruption of service to commercial customers during the change over.</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>Inclement weather, customer outages and 6 months lead time for obtaining an engineering permit from the Housatonic Railroad.</p>	

UTILITY WORK SCHEDULE Rev 3/2015

CTDOT Project Number: 99-114-115

Utility Company: EVERSOURCE ENERGY

Prepared By: S. WASILUS

Total Working Days: 174

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)
	Obtain Engineering permit from Housatonic Railroad	Application to the Housatonic Railroad	130
	Receive railroad permit. Order materials and schedule crews	CDOT notice to proceed.	20
	Installation of new poles and anchors	Materials received. CDOT marking curb lines and establishing roper road grades	5
	Installation of new conductors, guy wires	Installation of new poles	3
	Transferring of existing equipment from old poles to new poles	Installation of new conductors, guy wires	3
	Arrange customer outages	Transferring of existing equipment	10
	Removal of old conductors, poles and anchors	Customer outages	3

NOTICE TO CONTRACTOR – TIME RESTRICTIONS FOR DRAINAGE WORK

The contractor shall not commence construction on the proposed drainage system during the following period:

April 1 through May 30

The existing drainage system shall remain in-place until June 1 to allow the area to drain. Approval from the Engineer is required to commence construction before the aforementioned date.

NOTICE TO CONTRACTOR - EVERSOURCE

The contractor is hereby notified that coordination with Eversource will be required to identify and repair a recurring water issue located at Eversource utility pole #2078, adjacent to the proposed sidewalk. The contractor shall coordinate with Eversource to develop a plan and solution during construction of the project.

NOTICE TO CONTRACTOR - TRAFFIC SIGNALS

The Contractor is hereby notified that certain conditions pertaining to the installation of new signals and maintenance of traffic signal operations are required when relevant, as part of this contract.

Qualified/Unqualified Workers

U.S. Department of Labor

Occupational Safety & Health Administration (OSHA) www.osha.gov

Part Number 1910

Part Title Occupational Safety & Health Administration

Subpart S

Subpart Title Electrical

Standard Number 1910.333

Title Selection and use of work practices

Completion of this project will require Contractor employees to be near overhead utility lines. All workers and their activities when near utility lines shall comply with the above OSHA regulations. In general, unqualified workers are not allowed within 10 feet of overhead, energized lines. It is the contractor's responsibility to ensure that workers in this area are qualified in accordance with OSHA regulations.

The electric distribution company is responsible to provide and install all necessary anchors and guy strands on utility poles. It is the Contractors responsibility to coordinate with the utility company to ensure proper placement of the anchor.

For utility poles owned and maintained by Frontier Communications:

Frontier will be responsible to provide and install the pole anchor. The installation of the guy wire will be the responsibility of the Contractor and should follow Frontier specifications.

The Controller Unit (CU) shall conform to the current edition of the Functional Specifications for Traffic Control Equipment. The Functional Specifications require the CU meet NEMA Standard Publication No. TS2-1992 Type 2. The Functional Specifications are available on the Departments' web site <http://www.ct.gov/dot/site/default.asp>, click on "Doing Business with CONNDOT", under Engineering Resources click on "Traffic Engineering", Scroll down to Traffic Documents click on "Functional_Specifications_for_Traffic_Control_Equip.pdf".

Utility poles cannot be double loaded without proper guying.

The contractor will be held liable for all damage to existing equipment resulting from his or his subcontractor's actions. A credit will be deducted from monies due the Contractor for all maintenance calls responded to by Department of Transportation personnel.

All existing traffic appurtenances, in particular steel span poles, controller cabinets and pedestals shall be removed from the proposed roadway prior to excavation. The Contractor shall work with the utility companies to either relocate or install all traffic signal appurtenances prior to the roadway reconstruction.

The Contractor must install permanent or temporary spans in conjunction with utility company relocations. He then must either install the new signal equipment and controller or relocate the existing equipment.

The 30 Day Test on traffic control equipment, as specified in Section 10.00, Article 10.00.10 - TESTS, will not begin until the items listed below are delivered to the Department of Transportation, Traffic Signal Lab in Rocky Hill.

Five (5) sets of cabinet wiring diagrams. Leave one set in the controller cabinet.
All spare load switches and flash relays.

NOTICE TO CONTRACTOR – RECENT REVISIONS

The Contractor is hereby notified that the following Traffic Engineering Special Provisions have been revised:

Section 10.00 – General Clauses for Highway Illumination and Traffic Signal Projects

- Updated as-built plan requirements

1105xxxA – X_Way_X_Section Traffic Signal:

- Changed the color of housing, brackets, and hardware
- Clarified color of housing door and visor.
- Backplates:
 - changed to louvered
 - changed retroreflective strip sheeting type
 - changed aluminum alloy to 5052-H32
 - provided range for acceptable thickness

1106xxxA – X_Way_Pedestrian Signal:

- Changed the color of housing, brackets, and hardware
- Clarified color of housing door and visor

1107007A – Pedestrian Pushbutton and Sign (Piezo)

- Changed the color of housing, brackets, and hardware

1107011A – Accessible Pedestrian Signal and Detector (Type A)

- Changed the color of housing, brackets, and hardware
- Changed the sign size to 9” x 15”
- Changed to include confirmation light

1112286A – 360 Degree Camera Assembly

1112288A – IP Video Detection Camera Assembly

- Added installation best practices guide

The Contractor is hereby notified that Traffic Engineering’s following Standard Sheets have been revised:

TR-1105_01 – Traffic Signals and Cable Assignments

- Revised grounding note for span and other minor revisions

TR-1107_01 – Pedestrian Push Buttons

- Updated pedestrian sign legends and notes.

TR-1114_01 – Bonding and Utility Pole Attachment Details, Sign Hanger, “Y” Clamp Detail

- Revised wood pole grounding details, added ground rod.

NOTICE TO CONTRACTOR – SIGN PLACEMENT

The contractor is hereby notified that all proposed signs shall be coordinated with the North Canaan Fire District before installation commences. The Contractor shall also coordinate the consolidation of existing signs through the site area with the Fire District. Coordination will begin at the Pre-Construction meeting with appropriate parties.

NOTICE TO CONTRACTOR - Federal Rail Safety Regulations (49 C.F.R. Part 219) Concerning Alcohol and Drug Testing

On October 16, 2008, the United States Congress enacted the Rail Safety Improvement Act of 2008 (RSIA). RSIA directs the Federal Railroad Administration (FRA) to promulgate new safety regulations related to railroad safety. The purpose of this NTC is to notify you of certain requirements recently promulgated by the FRA that may be applicable to work you are currently performing, or may in the future perform, for the Connecticut Department of Transportation (Department).

On June 10, 2016, the FRA published a final rule expanding the scope of its drug and alcohol testing regulations (FRA Regulations) to provide that “[e]ach railroad must ensure that a regulated employee is subject to being selected for random testing... whenever the employee performs regulated service on the railroad’s behalf.” 49 C.F.R. § 219.601. A “regulated employee” includes a contractor to a railroad or any individual who is performing activities for a railroad and includes those contractors, consultants or individuals who are deemed “maintenance-of-way” employees under 49 CFR.Part 219 (See 49 C.F.R. §219.5).

The term maintenance-of-way (MOW) employee, as used in 49 C.F.R. Part 219, is defined in 49 C.F.R. § 214.7 as “any employee...of a contractor to a railroad, whose duties include inspection, construction, maintenance or repair of railroad track, bridges, roadway, signal and communications systems, electric traction systems, roadway facilities or roadway maintenance machinery on or near track or with the potential of fouling a track, and flagmen and watchmen/lookouts.” (collectively, MOW Activities).

The final rule, which is effective June 12, 2017, requires contractors and consultants employing MOW employees to submit a Part 219 Compliance Plan to FRA prior to the effective date. Please consult the following link to the model drug and alcohol plan prepared by the FRA for guidance.

<https://www.fra.dot.gov/eLib/details/L02814>

The final rule mandates, among other things, the establishment of a random testing pool to ensure a testing rate of 50% of MOW employees for drugs and 25% of MOW employees for alcohol on an annual basis. For more information related to the requirements, please refer to:

<http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5&node=49:4.1.1.1.14>

Every contractor or consultant that is performing MOW Activities must comply with its obligations under 49 C.F.R. Part 219 to ensure that all MOW employees are being randomly tested for drugs and alcohol. Failure of a contractor or consultant to timely comply with the FRA Regulations may subject that firm to civil penalties. In addition, MetroNorth Railroad (MNR) has stated that contractors or consultants who do not comply with the FRA regulations will not be able to work on MNR property.

The Department strongly urges all contractors and consultants to consult with their attorneys and/or to conduct their own independent due diligence regarding the requirements imposed by the new FRA Regulations to determine what steps are necessary to assure compliance. The information provided herein is advisory in nature and is offered without warranty of any kind. The Department does not accept any responsibility or liability for the accuracy, content, completeness, legality, or reliability of the information contained herein.

Any questions regarding the FRA Regulations concerning drug and alcohol testing should be directed to: Mr. Gerald Powers, Drug and Alcohol Program Manager, Office of Safety Enforcement, Federal Railroad Administration, 1200 New Jersey Avenue SE, Mail Stop 25, Washington, DC 20590 or via telephone (202) 493-6313.

GENERAL

**NOTICE TO CONTRACTOR – TRAFFIC OPERATIONS OVER
RAILROAD-HIGHWAY GRADE CROSSING**

The Contractor will not be allowed to queue traffic over the railroad crossing at any point during the construction of the project. If, due to the nature of the Contractor's operations, queuing is unavoidable, the Contractor shall utilize the Railroad's flagging services to ensure that vehicles are kept clear of the crossing area. Subject to the approval of the Railroad and Engineer, Uniformed Flaggers and/or Police Officers, Town or State, may be used in lieu of railroad flaggers.

The Contractor shall coordinate its work with the Railroad's authorized representative:

Mr. Matt Boardman
Project Engineer
Housatonic Railroad Company, Inc.
P.O. Box 1146
90 Main Street
Canaan, CT 06018

Office: (860) 824-0850, Ext. 17
Mobile: (860) 307-7021
Email: m.boardman@hrrc.com

NOTICE TO CONTRACTOR – RAILROAD SAFETY ORIENTATION TRAINING

The Contractor is hereby alerted that part of the work being done as part of this contract, that all individuals, including representatives and employees of the Contractor as well as any subcontractor(s) working for the Contractor, before entering onto railroad property or coming within twenty-five (25) feet of the centerline of track shall first complete **Housatonic Railroad Roadway Worker Protection Training for Railroad Contractors** web-based training.

The Contractor shall contact the Railroad's authorized representative for information concerning Housatonic Railroad safety orientation training:

Roadway Worker Training, LLC
315 West Town Place
Suite 8
St. Augustine, FL 32092

Telephone: (904) 296-8088
Toll Free: (866) 479-8462

Web Site: <https://www.rrtrainers.com/product/2019-housatonic-rr-roadway-worker-protection-training-for-railroad-contractors/>

Any cost incurred by the Contractor pertaining to the safety orientation training is non-reimbursable by the State of Connecticut.

NOTICE TO CONTRACTOR - CONSTRUCTION CONTRACTOR
DIGITAL SUBMISSIONS

Upon execution of the Contract, the Contractor acknowledges and agrees that contractual submittals for this Project shall be submitted and handled through a system of paperless electronic means as outlined in the special provision for Section 1.05 herein.

Shop drawings, working drawings, and product data shall be created, digitally signed and delivered by the Contractor in accordance with the Department's [Contractor Digital Submission Manual](#) (CDSM). Other deliverables that are required by other special provisions shall be similarly submitted.

Access credentials will be provided to the Contractor by the Department.

The Department will provide the Contractor with a list of email addresses that are to be used for each submittal type.

The Department shall not be held responsible for delays, lack of processing or response to submittals that do not follow the specified guidelines in the CDSM.

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
XXX	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 - ALL-INCLUSIVE DRAINAGE

ADDED SECTIONS:

2.86 – DRAINAGE TRENCH EXCAVATION

ROCK IN DRAINAGE TRENCH EXCAVATION

5.86 – CATCH BASINS, MANHOLES AND DROP INLETS

6.86 – DRAINAGE PIPES

DRAINAGE PIPE ENDS

This Contract contains the above-noted Special Provisions for all-inclusive drainage, developed to replace the following Sections in their entirety:

- Section 5.07 – *Catch Basins, Manholes and Drop Inlets*
- Section 6.51 – *Culverts*
- Section 6.52 – *Culvert Ends*

The Section 5.86 and 6.86 items include excavation and bedding material in the drainage structure, pipe and pipe end unit prices.

Section 2.05 *Trench Excavation* may be included for miscellaneous trenching, where necessary, but will not be used with all-inclusive drainage items.

Other Standard Specifications, Supplemental Specifications or Special Provisions may contain references to Articles or Subarticles from previous versions of Sections 5.07, 6.51 and 6.52 which are no longer valid.

The following Standard Specifications Sections or Supplements contain references to Articles or Subarticles from Section 2.05 which shall remain in effect:

- Section 2.06 – *Ditch Excavation*
- Section 5.06 – *Retaining Walls, Endwalls and Steps*
- Section 7.51 – *Underdrains and Outlets*
- Section 10.01 – *Trenching and Backfilling*

‘Rock in Drainage Trench Excavation’ is now defined in Section 2.86. ‘Rock in Trench Excavation’ will remain in Section 2.05 and may be used with trenching not associated with all-inclusive drainage items.

Any references to Articles beginning with “5.07,” “6.51,” or “6.52” shall refer to the pertinent topic or materials in the new Special Provisions contained herein.

NOTICE TO CONTRACTOR - ARCHITECTURAL AND INDUSTRIAL MAINTENANCE COATINGS

This Contract includes the application of materials subject to the Volatile Organic Compounds (VOC) content limits stated in the Regulations of Connecticut State Agencies (RCSA) Sections 22a-174-41 and -41a. All architectural and industrial maintenance (AIM) coatings and applications of such coatings must comply with these regulations.

The Contractor shall submit a Material Safety Data Sheet/Safety Data Sheet or Product Technical Data Sheet developed by the manufacturer of each material that may be subject to the Regulations. The submittal must verify both the type of AIM and its VOC Content. VOC content shall be determined based on the formulation data supplied by the materials manufacturer.

The Contractor may only use AIM coatings that contain VOCs below the respective coating category Phase II limits specified in Table 1 if either:

- a) the coating was manufactured on or after May 1, 2018, **or**
- b) the coating is being applied after April 30, 2021.

The Contractor may use AIM coatings that contain VOCs exceeding the respective coating category Phase II limits specified in Table 1 only if all of the following four conditions are met:

- a) the coating is being applied on or before April 30, 2021,
- b) the coating contains VOCs below the applicable Phase I limits specified in Table 1,
- c) the coating was manufactured prior to May 1, 2018, **and**
- d) the coating container(s) are dated (or date coded) as such.

For any coating that is not categorized within Table 1, the Contractor shall classify the coating as follows and apply corresponding limits in Table 1.

- Registers gloss <15 on an 85-degree meter or <5 on a 60-degree meter) – Flat Coating,
- Registers gloss of ≥ 15 on an 85-degree meter and ≥ 5 on a 60-degree meter) - Nonflat Coating,
- Registers gloss of ≥ 70 on a 60-degree meter - Nonflat-High Gloss Coating.

The Contractor must close all containers of coating and solvent when not in use.

Coating container labels must display the date the coating was manufactured, the manufacturer's recommendation regarding thinning with solvent, and the coating's VOC content in grams per liter (g/L) of coating. Certain coating categories as noted in Table 1 have additional labeling requirements.

The Contractor may add additional solvent to a coating only if such addition does not cause the coating to exceed the applicable VOC limit specified Table 1. The Contractor must adhere to type(s) of solvent and maximum amount of solvent recommended by coating manufacturer. VOC content of a thinned coating shall be the VOC content as listed by the manufacturer after thinning in accordance with its recommendation.

TABLE 1		
Coating Category	Phase I	Phase II
	manufactured prior to May 1, 2018 VOC content limit (g/L)	manufactured on or after May 1, 2018 VOC content limit (g/L)
Aluminum roof coating	--- ¹	450
Antenna coating	530	--- ¹
Antifouling coating	400	--- ¹
Basement specialty coating	--- ¹	400
Bituminous roof coating	300	270
Bituminous roof primer	350	350
Bond breaker	350	350
Calcimine recoater	475	475
Clear wood coating - Clear brushing lacquer ²	680	275
Clear wood coating - Lacquer ^{2,3}	550	275
Clear wood coating - Sanding sealer ^{2,4}	350	275
Clear wood coating - Varnish ²	350	275
Concrete curing compound	350	350
Concrete or masonry sealer/ Waterproofing concrete or masonry sealer	400	100
Concrete surface retarder	780	780
Conjugated oil varnish	--- ¹	450
Conversion varnish	725	725
Driveway sealer	--- ¹	50
Dry fog coating	400	150
Faux finishing coating ²	350	350
Fire resistive coating	350	350
Fire retardant coating - Clear	650	--- ¹
Fire retardant coating - Opaque	350	--- ¹
Flat coating	100	50
Floor coating	250	100
Flow coating	420	--- ¹
Form-release compound	250	250
Graphic arts coating (sign paint)	500	500
High temperature coating	420	420
Impacted immersion coating	780	780
Industrial maintenance coating ²	340	250
Industrial maintenance coating	340	250
Low solids coating	120	120
Magnesite cement coating	450	450
Mastic texture coating	300	100
Metallic pigmented coating	500	500

TABLE 1		
Coating Category	Phase I	Phase II
	manufactured prior to May 1, 2018 VOC content limit (g/L)	manufactured on or after May 1, 2018 VOC content limit (g/L)
Multi-color coating	250	250
Nonflat coating	150	100
Nonflat high gloss coating²	250	150
Nuclear coating	450	450
Pre-treatment wash primer	420	420
Primer, sealer and undercoater	200	100
Quick-dry enamel	250	--- ¹
Quick-dry primer, sealer and undercoater	200	--- ¹
Reactive penetrating carbonate stone sealer²	--- ¹	500
Reactive penetrating sealer²	--- ¹	350
Recycled coating	250	250
Roof coating	250	250
Rust preventive coating²	400	250
Shellac Clear	730	730
Shellac Opaque	550	550
Specialty primer, sealer and undercoater²	350	100
Stain	250	250
Stone consolidant²	--- ¹	450
Swimming pool coating	340	340
Thermoplastic rubber coating and mastic	550	550
Traffic marking coating	150	100
Traffic marking coating	150	100
Tub and tile refinish	--- ¹	420
Waterproofing membrane	--- ¹	250
Waterproofing sealer	250	--- ¹
Wood coating²	--- ¹	275
Wood preservative	350	350
Zinc-rich primer²	--- ¹	340

1 Classify as follows and apply corresponding limits in Table 1.

- Registers gloss <15 on an 85-degree meter or <5 on a 60-degree meter) – Flat Coating,
- Registers gloss of ≥15 on an 85-degree meter and ≥5 on a 60-degree meter) – Nonflat Coating
- Registers gloss of ≥70 on a 60-degree meter – Nonflat-High Gloss Coating

2 Container must be appropriately labeled. See RCSA 22a-174-41a

3 “Clear Wood Coating – Lacquer” includes lacquer sanding sealer

4 “Clear Wood Coating - Sanding Sealer” does not include lacquer sanding sealer

-END-

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. 6 Road Construction and Rehabilitation: Local Roads & Streets and non-freeways**, 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.

Article 1.02.04 – Examination of Plans, Specifications, Special Provisions and Site of Work:

Replace the third sentence of the last paragraph with:

The Department cannot ensure a response to inquiries received later than ten (10) days prior to the original scheduled opening of the related bid.

SECTION 1.05 - CONTROL OF THE WORK

Replace Article 1.05.02 with the following:

1.05.02—Contractor Submittals, Working Drawings, Shop Drawings, Product Data, Submittal Preparation and Processing - Review Timeframes, Department’s Action:

1. Contractor Submittals: The plans provided by the Department show the details necessary to give a comprehensive idea of the construction contemplated under the Contract. The plans will generally show the location, character, dimensions, and details necessary to complete the Project. If the plans do not show complete details, they will show the necessary dimensions and details, which when used along with the other Contract documents, will enable the Contractor to prepare working drawings, shop drawings or product data necessary to complete the Project.

The Contractor shall prepare submittals as Portable Document Format (PDF) files. The Contractor is also required to acquire, maintain access and use the Department’s document management system for delivery of submittals. The format, digital signing requirements, delivery processes and document tracking procedures shall be performed in accordance with this specification and the [Contractor’s Digital Submission Manual](#) (CDSM).

The submittals shall be sent to the Department’s reviewer(s), sufficiently in advance of the work detailed, to allow for their review in accordance with the review periods as specified herein (including any necessary revisions, resubmittal, and final review), and acquisition of materials, without causing a delay of the Project.

2. Working Drawings: When required by the Contract or when ordered to do so by the Engineer, the Contractor shall prepare and submit the working drawings, signed, sealed and dated by a qualified Professional Engineer licensed to practice in the State of Connecticut, for review. The drawings shall be delivered sufficiently in advance of the work detailed, to allow for their review in accordance with the review periods specified herein (including any necessary revisions, resubmittal, and final review).

There will be no direct payment for furnishing any working drawings, procedures or supporting calculations, but the cost thereof shall be considered as included in the general cost of the work.

a. Working Drawings for Permanent Construction: The Contractor shall supply to the Assistant District Engineer a certificate of insurance in accordance with 1.03.07 at the time that the working drawings for the Project are submitted.

The Contractor’s designer, who prepares the working drawings, shall secure and maintain at no direct cost to the State a Professional Liability Insurance Policy for errors and omissions in the minimum amount of \$2,000,000 per error or omission. The Contractor’s designer may elect to obtain a policy containing a maximum \$250,000 deductible clause, but if the Contractor’s designer should obtain a policy containing such a clause, they shall be liable to the extent of at

least the deductible amount. The Contractor's designer shall obtain the appropriate and proper endorsement of its Professional Liability Policy to cover the indemnification clause in this Contract, as the same relates to negligent acts, errors or omissions in the Project work performed by them. The Contractor's designer shall continue this liability insurance coverage for a period of

- (i) 3 years from the date of acceptance of the work by the Engineer, as evidenced by a State of Connecticut, Department of Transportation form entitled "Certificate of Acceptance of Work," issued to the Contractor; or
- (ii) 3 years after the termination of the Contract, whichever is earlier, subject to the continued commercial availability of such insurance.

b. Working Drawings for Temporary Construction: The Contractor shall submit drawings, calculations, procedures and other supporting data to the Assistant District Engineer.

3. Shop Drawings: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and deliver shop drawings to the Designer for review. Review timeframes and submission locations are as specified herein.

There will be no direct payment for furnishing any shop drawings, but the cost thereof shall be considered as included in the general cost of the work.

4. Product Data: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and deliver product data.

The Contractor shall submit the product data in a single submittal for each element or group of elements of construction.

The Contractor shall mark each copy of the product data submittal to show applicable choices and options. Where product data includes information on several products that are not required, copies shall be marked to indicate the applicable information. Product data shall include the following information and confirmation of conformance with the Contract to the extent applicable: manufacturer's printed recommendations, compliance with recognized trade association standards, compliance with recognized testing agency standards, application of testing agency labels and seals, notation of coordination requirements, Contract item number, and any other information required by the individual Contract provisions.

There will be no direct payment for furnishing any product data, but the cost thereof shall be considered as included in the general cost of the work.

5. Submittal Preparation and Processing – Review Timeframes: The Contractor shall allow 30 calendar days for submittal review by the Department, from the date receipt is acknowledged by the Department's reviewer. For any submittals marked with "Revise and Resubmit" or "Rejected," the Department is allowed an additional 20 calendar days for review of any resubmissions.

An extension of Contract time will not be authorized due to the Contractor's failure to transmit submittals sufficiently in advance of the work to permit processing.

The furnishing of shop drawings, working drawings or product data, or any comments or suggestions by the Designer or Engineer concerning shop drawings, working drawings or product data, shall not relieve the Contractor of any of its responsibility for claims by the State or by third parties, as per 1.07.10.

The furnishing of the shop drawings, working drawings and product data shall not serve to relieve the Contractor of any part of its responsibility for the safety or the successful completion of the Project construction.

- 6. Department's Action:** The Designer or Engineer will review each submittal, mark each with a self-explanatory action stamp, and return the stamped submittal promptly to the Contractor. The Contractor shall not proceed with the part of the Project covered by the submittal until the submittal is marked "No Exceptions Noted" or "Exceptions as Noted" by the Designer or Engineer. The Contractor shall retain sole responsibility for compliance with all Contract requirements. The stamp will be marked as follows to indicate the action taken:
- a. If submittals are marked "No Exceptions Noted," the Designer or Engineer has not observed any statement or feature that appears to deviate from the Contract requirements. This disposition is contingent on being able to execute any manufacturer's written warranty in compliance with the Contract provisions.
 - b. If submittals are marked "Exceptions as Noted" the considerations or changes noted by the Department's Action are necessary for the submittal to comply with Contract requirements. The Contractor shall review the required changes and inform the Designer or Engineer if they feel the changes violate a provision of the Contract or would lessen the warranty coverage.
 - c. If submittals are marked "Revise and Resubmit," the Contractor shall revise the submittals to address the deficiencies or provide additional information as noted by the Designer or Engineer. The Contractor shall allow an additional review period as specified in 1.05.02-5.
 - d. If submittals are marked "Rejected," the Contractor shall prepare and submit a new submittal in accordance with the Designer's or Engineer's notations. The resubmissions require an additional review and determination by the Designer or Engineer. The Contractor shall allow an additional review period as specified in 1.05.02-5.

SECTION 1.06 CONTROL OF MATERIALS

Article 1.06.01 - Source of Supply and Quality:

Add the following:

Traffic Signal Items:

For the following traffic signal items the contractor shall submit a complete description of the item, shop drawings, product data sheets and other descriptive literature which completely illustrates such items presented for formal review. Such review shall not change the requirements for a certified test report and materials certificate as may be called for. All documents shall be grouped into one separate file for each group of items as indicated by the Roman numerals below (for example, one pdf file for all of the pedestal items). The documents for all of the traffic signal items shall be submitted at one time, unless otherwise allowed by the engineer.

- I. 10030XX – Decorative Light Pole and Light Fixture
- II. 10080XX – Rigid Metal Conduit
- III. 11020XX – Aluminum Pedestals
- IV. 11060XXA – Pedestrian Signals - LEDs, Housings, and Hardware
11070XXA – Accessible Pedestrian Signal & Detector - Button, Housings & Sign (Type)
- V. 11114XXA – Loop Detector Amplifier, Sealant, Wire and Lead in Wire

SECTION 1.07 – LEGAL RELATIONS AND RESPONSIBILITIES

Article 1.07.07 – Safety and Public Convenience

Delete Article 1.07.07 in its entirety and replace it with the following:

1.07.07—Safety and Public Convenience: The Contractor shall conduct the Project work at all times in such a manner as to ensure the least possible obstruction to traffic. In a manner acceptable to the Engineer, the Contractor shall provide for the convenience and interests of the general public; the traveling public; parties residing along or adjacent to the highway or Project Site; and parties owning, occupying or using property adjacent to the Project Site, such as commuters, workers, tenants, lessors and operating agencies.

Notwithstanding any other Contract provision, the Contractor shall not close to normal pedestrian or vehicular traffic any section of road, access drive, parking lot, sidewalk, station platform, railroad track, bus stop, runway, taxiway, occupied space within a Site, or occupied space within a building, except with the written permission of the Engineer.

All equipment, materials, equipment or material storage areas, and work areas must be placed, located, and used in ways that do not create a hazard to people or property, especially in areas open to public pedestrian or vehicular traffic. All equipment and materials shall be placed or stored in such a way and in such locations as will not create a hazard to the traveling public or reduce sight lines. In an area unprotected by barriers or other means, equipment and materials must not be stored within 30 feet of any traveled way.

The Contractor must always erect barriers and warning signs between any of its work or storage areas and any area open to public, pedestrian, or vehicular traffic. Such barriers and signs must comply with all laws and regulations, including any applicable codes.

The Contractor must arrange for temporary lighting, snow and ice removal, security against vandalism and theft, and protection against excessive precipitation runoff within its Project work and storage areas, and within other areas specifically designated in the Contract.

In addition to meeting the requirements of Section 9.71, the Contractor shall take all precautions necessary and reasonable for the protection of all persons, including, but not limited to, employees of the Contractor or the Department, and for the protection of property, until the Engineer notifies the Contractor in writing that the Project or the pertinent portion of the Project has been completed to the Engineer's satisfaction.

The Contractor shall comply with the safety provisions of applicable laws, including building and construction codes and the latest edition of the CFR. The Contractor must make available for reference in its field office, throughout the duration of the Project, a copy of the latest edition and all supplements of the CFR pertaining to OSHA.

The Contractor shall make available to the Contractor's employees, subcontractors, the Engineer, and the public, all information pursuant to OSHA 29 CFR Part 1926.59 and The Hazard Communication Standard 29 CFR 1910.1200, and shall also maintain a file on each job site containing all MSDS for products in use at the Project. These MSDS shall be made available to the Engineer upon request.

The Contractor shall observe all rules and regulations of the Federal, State, and local health officials. Attention is directed to Federal, State, and local laws, rules, and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous to the worker's health or safety.

Safety Plan: Before starting work on the Project, the Contractor shall submit to the Engineer a written Safety and Health Plan (hereinafter referred to as the "Plan"). The Plan shall meet or exceed the minimum requirements of this Subsection and any applicable State or Federal regulations.

The Plan shall apply to any work under the Contract whether such work is performed, by way of example and not limitation, by the Contractor's forces, subcontractors, suppliers, or fabricators.

The Plan shall be prepared by the Contractor and submitted to the Engineer for review before the actual start of work on the Project. Within ten (10) calendar days of receipt, the Engineer will determine whether or not the Plan meets the requirements of this Specification. If the Plan does not meet the requirements of this Specification, it will be returned for revision. Work on the Project may not proceed until the Engineer has accepted the Plan. Nothing herein shall be construed, however, to relieve the Contractor from responsibility for the prosecution of the Project.

The Plan shall conform to the following general format:

1. General Introduction.

- a. Description.** The general introduction of the Plan shall include a statement by the Contractor describing its commitment to maintain a safe work environment for its employees, Department representatives, and the public. Implementation procedures and company policies relative to safety shall be summarized or referenced in the Plan.
 - i. The Plan shall include the names, addresses, and telephone numbers of the Contractor's Project Manager, Project superintendent and/or its designee for safety oversight, all competent persons, and the traffic control coordinator. Any changes to the safety management and oversight for the Project shall be promptly communicated to all concerned.
 - ii. The Plan shall provide guidelines for protecting all personnel from hazards associated with Project operations and activities.

- iii. The Plan shall establish the policies and procedures that are necessary for the Project to be in compliance with the requirements of OSHA and other State and Federal regulatory agencies with jurisdiction, rules, regulations, standards, or guidelines in effect at the time the work is in progress.
- b. Responsibility, Identification of Personnel, and Certifications.** The Contractor is solely responsible for creating, implementing, and monitoring the Plan.
 - i. The Contractor shall identify and designate on-site supervisory level personnel who shall be responsible for implementing and monitoring the Plan at all times throughout the duration of the Project and shall have authority to take prompt corrective measures to eliminate hazards including the ability to stop work activities.
 - ii. Documentation of training provided to the on-site supervisory level personnel shall be included as part of the Plan.
 - iii. For any work activities wherein the Contractor has identified a competent person as defined by OSHA, that person shall be capable of identifying existing and predictable hazards and have the authority to take prompt corrective measures to eliminate the hazards, including the ability to stop work activities.
 - iv. Documentation of the qualifications of such competent persons identified, including any certifications received, shall be included as part of the Plan.
 - v. The Contractor shall further identify the qualified safety professional responsible for developing the Plan and shall provide that person's qualifications for developing the Plan which shall include, but not be limited to, education, training, certifications, and experience in developing this type of Plan.
 - vi. The Plan shall contain a certification executed by the qualified safety professional that developed the Plan, stating that the Plan complies with OSHA and other applicable State and Federal regulatory agencies with jurisdiction, rules, regulations, standards, or guidelines in effect at the time the work is in progress.

2. Elements of the Plan. The Plan shall address, but not be limited to, the following elements:

- a. Management Safety Policy and Implementation Statement.**
 - i. The Plan shall describe in detail the means by which the Contractor shall implement and monitor the Plan. Implementation and monitoring shall also mean that the Plan shall be a document with provision for change to update the Plan with new information on a yearly basis at a minimum and shall include new practices or procedures, changing site and environmental conditions, or other situations that could adversely affect site personnel. The Plan shall provide guidelines for protecting all personnel from hazards associated with Project operations and activities.
- b. Emergency Telephone Numbers.**
- c. Personnel Responsibilities.**
 - i. Management responsibilities
 - ii. Responsibilities of Supervisor(s)
 - iii. Site safety officer(s) responsibilities
 - iv. Employee responsibilities

- v. Competent person(s) as defined by OSHA responsibilities
- d. Training.**
 - i. Regulatory
 - ii. Documentation
 - iii. Site hazard assessment -Daily employee awareness of site operations
- e. Safety Rules.**
 - i. General safety rules
 - ii. Personal protective equipment
 - iii. Housekeeping
- f. Safety Checklists.**
 - i. Project safety-planning checklist
 - ii. Emergency plans and procedures checklist
 - iii. Documentation checklist
 - iv. Protective materials and equipment checklist
- g. Traffic Control Coordinator Inspections.**
 - i. Responsible person
 - ii. Frequency
 - iii. Documentation of actions taken
- h. Record Keeping.**
 - i. OSHA 200 log
- i. Reporting.**
 - i. Accident(s)
 - ii. On site
 - iii. Legal notice requirement
 - iv. Public liability
 - v. Property damage
 - vi. Department of Labor
 - vii. Hazard Communications
- j. Additional Procedures for Project Specific Situations as Applicable.**
 - i. Compressed gas cylinders
 - ii. Confined spaces
 - iii. Cranes
 - iv. Crystalline silica (stone, masonry, concrete, and brick dust)
 - v. Electrical
 - vi. Equipment operators
 - vii. Fall protection
 - viii. Hand and power tools
 - ix. Hearing conservation
 - x. Highway safety
 - xi. Lead health and safety plan
 - xii. Lock out/tag out
 - xiii. Materials handling, storage, use, and disposal
 - xiv. Areas of environmental concern
 - xv. Night work
 - xvi. Personal protective equipment

- xvii. Project entry and exit
- xviii. Respiratory protection
- xix. Sanitation
- xx. Signs, signals, and barricades
- xxi. Subcontractors
- xxii. Trenching

3. Appendix for Environmental Health and Safety Plan (HASP). If environmental hazards are identified in the Contract, an Environmental HASP shall be included in an appendix to the Plan, or in a separate document. References to any Environmental HASP shall be included within the Plan, where appropriate.

The Plan shall be kept on the site and shall apply and be available to all workers and all other authorized persons entering the work site. Copies of all updates to the Plan shall be promptly supplied to the Engineer.

If at any time during the Project the Engineer determines that the Contractor is not complying with the requirements of this provision or the updated Plan, the Contractor shall correct such deficiencies immediately. Failure to remediate such deficiencies may result in suspension of the Contractor's operations until the deficiencies have been corrected. Suspensions ordered due to safety deficiencies will not be considered compensable or excusable delays.

The Contractor is responsible for implementation of the Plan. Pursuant to Article 1.07.10, the Contractor shall indemnify, and save harmless the State from any and all liability related to the Plan in proportion to the extent that the Contractor is held liable for same by an arbiter of competent jurisdiction.

The Contractor shall allow onto the Project site any inspector of OSHA or other legally responsible agency involved in safety and health administration upon presentation of proper credentials, without delay and without the presentation of an inspection warrant.

Article 1.07.10 - Contractor's Duty to Indemnify the State against Claims for Injury or Damage:

Add the following after the only paragraph:

“It is further understood and agreed by the parties hereto, that the Contractor shall not use the defense of Sovereign Immunity in the adjustment of claims or in the defense of any suit, including any suit between the State and the Contractor, unless requested to do so by the State.”

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

Add the following sentence to the last paragraph:

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

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

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

Mr. Carlos Vizcarrondo
Relocations Coordinator
Aquarion Water Company
Bridgeport, Connecticut
(203) 337-5950

Mr. Jim Bitzas
Sr. Manager of Western New England
Comcast of Connecticut
Westfield, Massachusetts
(413) 562-9923

Mr. John Hanlon
President
Housatonic Railroad
Canaan, Connecticut
(860) 824-0850

Mr. Thomas Woronik
Supervisor – Construction Engineering
Eversource Energy
East Hampton, Connecticut
(860) 267-3891

Ms. Lynne DeLucia
Manager – Engineering & Construction
Frontier Communications
Meriden, Connecticut
(203) 238-5000

The following Department representative shall be contacted by the Contractor to coordinate an inspection of the service entrance into the controller/flasher cabinet for controllers within the State right-of-way, when ready for inspection, release, and connection of electrical service. The local Building Department shall be contacted for electrical service inspections for controllers located on Town roads located within the respective municipality.

Mr. John Dunham
District Engineer
Department of Transportation
Thomaston, CT 06787
(203) 591-3540

Please provide the electrical service request number provided by the power company. This is a Work Request (WR) Number provided by Eversource (formerly Northeast Utilities [CL&P]) or a Work Order Number provided by United Illuminating (UI). For State-owned traffic signals in CL&P territory, contact the Department's Traffic Electrical Unit to obtain the WR Number. For State-owned traffic signals in UI territory, contact the Department's Traffic Electrical Unit to obtain a Request for Metered Service to provide to UI to obtain the Work Order Number. The street address is required for release to local power companies (Groton Utilities or Wallingford Electric).

Article 1.07.10 - Contractor's Duty to Indemnify the State against Claims for Injury or Damage:

Add the following after the only paragraph:

“It is further understood and agreed by the parties hereto, that the Contractor shall not use the defense of Sovereign Immunity in the adjustment of claims or in the defense of any suit, including any suit between the State and the Contractor, unless requested to do so by the State.”

SECTION 1.08 - PROSECUTION AND PROGRESS

Article 1.08.03 - Prosecution of Work:

Add the following:

The Contractor shall stake the limits of the concrete sidewalks and ramps in conjunction with staking the locations of foundations to ensure that pedestrian push buttons will be located appropriately and will be accessible from a landing area.

The Contractor shall notify the project engineer on construction projects, or the district permit agent on permit jobs, when all traffic signal work is completed. This will include all work at signalized intersections including loop replacements, adjusting existing traffic signals or any relocation work including handholes. The project engineer or district permit agent will notify the Division of Traffic Engineering to coordinate a field inspection of all work. Refer to Section 10.00 – General Clauses For Highway Illumination And Traffic Signal Projects, Article 10.00.10 and corresponding special provision.

Article 1.08.04 - Limitation of Operations - Add the following:

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

Route 7 (Railroad Street) and Routes 7 & 44 (Main Street)

On the following State observed Legal Holidays:

New Year's Day
Good Friday, Easter*
Memorial Day
Independence Day
Labor Day
Thanksgiving Day**
Christmas Day

The following restrictions also apply:

On the day before and the day after any of the above Legal Holidays.

On the Friday, Saturday, and Sunday immediately preceding any of the above Holidays celebrated on a Monday.

On the Saturday, Sunday, and Monday immediately following any of the above Holidays celebrated on a Friday.

* From 6:00 a.m. the Thursday before the Holiday to 8:00 p.m. the Monday after the Holiday.

** From 6:00 a.m. the Wednesday before the Holiday to 8:00 p.m. the Monday after the Holiday.

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

The Contractor will be allowed to close Main Street and detour traffic for a duration that shall not exceed one week, and shall not take place during a Holiday week.

Project Staging During Construction

All standard plates contained within the Maintenance and Protection of Traffic (M&PT) specification shall be utilized in-order-to construct the project along Route 7/44 (Main Street), Route 7 (Railroad Street) and Granite Street. Two-way traffic shall be maintained throughout project construction. If two-way traffic cannot be maintained during construction, approval must be provided by the Engineer to utilize one-way alternating traffic patterns found in the M&PT specification. All plans for

construction staging shall be submitted and approved by the engineer before the construction can begin.

Construction Staging at Crossings During Construction

The detour plans contained within the traffic subset shall be utilized when work commences on each railroad crossing. The railroad crossings shall be replaced during separate periods in-order-to minimize the disruption of traffic along the corridor as much as possible. Each crossing replacement shall be coordinated between the contractor for the Housatonic Railroad and the general contractor for this project.

When the detour pattern is erected for a crossing to be replaced, the contractor shall begin their earthwork and drainage in the area of the crossing. A schedule shall be provided by each contractor for the Engineer before work is performed to ensure that work from both contractors has been completed before the area is opened to live traffic.

Additional Lane Closure Restrictions

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

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

OTHER LIMITATIONS

The initial installation of and subsequent changes to signing patterns on roadways that are not closed shall constitute interference with existing traffic operations and shall not be allowed on:

Monday through Friday between 6:00 a.m. and 10:00 a.m. and between 2:00 p.m. and 8:00 p.m.

Saturday and Sunday between 10:00 a.m. and 9:00 p.m.

No roadway, with the exception of transition areas, shall be open to traffic unless the appropriate pavement markings have been installed. The transition areas shall have pavement markings applied immediately upon opening to traffic.

The Contractor shall schedule operations so that pavement removal and roadway resurfacing shall be completed full width across a roadway (bridge) section by the end of a workday (worknight). All transverse height differentials on all roadway surfaces shall be tapered to negate any "bump"

to traffic as specified elsewhere in this contract or as approved by the Engineer. Material for this taper shall be as approved by the Engineer.

Verify that nothing will conflict with Town events (Easter Egg Hunt, Memorial Day, Railroad Days, Fall Festival, Parade of Lights) or any other events. The Contractor shall be aware of such events and notify the Engineer when they occur. The Contractor shall ensure that construction will not conflict before, during, or after such events

SECTION 2.86 - DRAINAGE TRENCH EXCAVATION, ROCK IN DRAINAGE TRENCH EXCAVATION

2.86.01—Description

2.86.03—Construction Methods

2.86.04—Method of Measurement

2.86.05—Basis of Payment

2.86.01—Description: Drainage trench excavation consists of the excavation necessary for the proper installation of drainage structures, pipes, pipe ends and any other incidental drainage items.

It shall include earth and rock excavation, removal of existing pipes, dewatering, backfill, and disposal of materials; to the trench limits described herein, to the dimensions shown on the plans, or as directed by the Engineer.

Classifications:

- (1) **Drainage Trench Excavation** will include only the excavation necessary for the construction of the drainage items and the removals specified above.
- (2) **Rock in Drainage Trench Excavation**, insofar as it applies to drainage trench excavation, shall be defined as **1/2 cubic yard or more** in volume of the following obstructions removed from the limits of the drainage trench:
 - (a) rock in definite ledge formation
 - (b) boulders, or portions of boulders
 - (c) cement masonry structures
 - (d) concrete or reinforced concrete structures
 - (e) reinforced concrete pipe
 - (f) subsurface concrete pavement or concrete base

The removal shall be as indicated or directed from within the limits defined in 2.86.03 for drainage trench excavation.

2.86.03—Construction Methods:

(1) Drainage Trench Excavation Limits:

Horizontal Limits: Trench widths for pipes, pipe ends, pipe-arches, and drainage structures shall be as follows:

- (a) 2 feet greater than the nominal inside diameter of circular pipe or nominal inside span of elliptical pipe or pipe-arch for such diameters or spans of less than 30 inches
- (b) 3 feet greater than the nominal inside diameter of circular pipe or the nominal inside span of elliptical pipe or pipe-arch for such diameters or spans that are 30 inches or greater
- (c) 4 feet greater than the nominal inside diameter or nominal horizontal inside span for pipe-arches fabricated from structural plates
- (d) 2 feet beyond the neat lines of all exterior or foundation walls of drainage structures

Vertical Limits: Trench depths shall extend vertically as follows:

- (a) From the bottom of the trench to the bottom of the roadway excavation, or in areas away from roadway excavation, to the top of existing ground surface.

(b) Where drainage pipe is to be laid in a fill area, the embankment shall be placed and compacted to a minimum elevation 12 inches above the top of the proposed pipe, whereupon the drainage trench excavation shall be performed and the pipe installed.

- (2) **Drainage Trench Excavation:** Drainage trench excavation shall be made in conformity with the requirements of the plans, or as directed by the Engineer. The Contractor shall furnish and employ such shores, braces, pumps, or ancillary equipment as needed for the proper protection of property, proper completion of the work, as well as safety of the public and employees of both the Contractor and the Department. All bracing and shoring shall be removed when no longer required for the construction or safety of the work. When required, the Contractor shall provide or have on the Site at all times any OSHA certification for equipment to be used, per 1.07.07. For support of trenches greater than 10 feet in depth, working drawings shall be submitted, in accordance with 1.05.02. The Contractor shall control erosion and sedimentation at trench locations and ensure that pumped water from the drainage excavation is discharged in accordance with the requirements of 1.10.

Where a firm foundation is not encountered at the grades established due to unsuitable material, such as soft, spongy, or unstable soil, the unsuitable material shall be removed and replaced with approved backfill, thoroughly compacted in lifts not to exceed 6 inches, for the full trench width. The Engineer shall be notified prior to removal of the unsuitable material in order to determine the depth of removal necessary.

After the excavation is complete, the Contractor shall notify the Engineer and no drainage structure or material shall be placed in the excavated area until the Engineer has approved the depth of excavation and the character of the foundation material.

- (3) **Rock in Drainage Trench Excavation:**

(a) Rock in Drainage Trench Excavation - Ledge: When rock in definite ledge form is encountered, the Contractor shall excavate a minimum of 12 inches below the bottom of the proposed pipe or drainage structure; and this depth shall be filled with bedding material (as specified in M.08.03-1) below the proposed pipe; or granular fill (as specified in M.02.01) below the proposed drainage structure, which shall be thoroughly compacted in lifts not to exceed 6 inches.

(b) Rock in Drainage Trench Excavation - Boulders: When boulders are encountered, the Contractor shall remove them from the trench and if backfill is required, the void shall be filled with bedding material, surplus excavated material (as specified in 2.02.03-8) or granular fill which shall be thoroughly compacted in lifts not to exceed 6 inches.

(c) Rock in Drainage Trench Excavation –Structures: When cement masonry, concrete or reinforced concrete structures are encountered within the drainage trench limits, the Contractor shall remove the structure in its entirety or as directed by the Engineer, and if backfill is required, the void shall be filled with bedding material, surplus excavated material or granular fill which shall be thoroughly compacted in lifts not to exceed 6 inches.

- (4) **Backfill:** Suitable material excavated from the drainage trench shall be used as backfill material prior to consideration of using any other source of backfill. Backfill material used shall be of a quality satisfactory to the Engineer and shall be free from large or frozen lumps, wood and other extraneous material. Rock fill or stones larger than 5 inches shall not be placed within 1 foot of the drainage structure or pipe. The grading shall be

completed to the lines shown on the plans, or as ordered, by refilling to the required elevation with approved material, placed in layers not to exceed 6 inches in depth after compaction, which shall be thoroughly compacted with equipment approved by the Engineer.

All surplus or unsuitable material shall be removed and disposed of as directed. Should additional material be required for backfilling, it may be obtained from the Project surplus excavation in accordance with 2.02.03-8 or from borrow pits, gravel pits, or elsewhere as directed by the Engineer.

2.86.04—Method of Measurement:

Drainage Trench Excavation: Drainage trench excavation will not be measured for payment.

If granular fill or borrow is required to replace unsuitable material it will be measured for payment as directed by the Engineer.

Rock in Drainage Trench Excavation: If any material meeting the definition of Rock in Drainage Trench Excavation is encountered, the Contractor shall strip it of sufficient overlying material to allow for proper measurement and shall then notify the Engineer that the rock surface is ready for measurement. If the Contractor fails to give such notice, the Engineer will presume that the measurements taken at the time the Engineer first saw the material in question will give the true quantity of excavation.

Rock in Drainage Trench Excavation will be measured according to the classification provided in 2.86.01 and within the drainage trench excavation limits provided in 2.86.03.

For the removal of underground obstructions, as classified in 2.86.01-2, the measurement shall be the actual volume of rock removed (1/2 cubic yard or more) as approved by the Engineer.

Rock in Drainage Trench Excavation will not be measured for payment in fills.

Bedding Material or other suitable fill, as specified in 2.86.03(3), used to fill voids after rock is excavated will not be measured for payment.

2.86.05—Basis of Payment:

Drainage Trench Excavation: There will be no direct payment for drainage trench excavation required for the installation of drainage pipes, pipe ends, catch basins, drop inlets, manholes, and other drainage structures, or any other incidental drainage work including materials, tools, equipment and labor necessary to complete the drainage trench excavation in conformity with the plans or as directed by the Engineer.

There will be no direct payment for backfill or disposal of surplus material necessary for the satisfactory completion of this work.

There will be no direct payment made for shoring, bracing, dewatering, or for material or equipment necessary for the satisfactory completion of the work.

Where called for on the plans to install temporary earth retaining systems for the support of existing facilities, pavement, utilities, or for other constraints, payment will be made in accordance with such items in the Contract.

If granular fill or borrow is used to replace unsuitable material, payment will be made at the respective Contract unit prices, or in the absence of such items in the Contract, as Extra Work in accordance with 1.04.05.

Rock in Drainage Trench Excavation: When rock, conforming to the description in 2.86.01 is encountered within the limits of drainage trench excavation, its removal will be classified and

paid for at the Contract unit price per cubic yard for "Rock in Drainage Trench Excavation 0' – 10' Deep," or "Rock in Drainage Trench Excavation 0' – 20' Deep," as the case may be.

Those portions of drainage trench excavation classified and paid for as "Rock in Drainage Trench Excavation" of the various depths will be the actual volumes of rock excavated within the limits for drainage trench excavation, at the applicable bottom depth price.

Where no item or items for "Rock in Drainage Trench Excavation" at the applicable depth appear in the proposal and rock is encountered in drainage trench excavation, its removal will be paid for as Extra Work in accordance with 1.04.05.

When excavation is necessary in fill, no such excavation will be paid for as "Rock in Drainage Trench Excavation."

When excavation is necessary for any purpose other than drainage-related items, no such excavation will be paid under this item.

Bedding material or any other suitable material used to fill voids vacated by excavated rock will not be paid for but shall be included in the unit price per cubic yard for "Rock in Drainage Trench Excavation."

Pay Item	Pay Unit
Rock in Drainage Trench Excavation 0' - 10' Deep	c.y.
Rock in Drainage Trench Excavation 0' - 20' Deep	c.y.

SECTION 4.06 - BITUMINOUS CONCRETE

Section 4.06 is being deleted in its entirety and replaced with the following:

4.06.01—Description

4.06.02—Materials

4.06.03—Construction Methods

- 1. Material Documentation**
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4.06.04—Method of Measurement

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

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

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 bituminous concrete apply to all of its forms, such as those identified as hot-mix asphalt (HMA) or polymer-modified asphalt (PMA).

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

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

Density Lot: The total tonnage of all bituminous concrete placed in a single lift which are:

PWL density lots = When the project total estimated quantity per mixture is larger than 3,500 tons

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 and the Contractor's results that may affect payment.

Hot Mix Asphalt (HMA): A bituminous concrete mixture typically produced at 325°F.

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

Lift: An application of a bituminous concrete 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): A bituminous concrete mixture containing a polymer-modified asphalt binder and using a qualified warm mix technology.

Production Lot: The total tonnage of a bituminous concrete 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 bituminous concrete 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 bituminous concrete 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 bituminous concrete at reduced temperatures and/or increase workability of the mixture.

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

1. Materials Supply: The bituminous concrete 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 in bituminous concrete mixtures in accordance with Project Specifications.

4.06.03—Construction Methods

1. Material Documentation: All vendors producing bituminous concrete must have Plants with automated vehicle-weighting 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 bituminous concrete 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 Article 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 sufficient capacity to provide for a uniform 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 bituminous concrete. 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.

Lighting: For paving operations which will be performed during hours of darkness the paving equipment shall be equipped with lighting fixtures as described below or with an approved equal. Lighting shall minimize glare to passing traffic. The lighting options and minimum number of fixtures are listed in Tables 4.06-1 and 4.06-2.

TABLE 4.06-1: Minimum Paver lighting

Option	Fixture Configuration	Fixture Quantity	Requirement
1	Type A	3	Mount over screed area
	Type B (narrow) or Type C (spot)	2	Aim to auger and guideline
	Type B (wide) or Type C (flood)	2	Aim 25 feet behind paving machine
2	Type D Balloon	2	Mount over screed area

TABLE 4.06-2: Minimum Roller Lighting

Option	Fixture Configuration	Fixture Quantity	Requirement
1	Type B (wide)	2	Aim 50 feet in front of and behind roller
	Type B (narrow)	2	Aim 100 feet in front of and behind roller
2	Type C (flood)	2	Aim 50 feet in front of and behind roller
	Type C (spot)	2	Aim 100 feet in front of and behind roller
3	Type D Balloon	1	Mount above the roller

*All fixtures shall be mounted above the roller.

Type A: Fluorescent fixture shall be heavy duty industrial type. Each fixture shall have a minimum output of 8,000 lumens. The fixtures shall be mounted horizontally and be designed for continuous row installation.

Type B: Each floodlight fixture shall have a minimum output of 18,000 lumens.

Type C: Each fixture shall have a minimum output of 19,000 lumens.

Type D: Balloon light – each balloon light fixture shall have minimum output of 50,000 lumens and emit light equally in all directions.

Material Transfer Vehicle (MTV): A MTV shall be used when placing bituminous concrete 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 bituminous concrete mixture from the delivery vehicle to the paver. The MTV must continuously remix the bituminous concrete mixture throughout the placement process.

The use of a MTV will be subject to the requirements stated in Article 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 Section M.04 are not met.

The Contractor shall submit the 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 Article 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 bituminous concrete 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 14 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 base course shall be brought to the plan grade and cross section within the allowable tolerance.

Immediately before placing a bituminous concrete lift, a uniform coating of tack coat shall be applied to all existing underlying pavement surfaces and on the exposed surface of a wedge joint. Such surfaces shall be clean and dry. Sweeping or other means acceptable to the Engineer shall be used.

The mixture shall not be placed whenever the surface is wet or frozen.

Tack Coat Application: The tack coat shall be applied by a pressurized spray system that results in uniform overlapping coverage at an application rate of 0.03 to 0.05 gal./s.y. for a non-milled surface and an application rate of 0.05 to 0.07 gal./s.y. for a milled surface. For areas

where both milled and un-milled surfaces occur, the tack coat shall be an application rate of 0.03 to 0.05 gal /s.y. The Engineer must approve the equipment and the method of measurement prior to use. The material for tack coat shall be heated to $160^{\circ}\text{F} \pm 10^{\circ}\text{F}$ and shall not be further diluted.

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

The Contractor may request to omit the tack coat application between bituminous concrete layers that have not been exposed to traffic and are placed during the same work shift. Requests to omit tack coat application on the upper and lower surfaces of a wedge joint will not be considered.

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.

When unforeseen weather conditions prevent further placement of the mixture, the Engineer is not obligated to accept or place the bituminous concrete mixture that is in transit from the Plant.

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

The mixture temperature will be verified by means of a probe or infrared type of thermometer. The placement temperature range shall be listed in the quality control plan (QCP) for placement and meet the requirements of Table M.04.03-4. Any HMA material that falls outside the specified temperature range as measured by a probe thermometer 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 impracticable 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 bituminous concrete 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 or shim course, shall not be subject to thickness and area adjustments.

- a) 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 Article 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.

- b) 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 Article 4.06.04.
- c) 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 Article 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 Article 4.06.04 and eliminate all roller marks without displacement, shoving cracking, or aggregate breakage.

When placing a lift with a specified thickness less than 1 1/2 inches, or a wedge course, the Contractor shall provide a minimum rolling pattern as determined by the development of a compaction curve. 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 bituminous concrete, 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. S1.0 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 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

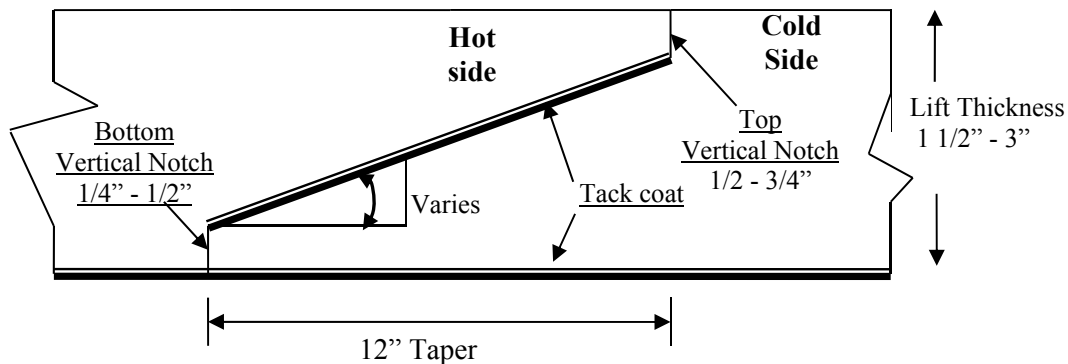
the Engineer.

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: 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.

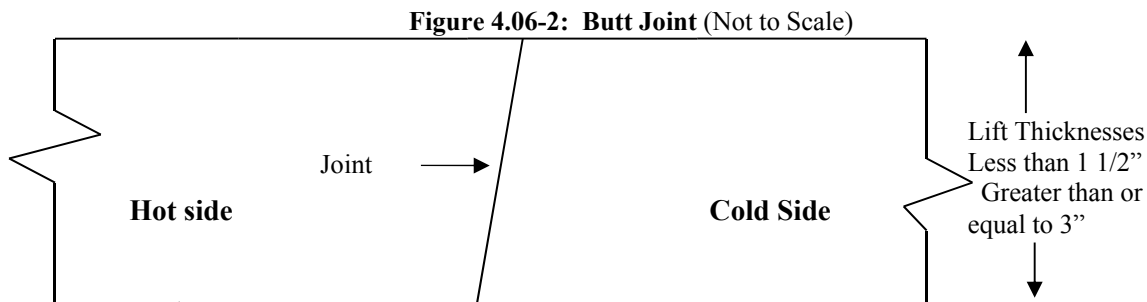
The Engineer reserves the right to define the paving limits when using a wedge joint that will be exposed to traffic.

If Method I cannot be used on those lifts which are 1 ½ 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:

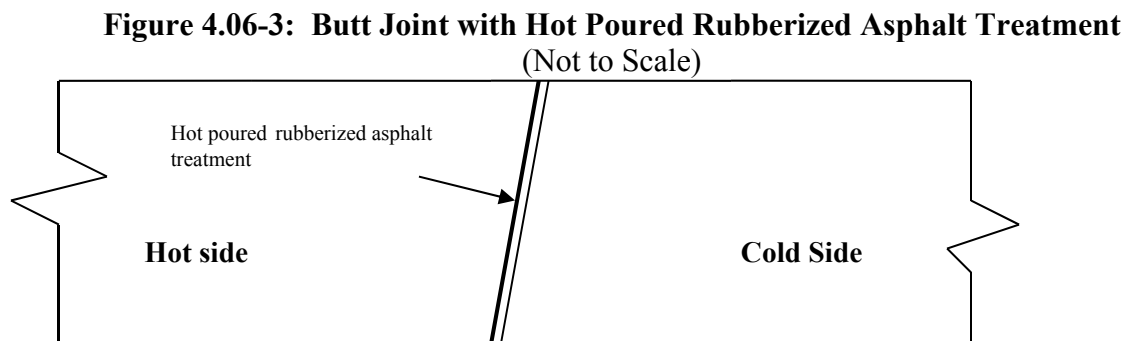
When adjoining passes are placed, the Contractor shall use the end gate to create a near vertical edge (refer to Figure 4.06-2). The completing pass (hot side) shall have sufficient mixture so that the compacted thickness is not less than the previous pass (cold side). During placement of multiple lifts,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

The Contractor shall not allow any butt joint to be incomplete at the end of a work shift unless otherwise allowed by the Engineer. When using this method, the Contractor is not allowed to leave a vertical edge exposed at the end of a work shift and must complete paving of the roadway full width “curb to curb.”



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.



All of the requirements of Method II must be met with Method III. In addition, the longitudinal vertical edge must be treated with a rubberized joint seal material meeting the requirements of ASTM D6690, Type 2. 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.

The Standard QCP for production shall consist of the quality control program specific to the production facility.

There are 3 components to the QCP for placement: a Standard QCP, a Project Summary Sheet

that details Project-specific information, and, if applicable, a separate Extended Season Paving Plan as required in 4.06.03-9 “Temperature and Seasonal Requirements.”

The Standard QCP for both production and placement shall be submitted to the Department for approval each calendar year and at a minimum of 30 days prior to production or placement.

Production or placement shall not occur until all QCP components have been approved 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.

Approval of the QCP does not relieve the Contractor of its responsibility to comply with the Project specifications. The Contractor may modify the QCPs as work progresses and must document the changes in writing prior to resuming operations. These changes include but are not limited to changes in quality control procedures or personnel. The Department reserves the right to deny significant changes to the QCPs.

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

QCP for Placement: The Standard QCP, Project Summary Sheet, and Extended Season Paving Plan shall conform to the format provided by the Engineer. The format is available at http://www.ct.gov/dot/lib/dot/documents/dconstruction/pat/qcp_outline_hma_placement.pdf

The Contractor shall perform all quality control sampling and testing, provide inspection, and exercise management control to ensure that bituminous concrete placement conforms to 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 manner acceptable to the Engineer.

The Contractor may obtain 1 mat core and 1 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 approval prior to taking the core. The core holes shall be filled to the same requirements described in Subarticle 4.06.03-10.

9. Temperature and Seasonal Requirements: Paving, including placement of temporary pavements, shall be divided into 2 seasons, “In-Season” and “Extended-Season.” In-Season paving occurs from May 1 to October 14, and Extended Season paving occurs from October 15 to April 30. The following requirements shall apply unless otherwise authorized or directed by the Engineer:

- Mixtures shall not be placed when the air or subbase temperature is less than 40°F regardless of the season.
- Should paving operations be scheduled during the Extended Season, the Contractor must submit an Extended Season Paving Plan for the Project that addresses minimum delivered mix temperature considering WMA, PMA, or other additives; maximum paver speed; enhanced rolling patterns; and the method to balance mixture delivery and placement

operations. Paving during Extended Season shall not commence until the Engineer has approved the plan.

10. Field Density The Contractor shall obtain cores for the determination of mat and longitudinal joint density of bituminous concrete pavements. Within five 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 S1.0 lifts.

The Contractor shall extract cores from random locations determined by the Engineer in accordance with ASTM D3665. Four (4) or six (6) inch diameter cores shall be extracted for S0.25, S0.375 and S0.5 mixtures; 6 inch diameter cores shall be required for S1.0 mixtures. The Contractor shall coordinate with the Engineer to witness the extraction, labeling of cores, and filling of the core holes.

Each lift will be separated into lots as follows:

- a. Simple Average Density Lots: For total estimated quantities below 2,000 tons, the lift will be evaluated in one lot which will include the total paved tonnage of the lift and all longitudinal joints between the curb lines.
For total estimated quantities between 2,000 and 3,500 tons, the lift will be evaluated in two lots in which each lot will include approximately half of the total tonnage placed for the full paving width of a lift including all longitudinal joints between the curb lines.
- b. PWL Density Lots: Mat density lots will include each 3,500 tons of mixture placed within 30 calendar days. Joint density lots will include 14,000 linear feet of constructed joints. Bridge density lots will always be analyzed using simple average lot methodology.
- c. Partial Density Lot (For PWL only): A mat density lot with less than 3,500 tons or a joint density lot with less than 14,000 linear feet due to:
 - completion of the course; or
 - a lot spanning 30 calendar days.

Prior to paving, the type and number of lot(s) will be determined by the Engineer.

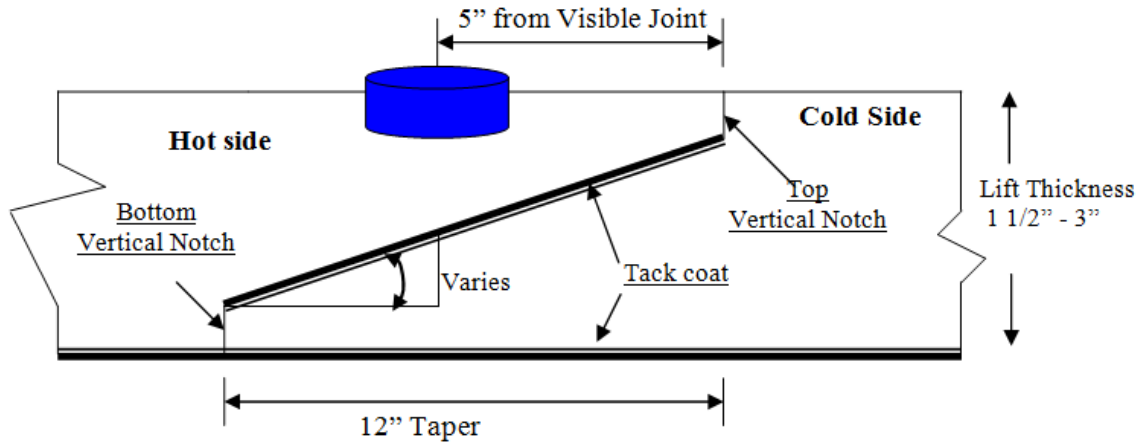
Noncontiguous areas such as highway ramps may be combined to create one lot.

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. Any core that is damaged or obviously defective while being obtained will be replaced with a new core from a location within 2 feet measured in a longitudinal direction.

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).

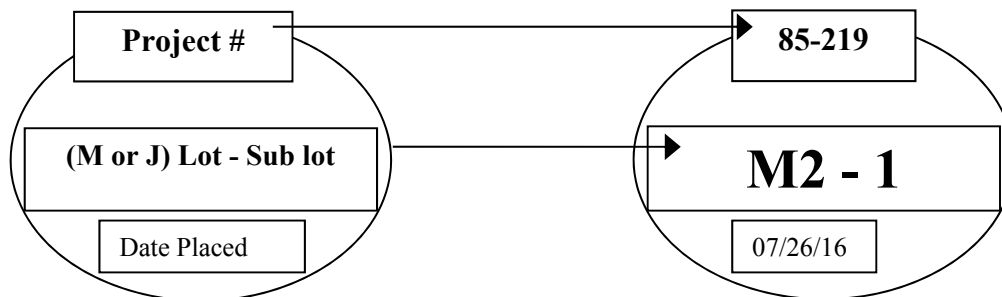
Figure 4.06-4: Notched Wedge Joint Cores (Not to Scale)



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.

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 shall fill out a MAT-109 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 hinges(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 a bituminous concrete mixture at a minimum temperature of 240°F containing the same or smaller nominal maximum aggregate size and compacted with a hand compactor or other mechanical means to the maximum compaction possible. The bituminous concrete shall be compacted to 1/8 inch above the finished pavement.

Simple Average Density Lots:

A standard simple average density lot is the quantity of material placed within the defined area excluding any bridge decks.

A combo simple average density lot is the quantity of material placed within the defined area including bridge decks 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.

The number of cores per lot shall be determined in accordance with Table 4.06-4. If a randomly selected 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.

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 Core 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

PWL Density Lots:

A PWL mat density lot is 3,500 tons of material placed within the defined area excluding any bridges. One mat core will be obtained per every 500 tons placed.

A PWL joint density lot is 14,000 linear feet of longitudinal joint excluding any joints on bridge decks. One joint core will be obtained per every 2,000 linear feet of joint.

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.

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. The density of each core 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.

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 within the required 5 calendar days of placement. Should the dispute not be resolved through evaluation of existing testing data or procedures, the Engineer may authorize the Contractor to obtain a new core or set of core samples per disputed lot. The core samples must be extracted no later than seven 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.

a) **Simple Average Lots:** The Contractor may only dispute any simple average lot that is adjusted at or below 95 percent payment. The number and location (mat, joint, or structure) of the cores taken for dispute resolution must reflect the number and location of the original cores. The location of each core shall be randomly located within the respective original sub lot. The dispute resolution results shall be combined with the original results and averaged for determining the final in-place density value.

b) **PWL Lots:** The Contractor may dispute any PWL subplot when the PWL falls below 50%

calculated in accordance with section 4.06.04.2.b. An additional random core in the subplot may be taken to validate the accuracy of the core in question. The Department will verify the additional core test result and may average the original test result with the additional core result for purpose of calculating adjustments.

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 bituminous concrete 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*: Bituminous concrete 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 bituminous concrete 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)) x (Avg. of width measurements (ft))]÷9 s.f./SY

Actual Thickness (t) = Total tons delivered / [Actual Area (SY) x 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 (T_A) = [(L x W_{adj})/9] x (t) x 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:

$$\text{Quantity Adjusted for Thickness (T}_T\text{)} = A \times t_{\text{adj}} \times 0.0575 = (-) \text{ tons}$$

Where: A = Area = $\{[L \times (\text{Design width} + \text{tolerance (lift thickness)/12})] / 9\}$
 t_{adj} = Adjusted thickness = $[(D_t + \text{tolerance}) - \text{Actual thickness}]$
 D_t = Designed thickness (inches)

- c) Weight: If the quantity of bituminous concrete 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:

$$\text{Quantity Adjusted for Weight (T}_W\text{)} = \text{GVW} - \text{DGW} = (-) \text{ tons}$$

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 (less than 3,500 tons):
 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:

$$\text{Tons Adjusted for Superpave Design (T}_{SD}\text{)} = [(\text{AdjAV}_t + \text{AdjPB}_t) / 100] \times \text{Tons}$$

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 4.06.4-1

$$\text{Percent Adjustment for Air Voids} = \text{AdjAV}_t = [\text{AdjAV}_1 + \text{AdjAV}_2 + \text{AdjAV}_i + \dots + \text{AdjAV}_n] / n$$

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 = $AdjPB_t = [(AdjPB_1 + AdjPB_2 + AdjPB_i + \dots + AdjPB_n)] / n$

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) (%)	<u>S0.25, S0.375, S0.5, S1</u> Pb
0.0	JMF Pb ± 0.3
- 10.0	≤ JMF Pb - 0.4 or ≥ JMF Pb + 0.4

ii. PWL Production Lot (3500 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 50 and 90%: $Adj(AV_t \text{ or } PB_t \text{ or } VMA_t) = (55 + 0.5 \text{ PWL}) - 100$

For PWL at and above 90%: $Adj(AV_t \text{ or } PB_t \text{ or } VMA_t) = (77.5 + 0.25 \text{ PWL}) - 100$

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 50% in any of the 3 individual material quality characteristics will be evaluated under 1.06.04.

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] X Tons

Where Tons: Weight of material (tons) in the lot adjusted by 4.06.4-1

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 3500 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 5 calendar days of placement.

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

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

P_{AM} = Mat density percent adjustment from Table 4.06-8

P_{AJ} = Joint density percent adjustment from Table 4.06-9

Tons: Weight of material (tons) in the lot adjusted by 4.06.4-1

TABLE 4.06-8: Adjustment Values for Pavement Mat density

Average Core Result Percent Mat Density	Percent Adjustment (Bridge and Non-Bridge) ⁽¹⁾⁽²⁾
97.1 - 100	-1.667*(ACRPD-98.5)
94.5 – 97.0	+2.5
93.5 – 94.4	+2.5*(ACRPD-93.5)
92.0 – 93.4	0
90.0 – 91.9	-5*(92-ACRPD)
88.0 – 89.9	-10*(91-ACRPD)
87.0 – 87.9	-30
86.9 or less	Remove and Replace (curb to curb)

Notes:

⁽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 Adjustment (Bridge and Non-Bridge) ⁽¹⁾⁽²⁾
Percent Joint Density	
97.1 – 100	-1.667*(ACRPD-98.5)
93.5 – 97.0	+2.5
92.0 – 93.4	+1.667*(ACRPD-92)
91.0 – 91.9	0
89.0 – 90.9	-7.5*(91-ACRPD)
88.0 – 88.9	-15*(90-ACRPD)
87.0 – 87.9	-30
86.9 or less	Remove and Replace (curb to curb)

Notes:

⁽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 subplot with a density result below 87% will be evaluated under 1.06.04.

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: 91.5-98%

Joint Density: 90-98%

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%: $PA_{(M \text{ or } J)} = 0.125 * PWL - 11.25$

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 5 calendar days of placement.

A lot with PWL less than 50% will be evaluated under 1.06.04.

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 4.06.4-1.

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

Tons Adjusted for Joint Density (T_{JD}) = (PA_J / 100) X 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 x $\frac{\text{Lot joint length}}{\text{Joint length in project or phase}}$

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

Additionally, any subplot with a density result below 87% will be evaluated under 1.06.04.

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 x Unit Price = Est. (Di)

Density Lot Adjustment (PWL Lots): (T_{MD} or T_{JD}) x Unit Price = 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 subplot with a density result below 87% will be evaluated under 1.06.04.

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 bituminous concrete pavement is not measured for payment.

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

5. 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:

Tack Coat (gallons at 60°F) = Measured Weight (pounds) / Weight per gallon at 60°F

Tack Coat (gallons at 60°F) = 0.996 x 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 x 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 bituminous concrete 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 bituminous concrete

pavement is included in the general cost of the work.

4. The cutting of bituminous concrete pavement will be paid in accordance with 2.02.05.
5. Material for tack coat will be paid for at the Contract unit price per gallon at 60°F for "Material for Tack Coat."
6. The Material Transfer Vehicle (MTV) will be paid at the Contract unit price per ton for "Material Transfer Vehicle."

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

SECTION 5.86 - CATCH BASINS, MANHOLES AND DROP INLETS

5.86.01—Description

5.86.02—Materials

5.86.03—Construction Methods

5.86.04—Method of Measurement

5.86.05—Basis of Payment

5.86.01—Description: The work under this Section shall consist of furnishing, preparing, and installing catch basins, manholes and drop inlets (and also the removal, abandonment, alteration, reconstruction, or conversion of such existing structures) in conformity with the lines, grades, dimensions and details shown on the plans.

This Section shall also include resetting or replacing catch basin tops as well as manhole frames and covers.

5.86.02—Materials: The materials for this work shall meet the following requirements:

Drainage structures shall meet the requirements of M.08.02 and shall utilize concrete with a 28-day minimum compressive strength of 4000 psi.

Galvanizing shall meet the requirements of M.06.03.

Mortar shall meet the requirements of M.11.04.

Butyl rubber joint seal shall meet the requirements of ASTM C990.

Granular fill, if necessary, shall meet the requirements of M.02.01.

Protective compound material shall be a type appearing on the Department's Qualified Products List and be acceptable to the Engineer, as specified in M.03.09.

5.86.03—Construction Methods: Drainage trench excavation, including rock in drainage trench excavation and backfilling, shall be performed in accordance with 2.86.03 and the requirements of the plans.

Where a drainage structure is to be installed below the surface, a drainage trench shall be excavated to the required depth, the bottom of which shall be graded to the elevation of the bottom of the proposed drainage structure or to ensure a uniform foundation for the structure.

Where a firm foundation is not encountered at the grades established due to unsuitable material, such as soft, spongy, or unstable soil, the unsuitable material shall be removed and replaced with approved granular fill, thoroughly compacted in lifts not to exceed 6 inches. The Engineer shall be notified prior to removal of the unsuitable material in order to determine the depth of removal necessary.

When rock, as defined in 2.86.01-2, is encountered, work shall be performed in accordance with 2.86.03 and the requirements of the plans.

When a drainage structure outside of proposed drainage trench limits is to be removed, it shall be completely removed and all pipes shall be removed or plugged with cement masonry.

When a drainage structure is to be abandoned, the structure shall be removed to a depth 2 feet below the subgrade or as directed by the Engineer. The floor of the structure shall be broken and all pipes shall be plugged with cement masonry.

Drainage structures shall be constructed in accordance with the plans and the requirements contained herein for the character of the work involved. The provisions of 6.02.03 pertaining to bar reinforcement shall apply except that shop drawings need not be submitted for approval unless called for in the plans, Contract or directed by the Engineer. Welding shall be performed in accordance with the applicable sections of the AWS Structural Welding Code, D1.1.

When it becomes necessary to increase the horizontal dimensions of manholes, catch basins and drop inlets to sizes greater than those shown on the plans in order to provide for multiple pipe installations, large pipes or for other reasons, the Contractor shall construct such manholes, catch basins and drop inlets to modified dimensions as directed by the Engineer.

The surfaces of the tops of all catch basins, and drop inlets shall be given a coat of protective compound material, at the manufacturer's recommended application rate, immediately upon completion of the concrete curing period.

All masonry units shall be laid in full mortar beds.

Metal fittings for catch basins, manholes or drop inlets shall be set in full mortar beds or otherwise secured as shown on the plans.

All inlet and outlet pipes shall be set flush with the inside face of the wall of the drainage structure as shown on the plans. The pipes shall extend through the walls for a sufficient distance beyond the outside surface to allow for satisfactory connections, and the concrete or masonry shall be constructed around them neatly to prevent leakage along their outer surfaces.

When constructing a new drainage structure within a run of existing pipe, the section of existing pipe disturbed by the construction shall be replaced with new pipe of identical type and size extending from the drainage structure to the nearest joint of the existing pipe in accordance with 6.86.03 or as directed by the Engineer.

Backfilling shall be performed in accordance with 2.86.03.

Frames, covers and tops which are to be reset shall be removed from their present beds, the walls or sides shall be rebuilt to conform to the requirements of the new construction and the frames, covers and tops shall be reset as shown on the plans or as directed by the Engineer.

5.86.04—Method of Measurement:

Drainage Trench Excavation: In accordance with 2.86.04, excavation for drainage trench will not be measured for payment but shall be included in the Contract unit price for the type of structure being installed.

Rock in Drainage Trench Excavation: Rock in Drainage Trench Excavation will be measured in accordance with the drainage trench excavation limits described in 2.86.03.

Manholes, Catch Basins and Drop Inlets will be measured as separate units.

Resetting of Manholes, Catch Basins and Drop Inlets will be measured as separate units.

Replacement of frames, covers, and tops will be measured as a unit for catch basin top or manhole frame and cover.

Conversion of drainage structures as specified on the plans, or as directed by the Engineer, including structure reconstruction will be measured for payment as a unit.

Removal or abandonment of drainage structures outside of drainage trench excavation limits, as defined in 2.86.03, will be measured as separate units.

There will be no measurement or direct payment for the application of the protective compound material, the cost of this work shall be considered as included in the general cost of the work.

Measurement for payment for work and materials involved with installing pipes to connect new drainage structures into a run of existing pipe will be as provided for under the applicable Contract items in accordance with 6.86.04.

There will be no measurement or direct payment for plugging existing pipes with cement masonry, the cost of this work will be considered as included in the general cost of the work.

5.86.05—Basis of Payment:

Drainage Trench Excavation for the installation of proposed structures described herein will be paid for under the respective drainage Contract item(s) for which the excavation is being performed, in accordance with the provisions of 2.86.05.

Rock in Drainage Trench Excavation will be paid for in accordance with the provisions of 2.86.05.

Manholes and Catch Basins will be paid for at the Contract unit price for each "Manhole," or "Catch Basin," of the type specified, at "0' to 10' Deep" or "0' to 20' Deep," complete in place, which price shall include all excavation, backfill, materials, equipment, tools and labor incidental thereto.

Drop Inlets will be paid for at the Contract unit price for each "Drop Inlet," of the type specified, complete in place, which price shall include all excavation, backfill, materials, equipment, tools and labor incidental thereto.

Manholes, Catch Basins and Drop Inlets constructed to modified dimensions as directed by the Engineer, will be paid for as follows:

Where the interior floor area has to be increased to accommodate existing field conditions, as measured horizontally at the top of the base of the completed structure, and does not exceed 125% of the interior floor area as shown on the plans for that structure, then the structure shall be paid for at the Contract unit price for each "Manhole," "Catch Basin," or "Drop Inlet" of the type specified. Where the floor area is greater than 125%, the increase in the unit price for the individual structure shall be in direct proportion to the increase of the completed structure interior floor area as compared to the interior floor area as shown on the plans for that structure. Such increased unit price shall include all excavation, materials, equipment, tools, and labor incidental to the completion of the structure.

Reset Units will be paid for at the Contract unit price each for "Reset Manhole," "Reset Catch Basin," or "Reset Drop Inlet," of the type specified, respectively, complete in place, which price shall include excavation, cutting of pavement, removal and replacement of pavement structure, and all materials, equipment, tools and labor incidental thereto, except when the work requires reconstruction greater than 3 feet, measured vertically, then the entire cost of resetting the unit will be paid for as Extra Work in accordance with the provisions of 1.04.05.

Frames, Covers, and Tops when required in connection with reset units, will be paid for at the Contract unit price each for such "Manhole Frame and Cover" or "(Type) Catch Basin Top," complete in place, including all incidental expense; or when no price exists, the furnishing and placing of such material will be paid for as Extra Work in accordance with the provisions of 1.04.05.

When the catch basin top has a stone or granite curb in its design, the curb or inlet shall be included in the cost of the "(Type) Catch Basin Top."

Conversion of drainage structures will be paid for at the Contract unit price each for "Convert Catch Basin to (Type) Catch Basin," "Convert Catch Basin to (Type) Manhole," or

"Convert Manhole to (Type) Catch Basin," complete in place, which price shall include excavation, cutting of pavement, removal and replacement of pavement, backfill, all alterations to existing structure, all materials including catch basin frame and grate of the type specified, or manhole frame and cover, all equipment, tools and labor incidental thereto.

The maximum change in elevation of frame under these items shall not exceed 3 feet. Greater depth changes, if required, shall be paid for as Extra Work, in accordance with 1.04.05.

Removal or abandonment of drainage structures outside of drainage trench excavation limits as defined in 2.86.03 will be paid for at the Contract unit price each for "Remove Drainage Structure – 0' to 10' Deep," "Remove Drainage Structure – 0' to 20' Deep," or "Abandon Drainage Structure," which price shall include excavation, cutting of pavement, removal and replacement of pavement, backfill, and all equipment, tools and labor incidental thereto.

Pay Item	Pay Unit
(Type) Catch Basin – 0' to 10' Deep	ea.
(Type) Catch Basin – 0' to 20' Deep	ea.
Manhole (Size) – 0' to 10' Deep	ea.
Manhole (Size) – 0' to 20' Deep	ea.
(Type) Drop Inlet	ea.
Reset Catch Basin	ea.
Reset Manhole	ea.
Reset Drop Inlet	ea.
Convert Catch Basin to (Type) Catch Basin	ea.
Convert Catch Basin to (Type) Manhole	ea.
Convert Manhole to (Type) Catch Basin	ea.
Manhole Frame and Cover	ea.
(Type) Catch Basin Top	ea.
Remove Drainage Structure – 0' to 10' Deep	ea.
Remove Drainage Structure – 0' to 20' Deep	ea.
Abandon Drainage Structure	ea.

SECTION 6.86 - DRAINAGE PIPES, DRAINAGE PIPE ENDS

6.86.01—Description

6.86.02—Materials

6.86.03—Construction Methods

6.86.04—Method of Measurement

6.86.05—Basis of Payment

6.86.01—Description: This work shall consist of furnishing, preparing and installing drainage pipes of the size and type specified, bedding material, joint sealant, rubber gaskets, clamps, collars, grout, grout collars, drainage trench excavation, backfilling or satisfactory disposal of all materials, the removal of which is necessary for the proper completion of the work, connecting proposed drainage systems to existing systems, plugging or abandoning existing pipes and removal of existing pipe within trench limits, as shown on the plans or as directed by the Engineer.

This Section shall also include removal of drainage pipes outside of drainage trench excavation limits, as defined in 2.86.03-1.

6.86.02—Materials: The materials for this work shall meet the following requirements: Drainage Pipe, Drainage Pipe Ends, Sealers, Gaskets and connection hardware shall meet the requirements of M.08.01.

Bedding Material shall meet the requirements of M.08.03-1.

Granular Fill, if necessary, shall meet the requirements of M.02.01.

Brick Masonry shall meet the requirements of M.11.03 and Mortar shall meet the requirements of M.11.04.

Concrete used for Concrete Pipe Connections shall be Class “F” Concrete meeting the requirements of M.03.

6.86.03—Construction Methods:

(1) **Drainage Trench Excavation:** Drainage trench excavation and backfilling shall be performed in accordance with 2.86.03 and the requirements of the plans.

Where drainage pipe is to be laid below the surface, a drainage trench shall be excavated to the required depth, the bottom of which shall be graded to the elevation of the bottom of the bedding material.

Where drainage pipe is to be laid in a fill area, the embankment shall be placed and compacted to a minimum elevation 12 inches above the top of the proposed pipe, whereupon the drainage trench excavation shall be performed and the pipe installed.

(2) **Rock in Drainage Trench Excavation:** When rock, as defined in 2.86.01-2, is encountered, work shall be performed in accordance with 2.86.03 and the requirements of the plans.

(3) **Drainage Pipe Installation:** New or re-laid drainage pipes shall be installed on 4 inches of bedding material (12 inches if over rock in ledge formation), the details as shown on the plans, or as directed by the Engineer. Prior to placement of the drainage pipe, in accordance with the plans, bedding material shall be pre-shaped to 10% of the total height

of the pipe in order to keep the pipe in the center of the trench. Following placement of the drainage pipe, bedding material backfill shall be placed in accordance with the following table:

Internal Pipe Diameter	Required Bedding Material Backfill
< 48 inches*	25% of total height of the pipe
≥ 48 inches*	12 inches above the top of the pipe
*Includes pipe arch of equivalent internal horizontal span See Standard Drawing	

The placement of the drainage pipe shall start at the downstream end and progress upstream or as shown on the plans, or as directed by the Engineer. All drainage pipes shall be carefully laid in the center of the drainage trench, true to the lines and grades given. Bell ends shall face upgrade and all joints shall be tight.

Joints in concrete pipe shall be sealed with cold-applied bituminous sealer, preformed plastic gaskets or flexible, watertight, rubber-type gaskets. Portland cement mortar shall not be used for sealing pipe joints except with permission of the Engineer.

When cold-applied bituminous sealer is used, the bell and spigot ends shall be wiped clean and dry before applying the bituminous sealer to the pipe ends. Before the drainage pipes are placed in contact with each other, the spigot or tongue end shall be completely covered with bituminous sealer; then the pipe shall be laid to line and grade so the inside surface of all abutting pipes are flush. Additional bituminous sealer shall be applied to the joint after the connection has been made to ensure a water tight connection.

Where the end of an existing drainage pipe is not compatible with the end of a proposed concrete pipe, the Contractor shall align the inner diameters of the pipes being connected, butt the pipe ends together, and construct a cast-in-place concrete pipe connection, as shown in the plans. Incompatible bell/spigot or tongue/groove ends shall be cut off as required to ensure the interior drainage pipe walls are aligned to provide a smooth transition between the pipes.

Metal pipe and pipe arches shall be carefully joined and firmly clamped together by approved connecting bands, which shall be properly bolted in place before any backfill is placed.

Newly installed drainage pipe which is not in true alignment, or which shows any settlement or distortion, shall be reinstalled in accordance with 1.05.03.

When drainage pipe outside of proposed drainage trench limits is to be removed, it shall be removed to the limits shown on the plans and all remaining pipes shall be plugged with cement masonry.

Where shown on the plans or directed by the Engineer, the Contractor shall plug abandoned existing pipes with cement masonry.

(4) Drainage Pipe End Installation: Reinforced concrete drainage pipe ends shall be placed on a prepared bed of the existing ground and accurately aligned as shown on the plans. The joints shall be sealed as specified in 6.86.03-3 and backfill shall be placed around both sides of the unit simultaneously to the elevation shown on the plans.

Metal drainage pipe ends shall be placed on a prepared bed of the existing ground and accurately aligned as shown on the plans. After the attachment of the drainage pipe end, backfill shall be placed around both sides of the unit up to the elevation shown on the plans, exercising caution to avoid displacement or deformation of the unit.

6.86.04—Method of Measurement: This work will be measured as follows:

Drainage Trench Excavation, in accordance with 2.86.04, will not be measured for payment.

Rock in Drainage Trench Excavation will be measured in accordance with 2.86.04.

Bedding Material will not be measured for payment.

New and Re-laid Pipes and Pipe Arches will be measured for payment by the actual number of linear feet of pipe or pipe arch of the various sizes and types, completed and accepted and measured in place along the invert. Coupling bands and fittings for pipes and pipe arches will not be measured for payment.

Reinforced Concrete Drainage Pipe Ends and Metal Drainage Pipe Ends will be measured for payment as separate units.

Corrugated Metal Pipe Elbows (of the Size and Type specified) will be measured for payment by the actual number of linear feet of pipe elbows completed and accepted, based on 6 linear feet per elbow, as shown on the plans. Coupling bands for elbows will not be measured for payment.

Concrete Pipe Connection will be measured for payment by the number of each concrete pipe connection constructed at locations where proposed concrete pipes tie into an existing pipe with an incompatible end, completed and accepted by the Engineer.

Removal of drainage pipe outside of drainage trench excavation limits, as defined in 2.86.03, will be measured for payment by the actual number of linear feet of drainage pipe removed.

There will be no measurement for plugging existing pipes with cement masonry.

6.86.05—Basis of Payment:

Drainage Trench Excavation for the installation of drainage pipes will not be paid separately but shall be included in the Contract unit price for the respective drainage pipe or pipe end item(s), in accordance with the provisions of 2.86.05.

Rock in Drainage Trench Excavation will be paid for in accordance with the provisions of 2.86.05.

Bedding Material necessary for the installation of drainage items described herein will be included in the Contract unit price for the respective drainage pipe or pipe end item(s). Bedding material required to fill voids when rock in drainage trench is encountered will not be measured for payment but shall be included in the Contract unit price for "Rock in Drainage Trench Excavation," in accordance with 2.86.05.

New Pipes and Pipe Arches will be paid for at the Contract unit price per linear foot for "(Size and Type) Pipe (Thickness) – 0' to 10' Deep," "(Size and Type) Pipe (Thickness) – 0' to 20' Deep," "(Size) Pipe Arch (Thickness) – 0' to 10' Deep" or "(Size) Pipe Arch (Thickness) – 0' to 20' Deep" complete in place, including materials, drainage trench excavation, bedding material, equipment, tools, and labor incidental thereto.

Relaid Pipes and Pipe Arches will be paid for at the Contract unit price per linear foot for "Relaid Pipe (Size and Type) – 0' to 10' Deep," "Re-laid Pipe (Size and Type) – 0' to 20' Deep," "Relaid Pipe Arch (Size and Type) – 0' to 10' Deep," or "Relaid Pipe Arch (Size and Type) – 0' to 20' Deep," complete in place, including all materials, drainage trench excavation, bedding material, equipment, tools, and labor incidental thereto.

Reinforced Concrete Drainage Pipe Ends and Metal Drainage Pipe Ends will be paid for at the Contract unit price for each drainage pipe end of the Size and Type specified, complete in place, including all excavation, materials, attachment systems, equipment, tools and labor incidental thereto.

Corrugated Metal Pipe Elbows will be paid for at the Contract unit price per linear foot for "(Size and Type) Corrugated Metal Pipe Elbow" including all materials, drainage trench excavation, bedding material, equipment, tools, and labor incidental thereto.

Concrete Pipe Connection will be paid for at the Contract unit price each for "Concrete Pipe Connection" complete in place, including all materials, equipment, tools and labor incidental thereto.

Removal of drainage pipes of all types and sizes, outside of drainage trench excavation limits, as defined in 2.86.03-1, will be paid for at the Contract unit price per linear foot for "Remove Existing Pipe – 0' to 10' Deep," or "Remove Existing Pipe – 0' to 20' Deep," which price shall include excavation, temporary trench protection, backfill, and all equipment, tools and labor incidental thereto.

There will be no direct payment for the plugging of existing drainage pipes, but the cost thereof shall be included in the respective drainage Contract item(s).

Pay Item	Pay Unit
(Size and Type) Pipe (Thickness) – 0' to 10' Deep	l.f.
(Size and Type) Pipe (Thickness) – 0' to 20' Deep	l.f.
(Size and Type) Pipe Arch (Thickness) – 0' to 10' Deep	l.f.
(Size and Type) Pipe Arch (Thickness) – 0' to 20' Deep	l.f.
Relaid (Size and Type) Pipe– 0' to 10' Deep	l.f.
Relaid (Size and Type) Pipe– 0' to 20' Deep	l.f.
(Size and Type) Relaid Pipe Arch – 0' to 10' Deep	l.f.
(Size and Type) Relaid Pipe Arch – 0' to 20' Deep	l.f.
(Size) Reinforced Concrete Drainage Pipe End	ea.
(Size) Metal Drainage Pipe End	ea.
(Size and Type) Corrugated Metal Pipe Elbow	l.f.
Concrete Pipe Connection	ea.
Remove Existing Pipe – 0' to 10' Deep	l.f.
Remove Existing Pipe – 0' to 20' Deep	l.f.

SECTION 10.00 - GENERAL CLAUSES FOR HIGHWAY ILLUMINATION AND TRAFFIC SIGNAL PROJECTS

Article 10.00.03 – Plans:

In the first paragraph, replace the 2nd, 3rd, and 4th sentences with the following:

The Contractor shall digitally mark, in red, any changes on the plan(s) using a pdf program.

The Contractor shall submit the digital pdf file(s) to the Engineer and to DOT.TrafficElectrical@ct.gov, for Traffic Signals, prior to requesting the Functional Inspection.

Also prior to requesting the Functional Inspection, the Contractor shall deliver to the Engineer the following:

In the first paragraph, last sentence, in item no. 1, replace “Four (4)” with “Digital PDF Files and Five (5)” [paper prints of schematics and wiring diagrams...].

Article 10.00.10 Section 3. Functional Inspection, first paragraph after the 2nd sentence: Add the following:

The Contractor shall have a bucket truck with crew on site during the Functional Inspection to make any necessary aerial signal adjustments as directed by the Engineer.

Article 10.00.12 - Negotiations with utility company: Add the following:

The Contractor shall give notice to utility companies a minimum of 30 days prior to required work or services to the utility company. Refer to Section 1.07 – Legal Relations and Responsibilities for the list of utility companies and representatives the contractor shall use.

The Contractor shall perform all work in conformance with Rules and Regulations of Public Utility Regulatory Authority (PURA) concerning Traffic Signals attached to Public Service Company Poles. The Contractor is cautioned that there may be energized wires in the vicinity of the specified installations. In addition to ensuring compliance with NESC and OSHA regulations, the Contractor and/or its Sub-Contractors shall coordinate with the appropriate utility company for securing/protecting the site during the installation of traffic signal mast arms, span poles or illumination poles.

When a span is attached to a utility pole, the Contractor shall ensure the anchor is in line with the proposed traffic signal span wire. More than 5 degree deviation will lower the holding strength and is not allowed. The Contractor shall provide any necessary assistance required by the utility company, and ensure the anchor and guy have been installed and properly tensioned prior to attaching the span wire to the utility pole.

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:

12.00.06 – Data Labels:

For the purpose of developing and maintaining a highway sign inventory and for the purpose of sampling and testing reflective sheeting, the Contractor shall affix a Data Label(s) to the back of each State owned and maintained sign face-extruded aluminum sign and sign face-sheet aluminum sign in the vicinity of the lower left hand corner or quadrant. Data Labels shall be 2 (two) separate 5 (five) inch by 3 (three) inch (125mm by 75mm), non-reflective weatherproof films with black copy on a yellow background having a pressure sensitive adhesive backing.

A “Fabrication” Data Label is to include information about the sign fabricator, date of fabrication and the sheeting manufacturer - type. An “Installation” Data Label is to include The State Project Number or Maintenance Permit Number that installed the sign and date of installation.

The cost of the data labels coded and in place on the sign shall be included in the unit cost of the respective sign material. Payment for the respective quantities of each sign face-extruded aluminum sign and each sign face-sheet aluminum sign may be withheld until all Data Label(s) have been installed to the satisfaction of the Engineer.

The Data Label designs, with additional notes relative to design requirements are attached herewith.

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

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

signing. The electronic database information shall detail information regarding the sign actually installed by the project.

Field Number	Type	size	Description
1	text	20	Record Number (starting at 1...)
2	text	20	Sign Catalog Number
# 3	text	10	Size Height
# 4	text	10	Size Width
5	text	25	Legend
# 6	text	10	Background Color
# 7	text	10	Copy Color
8	Link	25	Material (see acceptable categories)
9	text	30	Comments if any
# 10	text	20	MUTCD Type
11	text	15	Town
12	text	5	Route
13	text	5	Route direction
# 14	text	10	Highway Log Mileage
15	text	15	Latitude
16	text	15	Longitude
17	text	25	Mounting Type
18	text	25	Reflective Sheeting Type
19	date	25	Date Installed
20	text	10	Number of Posts
21	text	255	Sheeting Manufacturer name and address
22	text	15	State Project Number (or)
23	text	15	Encroachment Permit number.
24	Graphic	*	Sign Picture Graphic.

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

DATA LABELS
 NON REFLECTIVE, WEATHERPROOF FILM
 BLACK COPY, YELLOW BACKGROUND

CONN DOT											
SIGN FACE DATA LABEL											
Fabricator: (Insert NAME or State)											
Sheeting Manufacturer - Type (Insert NAME - TYPE)											
Date Fabricated - Month / Year											
J	F	M	A	M	J	J	A	S	O	N	D
12	13	14	15	16	17	18	19	20	21	22	23

CONN DOT											
SIGN FACE DATA LABEL											
Installed By:											
Project No.: (Insert 000-0000 or State)											
Permit No.: (Insert D_-000000)											
Date Installed - Month / Year											
J	F	M	A	M	J	J	A	S	O	N	D
12	13	14	15	16	17	18	19	20	21	22	23

Data Labels To Be 5 Inch By 3 Inch Each (125mm x 75mm) With Face Designs As Shown Above.

All Copy Ink Must Be Durable And Not Fade, Discolor, Or Smudge.

All Variable Legends To Be Included At Label Fabrication.

Only One "Installed By" Permit Or Project Number Should Be Provided.

Sign Fabrication And / Or Installation By State Forces, Insert "State."

The Month And Year Of Fabrication And Installation May Be Punched Or Marked Out

The Back Of The Data Label Must Contain A Pre-coated Pressure-Sensitive Adhesive Covered By A Removable Liner.

At Application, The Liner Must Be removable Without Soaking In Water Or Other Solvents.

The Adhesive Must Form A Durable Bond To Surfaces That Are Smooth, Clean, Corrosion-Free And Weather Resistant.

Completed Data Labels Must Not Discolor, Crack, Craze, Blister, Delaminate, Peel, Chalk, Or Lose Adhesion When Subjected To Temperatures From -30 Degrees to 200 Degrees Fahrenheit.

SECTION M.04 - BITUMINOUS CONCRETE MATERIALS

Section M.04 is being deleted in its entirety and replaced with the following:

M.04.01—Bituminous Concrete Materials and Facilities

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

M.04.03—Production Requirements

M.04.01—Bituminous Concrete Materials and Facilities: Each source of material, Plant, and laboratory used to produce and test bituminous concrete must be qualified on an annual basis by the Engineer. AASHTO or 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.

2. Fine Aggregate: All fine aggregate shall meet the requirements listed in M.01.

3. Mineral Filler: Mineral filler shall conform to 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 Contractor shall submit a Certified Test Report and bill of lading representing each delivery in accordance with AASHTO R 26(M). 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 Contractor shall submit the name(s) of personnel responsible for receipt, inspection, and record keeping of PG binder. Contractor Plant personnel shall document specific storage tank(s) where binder will be transferred and stored until used and provide binder samples 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 1 storage tank at the Plant from different suppliers, grades, or additive percentages is prohibited.

(b) Basis of Approval: The request for approval of the source of supply shall list the location where the material will be manufactured, and the handling and storage methods, along with necessary certification in accordance with AASHTO R 26(M). Only suppliers/refineries that have an approved “Quality Control Plan for Performance Graded Binders” formatted in accordance with AASHTO R 26(M) may supply PG binders to Department projects.

(c) 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.

(d) 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 bituminous concrete 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.

(e) Warm Mix Additive or Technology:

- i. The warm mix additive or technology must be listed on the North East Asphalt User Producer Group (NEAUPG) Qualified Warm Mix Asphalt (WMA) Technologies List at the time of bid, which may be accessed online at <http://www.neaupg.uconn.edu>.
- ii. The warm mix 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 Contractor 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 warm mix additive, the manufacturer's suggested rate for the WMA additive, the water injection rate (when applicable), and the WMA Technology manufacturer's recommended mixing and compaction temperature ranges.

5. Emulsified Asphalts:

(a) General:

- i. The emulsified asphalt shall meet the requirements of AASHTO M 140(M) or AASHTO M 208 as applicable.
- 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.

(b) Basis of Approval:

- i. The request for approval of the source of supply shall list the location where the material is manufactured, the handling and storage methods, and certifications in accordance with AASHTO R 77. Only suppliers that have an approved "Quality Control Plan for Emulsified Asphalt" formatted in accordance with AASHTO R 77 and that submit monthly split samples per grade to the Engineer may supply emulsified asphalt to Department projects.
- ii. Each shipment of emulsified asphalt delivered to the Project site shall be accompanied with the corresponding Certified Test Report listing Saybolt viscosity, residue by evaporation, penetration of residue, and weight per gallon at 77°F and Material Certificate.
- iii. Anionic emulsified asphalts shall meet the requirements of AASHTO M-140. Materials

used for tack coat shall not be diluted and 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.

- iv. Cationic emulsified asphalt shall meet the requirements of AASHTO M-208. Materials used for tack coat shall not be diluted and 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 bituminous concrete pavement. 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 Contractor shall provide a 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 Material 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 conforms to the following gradation:

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

The Contractor shall submit a Material 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 Material Certificate in accordance with 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 material under consideration for use in bituminous concrete mixtures must be certified as being asbestos-free and shall be entirely free of whole, intact nails. The RAS material shall meet the requirements of AASHTO MP 23.

The Producer shall test the RAS material to determine the asphalt content and the gradation of the RAS material. The Producer shall take necessary action to prevent contamination of RAS stockpiles.

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

10. Plant Requirements:

(a) General: The Plant producing bituminous concrete 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)	
	<u>HMA</u>	<u>WMA/PMA</u>
Open Surge	4	Mfg Recommendations*
Unheated - Non-insulated	8	Mfg Recommendations*
Unheated - Insulated	18	Mfg Recommendations*
Heated - No inert gas	TBD by the Engineer	TBD by the Engineer

*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. Recording equipment shall monitor the batching sequence of each component of the mixture and produce a printed record of these operations on each Plant ticket, as specified herein.

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

If a WMA Technology is added at the Plant, the Plant tickets shall include the actual dosage rate.

For drum Plants, the Plant ticket 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 Plant ticket shall be produced for each bath 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
Bituminous Material	±0.1% of the total batch
Zero Return (Aggregate)	±0.5% of the total batch
Zero Return (Bituminous 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 half way through production, shall be determined.

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

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

(f) RAP: RAP moisture content shall be determined a minimum of twice daily (prior to production and halfway through production).

(g) Asphalt Binder: A binder log shall be submitted to the Department's Central Lab on a monthly basis.

(h) Warm mix additive: For mechanically foamed WMA, the water injection rate shall be monitored during production and not exceed 2.0% by total weight of binder. For additive added at the Plant, the dosage rate shall be monitored during production.

(i) Testing Laboratory: The Contractor shall maintain a laboratory to test bituminous concrete mixtures during production. 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 Drinking Water Division, and be equipped with all necessary testing equipment as well as with a PC, printer, and telephone with a dedicated hard-wired phone line. In addition, the PC shall have a high speed internet connection and a functioning web browser with unrestricted access to <https://ctmail.ct.gov>. This equipment shall be maintained in working order at all times and be made available for use by the Engineer.

The laboratory shall be equipped with a heating system capable of maintaining a minimum temperature of 65°F. It shall be clean 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 testing apparatus, 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. The Contractor shall ensure that the Laboratory is adequately supplied at all times during the course of the Project with all necessary testing materials and equipment.

The Contractor shall maintain a list of laboratory 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. The Contractor shall notify the Engineer if any modifications are made to the equipment within the laboratory. The Contractor shall take immediate action to replace, repair, or recalibrate any piece of equipment that is out of calibration, malfunctioning, or not in operation.

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

1. Curb Mix:

(a) Requirements: The Contractor shall use bituminous concrete 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 6.5 - 9.0	0.4
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		
Binder	325°F maximum	
Aggregate	280-350°F	
Mixtures	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 bituminous asphalt binder.		

2. Superpave 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 7 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 component consensus properties and tensile strength ratio (TSR) specimens shall be tested at an AASHTO Materials Reference Laboratory (AMRL) by NETTCP Certified Technicians.

All bituminous concrete 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. The compacted specimens may be fabricated at the Plant and then tested at an AMRL accredited facility. A minimum of 45000 grams of laboratory or plant blended mixture and the

corresponding complete Form MAT-412s shall be submitted to the Division of Material Testing (DMT) for design TSR testing verification. The mixture submitted shall be representative of the corresponding mix design as determined by the Engineer.

- i. 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 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.
 - Two (2) representative samples of RAP shall be obtained. Each sample shall be split, and 1 split sample shall be tested for binder content in accordance with AASHTO T 164 and the other in accordance with AASHTO T 308.
 - RAP material shall not be used with any other recycling option.
 - ii. 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 Approval: The following information must be included in the JMF submittal:
- i. Gradation, consensus properties and specific gravities of the aggregate, RAP or RAS.
 - ii. Average asphalt content of the RAP or RAS by AASHTO T 164.
 - iii. Source of RAP or RAS and percentage to be used.
 - iv. Warm mix Technology, manufacturer's recommended additive rate and tolerances, and manufacturer recommended mixing and compaction temperatures.
 - v. TSR test report and anti-strip manufacturer and recommended dosage rate if applicable.
 - vi. Mixing and compaction temperature ranges for the mix with and without the warm-mix technology incorporated.
 - vii. JMF ignition oven correction factor by AASHTO T 308.

With each JMF submittal, the following samples shall be submitted to the Division of Materials Testing:

- 4 - one (1) quart cans of PG binder, with corresponding Safety Data Sheet (SDS)
- 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 and M.04.02-4. 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 Master Range for Bituminous Concrete Mixture Design Criteria

	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 ± 1		16.0 ± 1		15.0 ± 1		13.0 ± 1	
VA (%)	4.0 ± 1		4.0 ± 1		4.0 ± 1		4.0 ± 1	
Gse	JMF value		JMF value		JMF value		JMF value	
Gmm	JMF ± 0.030		JMF ± 0.030		JMF ± 0.030		JMF ± 0.030	
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	Minimal as determined by the Engineer							

(c) Mix Status: Each facility will have each type of bituminous concrete mixture rated based on the results of the previous year of production. Mix status will be provided to each bituminous concrete Producer 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 A: Percentage of acceptance test results with compliant air voids.

Criteria B: The average of the percentage of acceptance results with compliant VMA and the percentage of acceptance results with compliant air voids.

The final rating assigned will be the lower of the rating obtained with Criteria A or Criteria B. 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.

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

1. there are no compliant acceptance production test results 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. 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.

Bituminous concrete mixtures rated with a “PPT” status cannot be used on Department projects. Testing shall be performed by the Producer with NETTCP certified personnel on material under this status. Test results 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 bituminous concrete, and 5,000 grams of cooled loose bituminous concrete for verification testing and approval

Option C: When the Contractor or their representative performs testing without being witnessed by a Department Inspector, the Engineer may verify the mix in the Contractor’s laboratory

Witnessing or verifying by the Department 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, Acceptance and Assurance Testing Policies and Procedures](#) in order to be verified.

“U” – Not Approved: Status assigned to a type of mixture that does not have an approved JMF. Bituminous concrete mixtures with a “U” status cannot be used on Department projects.

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

Traffic Level	Design ESALs (80kN) Millions	Coarse Aggregate Angularity ⁽¹⁾	Fine Aggregate Angularity AASHTO T 304, Method A Minimum %	Flat and Elongated Particles ⁽²⁾ ASTM D4791, Maximum %	Sand Equivalent AASHTO T 176, Minimum %
		ASTM D5821, 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	70-80	70-80	70-80	67-80
2	0.3 to <3.0	7	75	115	≤90.5	96.0	≤98.0	65-78	65-78	65-78	65-78
3	≥3.0	7	75	115	≤90.0	96.0	≤98.0	65-77	65-76	65-75	65-75

**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 bituminous concrete production process. The control chart(s) shall be submitted to the Engineer the first day of each month.

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.

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 bituminous concrete that complies with these specifications. The Contractor shall submit any changes to the QCP as work progresses.

2. Acceptance Requirements:

(a) General:

For those mixes with a total estimated project tonnage over 500 tons, a NETTCP HMA Paving Inspector certified Contractor representative shall obtain a field sample of the material placed at the project site in accordance with AASHTO T 168 using the procedure indicated in Section 5.2.3 or an alternate procedure approved by the Engineer. Sampling from the truck at the Plant in accordance with AASHTO T 168 using the procedure indicated in Section 5.2.2 will be allowed for those mixes with a total estimated project tonnage equal to or less than 500 tons. Regardless of sampling location, the sample shall be quartered by the Contractor in accordance with AASHTO R 47 and placed in an approved container. The container shall be sealed with a 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 14000 grams. The Contractor shall transport one of the containers to the Departments Central Laboratory in Rocky Hill, retain one of the sealed containers for potential use in dispute resolution and test the remaining samples for acceptance in accordance with past practice.

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 personnel performing QC and acceptance testing must be present at the facility prior to, during, and until completion of production, and be certified as a NETTCP HMA Plant Technician or Interim 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.

Should the Department be unable to validate the Contractor's acceptance test result(s) for a lot of material, the Engineer will use results from verification testing and re-calculate the pay adjustment for that lot. The Contractor may request to initiate the dispute resolution process in writing within 24 hours of receiving the adjustment and must include supporting documentation or test results to justify the request.

(b) Curb Mix Acceptance Sampling and Testing Procedures: Curb Mixes shall be tested by the Contractor at a frequency of 1 test per every 250 tons of cumulative production, regardless of the day of production.

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 T 168	Sampling of Bituminous Concrete
3	AASHTO T 308	Binder Content by Ignition Oven Method (adjusted for aggregate correction factor)
4	AASHTO T 209(M)⁽²⁾	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
5	AASHTO T 312⁽²⁾	⁽¹⁾ Superpave Gyrotory Molds Compacted to N _{des}
6	AASHTO T 329	Moisture Content of Hot-Mix Asphalt (HMA) by Oven Method

Notes: ⁽¹⁾ One (1) set equals 2 each of 6-inch molds. Molds to be compacted to 50 gyrations.
⁽²⁾ Once per year or when requested by the Engineer.

- i. Determination of Off-Test Status:
 1. Curb Mix is considered “off test” when the test results indicate that any single value for bitumen content or gradation are not within the tolerances shown in Table M.04.02-1 for that mixture. If the mix is “off test,” the Contractor must take immediate actions to correct the deficiency and a new acceptance sample shall be tested on the same day or the following day of production.
 2. When multiple silos are located at 1 site, mixture supplied to 1 project is considered as coming from 1 source for the purpose of applying the “off test” status.
 3. The Engineer may cease supply from the Plant when test results from 3 consecutive samples are not within the JMF tolerances or the test results from 2 consecutive samples not within the control points indicated in Table M.04.02-1 regardless of production date.
 - ii. JMF Revisions
 1. If a test indicates that the bitumen content or gradation are outside the tolerances, the Contractor may make a single JMF revision as allowed by the Engineer prior to any additional testing. Consecutive test results outside the requirements of Table M.04.02-1 JMF tolerances may result in rejection of the mixture.
 2. 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: The lot will be defined as one of the following types:

 - Non-PWL Production Lot for total estimated Project quantities per mixture less than 3500 tons: All mixture placed during a single continuous paving operation.
 - PWL Production Lot for total estimated Project quantities per mixture of 3500 tons or more: Each 3500 tons of mixture produced within 30 calendar days.

Production Sub Lot:

 - For Non-PWL: As defined in Table M.04.03-2
 - For PWL: 500 tons (The last sub lot may be less than 500 tons.)

Partial Production Lots (For PWL only): A Lot with less than 3500 tons 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.

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

- the total daily estimated tons of production for non-PWL lots, or
- the total size for PWL lots.

One (1) acceptance sample shall be obtained and tested per sub lot with quantities over 125 tons. The Engineer may direct that additional acceptance samples be obtained. For non-PWL lots, one (1) acceptance test shall always be performed in the last sub lot based on actual tons of material produced.

For non-PWL lots, quantities of the same mixture per Plant may be combined daily for multiple State projects to determine the number of sub lots.

The payment adjustment will be calculated as described in 4.06.

**TABLE M.04.03-2:
Superpave Acceptance Testing Frequency per Type/Level/Plant for Non-PWL Lots**

Daily Quantity Produced in Tons (Lot)	Number of Sub Lots/Tests
0 to 125	0, Unless requested by the Engineer
126 to 500	1
501 to 1,000	2
1,001 to 1,500	3
1,500 or greater	1 per 500 tons or portions thereof

The following test procedures shall be used for acceptance:

TABLE M.04.03-3: Superpave Acceptance Testing Procedures

Protocol	Procedure	Description
1	AASHTO T 168	Sampling of bituminous concrete
2	AASHTO R 47	Reducing samples to testing size
3	AASHTO T 308	Binder content by ignition oven method (adjusted for aggregate correction factor)
4	AASHTO T 30(M)	Gradation of extracted aggregate for bituminous concrete mixture
5	AASHTO T 312	⁽¹⁾ Superpave gyratory molds compacted to N_{des}
6	AASHTO T 166	⁽²⁾ Bulk specific gravity of bituminous concrete
7	AASHTO R 35	⁽²⁾ Air voids, VMA
8	AASHTO T 209(M)	Maximum specific gravity of bituminous concrete (average of 2 tests)
9	AASHTO T 329	Moisture content of bituminous concrete

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.

The Contractor shall perform TSR testing within 30 days after the start of production for all design levels of HMA- and PMA- S0.5 Plant-produced mixtures, in accordance with AASHTO T 283(M). The TSR test shall be performed at an AMRL certified laboratory by NETTCP certified technicians. The compacted specimens may be fabricated at the Plant and then tested at an AMRL accredited facility. A minimum of 45000 grams of plant blended mixture and the corresponding complete Form MAT-412s shall be submitted to the DMT for production TSR testing verification. The mixture submitted shall be representative of the corresponding mix design as determined by the Engineer. Additionally, the TSR test report and tested specimens shall be submitted to the Engineer for review. Superpave mixtures that require anti-strip additives (either liquid or mineral) shall continue to meet all requirements specified herein for binder and bituminous concrete. The Contractor shall submit the name, manufacturer, percent used, technical datasheet and SDS for the anti-strip additive (if applicable) to the Engineer.

i. Determination of Off-Test Status:

1. Superpave mixes shall be considered “*off test*” when any control point sieve, binder content, VA, VMA, and Gmm value is outside of the limits specified in Table M.04.03-4 or the target binder content at the Plant is below the minimum binder

content stated in Table M.04.02-5. Note that further testing of samples or portions of samples not initially tested for this purpose cannot be used to change the status.

2. Any time the bituminous concrete mixture is considered off-test:
 - A. The Contractor shall notify the Engineer when the Plant is “*off test*” for any mix design that is delivered to the Project in any production day. When multiple silos are located at 1 site, mixture supplied to 1 project is considered as coming from 1 source for the purpose of applying the “*off test*” determination.
 - B. The Contractor must take immediate actions to correct the deficiency, minimize “*off test*” production 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.

ii. Cessation of Supply for Superpave Mixtures in Non-PWL Lots:

A mixture **shall not be used** on Department projects when it is “off test” for:

1. four (4) consecutive tests in any combination of VA, VMA or Gmm, regardless of date of production, or
2. two (2) consecutive tests in the control point sieves in 1 production shift.

As a result of cessation of supply, the mix status will be changed to PPT

iii. 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 AMRL 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

	S0.25		S0.375		S0.5		S1		Tolerances
Sieve	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		0.3 ⁽³⁾
VMA (%)	16.5		16.0		15.0		13.0		1.0 ⁽⁴⁾
VA (%)	4.0		4.0		4.0		4.0		1.0 ⁽⁵⁾
Gmm	JMF value		JMF value		JMF value		JMF value		0.030
Mix Temp. – HMA ⁽⁶⁾	265-325°F ⁽¹⁾		265-325°F ⁽¹⁾		265-325°F ⁽¹⁾		265-325°F ⁽¹⁾		
Mix Temp. – PMA ⁽⁶⁾	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		Minimal TBD by the Engineer		N/A		

Notes: ⁽¹⁾ 300°F minimum after October 15.

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

⁽³⁾ 0.4 for PWL lots

⁽⁴⁾ 1.3 for all PWL lots except S/P 0.25 mixes. 1.1 for S/P 0.25 Non-PWL lots. 1.4 for S/P 0.25 PWL lots

⁽⁵⁾ 1.2 for PWL lots

⁽⁶⁾ 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
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	<p>All laboratory technician(s) responsible for testing PG binders shall be certified or Interim Qualified by NETTCP as a PG Asphalt Binder Lab Technician.</p> <p>All laboratories testing binders for the Department are required to be accredited by the AMRL.</p> <p>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.</p> <p>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.</p> <p>All AASHTO M 320 references shall be replaced with AASHTO M 332.</p> <p>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.</p>

SECTION M.06 - METALS

Section M.06 is amended as follows:

M.06.01—Reinforcing Steel:

Delete the entire last paragraph in Subarticle 1 "Bar Reinforcement" that reads: "Prior to the incorporation... ..and type of bar reinforcement."

M.06.02—Structural Steel:

Revise Subarticle 2 "Anchor Bolts" as follows:

"(a) Anchor bolt assemblies shall meet the requirements of ASTM F1554, and the grade shall be as specified on the plans. All components of the bolt assembly shall be galvanized in accordance with ASTM F2329."

Replace Subarticle 3 "High Strength Bolts" with the following:

" **3. High-Strength Bolts:** High-strength bolts, including suitable nuts and hardened washers, shall meet the following requirements:

- (a) High-strength bolts shall meet the requirements of ASTM F3125 Grade A325 or ASTM F3125 Grade A490 as shown on the plans. High-strength bolts used with coated steel shall be mechanically galvanized, unless otherwise specified. High-strength bolts used with uncoated weathering grades of steel shall be Type 3.

Nuts for ASTM F3125 Grade A325 bolts shall meet the requirements of ASTM A563, Grades DH, DH3, C, C3 and D. Where galvanized high-strength bolts are used, the nuts shall be galvanized, heat-treated Grade DH. Where Type 3 high-strength bolts are used, the nuts shall be Grade C3 or DH3.

Nuts for ASTM F3125 Grade A490 bolts shall meet the requirements of ASTM A563, Grade DH. Where Type 3 high-strength bolts are used, the nuts shall be Grade DH3.

All galvanized nuts shall be lubricated with a lubricant containing a visible dye of any color that contrasts with the color of the galvanizing. Black bolts must be oily to the touch when delivered and installed.

Circular flat and square or rectangular beveled, hardened steel washers shall meet the requirements of ASTM F436. Unless otherwise specified, galvanized washers shall be furnished when galvanized high-strength bolts are specified, and washers with atmospheric corrosion resistance and weathering characteristics shall be furnished when Type 3 high-strength bolts are specified.

Compressible-washer-type direct tension indicator washers, used in conjunction with high-strength bolts, shall meet the requirements of ASTM F959. Where galvanized high-strength bolts are used, the washers shall be galvanized in accordance with ASTM B695,

Class 55. Where Type 3 high-strength bolts are used, the washers shall be galvanized in accordance with ASTM B695, Class 55 and coated with epoxy.

- (b) Identifying Marks:** ASTM F3125 Grade A325 for bolts and the specifications referenced therein for nuts require that bolts and nuts manufactured to the specification be identified by specific markings on the top of the bolt head and on one face of the nut. Markings may be raised or depressed at the manufacturer's option and shall be visible after coating if coating is required. Head markings must identify the grade by the symbol "A325," the manufacturer and the type, if Type 3. Nut markings must identify the grade, the manufacturer and if Type 3, the type. Markings on direct tension indicators must identify the manufacturer and Type "A325." Other washer markings must identify the manufacturer and if Type 3, the type.

ASTM F3125 Grade A490 for bolts and the specifications referenced therein for nuts require that bolts and nuts manufactured to the specifications be identified by specific markings on the top of the bolt head and on one face of the nut. Markings may be raised or depressed at the manufacturer's option and shall be visible after coating if coating is required. Head markings must identify the grade by the symbol "A490," the manufacturer and the type, if Type 3. Nut markings must identify the grade, the manufacturer and if Type 3, the type. Markings on direct tension indicators must identify the manufacturer and Type "A490." Other washer markings must identify the manufacturer and if Type 3, the type.

ASTM F3125 Grade A325 and ASTM F3125 Grade A490 bolt lengths up to 4 times the diameter which are fully threaded but which are not required to be fully threaded by the relevant ASME standard shall be marked with a "T" immediately after the grade designation, for example "A325T." Bolts with any other non-standard dimensions, including thread length, shall be marked with an "S" immediately after the grade designation, for example "A325S." All other markings, if used, such as a private label distributor's mark shall also be separate and distinct.

- (c) Dimensions:** Bolt and nut dimensions shall meet the requirements for Heavy Hexagon Structural Bolts and for Heavy Semi-Finished Hexagon Nuts given in ASME Standard B18.2.6.
- (d) Galvanized Bolts:** Galvanized bolts shall meet the requirements of ASTM F3125 Grade A325, Type 1. The bolts shall be hot-dip galvanized in accordance with ASTM F2329, to a thickness of 50 μm or mechanically galvanized in accordance with ASTM B695, Class 55. Bolts, nuts, and washers of any assembly shall be galvanized by the same process. The nuts shall be overtapped to the minimum amount required for the fastener assembly, and shall be lubricated with a lubricant containing a visible dye so a visual check can be made for the lubricant at the time of field installation. Galvanized bolts shall be tension tested after galvanizing. ASTM F3125 Grade A490 bolts shall be uncoated or shall be coated in accordance with either ASTM F1136 Grade 3 or ASTM F2833 Grade 1.
- (e) Test Requirements:** The maximum hardness of ASTM F3125 Grade A325 bolts shall be 34 HRC. The maximum hardness of ASTM F3125 Grade A490 bolts shall be 38 HRC. Plain, ungalvanized nuts shall have a minimum hardness of 89 HRB.

Proof load tests, in accordance with the requirements of ASTM F606 Method 1, shall be required for the bolts. Wedge tests of full-size bolts are required in accordance with Section 10.1 of ASTM F3125. Galvanized bolts shall be wedge tested after galvanizing.

Proof load tests of ASTM A563 are required for nuts. Proof load tests for nuts used with galvanized bolts shall be performed after galvanizing, overtapping and lubricating.

Rotational-capacity tests are required and shall be performed on all plain or galvanized (after galvanizing) bolt, nut and washer assemblies by the manufacturer or distributor prior to shipping and by the Contractor at the Site.

The thickness of galvanizing on bolts, nuts and washers shall be measured. On bolts, it shall be measured on the wrench flats or on top of the bolt head, and on nuts it shall be measured on the wrench flats.

- (f) Certified Test Reports and Materials Certificates:** The Contractor shall submit notarized copies of Certified Test Reports and Materials Certificates in accordance with Article 1.06.07 for fastener assemblies. In addition the Certified Test Reports and Materials Certificates shall include the following:
1. Mill test reports shall indicate the place where the material was melted and manufactured.
 2. Test reports for proof load tests, wedge tests, and rotational-capacity tests shall indicate where the tests were performed, date of tests, location of where the components were manufactured and lot numbers.
 3. The test report for galvanized components shall indicate the thickness of the galvanizing.
- (g) Material Samples:** Prior to incorporation into the work, the Contractor shall submit samples of the bolt assemblies to the Engineer for testing in accordance with the latest edition of the "[Materials Testing Manual](#) (Chapter 8, Minimum Schedule for Acceptance Testing)." Samples shall be submitted for each diameter, length, material designation, grade, coating and manufacturer of bolt assembly."

M.06.03—Galvanizing:

Replace the entire subarticle with the following:

" **M.06.03—Galvanizing:** Unless otherwise specified on the plans or in the special provisions, the zinc coating on all iron and steel materials, other than wire, shall meet the requirements of ASTM A123, A153 or F2329, whichever shall apply.

When mechanical galvanizing is used it shall meet the requirements of ASTM B695 Class 55."

ON-THE-JOB TRAINING (OJT) WORKFORCE DEVELOPMENT PILOT:

Description

To provide construction industry related job opportunities to minorities, women and economically disadvantaged individuals; and to increase the likelihood of a diverse and inclusive workforce on Connecticut Department of Transportation (ConnDOT) projects.

All contractors (existing and newcomers) will be automatically placed in the Workforce Development Pilot. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level for new projects. Instead, these requirements will be applicable on an annual basis for each contractor performing work on ConnDOT projects.

The OJT Workforce Development Pilot will allow a contractor to train employees on Federal, State and privately funded projects located in Connecticut. However, contractors should give priority to training employees on ConnDOT Federal-Aid funded projects.

Funding

The Department will establish an OJT fund annually from which contractors may bill the Department directly for eligible trainee hours. The funds for payment of trainee hours on federal-aid projects will be allocated from the ½ of 1% provided for OJT funding, and will be based on hours trained, not to exceed a maximum of \$25,000.00 per year; per contractor.

Minorities and Women

Developing, training and upgrading of minorities, women and economically disadvantaged individuals toward journeyman level status is the primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority, women and economically disadvantaged individuals as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Coordinator, will assign training goals for a calendar year based on the contractor's past two year's activities and the contractor's anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time, the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from one (1) to six (6) per

contractor per calendar year. Each January, a summary of the trainees required and the OJT Workforce Development Pilot package will be sent to participating contractors. The number of trainees assigned to each contractor in the summary will increase proportionately not to exceed 6, as shown in the following table. This package will also be provided to contractors as they become newly eligible for the OJT Workforce Development Pilot throughout the remainder of the year. Projects awarded after September 30 will be included in the following year's Program.

The dollar thresholds for training assignments are as follows:

\$4.5 – 8 million=	1 trainee
\$ 9 – 15 million=	2 trainees
\$16 – 23 million=	3 trainees
\$24 – 30 million=	4 trainees
\$31 – 40 million=	5 trainees
\$41 – and above=	6 trainees

Training Classifications

Preference shall be given to providing training in the following skilled work classifications. However, the classifications established are not all-inclusive:

Equipment Operators	Electricians
Laborers	Painters
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has on file common training classifications and their respective training requirements; that may be used by the contractors. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and the number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

Where feasible, 25% percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment in the program and submit all required reports documenting company compliance under these contract requirements. These documents and any other information shall be submitted to the OJT Program Coordinator as requested.

Upon the trainee's completion and graduation from the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

In order to determine the continued effectiveness of the OJT Program in Connecticut, the department will periodically conduct personal interviews with current trainees and may survey recent graduates of the program. This enables the OJT Program Coordinator to modify and improve the program as necessary. Trainee interviews are generally conducted at the job site to ensure that the trainees' work and training is consistent with the approved training program.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no case, will the trainee be paid less than the prevailing rate for general laborer as shown in the contract wage decision (must be approved by the Department of Labor).

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee currently enrolled or who becomes enrolled in the approved training program and providing they receive the required training under the specific training program. Trainees will be allowed to be transferred between projects if required by the Contractor's schedule and workload. The OJT Program Coordinator must be notified of transfers within five (5) days of the transfer or reassignments by e-mail (Phylisha.Coles@ct.gov).

Where a contractor does not or cannot achieve its annual training goal with female or minority trainees, they must produce adequate Good Faith Efforts documentation. Good Faith Efforts are those designed to achieve equal opportunity through positive, aggressive, and continuous result-oriented measures. 23 CFR § 230.409(g) (4). Contractors should request minorities and females from unions when minorities and females are under-represented in the contractor's workforce.

Whenever a contractor requests ConnDOT approval of someone other than a minority or female, the contractor must submit documented evidence of its Good Faith Efforts to fill that position with a minority or female. When a non-minority male is accepted, a contractor must continue to attempt to meet its remaining annual training goals with females and minorities.

Where a contractor has neither attained its goal nor submitted adequate Good Faith Efforts documentation, ConnDOT will issue a letter of non-compliance. Within thirty (30) days of receiving the letter of non-compliance, the contractor must submit a written Corrective Action Plan (CAP) outlining the steps that it will take to remedy the non-compliance. The CAP must be approved by ConnDOT. Failure to comply with the CAP may result in your firm being found non-responsive for future projects.

Measurement and Payment

Optional reimbursement will be made to the contractor for providing the required training under this special provision on ConnDOT Federal-Aid funded projects only.

Contractor will be reimbursed at \$0.80 for each hour of training given to an employee in accordance with an approved training or apprenticeship program. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement.

Reimbursement for training is made annually or upon the trainees completion and not on a monthly basis. No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor.

Program reimbursements will be made directly to the prime contractor on an annual basis. To request reimbursement, prime contractors must complete the Voucher for OJT Workforce Development Pilot Hourly Reimbursement for each trainee in the OJT Program. This form is included in the OJT Workforce Development Pilot package and is available on the Department's web site at:

www.ct.gov/dot

The completed form must be submitted to the Office of Contract Compliance for approval. The form is due on the 15th day of January for each trainee currently enrolled and for hours worked on ConnDOT Federal-Aid funded projects only.

D.B.E. SUBCONTRACTORS AND MATERIAL SUPPLIERS OR MANUFACTURERS

January 2013

I. ABBREVIATIONS AND DEFINITIONS AS USED IN THIS SPECIAL PROVISION

A. *CTDOT* means the Connecticut Department of Transportation.

B. *USDOT* means the U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (“FHWA”), the Federal Transit Administration (“FTA”), and the Federal Aviation Administration (“FAA”).

C. *Broker* means a party acting as an agent for others in negotiating Contracts, Agreements, purchases, sales, etc., in return for a fee or commission.

D. *Contract, Agreement or Subcontract* means a legally binding relationship obligating a seller to furnish supplies or services (including but not limited to, construction and professional services) and the buyer to pay for them. For the purposes of this provision, a lease for equipment or products is also considered to be a Contract.

E. *Contractor* means a consultant, second party or any other entity under Contract to do business with CTDOT or, as the context may require, with another Contractor.

F. *Disadvantaged Business Enterprise (“DBE”)* means a for profit small business concern:

1. That is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals; and
2. Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it; and
3. Certified by CTDOT under Title 49 of the Code of Federal Regulations, Part 26, (Title 49 CFR Part 23 of the Code of Federal Regulations for Participation of Disadvantaged Business Enterprise in Airport Concessions)

G. *USDOT-assisted Contract* means any Contract between CTDOT and a Contractor (at any tier) funded in whole or in part with USDOT financial assistance.

H. *Good Faith Efforts (“GFE”)* means all necessary and reasonable steps to achieve a DBE goal or other requirement which by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

I. *Small Business Concern* means, with respect to firms seeking to participate as DBEs in USDOT-assisted Contracts, a small business concern as defined pursuant to Section 3 of the Small Business Act and Small Business Administration (“SBA”) regulations implementing it (13 CFR Part 121) that also does not exceed the cap on average annual gross receipts in 49 CFR Part 26, Section 26.65(b).

J. *Socially and Economically Disadvantaged Individual* means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is:

1. Any individual who CTDOT finds, on a case-by-case basis, to be a socially and economically disadvantaged individual.
2. Any individuals in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:
 - “Black Americans”, which includes persons having origins in any of the Black racial groups of Africa;
 - “Hispanic Americans”, which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
 - “Native Americans”, which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians.
 - “Asian-Pacific Americans”, which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, or Federated States of Micronesia;
 - “Subcontinent Asian Americans”, which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
 - Women;
 - Any additional groups whose members are designated as socially and economically disadvantaged by the SBA, at such time as the SBA designation becomes effective.

K. *Commercially Useful Function (“CUF”)* means the DBE is responsible for the execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved with its own forces and equipment. The DBE must be responsible for procuring, determining quantity, negotiating price, determining quality and paying for all materials (where applicable) associated with their work. The DBE must also perform at least 30% of the total cost of its contract with its own workforce.

II. ADMINISTRATIVE REQUIREMENTS

A. General Requirements

A DBE goal percentage equaling **Twelve Percent (12%)** of the Contract value has been established for this Contract. This DBE goal percentage will be applied to the final Contract value to ultimately determine the required DBE goal. If additional work is required, DBE firms should be provided the appropriate opportunities to achieve the required DBE goal.

In order to receive credit toward the Contract DBE goal, the firms utilized as DBE subcontractors or suppliers must be certified as DBEs in the type of work to be counted for credit by CTDOT’s Office of Contract Compliance prior to the date of the execution of the subcontract. Neither CTDOT nor the State of Connecticut’s Unified Certification Program (UCP) makes any representation as to any DBE’s technical or financial ability to perform the work. Prime contractors are solely responsible for performing due diligence in hiring DBE subcontractors.

All DBEs shall perform a CUF for the work that is assigned to them. The Contractor shall monitor and ensure that the DBE is in compliance with this requirement. The Connecticut DBE UPC Directory of certified firms can

be found on the CTDOT website <http://www.ct.gov/dot>. The directory lists certified DBE firms with a description of services that they are certified to perform. Only work identified in this listing may be counted towards the project's DBE goal. A DBE firm may request to have services added at any time by contacting CTDOT's Office of Contract Compliance. No credit shall be counted for any DBE firm found not to be performing a CUF.

Once a Contract is awarded, all DBEs that were listed on the pre-award DBE commitment document must be utilized. The Contractor is obligated to provide the value and items of the work originally established in the pre-award documentation to the DBE firms listed in the pre-award documentation. Any modifications to the pre-award commitment must follow the procedure established in Section II-C.

The Contractor shall designate a liaison officer who will administer the Contractor's DBE program. Upon execution of this Contract, the name of the liaison officer shall be furnished in writing to CTDOT's unit administering the Contract, CTDOT's Office of Contract Compliance and CTDOT's Office of Construction ("OOC"). Contact information for the designated liaison officer shall be furnished no later than the scheduled date for the pre-construction meeting.

The Contractor shall submit a bi-monthly report to the appropriate CTDOT unit administering the Contract. This report shall indicate what work has been performed to date, with the dollars paid and percentage of DBE goal completed.

Verified payments made to DBEs shall be included in this bi-monthly report. A sample form is included on the CTDOT website.

In addition, the report shall include:

1. A projected time frame of when the remaining work is to be completed for each DBE.
2. A statement by the Contractor either confirming that the approved DBEs are on schedule to meet the Contract goal, or that the Contractor is actively pursuing a GFE.
3. If retainage is specified in the Contract specifications, then a statement of certification that the subcontractors' retainage is being released in accordance with 1.08.01 (Revised or supplemented).

Failure by the Contractor to provide the required reports may result in CTDOT withholding an amount equal to one percent (1%) of the monthly estimate until the required documentation is received.

The Contractor shall receive DBE credit when a DBE, or any combination of DBEs, perform work under the Contract in accordance with this specification.

Only work actually performed by and/or services provided by DBEs which are certified for such work and/or services, as verified by CTDOT, can be counted toward the DBE goal. Supplies and equipment a DBE purchases or leases from the Contractor or its affiliate cannot be counted toward the goal.

Monitoring of the CUF will occur by CTDOT throughout the life of the project. If it is unclear that the DBE is performing the work specified in its subcontract with the prime Contractor, further review may be required. If it is determined that the DBE is not performing a CUF, then the work performed by that DBE will not be counted towards the DBE goal percentage.

B. Subcontract Requirements

The Contractor shall submit to CTDOT's OOC all requests for subcontractor approvals on the standard CLA-12 forms provided by CTDOT. The dollar amount and items of work identified on the CLA-12 form must, at minimum, equal the dollar value submitted in the pre-award commitment. CLA-12 forms can be found at <http://www.ct.gov/dot/construction> under the "Subcontractor Approval" section. All DBE subcontractors must be identified on the CLA-12 form, regardless of whether they are being utilized to meet a Contract goal percentage. A copy of the legal Contract between the Contractor and the DBE subcontractor/supplier, a copy of the Title VI Contractor Assurances and a copy of the Required Contract Provision for Federal Aid Construction Contracts (Form FHWA-1273) (Federal Highway Administration projects only) must be submitted along with a request for subcontractor approval. These attachments cannot be substituted by reference.

If retainage is specified in the Contract specifications, then the subcontract agreement must contain a prompt payment mechanism that acts in accordance with Article 1.08.01 (Revised or supplemented).

If the Contract specifications do not contain a retainage clause, the Contractor shall not include a retainage clause in any subcontract agreement, and in this case, if a Contractor does include a retainage clause, it shall be deemed unenforceable.

In addition, the following documents are to be included with the CLA-12, if applicable:

- An explanation indicating who will purchase material.
- A statement explaining any method or arrangement for utilization of the Contractor's equipment.

The subcontract must show items of work to be performed, unit prices and, if a partial item, the work involved by all parties. If the subcontract items of work or unit prices are modified, the procedure established in Section II-C must be followed.

Should a DBE subcontractor further sublet items of work assigned to it, only lower tier subcontractors who are certified as a DBE firm will be counted toward the DBE goal. If the lower tier subcontractor is a non-DBE firm, the value of the work performed by that firm will not be counted as credit toward the DBE goal.

The use of joint checks between a DBE firm and the Contractor is acceptable, provided that written approval is received from the OOC prior to the issuance of any joint check. Should it become necessary to issue a joint check between the DBE firm and the Contractor to purchase materials, the DBE firm must be responsible for negotiating the cost, determining the quality and quantity, ordering the material and installing (where applicable), and administering the payment to the supplier. The Contractor should not make payment directly to suppliers.

Each subcontract the Contractor signs with a subcontractor must contain the following assurance:

"The subcontractor/supplier/manufacture 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/subcontractor/supplier/manufacture 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."

C. Modification to Pre-Award Commitment

Contractors may not terminate for convenience any DBE subcontractor or supplier that was listed on the pre-award DBE commitment without prior written approval of the OOC. This includes, but is not limited to, instances

in which a Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Prior to approval, the Contractor must demonstrate to the satisfaction of the OOC, that it has good cause, as found in 49CFR Part 26.53 (f)(3), for termination of the DBE firm.

Before transmitting its request for approval to terminate pre-award DBE firms to the OOC, the Contractor must give written notice to the DBE subcontractor and include a copy to the OOC of its notice to terminate and/or substitute, and the reason for the notice.

The Contractor must provide five (5) days for the affected DBE firm to respond. This affords the DBE firm the opportunity to advise the OOC and the Contractor of any reasons why it objects to the termination of its subcontract and why the OOC should not approve the Contractor's action.

Once the Contract is awarded, should there be any amendments or modifications of the approved pre-award DBE submission other than termination of a DBE firm, the Contractor shall follow the procedure below that best meets the criteria associated with the reason for modification:

1. If the change is due to a scope of work revision or non-routine quantity revision by CTDOT, the Contractor must notify CTDOT's OOC in writing or via electronic mail that their DBE participation on the project may be impacted as soon as they are aware of the change. In this case, a release of work from the DBE firm may not be required; however the Contractor must concurrently notify the DBE firm in writing, and copy the OOC for inclusion in the project DBE file. This does not relieve the Contractor of its obligation to meet the Contract specified DBE goal, or of any other responsibility found in this specification.
2. If the change is due to a factor other than a CTDOT directive, a request for approval in writing or via electronic mail of the modification from the OOC must be submitted, along with an explanation of the change(s), prior to the commencement of work. The Contractor must also obtain a letter of release from the originally named DBE indicating their concurrence with the change, and the reason(s) for their inability to perform the work. In the event a release cannot be obtained, the Contractor must document all efforts made to obtain it.
3. In the event a DBE firm that was listed in the pre-award documents is **unable** or **unwilling** to perform the work assigned, the Contractor shall:
 - Notify the OOC Division Chief immediately and make efforts to obtain a release of work from the firm.
 - Submit documentation that will provide a basis for the change to the OOC for review and approval prior to the implementation of the change.
 - Use the DBE Directory to identify and contact firms certified to perform the type of work that was assigned to the unable or unwilling DBE firm. The Contractor should also contact CTDOT's Office of Contract Compliance for assistance in locating additional DBE firms to the extent needed to meet the contract goal.

Should a DBE subcontractor be terminated or fail to complete work on the Contract for any reason, the Contractor must make a GFE to find another DBE subcontractor to substitute for the original DBE. The DBE replacement shall be given every opportunity to perform at least the same amount of work under the Contract as the original DBE subcontractor.

If the Contractor is unable to find a DBE replacement:

- The Contractor should identify other contracting opportunities and solicit DBE firms in an effort to meet the Contract DBE goal requirement, if necessary, and provide documentation to support a GFE. (Refer to GFE in Section III.)
- The Contractor must demonstrate that the originally named DBE, who is unable or unwilling to perform the work assigned, is in default of its subcontract, or identify other issues that affected the DBE firm's ability to perform the assigned work. **The Contractor's ability to negotiate a more advantageous agreement with another subcontractor is not a valid basis for change.**

III. GOOD FAITH EFFORTS

The DBE goal is **NOT** reduced or waived for projects where the Contractor receives a Pre-Award GFE determination from the Office of Contract Compliance prior to the award of the Contract. It remains the responsibility of the Contractor to make a continuing GFE to achieve the specified Contract DBE goal. The Contractor shall pursue every available opportunity to obtain additional DBE firms and document all efforts made in such attempts.

At the completion of all Contract work, the Contractor shall submit a final report to CTDOT's unit administering the Contract indicating the work done by and the dollars paid to DBEs. Only verified payments made to DBEs performing a CUF will be counted towards the Contract goal.

Goal attainment is based on the total Contract value, which includes all construction orders created during the Contract. If the Contractor does not achieve the specified Contract goal for DBE participation or has not provided the value of work to the DBE firms originally committed to in the pre-award submission, the Contractor shall submit documentation to CTDOT's unit administering the Contract detailing the GFE made during the performance of the Contract to satisfy the goal.

A GFE should consist of the following, where applicable (CTDOT reserves the right to request additional information):

1. A detailed statement of the efforts made to replace an unable or unwilling DBE firm, and a description of any additional subcontracting opportunities that were identified and offered to DBE firms in order to increase the likelihood of achieving the stated goal.
2. A detailed statement, including documentation of the efforts made to contact and solicit bids from certified DBEs, including the names, addresses, and telephone numbers of each DBE firm contacted; the date of contact and a description of the information provided to each DBE regarding the scope of services and anticipated time schedule of work items proposed to be subcontracted and the response from firms contacted.
3. Provide a detailed explanation for each DBE that submitted a subcontract proposal which the Contractor considered to be unacceptable stating the reason(s) for this conclusion.
4. Provide documentation, if any, to support contacts made with CTDOT requesting assistance in satisfying the specified Contract goal.

5. Provide documentation of all other efforts undertaken by the Contractor to meet the defined goal. Additional documentation of efforts made to obtain DBE firms may include but will not be limited to:
 - Negotiations held in good faith with interested DBE firms, not rejecting them without sound reasons.
 - Written notice provided to a reasonable number of specific DBE firms in sufficient time to allow effective participation.
 - Those portions of work that could be performed by readily available DBE firms.

In instances where the Contractor can adequately document or substantiate its GFE and compliance with other DBE Program requirements, the Contractor will have satisfied the DBE requirement and no administrative remedies will be imposed.

IV. PROJECT COMPLETION

At the completion of all Contract work, the Contractor shall:

1. Submit a final report to CTDOT's unit administering the Contract indicating the work done by, and the dollars paid to DBEs.
2. Submit verified payments made to all DBE subcontractors for the work that was completed.
3. Submit documentation detailing any changes to the DBE pre-award subcontractors that have not met the original DBE pre-award commitment, including copies of the Department's approvals of those changes.
4. Retain all records for a period of three (3) years following acceptance by CTDOT of the Contract and those records shall be available at reasonable times and places for inspection by authorized representatives of CTDOT and Federal agencies. If any litigation, claim, or audit is started before the expiration of the three (3) year period, the records shall be retained until all litigation, claims, or audit findings involving the records are resolved.

If the Contractor does not achieve the specified Contract goal for DBE participation in addition to meeting the dollar value committed to the DBE subcontractors identified in the pre-award commitment, the Contractor shall submit documentation to CTDOT's unit administering the Contract detailing the GFE made during the performance of the Contract to satisfy the goal.

V. SHORTFALLS

A. Failure to meet DBE goals

As specified in (II-A) above, attainment of the Contract DBE goal is based on the final Contract value. The Contractor is expected to achieve the amount of DBE participation originally committed to at the time of award; however, additional efforts must be made to provide opportunities to DBE firms in the event a Contract's original value is increased during the life of the Contract.

The Contractor is expected to utilize the DBE subcontractors originally committed in the DBE pre-award documentation for the work and dollar value that was originally assigned.

If a DBE is terminated or is unable or unwilling to complete its work on a Contract, the Contractor shall make a GFE to replace that DBE with another certified DBE to meet the Contract goal.

The Contractor shall immediately notify the OOC of the DBE's inability or unwillingness to perform, and provide reasonable documentation and make efforts to obtain a release of work from the firm.

If the Contractor is unable to find a DBE replacement, then the Contractor should identify other contracting opportunities and solicit DBE firms in an effort to meet the Contract DBE goal requirement, if necessary, and provide documentation to support a GFE.

When a DBE is unable or unwilling to perform, or is terminated for just cause, the Contractor shall make a GFE to find other DBE opportunities to increase DBE participation to the extent necessary to at least satisfy the Contract goal.

For any DBE pre-award subcontractor that has been released appropriately from the project, no remedy will be assessed, provided that the Contractor has met the criteria described in Section II-C.

B. Administrative Remedies for Non-Compliance:

In cases where the Contractor has failed to meet the Contract specified DBE goal or the DBE pre-award commitment, and where no GFE has been demonstrated, then one or more of the following administrative remedies will be applied:

1. A reduction in Contract payments to the Contractor as determined by CTDOT, not to exceed the shortfall amount of the **DBE goal**. The maximum shortfall will be calculated by multiplying the Contract DBE goal (adjusted by any applicable GFE) by the final Contract value, and subtracting any verified final payments made to DBE firms by the Contractor.
2. A reduction in Contract payments to the Contractor determined by CTDOT, not to exceed the shortfall amount of the **pre-award commitment**. The maximum shortfall will be calculated by subtracting any verified final payments made by the Contractor to each DBE subcontractor from the amount originally committed to that subcontractor in the pre-award commitment.
3. A reduction in Contract payments to the Contractor determined by CTDOT for any pre-award DBE subcontractor who has not obtained the dollar value of work identified in the DBE pre-award commitment and has not followed the requirements of Section II-C or for any DBE firm submitted for DBE credit that has not performed a CUF.
4. The Contractor being required to submit a written DBE Program Corrective Action Plan to CTDOT for review and approval, which is aimed at ensuring compliance on future projects.
5. The Contractor being required to attend a Non-Responsibility Meeting on the next contract where it is the apparent low bidder.
6. The Contractor being suspended from bidding on contracts for a period not to exceed six (6) months.

VI. CLASSIFICATIONS OTHER THAN SUBCONTRACTORS

A. Material Manufacturers

Credit for DBE manufacturers is 100% of the value of the manufactured product. A manufacturer is a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor.

If the Contractor elects to utilize a DBE manufacturer to satisfy a portion of, or the entire specified DBE goal, the Contractor must provide the OOC with:

- Subcontractor Approval Form (CLA-12) indicating the firm designation,
- An executed "Affidavit for the Utilization of Material Suppliers or Manufacturers" (sample attached), and
- Substantiation of payments made to the supplier or manufacturer for materials used on the project.

B. Material Suppliers (Dealers)

Credit for DBE dealers/suppliers is limited to 60% of the value of the material to be supplied, provided such material is obtained from an approved DBE dealer/supplier.

In order for a firm to be considered a regular dealer, the firm must own, operate, or maintain a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. At least one of the following criteria must apply:

- To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
- A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating or maintaining a place of business if the person both owns and operates distribution equipment for the products. Any supplementing of the regular dealers' own distribution equipment shall be by long term lease agreement, and not on an ad hoc or contract to contract basis.
- Packers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this paragraph.

If the Contractor elects to utilize a DBE supplier to satisfy a portion or the entire specified DBE goal, the Contractor must provide the OOC with:

- Subcontractor Approval Form (CLA-12) indicating the firm designation,
- An executed "Affidavit for the Utilization of Material Suppliers or Manufacturers" (sample attached), and
- Substantiation of payments made to the supplier or manufacturer for materials used on the project.

C. Brokering

- Brokering of work for DBE firms who have been listed by the Department as certified brokers is allowed. Credit for those firms shall be applied following the procedures in Section VI-D.
- Brokering of work by DBEs who have been approved to perform subcontract work with their own workforce and equipment is not allowed, and is a Contract violation.

- Firms involved in the brokering of work, whether they are DBEs and/or majority firms who engage in willful falsification, distortion or misrepresentation with respect to any facts related to the project shall be referred to the U.S. DOT, Office of the Inspector General for prosecution under Title 18, U.S. Code, Part I, Chapter 47, Section 1020.

D. Non-Manufacturing or Non-Supplier DBE Credit

Contractors may count towards their DBE goals the following expenditures with DBEs that are not manufacturers or suppliers:

- Reasonable fees or commissions charged for providing a bona fide service such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment materials or supplies necessary for the performance of the Contract, provided that the fee or commission is determined by the OOC to be reasonable and consistent with fees customarily allowed for similar services.
- The fees charged only for delivery of materials and supplies required on a job site when the hauler, trucker, or delivery service is a DBE, and not the manufacturer, or regular dealer of the materials and supplies, and provided that the fees are determined by the OOC to be reasonable and not excessive as compared with fees customarily allowed for similar services.
- The fees or commissions charged for providing bonds or insurance specifically required for the performance of the Contract, provided that the fees or commissions are determined by CTDOT to be reasonable and not excessive as compared with fees customarily allowed for similar services.

E. Trucking

While technically still considered a subcontractor, the rules for counting credit for DBE trucking firms are as follows:

- The DBE must own and operate at least one fully licensed, insured, and operational truck used on the Contract.
- The DBE receives credit for the total value of the transportation services it provides on the Contract using trucks it owns, insures and operates using drivers it employs.
- The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.
- The DBE may lease trucks from a non-DBE firm; however the DBE may only receive credit for any fees or commissions received for arranging transportation services provided by the non-DBE firms. Additionally, the DBE firm must demonstrate that they are in full control of the trucking operation for which they are seeking credit.

VII. Suspected DBE Fraud

In appropriate cases, CTDOT will bring to the attention of the USDOT any appearance of false, fraudulent, or dishonest conduct in connection with the DBE program, so that USDOT can take the steps, e.g. referral to the

Department of Justice for criminal prosecution, referral to USDOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules provided in 49 CFR Part 31.

**CONNECTICUT DEPARTMENT OF TRANSPORTATION
(OFFICE OF CONSTRUCTION)
BUREAU OF ENGINEERING AND CONSTRUCTION**

This affidavit must be completed by the State Contractor's DBE notarized and attached to the contractor's request to utilize a DBE supplier or manufacturer as a credit towards its DBE contract requirements; failure to do so will result in not receiving credit towards the contract DBE requirement.

State Contract No.

Federal Aid Project No.

Description of Project

I, _____, acting in behalf of _____,
(Name of person signing Affidavit) (DBE person, firm, association or corporation)

of which I am the _____ certify and affirm that _____
(Title of Person) (DBE person, firm, association or corporation)

is a certified Connecticut Department of Transportation DBE. I further certify and affirm that I have read and understand 49 CFR, Sec. 26.55(e)(2), as the same may be revised.

I further certify and affirm that _____ will assume the actual and
(DBE person, firm, association or Corporation)

for the provision of the materials and/or supplies sought by _____.

If a manufacturer, I operate or maintain a factory or establishment that produces, on the premises, the materials, supplies, articles or equipment required under the contract an of the general character described by the specifications.

If a supplier, I perform a commercially useful function in the supply process. As a regular dealer, I, at a minimum, own and operate the distribution equipment for bulk items. Any supplementing of my distribution equipment shall be by long-term lease agreement, and not on an ad hoc or contract-by-contract basis.

I understand that false statements made herein are punishable by Law (Sec. 53a-157), CGS, as revised).

(Name of Corporation or Firm)

(Signature & Title of Official making the Affidavit)

Subscribed and sworn to before me, this _____ day of _____ 20 _____.

Notary Public (Commissioner of the Superior Court)

My Commission Expires _____

CERTIFICATE OF CORPORATION

I, _____, certify that I am the _____
(Official) (President)

of the Corporation named in the foregoing instrument; that I have been duly authorized to affix the seal of the Corporation to such papers as require the seal; that _____, who signed said instrument on behalf of the Corporation, was then _____ of said corporation; that said instrument was duly signed for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporation powers.

(Signature of Person Certifying)

(Date)

ITEM #0202454A – SPECIAL TEST PIT - WATER

Description:

Work under this section shall include the completion of test pits for the purpose of locating the existing water main and to identify the occurrence, location and dimensions of existing subsurface structures. Work under this section shall also include excavation, inspection, measurements of the pipe, and backfilling. Measurements of the pipe shall include, but are not limited to, depth to the top of the pipe from the ground surface, outside diameter of the pipe, pipe size, pipe type, and the location of the pipe (test pit) using swing ties.

Work under this section shall include all labor, tools, materials, and equipment necessary for:

- obtaining road opening permit
- coordination of Call-Before-You-Dig mark out
- saw-cutting of the roadway, sidewalks, or driveways
- traffic control equipment (signs, barriers, etc.)
- traffic control coordination, including scheduling of policemen and flagmen
- furnishing and maintaining lighting
- mobilization and demobilization
- excavation
- furnishing, installing, operating and maintaining a dewatering system
- furnishing, installing and removing sheeting, bracing and trench boxes
- backfill and compaction of the excavation
- stockpiling, loading, hauling and legally disposing of surplus material
- asphalt and concrete pavement removal and disposal (including necessary saw cutting)
- removal and restoration of walls, fences, signs and any other structures which must be removed to carry out the work
- removal of topsoil and sod
- care and protection of existing pipes, utilities, and other structures
- piling and storage of excavated materials

Materials:

Materials to be used for backfilling test pits shall consist of materials similar to the bedding material and Additional Backfill Material as specified in these specifications. When test pits are performed in areas that require pavement restoration, the subbase, base and surface courses must conform to the requirements for Temporary Pavement and/or Permanent Pavement as specified elsewhere in these specifications.

Construction Methods:

If, in the opinion of the Aquarion Representative, the excavated material is unsuitable for backfill, it shall be removed and disposed of to such limits as directed by the Aquarion Representative.

Test pits shall be backfilled in accordance with these specifications.

Method of Measurement:

Special Test Pits shall be measured for payment per each test pit performed, complete in place, and accepted.

Special Test Pits shall include the cost of excavating and backfilling a hole six feet long by six feet wide. Any work beyond the horizontal limits specified shall not be measured separately for payment.

The quantity of additional material excavated and replaced, measured in place, as directed by the Aquarion Representative, shall not be measured separately for payment.

Bedding material furnished, installed, and compacted, to the bedding material limits shown on the Typical Trench Detail, shall not be measured separately for payment, but shall be included in the cost per each test pit performed.

Rock In Trench, Removal of Unsuitable Material, Additional Backfill Material, Processed Aggregate Base or Rolled Granular Base, and Temporary and Permanent Pavement shall be measured separately for payment under those appropriate Item Numbers.

Basis of Payment:

Special Test Pits will be paid for at the contract unit price per each test pit performed, complete in place, and accepted.

No separate payment will be made for any work beyond the horizontal limits specified above, but will be included in the contract unit price per each test pit performed, of the type specified, complete in place, and accepted.

No separate payment will be made for the quantity of additional material excavated or replaced, measured in place, as directed by the Aquarion Representative. No separate payment will be made for bedding material furnished, installed, and compacted, to the bedding material limits shown on the Typical Trench Detail, but will be included in the cost per each test pit performed.

Rock In Trench, Removal of Unsuitable Material, Additional Backfill Material, Processed Aggregate Base or Rolled Granular Base, and Temporary and Permanent Pavement will be paid for separately at the contract unit price under those appropriate Item Numbers.

Pay Item

Pay Unit

Special Test Pit - Water

EA

ITEM #0202522A - REMOVAL OF BITUMINOUS TYPE PAVEMENT

Description:

Work under this item shall consist of the removal and satisfactory disposal of bituminous type pavement outside the limits of roadway excavation as shown on the plans. This item shall also include the removal and disposal of a satisfactory amount of the remaining pavement structure so that the area can be graded in accordance with the plans.

Construction Methods:

Removal of bituminous type pavement shall be made in conformity of the requirements of the plans and as ordered by the Engineer.

The existing bituminous pavement shall be removed in its entirety so that the area can be graded and turf established as shown on the plans. If necessary, the remaining pavement structure under the bituminous pavement shall be removed to a depth that will allow for the placement of 4 inches of topsoil. If, after removal of the existing bituminous concrete pavement, the surrounding existing ground is more than 4 inches above the top of subgrade, the area shall be backfilled with a suitable earth material to an elevation 4 inches below the finished grade. The suitable earth material shall be free from admixture of subsoil, refuse, stumps, roots, rocks, brush, weeds and other material which will prevent the formation of a suitable seed bed.

Method of Measurement:

This item shall be measured for payment by the actual number of square yards of bituminous pavement removed outside the limit of roadway excavation. Suitable backfill required to bring the area up to grade will not be measured for payment.

Basis of Payment:

This work will be paid for at the contract unit price per square yard for "Removal of Bituminous Type Pavement". This price shall include all equipment, labor, and tools necessary to complete the work, disposal of the removed material, furnishing and placing suitable backfill material as necessary and leaving the site in a condition suitable for the placement of topsoil.

Topsoil will be paid for under the item "Furnishing and Placing Topsoil".

<u>Pav Item</u>	<u>Pav Unit</u>
Removal of Bituminous Type Pavement	SY

ITEM #0202559A – REMOVE AND RESET SURVEY MONUMENT

DESCRIPTION

This work shall consist of removing and resetting existing survey monument; providing all new materials if necessary; related survey work; submittal of survey data and monument certification prepared by a Land Surveyor licensed to practice in the State of Connecticut that the work completed meets the standards and specification as required in the contract documents or as ordered by the Engineer.

MATERIALS

The material used shall be as shown on the plans or as directed by the engineer. The Contractor shall submit the material to the Engineer for approval.

CONSTRUCTION METHODS

Adjustment of survey monuments shall be completed under the direction of a Land Surveyor licensed to practice in the State of Connecticut. The Town of North Canaan shall be provided with the final positional data (both horizontal and/or vertical), along with certification by the Land Surveyor supervising the work that the position of adjusted monument meets the specification.

The Land Surveyor shall submit a plan to the Town of North Canaan as to the procedures and equipment that will be used to make the vertical adjustment of the monument. Once the Contractor's Land Surveyor has received written notification to proceed, the adjustment may be started. Once the work is complete the Contractor's Land Surveyor shall submit the original field notes of the measurements made and a copy of a report outlining the way the work was performed.

In the event that a survey monument is destroyed during construction, the survey monument shall be replaced by the Contractor at his expense.

METHOD OF MEASUREMENT

This work will be measured for payment by the actual number of monuments removed and reset and accepted by the Engineer.

BASIS OF PAYMENT

This work will be paid for at the contract unit price each for 'Remove and Reset Survey Monument' complete in place, which price shall include the cost of: related survey work; preparation and submittal of survey data; excavation; furnishing and installing concrete and select granular backfill; and furnishing all labor, material and equipment necessary to complete the work.

PAY ITEM

REMOVE AND RESET SURVEY MONUMENT

PAY UNIT

EA

ITEM #0406275A - FINE MILLING OF BITUMINOUS CONCRETE (0 TO 4 INCHES)

Description: This work shall consist of the milling, removal, and disposal of existing bituminous concrete pavement.

Construction Methods: The Contractor shall remove the bituminous concrete material using means acceptable to the Engineer. The pavement surface shall be removed to the line, grade, and existing or typical cross-section shown on the plans or as directed by the Engineer.

The bituminous concrete material shall be disposed of offsite by the Contractor at an approved disposal facility unless otherwise stated in the Contract.

Any milled surface, or portion thereof, that is exposed to traffic shall be paved within five (5) calendar days unless otherwise stated in the plans or Contract.

The equipment for milling the pavement surface shall be designed and built for milling bituminous concrete pavements. It shall be self propelled with sufficient power, traction, and stability to maintain depth and slope and shall be capable of removing the existing bituminous concrete pavement.

The milling machine shall be equipped with a built-in automatic grade averaging control system that can control the longitudinal profile and the transverse cross-slope to produce the specified results. The longitudinal controls shall be capable of operating from any longitudinal grade reference, including string line, contact ski (30 feet minimum), non-contact ski (20 feet minimum), or mobile string line (30 feet minimum). The transverse controls shall have an automatic system for controlling cross-slope at a given rate. The Engineer may waive the requirement for automatic grade or slope controls where the situation warrants such action.

The machine shall be able to provide a 0 to 4 inch deep cut in one pass. The rotary drum of the machine shall use carbide or diamond tipped tools spaced not more than $\frac{5}{16}$ inch apart. The forward speed of the milling machine shall be limited to no more than 45 feet/minute. The tools on the revolving cutting drum must be continually maintained and shall be replaced as warranted to provide a uniform pavement texture.

The machine shall be equipped with an integral pickup and conveying device to immediately remove material being milled from the surface of the roadway and discharge the millings into a truck, all in one operation. The machine shall also be equipped with a means of effectively limiting the amount of dust escaping from the milling and removal operation.

When milling smaller areas or areas where it is impractical to use the above described equipment, the use of a lesser equipped milling machine may be permitted when approved by the Engineer.

Protection shall be provided around existing catch basin inlets, manholes, utility valve boxes, and any similar structures. Any damage to such structures as a result of the milling operation is the Contractor's responsibility and shall be repaired at the Contractor's expense.

To prevent the infiltration of milled material into the storm drainage system, the Contractor shall take special care to prevent the milled material from falling into the inlet openings or inlet grates. Any milled material that has fallen into inlet openings or inlet grates shall be removed at the Contractor's expense.

Surface Tolerance: The milled surface shall provide a satisfactory riding surface with a uniform textured appearance. The milled surface shall be free from gouges, longitudinal grooves and ridges, oil film, and other imperfections that are a result of defective equipment, improper use of equipment, or poor workmanship. The Contractor, under the direction of the Inspector, shall perform random spot-checks with a Contractor supplied ten-foot straightedge to verify surface tolerances at a minimum of five (5) locations per day. The variation of the top of two ridges from the testing edge of the straightedge, between any two ridge contact points, shall not exceed ¼ inch. The variation of the top of any ridge to the bottom of the groove adjacent to that ridge shall not exceed ¼ inch. Any unsatisfactory surfaces produced are the responsibility of the Contractor and shall be corrected at the Contractor's expense and to the satisfaction of the Engineer.

The depth of removal will be verified by taking measurements every 250 feet per each pass of the milling machine, or as directed by the Engineer. These depth measurements shall be used to monitor the average depth of removal.

Where a surface delamination between bituminous concrete layers or a surface delamination of bituminous concrete on Portland cement concrete causes a non-uniform texture to occur, the depth of milling shall be adjusted in small increments to a maximum of +/- ½ inch to eliminate the condition.

When removing bituminous concrete pavement entirely from an underlying Portland cement concrete pavement, all of the bituminous concrete pavement shall be removed leaving a uniform surface of Portland cement concrete, unless otherwise directed by the Engineer.

Any unsatisfactory surfaces produced by the milling operation are the Contractor's responsibility and shall be corrected at the Contractor's expense and to the satisfaction of the Engineer.

No vertical faces, transverse or longitudinal, shall be left exposed to traffic unless the requirements below are met. This shall include roadway structures (catch basins, manholes, utility valve boxes, etc.). If any vertical face is formed in an area exposed to traffic, a temporary paved transition shall be established according to the requirements shown on the plans. If the milling machine is used to form a temporary transition, the length of the temporary transition shall conform to Special Provision Section 4.06 –Bituminous Concrete, "Transitions for Roadway Surface," the requirements shown on the plans, or as directed by the Engineer. At all

permanent limits of removal, a clean vertical face shall be established by saw cutting prior to paving.

Roadway structures shall not have a vertical face of greater than one (1) inch exposed to traffic as a result of milling. All structures within the roadway that are exposed to traffic and greater than one (1) inch above the milled surface shall receive a transition meeting the following requirements:

For roadways with a posted speed limit of 35 mph or less*:

1. Round structures with a vertical face of greater than 1 inch to 2.5 inches shall be transitioned with a hard rubber tapered protection ring of the appropriate inside diameter designed specifically to protect roadway structures.
2. Round structures with a vertical face greater than 2.5 inches shall receive a transition of bituminous concrete formed at a minimum 24 to 1 (24:1) taper in all directions.
3. All rectangular structures with a vertical face greater than 1 inch shall receive a transition of bituminous concrete formed at a minimum 24 to 1 (24:1) taper in all directions.

*Bituminous concrete tapers at a minimum 24 to 1 (24:1) taper in all directions may be substituted for the protection rings if approved by the Engineer.

For roadways with a posted speed limit of 40, 45 or 50 mph:

1. All structures shall receive a transition of bituminous concrete formed at a minimum 36 to 1 (36:1) taper in the direction of travel. Direction of travel includes both the leading and trailing side of a structure. The minimum taper shall be 24 to 1 (24:1) in all other directions.

For roadways with a posted speed limit of greater than 50 mph:

1. All structures shall receive a transition of bituminous concrete formed at a minimum 60 to 1 (60:1) taper in the direction of travel. Direction of travel includes both the leading and trailing side of a structure. The minimum taper shall be 24 to 1 (24:1) in all other directions.

All roadway structure edges and bituminous concrete tapers shall be clearly marked with fluorescent paint. The paint shall be maintained throughout the exposure to traffic.

The milling operation shall proceed in accordance with the requirements of the "Maintenance and Protection of Traffic" and "Prosecution and Progress" specifications, or other Contract requirements. The more stringent specification shall apply.

Prior to opening an area which has been milled to traffic, the pavement shall be thoroughly swept with a sweeper truck. The sweeper truck shall be equipped with a water tank and be capable of removing the millings and loose debris from the surface. The sweeper truck shall operate at a forward speed that allows for the maximum pickup of millings from the roadway surface. Other sweeping equipment may be provided in lieu of the sweeper truck where acceptable by the Engineer.

Any milled area that will not be exposed to live traffic for a minimum of 48 hours prior to paving shall require a vacuum sweeper truck in addition to, or in lieu of, mechanical sweeping. The vacuum sweeper truck shall have sufficient power and capacity to completely remove all millings from the roadway surface including any fine particles within the texture of the milled surface. Vacuum sweeper truck hose attachments shall be used to clean around pavement structures or areas that cannot be reached effectively by the main vacuum. Compressed air may be used in lieu of vacuum attachments if approved by the Engineer.

Method of Measurement: This work will be measured for payment by the number of square yards of area from which the milling of asphalt has been completed and the work accepted. No area deductions will be made for minor unmilled areas such as catch basin inlets, manholes, utility boxes and any similar structures.

Basis of Payment: This work will be paid for at the Contract unit price per square yard for “Fine Milling of Bituminous Concrete (0 to 4 Inches).” This price shall include all equipment, tools, labor, and materials incidental thereto.

No additional payments will be made for multiple passes with the milling machine to remove the bituminous surface.

No separate payments will be made for cleaning the pavement prior to paving; providing protection and doing handwork removal of bituminous concrete around catch basin inlets, manholes, utility valve boxes and any similar structures; repairing surface defects as a result of the Contractors negligence; providing protection to underground utilities from the vibration of the milling operation; removal of any temporary milled or paved transition; removal and disposal of millings; furnishing a sweeper truck and sweeping after milling. The costs for these items shall be included in the Contract unit price.

Pay Item	Pay Unit
Fine Milling of Bituminous Concrete (0 to 4 Inches)	S.Y.

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 hot mix asphalt (HMA), Polymer Modified Asphalt (PMA), and Ultra-Thin Bonded Hot-Mix Asphalt mixtures 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 of the following conditions are met:

- I. For HMA and PMA mixtures:
 - a. The HMA or PMA 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 and PMA 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 Ultra-Thin Bonded HMA mixtures:
 - a. The Ultra-Thin Bonded HMA mixture for which the adjustment would be applied is listed as a Contract item.
 - b. The total quantity for Ultra-Thin Bonded HMA mixture in the Contract exceeds:
 - i. 800 tons if the Ultra-Thin Bonded HMA item has a pay unit of tons.
 - ii. 30,000 square yards if the Ultra-Thin Bonded HMA item has a pay unit of square yards.

Note: The quantity of Ultra-Thin Bonded HMA measured in tons shall be determined from the material documentation requirements set forth in the Ultra-Thin Bonded HMA item Special Provision.
 - 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 Ultra-Thin Bonded HMA mixture system.
- III. Regardless of the binder used in all HMA or PMA mixtures, 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:

Formula: $HMA \times [PG\%/100] \times [(Period\ Price - Base\ Price)] = \$ \underline{\hspace{2cm}}$

where

- **HMA:**
 1. For HMA, PMA, and Ultra-Thin Bonded HMA mixtures with pay units of tons:
The quantity in tons of accepted HMA, PMA, or Ultra-Thin Bonded HMA mixture measured and accepted for payment.
 2. For Ultra-Thin Bonded HMA mixtures with pay units of square yards:
The quantity of Ultra-Thin Bonded HMA mixture delivered, placed, and accepted for payment, calculated in tons as documented according to the Material Documentation provision (Construction Methods, paragraph G) of the Ultra-Thin Bonded HMA Special Provision.
- **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 or PMA 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 Ultra-Thin Bonded HMA 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%)

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 formula 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 #0703031A - ROCK WEIR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pay Item	Pay Unit
Rock Weir	ea.

ITEM #0728017A – River Rock

Description: This work shall consist of furnishing and installing river rock at the locations shown on the plans or as ordered by the Engineer.

Materials: Smooth tri-color river rock with a 1.5"-2" nominal size. Stone shall be free from deleterious materials and shall be stored as to prevent inclusion of foreign material. The material for this work shall meet the requirement of Article M.02.02 for 2” (Grade A) stone.

Construction Methods: The area on which the river rock is to be placed shall be shaped to a reasonably true surface prior to placing the river rock. The surface shall be proof rolled in order to provide a suitable surface, and to the satisfaction of the Engineer. The rock shall be spread by any suitable means which will not crush the rock and shall be shaped to a ‘roughly’ uniform grade.

Method of Measurement: This work will be measured for payment by the actual number of tons accepted by the Engineer. The river rock shall be weighed on scales with proper documentation provided to the Engineer for confirmation of weight less the vehicle providing transport. Trucks shall be zeroed on the scale before the weight of the river rock is taken. Only the weight of the River Rock will be counted towards the overall tonnage for payment.

Basis of Payment: This work shall be paid for at the contract unit price per ton for “River Rock”, complete in place, which price shall include all materials, equipment, tools, transportation of material and labor incidental thereto.

Pay Item

Pay Unit

River Rock

Ton

ITEM #0914018A – ORNAMENTAL METAL FENCE (4' HIGH)

Description:

1. Summary

Work under this item shall consist of furnishing and installing decorative metallic-coated-steel tubular picket fences and gates of the type and height specified where indicated on the plans or as ordered and in conformity with these specifications.

2. Submittals

Submit Shop Drawings, Manufacturer's Product Data and Installation Instructions for ornamental fencing.

Material:

1. Manufacturer

The fence system shall conform to Monumental Iron Works, Imperial Style E, 4-rail design sold by Master Halco, Inc, Irving Texas or approved equal. The manufacturer shall supply this total Riveted Ornamental Steel Fence system in compliance with the requirements of ASTM F2408.

2. Material

Steel material for fence framework shall be galvanized prior to forming in accordance with the requirements of ASTM A653/A653M, with minimum yield strength of 45,000 psi (310 MPa). The steel shall be hot-dip galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 oz/ft², Coating Designation G-90 for rails; 0.60 oz/ft², Coating Designation G-60 for pickets and posts.

Material for pickets shall be a minimum of 3/4" x 16ga tubing. The cross-sectional shape of the rails shall conform to the manufacturer's U-channel design with outside cross-section dimensions of 1.375" x 1.5" and a minimum thickness of 11 Ga. Picket holes in the U-channel rail shall be spaced 4.687" on center. Picket to channel connection shall be 1/4" diameter aluminum drive rivet. Fence posts shall be a minimum of 2.5" x 2.5" x 16 ga tubing.

3. Fabrication

Pickets, rails and posts shall be pre-cut to specified lengths. U-channel rails shall be pre-punched to accept pickets. Pickets shall be pre-drilled to accept rivets.

Industrial drive rivets of sufficient length shall attach pickets to rails in a secure fashion to minimize picket movement. Rivet shall have a minimum of 1100 lbs. holding power and a shear strength of 1500 lbs.

Pro-Arc Rail End Brackets: Brackets shall be die cast zinc (ZAMAK #3 alloy) per ASTM B86-83Z 33521. Ball and socket design capable of 30° swivel (up/down-left/right). Bracket to fully encapsulate rail end with snap fit top cap for complete security. Bracket shall be secured to the rail by a #4 Drive Rivet.

The manufactured galvanized framework shall be subjected to the PermaCoat® thermal stratification coating process (high-temperature, in-line, multi-stage, multi-layer) including, as a mini-

mum, a six-stage pretreatment/wash (with zinc phosphate), an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The base coat shall

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be a thermosetting epoxy powder coating (gray in color) with a minimum thickness of 2 mils (0.0508mm). The topcoat shall be a “no-mar” TGIC polyester powder coat finish with a minimum thickness of 2 mils (0.0508mm). The color shall be (specify Black, Bronze, White, or Desert Sand). The stratification-coated framework shall be capable of meeting the performance requirements for each quality characteristic shown in Table below.

Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 1,000 hours (Scribed per D1654; failure mode is accumulation of 1/8” coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625” ball).
Weathering Resistance	D822 D2244, D523 (60° Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

4. Swing Gates

Swing gates shall be fabricated using channel rail, gate ends, gussets and pickets. All rail and up-right intersections shall be joined by welding. All picket and rail intersections shall also be joined by welding. Height of gate shall match height of fence.

5. Miscellaneous Materials

Concrete: Normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 3000 psi, 3-inch slump, and 1-inch maximum aggregate size.

Construction Methods:

1. Examination

Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, construction layout, and other conditions affecting performance of the Work. Do not begin installation before final grading is completed unless otherwise permitted by Engineer. Proceed with installation only after unsatisfactory conditions have been corrected.

2. Preparation

Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3. Ornamental Fence Installation in Round Concrete Footings:

Install fences according to manufacturer's written instructions.

Post Excavation: Drill or hand-excavate holes for posts in firm, undisturbed soil. Excavate holes to a diameter of not less than 4 times post size and a depth of not less than 42 inches.

Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.

Concrete Fill: Place concrete around posts and vibrate or tamp for consolidation. Protect above-

ground portion of posts from concrete splatter.

Concealed Concrete: Top 2 inches below grade to allow covering with surface material. Slope top surface of concrete to drain water away from post.

Posts Set in Concrete: Extend post to within 6 inches of specified excavation depth, but not closer than 3 inches to bottom of concrete.

4. Ornamental Fence Installation in Existing Concrete Wall Foundation:

Fence posts are to be mounted on existing concrete wall foundation as detailed. All fastening hardware shall be approved by the Engineer.

5. Gate Installation

Gate posts shall be spaced according to the manufacturer's gate drawings, dependent on standard out-to-out gate leaf dimensions and gate hardware selected. Type and quantity of gate hinges shall be based on the application; weight, height, and number of gate cycles. The manufacturer's gate drawings shall identify the necessary gate hardware required for the application. Gate hardware shall be provided by the manufacturer of the gate and shall be installed per the manufacturer's recommendations.

Method of Measurement:

This work will be measured for payment by the number of linear feet of completed and accepted ornamental metal fence of the height specified, measured from the outside to outside of terminal posts, including gates as indicated on the drawings. Gates will not be measured separately for payment, the cost of which shall be included in the unit price of the fence.

Basis of Payment:

This work will be paid for at the contract price per linear foot for "Ornamental Metal Fence (4' High)" of the height specified, complete and in place, which price shall include all materials, equipment, tools, excavation, backfill, disposal of surplus material and labor incidental thereto. Payment will be made under:

Pay Item

Ornamental Metal Fence (4' High)

Pay Unit

LF

ITEM #0915000A – TREE PROTECTION

Article 9.15.01 – Description: This item shall consist of the protection of selected crab apple trees, and others as indicated by the Engineer, by placing trunk armoring and drip-line fencing to protect the main trunk and root system, as shown on the plans, and in accordance with these specifications.

Article 9.15.02 – Materials: The materials for trunk armoring shall consist of 2” x 4” lumber tied to the trunk with 9 gauge wire top and bottom. The materials for the drip-line fencing shall consist of heavy-duty oval orange mesh fence, 9 gauge tension wire, and heavy gauge steel u-channel posts. All materials shall be installed as shown on the plans.

Article 9.24.03 – Construction Methods: Where tree protection is required, the area to be protected shall be thoroughly cleared of all vegetation. Care shall be taken to assure that the trees, shrubs, or other woody plants which are to be preserved in place are not scarred or damaged by operations under this item. The area to be protected shall be the area of ground surface lying within the drip line of the outermost branches of the tree concerned.

While grading near crab apple trees, and others as indicated by the Engineer, if roots are found, located or exposed, the contractor shall regrade the slope as approved by the Engineer, to ensure tree roots are no longer exposed or vulnerable to being damaged.

Article 9.24.04 – Method of Measurement: Tree Protection will be paid on a Lump Sum basis, for all trees requiring and receiving protection per the plan.

Article 9.24.05 – Basis of Payment: This work shall be paid for at the Contract unit price for “Tree Protection” which price shall be full compensation for trunk armoring, wiring, fencing, heavy gauge steel u-channel posts, for clearing the ground surface, for placing the pervious material and all materials, equipment, tools, and labor incidental thereto.

<u>Pay Item</u>	<u>Pay Unit</u>
Tree Protection	LS

ITEM #0921005A - CONCRETE SIDEWALK RAMP
ITEM #0921039A – DETECTABLE WARNING STRIP

Section 9.21 is amended as follows:

Article 9.21.02 – Materials: Delete the third (3rd) paragraph in its entirety and replace with the following:

Concrete Sidewalk Ramp detectable warning strips shall be prefabricated cast iron detectable warning plates with a natural finish.

Concrete Sidewalk Ramp detectable warning strips shall be one of the following products (or approved equal):

Duralast Detectable Warning Plates
Cast Iron Uncoated Natural Finish
East Jordan Iron Works
5000 Airport Road
PO Box 439
East Jordan, MI 49727
Telephone: 231-536-2261
Website: www.ejco.com

Cast Iron Tactile Systems
ADA Solutions, Inc.
323 Andover Street – Suite 3
Wilmington, MA 01887
Telephone: 978-262-9900
Website: www.adatale.com

Cast Iron Detectable Warning Plates
Neenah Enterprises, Inc.
2121 Brooks Ave.
Neenah, WI 54956
Telephone: 920-725-7000
Website: www.nfco.com

Article 9.21.03 – Construction Methods:

7. Detectable Warning Strip: Delete the first (1st) paragraph in its entirety and replace with the following:

The detectable warning strip shall be installed in fresh concrete, flush with the adjacent sidewalk ramp. Install detectable warning strip according to the plans and the manufacturer's specifications, or as directed by the engineer.

ITEM #0921024A – CONCRETE PAVERS

Description:

1. Summary

Work under this item shall consist of concrete paver surfaced sidewalks constructed on a concrete base and paver bedding material and base in the locations and to the dimensions and details shown on the plans or as directed by the Engineer.

2. Submittals

Submit sample units of each paver type representative of size, shape, color and finish, indicating color variation and texture range expected in finished installation. Submit minimum of ½ pallet each of 4"x4" and 4"x6" brick. Lay out pavers on site or where directed for the Engineer's approval. Do not order brick for project until the Engineer has approved the sample units.

Submit five (5) copies of Manufacturer's Product Data and Installation Instructions for the following items:

- a) Brick pavers
- b) Accent brick pavers
- c) Polymeric sand joint filler mixture
- d) Neoprene-modified asphalt setting adhesive
- e) Bituminous setting bed

Submit five (5) copies of the test report of brick pavers and accent brick pavers indicating ASTM C-902 compliance as applicable. Testing shall be done by a qualified independent testing laboratory. Test procedures shall conform to ASTM C-67-03 methods, as applicable. Test report shall indicate, as a minimum, the following:

- a) Compressive strength, psi
- b) Absorption, 5 hr. submersion in cold water.
- c) Absorption, 24 hr. submersion in cold water.
- d) Maximum saturation coefficient.
- e) Initial rate of absorption (suction).
- f) Abrasion index.
- g) Freeze-thaw.
- h) Tolerance to saline conditions.
- i) Efflorescence.

3. Quality Assurance

Installer Qualifications: Installer shall have not less than three years' experience with at least 75-100,000 square feet installed. Successful completion of five similar clay brick paver installations similar in design which are to be documented. Installer shall include

the specified product(s) in their bid and shall have read and understand the contents of ASTM C 902 and/or C 1272 whichever is applicable.

Source Limitations: Obtain each type of unit paver, joint material, and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

Dimensional Uniformity: The entire order for all material including waste must be ordered and blended at the manufacturer's plant at one time, so that they can be supplied from one production run or sequential production runs to ensure reasonable dimensional uniformity. The manufacturer shall earmark the plant-blended pavers ordered for this Contract.

Inspections: Inspect all materials upon delivery. Colors and size within a given shipment may vary slightly due to subtle changes in clay composition and kiln firing temperatures. Pavers are sealed with a siloxane-based penetrating sealer/water proofer.

Preinstallation Meetings: Conduct pre-installation meeting one week prior to commencing work of this Section to verify project requirements, substrate condition, coordination with other trades, installation instructions, and warranty requirements. Preinstallation meeting shall include the Contractor, Installer, Engineer, Distributor and/or Manufacturer's Representative, and other interested parties as appropriate.

Mockup: Construct a mockup of not less than 12' x 12' to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution. The Mockup shall include the running bond "sidewalk" pattern, the herringbone "plaza" pattern, soldier course banding, brick accent pavers, and granite paver banding. Use mock-up(s) to determine pre-compaction setting bed level, joint sizes, lines, laying patterns, color and texture range, and workmanship. Do not start work until Engineer has approved mock-up. Remove mock-up and dispose of materials at the completion of the work or as directed by Engineer.

Materials:

1. Brick Pavers

The brick pavers shall be light-traffic paving brick; ASTM C 902, Class SX, Type I. 4"x4" and 4"x6" brick pavers shall be Application PX. Provide brick without frogs or cores in surfaces exposed to view in the completed work.

The brick paver shall be Whitacre-Greer dry-pressed beveled and lugged pavers, 4 inches wide x 4 inches long x 2 ¼ inches deep and 4 inches wide x 6 inches long x 2 ¼ inches deep. The color blend shall be 60 percent No. 36 "Red Sunset", 20 percent No. 32 "Antique", and 20 percent No. 33 "Dark Antique".

All brick pavers and accent brick pavers shall be rated "not effloresced" when tested according to ASTM C 67.

2. Bituminous Setting-Bed

Primer for Base shall be ASTM D 2028, cutback asphalt, grade as recommended by brick paver manufacturer.

Asphalt cement to be used in the bituminous setting bed shall be Performance Grade binder PG 64-28.

Fine aggregate to be used in the bituminous setting bed shall be clean, hard sand with durable particles and free from adherent coatings, lumps of clay, alkali salts, and organic matter. Aggregate shall be ASTM D 1073, No. 2 or No. 3.

Fine aggregate shall be dried and shall be combined with hot asphalt cement, and the mix shall be heated to approximately 300 degrees F at the asphalt plant. The approximate proportion of materials shall be 7% asphalt cement and 93% fine aggregate.

3. Neoprene-Modified Asphalt Setting Adhesive

Neoprene modified asphalt setting adhesive shall meet paving manufacturer's standard adhesive consisting of oxidized asphalt combined with 2 percent neoprene and 10 percent long-fibered mineral fibers containing no asbestos.

4. Concrete Base Slab

Shall conform to Section 0921001A of these specifications with the following additions:

- a) All concrete base slabs will receive wire mesh reinforcing 2 inches below the top of the slab. Wire mesh reinforcing shall be plain finish welded steel, W1.4 x W 1.4 wire spaced 6" x 6" both ways meeting ASTM specifications A-185-02. The mesh shall be lapped 6" and tied together with wire spaced not over 12" on center to prevent displacement set.

5. Sand for Joints

High Performance Polymeric Jointing Sand for pavers. Color to be selected by Engineer and conform to the ASTM C-144 requirements for joint sand.

- a) Mixture of polymer binders and calibrated sand.
- b) Water resistant after 90 minutes
- c) For surface exposed to heavy foot traffic
- d) Applied dry- hardens after being misted
- e) Inhibits weed growth
- f) Deters ants and other insect infestations
- g) Resists erosion – water, frost heaving, wind, power washing, etc.
- h) Stabilizes pavers – strengthens interlocking pavers

6. Pea Stone

Crushed stone conforming to CDOT Form 816-2004, Article M.01.01, gradation No. 8.

7. Cork Joint Filler

Preformed strips complying with ASTM D 1752, Type II.

Construction Methods:

1. Delivery, Storage, and Handling

Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.

Store aggregates where grading and other required characteristics can be maintained, and contamination avoided.

Store asphalt cement and other bituminous materials in tightly closed containers.

2. Project Conditions

Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

Weather Limitations for Bituminous Setting Bed:

- a) Install bituminous setting bed only when ambient temperature is above 40 deg F and when base is dry.
- b) Apply asphalt adhesive only when ambient temperature is above 50 deg F and when temperature has not been below 35 deg F for 12 hours immediately before application. Do not apply when setting bed is wet or contains excess moisture.

3. Protection of Finished Surfaces

Finished surfaces adjacent to the paving work shall be adequately protected from soiling, staining, and other damage during construction.

4. Excavation

Work under this item shall consist of removing and disposing of existing sidewalk and foundation to a full depth. Wherever portions of concrete sidewalks or concrete driveway ramps are to be removed, such removals shall be made to neat lines. Partial removals shall generally be to existing joints except when a location other than a joint is identified on the plans or set by the Engineer due to construction staging limits. At removal limits where a joint is not present, the Contractor shall sawcut the concrete full depth to create a neat line. The bottom of the excavation shall be graded smooth and thoroughly compacted to a firm, even surface using a roller weighing not less than five tons or a motor driven vibratory compactor.

Work under this item shall also consist of removing and disposing of existing miscellaneous foundations as directed by engineer.

5. Concrete Base Slab

Concrete installation shall conform to Section 0921001A of these specifications. Additional requirements for concrete slab are as follows:

All concrete base slabs shall receive 6 x 6 – W1.4 x W1.4 welded wire mesh reinforcing 2 inches below the top of the slab. Wire mesh reinforcing shall be plain finish welded steel, W1.4 x W1.4 wire spaced 6" x 6" both ways meeting ASTM specifications A-185-02. The mesh shall be lapped 6" and tied together with wire spaced not over 12" on center to prevent displacement set.

6. Preparation

Core-drill weep holes in concrete substrates at 24-inch centers at lowest elevations, and against curbs, walls, and other permanent structures. Fill holes with washed pea gravel and install temporary plugs to prevent ingress of setting bed material or neoprene adhesive during construction. Remove plugs when paving adjacent to weep holes.

Sweep concrete substrates to remove dirt, dust, debris, and loose particles.

7. Bituminous Setting Bed

Bituminous setting bed shall be installed over the fully cured concrete base. Apply primer to concrete slab or binder course immediately before placing setting bed.

Control bars $\frac{3}{4}$ " deep shall be placed approximately 11 feet apart and parallel to one another, to serve as guides for striking board. Adjust bars to subgrades required for accurate setting of paving units to finished grades indicated.

Place bituminous setting bed where indicated, in panels, by spreading bituminous material between control bars. Spread mix at a minimum temperature of 250 deg F. Strike setting bed smooth, firm, even, and not less than $\frac{3}{4}$ inch thick. Add fresh bituminous material to low, porous spots after each pass of striking board. After each panel is completed, advance first control bar to next position in readiness for striking adjacent panels. Carefully fill depressions that remain after removing depth-control bars.

The setting bed shall be rolled with a power roller to a nominal depth of $\frac{3}{4}$ " while still hot. The thickness of the setting bed shall be adjusted so that when the bricks are placed and rolled, the top surface of the pavers will be at the required finished grade.

Apply neoprene-modified asphalt adhesive to cold setting bed by squeegeeing or troweling to a uniform thickness of 1/16 inch. Proceed with setting of paving units only after adhesive is tacky and surface is dry to touch.

8. Brick Pavers

Do not use brick pavers with chips, cracks, voids, discolorations, or other defects that might be visible or cause staining in finished work.

If pavers are not factory-blended, the installer must blend from a minimum of three pallets of each color in the blend as they are placed to produce uniform blend of colors and textures.

Cut brick pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.

Place pavers carefully by hand in straight courses, maintaining accurate alignment and uniform top surface. Protect newly laid pavers with plywood panels on which workers can stand. Advance protective panels as work progresses, but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of pavers. If additional leveling of paving is required, and before treating joints, roll paving with power roller after sufficient heat has built up in the surface from several days of hot weather.

Pavers shall be set true to the required lines and grades in the pattern detailed on the Drawings. Lay full pavers first and adjust pavers to form straight bond lines and appropriate joint widths. Provide 1/16" to 3/16" sand filled joints between pavers. Do not exceed 1/8-inch unit-to-unit offset from flush (lippage) nor 3/8 inch in 10 feet from level, or indicated slope, for finished surface of paving.

String lines or chalk lines must be used to keep paver bond lines straight and true. The straight and true bond lines shall not deviate more than +/- 1/2" at the end of 50 feet. Establish a center line working outward setting parallel string lines or chalk lines every 2 to 6 feet, depending on the area, to continuously check and adjust paver bond lines.

Roll or compact bituminous-set pavers to achieve full bond with the setting bed, reduce lippage and improve the overall flatness of the surface. Fill the spaces between pavers in conformance with the polymeric sand producer's installation instructions and recommendations as soon as possible after the pavers have been placed. Clean joints of all debris with power air blowers or vacuums to ensure full penetration of the jointing sand. Sweep dry joint filling sand over surface of paving until all joints are completely filled. Once the initial filling of the joints is completed, roll the surface of the pavers to fully compact the pavers into place. Utilize a light rubber-tired roller with sufficient pressure to achieve a full bond to the setting bed or a 4-5000 LBF plate tamper with a protective mat attached. Do not operate the roller in a vibrating mode, as this may cause cracking of the pavers. Protect the surface with plywood or other suitable materials to prevent damage to the edges of the pavers. Perform rolling at the warmest part of the day, but prior to final set of the adhesive, taking care to ensure that the alignment is not altered. After rolling, add dry sand to the joints as necessary to ensure that the sand has penetrated to the bottom of the joints. Do not vibrate the pavers after they or the sand have been placed on the setting bed. Roll the surface when the sand shows no sign of further settlement. Add additional sand as necessary. Mist and rinse in conformance with the polymeric sand producer's installation instructions and recommendations.

Do not permit traffic, including construction equipment, on pavers before joint filling. Disturbed areas of pavers should be taken up, the setting bed re-rolled, and pavers re-laid. Remove cracked or damaged pavers and replace with new units. Protect areas where joints have not been filled with waterproof covering overnight.

Completed brick paver areas within the path of travel of any construction equipment shall be protected with steel road plates.

Discontinue laying operations when weather conditions are such that pavement performance may be compromised. On laying operations recommencement, verify acceptable setting bed condition before further pavers are laid.

Method of Measurement: This work will be measured for payment as follows:

- 1. Concrete Pavers:** This work will be measured by the actual number of square feet of completed and accepted concrete pavers.
- 2. Excavation:** Excavation below the finished grade of the concrete pavers, backfilling, and disposal of surplus material will not be measured for payment, but the cost shall be included in the price bid for concrete pavers. Excavation above the finished grade of the concrete pavers will be classified and paid for in accordance with section 2.02.
- 3. Base Materials:** Forming subgrade and installing the granular fill, concrete base, paver bedding, and weep holes will not be measured for payment, but the cost thereof shall be included in the price bid for the concrete pavers.

Basis of Payment: This work will be paid at the Contract unit price per square foot for “Concrete Pavers”, complete in place, which price shall include all saw cutting, excavation as specified above, backfill, disposal of surplus material, formation of subgrade, granular fill, concrete base (including formwork and welded wire fabric), bituminous paver bedding, weep holes, and all equipment, tools, labor and materials incidental thereto.

Pay Item
Concrete Pavers

Pay Unit
SF

ITEM #0952001A – SELECTIVE CLEARING AND THINNING

Section 9.52 is amended as follows:

Article 9.52.03 – Construction Methods is supplemented as follows:

Where directed by the Engineer, materials to be cut, trimmed or removed shall be those items that restrict visibility to a sheet aluminum sign to less than 800 ft (244 m). The entire sign will be visible for 800 ft (244 m) measured from the center of the right-travel lane approaching the sign, as viewed from a 3.5 ft (1.1 m) height above the roadway.

ITEM #0969062A - CONSTRUCTION FIELD OFFICE, MEDIUM

Description: Under the item included in the bid document, 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	400	1000	2000
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.

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, calculators 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 heating, air conditioning and ventilation equipment to maintain a temperature range of 68°-80° Fahrenheit within the field office.

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 two (2) telephone lines: one (1) line for phone/voice service and one (1) line dedicated for the facsimile machine. For an Extra-Large field office this shall consist of four (4) telephone lines: three (3) lines for phone/voice service and one (1) line dedicated for facsimile machine. The Contractor shall pay all charges.

Data Communications Facility Wiring: Contractor shall install a Category 6 568B patch panel in a central wiring location and Cat 6 cable from the patch panel to each PC station, Smart Board location, Multifunction Laser Printer/Copier/Scanner/Fax, terminating in a (Category 6 568B) wall or surface mount data jack. The central wiring location shall also house either the data circuit with appropriate power requirements or a category 5 cable run to the location of the installed data circuit. The central wiring location will be determined by the CTDOT OIS staff in coordination with the designated field office personnel as soon as the facility is in place.

For Small, Medium and Large field offices the Contractor shall run a CAT 6 LAN cable a minimum length of 25 feet for each CTDOT networked device (including but not limited to: smartboards and Multi-Function Laser Printer/Copier/Scanner/Fax) to LAN switch area leaving an additional 10 feet of cable length on each side with terminated RJ45 connectors. For an Extra-Large field office the Contractor shall run CAT 6 LAN cables from workstations, install patch panel in data circuit demark area and terminate runs with RJ45 jacks at each device location. Terminate runs to patch panel in LAN switch area. Each run / jack shall be clearly labeled with an identifying Jack Number.

The Contractor shall supply cables to connect the Wi-Fi printer to the Contractor supplied internet router and to workstations/devices as needed. These cables shall be separate from the LAN cables and data Jacks detailed above for the CTDOT network.

The number of networked devices anticipated shall be at least equal to the number of personal computer tables, Multi-Function Laser Printer/Copier/Scanner/Fax, and smartboards listed below.

The installation of a data communication circuit between the field office and the CTDOT OIS in Newington will be coordinated between the CTDOT District staff, CTDOT OIS staff and the local utility company once the Contractor supplies the field office phone numbers and anticipated installation date. 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. This is required to facilitate data line and computer installations.

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 drafters 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
Telephone.	1	1	1	-
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
Electronic office type printing calculators capable of addition, subtraction, multiplication and division with memory and a supply of printing paper.	1	1	2	4
Small Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under <u>Computer Related Hardware and Software</u> .	1	1		
Large Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under <u>Computer Related Hardware and Software</u> .			1	1
Field Office Wi-Fi Connection as specified below under <u>Computer Related Hardware and Software</u>	1	1	1	1
Wi-Fi Printer as specified below under <u>Computer Related Hardware and Software</u> .	1	1	1	1
Digital Camera as specified below under <u>Computer Related Hardware and Software</u> .	1	1	3	3
Video Projector as specified below under <u>Computer Related Hardware and Software</u> .	-	-	-	1
Smart Board as specified below under <u>Computer Related Hardware and Software</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
Flip Phones as specified under <u>Computer Related Hardware and Software</u> .	-	-	-	-
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.

Computer Related Hardware and Software: The CTDOT will supply by its own means the actual Personal Computers for the CTDOT representatives. The Contractor shall supply the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors, and Smart Board(s) as well as associated hardware and software, must meet the requirements of this specification as well as the latest minimum specifications posted, as of the project advertising date, at CTDOTs web site <http://www.ct.gov/dot/cwp/view.asp?a=1410&q=563904>

Within 10 calendar days after the signing of the Contract but before ordering/purchasing the Wi-Fi Printer (separate from the Multifunction Laser Printer/Copier/Scanner/Fax), Field Office Wi-Fi, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projector(s) and Smart Board(s) 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 Wi-Fi Printer, Wi-Fi Router, Flip Phones, Smart Phones, digital cameras, Projector(s) and Smart Board(s) will be reviewed by CTDOT District personnel. The Multifunction Laser Printer/Copier/Scanner/Fax 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 and setup of the field office Wi-Fi, Wi-Fi printer, and the configuration of the wireless router as directed by the CTDOT. Installation will be coordinated with CTDOT District and Project personnel.

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 Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors and Smart Board(s), as well as associated hardware, software, supplies, and support documentation.

The Contractor shall provide all supplies, paper, maintenance, service and repairs (including labor and parts) for the Wi-Fi printers, copiers, field office Wi-Fi, fax machines and other equipment and facilities required by this specification for the duration of the Contract. All repairs 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 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 rain water 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.

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 T119, Standard Test Method for Slump of Hydraulic-Cement Concrete.

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) in order 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. These 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, the 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, the CTDOT will reimburse the Contractor for replacement costs exceeding the amount of the required coverage.

Maintenance: During the occupancy by the 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 weekly professional cleaning to include, but not limited to, washing & waxing floors, cleaning restrooms, removal of trash, 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 ways 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, (Type),” 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 of this specified this specification.

<u>Pay Item</u>	<u>Pay Unit</u>
Construction Field Office, (Type)	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 "Prosecution and Progress":

Route 7 (Railroad Street) and Routes 7 & 44 (Main Street)

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Where turn lanes exist, the Contractor shall provide an additional 10 feet of paved travel path to be used for turning vehicles only. This additional 10 feet of travel path shall be a minimum length of 150 feet. It shall be implemented so that sufficient storage, taper length, and turning radius are provided.

The Contractor will be allowed to close Route 7 & 44 (Main Street) to through traffic and detour traffic as shown on the Detour Plan contained in the contract plans.

Granite Avenue

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least an alternating one-way traffic operation, on a paved travel path not less than 11 feet in width. The length of the alternating one-way traffic operation shall not exceed 300 feet and 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 allowed to close said driveways to perform the required work during those periods when the businesses are closed, unless permission is granted from the business owner to close the driveway during business hours. If a temporary closure of a residential driveway is necessary, the Contractor shall coordinate with the owner to determine the time period of the closure.

Article 9.71.03 - Construction Methods is supplemented as follows:

General

Unpaved travel paths will only be permitted for areas requiring full depth and full width reconstruction, in which case the Contractor will be allowed to maintain traffic on processed aggregate for a duration not to exceed 10 calendar days. The unpaved section shall be the full width of the road and perpendicular to the travel lanes. Opposing traffic lane dividers shall be used as a centerline.

The Contractor is required to delineate any raised structures within the travel lanes, so that the structures are visible day and night, unless there are specific contract plans and provisions to temporarily lower these structures prior to the completion of work.

The Contractor shall schedule operations so that pavement removal and roadway resurfacing shall be completed full width across a roadway (bridge) section by the end of a workday (work night), 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 install the final course of bituminous concrete pavement.

When the Contractor is excavating adjacent to the roadway, the Contractor shall provide a 3-foot shoulder between the work area and travel lanes, with traffic drums spaced every 50 feet. At the end of the workday, if the vertical drop-off exceeds 3 inches, the Contractor shall provide a temporary traversable slope of 4:1 or flatter that is acceptable to the Engineer.

The Contractor, during the course of active construction work on overhead signs and structures, shall close the lanes directly below the work area for the entire length of time overhead work is being undertaken. At no time shall an overhead sign be left partially removed or installed.

If applicable, when an existing sign is removed, it shall be either relocated or replaced by a new sign during the same working day.

The Contractor shall not store any material on site which would present a safety hazard to motorists or pedestrians (e.g. fixed object or obstruct sight lines).

The field installation of a signing pattern shall constitute interference with existing traffic operations and shall not be allowed, except during the allowable periods.

Construction vehicles entering travel lanes at speeds less than the posted speed are interfering with traffic, and shall not be allowed without a lane closure. The lane closure shall be of sufficient length to allow vehicles to enter or exit the work area at posted speeds, in order to merge with existing traffic.

Existing Signing

The Contractor shall maintain all existing overhead and side-mounted signs throughout the project limits during the duration of the project. The Contractor shall temporarily relocate signs and sign supports as many times as deemed necessary, and install temporary sign supports if necessary and as directed by the Engineer.

Requirements for Winter

The Contractor shall schedule a meeting with representatives from the Department including the offices of Maintenance and Traffic, and the Town/City to determine what interim traffic control measures the Contractor shall accomplish for the winter to provide safety to the motorists and permit adequate snow removal procedures. This meeting shall be held prior to October 31 of each year and will include, but not be limited to, discussion of the status and schedule of the following items: lane and shoulder widths, pavement restoration, traffic signal work, pavement markings, and signing.

Signing Patterns

The Contractor shall erect and maintain all signing patterns in accordance with the traffic control plans contained herein. Proper distances between advance warning signs and proper taper lengths are mandatory.

See the detour plans for detour signs.

Article 9.71.05 – Basis of Payment is supplemented by the following:

The temporary relocation of signs and supports, and the furnishing, installation and removal of any temporary supports shall be paid for under the item “Maintenance and Protection of Traffic”. Temporary overhead sign supports and foundations shall be paid for under the appropriate item(s).

The cost of furnishing, installing, and removing the material for the 4H:1V traversable slope shall be paid for under the item “Maintenance and Protection of Traffic.”

Pavement Markings -Non-Limited Access Multilane Roadways Secondary and Local Roadways

During construction, the Contractor shall maintain all pavement markings on paved surfaces on all roadways throughout the limits of the project.

Interim Pavement Markings

The Contractor shall install painted pavement markings, which shall include centerlines, edge lines, lane lines (broken lines), lane-use arrows, and stop bars, on each intermediate course of bituminous concrete pavement and on any milled surface by the end of the work day/night. If

the next course of bituminous concrete pavement will be placed within seven days, edge lines are not required. The painted pavement markings will be paid under the appropriate items.

If the Contractor will install another course of bituminous concrete pavement within 24 hours, the Contractor may install Temporary Plastic Pavement Marking Tape in place of the painted pavement markings by the end of the work day/night. These temporary pavement markings shall include centerlines, lane lines (broken lines) and stop bars; edge lines are not required. Centerlines shall consist of two 4-inch-wide yellow markings, 2 feet in length, side by side, 4 to 6 inches apart, at 40-foot intervals. No passing zones should be posted with signs in those areas where the final centerlines have not been established on two-way roadways. Stop bars may consist of two 6-inch-wide white markings or three 4 inch wide white markings placed side by side. The Contractor shall remove and dispose of the Temporary Plastic Pavement Marking Tape when another course of bituminous concrete pavement is installed. The cost of furnishing, installing and removing the Temporary Plastic Pavement Marking Tape shall be at the Contractor's expense.

If an intermediate course of bituminous concrete pavement will be exposed throughout the winter, then Epoxy Resin Pavement Markings should be installed unless directed otherwise by the Engineer.

Final Pavement Markings

The Contractor should install painted pavement markings on the final course of bituminous concrete pavement by the end of the work day/night. If the painted pavement markings are not installed by the end of the work day/night, then Temporary Plastic Pavement Marking Tape shall be installed as described above and the painted pavement markings shall be installed by the end of the work day/night on Friday of that week.

If Temporary Plastic Pavement Marking Tape is installed, the Contractor shall remove and dispose of these markings when the painted pavement markings are installed. The cost of furnishing, installing and removing the Temporary Plastic Pavement Marking Tape shall be at the Contractor's expense.

The Contractor shall install permanent Epoxy Resin Pavement Markings in accordance with Section 12.10 entitled "Epoxy Resin Pavement Markings" after such time as determined by the Engineer.

TRAFFIC CONTROL DURING CONSTRUCTION OPERATIONS

The following guidelines shall assist field personnel in determining when and what type of traffic control patterns to use for various situations. These guidelines shall provide for the safe and efficient movement of traffic through work zones and enhance the safety of work forces in the work area.

TRAFFIC CONTROL PATTERNS

Traffic control patterns shall be used when a work operation requires that all or part of any vehicle or work area protrudes onto any part of a travel lane or shoulder. For each situation, the installation of traffic control devices shall be based on the following:

- Speed and volume of traffic
- Duration of operation
- Exposure to hazards

Traffic control patterns shall be uniform, neat and orderly so as to command respect from the motorist.

In the case of a horizontal or vertical sight restriction in advance of the work area, the traffic control pattern shall be extended to provide adequate sight distance for approaching traffic.

If a lane reduction taper is required to shift traffic, the entire length of the taper should be installed on a tangent section of roadway so that the entire taper area can be seen by the motorist.

Any existing signs that are in conflict with the traffic control patterns shall be removed, covered, or turned so that they are not readable by oncoming traffic.

When installing a traffic control pattern, a Buffer Area should be provided and this area shall be free of equipment, workers, materials and parked vehicles.

Typical traffic control plans 19 through 25 may be used for moving operations such as line striping, pot hole patching, mowing, or sweeping when it is necessary for equipment to occupy a travel lane.

Traffic control patterns will not be required when vehicles are on an emergency patrol type activity or when a short duration stop is made and the equipment can be contained within the shoulder. Flashing lights and appropriate trafficperson shall be used when required.

Although each situation must be dealt with individually, conformity with the typical traffic control plans contained herein is required. In a situation not adequately covered by the typical traffic control plans, the Contractor must contact the Engineer for assistance prior to setting up a traffic control pattern.

PLACEMENT OF SIGNS

Signs must be placed in such a position to allow motorists the opportunity to reduce their speed prior to the work area. Signs shall be installed on the same side of the roadway as the work area. On multi-lane divided highways, advance warning signs shall be installed on both sides of the

highway. On directional roadways (on-ramps, off-ramps, one-way roads), where the sight distance to signs is restricted, these signs should be installed on both sides of the roadway.

ALLOWABLE ADJUSTMENT OF SIGNS AND DEVICES SHOWN ON THE TRAFFIC CONTROL PLANS

The traffic control plans contained herein show the location and spacing of signs and devices under ideal conditions. Signs and devices should be installed as shown on these plans whenever possible.

The proper application of the traffic control plans and installation of traffic control devices depends on actual field conditions.

Adjustments to the traffic control plans shall be made only at the direction of the Engineer to improve the visibility of the signs and devices and to better control traffic operations. Adjustments to the traffic control plans shall be based on safety of work forces and motorists, abutting property requirements, driveways, side roads, and the vertical and horizontal curvature of the roadway.

The Engineer may require that the traffic control pattern be located significantly in advance of the work area to provide better sight line to the signing and safer traffic operations through the work zone.

Table I indicates the minimum taper length required for a lane closure based on the posted speed limit of the roadway. These taper lengths shall only be used when the recommended taper lengths shown on the traffic control plans cannot be achieved.

TABLE I – MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT MILES PER HOUR	MINIMUM TAPER LENGTH IN FEET FOR A SINGLE LANE CLOSURE
30 OR LESS	180
35	250
40	320
45	540
50	600
55	660
65	780

SECTION 1. WORK ZONE SAFETY MEETINGS

- 1.a) Prior to the commencement of work, a work zone safety meeting will be conducted with representatives of DOT Construction, Connecticut State Police (Local Barracks), Municipal Police, the Contractor (Project Superintendent) and the Traffic Control Subcontractor (if different than the prime Contractor) to review the traffic operations, lines of responsibility, and operating guidelines which will be used on the project. Other work zone safety meetings during the course of the project should be scheduled as needed.
- 1.b) A Work Zone Safety Meeting Agenda shall be developed and used at the meeting to outline the anticipated traffic control issues during the construction of this project. Any issues that can't be resolved at these meetings will be brought to the attention of the District Engineer and the Office of Construction. The agenda should include:
- Review Project scope of work and time
 - Review Section 1.08, Prosecution and Progress
 - Review Section 9.70, Trafficpersons
 - Review Section 9.71, Maintenance and Protection of Traffic
 - Review Contractor's schedule and method of operations.
 - Review areas of special concern: ramps, turning roadways, medians, lane drops, etc.
 - Open discussion of work zone questions and issues
 - Discussion of review and approval process for changes in contract requirements as they relate to work zone areas

SECTION 2. GENERAL

- 2.a) If the required minimum number of signs and equipment (i.e. one High Mounted Internally Illuminated Flashing Arrow for each lane closed, two TMAs, Changeable Message Sign, etc.) are not available; the traffic control pattern shall not be installed.
- 2.b) The Contractor shall have back-up equipment (TMAs, High Mounted Internally Illuminated Flashing Arrow, Changeable Message Sign, construction signs, cones/drums, etc.) available at all times in case of mechanical failures, etc. The only exception to this is in the case of sudden equipment breakdowns in which the pattern may be installed but the Contractor must provide replacement equipment within 24 hours.
- 2.c) Failure of the Contractor to have the required minimum number of signs, personnel and equipment, which results in the pattern not being installed, shall not be a reason for a time extension or claim for loss time.
- 2.d) In cases of legitimate differences of opinion between the Contractor and the Inspection staff, the Inspection staff shall err on the side of safety. The matter shall be brought to

the District Office for resolution immediately or, in the case of work after regular business hours, on the next business day.

SECTION 3. INSTALLING AND REMOVING TRAFFIC CONTROL PATTERNS

- 3.a) Lane Closures shall be installed beginning with the advance warning signs and proceeding forward toward the work area.
- 3.b) Lane Closures shall be removed in the reverse order, beginning at the work area, or end of the traffic control pattern, and proceeding back toward the advance warning signs.
- 3.c) Stopping traffic may be allowed:
 - As per the contract for such activities as blasting, steel erection, etc.
 - During paving, milling operations, etc. where, in the middle of the operation, it is necessary to flip the pattern to complete the operation on the other half of the roadway and traffic should not travel across the longitudinal joint or difference in roadway elevation.
 - To move slow moving equipment across live traffic lanes into the work area.
- 3.d) Under certain situations when the safety of the traveling public and/or that of the workers may be compromised due to conditions such as traffic volume, speed, roadside obstructions, or sight line deficiencies, as determined by the Engineer and/or State Police, traffic may be briefly impeded while installing and/or removing the advance warning signs and the first ten traffic cones/drums only. Appropriate measures shall be taken to safely slow traffic. If required, traffic slowing techniques may be used and shall include the use of Truck Mounted Impact Attenuators (TMAs) as appropriate, for a minimum of one mile in advance of the pattern starting point. Once the advance warning signs and the first ten traffic cones/drums are installed/removed, the TMAs and sign crew shall continue to install/remove the pattern as described in Section 5 and traffic shall be allowed to resume their normal travel.
- 3.e) The Contractor must adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.
- 3.f) Additional devices are required on entrance ramps, exit ramps, and intersecting roads to warn and/or move traffic into the proper travel path prior to merging/exiting with/from the main line traffic. This shall be completed before installing the mainline pattern past the ramp or intersecting roadway.
- 3.g) Prior to installing a pattern, any conflicting existing signs shall be covered with an opaque material. Once the pattern is removed, the existing signs shall be uncovered.

- 3.h) On limited access roadways, workers are prohibited from crossing the travel lanes to install and remove signs or other devices on the opposite side of the roadway. Any signs or devices on the opposite side of the roadway shall be installed and removed separately.

SECTION 4. USE OF HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

- 4.a) On limited access roadways, one Flashing Arrow shall be used for each lane that is closed. The Flashing Arrow shall be installed concurrently with the installation of the traffic control pattern and its placement shall be as shown on the traffic control plan. For multiple lane closures, one Flashing Arrow is required for each lane closed. If conditions warrant, additional Flashing Arrows should be employed (i.e.: curves, major ramps, etc.).
- 4.b) On non-limited access roadways, the use of a Flashing Arrow for lane closures is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to use the Flashing Arrow.
- 4.c) The Flashing Arrow shall not be used on two lane, two-way roadways for temporary alternating one-way traffic operations.
- 4.d) The Flashing Arrow board display shall be in the “arrow” mode for lane closure tapers and in the “caution” mode (four corners) for shoulder work, blocking the shoulder, or roadside work near the shoulder. The Flashing Arrow shall be in the “caution” mode when it is positioned in the closed lane.
- 4.e) The Flashing Arrow shall not be used on a multi-lane roadway to laterally shift all lanes of traffic, because unnecessary lane changing may result.

SECTION 5. USE OF TRUCK MOUNTED IMPACT ATTENUATOR VEHICLES (TMAs)

- 5.a) For lane closures on limited access roadways, a minimum of two TMAs shall be used to install and remove traffic control patterns. If two TMAs are not available, the pattern shall not be installed.
- 5.b) On non-limited access roadways, the use of TMAs to install and remove patterns closing a lane(s) is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to utilize the TMAs.
- 5.c) Generally, to establish the advance and transition signing, one TMA shall be placed on the shoulder and the second TMA shall be approximately 1,000 feet ahead blocking the lane. The flashing arrow board mounted on the TMA should be in the “flashing arrow” mode when taking the lane. The sign truck and workers should be immediately ahead of

the second TMA. In no case shall the TMA be used as the sign truck or a work truck. Once the transition is in place, the TMAs shall travel in the closed lane until all Changeable Message Signs, signs, Flashing Arrows, and cones/drums are installed. The flashing arrow board mounted on the TMA should be in the “caution” mode when traveling in the closed lane.

- 5.d) A TMA shall be placed prior to the first work area in the pattern. If there are multiple work areas within the same pattern, then additional TMAs shall be positioned at each additional work area as needed. The flashing arrow board mounted on the TMA should be in the “caution” mode when in the closed lane.
- 5.e) TMAs shall be positioned a sufficient distance prior to the workers or equipment being protected to allow for appropriate vehicle roll-ahead in the event that the TMA is hit, but not so far that an errant vehicle could travel around the TMA and into the work area. For additional placement and use details, refer to the specification entitled “Type ‘D’ Portable Impact Attenuation System”. Some operations, such as paving and concrete repairs, do not allow for placement of the TMA(s) within the specified distances. In these situations, the TMA(s) should be placed at the beginning of the work area and shall be advanced as the paving or concrete operations proceed.
- 5.f) TMAs should be paid in accordance with how the unit is utilized. When it is used as a TMA and is in the proper location as specified, and then it should be paid at the specified hourly rate for “Type ‘D’ Portable Impact Attenuation System”. When the TMA is used as a Flashing Arrow, it should be paid at the daily rate for “High Mounted Internally Illuminated Flashing Arrow”. If a TMA is used to install and remove a pattern and then is used as a Flashing Arrow, the unit should be paid as a “Type ‘D’ Portable Impact Attenuation System” for the hours used to install and remove the pattern, typically 2 hours (1 hour to install and 1 hour to remove), and is also paid for the day as a “High Mounted Internally Illuminated Flashing Arrow”.

SECTION 6. USE OF TRAFFIC DRUMS AND TRAFFIC CONES

- 6.a) Traffic drums shall be used for taper channelization on limited-access roadways, ramps, and turning roadways and to delineate raised catch basins and other hazards.
- 6.b) Traffic drums shall be used in place of traffic cones in traffic control patterns that are in effect for more than a 36-hour duration.
- 6.c) Traffic Cones less than 42 inches in height shall not be used on limited-access roadways or on non-limited access roadways with a posted speed limit of 45 mph and above.
- 6.d) Typical spacing of traffic drums and/or cones shown on the Traffic Control Plans in the Contract are maximum spacings and may be reduced to meet actual field conditions as required.

SECTION 7. USE OF (REMOTE CONTROLLED) CHANGEABLE MESSAGE SIGNS (CMS)

- 7.a) For lane closures on limited access roadways, one CMS shall be used in advance of the traffic control pattern. Prior to installing the pattern, the CMS shall be installed and in operation, displaying the appropriate lane closure information (i.e.: Left Lane Closed - Merge Right). The CMS shall be positioned ½ - 1 mile ahead of the lane closure taper. If the nearest Exit ramp is greater than the specified ½ - 1 mile distance, than an additional CMS shall be positioned a sufficient distance ahead of the Exit ramp to alert motorists to the work and therefore offer them an opportunity to take the exit.
- 7.b) CMS should not be installed within 1000 feet of an existing CMS.
- 7.c) On non-limited access roadways, the use of CMS for lane closures is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to use the CMS.
- 7.d) The advance CMS is typically placed off the right shoulder, 5 feet from the edge of pavement. In areas where the CMS cannot be placed beyond the edge of pavement, it may be placed on the paved shoulder with a minimum of five (5) traffic drums placed in a taper in front of it to delineate its position. The advance CMS shall be adequately protected if it is used for a continuous duration of 36 hours or more.
- 7.e) When the CMS are no longer required, they should be removed from the clear zone and have the display screen cleared and turned 90° away from the roadway.
- 7.f) The CMS generally should not be used for generic messages (ex: Road Work Ahead, Bump Ahead, Gravel Road, etc.).
- 7.g) The CMS should be used for specific situations that need to command the motorist's attention which cannot be conveyed with standard construction signs (Examples include: Exit 34 Closed Sat/Sun - Use Exit 35, All Lanes Closed - Use Shoulder, Workers on Road - Slow Down).
- 7.h) Messages that need to be displayed for long periods of time, such as during stage construction, should be displayed with construction signs. For special signs, please coordinate with the Office of Construction and the Division of Traffic Engineering for the proper layout/dimensions required.
- 7.i) The messages that are allowed on the CMS are as follows:

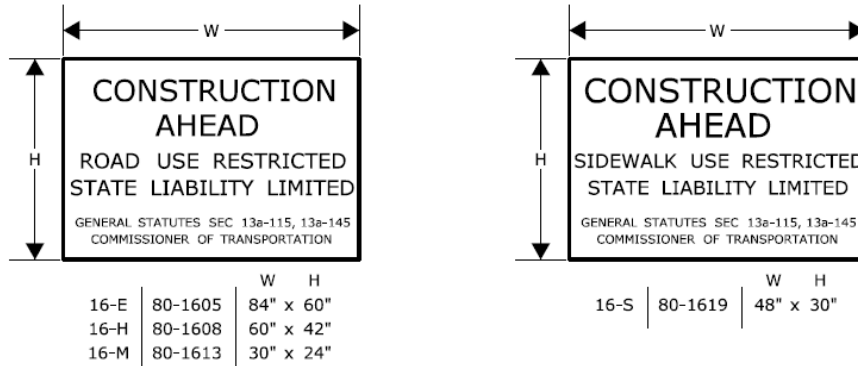
<u>Message No.</u>	<u>Frame 1</u>	<u>Frame 2</u>	<u>Message No.</u>	<u>Frame 1</u>	<u>Frame 2</u>
1	LEFT LANE CLOSED	MERGE RIGHT	9	LANES CLOSED AHEAD	REDUCE SPEED
2	2 LEFT LANES CLOSED	MERGE RIGHT	10	LANES CLOSED AHEAD	USE CAUTION
3	LEFT LANE CLOSED	REDUCE SPEED	11	WORKERS ON ROAD	REDUCE SPEED
4	2 LEFT LANES CLOSED	REDUCE SPEED	12	WORKERS ON ROAD	SLOW DOWN
5	RIGHT LANE CLOSED	MERGE LEFT	13	EXIT XX CLOSED	USE EXIT YY
6	2 RIGHT LANES CLOSED	MERGE LEFT	14	EXIT XX CLOSED USE YY	FOLLOW DETOUR
7	RIGHT LANE CLOSED	REDUCE SPEED	15	2 LANES SHIFT AHEAD	USE CAUTION
8	2 RIGHT LANES CLOSED	REDUCE SPEED	16	3 LANES SHIFT AHEAD	USE CAUTION

For any other message(s), approval must be received from the Office of Construction prior to their use. No more than two (2) displays shall be used within any message cycle.

SECTION 8. USE OF STATE POLICE OFFICERS

- 8.a) State Police may be utilized only on limited access highways and secondary roadways under their primary jurisdiction. One Officer may be used per critical sign pattern. Shoulder closures and right lane closures can generally be implemented without the presence of a State Police Officer. Likewise in areas with moderate traffic and wide, unobstructed medians, left lane closures can be implemented without State Police presence. Under some situations it may be desirable to have State Police presence, when one is available. Examples of this include: nighttime lane closures; left lane closures with minimal width for setting up advance signs and staging; lane and shoulder closures on turning roadways/ramps or mainline where sight distance is minimal; and closures where extensive turning movements or traffic congestion regularly occur, however they are not required.
- 8.b) Once the pattern is in place, the State Police Officer should be positioned in a non-hazardous location in advance of the pattern. If traffic backs up beyond the beginning of the pattern, then the State Police Officer shall be repositioned prior to the backup to give warning to the oncoming motorists. The State Police Officer and TMA should not be in proximity to each other.
- 8.c) Other functions of the State Police Officer(s) may include:
- Assisting entering/exiting construction vehicles within the work area.
 - Enforcement of speed and other motor vehicle laws within the work area, if specifically requested by the project.
- 8.d) State Police Officers assigned to a work site are to only take direction from the Engineer.

SERIES 16 SIGNS



THE 16-S SIGN SHALL BE USED ON ALL PROJECTS THAT REQUIRE SIDEWALK RECONSTRUCTION OR RESTRICT PEDESTRIAN TRAVEL ON AN EXISTING SIDEWALK.

SERIES 16 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE TRAFFIC CONTROL PATTERNS TO ALLOW MOTORISTS THE OPPORTUNITY TO AVOID A WORK ZONE. SERIES 16 SIGNS SHALL BE INSTALLED ON ANY MAJOR INTERSECTING ROADWAYS THAT APPROACH THE WORK ZONE. ON LIMITED-ACCESS HIGHWAYS, THESE SIGNS SHALL BE LOCATED IN ADVANCE OF THE NEAREST UPSTREAM EXIT RAMP AND ON ANY ENTRANCE RAMP PRIOR TO OR WITHIN THE WORK ZONE LIMITS.

THE LOCATION OF SERIES 16 SIGNS CAN BE FOUND ELSEWHERE IN THE PLANS OR INSTALLED AS DIRECTED BY THE ENGINEER.

SIGNS 16-E AND 16-H SHALL BE POST-MOUNTED.

SIGN 16-E SHALL BE USED ON ALL EXPRESSWAYS.

SIGN 16-H SHALL BE USED ON ALL RAMP, OTHER STATE ROADWAYS, AND MAJOR TOWN/CITY ROADWAYS.

SIGN 16-M SHALL BE USED ON OTHER TOWN ROADWAYS.

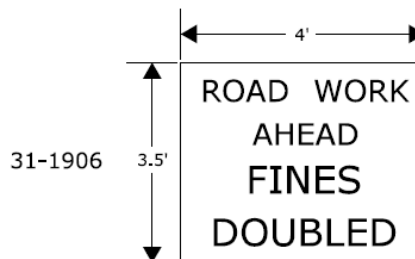
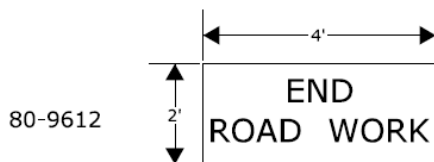
REGULATORY SIGN "ROAD WORK AHEAD, FINES DOUBLED"

THE REGULATORY SIGN "ROAD WORK AHEAD FINES DOUBLED" SHALL BE INSTALLED FOR ALL WORK ZONES THAT OCCUR ON ANY STATE HIGHWAY IN CONNECTICUT WHERE THERE ARE WORKERS ON THE HIGHWAY OR WHEN THERE IS OTHER THAN EXISTING TRAFFIC OPERATIONS.

THE "ROAD WORK AHEAD FINES DOUBLED" REGULATORY SIGN SHALL BE PLACED AFTER THE SERIES 16 SIGN AND IN ADVANCE OF THE "ROAD WORK AHEAD" SIGN.

"END ROAD WORK" SIGN

THE LAST SIGN IN THE PATTERN MUST BE THE "END ROAD WORK" SIGN.



SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
REQUIRED SIGNS

NOTES FOR TRAFFIC CONTROL PLANS

1. IF A TRAFFIC STOPPAGE OCCURS IN ADVANCE OF SIGN (A), THEN AN ADDITIONAL SIGN (A) SHALL BE INSTALLED IN ADVANCE OF THE STOPPAGE.
2. SIGNS (AA), (A), AND (D) SHOULD BE OMITTED WHEN THESE SIGNS HAVE ALREADY BEEN INSTALLED TO DESIGNATE A LARGER WORK ZONE THAN THE WORK ZONE THAT IS ENCOMPASSED ON THIS PLAN.
3. SEE TABLE 1 FOR ADJUSTMENT OF TAPERS IF NECESSARY.
4. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN TRAFFIC DRUMS SHALL BE USED IN PLACE OF TRAFFIC CONES.
5. ANY LEGAL SPEED LIMIT SIGNS WITHIN THE LIMITS OF A ROADWAY / LANE CLOSURE AREA SHALL BE COVERED WITH AN OPAQUE MATERIAL WHILE THE CLOSURE IS IN EFFECT, AND UNCOVERED WHEN THE ROADWAY / LANE CLOSURE IS RE-OPENED TO ALL LANES OF TRAFFIC.
6. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN ANY EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED, AND TEMPORARY PAVEMENT MARKINGS THAT DELINEATE THE PROPER TRAVELPATHS SHALL BE INSTALLED.
7. DISTANCES BETWEEN SIGNS IN THE ADVANCE WARNING AREA MAY BE REDUCED TO 100' ON LOW-SPEED URBAN ROADS (SPEED LIMIT < 40 MPH).
8. IF THIS PLAN IS TO REMAIN IN OPERATION DURING THE HOURS OF DARKNESS, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.
9. A CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.
10. SIGN (P) SHALL BE MOUNTED A MINIMUM OF 7 FEET FROM THE PAVEMENT SURFACE TO THE BOTTOM OF THE SIGN.

TABLE 1 - MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT (MILES PER HOUR)	MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE
30 OR LESS	180' (55m)
35	250' (75m)
40	320' (100m)
45	540' (165m)
50	600' (180m)
55	660' (200m)
65	780' (240m)

METRIC CONVERSION CHART (1" = 25mm)

ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC
12"	300mm	42"	1050mm	72"	1800mm
18"	450mm	48"	1200mm	78"	1950mm
24"	600mm	54"	1350mm	84"	2100mm
30"	750mm	60"	1500mm	90"	2250mm
36"	900mm	66"	1650mm	96"	2400mm



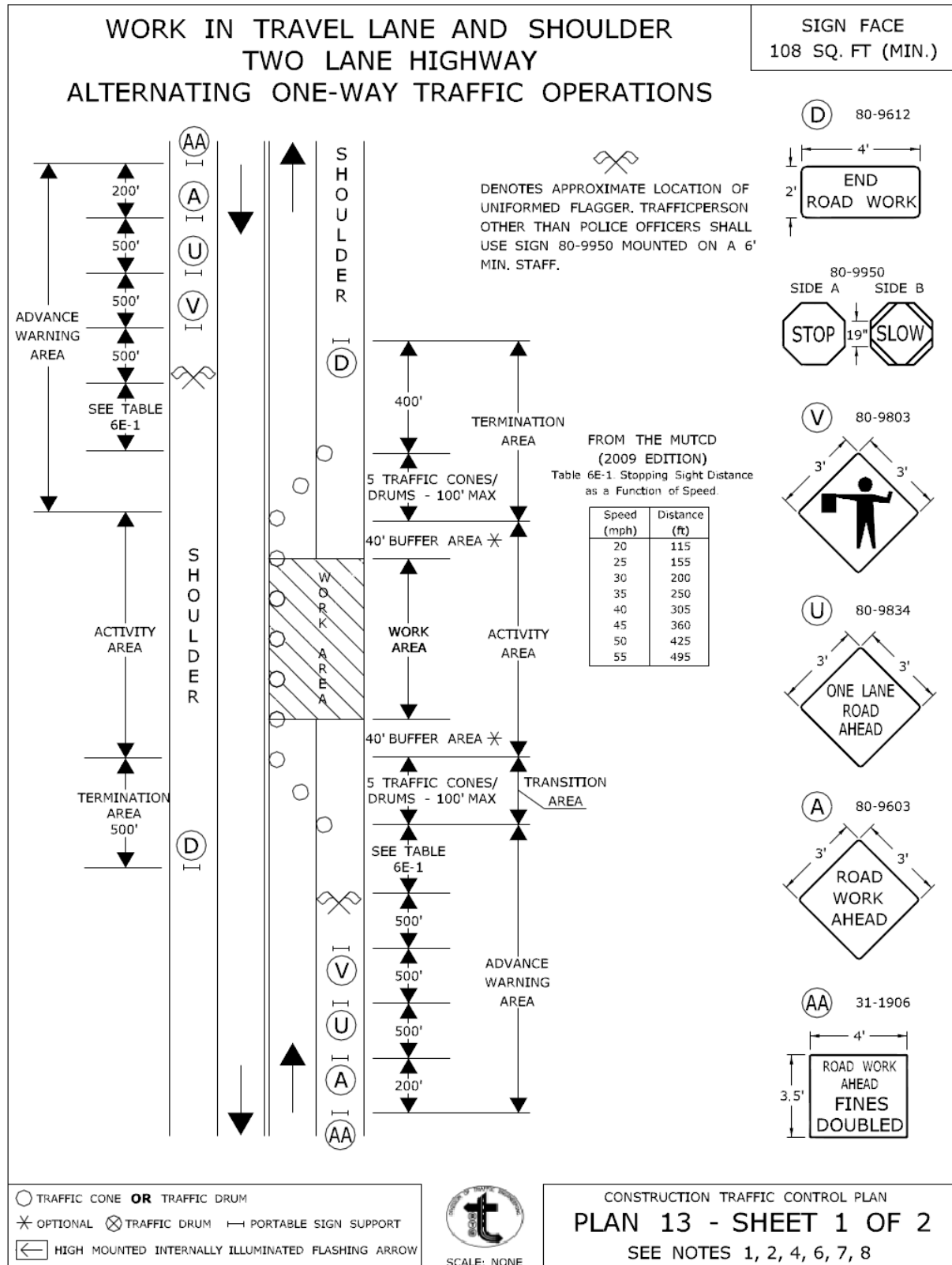
SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN NOTES

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED

Charles S. Harlow
Charles S. Harlow
2012.06.05 15:50:35-0400
PRINCIPAL ENGINEER



CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED *Charles S. Harlow* Charles S. Harlow
2012.06.05 15:55:23-04'00"
PRINCIPAL ENGINEER

WORK IN TRAVEL LANE AND SHOULDER TWO LANE HIGHWAY ALTERNATING ONE-WAY TRAFFIC OPERATIONS

SIGN FACE
108 SQ. FT (MIN.)

HAND SIGNAL METHODS TO BE USED BY UNIFORMED FLAGGERS

THE FOLLOWING METHODS FROM SECTION 6E.07, FLAGGER PROCEDURES, IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," SHALL BE USED BY UNIFORMED FLAGGERS WHEN DIRECTING TRAFFIC THROUGH A WORK AREA. THE STOP/SLOW SIGN PADDLE (SIGN NO. 80-9950) SHOWN ON THE TRAFFIC STANDARD SHEET TR-1220 01 ENTITLED, "SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS" SHALL BE USED.

A. TO STOP TRAFFIC

TO STOP ROAD USERS, THE FLAGGER SHALL FACE ROAD USERS AND AIM THE STOP PADDLE FACE TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FREE ARM SHALL BE HELD WITH THE PALM OF THE HAND ABOVE SHOULDER LEVEL TOWARD APPROACHING TRAFFIC.



B. TO DIRECT TRAFFIC TO PROCEED

TO DIRECT STOPPED ROAD USERS TO PROCEED, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FLAGGER SHALL MOTION WITH THE FREE HAND FOR ROAD USERS TO PROCEED.



C. TO ALERT OR SLOW TRAFFIC

TO ALERT OR SLOW TRAFFIC, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. TO FURTHER ALERT OR SLOW TRAFFIC, THE FLAGGER HOLDING THE SLOW PADDLE FACE TOWARD ROAD USERS MAY MOTION UP AND DOWN WITH THE FREE HAND, PALM DOWN.



- TRAFFIC CONE **OR** TRAFFIC DRUM
- * OPTIONAL ⊗ TRAFFIC DRUM — PORTABLE SIGN SUPPORT
- ◀ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW



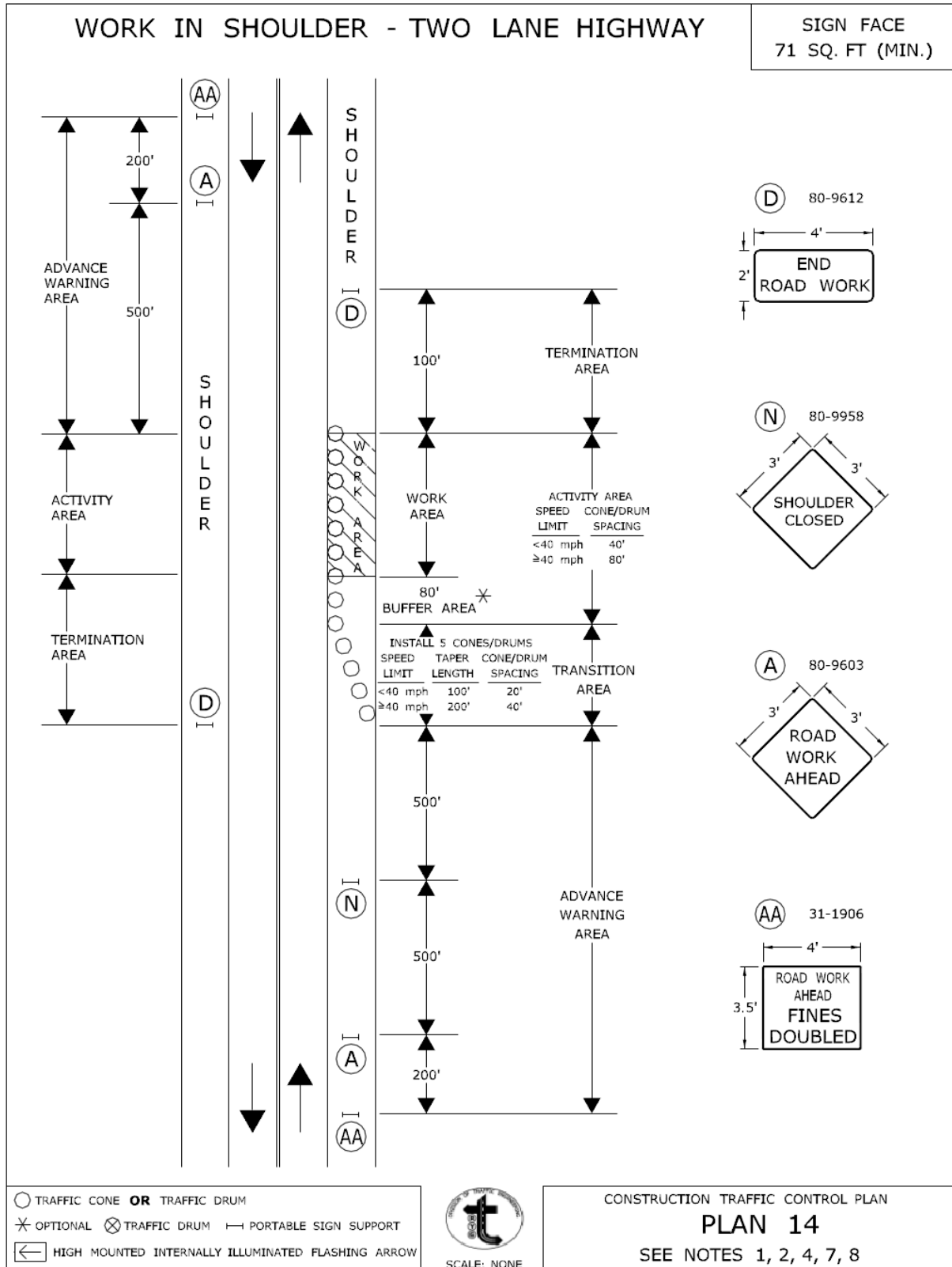
SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 2 OF 2
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED

Charles S. Harlow
Charles S. Harlow
2012.06.05 15:55:45-04'00"
PRINCIPAL ENGINEER



○ TRAFFIC CONE OR TRAFFIC DRUM
 * OPTIONAL ⊗ TRAFFIC DRUM — PORTABLE SIGN SUPPORT
 HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW



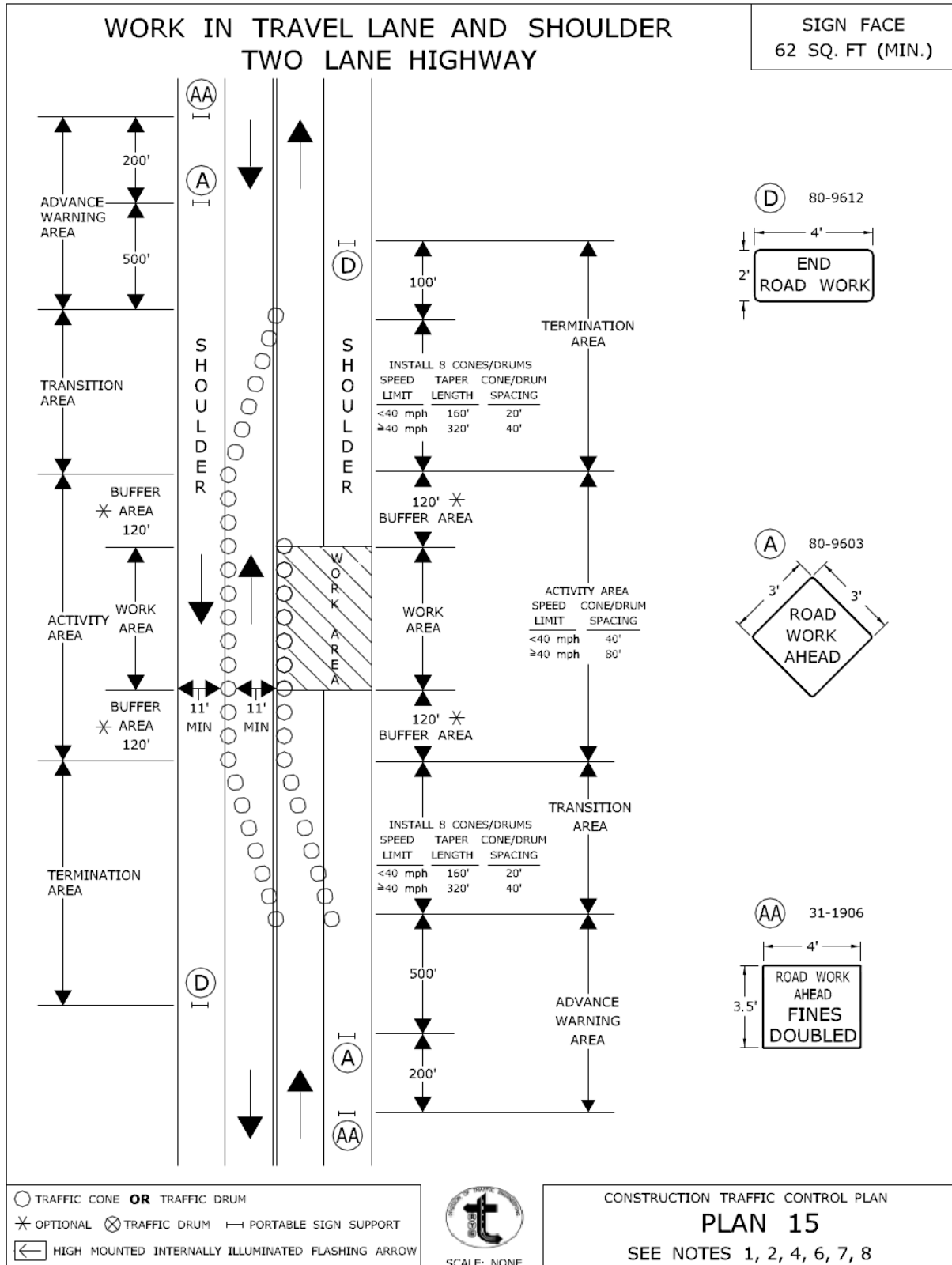
CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 14
 SEE NOTES 1, 2, 4, 7, 8

SCALE: NONE

CONNECTICUT DEPARTMENT OF TRANSPORTATION
 BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED

Charles S. Harlow
 Charles S. Harlow
 2012.06.05 15:56:09-04'00"
 PRINCIPAL ENGINEER



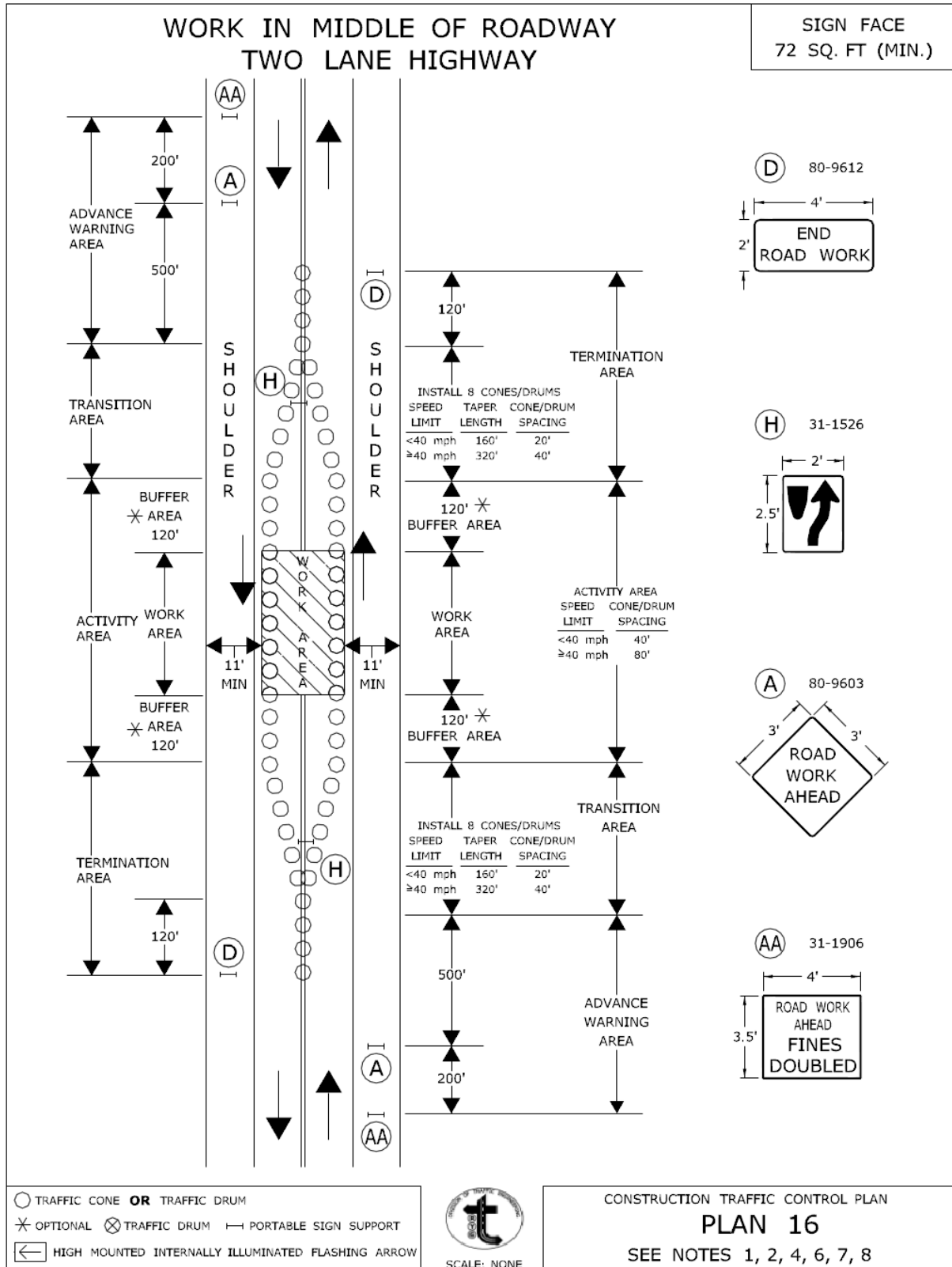
○ TRAFFIC CONE OR TRAFFIC DRUM
 ✖ OPTIONAL ✘ TRAFFIC DRUM — PORTABLE SIGN SUPPORT
 HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW



CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 15
 SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
 BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED *Charles S. Harlow* Charles S. Harlow
 2012.06.05 15:56:29-04'00"
 PRINCIPAL ENGINEER



○ TRAFFIC CONE OR TRAFFIC DRUM
 ✖ OPTIONAL ✘ TRAFFIC DRUM — PORTABLE SIGN SUPPORT
 HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

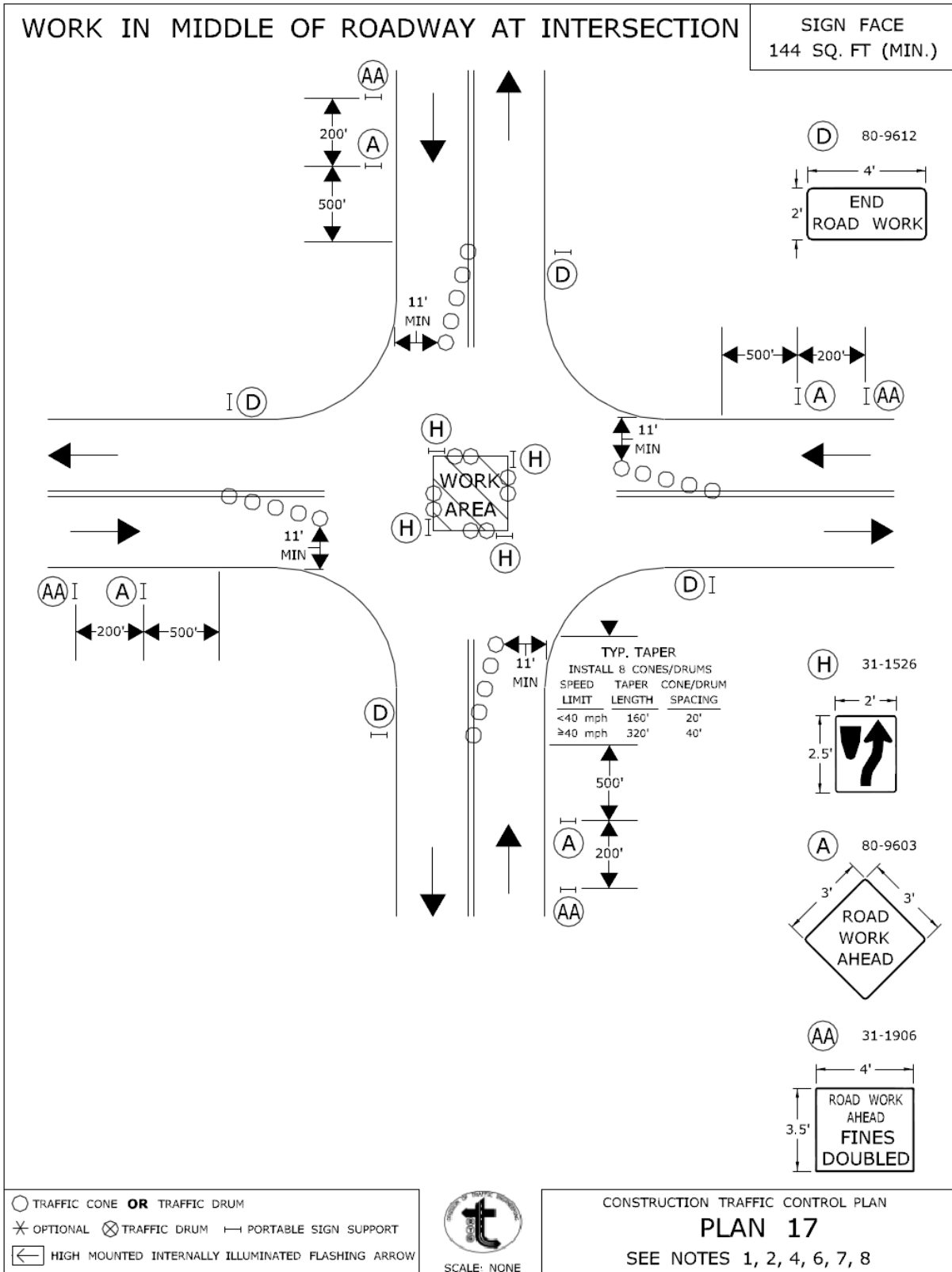


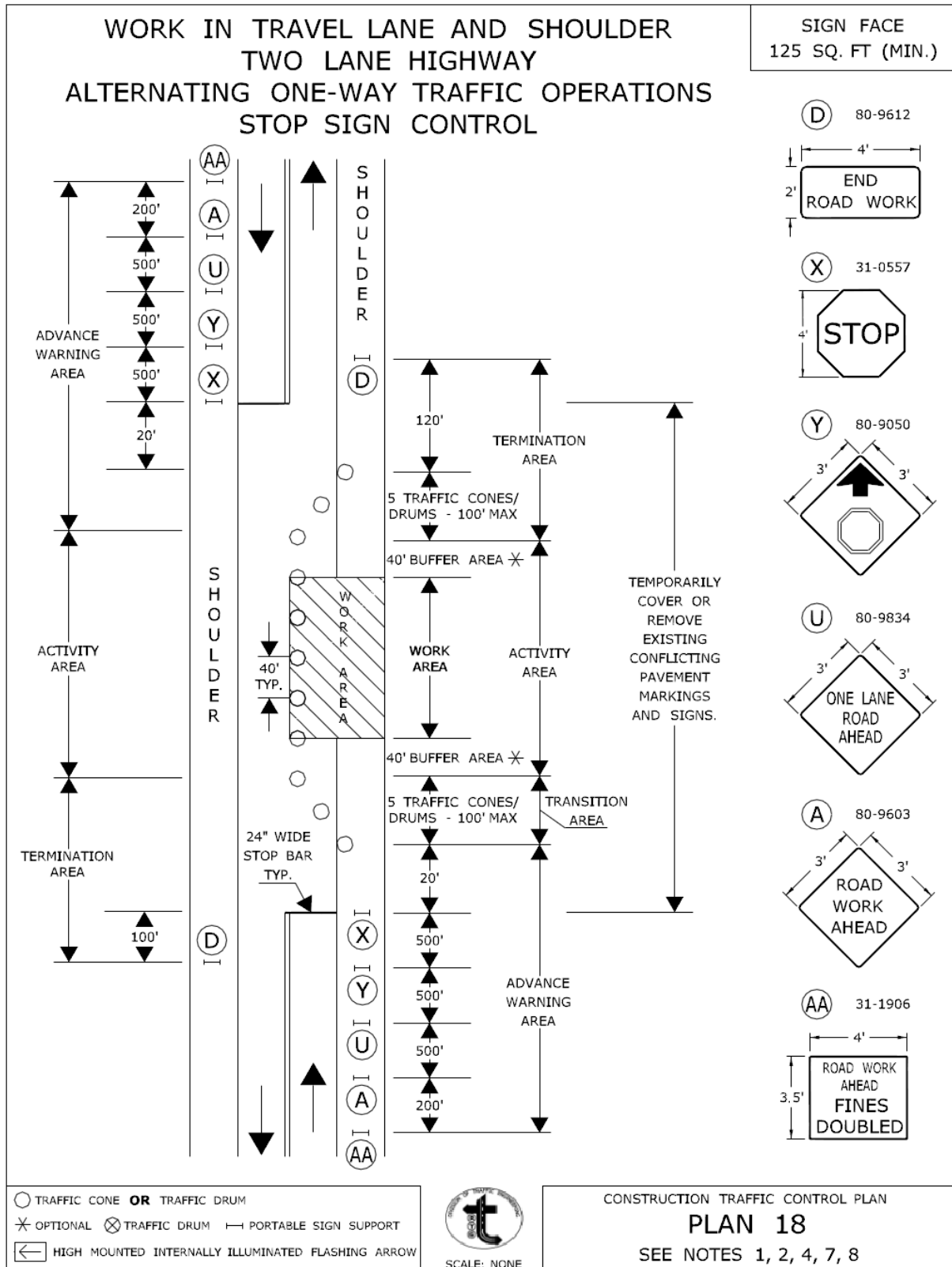
CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 16
 SEE NOTES 1, 2, 4, 6, 7, 8

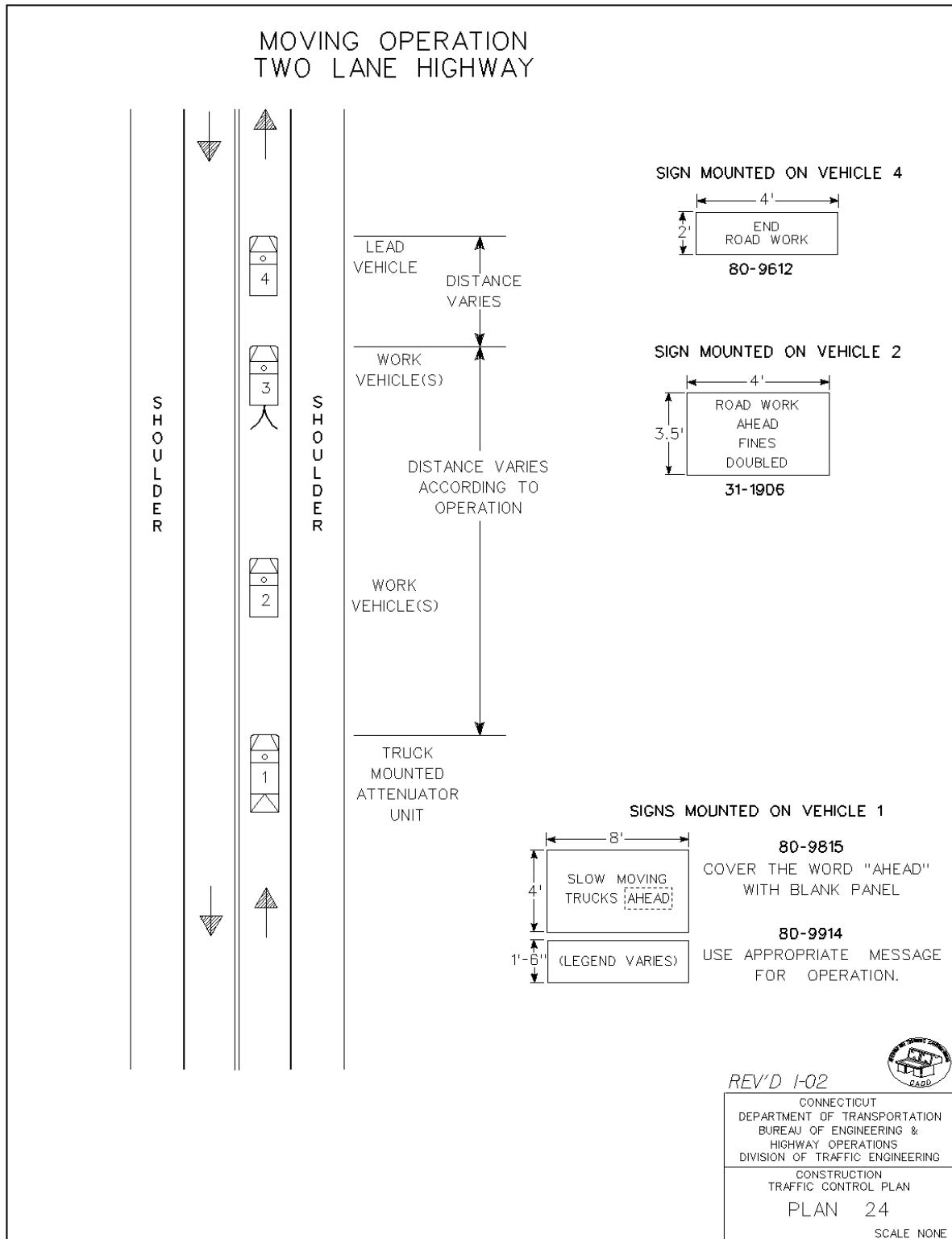
CONNECTICUT DEPARTMENT OF TRANSPORTATION
 BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED

Charles S. Harlow
 Charles S. Harlow
 2012.06.05 15:56:51-04'00"
 PRINCIPAL ENGINEER







APPROVED John D. McCall DATE 1-30-02
 PRINCIPAL ENGINEER

ITEM #1002291A - MODIFICATION OF TRAFFIC CONTROL FOUNDATION

Description:

This item shall consist of modifying existing traffic control foundation of the type specified at the locations shown on the plans or as directed by the Engineer and in conformity with these special provisions.

Materials:

Concrete replacement shall be Class "A" concrete conforming to Section M.03 and for Rigid Metal Conduit, Article M.15.09.

Concrete bonding compound shall be of an approved type as directed by the Engineer.

Construction Methods:

All work shall be in accordance with the following procedure or as directed by the Engineer.

- a) Remove concrete foundation by cutting, chiseling or any other method approved by the Engineer as required to install new conduit sweeps.
- b) Position new conduit sweeps, and apply an approved concrete bonding compound on the exposed concrete surfaces as recommended by the manufacturer.
- c) Forms shall be positioned so that all existing exposed foundation at grade level or above will be matched. All work shall be in accordance with Section 6.01.
- d) Allow concrete to cure and backfill as indicated on the details.

When all conduits, existing and new, are used, one additional 50mm (2") rigid metal conduit sweep shall be installed as a spare. Existing conduits that will be abandoned shall be cut and capped approximately two feet from the foundation.

Surfaces, new and existing, of a foundation which is modified, shall be "Grout Clean-Down Finish" as described in Section 6.01.

Where a foundation is modified within or adjacent to a concrete sidewalk, unless otherwise directed by the Engineer, the entire section of sidewalk shall be replaced in accordance with Section 9.21.

Method of Measurement:

The work for this item shall be measured for payment by the number of foundations modified.

Basis of Payment:

This work will be paid for at the contract unit price each for "Modification Of Traffic Control Foundation", which price shall include all costs for cutting of bases, bonding compound, forms, concrete, conduit sweeps, and all fittings, material, equipment, labor and tools incidental thereto.

All concrete sidewalk replaced due to foundation modification shall be paid for at the contract unit price for "Concrete Sidewalk".

<u>Pay Item</u>	<u>Pay Unit</u>
Modification of Traffic Control Foundation	Ea.

ITEM #1003595A - DECORATIVE LIGHT POLE AND LIGHT FIXTURE

Description: This work shall consist of furnishing and installing a Crenshaw Lighting Light Standard and LEDS or approved equal, according to the details, and at the locations shown on the plans or as ordered complete in place.

1. Submittals

Prior to excavating for the foundation for the light pole, the Contractor shall submit working drawings and design calculations, with all details and documents necessary for fabrication and construction, for each light pole foundation for review in accordance with the “Notice To Contractor – Special Provision 1.05” and the special provision “Section 1.05 – Control Of Work”.

The working drawings and design calculations for the light pole foundations shall conform to working drawing requirements for permanent construction. A single set of working drawings with tabulated data for. The working drawings and calculations shall be prepared in Customary U.S. units.

Materials: The light pole shall be manufactured by Grand Lighting or approved equal and shall be green in color. The Light Fixture shall be “Outdoor Lantern” with a wrought iron finish – green. The base shall be a “Sacramento SC12-AS” type or approved equal. The finish shall be Hunter Green.

The luminaire shall be 12 LEDS, 70 Watts (each) at 120 voltage.

Construction Methods: This work shall comply with Article 10.03.03.

Method of Measurement: This work shall be measured for payment by the number of decorative light poles and light fixtures installed and accepted of the type specified.

Basis of Payment: This work shall be paid for at the contract unit price each for “Decorative Light Pole and Light Fixture”, complete in place, which price shall include all materials, pole, luminaire, base, washers, nuts, bolts, equipment, tools, and labor incidental thereto.

Pay Item

Pay Unit

Decorative Light Pole and Light Fixture

Each

ITEM #1008908A - CLEAN EXISTING CONDUIT

Description:

Clean existing conduit as required, as shown on the plans or as directed by the Engineer to remove dirt and debris to facilitate the installation of new cable.

Construction Methods:

Where cable is to be installed in existing conduit the conduit may have to be cleared prior to the installation. Cleaning will only be necessary if the new cable cannot be easily installed in the existing conduit. By field inspection, and with the concurrence of the Engineer, determine the sections of conduit that require cleaning.

Remove all existing cable from conduit. Install temporary cable elsewhere, as necessary, to maintain normal signalization complete with vehicle & pedestrian detection, EVPS, and coordination. Clean the conduit by one of the following methods:

- 1) Rodding.
- 2) A high pressure jet spray, or air pressure.
- 3) By pulling a mandrel or ball through the conduit.

Submit in writing the anticipated method of cleaning the conduit to the Engineer for approval prior to cleaning any conduit.

If the conduit is found damaged to any extent that the cleaning process will not clear the obstruction, it will be the judgment of the Engineer whether to replace the entire conduit run or excavate and replace only the damaged section.

If the existing conduit is found to be missing hardware such as bonding bushings and bond wire, the missing material shall be provided and installed under this item prior to installation of the cable.

Method of Measurement:

This work shall be measured from termination point to termination point. This work shall be measured for payment on actual number of linear feet (meters)..

Basis of Payment:

The work under the Item "Clean Existing Conduit" shall be paid for at the contract unit price per linear foot (meters), which price shall include all material, tools, equipment, labor, and work incidental thereto. Work pertaining to temporary operation shall be paid for under Item 1108xxxA - Temporary Signalization (Site X). Replacement of any damaged conduit shall be paid for under the applicable conduit item.

Pay Item	Pay Unit
Clean Existing Conduit	l.f. (m)

ITEM #1010060A – CLEAN EXISTING CONCRETE HANDHOLE

DESCRIPTION:

Clean all debris from an existing concrete handhole where shown on the plans or as directed.

MATERIAL:

- Insulated Bonding Bushings:
 - Specification Grade
 - Threaded
 - Malleable Iron or Steel
 - Galvanized
 - UL listed
- Bonding Wire:
 - M.15.13
- Grout:
 - M.03.05

CONSTRUCTION METHODS:

Remove to a level even with the bottom of the handhole all sand, silt and other debris. Remove any material that is accessible from the ends of conduit. Additional conduit cleaning will be paid for under Item 1008908A-Clean Existing Conduit. Place approximately 4” (100) of ¾” (19) crushed stone in bottom of handhole using care not to allow crushed stone to enter conduits. Grout around conduits to prevent future entrance of dirt and silt. Properly dispose all removed debris. Inspect bonding bushings. Tighten loose bushings. Secure loose bond connections. Install new bonding bushings on spare conduits and bond to other conduits.

METHOD OF MEASUREMENT:

This work will be measured for payment by the number of concrete handholes cleaned, complete and accepted.

BASES OF PAYMENT:

This work will be paid for at the contract unit price each for "Clean Existing Concrete Handhole", which price shall include the removal and disposal of debris from handhole and associated conduit, crushed stone, grout, bonding bushings, bonding wire, and all equipment and work incidental thereto.

<u>Pay Item</u>	<u>Pay Unit</u>
Clean Existing Concrete Handhole	Each (Ea)

ITEM #1106001A - 1 WAY PEDESTRIAN SIGNAL POLE MOUNTED

ITEM #1106003A - 1 WAY PEDESTRIAN SIGNAL PEDESTAL MOUNTED

ITEM #1106004A - 2 WAY PEDESTRIAN SIGNAL PEDESTAL MOUNTED

Section 11.06.02 Pedestrian Signal, Materials

Section M.16.07 C. Optical Unit

Delete 2. LED: and replace with the following:

General

- Meet requirements of current MUTCD Section 4E.
- Meet current ITE specifications for Pedestrian Traffic Control Signal Indications - (PTCSI) Part 2: Light Emitting Diode (LED).
- Meet CT DOT, 2008 - 2010 Functional Specifications for Traffic Control Equipment; Section 5D, LED Pedestrian Signal with Countdown Timer.
- Meet EPA Energy Star® requirements for LED Pedestrian Signal Modules.

Operational

- Countdown display only during the flashing Pedestrian Clearance (Ped Clr) Interval. Timer goes blank at end of flashing ped clr even if countdown has not reached zero.

Physical

- Sealed optical module to prevent entrance of moisture and dust.
- Self-contained optical module, including necessary power supplies.
- Designed to securely fit into standard housing without the use of special tools or modifications to the housing.
- Identification information on module: manufacturer's name, model number, serial number, and date code.

Optical

- Multiple LED sources; capable of partial loss of LED's without loss of symbol or countdown message.
- Two complete self contained optical systems. One to display the walking person symbol (walk) and the hand symbol (don't walk). One to display the countdown timer digits.
- Visual Image similar to incandescent display; smooth, non-pixelated.
- Symbol and countdown digit size as shown on the plan.
- Solid hand/person symbol; outline display not allowed.
- Overlaid hand/person symbols and countdown digits arranged side by side.
- Countdown digit display color: Portland Orange in accordance with ITE requirements.
- Countdown digits comprised of two seven segments, each in a figure 8 pattern.
- Photometric Requirements: Luminance, Uniformity, and Distribution in accordance with ITE requirements.

- Color Uniformity in accordance with ITE requirements.
- Blank-Out design; symbols and digits illegible even in direct sunlight when not illuminated.

Electrical

- Operating voltage: 89 VAC to 135 VAC.
- Low Voltage Turn-Off: 35 VAC.
- Turn-On and Turn-Off times in accordance with ITE specifications.
- Combined Hand – Countdown Digits wattage: ≥ 20 Watts.
- Input impedance at 60 Hertz sufficient to satisfy Malfunction Management Unit (MMU) requirements.
- Two separate power supplies. One to power the walking person symbol. One to power the hand symbol and the countdown digits.
- Meet Federal Communication Commission (FCC) regulations concerning electronic noise.
- Filtered and protected against electrical transients and surges.

Warranty

- Five years from date ownership is accepted.

Section M.16.07 F. Painting:

Remove the 2nd and 3rd sentences referring to the color.

Third coat: Replace with the following:

The housing and all brackets and hardware shall be painted black by the manufacturer. The color shall be No. 17038, Federal Standard No. 595.

The inside and outside of the visors shall be flat black No. 37038, Federal Standard No. 595.

ITEM #1107011A - ACCESSIBLE PEDESTRIAN SIGNAL AND DETECTOR (TYPE A)

Description:

Furnish and install an Accessible Pedestrian Signal and Detector (APS&D). The APS&D provides audio and tactile information to augment the visual pedestrian signal.

Type A provides a low frequency percussive tone during the walk interval and is used where there is an exclusive pedestrian phase or ≥ 10 foot separation between APS&Ds.

Type B provides a speech message during the walk interval and is used where there is a concurrent pedestrian phase or < 10 foot separation between APS&Ds.

Material:

A. General:

- Conform to applicable sections of the current MUTCD Chapter 4E, Pedestrian Control Features as specified herein.
- All features fully operational when the traffic signal is in colors mode.
- All features non-operational when the traffic signal is in flash mode.
- Interchangeable with a non-accessible type pedestrian pushbutton with no modifications to the Controller Assembly (CA) or Controller Unit.
- Audible transducer integral with the APS&D housing, adjacent to the pushbutton.
- Operation programming method: Either or combination of:
 - Mechanically by dip switches or circuit board jumpers
 - Infrared remote-control hand-held device

B. Electrical:

- Metallic components either grounded or insulated to preclude an electrical hazard to pedestrians under all weather conditions.
- All features powered by the 110VAC Walk signal and the 110VAC Don't Walk signal so that additional conductors from the CA are not needed.

C. Audible Pushbutton Locator Tone

- Frequency: repeating tone at one (1) second intervals
- Tone duration: ≤ 0.15 seconds
- Volume:
 - Minimum setting of zero
 - Manually adjustable initial setting
 - Automatically adjusted after initial setting. Volume increased in response to a temporary increase in ambient noise and subsequently decreased with a decrease in ambient noise.
 - Maximum volume: 100 dBA which is the approximate sound pressure of a gasoline powered lawn mower nearby.
 - Automatic volume adjustment independent of other APS&Ds at the intersection.
 - May be disabled without affecting operation of other features.
- Silent only during walk interval. Active all other times.

D. Vibrotactile Arrow Pushbutton

- Pushbutton contained in a circular assembly which fits inside the housing and is attached to the housing with 4 screws.
- Actuation of pushbutton acknowledged by confirmation light.
- Actuation of pushbutton initiates speech message "Wait".

- ADA compliant: Size: $\geq 2.0''$ (50) diameter, Actuation force: ≤ 5 ft-lb (22.2 N)
- Shape: Circular, raised slightly above housing so that it may be actuated with the back of a hand
- Tamper-proof, vandal-proof, weatherproof, freeze-proof, impact-resistant design and construction.
- Operation: Vibrates only during the walk interval (when the walk indication is displayed).
- Tactile Arrow:
 - Attached to surface of the button assembly by a tamperproof method.
 - Raised slightly above surface of pushbutton, minimum 0.125'' (0.3)
 - Size: Length $\geq 1.5''$ (38), Height $\geq 1.0''$ (25)
 - Color: Sharp contrast to background color of pushbutton and housing

E. Audible Walk Interval

1. General:

- Operation independent of other APS&Ds at intersection.
- Active only during the walk interval (when the walk indication is displayed).
- Volume:
 - Minimum setting of zero
 - Manually adjustable initial setting
 - Automatically adjusted after initial setting. Volume increased in response to a temporary increase in ambient noise and subsequently decreased with a decrease in ambient noise.
 - Automatic volume adjustment independent of other APS&Ds at the intersection.
 - Maximum volume: 100 dBA which is the approximate sound pressure of a gasoline powered lawn mower nearby.
- Duration:
 - Default method: Automatically set by the duration of the visual walk signal display.
 - When selected: Manually set when rest-in-walk is used for a concurrent pedestrian movement.
- Audible sounds that mimic any bird call are not allowed.

2. Type A, Percussive Tone:

- Repeating tone at eight (8) to ten (10) ticks per second.
- Tone frequency: Multiple frequencies with a dominant component at 880 Hz which creates a "tick - tick - tick..." sound.

3. Type B, Speech Message:

- Concurrent Ped Crossing: Clearly enunciate the name of the travel way to be crossed and the message that the walk signal is on for that crossing. e.g., "Walk signal is on to cross Main". See signal plan for specific message.
- Exclusive Ped Crossing: Clearly enunciate the message that the walk signal is on at all crossings. e.g., "Walk signal is on for all crossings".

F. Pushbutton Housing/Sign Frame/Sign

- One piece die cast aluminum meeting requirements of ASTM B85.
- Sign frame designed to accept 9" x 15" (230 x 380) four-hole advisory sign.
- Flat back to facilitate surface mount.
- Available brackets to either pedestal top-mount or pole side-mount on pole diameter range of 3½" (89) to 15" (380).

- Available brackets to allow mounting two (2) APS&Ds to the same 3½” (89) pole, facing ≥ 60 degrees apart, at the same height.
- Available extension bracket of a size indicated on the plan – 18” maximum.
- Wire entrance through the rear.
- Stainless steel mounting hardware.
- Color: The color shall be black No. 17038, Federal Standard No. 595. At intersections at Merritt Parkway interchanges, all brackets and hardware shall be painted dark green by the manufacturer. The color shall be No. 14056, Federal Standard No. 595.
- Finish: Housing/Frame and all mounting brackets either:
 1. Painted with 3 coats of infrared oven-baked paint before assembly.
 - Primer: Baked iron oxide which meets or exceeds FS TT-P-636.
 - Second coat: Exterior-baking enamel, light gray, which meets or exceeds FS TT-E-527.
 - Third coat: Exterior-baking enamel, which meets or exceeds FS TT-E-489.
 2. Electrostatic powder coated after chemically cleaned.
- Sign: CT DOT Sign No. 31-0856

Construction Methods:

Install the APS&D according to the manufacturer’s instructions. Position the APS&D so the plane of the sign face is parallel to the crossing (sign is facing perpendicular) and the arrow is pointing in the same direction as the crossing, not necessarily at the ramp. Notify the Engineer if there is any discrepancy or ambiguity between the plans and field conditions that prevent placement of the APS&D as shown on the plan. Set the minimum sound levels of the locator tone and the audible walk indication when there is little or no ambient noise as in night time operation. Set the volume of audible walk indications and pushbutton locator tones to a maximum of 5dBA louder than ambient sound. The locator tone should be audible 6’ to 12’ (1.8 m to 3.6 m) from the pushbutton or to the building line, whichever is less. Confirm the volume of both audible walk indication and the locator tone increases with an increase in ambient sound and subsequently decreases when the ambient noise decreases.

If programming method is remote, by an infrared hand-held device, provide one device and operation manual for each intersection where APS&D is installed.

Method of Measurement:

This work is measured by the number of APS&Ds of the type specified, installed, tested, fully operational, and accepted.

Basis of Payment:

Payment for this work is based on the installation, inspection, successful completion of the 30 day test period, and final acceptance of the Accessible Pedestrian Signal and Detector of the type specified. Payment includes the sign, mounting brackets for adjacent buttons on the same structure, extension brackets, all necessary cable, all incidental materials, labor, tools, and equipment necessary to complete the installation. Payment also includes the warrantee, installation manual, and operation manual.

If programming method is remote by an infrared hand-held device, the total bid price of all APS&Ds includes one remote programming device and accompanying operation manual for each intersection where APS&D is installed.

Pay Item	Pay Unit
Accessible Pedestrian Signal and Detector (Type A)	Each

ITEM #1108163A - MODIFY EXISTING CONTROLLER

This item shall consist of modifying the existing traffic controller assembly to provide the revised operation as shown on the plans or as directed by the Engineer. The modification shall include, but not be limited to, revisions to the timing and sequence, cabinet wiring, coordination, pre-emption, field wiring and cabinet wiring diagrams.

MATERIAL

The material for this work shall conform to the requirements of the current edition of the Connecticut Department of Transportation Functional Specifications for Traffic Control Equipment. The material shall be compatible with the existing equipment. Any material in question shall be approved prior to installation by the Engineer or the Department of Transportation Signal Lab, 280 West Street, Rocky Hill. Contact Mr. Don Assard at (860) 258-0346 or Mr. Mark Zampini at (860) 258-0349 for approval.

CONSTRUCTION METHODS

All revisions to the cabinet wiring shall be neat and orderly. All additional wiring shall be from terminal to terminal. Splices will not be allowed. All changes, additions and deletions shall be documented, dated and drawn on the reproducible original or a reproducible copy of the original cabinet wiring diagram. Four paper copies shall be furnished to the Engineer upon completion of the revision.

METHOD OF MEASUREMENT

This item will be measured for payment as an "Each" item.

BASIS OF PAYMENT

This item will be paid for at the contract price each, for "Modify Existing Controller" which price shall include all necessary load switches, relays, components, hardware, tools, equipment, engineering and labor required to modify the existing controller as shown on the plan. This price shall also include four updated cabinet wiring diagrams.

Pay Item
Modify Existing Controller

Pay Unit
Ea.

ITEM #1111201A – TEMPORARY DETECTION (SITE NO. 1)

Description:

Provide a Temporary Detection (TD) system at signalized intersections throughout the duration of construction, as noted on the contract plans or directed by the Engineer. TD is intended to provide an efficient traffic-responsive operation which will reduce unused time for motorists travelling through the intersection. A TD system shall consist of all material, such as pedestrian pushbutton, accessible pedestrian signal, conduit, handholes, cable, messenger, sawcut, loop amplifier, microwave detector, Video Image Detection System (VIDS), Self-Powered Vehicle Detector (SPVD), and any additional components needed to achieve an actuated traffic signal operation.

Materials:

Material used for TD is either owned by the Contractor and in good working condition, or existing material that will be removed upon completion of the contract. Approval by the Engineer is needed prior to using existing material that will be incorporated into the permanent installation. New material that will become part of the permanent installation is not included or paid for under TD.

Construction Methods:

The work for this item includes furnishing, installation, relocating, realigning, and maintaining the necessary detection systems as to provide vehicle and pedestrian detection during each phase of construction. If not shown on the plan, program the TD modes (pulse or presence) as the existing detectors or as directed by the Engineer. If the TD method is not specified elsewhere in the Contract, (loops, SPVD, microwave, VIDS, pushbutton, or other) it may be the Contractor's choice. The method chosen for TD must be indicated on the TD Plan submission.

The traffic signal plan-of-record, if not in the controller cabinet will be provided upon request. Ensure the controller phase mode (recall, lock, non-lock) and phase timing are correct for the TD. Adjust these settings as needed or as directed by the Engineer.

At least 30 days prior to implementation of each phase of construction submit a TD proposal to the Engineer for approval. Submit the TD proposal at the same time as the Temporary Signalization plan. Indicate the following information for each intersection approach:

- Phase Mode
- Temporary Detection Method
- Area of Detection
- Detector Mode

Submit the proposed temporary phase timing settings and the TD installation schedule with the TD proposal. See the example below.

Example Proposed Temporary Detection and Timing

Site 1

Warren, Rt. 45 at Rt. 341, Location #149-201

Approach	Phase	Phase Mode	TD Method	Area of Detection	Det Mode
<i>Rt. 45 NB</i>	<i>2</i>	<i>Min Recall</i>	<i>VIDS</i>	<i>150' from Stop Bar</i>	<i>Presence</i>
<i>Rt. 45 SB</i>	<i>2</i>	<i>Min Recall</i>	<i>SPVD</i>	<i>150' from Stop Bar</i>	<i>Pulse</i>
<i>Rt. 341</i>	<i>4</i>	<i>Lock</i>	<i>Microwave</i>	<i>30' from Stop Bar</i>	<i>Pulse</i>
<i>Rt. 341</i>	<i>4</i>	<i>Lock</i>	<i>Pushbutton</i>	<i>At SE & SW corners</i>	<i>n/a</i>

Temporary Phase Timing Settings:

Phase	Min	Ped	Ped Clr	Ext	Max 1	Max2	Yel	Red
<i>2</i>	<i>20</i>	<i>0</i>	<i>0</i>	<i>6</i>	<i>45</i>	<i>60</i>	<i>4</i>	<i>1</i>
<i>4</i>	<i>14</i>	<i>7</i>	<i>9</i>	<i>3</i>	<i>27</i>	<i>35</i>	<i>3</i>	<i>1</i>

Scheduled TD: *July 4, 2011* Site 2

Scotland, Rt. 14 at Rt. 97, Location #123-201

Approach	Phase	Phase Mode	TD Method	Area of Detection	Det Mode
<i>Rt. 15 WB Left Turn</i>	<i>1</i>	<i>Non-Lock</i>	<i>VIDS</i>	<i>5' in front to 10' Behind Stop Bar</i>	<i>Presence</i>
<i>Rt. 14 EB</i>	<i>2</i>	<i>Min Recall</i>	<i>Existing Loop</i>	<i>150' from Stop Bar</i>	<i>Pulse</i>
<i>Ped Phase</i>	<i>3</i>	<i>Non-Lock</i>	<i>Pushbutton</i>	<i>At all corners</i>	<i>n/a</i>
<i>Rt. 14 WB</i>	<i>6</i>	<i>Min Recall</i>	<i>VIDS</i>	<i>150' from Stop Bar</i>	<i>Presence</i>
<i>Rt. 97</i>	<i>4</i>	<i>Lock</i>	<i>Loop, Pre-formed</i>	<i>20' from Stop Bar</i>	<i>Pulse</i>

Temporary Phase Timing Settings:

Phase	Min	Ped	Ped Clr	Ext	Max 1	Max2	Yel	Red
<i>1</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>2</i>	<i>12</i>	<i>18</i>	<i>3</i>	<i>1</i>
<i>2 & 6</i>	<i>24</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>26</i>	<i>36</i>	<i>4</i>	<i>1</i>
<i>3</i>	<i>16</i>	<i>7</i>	<i>9</i>	<i>0</i>	<i>16</i>	<i>16</i>	<i>4</i>	<i>1</i>
<i>4</i>	<i>14</i>	<i>7</i>	<i>9</i>	<i>3</i>	<i>27</i>	<i>35</i>	<i>3</i>	<i>1</i>

Scheduled TD: *July 4, 2011*

When at any time during construction the existing vehicle or pushbutton detection becomes damaged, removed, or disconnected, install TD to actuate the affected approaches. Install and make TD operational prior to removing existing detection. TD must be operational throughout all construction phases.

Provide a list of telephone numbers of personnel who will be responsible for the TD to the Engineer. If the TD malfunctions or is damaged, notify the Engineer and place the associated phase on max recall. Respond to TD malfunctions by having a qualified representative at the site within three (3) hours. Restore detection to the condition prior to the malfunction within twenty-four (24) hours.

If the Engineer determines that the nature of a malfunction requires immediate attention and the Contractor does not respond within three (3) hours following the initial contact, then an alternative maintenance service will be called to restore TD. Expenses incurred by the State for alternative service will be deducted from monies due to the Contractor with a minimum deduction of \$500.00 for each service call. The alternate maintenance service may be the traffic signal owner or another qualified Contractor.

TD shall be terminated when the detection is no longer required. This may be either when the temporary signal is taken out of service or when the permanent detectors are in place and fully operational.

Any material and equipment supplied by the Contractor specifically for TD shall remain the Contractor's property. Existing material not designated as scrap or salvage shall become the property of the Contractor. Return and deliver to the owner all existing equipment used as TD that is removed and designated as salvage.

Method of Measurement:

Temporary Signalization (TS) shall be measured for payment as follows:

Fifty percent (50%) will be paid when Temporary Detection is initially set up, approved, and becomes fully operational.

Fifty percent (50%) will be paid when Temporary Detection terminates and all temporary equipment is removed to the satisfaction of the Engineer.

Basis of Payment:

This work will be paid at the contract Lump Sum price for "Temporary Detection (Site No.)". The price includes furnishing, installing, relocating, realigning, maintaining, and removing, the necessary detection systems and all incidental material, labor, tools, and equipment. This price also includes any detector mode setting changes, timing or program modifications to the controller that are associated with TD. All Contractor supplied material that will remain the Contractor's property will be included in the contract Lump Sum price for "Temporary Detection (Site No.)". Any items installed for TD that will become part of the permanent installation will not be paid for under this item but are paid for under the bid item for that work.

<u>Pay Item</u>	<u>Pay Unit</u>
Temporary Detection (Site No.)	L. S.

ITEM #1111451A - LOOP DETECTOR SAWCUT

11.11.02 – Materials:

Replace Article M.16.12 with the following:

Sawcut:

(a) Wire in sawcut:

- International Municipal Signal Association (IMSA) Specification 51-7, single conductor cross-linked polyethylene insulation inside polyethylene tube.
- # 14 AWG

(b) Sealant:

(1) Polyester Resin Compound

- Two part polyester which to cure, requires a liquid hardener.
- Use of a respirator not necessary when applied in an open air environment.
- Cure time dependent on amount of hardener mixed.
- Flow characteristics to guarantee encapsulation of loop wires.
- Viscosity: 4000 CPS to 7000 CPS at 77 degrees Fahrenheit (25° C).
- Form a tack-free skin within 25 minutes and full-cure within 60 minutes at 77 degrees Fahrenheit (25° C).
- When cured, resist effects of weather, vehicular abrasion, motor oil, gasoline, antifreeze, brake fluid, de-icing chemicals, salt, acid, hydrocarbons, and normal roadway encounters.
- When cured, maintain physical characteristics throughout the ambient temperature ranges experienced within the State of Connecticut.
- When cured, bonds (adheres) to all types of road surfaces.
- Weight per Gallon (3.8 l): 11 lbs ± 1 lb (5kg ± .45kg)
- Show no visible signs of shrinkage after curing.
- 12 month shelf life of unopened containers when stored under manufacturers specified conditions.
- Cured testing requirements:
 - Gel time at 77 degrees F (25° C): 15 - 20 minutes, ASTM C881, D-2471
 - Shore D Hardness at 24 hours: 55-78, ASTM D-2240
 - Tensile Strength: > 1000 psi (6895 kPa), ASTM D-638
 - Elongation: 18 - 20 %, ASTM D-638
 - Adhesion to steel: 700 - 900 psi (4826 - 6205 kPa), ASTM D-3163
 - Absorption of water, sodium chloride, oil, and gasoline: < 0.2%, ASTM D-570
- Include in the Certificate of Compliance:
 - Manufacturer's confirmation of the uncured and cured physical properties stated above.
 - Material Safety Data Sheet (MSDS) stating sealant may be applied without a respirator in an open air environment.
- Designed to allow clean-up without the use of solvent that is harmful to the workers and the environment.

(2) Elastosmer Urethane Compound:

- One part urethane which to cure, does not require a reactor initiator, or a source of thermal energy prior to or during its installation.
- Use of a respirator not necessary when applied in an open air environment.

- Cure only in the presence of moisture.
- Flow characteristics to guarantee encapsulation of loop wires.
- Viscosity such that it does not run out of the sawcut in sloped pavement during installation; 5000 CPS to 85,000 CPS.
- Form a tack-free skin within 24 hours and 0.125 inch (0.33mm) cure within 30 hours at 75 degrees Fahrenheit (24° C).
- When cured, resist effects of weather, vehicular abrasion, motor oil, gasoline, antifreeze, brake fluid, de-icing chemicals, salt, acid, hydrocarbons, and normal roadway encounters.
- When cured, maintain physical characteristics throughout the ambient temperature ranges experienced within the State of Connecticut.
- Show no visible signs of shrinkage after curing.
- Shelf life when stored under manufacturers specified conditions:
 - Caulk type cartridges: minimum 9 months
 - Five gallon containers: minimum 12 months
- Designed for application when the pavement surface temperature is between 40 and 100 degrees Fahrenheit (4° and 38° C).
- Uncured testing requirements:
 - Weight/Gallon: ASTM D-1875
 - Determination of Non-volatile Content: ASTM D-2834
 - Viscosity: ASTM D-1048B
 - Tack-free Time: ASTM D-1640
- Cured testing requirements:
 - Hardness: ASTM D-2240
 - Tensile Strength & Elongation: ASTM D-412A
- Include in the Certificate of Compliance:
 - Manufacturer's confirmation of the uncured and cured physical properties stated above.
 - Material Safety Data Sheet (MSDS) stating sealant may be applied without a respirator in an open air environment.
- Designed to allow clean-up without the use of solvent that is harmful to the workers and the environment.

3. Miscellaneous:

(a) Liquidtight Flexible Nonmetallic Conduit

- UL listed for direct burial
- UL 1660
- Smooth polyvinyl chloride inner surface

(b) Water Resistant Pressure Type Wire Connector

- UL listed for direct burial and wet locations
- UL 486D

11.11.03 - Construction methods:

2. Loop Detector Sawcut

- Loop size, number of turns, and location is shown on the intersection plan.
- Do not cut through a patched trench, damaged or poor quality pavement without the approval of the Engineer.
- Wet-cut pavement with a power saw using a diamond blade $\frac{3}{8}$ inch (9.5mm) wide. Dry-cut is not allowed.
- Ensure slot depth is between 1 $\frac{3}{4}$ inch to 2.0 inch (45mm to 50mm).
- Overlap corners to ensure full depth of cut.

- To prevent wire kinking and insulation damage, chamfer inside of corners that are ≤ 120 degrees.
- Clean all cutting residue and moisture from slot with oil-free compressed air. Ensure slot is dry before inserting wire and sealing sawcut.
- Cut home-run, from loop to curb or edge-of-road, as shown on the typical installation sheet.
- To prevent cross-talk and minimize electrical interference, twist home-run wires, from edge of road to handhole, with at least 5 turns per foot (16 turns per meter). Tape together twisted home-run wires at 2 foot (0.6 meter) \pm intervals.
- In new or resurfaced pavement, install loops in the wearing course. If the wearing course is not scheduled for immediate placement (within 24 hours) after the base course, provide temporary detection when directed by the Engineer. Temporary detection may be sawcut loops, preformed loops, microwave sensor, video, or other method approved by the Engineer.
- Splice(s) not allowed anywhere in loop wire either in loop or in home-run.
- Ensure wires are held in place at bottom of slot by inserting at 2 foot (0.6 m) intervals, 1 inch sections of foam backer rod or wedges formed from 1 inch (25mm) sections of the polyethylene tubing. Loop detectors with wires that have floated to the top of the sealant will not be accepted.
- To create a uniform magnetic field in the detection zone, wind adjacent loops in opposite directions.
- Use **polyester compound** as the sealant unless another type is allowed by the Engineer.
- Mix hardening agent into polyester resin with a power mixer or in an application machine designed for this type of sealant in accordance with the manufacturer's instructions.
- Apply the loop sealant in accordance with the manufacturer's instructions and the typical installation sheet. Do not apply sealant when pavement temperature is outside the manufacturers recommended application range.
- Solder splice the loop wires to the lead-in cable and install water resistant connector as shown on the typical installation sheet.
- Test the loop circuit resistance, inductance, and amplifier power-interruption as shown on the typical installation sheet. Document all test results.

3. Damaged, Patched, or Excessively Worn Pavement

- Where the existing pavement is damaged, patched or excessively worn and is found to be not suitable for reliable loop detection, notify the Engineer.
- When directed by the Engineer, remove and replace an area of pavement to allow the proper installation of the loop.
- Remove a minimum of 3 inches (75mm) depth.
- Comply with the applicable construction methods of Section 2.02 Roadway Excavation, Formation Of Embankment and Disposal of Surplus Material, and Section 4.06 Bituminous Concrete, such as:
 - Cut Bituminous Concrete
 - Material for Tack Coat
 - Bituminous Concrete Class 1

4. Re-surface/Overlay Project

- Prior to disconnecting the existing loop confirm that the amplifier is operating properly and is programmed according to plan. Document loop operation. Report any discrepancies and malfunctions to Engineer.
- Remove all abandoned sawcut home-run wire from handhole.
- Sawcut new loop according to plan.

- Solder splice new loop wires to the existing lead-in cable and install new water resistant twist connectors as shown on the typical installation sheet. Do not re-use the removed connectors.
- Test the loop circuit resistance and inductance. Document results.
- Ensure the existing loop amplifier has re-tuned to the new loop and is operating according to plan.

11.11.04 – Method of Measurement:

Loop Detector Sawcut is measured by the number of linear feet (meters) of installed, tested, operating, and accepted sawcut only where there is loop wire. Over-cuts at corners that do not contain wire are not measured.

11.11.05 – Basis of Payment:

Loop Detector Sawcut is paid at the contract unit price per linear foot (meter). The price includes sawcut, loop wire, sealant, liquidtight flexible nonmetallic conduit, duct seal, water resistant splice connectors, testing, incidental material, equipment, and labor.

Pay Item
Loop Detector Sawcut

Pay Unit
l.f. (m)

ITEM #1113011A – 3 CONDUCTOR NO. 10 AWG, THWN

ITEM #1113012A – 3 CONDUCTOR NO. 12 AWG, THWN

ITEM #1113014A – 3 CONDUCTOR NO. 8 AWG, THWN

Description:

Work under this item shall consist of furnishing and installing conductors at all the locations shown on the plans.

Materials:

Provide copper conductors installed in conduit for power and lighting. (NEC Type THWN) Conductors shall be 98% conductivity solid or class B concentric strand copper with 600 volt thermoplastic insulation manufactured in accordance with UL 83.

Construction Methods:

Installation shall consist of the following:

1. Completely and thoroughly swab raceway before installing wire.
2. There shall be no splices in any conductors except where circuits are branched and located in accessible handhole, junction or outlet box.
3. Pull all conductors into raceway at same time.
4. Conductors shall be installed from handhole to fuse holder (in luminaire base) and from fuse holder up to luminaire.
5. Clean conductor surfaces before installing lugs and connectors.
6. Neatly train and lace wiring inside boxes and equipment.

Method of Measurement:

This item will be measured for payment as the linear feet of three conductors furnished, installed and accepted in place.

Basis of Payment:

This work will be paid for at the contract unit price per linear foot for "3 Conductor No. 12 AWG", "3 Conductor No. 10 AWG, THWN" & "3 Conductor No. 8 AWG, THWN", complete and accepted in place, which price shall include furnishing, installation, splicing to existing conductors and connection to lighting fixtures and all equipment, tools, and labor incidental thereto.

Pay Item

3 Conductor No. 12 AWG, THWN
3 Conductor No. 10 AWG, THWN
3 Conductor No. 8 AWG, THWN

Pay Unit

LF
LF
LF

ITEM #1113011A

ITEM #1113012A

ITEM #1113014A

ITEM #1113011A

ITEM #1113012A

ITEM #1113014A

ITEM #1111201A – TEMPORARY DETECTION (SITE NO. 1)

Description:

Provide a Temporary Detection (TD) system at signalized intersections throughout the duration of construction, as noted on the contract plans or directed by the Engineer. TD is intended to provide an efficient traffic-responsive operation which will reduce unused time for motorists travelling through the intersection. A TD system shall consist of all material, such as pedestrian pushbutton, accessible pedestrian signal, conduit, handholes, cable, messenger, sawcut, loop amplifier, microwave detector, Video Image Detection System (VIDS), Self-Powered Vehicle Detector (SPVD), and any additional components needed to achieve an actuated traffic signal operation.

Materials:

Material used for TD is either owned by the Contractor and in good working condition, or existing material that will be removed upon completion of the contract. Approval by the Engineer is needed prior to using existing material that will be incorporated into the permanent installation. New material that will become part of the permanent installation is not included or paid for under TD.

Construction Methods:

The work for this item includes furnishing, installation, relocating, realigning, and maintaining the necessary detection systems as to provide vehicle and pedestrian detection during each phase of construction. If not shown on the plan, program the TD modes (pulse or presence) as the existing detectors or as directed by the Engineer. If the TD method is not specified elsewhere in the Contract, (loops, SPVD, microwave, VIDS, pushbutton, or other) it may be the Contractor's choice. The method chosen for TD must be indicated on the TD Plan submission.

The traffic signal plan-of-record, if not in the controller cabinet will be provided upon request. Ensure the controller phase mode (recall, lock, non-lock) and phase timing are correct for the TD. Adjust these settings as needed or as directed by the Engineer.

At least 30 days prior to implementation of each phase of construction submit a TD proposal to the Engineer for approval. Submit the TD proposal at the same time as the Temporary Signalization plan. Indicate the following information for each intersection approach:

- Phase Mode
- Temporary Detection Method
- Area of Detection
- Detector Mode

Submit the proposed temporary phase timing settings and the TD installation schedule with the TD proposal. See the example below.

Example Proposed Temporary Detection and Timing

Site 1

Warren, Rt. 45 at Rt. 341, Location #149-201

Approach	Phase	Phase Mode	TD Method	Area of Detection	Det Mode
<i>Rt. 45 NB</i>	<i>2</i>	<i>Min Recall</i>	<i>VIDS</i>	<i>150' from Stop Bar</i>	<i>Presence</i>
<i>Rt. 45 SB</i>	<i>2</i>	<i>Min Recall</i>	<i>SPVD</i>	<i>150' from Stop Bar</i>	<i>Pulse</i>
<i>Rt. 341</i>	<i>4</i>	<i>Lock</i>	<i>Microwave</i>	<i>30' from Stop Bar</i>	<i>Pulse</i>
<i>Rt. 341</i>	<i>4</i>	<i>Lock</i>	<i>Pushbutton</i>	<i>At SE & SW corners</i>	<i>n/a</i>

Temporary Phase Timing Settings:

Phase	Min	Ped	Ped Clr	Ext	Max 1	Max2	Yel	Red
<i>2</i>	<i>20</i>	<i>0</i>	<i>0</i>	<i>6</i>	<i>45</i>	<i>60</i>	<i>4</i>	<i>1</i>
<i>4</i>	<i>14</i>	<i>7</i>	<i>9</i>	<i>3</i>	<i>27</i>	<i>35</i>	<i>3</i>	<i>1</i>

Scheduled TD: *July 4, 2011* Site 2

Scotland, Rt. 14 at Rt. 97, Location #123-201

Approach	Phase	Phase Mode	TD Method	Area of Detection	Det Mode
<i>Rt. 15 WB Left Turn</i>	<i>1</i>	<i>Non-Lock</i>	<i>VIDS</i>	<i>5' in front to 10' Behind Stop Bar</i>	<i>Presence</i>
<i>Rt. 14 EB</i>	<i>2</i>	<i>Min Recall</i>	<i>Existing Loop</i>	<i>150' from Stop Bar</i>	<i>Pulse</i>
<i>Ped Phase</i>	<i>3</i>	<i>Non-Lock</i>	<i>Pushbutton</i>	<i>At all corners</i>	<i>n/a</i>
<i>Rt. 14 WB</i>	<i>6</i>	<i>Min Recall</i>	<i>VIDS</i>	<i>150' from Stop Bar</i>	<i>Presence</i>
<i>Rt. 97</i>	<i>4</i>	<i>Lock</i>	<i>Loop, Pre-formed</i>	<i>20' from Stop Bar</i>	<i>Pulse</i>

Temporary Phase Timing Settings:

Phase	Min	Ped	Ped Clr	Ext	Max 1	Max2	Yel	Red
<i>1</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>2</i>	<i>12</i>	<i>18</i>	<i>3</i>	<i>1</i>
<i>2 & 6</i>	<i>24</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>26</i>	<i>36</i>	<i>4</i>	<i>1</i>
<i>3</i>	<i>16</i>	<i>7</i>	<i>9</i>	<i>0</i>	<i>16</i>	<i>16</i>	<i>4</i>	<i>1</i>
<i>4</i>	<i>14</i>	<i>7</i>	<i>9</i>	<i>3</i>	<i>27</i>	<i>35</i>	<i>3</i>	<i>1</i>

Scheduled TD: *July 4, 2011*

When at any time during construction the existing vehicle or pushbutton detection becomes damaged, removed, or disconnected, install TD to actuate the affected approaches. Install and make TD operational prior to removing existing detection. TD must be operational throughout all construction phases.

Provide a list of telephone numbers of personnel who will be responsible for the TD to the Engineer. If the TD malfunctions or is damaged, notify the Engineer and place the associated phase on max recall. Respond to TD malfunctions by having a qualified representative at the site within three (3) hours. Restore detection to the condition prior to the malfunction within twenty-four (24) hours.

If the Engineer determines that the nature of a malfunction requires immediate attention and the Contractor does not respond within three (3) hours following the initial contact, then an alternative maintenance service will be called to restore TD. Expenses incurred by the State for alternative service will be deducted from monies due to the Contractor with a minimum deduction of \$500.00 for each service call. The alternate maintenance service may be the traffic signal owner or another qualified Contractor.

TD shall be terminated when the detection is no longer required. This may be either when the temporary signal is taken out of service or when the permanent detectors are in place and fully operational.

Any material and equipment supplied by the Contractor specifically for TD shall remain the Contractor's property. Existing material not designated as scrap or salvage shall become the property of the Contractor. Return and deliver to the owner all existing equipment used as TD that is removed and designated as salvage.

Method of Measurement:

Temporary Signalization (TS) shall be measured for payment as follows:

Fifty percent (50%) will be paid when Temporary Detection is initially set up, approved, and becomes fully operational.

Fifty percent (50%) will be paid when Temporary Detection terminates and all temporary equipment is removed to the satisfaction of the Engineer.

Basis of Payment:

This work will be paid at the contract Lump Sum price for "Temporary Detection (Site No.)". The price includes furnishing, installing, relocating, realigning, maintaining, and removing, the necessary detection systems and all incidental material, labor, tools, and equipment. This price also includes any detector mode setting changes, timing or program modifications to the controller that are associated with TD. All Contractor supplied material that will remain the Contractor's property will be included in the contract Lump Sum price for "Temporary Detection (Site No.)". Any items installed for TD that will become part of the permanent installation will not be paid for under this item but are paid for under the bid item for that work.

<u>Pay Item</u>	<u>Pay Unit</u>
Temporary Detection (Site No.)	L. S.

ITEM #1118051A – TEMPORARY SIGNALIZATION (SITE NO. 1)

Description:

Work under this item shall consist of providing Temporary Signalization (TS) at the intersections shown on the plans

1. Existing Signalized Intersection: The Contractor shall keep each traffic signal completely operational at all times during construction through the use of existing signal equipment, temporary signal equipment, new signal equipment, or any combination thereof once TS has started as noted in the section labeled “Duration.”

2. Unsignalized Intersection: The Contractor shall provide TS during construction activities and convert the temporary condition to a permanent traffic signal upon project completion. The Contractor shall furnish, install, maintain, and relocate equipment to provide a complete temporary traffic signal, including but not limited to the necessary support structures, electrical connection and disconnection (if required) and energy supply, vehicle and pedestrian indications, vehicle and pedestrian detection (paid for under Item #11112XXA – Temporary Detection {Site No. X}), pavement markings, and signing.

Materials:

- Pertinent articles of the Standard Specifications
- Supplemental Specifications and Special Provisions contained in this contract

Construction Methods: The Contractor shall perform a Preliminary Inspection and submit a Temporary Signalization (TS) Plan as described herein. No physical work will be allowed at any location until the requirements of the Preliminary Inspection and Temporary Signalization (TS) Plan have been met.

1. Preliminary Inspection

Prior to beginning any physical work, the Contractor shall meet with the Engineer and a representative from the DOT Electrical Maintenance Office (Town representative for a Town owned signal), to inspect and document (for the Engineer’s concurrence) the existing traffic signal’s physical and operational condition prior to implementing any Temporary Signalization (TS.) The inspection shall include, but not be limited to, the condition of the following:

- Controller Assembly (CA)
 - Controller Unit (CU)
 - Detection Equipment
 - Pre-emption Equipment
 - Coordination Equipment
- Vehicle and Pedestrian Signals
- Vehicle and Pedestrian Detectors
- Emergency Vehicle Pre-emption System (EVPS) *

- Interconnect Cable and Splice Enclosures
- Support Structures
- Handholes, Conduit and Cable

It may be necessary to repair or replace equipment that is missing, damaged, or malfunctioning. The Contractor shall prepare a list of items for replacement or repair. If authorized by the Engineer, this work will be considered “Extra Work” under Article 1.09.04.

* At a State owned signal the EVPS equipment is usually owned by the municipality. The Engineer will notify the municipality of the inspection schedule and information relating to its EVPS equipment as required.

The Preliminary Inspection meeting shall also include discussion of potential utility conflicts according to the *Utilities* section under *TS Plan* below.

2. Temporary Signalization (TS) Plan

At least 30 days prior to implementation of each stage, the Contractor shall submit a 1:40 (1:500 metric) scale TS plan in pdf format for each location to the Engineer for review and comment. This TS Plan shall include, but not be limited to the following:

- Survey Ties
- Dimensions of Lanes, Shoulders, and Islands
- Slope Limits
- Clearing and Grubbing Limits
- Signal Phasing and Timing
- Location of Signal Appurtenances such as Supports, Signal Heads, Pedestrian Push buttons, Pedestrian Signals
- Location of Signing and Pavement Markings (stop bars, lane lines, etc.)
- Location, method, and mode of Temporary Detection
- Location of utilities and potential conflicts

Review of the TS plan does not relieve the Contractor of ensuring the TS meets the requirements of the MUTCD. The existing traffic signal plan of record for State-owned traffic signals is available from the Division of Traffic Engineering upon request. The Contractor may request existing traffic signal plans for Town-owned traffic signals from the Town.

It is acceptable to use the existing traffic signal plan as the TS plan by marking up the existing plan to show any needed changes.

The Contractor shall not implement the TS plan until all review comments have been addressed.

The TS Plan shall also address the following elements:

Earthwork

The Contractor shall perform the necessary clearing and grubbing and the grading of slopes required for the installation, maintenance, and removal of the TS equipment. Upon termination of

the TS, the Contractor shall restore the affected area to its prior condition and to the satisfaction of the Engineer.

Maintenance and Protection of Traffic

The Contractor shall furnish, install, maintain, relocate, and remove signal-related signing (lane-use, signal ahead, NTOR, etc.), and pavement markings, as needed.

The Contractor shall install, relocate, or remove, equipment in a manner to cause no hazard to pedestrians, traffic or property. The Contractor shall maintain traffic as specified in the Special Provisions “Prosecution and Progress” and “Maintenance and Protection of Traffic” in the Contract.

Utilities

The Contractor shall verify that proposed temporary and/or relocated signal equipment will not conflict with proposed project utility relocations. The Contractor shall ensure that temporary span/temporary poles will not restrict the ability to shift utility cables off of the poles.

The Contractor shall coordinate its TS activities with all utility companies in the project area to ensure that the proposed temporary and/or relocated signal equipment will not be in conflict with existing utilities. The Contractor shall coordinate any utility work that may be needed prior to the Contractor implementing the TS plan.

Electrical Service and Telephone Service at Existing Signalized Intersections

The Contractor shall be responsible for relocating and changing any electrical service or telephone service source if required. Any arrangements with these companies and costs associated with any relocation or change shall be paid for by the Contractor. The Contractor shall ensure that the party previously responsible for the monthly payment of service shall continue to be responsible for that payment during TS.

Electrical Service for TS at Unsignalized Intersections

The Contractor shall be responsible for providing electrical service for TS at unsignalized intersections. All charges and all arrangements with the power company, including service requests, scheduling, and monthly bills in accordance with Section 10.00.12 and Section 10.00.13 of the Standard Specifications shall be the responsibility of the Contractor. The Contractor shall remove the service or leave the service if it will become permanent as shown on the plans or as directed by the Engineer.

Temporary Signalization

The Contractor shall furnish, install, maintain, relocate, and remove existing, temporary, and proposed traffic signal equipment and all necessary hardware; modifications to or furnishing of a new CA; and reprogramming of the CU phasing and timing; and any other incidentals related to this TS, as many times as necessary for each stage/phase of construction to maintain and protect traffic and pedestrian movements as shown on the plans or as directed by the Engineer.

Inspection

When requested by the Engineer, the TS will be subject to a field review by a representative of the Division of Traffic Engineering and/or the Town, The Contractor shall revise the TS as needed to address comments.

Detection

The Contractor shall provide vehicle detection on the existing, temporary, and/or new roadway alignment for all intersection approaches that have existing detection, detection in the final condition as shown on the signal plan, or as directed by the Engineer. The Contractor shall keep existing pedestrian pushbuttons accessible and operational at all times during TS. Temporary Detection is described and is paid for under Item # 11112XXA - Temporary Detection (Site No. X)

Emergency Vehicle Pre-emption System (EVPS)

The Contractor shall furnish, install, maintain, relocate, and remove the equipment necessary to keep the existing EVPS operational as shown on the plan. The Contractor shall not disconnect or alter the EVPS without the knowledge and concurrence of the Engineer and the EVPS owner. The Contractor shall schedule all EVPS relocations so that the system is out of service only when the Contractor is actively working. The Contractor shall ensure EVPS is returned to service and is completely operational at the end of the work day and shall keep the EVPS owner apprised of all changes to the EVPS.

Coordination

The Contractor shall furnish, install, maintain, relocate, and remove the equipment necessary to keep the intersection coordinated to adjacent signals as shown on the plan. The Contractor shall not disconnect the interconnect without the approval of the Engineer.

- Closed Loop System: If it is necessary to disconnect the communication cable, the Contractor will notify the Engineer and the Bridgeport Operation Center (BOC) or the Newington Operation Center (NOC) prior to disconnect and also after it is reconnected.
- Time Base System: The Contractor shall program and synchronize all Time Clock/Time Base Coordination (TC/TBC) units as necessary.

Maintenance

Once TS is in effect, the Contractor shall assume all maintenance responsibilities of the entire installation in accordance with Section 1.07.12 of the Standard Specifications. The Contractor shall notify the Engineer for the project records the date that Temporary Signalization begins. The Contractor shall coordinate with the Engineer to notify the following parties that maintenance responsibility has been transferred to the Contractor:

- Signal Owner
 - CT DOT Electrical Maintenance Office or
 - Town Representative
- Local Police Department

The Contractor shall provide the Engineer a list of telephone numbers of personnel who will be on-call during TS and shall respond to traffic signal malfunctions by having a representative

at the site within three hours from the initial contact. Any traffic signal malfunction shall be made operational according to plan within twenty-four (24) hours.

If the Engineer determines that the nature of a malfunction requires immediate attention and/or the Contractor does not respond within three (3) hours, then an alternate maintenance service will be called to repair the signal. Expenses incurred by the alternate maintenance service for each call will be deducted from monies due to the Contractor with a minimum deduction of \$1,000. The alternate maintenance service may be the owner of the signal or another qualified electrical contractor.

Duration

Temporary Signalization shall commence when the Contractor begins physical work at a particular intersection.

- a) For intersections with a State furnished controller, TS terminates when the inspection of the permanent signal is complete and operational and is accepted by the Engineer.
- b) For intersections with a Contractor furnished controller, Temporary Signalization terminates at the beginning of the 30 day test period for the permanent signal.

Ownership

The Contractor shall remove and deliver any existing equipment that is designated as salvage to its original owner upon completion of use. Any temporary equipment supplied by the Contractor shall be removed by the Contractor unless noted otherwise.

Method of Measurement:

Temporary Signalization (TS) shall be measured for payment as follows:

- Fifty percent (50%) shall be paid when the TS for that site is operational as shown on the plan and to the satisfaction of the Engineer.
- Fifty percent (50%) shall be paid upon termination of the TS as described herein.

Basis of Payment:

This work shall be paid at the contract Lump Sum price for “Temporary Signalization (Site No.)” for each site. This price includes the preliminary inspection, TS plan for each stage/phase, furnishing, installing, maintaining, relocating and revising traffic signal equipment, controller assembly modifications, controller unit program changes such as phasing and timing, removing existing, temporary, and proposed traffic signal equipment, arrangements with utility companies, towns or cities including the fees necessary for electric and telephone service, clearing and grubbing, earthwork and grading, area restoration and all necessary hardware, materials, labor, and work incidental thereto.

All material and work for signing and pavement markings is paid for under the appropriate Contract items.

All material and work necessary for vehicle and pedestrian detection for TS is paid for under item 11112XXA - Temporary Detection (Site No. X).

All Contractor supplied items that will remain the Contractor's property shall be included in the contract Lump Sum price for "Temporary Signalization."

Any items installed as part of the permanent installation will be paid for under those separate pay items in the Contract.

<u>Pay Item</u>	<u>Pay Unit</u>
Temporary Signalization (Site No.)	L.S.

ITEM #1206023A - REMOVAL AND RELOCATION OF EXISTING SIGNS

Section 12.06 is supplemented as follows:

Article 12.06.01 – Description is supplemented with the following:

Work under this item shall consist of the removal and/or relocation of designated side-mounted extruded aluminum and sheet aluminum signs, sign posts, sign supports, and foundations where indicated on the plans or as directed by the Engineer. Work under this item shall also include furnishing and installing new sign posts and associated hardware for signs designated for relocation.

Article 12.06.03 – Construction Methods is supplemented with the following:

The Contractor shall take care during the removal and relocation of existing signs, sign posts, and sign supports that are to be relocated so that they are not damaged. Any material that is damaged shall be replaced by the Contractor at no cost to the State.

Foundations and other materials designated for removal shall be removed and disposed of by the Contractor as directed by the Engineer and in accordance with existing standards for Removal of Existing Signing.

Sheet aluminum signs designated for relocation are to be re-installed on new sign posts.

Article 12.06.04 – Method of Measurement is supplemented with the following:

Payment under Removal and Relocation of Existing Signs shall be at the contract lump sum price which shall include all extruded aluminum and sheet aluminum signs, sign posts, and sign supports designated for relocation, all new sign posts and associated hardware for signs designated for relocation, all extruded aluminum signs, sheet aluminum signs, sign posts and sign supports designated for scrap, and foundations and other materials designated for removal and disposal, and all work and equipment required.

Article 12.06.05 – Basis of Payment is supplemented with the following:

This work will be paid for at the contract lump sum price for “Removal and Relocation of Existing Signs” which price shall include relocating designated extruded aluminum and sheet aluminum signs, sign posts, and sign supports, providing new posts and associated hardware for relocated signs, removing and disposing of foundations and other materials, and all equipment, material, tools and labor incidental thereto. This price shall also include removing, loading, transporting, and unloading of extruded aluminum signs, sheet aluminum signs, sign posts, and sign supports designated for scrap and all equipment, material, tools and labor incidental thereto.

<u>Pay Item</u>	<u>Pay Unit</u>
Removal and Relocation of Existing Signs	L.S.

ITEM #1208932A – SIGN FACE - SHEET ALUMINUM (TYPE IV RETROREFLECTIVE SHEETING)

Section 12.08 is supplemented and amended as follows:

12.08.01—Description:

Add the following:

This item shall also include field testing of metal sign base posts as directed by the Engineer.

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

PERMITS AND/OR REQUIRED PROVISIONS

The following Permits and/or and Required Provisions follow this page are hereby made part of this Contract.

PERMITS AND/OR PERMIT APPLICATIONS

- Flood Management General Certification
- ACOE – Self Verification
- Inland Wetland General Permit
- Storm Water Discharge

Construction Contracts - Required Contract Provisions (FHWA Funded Contracts)



Bureau of Materials Management and Compliance Assurance

Notice of Permit Authorization

August, 09 2019

John S. Dunham
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION
359 S Main St
Thomaston, CT 06787-1804

Subject: General Permit Registration for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities
Application NO.: 201907181

John S. Dunham:

The Department of Energy and Environmental Protection, Water Permitting and Enforcement Division of the Bureau of Materials Management and Compliance Assurance, has completed the review of the Project No. 99-114/115 (located at US-7 & 44 (Main Street) Housatonic RR Crossings, North Canaan) registration for the **General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective 10/1/13 (general permit)**. The project is compliant with the requirements of the general permit and the discharge(s) associated with this project is (are) authorized to commence as of the date of this letter. Permit No. GSN003473 has been assigned to authorize the stormwater discharge(s) from this project.

Questions can be emailed to deep.stormwater@ct.gov.



General Permit Registration Form for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective 10/1/13 (non-electronic form)

Prior to completing this form, you **must** read the instructions for the subject general permit available at [DEEP-WPED-INST-015](#).
 This form must be filled out electronically before being printed.
 You must submit the registration fee along with this form.

The [status of your registration](#) can be checked on the DEEP's ezFile Portal. Please note that DEEP will no longer mail certificates of registration.

CPPU USE ONLY	
App #:	_____
Doc #:	_____
Check #:	_____
Program: Stormwater	

Part I: Registration Type

Select the appropriate boxes identifying the registration type and registration deadline.

Registration Type		Registration Timeline	
<input checked="" type="checkbox"/>	New Registration (Refer to Section 2 of the permit for definitions of Locally Exempt and Locally Approvable Projects)	<input type="checkbox"/> Locally Approvable Projects Size of soil disturbance:	New registration - Sixty (60) days prior to the initiation of the construction activity for: Sites with a total soil disturbance area of 5 or more acres
		<input checked="" type="checkbox"/> Locally Exempt Projects Size of soil disturbance: 2.75	<input checked="" 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 an impaired water listed in the "Impaired Waters Table for Construction Stormwater Discharges"

Part II: Fee Information

1. New Registrations

a. Locally approvable projects (registration only):

\$625 [#1855]

b. Locally exempt projects (registration and Plan):

\$3,000 total soil disturbance area \geq one (1) and $<$ twenty (20) acres. [#1856]

\$4,000 total soil disturbance \geq twenty (20) acres and $<$ fifty (50) acres. [#1857]

\$5,000 total soil disturbance \geq fifty (50) acres. [#1858]

The fees for municipalities shall be half of those indicated in subsections 1.a., 1.b., and 2 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 registration 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. This information can be accessed at [CONCORD](#).
- 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

State Agency ↓

Secretary of the State business ID #: [REDACTED]

Mailing Address: 359 South Main Street

City/Town: Thomaston

State: CT

Zip Code: 06787

Business Phone: 203-591-3540

ext.:

Example:(xxx) xxx-xxxx

Contact Person: John S. Dunham

Title: Dist. 4 Eng.

E-Mail: john.s.dunham@ct.gov

Additional Phone Number (if applicable):

ext.

2. List billing contact, if different than the registrant:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Title:

Part III: Registrant Information (continued)

3. List primary contact for departmental correspondence and inquiries, if different than the registrant:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Site Phone:

Emergency Phone:

Contact Person:

Title:

Association (e.g. developer, general or site contractor, etc.):

4. List owner of the property on which the activity will take place, if different from registrant:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

5. List developer, if different from registrant or primary contact:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Title:

6. List general contractor, if different from registrant or primary contact:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Site Phone:

Off Hours Phone:

Contact Person:

Title:

7. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration and/or Stormwater Pollution Control Plan. Please select if additional sheets are necessary, and label and attach them to this sheet.

Name: BL Companies (Business ID 0188407)

Mailing Address: 100 Constitution Plaza, 10th Floor

City/Town: Hartford

State: CT

Zip Code: 06103

Business Phone: 860-249-2200

ext.: 1930

Contact Person: David Cicia

Title: Principal Engineer

Service Provided: **Roadway Engineering, Permit Preparation**

Email: dcicia@blcompanies.com

8. List Reviewing Qualified Professional (for locally approvable projects only). This information must match the information provided in Part IX of this registration.

Name:

Contact Person:

Mailing Address:

Email:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Part IV: Site Information

1. Site Name: Project No. 99-114/115

Street Address or Description of Location: State Route 7/44 Housatonic Railroad Crossings
(if linear, project location should be the project beginning point)

City/Town: North Canaan

State: CT

Zip Code: 06018

(use only one zip code)

Longitude: -7 3.0 1 3 4 6 Latitude: 4 1.3 1 5 7 6

Brief Description of construction activity: Installation of railroad flashing lights, vehicular gates and rehabilitation of existing drainage network to accommodate the crossing improvements.

Project Start Date (must be on or after the authorization date of this registration) : 10 / 2019

Anticipated Completion Date: 10 / 2020

month/ yr)

(month/ yr)

Normal working hours: **Monday - Friday 7:00 a.m. to 5:00 p.m.**

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

The coastal boundaries fall within the following towns: Branford, Bridgeport, Chester, Clinton, Darien, Deep River, East Haven, East Lyme, Essex, Fairfield, Greenwich, Groton (City and Town), Old Lyme, Guilford, Hamden, Ledyard, Lyme, Madison, Milford, Montville, New London, New Haven, North Haven, Norwalk, Norwich, Old Saybrook, Orange, Preston, Shelton, Stamford, Stonington (Borough and Town), Stratford, Waterford, West Haven, Westbrook and Westport.

If "yes", and this registration is for a new authorization or a modification of an existing authorization where the physical footprint of the subject activity is modified, you must provide documentation the DEEP Office of Long Island Sound Programs or the local governing authority has issued a coastal site plan approval or determined the project is exempt from coastal site plan review. Provide this documentation with your registration as Attachment B. See guidance in Appendix D of the general permit. Information on the coastal boundary is available at the local town hall or at www.cteco.uconn.edu/map_catalog.asp. Additional DEEP Maps and Publications are available by contacting DEEP staff at 860-424-3555.

Part IV: Site Information (continued)

6. ENDANGERED OR THREATENED SPECIES:

In order to be eligible to register for this General Permit, each registrant must perform a self-assessment, obtain a limited one-year determination, or obtain a safe-harbor determination regarding threatened and endangered species. This may include the need to develop and implement a mitigation plan. While each alternative has different limitations, the alternatives are not mutually exclusive; a registrant may register for this General Permit using more than one alternative. See Appendix A of the General Permit. Each registrant must complete this section AND Attachment C to this Registration form and a registrant who does not or cannot do so is not eligible to register under this General Permit.

Each registrant 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. Verify that I have completed Attachment C to this Registration Form. Yes
- b. Provide the date the NDDDB maps were reviewed: December 2018 Date of map should be **one** year or less than the submittal date of this application. Print a copy of the NDDDB map you viewed since it must be submitted with this registration as part of Attachment C.
- c. For a registrant using a limited one-year determination or safe harbor determination to register for this General Permit, provide the Department's Wildlife Division NDDDB identification number for any such determination: _____ (The number is on the determination issued by the Department's Wildlife Division).

For more information on threatened and endangered species requirements, refer to Appendix A and Section 3(b)(2) of this General Permit, visit the DEEP website at www.ct.gov/deep/nddbrequest or call the NDDDB at 860-424-3011.

- 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 www.ct.gov/deep/aquiferprotection 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. CT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL: Is the activity in accordance with CT Guidelines for Erosion and Sediment Control and local erosion & sediment control ordinances, where applicable? Yes No
- 10. HISTORIC AND/OR ARCHAEOLOGICAL RESOURCES:
Verify that 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
 - 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 Yes No
 - c. The proposed activity has been reviewed and authorized under an Army Corps of Engineers Section 404 wetland permit. 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 that 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	d) Note: To find lat/long, go to: CT ECO . A decimal format is required here. Directions on how to use CT ECO to find lat./long. and conversions can be found in Part V, Section d of the DEEP-WPED-INST-015 .		e) What method was used to obtain your latitude/longitude information?
				Longitude	Latitude	
EO-1	pipe	other: concrete	12"	-7 3.3 2 9 9 7	4 2.0 2 5 6 7	other: ezFile
EO-2	pipe	plastic	24"	-7 3.3 3 0 9 0	4 2.0 2 3 5 2	other: ezFile
EO-3	pipe	plastic	15"	-7 3.3 2 7 3 7	4 2.0 2 4 9 4	other: ezFile
PO-1	pipe	other:concrete	24"	-7 3.3 2 9 9 7	4 2.0 2 5 6 7	other: ezFile
PO-2	pipe	other: concrete	36"	-7 3.3 3 0 4 9	4 2.0 2 4 4 0	other: ezFile

Table 2						
Outfall #	a) For temporary and permanent outfalls, provide a start date. For temporary discharges, also provide a date the discharge will cease.	b) For the drainage area associated with each outfall: Effective Impervious Area Before Construction	c) For the drainage area associated with each outfall: Effective Impervious Area After Construction	d) To what system or receiving water does your stormwater runoff discharge? either "storm sewer or wetlands" or "waterbody" (If you select "storm sewer or wetland" proceed to Part VI of the form. If you select "waterbody" proceed to next question)	e) For each outfall, does it discharge to any of the following towns: <i>Branford, Kent, Manchester, Meriden, North Branford, Norwalk, or Wilton?</i> (If no, proceed to Part VI of the form. If yes, proceed to next question.)	f) For each outfall, does it discharge to a "freshwater" or "salt water" ? (If you select "freshwater" proceed to Table 3. If you selected "salt water", proceed to Part VI of the form.)
EO-1	-6/20 mm/dd-mm/dd	139,610 sq feet	0 sq feet	storm sewer or wetland	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Select one:
EO-2	-6/20 mm/dd-mm/dd	70,530 sq feet	0 sq feet	waterbody	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Select one:
EO-3	-6/20 mm/dd-mm/dd	51,690 sq feet	0 sq feet	storm sewer or wetland	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Select one:
PO-1	6/20- mm/dd-mm/dd	0 sq feet	150,420 sq feet	storm sewer or wetland	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Select one:
PO-2	6/20- mm/dd-mm/dd	0 sq feet	0 sq feet	storm sewer or wetland	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Select one:
		261,830 total sq feet	150,420 total sq feet			

Part V: Stormwater Discharge Information

Table 1						
Outfall #	a) Type	b) Pipe Material	c) Pipe Size	d) Note: To find lat/long, go to: CT ECO . A decimal format is required here. Directions on how to use CT ECO to find lat./long. and conversions can be found in Part V, Section d of the DEEP-WPED-INST-015 .		e) What method was used to obtain your latitude/longitude information?
				Longitude	Latitude	
PO-3	swale	not applicable	not applicable	-7 3.3 3 0 9 2	4 2.0 2 3 5 2	other: ezFile
PO-4	pipe	concrete	24"	-7 3.3 2 7 4 1	4 2.0 2 4 8 4	other: ezFile
	Select One:	Select One:	Select One:	-	Select One:
	Select One:	Select One:	Select One:	-	Select One:
	Select One:	Select One:	Select One:	-	Select One:

Table 2						
Outfall #	a) For temporary and permanent outfalls, provide a start date. For temporary discharges, also provide a date the discharge will cease.	b) For the drainage area associated with each outfall: Effective Impervious Area Before Construction	c) For the drainage area associated with each outfall: Effective Impervious Area After Construction	d) To what system or receiving water does your stormwater runoff discharge? either "storm sewer or wetlands" or "waterbody" (If you select "storm sewer or wetland" proceed to Part VI of the form. If you select "waterbody" proceed to next question)	e) For each outfall, does it discharge to any of the following towns: <i>Branford, Kent, Manchester, Meriden, North Branford, Norwalk, or Wilton?</i> (If no, proceed to Part VI of the form. If yes, proceed to next question.)	f) For each outfall, does it discharge to a "freshwater" or "salt water" ? (If you select "freshwater" proceed to Table 3. If you selected "salt water", proceed to Part VI of the form.)
PO-3	6/20-mm/dd-mm/dd	0 sq feet	70,530 sq feet	waterbody	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Select one:
PO-4	6/20-mm/dd-mm/dd	0 sq feet	43,380 sq feet	storm sewer or wetland	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Select one:
	- mm/dd-mm/dd	sq feet	sq feet	Select one:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Select one:
	- mm/dd-mm/dd	sq feet	sq feet	Select one:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Select one:
	- mm/dd-mm/dd	sq feet	sq feet	Select one:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Select one:
		total sq feet	113,910 total sq feet			

Part V: Stormwater Discharge Information (continued)

Table 3 Provide the following information about the receiving water(s)/wetland(s) that receive stormwater runoff from your site:			
Outfall #	a) What is your 305b ID # (water body ID #)? (Section 3.b, of the DEEP-WPED-INST-015 , explains how to find this information)	b) Is your receiving water identified as a impaired water in the " Impaired Waters Table for Construction Stormwater Discharges "? If yes, proceed to next question. If no, proceed to Part VI: Pollution Control Plan.	c) Has any Total Maximum Daily Load (TMDL) been approved for the impaired water?
■	■	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
■	■	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
■	■	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
■	■	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
■	■	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N

Part V: Stormwater Discharge Information (continued)

Impaired waters: If you answered “yes” to Table 3, question b., **verify** that the project’s Pollution Control Plan (Plan) addresses the control measures below in Question 1 or 2, as appropriate.

1. If the impaired water does not have a TMDL, confirm compliance by selecting 1.a. or 1.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 (select one of the following three categories)

I am registering a Locally Exempt project and submitting the required electronic Plan (in Adobe™ PDF or similar publically available format) pursuant to Section 3(c)(2)(E) of this permit. (If you do not have the capability to submit the Plan electronically please call 860-418-5982).

Plan is attached to this registration form

Plan is available at the following Internet Address (URL):

I am registering a Locally Approvable project and have chosen not to submit the Plan with this registration pursuant to Section 3(c)(1) of this permit.

I am registering a Locally Approvable project and have chosen to make my Plan electronically available pursuant to Section 4(c)(2)(N) of this permit.

Plan is attached to this registration form

Plan is available at the following Internet Address (URL):

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 Registrants:

" I hereby certify that I am making this certification in connection with a registration under such general permit,
 [INSERT NAME OF REGISTRANT BELOW]

submitted to the commissioner by John S. Dunham, District 4 Engineer for

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

an activity located at State Route 7 & 44 Housatonic Railroad Crossings and that all terms and conditions of the general permit are being met for all discharges which have been 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 registration 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 3(b)(8)(A) 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 3(b)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes. I also understand that knowingly making any false statement made 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 Connecticut General Statutes and any other applicable law."

For Re-registrants:

" I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner
 [INSERT NAME OF REGISTRANT BELOW]

by [REDACTED] for an activity located at

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

[REDACTED] and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that all designs and plans for such activity meet the current terms and conditions of the general permit in accordance with Section 5(b)(5)(C) of such general permit and 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 registration 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 3(b)(8)(A) 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 also understand that knowingly making any false statement made 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 Connecticut General Statutes and any other applicable law."

Signature of Registrant (Must be an original signature, not a copy or fax)	Date
John S. Dunham	District 4 Engineer
Name of Registrant (print or type)	Title (if applicable)
Signature of Preparer (if different than above) (Must be an original signature, not a copy or fax)	Date
David M. Cicia	Principal Engineer, BL Companies
Name of Preparer (print or type)	Title (if applicable)

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: list of districts

Date of Affirmative Determination:

" I am making this certification in connection with a registration under General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner

[INSERT NAME OF REGISTRANT BELOW]

by

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

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 Section 3(b)(11)(C) of 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 (Must be an original signature, not a copy or fax)

Name of District Professional and License Number (if applicable)

Or

Review certification by Qualified Professional

Company: _____

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 15 or more 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 or qualified soil erosion and sediment control professional, or both, as defined in the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and as further specified in Sections 3(b)(11)(A) and (B) of such general permit. I am making this certification in connection with a registration under such general permit,

[INSERT NAME OF REGISTRANT BELOW]

submitted to the commissioner by

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

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 3(b)(11)(C) 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 3(b)(11)(D)(i) and (ii) of this general permit. 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 Reviewing Qualified Professional
(Must be an original signature, not a copy or fax)

Date: _____

Name of Reviewing Qualified Professional

License No.: _____

Affix P.E./L.A. Stamp Here

Part X: Supporting Documents

Select the applicable box below for each attachment being submitted with this registration form. When submitting any supporting documents, please label the documents as indicated below (e.g., Attachment A, etc.) and be sure to include the registrant's name as indicated on this certification form.

- Attachment A:** Select here as verification that an 8 ½" X 11" copy of the relevant portion of a USGS Quadrangle Map with a scale of 1:24,000, showing the exact location of the facility has been submitted with this registration. Indicate the quadrangle name on the map, and be sure to include the registrant's name. (To obtain a copy of the relevant USGS Quadrangle Map, call your town hall or DEEP Maps and Publications Sales at 860-424-3555)
- Attachment B:** Documentation related to *Coastal Consistency Review*, if applicable.
- Attachment C:** Threatened and Endangered Species Form and any additional information (such as a copy of a NDDB map)
- Attachment D:** Conservation or Preservation Restriction Information, if applicable.
- Attachment E:** Where applicable, non-electronic Pollution Control Plan.

Note: Please submit the fee along with a completed, printed and signed Registration Form and all additional supporting documents to:

**CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127**

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES

Information about compliance with the requirements of Section 3(b)(2) of this general permit, regarding threatened and endangered species, is in Appendix A of the general permit. Choose one or more (if applicable) of the following in order to be eligible to register for this General Permit. A registrant who does not or cannot do so is not eligible to register under this General Permit.

Self Assessment using the NDDDB maps – Select this only if:

- a. The site of the construction activity is not entirely, partially or within a ¼ mile of a shaded area depicted on the Department’s Natural Diversity Database maps and this determination was made not more than six months before the date of submitting this registration;

AND

- b. The entity registering for this General Permit has no reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Attach a copy of the NDDDB map used to conduct the self assessment used to register for this general permit.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the self-assessment option. If neither is true, a Registrant cannot use the self-assessment option to comply with Section 3(b)(2) and Appendix A of the General Permit.

Limited One-Year Determination – Select this only if:

- a. The entity registering for this General Permit has obtained a limited one-year determination from the Department’s Wildlife Division regarding threatened and endangered species: i) within a year of the date of submitting this registration; or ii) more than 1 year before submitting this registration, but such determination has been extended by the Department within one year of the date of submitting this registration;

AND

- b. The Registrant has provided to the Department’s Wildlife Division any reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Provide the date the limited one-year determination was issued by the Department’s Wildlife Division _____;

or

Provide the date that the most recent extension to a limited one year determination was issued by the Department’s Wildlife Division _____.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the Limited One-Year Determination option. If a Limited One-Year Determination or extension to any such determination was issued by the Department’s Wildlife Division more than one year before the submission of this registration, a Registrant cannot use any such determination or extension to comply with Section 3(b)(2) and Appendix A of the General Permit.

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES (continued)

- Select here if the Limited One-Year Determination issued by the Department includes a Mitigation Plan.**

Provide the date the Mitigation Plan was approved: _____

Governmental Entity Approving the Plan: _____

As of the date this Registration is submitted,

Has the Mitigation Plan been fully implemented? Yes No

Date commenced: _____ Date completed: _____

Is the Mitigation Plan partially implemented? Yes No

If yes, what actions have been taken? _____

And which actions are yet to be implemented and what is the timeframe for completion of such actions: _____

Is the Mitigation Plan yet to be implemented? Yes No

If yes, specify the timeframe for implementation: _____ to _____

And summarize actions to be implemented: _____

- Safe Harbor Determination - Select this only if:

- a. The entity registering for this General Permit has obtained a Safe Harbor Determination from the Department's Wildlife Division regarding threatened and endangered species: i) within 3 years of the date of submitting this registration; or ii) more than 3 years before submitting this registration, but within one-year of a one-year extension issued by the Department's Wildlife Division to a safe harbor determination;

AND

- b. The entity registering for this General Permit has provided to the Department's Wildlife Division any reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Provide the date the Department's Wildlife Division issued a Safe Harbor Determination: _____

If applicable, provide the date that any one-year extension to a Safe Harbor Determination was issued by the Department's Wildlife Division: _____.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the Safe Harbor Determination option. If a Safe Harbor Determination was issued by the Department's Wildlife Division more than three years before the submission of this registration, and has not been extended, a Registrant cannot use any such safe harbor to comply with section 3(b)(2) and Appendix A of this General Permit. If a Safe Harbor Determination was granted and extended for one-year, more than four years before the submission of this registration, a Registrant cannot use any such Safe Harbor Determination to comply with Section 3(b)(2) and Appendix A of the general permit.

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES (continued)

- Select here if the safe harbor noted above includes a Mitigation Plan.**

Provide the date the Mitigation Plan was approved: _____

Governmental Entity Approving the Plan: _____

As of the date this Registration is submitted,

Has the Mitigation Plan been fully implemented? Yes No

Date commenced: _____ Date completed: _____

Is the Mitigation Plan partially implemented? Yes No

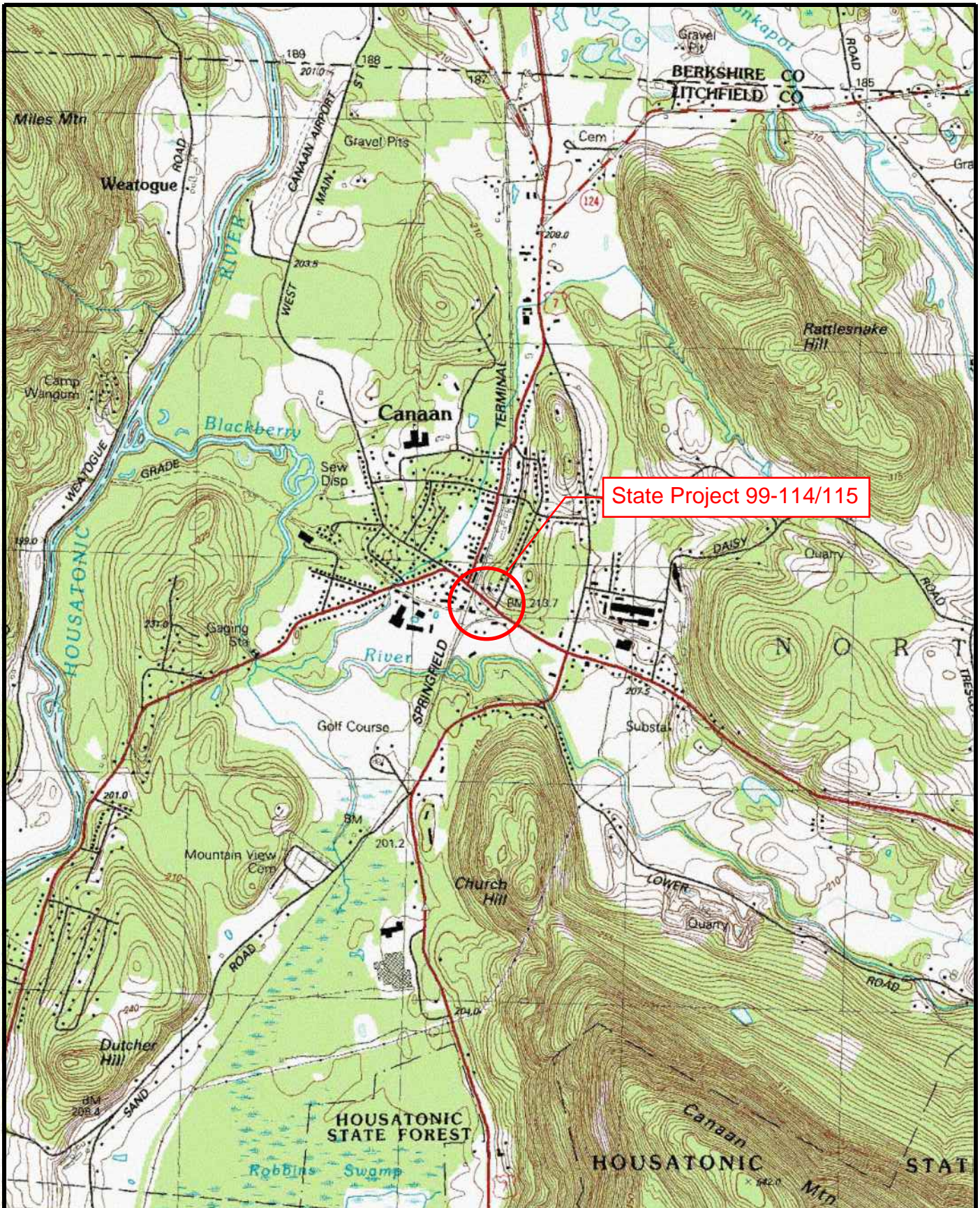
If yes, what actions have been taken? _____

And which actions are yet to be implemented and what is the timeframe for completion of such actions: _____

Is the Mitigation Plan yet to be implemented? Yes No

If yes, specify the timeframe for implementation: _____ to _____

And summarize actions to be implemented: _____



State Project 99-114/115



**RAILROAD-HIGHWAY
GRADE CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN STREET)
NORTH CANAAN, CT**

LOCATION MAP
PROJ. NO.: 99-114/115
SCALE: 1" = 2000'



79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

August 27, 2018

Aaron M. Ferraro
State Of Connecticut Department Of Transportation
2800 Berlin Tpke
PO Box 317546
Newington, CT 06111
Aarron.ferraro@ct.gov

Project: CT DOT 099-114/115 Railroad-Highway Grade Crossing Improvements on Routes 7 & 44 in North Canaan
NDDDB Determination No.: 201809617

Dear Aaron M. Ferraro,

I have reviewed Natural Diversity Data Base (NDDDB) maps and files regarding the area delineated on the map provided for the proposed CT DOT 099-114/115 Railroad-Highway Grade Crossing Improvements on Routes 7 & 44 in North Canaan, Connecticut. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for two years. Please re-submit a new NDDDB Request for Review if the scope of work changes or if work has not begun on this project by August 27, 2020.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,



A handwritten signature in cursive script that reads "Dawn M. McKay".

Dawn M. McKay
Environmental Analyst 3

Natural Diversity Data Base Areas

NORTH CANAAN, CT

December 2017

-  State and Federal Listed Species & Significant Natural Communities
-  Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources. Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

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 shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

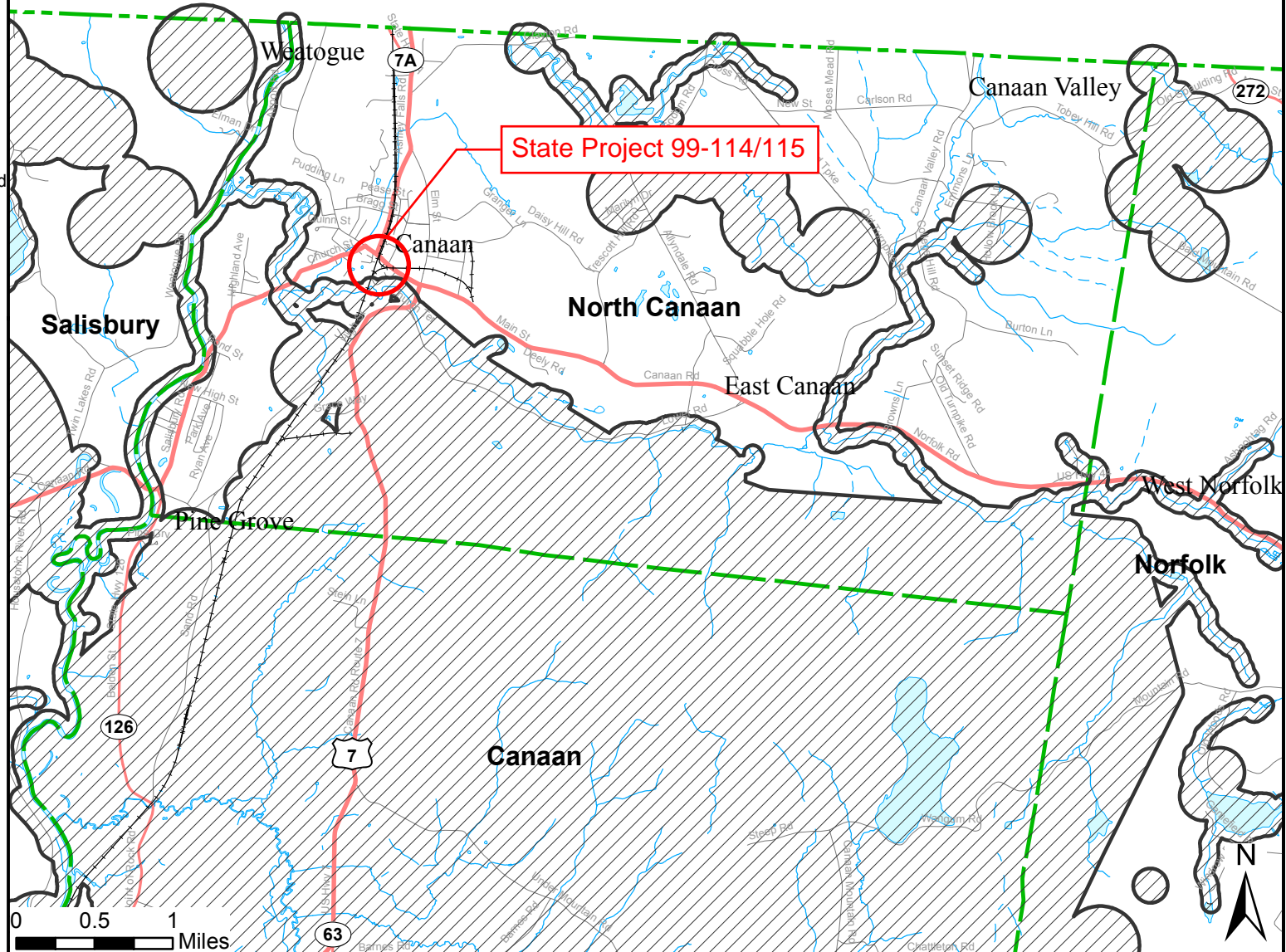
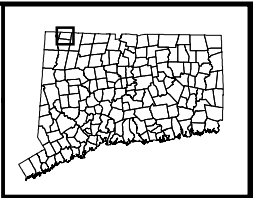
www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.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
Phone (860) 424-3011



Connecticut Department of
Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



STORMWATER POLLUTION CONTROL PLAN

U.S. Route 7 & 44 Railroad-Highway Grade Crossing Improvements North Canaan, CT

**State Project No.: 99-114/115
ezFile No. 49081**

Connecticut Department of Transportation



May 2019

This Stormwater Pollution Control Plan (SPCP) is prepared to comply with the requirements for the General Permit for Stormwater Discharges (GPSD) from Construction Activities. Also, to be considered part of the SPCP are the proposed construction plans, special provisions, and the Connecticut Department of Transportation's "Standard Specifications for Roads, Bridges and Incidental Construction" (Form 817) including supplements thereto and the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control

Stormwater Pollution Control Plan
Connecticut Department of Transportation

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1. Site Description

Site Description

State Project No. 99-114/115 is located on, and between, two Housatonic Railroad crossings along U.S. Route 7 & 44 (Main Street) in North Canaan, Connecticut. The proposed railway crossing improvements include flashing light, vehicular gates, roadway and crossing surface modifications. The proposed railway improvements cannot be built due to the inadequate existing drainage systems at the crossing locations.

The at-grade crossings receive an excessive amount of runoff causing street flooding, track settlement and channel degradation. The project will install drainage and rehabilitate the pavement of Main Street approaching the crossings and between the crossings. The roadway and drainage work are required since the Housatonic Railroad track circuits required for the flashing lights and vehicular gates could be compromised due to the existing conditions.

The two crossings have a history of flooding due to the inadequate existing drainage systems. The flooding has an adverse effect on the roadway approaches, the track surface and will have a detrimental effect on the proposed track circuitry. It was determined that the railroad warning devices could not be upgraded unless a comprehensive drainage design was developed to prevent ponding within the track structure.

The existing topography features a large hill to the north of Main Street. The majority of stormwater flowing from the hill enters drainage structures located along the two railroad track crossings. There are no drainage structures located along this stretch of Main Street. There is a high point along Main Street at the intersection with Granite Avenue. Stormwater west of this high point travels overland to the west railroad crossing and stormwater east of the road enters the east crossing.

Estimated Disturbed Area

The total site area including the roadway right-of-way and construction easements is 3.79 acres. There will be 2.75 acres of soil disturbance during the construction of the project. This area includes the area of the proposed roadway reconstruction, proposed drainage network enhancements, and proposed railroad crossing improvements.

Estimated Runoff Coefficient

Pre-Construction

	Runoff Coefficient	Area (acres)
Impervious Area	0.90	1.45
Riprap/Gravel Area	0.65	0.15
Grass/Swale Area	0.25	0.93
Woods Area	0.30	0.22
Total Area		2.75

$$C_{\text{Weighted}} = \frac{(1.45 \text{ ac.} \times 0.90) + (0.15 \text{ ac.} \times 0.65) + (0.93 \text{ ac.} \times 0.25) + (0.22 \text{ ac.} \times 0.30)}{2.75 \text{ ac.}} = 0.61$$

Post-Construction

	Runoff Coefficient	Area (acres)
Impervious Area	0.90	1.33
Riprap/Gravel Area	0.65	0.18
Grass/Swale Area	0.25	1.24
Woods Area	0.30	0.00
Total Area		2.75

$$C_{\text{Weighted}} = \frac{(1.33 \text{ ac.} \times 0.90) + (0.18 \text{ ac.} \times 0.65) + (1.24 \text{ ac.} \times 0.25) + (0.00 \text{ ac.} \times 0.30)}{2.75 \text{ ac.}} = 0.59$$

Although the drainage coefficient is lowered in the Post-Construction condition within the site area, the total effective impervious area for the proposed outlets increases due to the larger overall runoff area being handled by the systems.

Existing Stormwater System

The two crossings have separate drainage systems. Both functions similarly, with ditches and structures along the railroad tracks conveying stormwater into the roadway system and the combined system outletting towards the Blackberry River.

Stormwater System 1

At the west crossing, ditches located on both sides of the track capture stormwater north of Main Street. The stormwater outlets each ditch into pipes that connect to catch basins located along the north edge of Main Street. Both catch basins collect runoff from the roadway and impervious areas along the road. The basin on the east side of the tracks connects to the basin on the west side through a 10” clay pipe. The system then outlets to a drainage channel which conveys runoff into the Blackberry River.

From the basin on the west side of the tracks, stormwater flows to a basin on the south side of Main Street and continues running south just west of the tracks. The drainage outlets into a ditch for 200 feet before entering back into an underground system. The underground system continues to pick up stormwater from other properties before outletting along the bank of the Blackberry River.

Stormwater System 2

Drainage for the east crossing is similar to that of the west crossing. Drainage ditches and structures are located on both sides of the railroad track and surrounding pervious and impervious areas. The drainage from the structures of Granite Avenue also contributes to this system. The stormwater from the west side of the tracks flows to the east side. The system crosses below Main Street and travels south to an outlet just east of the ConnDOT Maintenance Facility driveway. The outlet is located within a small drainage ditch. The stormwater travels

overland along State of Connecticut property then Town of North Canaan property for approximate 350 feet to the Blackberry River.

Temporary Stormwater System

There are no temporary stormwater facilities to be installed during construction. Construction of the proposed systems will be performed in a manner that allows for some existing drainage systems to accommodate runoff while other existing drainage systems are being replaced or rehabilitated.

Proposed Stormwater System

The proposed drainage system consists of several components. To address the existing drainage inadequacies at the railroad crossings, the pipe inlets within the existing drainage ditches will be replaced with ballast inlets and underdrains. This will greatly improve capture efficiency and stormwater conveyance. The ballast inlets and underdrains are to be designed by Housatonic Railroad. The existing pipe inlets discharge stormwater only from ground level.

The underdrains will contain and convey stormwater below the ground surface. Also, the ballast inlets have catch basin tops, allowing stormwater to enter the system if a larger storm begins to pond water above ground level prior to draining through the stone to the underdrains. The few existing roadway structures need to be replaced due to the new curb line locations and because the existing pipes are undersized and do not safely convey the 10-year design storm discharge. All proposed pipes are reinforced concrete.

Proposed Stormwater System 1

To the west of Granite Avenue, a series of catch basins will be installed along the north and south gutter lines of Main Street. Two crossings, one per each side of Main Street, will be required below the western railroad tracks to avoid conflicting with existing utilities along Main Street. The basins at the crossing area will be located to avoid the proposed railroad signal and gate foundations.

After the proposed systems cross under the western railroad tracks, the collected stormwater will be conveyed toward a proposed manhole. From this manhole, the stormwater flows south, parallel to the existing tracks until reaching a double grate catch basin. The double grate basin is proposed to ensure any stormwater still connected to the existing drainage pipe parallel to the railroad tracks flows to the outlet.

Because it is a contributing factor to the drainage problems at the western system, the North Canaan Union Station is being renovated and improved to include new yard drains within the railroad track ballast, as well as replacing the existing drainage network within the property. After stormwater reaches the double grate catch basin, the combined flow will outlet onto a proposed preformed scour hole. The outlet is approximately two-feet north of the existing system outlet. The existing outlet will be removed.

The proposed preformed scour hole is located within an existing drainage channel. The area at the onset of the drainage channel will be regraded for the proposed pipe outlet. The overgrown channel

bottom will be cleaned of sediment and brush. The channel will be extended an additional 65 feet to the south. All disturbed soil within the existing and extended swale will be furnished with topsoil and seeded as necessary and lined with Type "E" Erosion Control Matting. Stormwater from the proposed outlet will flow overland for 265 feet and enter a new headwall at the base of the extended drainage channel.

The stormwater will then be piped underground parallel to the railroad tracks for 240 feet, until it is conveyed west to a proposed manhole. This manhole connects to an existing manhole that also collects stormwater from an existing drainage system conveying commercial and residential runoff further west. From the existing manhole (which is being replaced with a larger structure), the collected runoff flows south and outlets onto a new preformed scour hole within a new grass drainage channel.

The drainage channel conveys flow 300 feet south to the bank of the Blackberry River in the vicinity of an existing storm drainage outlet. The existing storm drainage outlet and associated piping will entirely be removed from the replaced manhole to the outlet. The proposed channel is designed to provide one-foot of freeboard for a 10-year storm and will provide a constant sloped path to convey stormwater to the river.

Per DEEP Fisheries request, a rock weir is to be placed near the downstream limit of the drainage channel. The rock weir will provide erosion protection and reduce the velocity of stormwater entering the river. Modified riprap will be placed downstream of the rock weir to the edge of the river for further protection.

Due to the history of ponding at the northwestern quadrant of the Route 7/44 and Railroad Street intersection, the town of North Canaan requested two proposed basins be installed in this area. Additionally, the town requested the project address an overflowing drainage pipe within the commercial developments on the northern side of Route 7/44. A proposed lawn drain will be installed within the turf establishment at Station 13+31, 24' LT and connect to the proposed drainage system through a 12" RCP.

Proposed Stormwater System 2

The proposed track drainage system of the east crossing will be similar to that of the west. Ballast inlets and underdrains will be installed to alleviate the existing flooding problem. The two double-grate catch basins and drainage pipe below the railroad tracks will be replaced. The existing structures are located too high for the underdrains to properly drain to. The railroad drainage will be combined with the roadway drainage east of the railroad tracks.

The roadway drainage of the eastern project area will begin at the intersection of Main Street and Granite Avenue. Catch basins will be installed along the new curb of Granite Avenue and will combine with a lawn drain located off the roadway. These basins will connect to a catch basin along Main Street. Additional catch basins along Main Street will capture stormwater before one storm pipe is installed below the east railroad tracks to a catch basin at the junction of the roadway and railroad systems.

The drainage system will cross to a catch basin on the south side of Main Street. Conflicting utilities

are proposed to be relocated. The drainage will continue below the ConnDOT Maintenance Facility driveway into the existing drainage channel east of the driveway through twin 18” reinforced concrete pipes. The existing outlet will be removed and the area of the new outlet into the channel will have riprap installed to comply with current outlet protection criteria. The existing drainage channel will remain. The drainage pipe will outlet into the existing channel and flow overland to the river as it does in the existing conditions.

Receiving Waters

Beyond the railroad areas, the proposed system will replace various existing drainage structures and pipes within the project area and provide new outlets toward or directly into the Blackberry River. The western system will outlet into a proposed drainage channel and then flow then into the river. The eastern system will outlet onto a riprap splash pad then flow through an existing drainage channel into Blackberry River.

Wetland Areas

There are approximately 0.014 acres of wetlands impacted within the project area and these impacts are permanent. Impacts will include cut and fill, excavation of proposed drainage channel, extension of existing drainage channel, and installation of riprap outlet protection. There are no temporary impacts within the delineated wetlands.

2. Construction Sequencing

The selected Contractor will be required to stabilize disturbed areas using approved management practices to comply with construction sequencing, erosion and sedimentation control plans and this Stormwater Pollution Control Plan (SPCP). All construction will be in accordance with the 2002 E&S Guidelines. Construction is anticipated to start in August 2019 and to be completed in October 2020.

The suggested sequence of construction is as follows:

1. Conduct a preconstruction meeting.
2. Verify subsurface information by contacting Call Before You Dig at 1-800-922-4455.
3. Mobilization of construction equipment, materials and personnel. Approximate one-week period.
4. Utility work to be performed within the site limits until winter shutdown. Approximate eight-week period.
5. Winter shutdown and permit restrictions for approximately 24 weeks.
6. Clearing and grubbing within the project limits. Approximate one-week period.
7. Installation of the drainage structures and pipes will be completed next. This work will be performed in 500-foot sections along Main Street (U.S. Route 7 & 44). The drainage on the northern side of the roadway shall be constructed first, followed by the drainage along the southern side of the roadway (EO-1, EO-2, EO-3). Two-way traffic will be maintained during construction utilizing temporary striping and the appropriate signage. Approximate four-week period.

8. While the drainage work is ongoing, channel excavation and installation of the new outlets, headwalls, and endwalls will be constructed (PO-1, PO-2, PO-3, PO-4). This work may be done simultaneously during the construction of the roadway as well. Approximate three-week period.
9. Riprap pads and the rock weir are installed when the outlets, headwalls, and endwalls are completed. Approximate three-week period.
10. The roadway work will begin with full-depth excavation of the roadway. This will be completed by performing the work in 500-foot sections along Main Street similar to the drainage installation. The northern side of the roadway shall be constructed first, followed by the southern side of the roadway. Two-way traffic will be maintained during this stage of construction. Approximate two-week period.
11. Upon excavation of the approximate 500-foot section, the contractor will begin placing and compacting all subbase, pavement, and curbing for the section. The roadway section shall be left with the binder layer of pavement before moving to the next stretch of roadway. Temporary traffic markings shall be applied once the paving is completed. When the construction of one (1) section is concluded, each subsequent 500-foot section may be constructed. Approximate two-week period for each section.
12. The sidewalk and sidewalk ramps, driveways and work outside the curblines within the roadway section may be constructed at this point. Approximate five-week period.
13. The contractor shall coordinate with the Railroad subcontractor in order to conduct earth excavation within the limits of the railroad crossing when the detour pattern is setup. Approximate three-week period.
14. After completion of all full-depth roadway construction, topsoil and turf establishment may be installed at defined areas within the project limits. Approximate one-week period.
15. The final layer of pavement may then be installed coupled with the final epoxy line striping. Approximate one-week period.
16. Perform final site cleanup and project closeout. Approximate one-week period.

If the construction sequencing activities create an area of disturbance with a total contributing drainage area of between two (2) acres and five (5) acres per discharge point, the Contractor must submit to the Engineer a revised SPCP for review and approval. The SPCP must include locations of the temporary sedimentation trap per discharge point with a capacity to contain 134 cubic yards per acre of material in accordance with the 2002 Guidelines. The Contractor shall provide an inspection and maintenance plan for the temporary sedimentation trap as part of the amended SPCP.

3. Control Measures

Erosion and sedimentation controls will conform to and be maintained in accordance with the “2002 Connecticut Guidelines for Soil Erosion and Sediment Control” (E&S Guidelines), dated 2002, as amended and the State of Connecticut Form 817, dated 2016, including supplemental specifications.

All erosion control devices shall be maintained or replaced by the Contractor during the construction period as necessary or required by the state.

The location of the preliminary erosion and sedimentation controls are shown on the construction plans (see Appendix C). Additional measures will be installed at each phase of the work. Additional controls, if required, are contained in the above documents.

Erosion and Sedimentation Controls

The Connecticut Department of Transportation (CTDOT) will have construction inspection personnel assigned to the project in order to oversee the Contractor's operations to ensure compliance with the provisions of the Standard Specifications. Further CTDOT oversight is provided by the District 4 Environmental Coordinator and the Office of Environmental Planning.

The following timelines will be followed for the proposed construction activities:

- If construction activities are completed to final grade, permanent seeding shall take place within seven (7) days.
- Areas that remain disturbed but inactive for at least 30 days shall receive temporary seeding or soil protection within seven (7) days.
- Disturbed areas that do not establish a vegetative cover within 30 days of seeding shall have erosion control blankets installed. Prior to the erosion control blanket installation, the soil would be prepared with the application of lime, fertilizer, and seed.
- 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.
- Stabilization practices will be implemented as quickly as possible in accordance with the Guidelines.
- The Contractor shall stabilize disturbed areas with temporary or permanent measures as quickly as possible after the land is disturbed. Requirements for soil stabilization are detailed in Form 817 Section 1.10, Environmental Compliance.

Temporary Stabilization Practices

Prior to the start of construction, temporary stabilization measures will be installed. The temporary measures will be removed after final stabilization. Temporary measures include the following:

- 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 Engineer.
- Sedimentation Control System (SCS): SCS shall be placed at the toe of the slope or as directed by the Engineer
- 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: On soils to be exposed for a period greater than 1 month but less than 1-year, temporary seeding shall be used to temporarily stabilize the soil until

permanent stabilization is established.

- Catch Basin Inlet Protection: Catch basin inlet protection shall be used to reduce the amount of sediment entering the storm drainage system during construction.

Stabilization practices shall be implemented no more than seven days after completion, as final grades are reached, or if work has been suspended for more than seven days.

Temporary seeding shall be spread over any disturbed areas which will remain inactive for at least 30 days. Areas to remain disturbed through winter will 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 use other controls in the project as necessary if they conform to the 2002 E&S Guidelines and are approved by the Engineer. 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 every seven calendar days. These areas shall also be inspected within 24 hours following any storm in which 0.5 inches or greater of rain occurs.

Permanent Stabilization Practices

During construction, the following methods of permanent stabilization shall be installed:

- Top Soiling: In conjunction with permanent seeding, once final grades have been established, topsoil shall be applied to provide a suitable growth medium for vegetation.
- Permanent Seeding: Once Soils have been brought to final grade, permanent seeding shall be used to stabilize the soil with vegetative cover. Disturbed areas below the wetland limit shall be seeded with a wetland seed mix and/or above the wetland limit shall be seeded with a conservation seed mix.

All new embankments disturbed by construction and unpaved areas that are graded or disturbed by construction will receive erosion control matting, topsoil and/or turf establishment. The Contractor may use other permanent stabilization practices approved by the Engineer and conforming to 2002 Guidelines.

Structural Measures

Structural Measures will be utilized to minimize the exposure of soils and disturbance to the existing wetlands. The following structural measures shall be used to divert flows, limit runoff, and minimize the discharge of pollutants:

- Outlet Protection: Riprap outlet protection shall be used at the proposed outlet to decrease velocity and the potential for erosion. (i.e. apron, splash pad...)
- Deep Sump Catch Basins: Deep sump catch basins (4-foot sump) shall be used, especially adjacent to outlets, to intercept pollutants and debris when feasible.

Maintenance

All construction activities and related activities shall conform to the requirements of Section 1.10 "Environmental Compliance" of the Department's Standard Specifications, Form 817. 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 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 2002 Guidelines and as directed by the Engineer.

4. Dewatering Wastewaters

Dewatering Guidelines

No dewatering measures are anticipated for this project as the site does not involve any work within nor across a watercourse.

If dewatering is required, the Contractor must submit to the Engineer a written proposal for specific methods and devices to be used and must obtain the Engineer's written approval of such methods and devices. If the Engineer determines that an 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, approved in writing by the Engineer and implemented by the Contractor. No discharge of dewatering wastewater shall contain or cause a visible oil sheen, floating solids or foaming in the receiving area.

Dewatering activities will conform to Section 1.10, Environmental Compliance within Form 817. All work will be in accordance with Best Management Practices (BMP's), and in conformance with the 2002 Erosion and Sedimentation Control Guidelines and the 2004 Stormwater Quality Manual.

5. Post-Construction Stormwater Management

Post-Construction Guidelines

All post-construction stormwater structures will be cleaned of construction sediment and all temporary erosion control measures will be removed when the disturbed areas are permanently stabilized. Upon permanent stabilization, a termination notice pursuant to Section 6 of the General Permit will be filed.

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 regularly.
- Mowing and maintenance of the turf areas and vegetated areas will occur as needed.
- Riprap channel protection will be inspected and repaired annually or as needed.
- Stormwater drainage system will be cleaned of sediment/debris as directed by the District Drainage Engineer.

Post-Construction Performance Standards

The site lies along a developed area in a town center. Although the proposed condition will contain overall less impervious area, this project is considered a redevelopment as it has over 40% effective impervious surface cover after completion and upon initiation of construction.

Retention of half the water quality volume cannot be achieved due to site constraints. Much of the area surrounding the roadway and areas of construction is not only impervious, but primarily in either residential property or within the railroad ROW. Primary treatment practices such as stormwater ponds, stormwater wetlands, and infiltration areas, require much more area than is available at the site. Similarly, the area is not available for secondary treatments such as dry detention ponds and underground detention facilities. Refer to Appendix B, Water Quality Volume Calculations for details on surface cover.

Similar to the water quality volume retention, stormwater treatment measures, runoff reduction and Low Impact Development features are limited due to property constraints. Currently, there are limited water quality treatment measures in the existing stormwater system, with limited outlet protection. The objective of the proposed stormwater management system is to mitigate, to the maximum extent achievable, suspended solids (oil and grease, floatable solids, trash, etc.) from stormwater. Proposed design addresses stormwater quality using the following methods:

- Four-foot sumps in proposed Type “C” and “C-L” catch basins and two-foot sumps to avoid utility conflict or where site conditions prevent the installation of deep sumps.
- Intermediate riprap outlet protection at proposed outlets.
- Extension of existing drainage channel.
- Excavation of proposed drainage channel outletting into the Blackberry River.

Suspended Solids and Floatables Removal

The proposed catch basin sumps will improve the removal of larger sediment from the stormwater discharge. Other water quality treatment improvement structures, such as hydrodynamic separators would not be feasible in the area due to right-of-way constraints and limited access for monitoring and maintenance.

Velocity Dissipation

The proposed outlet installations include riprap aprons at the outlets of each system. The calculations for these measures are included in Appendix B.

6. Other Controls

Waste Disposal

Construction site waste shall be properly managed and disposed of during the entire construction period. Additionally,

- 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 Engineer.

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.

The designated area shall be designed and maintained such that no overflows can occur during rainfall or after snowmelt. Containers or pits shall be inspected at least once a week to ensure structural integrity, adequate holding capacity and will be repaired prior to future use if leaks are present. The contractor shall remove hardened concrete waste when it accumulates to a height of 1/2 of the container or pit as necessary to avoid overflows. All concrete waste shall be disposed of in a manner consistent with all applicable laws, regulations and guidelines.

Anti-tracking Pads and Dust Control

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.

Post-Construction

Upon completion of construction activities and stabilization of the site, all post-construction stormwater structures shall be cleaned of construction sediment and any remaining silt fence shall be removed prior to acceptance of the project by CTDOT. Sediment shall be properly disposed of in accordance with all applicable laws, regulations and guidelines.

Maintaining and Storing Vehicles and Equipment

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.

7. Inspections

Inspection Guidelines

All construction activities shall be inspected initially for Plan implementation and then weekly for Routine Inspections.

During construction, all areas disturbed by the construction activity that have not been stabilized, all erosion and sedimentation control measures, all 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, pollutants entering the drainage system and impacts to receiving

waters at least once every seven 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 working hours will not commence within 24 hours, an inspection is required within 24 hours only for storms that equal or exceed 0.5 inches. 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 once every month for three months.

Qualified inspectors provided by the Department's District 4 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.
Concrete Washout Area	Containers or pits shall be inspected at least once a week to ensure structural integrity, adequate holding capacity and will be repaired prior to future use if leaks are present. The contractor shall remove hardened concrete waste when it accumulates to a height of 1/2 of the container or pit or as necessary to avoid overflows. All concrete waste shall be disposed of in a manner consistent with all applicable laws, regulations and guidelines.
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. Hay bales shall be inspected to ensure they have not clogged.
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.

8. Keeping Plans Current

Revisions to Stormwater Pollution Control Plans

CTDOT shall 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. 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 permit.

9. Monitoring Requirements

A written report summarizing the scope of the inspection, the name(s) and qualifications of inspection personnel, the date and time of the inspection, major observations relative to the implementation of the Pollution Control Plan, and actions taken shall be completed within 24 hours of the inspection. This report shall be retained as part of the Stormwater Pollution Control Plan for at least five years after the date of the inspection.

Turbidity monitoring shall be conducted utilizing the drainage plans and a procedure consistent with 40 CFR Part 136 (http://www.epa.gov/region9/qa/pdfs/40cfr136_03.pdf) and may be taken manually or by an in-situ turbidity probe or other automatic sampling device equipped to take individual turbidity readings. The first sample shall be taken within the first hour of stormwater discharge from the site and at least three grab samples shall be taken during a storm event and shall be representative of the flow and characteristics of the discharge. Sampling shall be conducted at least monthly when there is a discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall is achieved.

Samples shall be taken during normal working hours, which for this project shall be defined as

Monday through Friday, 8am – 6pm. If a storm continues past working hours, sampling shall resume the following morning or the morning of the next working day following a weekend or Holiday, as long as the discharge continues. Sampling may be temporarily suspended when conditions exist that may reasonably pose a threat to the safety of the person taking the sample.

Within 30 days following the end of each month, the stormwater sampling results shall be submitted on the Stormwater Monitoring Report (SMR) and submit in accordance with Net DMR. If there is no stormwater discharge during a month, sampling is not required, however, SMR's indicating "no discharge" along with the reason, shall still be submitted as required.

10. 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 certification will be included in the Stormwater Pollution Control Plan.

State Project No. 99-114/115

Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, 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 (SPCP) is prepared to comply with the requirements for the General Permit for Stormwater Discharges (GPSD) from Construction Activities. Also, to be considered part of the SPCP are the proposed construction plans, special provisions, and the Connecticut Department of Transportation's "Standard Specifications for Roads, Bridges and Incidental Construction" (Form 817) including supplements thereto and the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control and 2004 Stormwater Quality Manual.

Appendices:

Appendix A – Figures

FEMA FIRM	Figure 1
Location Map	Figure 2
Drainage Area Maps	Figure 3.1-3.3
Pre/Post-Construction Surface Plan	Figure 4.1-4.6
Construction Access Map	Figure 7
NRCS Soil Resource Map	Figure 8.1-8.3

Appendix B – Drainage Calculations

Outlet Protection Calculations	Figure 9.1-9.3
Water Quality Computations	Figure 10.1-10.2

Appendix C – Plan Sheets (Reduced to 11x17)

Title Sheet	PMT-01
Index Map	PMT-02
General Site Plans	PMT-03 thru PMT-08
Impact Plans	PMT-09 thru PMT-11
Miscellaneous Detail Sheets	PMT-12 thru PMT-13

Appendix D – Stormwater Monitoring Report Forms

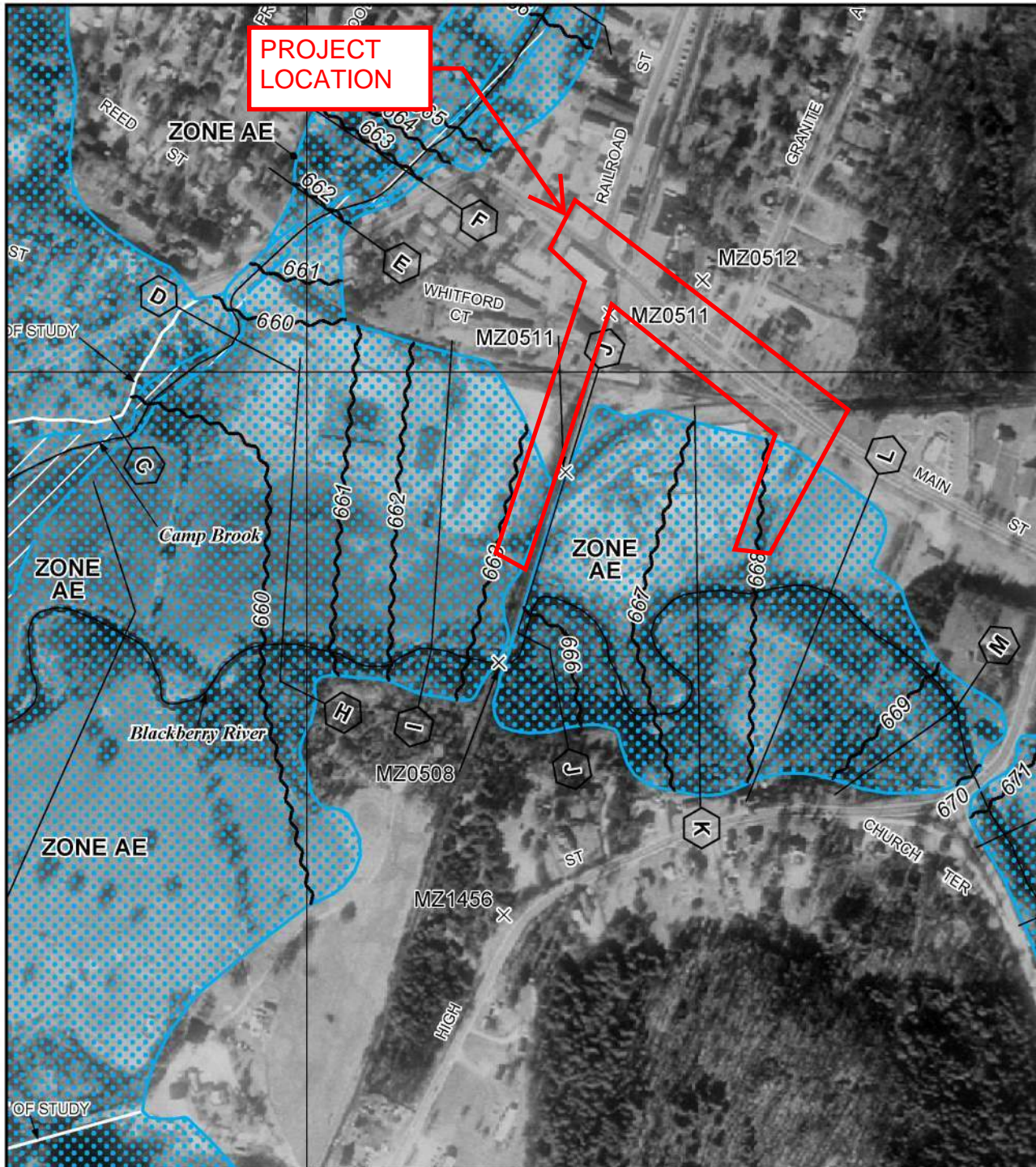
Appendix E – Notice of Termination Form

**State Project No. 99-114/115
U.S. Route 7 & 44 (Main Street)**

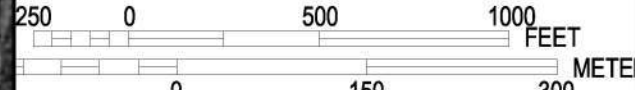
Stormwater Pollution Control Plan

**Appendix A
Figures**

**U.S. Route 7 & 44 Rail Crossings
North Canaan, Connecticut**



MAP SCALE 1" = 500'



NFIP

PANEL 0014C

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
NORTH CANAAN,
CONNECTICUT
LITCHFIELD COUNTY

PANEL 14 OF 100
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NORTH CANAAN, TOWN OF	090149	0014	C

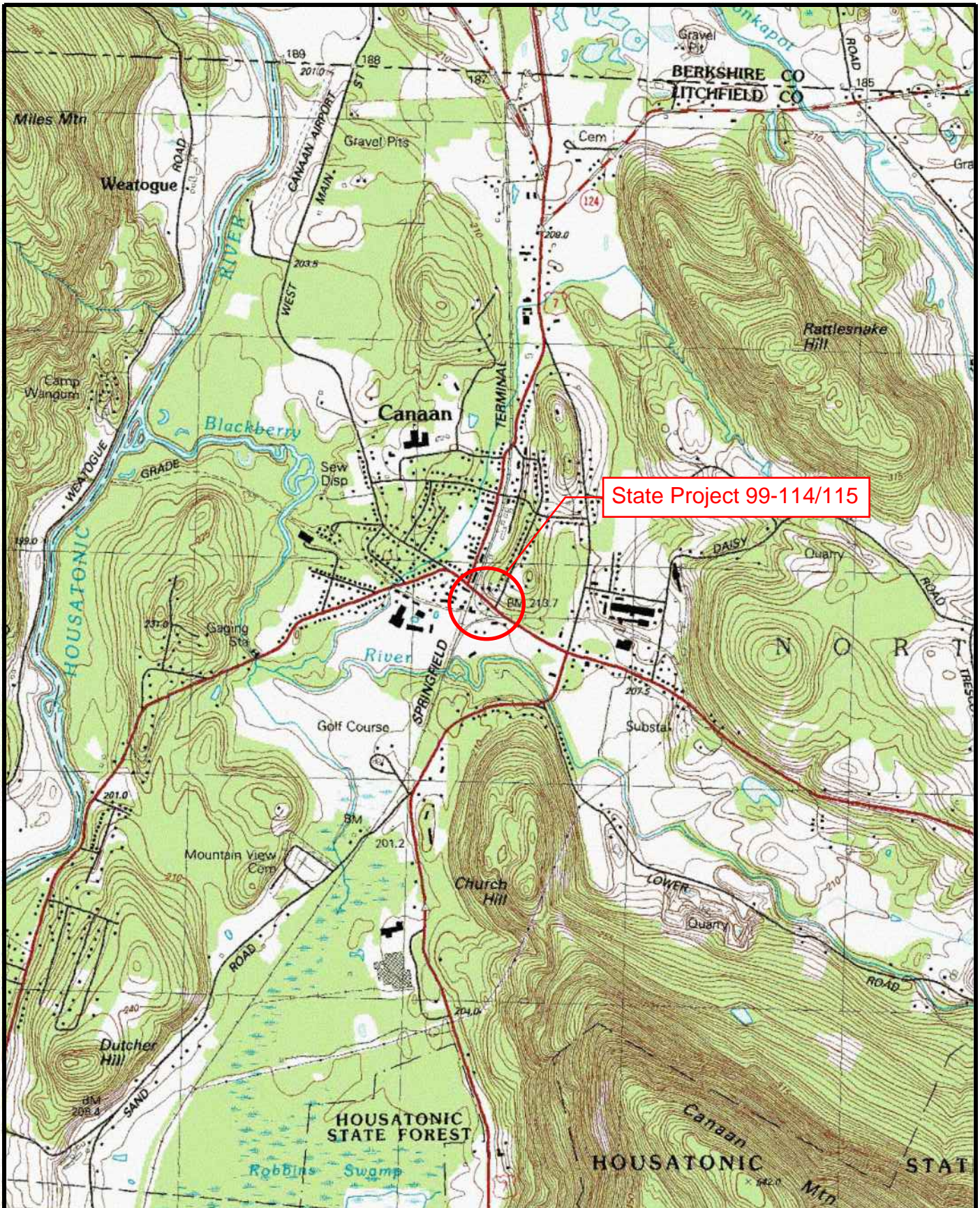
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
0901490014C
MAP REVISED
JANUARY 2, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



State Project 99-114/115



**RAILROAD-HIGHWAY
GRADE CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN STREET)
NORTH CANAAN, CT**

LOCATION MAP
PROJ. NO.: 99-114/115
SCALE: 1" = 2000'

PROJECT: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS

JOB NUMBER: 03C643

CITY: NORTH CANAAN

ROUTE: 7 & 44

FILE NAME: DRAINAGE STRUCTURE OVERVIEW.xls

DESIGNED BY: BGR

CHECKED BY: DMC

DATE: 4/30/2019

DATE: 4/30/2019

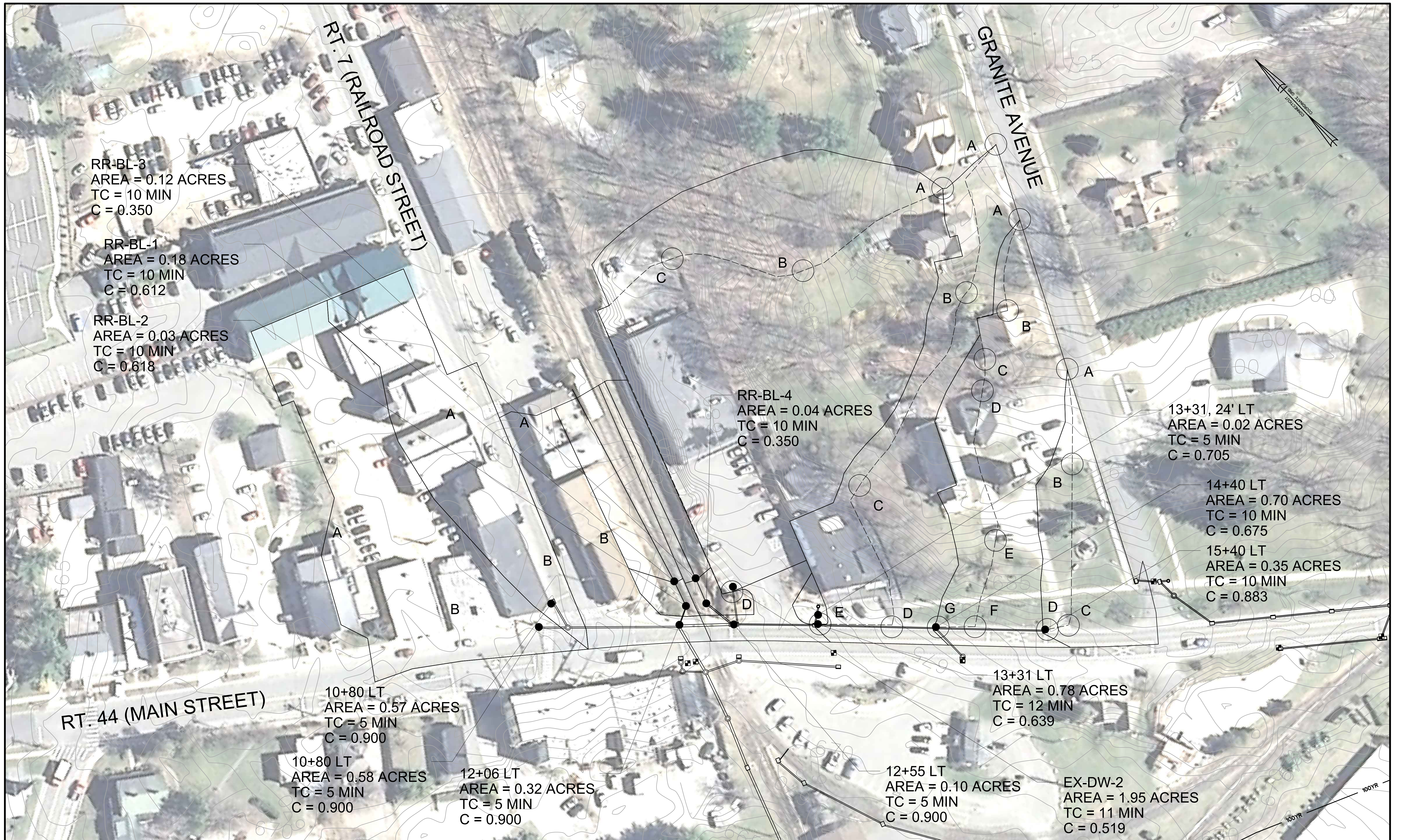
StormCAD Label	Drainage System	Type	Description	Total Drainage Area (ft ²)	See Below for Coefficients			Weighted Runoff Coefficient	Time of Concentration (min)	
					Impervious Area (ft ²)	Woods Area (ft ²)	Grass Area (ft ²)			
1+37 RT	East	Proposed	Type "C" CB along Granite Avenue.	8330	8330			0.900	5	Minimum of pavement flow.
1+43 LT	East	Proposed	Type "C" CB along Granite Avenue.	17690	15480	0	2210	0.831	5	Minimum of pavement flow.
1+46 LT	East	Proposed	Lawn Drain off Granite Avenue. Located in small drainage ditch off roadway.	1570	0	0	1570	0.350	5	Minimum of pavement flow.
1+59 LT	East	Proposed	Manhole off of Granite Avenue.							
1+75 RT	West	Proposed	Catch basin at intersection of Railroad Ave approaching Route 7/44.	24900	25310			0.90	5	Minimum of pavement flow.
10+80 LT	West	Proposed	Type "C-L" CB along Route 7/44.	38540	38540			0.900	5	Minimum of pavement flow.
11+05 LT	West	Proposed	Manhole connecting proposed CB from Railroad to West system along Route 7/44.							
12+05 RT	West	Proposed	Offset Type "C" CB along Route 7/44.	2800	2760	40		0.892	5	Minimum of pavement flow.
12+06 LT	West	Proposed	Type "C" CB along Route 7/44.	14020	14020			0.900	5	Minimum of pavement flow.
12+23 RT	West	Existing	Manhole off of Route 7/44							
12+55 LT	West	Proposed	Type "C" CB Double Grate - Type II along Route 7/44.	4190	4190			0.900	5	Minimum of pavement flow.
12+55 RT	West	Proposed	Offset Type "C" CB along Route 7/44.	2570	2570			0.900	5	Minimum of pavement flow.
12+56 RT	West	Proposed	Type "C-L" CB south of Route 7/44.	6670	5390			0.727	5	Minimum of pavement flow.
12+71 RT	West	Proposed	Type "C-L" CB south of Route 7/44.	6720	4270	2450		0.699	10	Minimum of overland flow.
13+28 LT	West	Proposed	Type "C" CB along Route 7/44.	33920	17840	16080		0.639	12	See Time of Concentration Spreadsheet.
13+31 LT	West	Proposed	Lawn Drain 24' off of Route 7/44.	930	600	330		0.705	5	Minimum of pavement flow.
13+52 RT	West	Proposed	Type "C" CB along Route 7/44.	2630	2630			0.900	5	Minimum of pavement flow.
13+57 RT	West	Proposed	Manhole off of Route 7/44.							
13+82 RT	West	Proposed	Type "C-L" CB Double Grate - Type II 21' from PO-1	2570	0					
14+40 LT	West	Proposed	Type "C" CB along Route 7/44.	30610	18090	12520		0.675	6	Minimum of overland flow.
14+65 RT	West	Proposed	Offset Type "C" CB along Route 7/44.	3990	3870	120		0.883	5	Minimum of pavement flow.
15+40 LT	West	Proposed	Type "C" CB along Route 7/44.	15160	5860	9300		0.563	5	Minimum of overland flow.
16+95 LT	East	Proposed	Type "C" CB along Route 7/44.	3370	1770	0	1600	0.639	5	Minimum of pavement flow.
17+51 LT	East	Proposed	Type "C" CB along Route 7/44.	11570	1540	0	10030	0.423	10	Minimum of overland flow.
17+55 RT	East	Proposed	Type "C" CB along Route 7/44.	2500	1860	640		0.759	5	Minimum of pavement flow.
18+05 LT	East	Proposed	Type "C" CB along Route 7/44.	6950	1100	0	5850	0.437	15	See Time of Concentration Spreadsheet.
18+49 RT	East	Proposed	Type "C" CB Double Grate - Type II along Route 7/44.	2710	2240	470		0.805	5	Minimum of pavement flow.
18+62 LT	East	Proposed	Type "C" CB Double Grate - Type II along Route 7/44.	13710	1920	0	11790	0.427	10	Minimum of overland flow.
18+96 RT	East	Proposed	Type "C" CB along Route 7/44.	1650	1340	310		0.797	5	Minimum of pavement flow.
19+50 LT	East	Proposed	Type "C" CB along Route 7/44.	2070	1660	410		0.791	5	Minimum of pavement flow.
19+50 RT	East	Proposed	Type "C" CB along Route 7/44.	1030	960	70		0.863	5	Minimum of pavement flow.
20+08 RT	East	Proposed	Manhole between the two driveways off of Route 7/44.							
20+12 RT	East	Proposed	Manhole between the two driveways off of Route 7/44 connecting twin 18" pipes.							
CB-DG-1	East	Existing	Double grate catch basin located on the west side of the east railroad crossing.	140020	51340	9730	78950	0.545	10	Minimum of overland flow.
CB-DG-2	East	Existing	Double grate catch basin located on the east side of the east railroad crossing.	2160	350		1810	0.439	10	Minimum of overland flow.
Ditch Inlet	East	Existing	Culvert end installed at end of existing drainage ditch.							
E-RR-CB-1	West	Existing	Catch basin located within railroad parking lot, south of Route 7/44.	10440	7370		3070	0.738	5	Minimum of pavement flow.
E-RR-CB-2	West	Existing	Catch basin located within railroad parking lot, south of Route 7/44.	5950	4060		1890	0.725	10	Minimum of overland flow.
YD-1	West	Existing	Yard drain within railroad ballast, south of Route 7/44.	3370	0		3370	0.350	10	Minimum of overland flow.
YD-2	West	Existing	Yard drain within railroad ballast, south of Route 7/44.	4350	1840		2510	0.583	10	Minimum of overland flow.
YD-3	West	Existing	Yard drain within railroad ballast, south of Route 7/44.	5110	3140		1970	0.688	10	Minimum of overland flow.
YD-4	West	Existing	Yard drain within railroad ballast, south of Route 7/44.	4660	2810		1850	0.682	10	Minimum of overland flow.
YD-5	West	Existing	Yard drain within railroad ballast, south of Route 7/44.	1640	630		1010	0.561	10	Minimum of overland flow.
YD-6	West	Existing	Yard drain within railroad ballast, south of Route 7/44.	480	0		480	0.350	10	Minimum of overland flow.
Ex-DW-2	West	Existing	Drywell located north of Route 44, just east of west railroad crossing.	85030	30120	22210	32700	0.519	11	See Time of Concentration Spreadsheet.
DOT-1	West	Existing	Connection of the existing catch basins of the private properties.							
DOT-2	West	Existing	Connection of the existing catch basins of the private properties.							
Ex-Out	West	Existing	Outlet of the private property drainage into the existing drainage ditch.							
MH-1	West	Existing	Manhole along final segment of drainage line prior to discharge into river.							
MH-2	West	Proposed	Manhole along final segment of drainage line prior to discharge into river.							
PR-Out	West	Proposed	Outlet of railroad and Route 7/44 drainage into existing drainage ditch.							
RR-BI-1	West	Proposed	Ballast Inlet at west crossing.	7860	3740		4120	0.612	10	Minimum of overland flow.
RR-BI-2	West	Proposed	Ballast Inlet at west crossing.	1520	740		780	0.618	10	Minimum of overland flow.
RR-BI-3	West	Proposed	Ballast Inlet at west crossing.	5220			5220	0.350	10	Minimum of overland flow.
RR-BI-4	West	Proposed	Ballast Inlet at west crossing.	1580			1580	0.350	10	Minimum of overland flow.
RR-BI-5	East	Proposed	Ballast Inlet at east crossing.	7480	260		7220	0.369	10	Minimum of overland flow.
RR-BI-6	East	Proposed	Ballast Inlet at east crossing.	39610	3740	4200	31670	0.391	10	Minimum of overland flow.
RR-BI-7	East	Proposed	Ballast Inlet at east crossing.	63960	2950	45690	15320	0.304	16	See Time of Concentration Spreadsheet.
RR-BI-8	East	Proposed	Ballast Inlet at east crossing.	3330			3330	0.350	10	Minimum of overland flow.
RR-BI-9	East	Proposed	Ballast Inlet at east crossing.	4140			4140	0.350	10	Minimum of overland flow.
Ex-CB-1	West	Existing	Catch basin located within private properties south of Route 7/44.	40802	12039		28763	0.512	22	See Time of Concentration Spreadsheet.
Ex-CB-2	West	Existing	Catch basin located within private properties south of Route 7/44.	10874	7935		2939	0.751	5	Minimum of pavement flow.
Ex-CB-3	West	Existing	Catch basin located within private properties south of Route 7/44.	12007	7025		4982	0.672	5	Minimum of pavement flow.
Ex-Road				62640	62640					
EO-1	West	Existing			139609		EO-1 - PO-1			
EO-2	West	Existing					-10811	imp. area incr.		
EO-3	East	Existing			51690					
PO-1	West	Proposed			150420		EO-3 - PO-4			
PO-2	West	Proposed					8310	imp. area decr.		
PO-3	West	Proposed								
PO-4	East	Proposed			43380					

Drywell Ex-DW-1 has no evidence of connecting to existing system, drainage area does not enter the drainage system.

Impervious Runoff Coefficient = 0.9

Woods Runoff Coefficient = 0.25

Grass Runoff Coefficient = 0.35



RR-BL-3
 AREA = 0.12 ACRES
 TC = 10 MIN
 C = 0.350

RR-BL-1
 AREA = 0.18 ACRES
 TC = 10 MIN
 C = 0.612

RR-BL-2
 AREA = 0.03 ACRES
 TC = 10 MIN
 C = 0.618

RR-BL-4
 AREA = 0.04 ACRES
 TC = 10 MIN
 C = 0.350

13+31, 24' LT
 AREA = 0.02 ACRES
 TC = 5 MIN
 C = 0.705

14+40 LT
 AREA = 0.70 ACRES
 TC = 10 MIN
 C = 0.675

15+40 LT
 AREA = 0.35 ACRES
 TC = 10 MIN
 C = 0.883

13+31 LT
 AREA = 0.78 ACRES
 TC = 12 MIN
 C = 0.639

10+80 LT
 AREA = 0.57 ACRES
 TC = 5 MIN
 C = 0.900

10+80 LT
 AREA = 0.58 ACRES
 TC = 5 MIN
 C = 0.900

12+06 LT
 AREA = 0.32 ACRES
 TC = 5 MIN
 C = 0.900

12+55 LT
 AREA = 0.10 ACRES
 TC = 5 MIN
 C = 0.900

EX-DW-2
 AREA = 1.95 ACRES
 TC = 11 MIN
 C = 0.519

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 4/9/2019

DESIGNER/DRAFTER:
B.G.R.
 CHECKED BY:
D.M.C.
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 SCALE 1"=40'

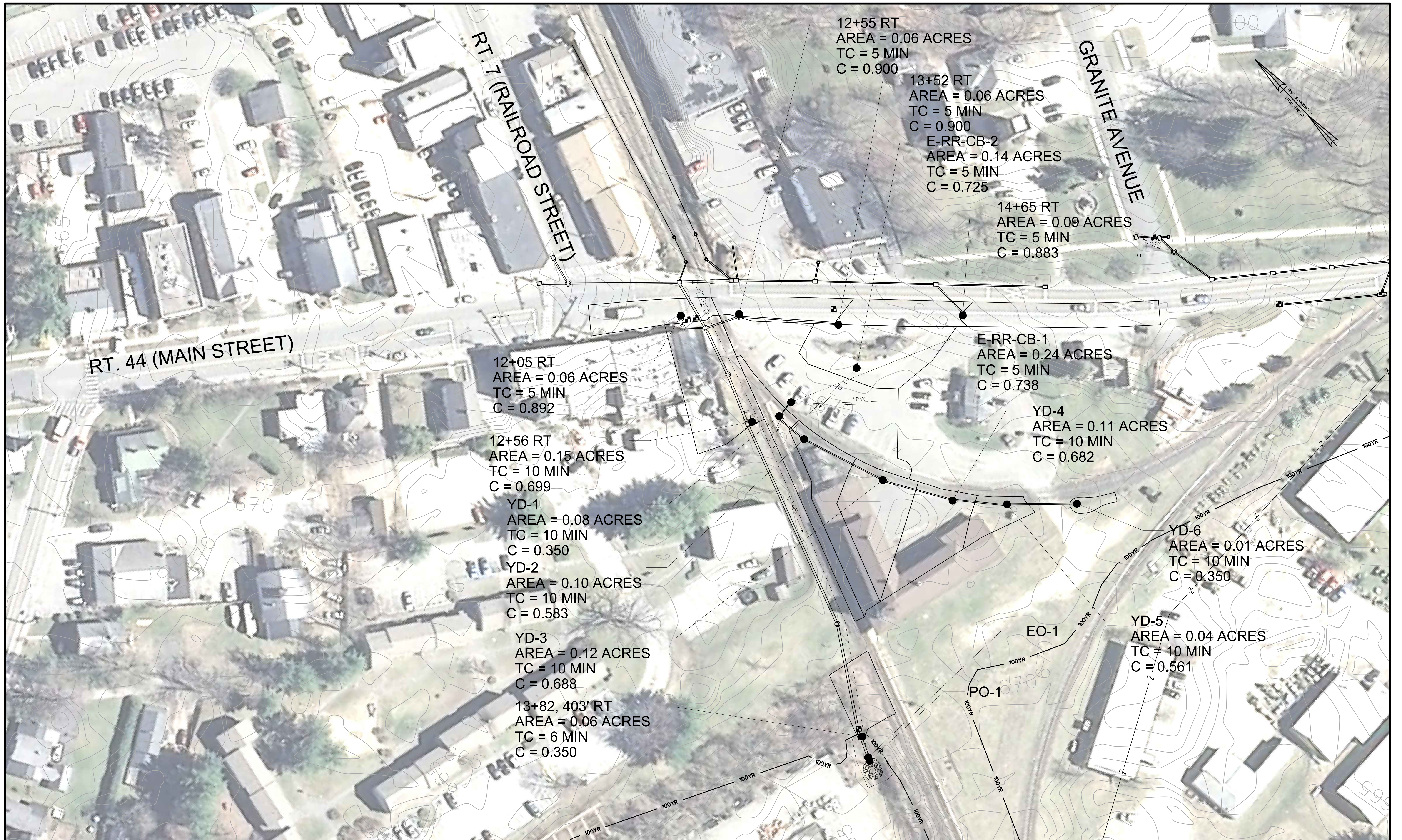
STATE OF CONNECTICUT
 DEPARTMENT OF TRANSPORTATION

SIGNATURE/
 BLOCK:

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
 CROSSING IMPROVEMENTS
 U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN
 DRAWING TITLE:
**DRAINAGE AREA
 MAP**

PROJECT NO.
99-114
 DRAWING NO.
DRA-01
 SHEET NO.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:
B.G.R.
 CHECKED BY:
D.M.C.
 SCALE IN FEET
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 SCALE 1"=40'

STATE OF CONNECTICUT
 DEPARTMENT OF TRANSPORTATION

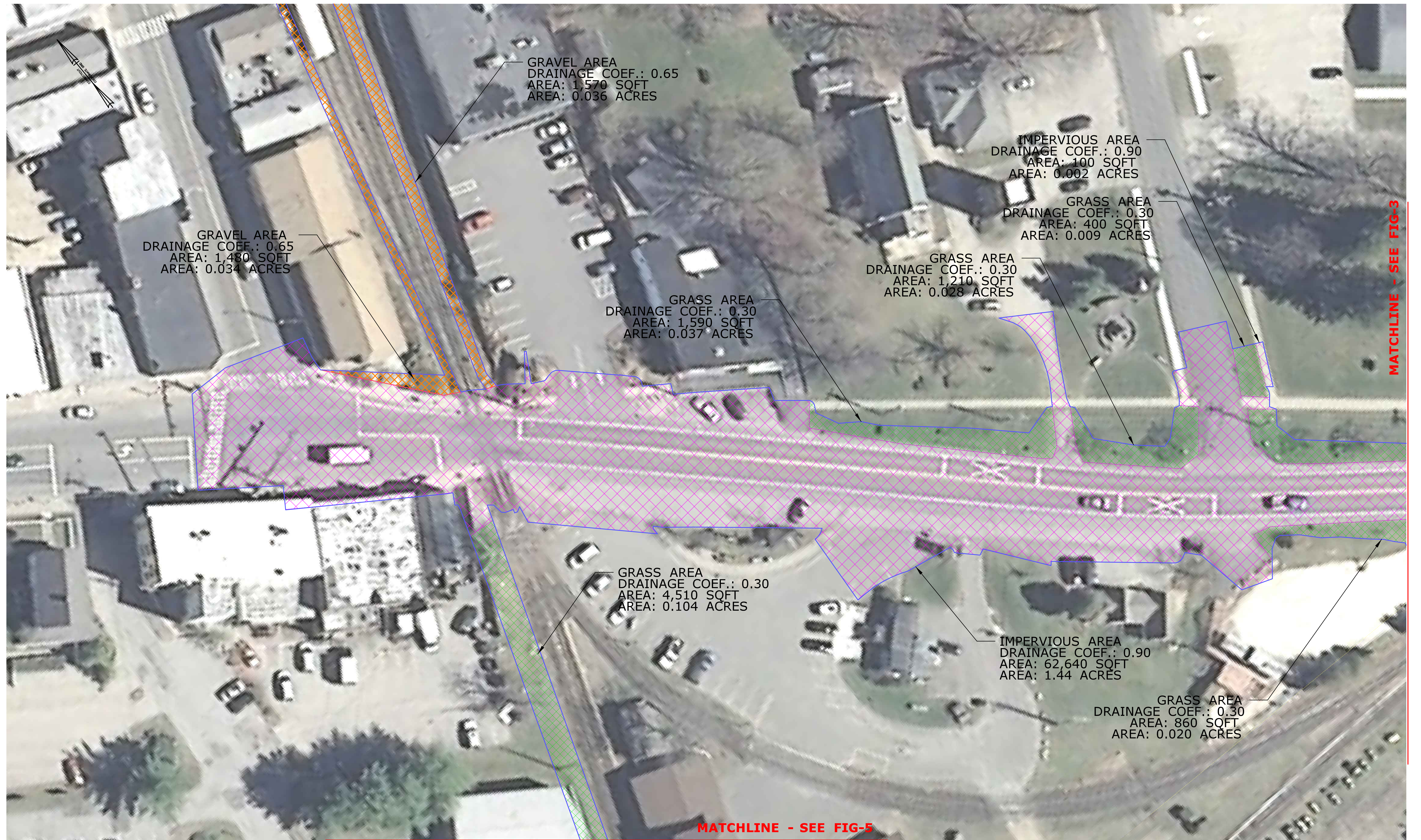
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PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
 CROSSING IMPROVEMENTS
 U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN
 DRAWING TITLE:
**DRAINAGE AREA
 MAP**

PROJECT NO.
99-114
 DRAWING NO.
DRA-02
 SHEET NO.

Filename: ... \DRA09114-115001_02.dgn



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 4/23/2019

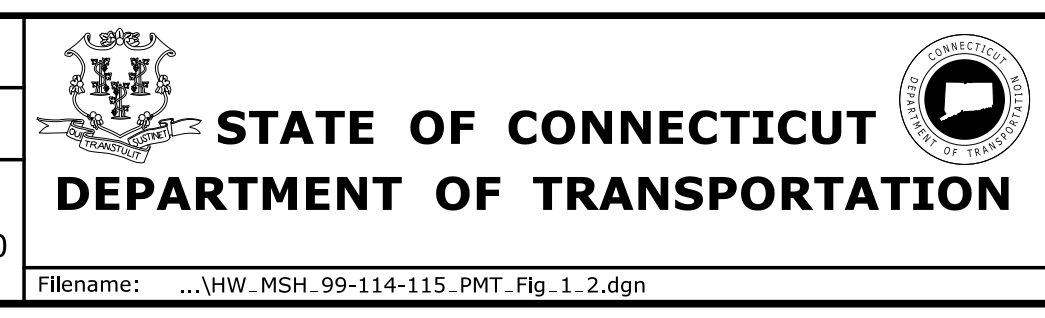
DESIGNER/DRAFTER:
BGR

CHECKED BY:
DMC

SCALE IN FEET

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SCALE 1"=25'



SIGNATURE/
BLOCK:

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN

DRAWING TITLE:
**PRE-CONSTRUCTION
SURFACE COVER**

PROJECT NO.
99-114/115

DRAWING NO.
FIG-1

SHEET NO.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

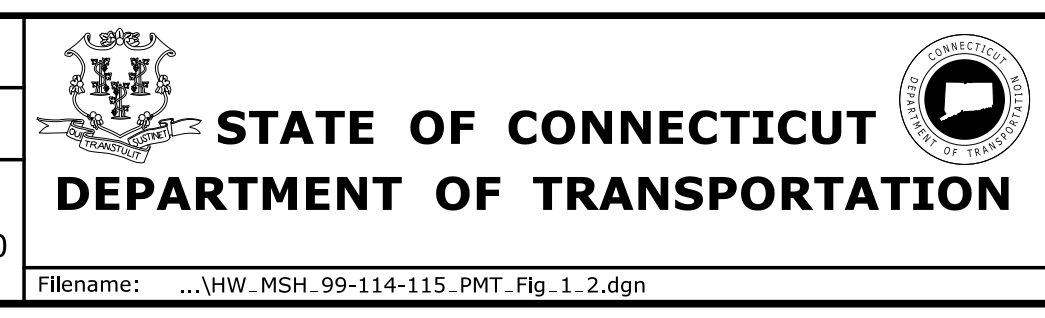
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 4/23/2019

DESIGNER/DRAFTER:
BGR

CHECKED BY:
DMC

SCALE IN FEET
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SCALE 1"=25'



SIGNATURE/
BLOCK:

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN

DRAWING TITLE:
**POST-CONSTRUCTION
SURFACE COVER**

PROJECT NO.
99-114/115

DRAWING NO.
FIG-2

SHEET NO.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

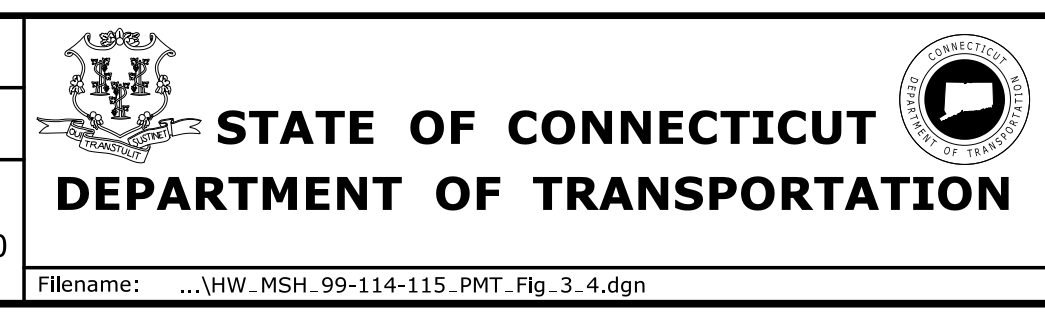
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 4/23/2019

DESIGNER/DRAFTER:
BGR

CHECKED BY:
DMC

SCALE IN FEET
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SCALE 1"=25'



SIGNATURE/
BLOCK:

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)**

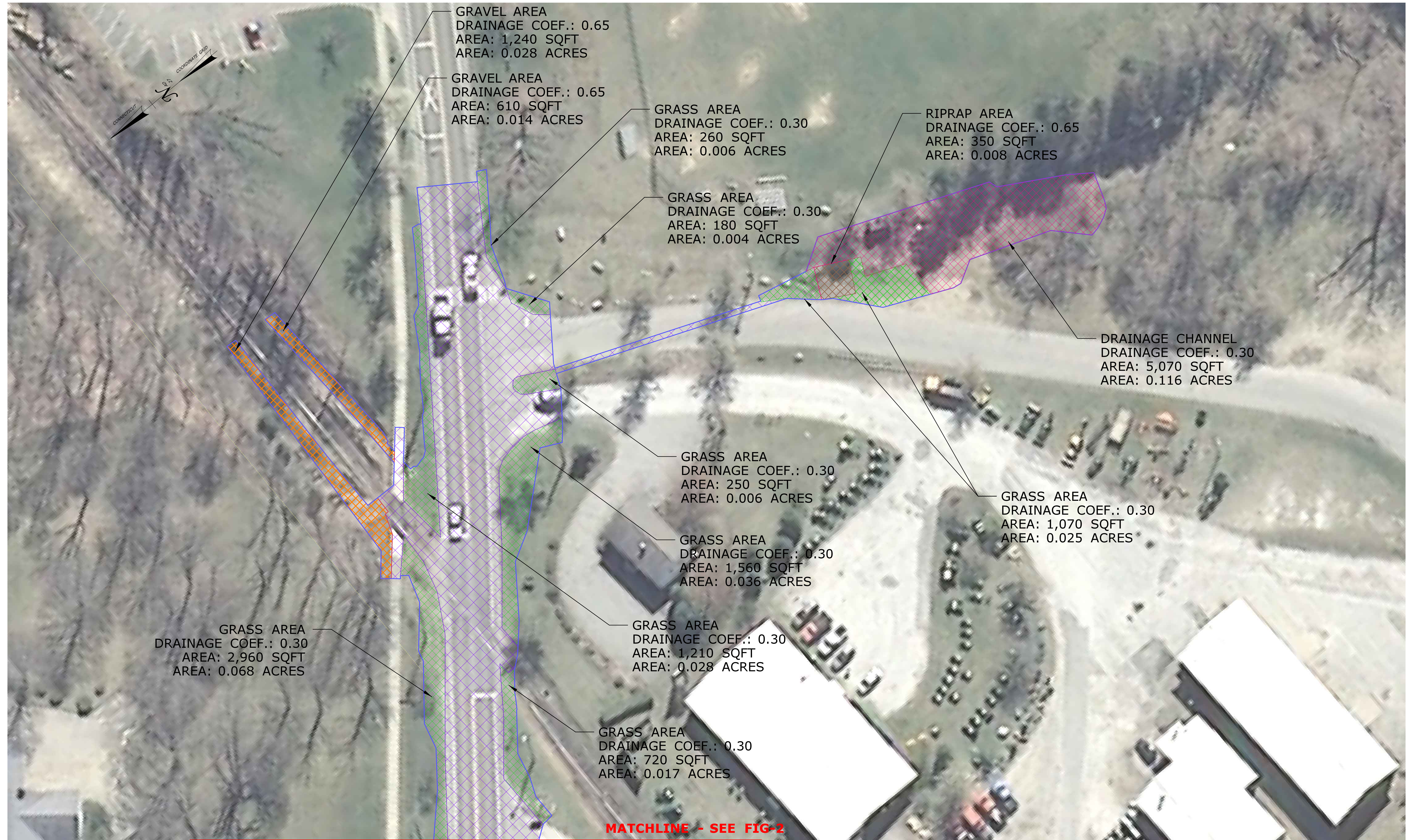
TOWN:
NORTH CANAAN

DRAWING TITLE:
**PRE-CONSTRUCTION
SURFACE COVER**

PROJECT NO.
99-114/115

DRAWING NO.
FIG-3

SHEET NO.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 4/23/2019

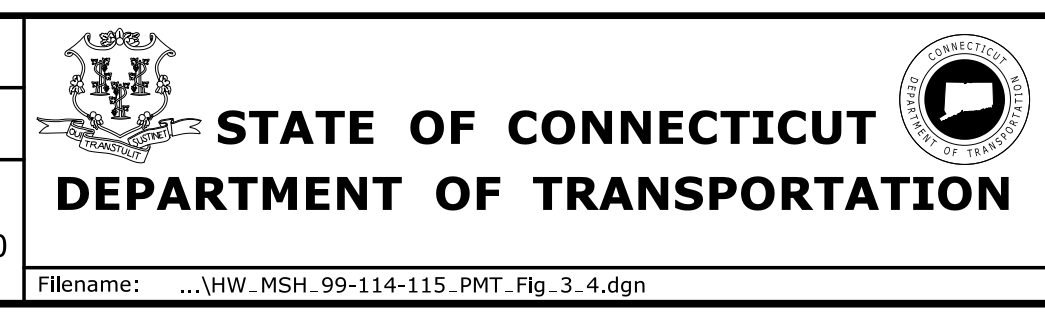
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BGR

CHECKED BY:
DMC

SCALE IN FEET

0 25 50

SCALE 1"=25'



SIGNATURE/
BLOCK:

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN

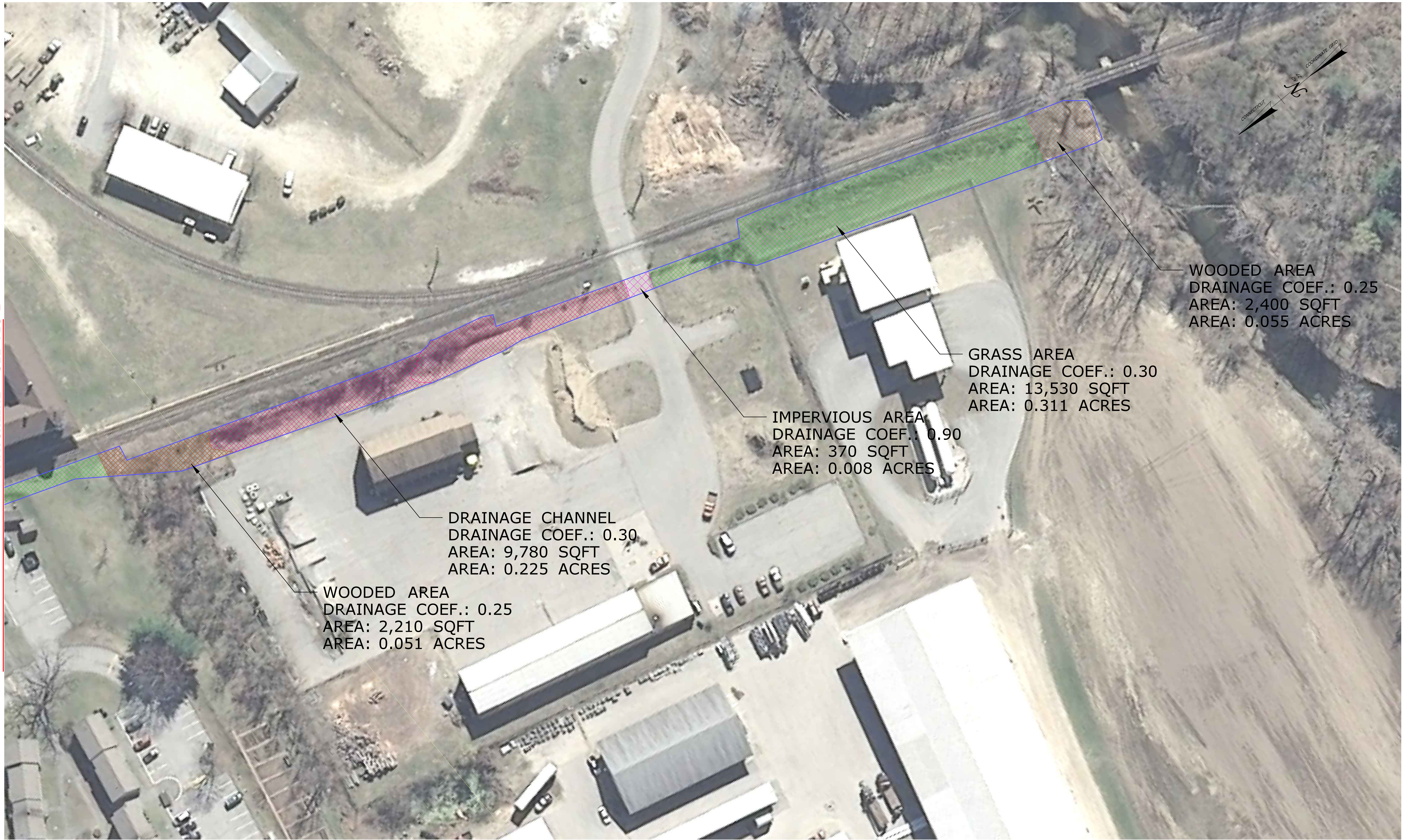
DRAWING TITLE:
**POST-CONSTRUCTION
SURFACE COVER**

PROJECT NO.
99-114/115

DRAWING NO.
FIG-4

SHEET NO.

MATCHLINE - SEE FIG-1



WOODED AREA
DRAINAGE COEF.: 0.25
AREA: 2,400 SQFT
AREA: 0.055 ACRES

GRASS AREA
DRAINAGE COEF.: 0.30
AREA: 13,530 SQFT
AREA: 0.311 ACRES

IMPERVIOUS AREA
DRAINAGE COEF.: 0.90
AREA: 370 SQFT
AREA: 0.008 ACRES

DRAINAGE CHANNEL
DRAINAGE COEF.: 0.30
AREA: 9,780 SQFT
AREA: 0.225 ACRES

WOODED AREA
DRAINAGE COEF.: 0.25
AREA: 2,210 SQFT
AREA: 0.051 ACRES

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 4/23/2019

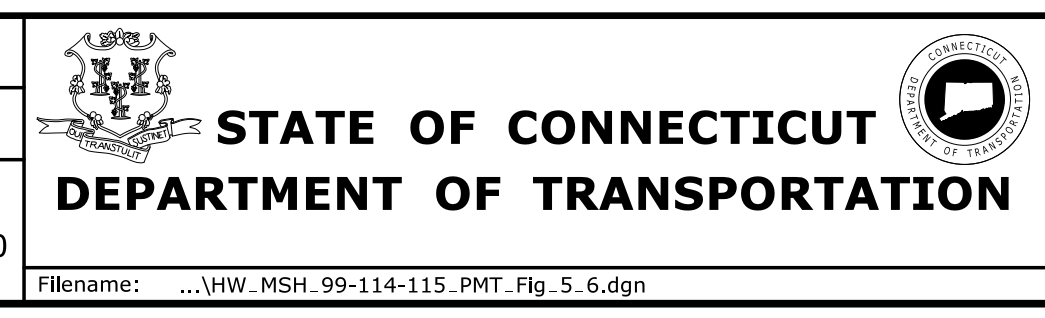
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DMC

SCALE IN FEET

0 40 80

SCALE 1"=40'



SIGNATURE/
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PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN

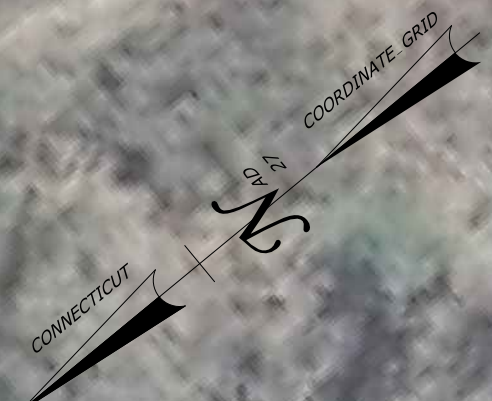
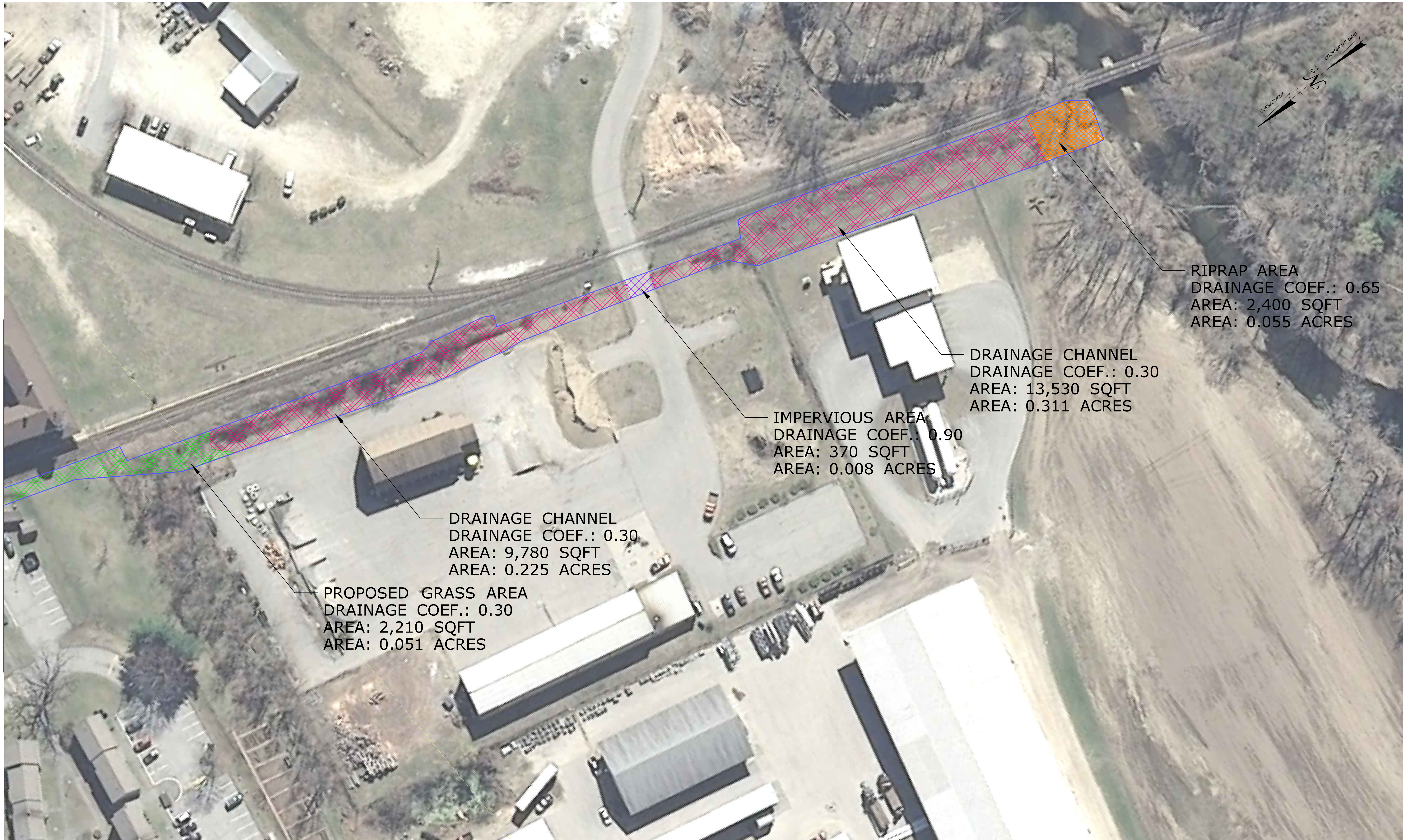
DRAWING TITLE:
**PRE-CONSTRUCTION
SURFACE COVER**

PROJECT NO.
99-114/115

DRAWING NO.
FIG-5

SHEET NO.

MATCHLINE - SEE FIG-2



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 4/23/2019

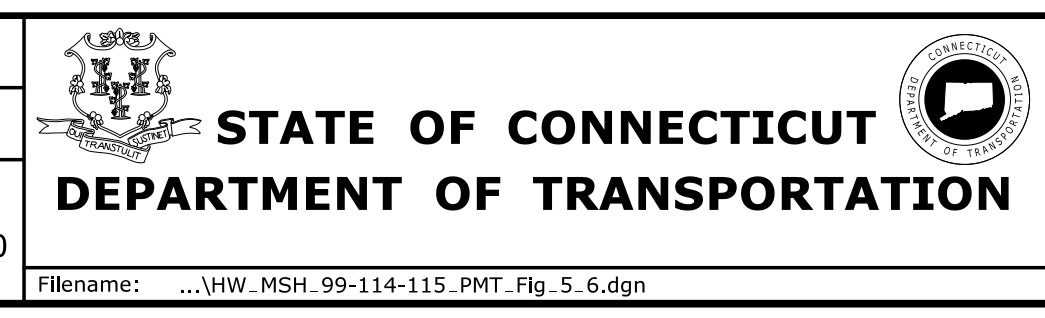
DESIGNER/DRAFTER:
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CHECKED BY:
DMC

SCALE IN FEET

0 40 80

SCALE 1"=40'



SIGNATURE/
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PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
 CROSSING IMPROVEMENTS
 U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN

DRAWING TITLE:
**POST-CONSTRUCTION
 SURFACE COVER**

PROJECT NO.
99-114/115

DRAWING NO.
FIG-6

SHEET NO.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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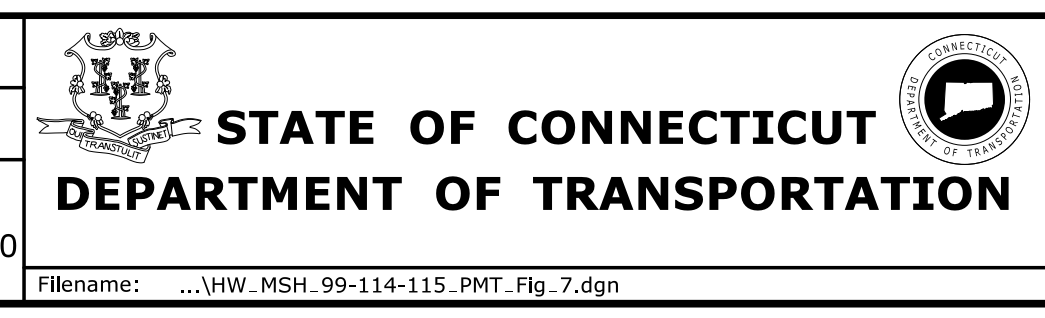
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Plotted Date: 4/23/2019

DESIGNER/DRAFTER:
BGR

CHECKED BY:
DMC

SCALE IN FEET
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SCALE 1"=60'



SIGNATURE/
BLOCK:

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN

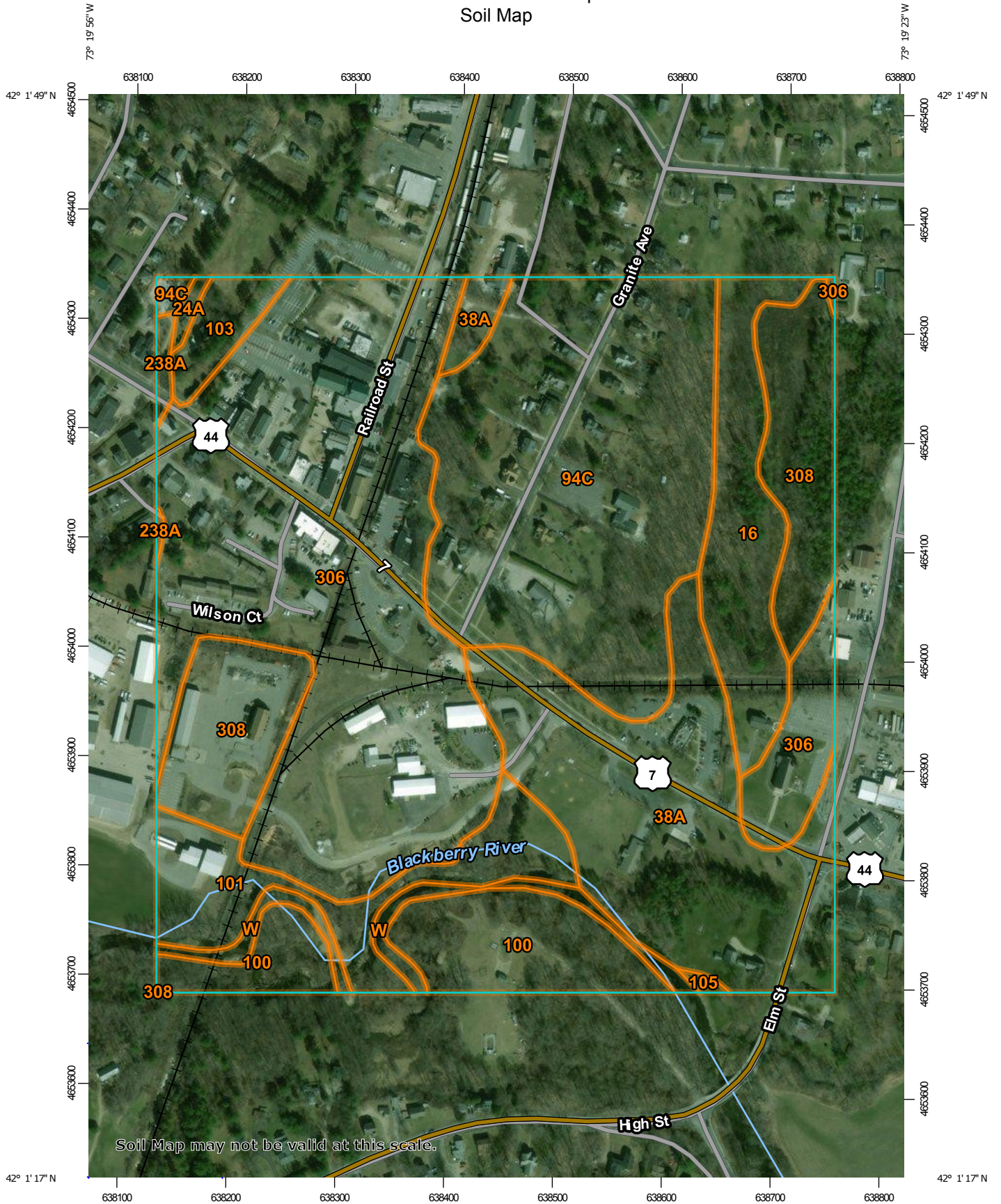
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**CONSTRUCTION
ACCESS**

PROJECT NO.
99-114/115

DRAWING NO.
FIG-7

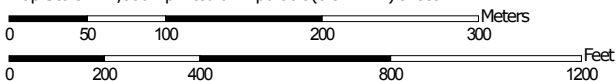
SHEET NO.

Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.


Map Scale: 1:4,830 if printed on A portrait (8.5" x 11") sheet.



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

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
 Survey Area Data: Version 18, Dec 6, 2018

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

Date(s) aerial images were photographed: Jul 2, 2015—Oct 5, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
16	Halsey silt loam	6.1	6.0%
24A	Deerfield loamy fine sand, 0 to 3 percent slopes	0.2	0.2%
38A	Hinckley loamy sand, 0 to 3 percent slopes	16.0	15.8%
94C	Farmington-Nellis complex, 3 to 15 percent slopes, very rocky	21.6	21.4%
100	Suncook loamy fine sand	6.5	6.4%
101	Occum fine sandy loam	5.6	5.6%
103	Rippowam fine sandy loam	1.5	1.5%
105	Hadley silt loam	0.1	0.1%
238A	Hinckley-Urban land complex, 0 to 3 percent slopes	0.4	0.4%
306	Udorthents-Urban land complex	32.5	32.1%
308	Udorthents, smoothed	8.9	8.8%
W	Water	1.8	1.8%
Totals for Area of Interest		101.2	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They

**State Project No. 99-114/115
U.S. Route 7 & 44 (Main Street)**

Stormwater Pollution Control Plan

**Appendix B
Calculations**

**U.S. Route 7 & 44 Rail Crossings
North Canaan, Connecticut**



100 Constitution Plaza, 10th Floor
Hartford, Connecticut 06103

PROJECT: Railroad-Highway Grade Crossing Improvements
North Canaan, CT

PROJECT NO. 03C643

PREPARED BY Brandon Rojas DATE 4/10/19

CHECKED BY David Cicia DATE 4/10/19

OUTLET PROTECTION DESIGN
WESTERN (NORTHERN) OUTLET, STORMCAD: PR-OUT
BASED ON CONNDOT DRAINAGE MANUAL, CHAPTER 11

STEP 1: DETERMINE OUTLET PROTECTION TYPE

Outlet: Western (Northern) Drainage System Outlet, PR-Out

Pipe Size: 24" RCP
Tailwater Depth: 2.20 ft
Flow: 21.93 cfs

Since the Tailwater Depth is greater than half the pipe size and the Flow is greater than 18 cfs, a preformed scour hole will be used.

STEP 2: DETERMINE STONE SIZE, d_{50}

Type II Preformed Scour Hole

$$d_{50} = (0.0082R_p^2/TW) ((Q/R_p^{2.5})^{1.333})$$

$$(0.0082(2)^2/(2.20)) (((21.93)/(2)^{2.5})^{1.333})$$

0.09 ft

Since the d_{50} is less than 0.42 ft, modified riprap will be used.

STEP 3: DIMENSIONS (TYPE II)

B: 16 ft
C: 18 ft
2S_p: 4 ft
3S_p: 6 ft
F: 2 ft

REFERENCES

StormCAD Model, Western Crossing

ConnDOT Drainage Manual
Section 11.13.4 & Table 11-13.1

ConnDOT Drainage Manual
Section 11.13-5

ConnDOT Drainage Manual
Section 11.13.6, Eqn 11.35

ConnDOT Drainage Manual
Table 11-14.1



100 Constitution Plaza, 10th Floor
Hartford, Connecticut 06103

PROJECT: Railroad-Highway Grade Crossing Improvements
North Canaan, CT

PROJECT NO. 03C643

PREPARED BY Brandon Rojas DATE 4/10/19

CHECKED BY David Cicia DATE 4/10/19

OUTLET PROTECTION DESIGN
WESTERN (SOUTHERN) OUTLET, STORMCAD: OUTLET WEST
BASED ON CONNDOT DRAINAGE MANUAL, CHAPTER 11

STEP 1: DETERMINE OUTLET PROTECTION TYPE

Outlet: Western (Southern) Drainage System Outlet, Outlet West

Pipe Size: 36" RCP
Tailwater Depth: 2.00 ft
Flow: 42.49 cfs

Since the Tailwater Depth is greater than half the pipe size and the Flow is greater than 22 cfs, a preformed scour hole will be used.

STEP 2: DETERMINE STONE SIZE, d_{50}

Type I Preformed Scour Hole

$$d_{50} = (0.0125R_p^2/TW) ((Q/R_p^{2.5})^{1.333})$$

$$(0.0125(3)^2/(2.00)) (((42.49)/(3)^{2.5})^{1.333})$$

0.21 ft

Since the d_{50} is less than 0.42 ft, modified riprap will be used.

STEP 3: DIMENSIONS (TYPE I)

B: 15 ft
C: 18 ft
 $2S_p$: 6 ft
 $3S_p$: 9 ft
F: 1.5 ft

REFERENCES

StormCAD Model, Western Crossing

ConnDOT Drainage Manual
Section 11.13.4 & Table 11-13.1

ConnDOT Drainage Manual
Section 11.13-5

ConnDOT Drainage Manual
Section 11.13.6, Eqn 11.35

ConnDOT Drainage Manual
Table 11-14.1



100 Constitution Plaza, 10th Floor
Hartford, Connecticut 06103

PROJECT: Railroad-Highway Grade Crossing Improvements
North Canaan, CT

PROJECT NO. 03C643

PREPARED BY Brandon Rojas DATE 4/10/19

CHECKED BY David Cicia DATE 4/10/19

OUTLET PROTECTION DESIGN
EASTERN OUTLET, STORMCAD: OUTLET-EAST
BASED ON CONNDOT DRAINAGE MANUAL, CHAPTER 11

STEP 1: DETERMINE OUTLET PROTECTION TYPE

Outlet: Eastern Drainage System Outlet, OUTLET-EAST

Pipe Size: Twin 18" RCP
Tailwater Depth: 1.50 ft
Flow: 14.08 cfs

Since the Tailwater Depth is greater than half the pipe size and the Flow is greater than 18 cfs, a preformed scour hole will be used.

STEP 2: DETERMINE STONE SIZE, d_{50}

Type II Preformed Scour Hole

$$d_{50} = (0.0082R_p^2/TW) ((Q/R_p^{2.5})^{1.333})$$

$$(0.0082(2)^2/(2)) (((14.08)/(2)^{2.5})^{1.333})$$

0.11 ft

Since the d_{50} is less than 0.42 ft, modified riprap will be used.

STEP 3: DIMENSIONS (TYPE II)

B: 16 ft
C: 18 ft
2S_p: 4 ft
3S_p: 6 ft
F: 2 ft

REFERENCES

StormCAD Model, Eastern Crossing

ConnDOT Drainage Manual
Section 11.13.4 & Table 11-13.1

ConnDOT Drainage Manual
Section 11.13-5

ConnDOT Drainage Manual
Section 11.13.6, Eqn 11.35

ConnDOT Drainage Manual
Table 11-14.1

PROJECT 99-114/115
 DATE 4/22/2019
 SUBJECT Railroad-Highway Grade Crossing Improvements

PREPARED BY BGR
 CHECKED BY DMC

Existing Cover

	Impervious	Woods	Riprap/Gravel	Grass/Swales
	1.45	0.22	0.15	0.93
Total Site Area	1.45	0.22	0.15	0.93

WATER QUALITY VOLUME (WQV) CALCULATION

Area (A) = 2.75 acres
 Area (A) = 0.00430 square miles
 Design Precipitation (P) = 1 inch
 % Impervious Cover (I) = 53
 Volumetric Runoff Coefficient (R) = 0.525

WQV =	0.120	ac-ft
1/2 WQV=	0.060	ac-ft
=	2618	cu-ft

PROJECT 99-114/115
 DATE 4/22/2019
 SUBJECT Railroad-Highway Grade Crossing Improvements

PREPARED BY BGR
 CHECKED BY DMC

Proposed Cover

	Impervious	Woods	Riprap/Gravel	Grass/Swales
	1.33	0.00	0.18	1.24
Total Site Area	1.33	0.00	0.18	1.24

WATER QUALITY VOLUME (WQV) CALCULATION

Area (A) = 2.75 acres
 Area (A) = 0.00430 square miles
 Design Precipitation (P) = 1 inch
 % Impervious Cover (I) = 48
 Volumetric Runoff Coefficient (R) = 0.486

WQV =	0.111	ac-ft
1/2 WQV=	0.056	ac-ft
=	2426	cu-ft

**State Project No. 99-114/115
U.S. Route 7 & 44 (Main Street)**

Stormwater Pollution Control Plan

**Appendix C
Plan Sheets (Reduced to 11x17)**

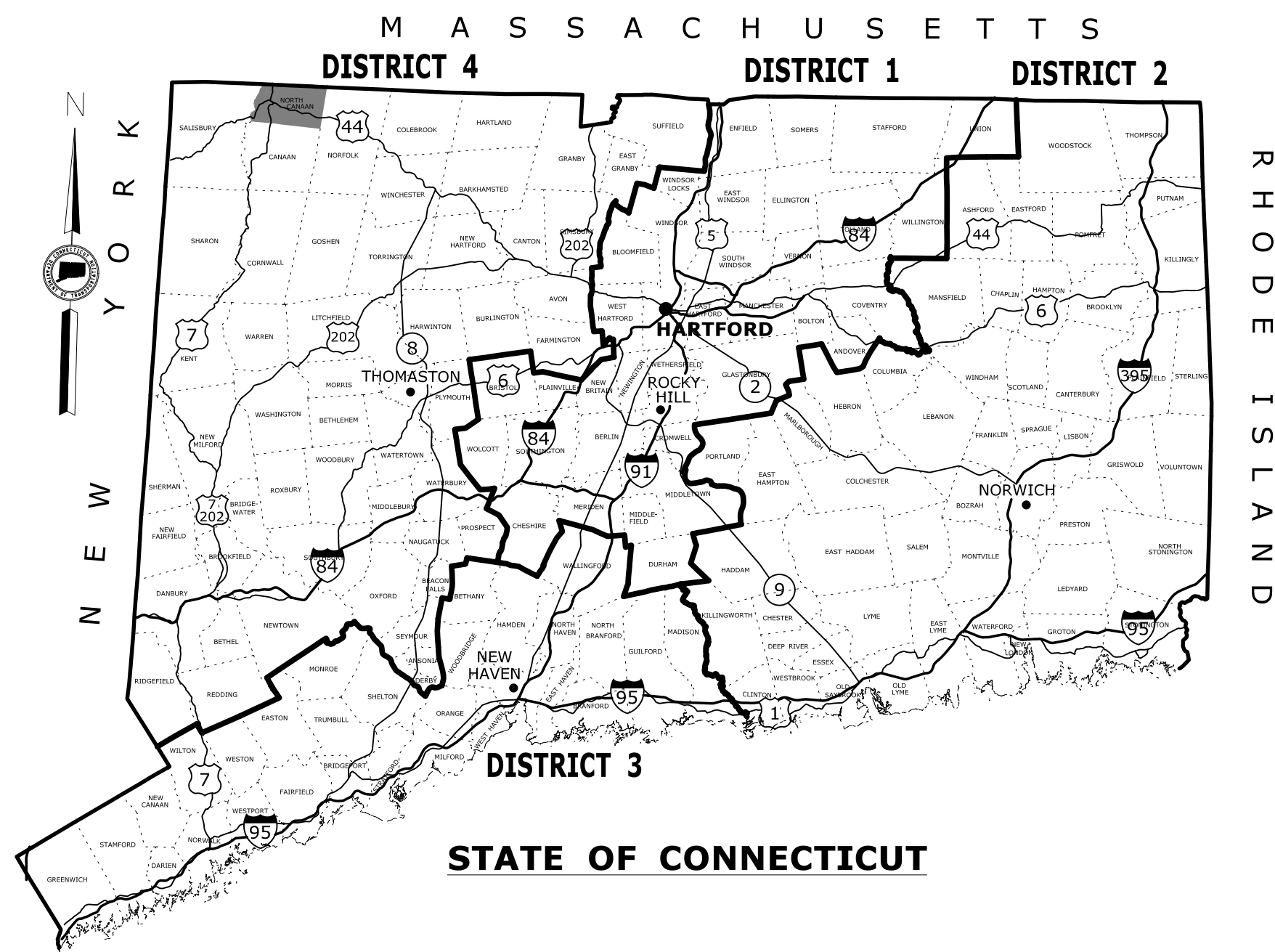
**U.S. Route 7 & 44 Rail Crossings
North Canaan, Connecticut**

ENVIRONMENTAL PERMIT PLANS

STATE PROJECT 99-114/115

U.S. ROUTE 7 & 44 (MAIN STREET)

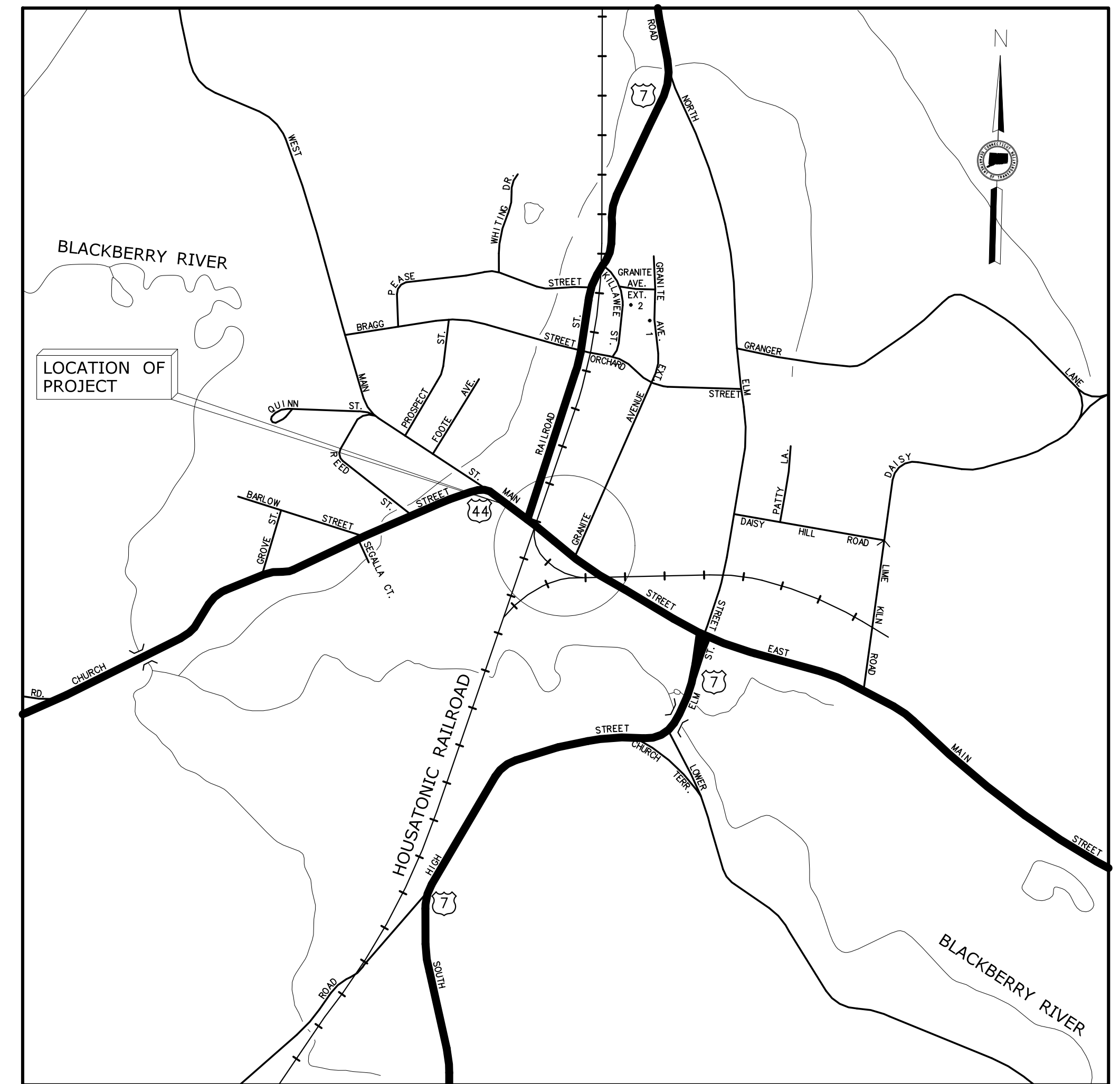
TOWN OF NORTH CANAAN



GENERAL NOTES:

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND ACOE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLAND AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1983
VERTICAL DATUM BASED ON NAVD OF 1983
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW BEST MANAGEMENT PRACTICES (BMP) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.

LIST OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
PMT-01	TITLE SHEET
PMT-02	INDEX MAP
PMT-03 - PMT-08	GENERAL SITE PLAN
PMT-09 - PMT-11	IMPACT PLAN
PMT-12 - PMT-13	MISCELLANEOUS DETAILS

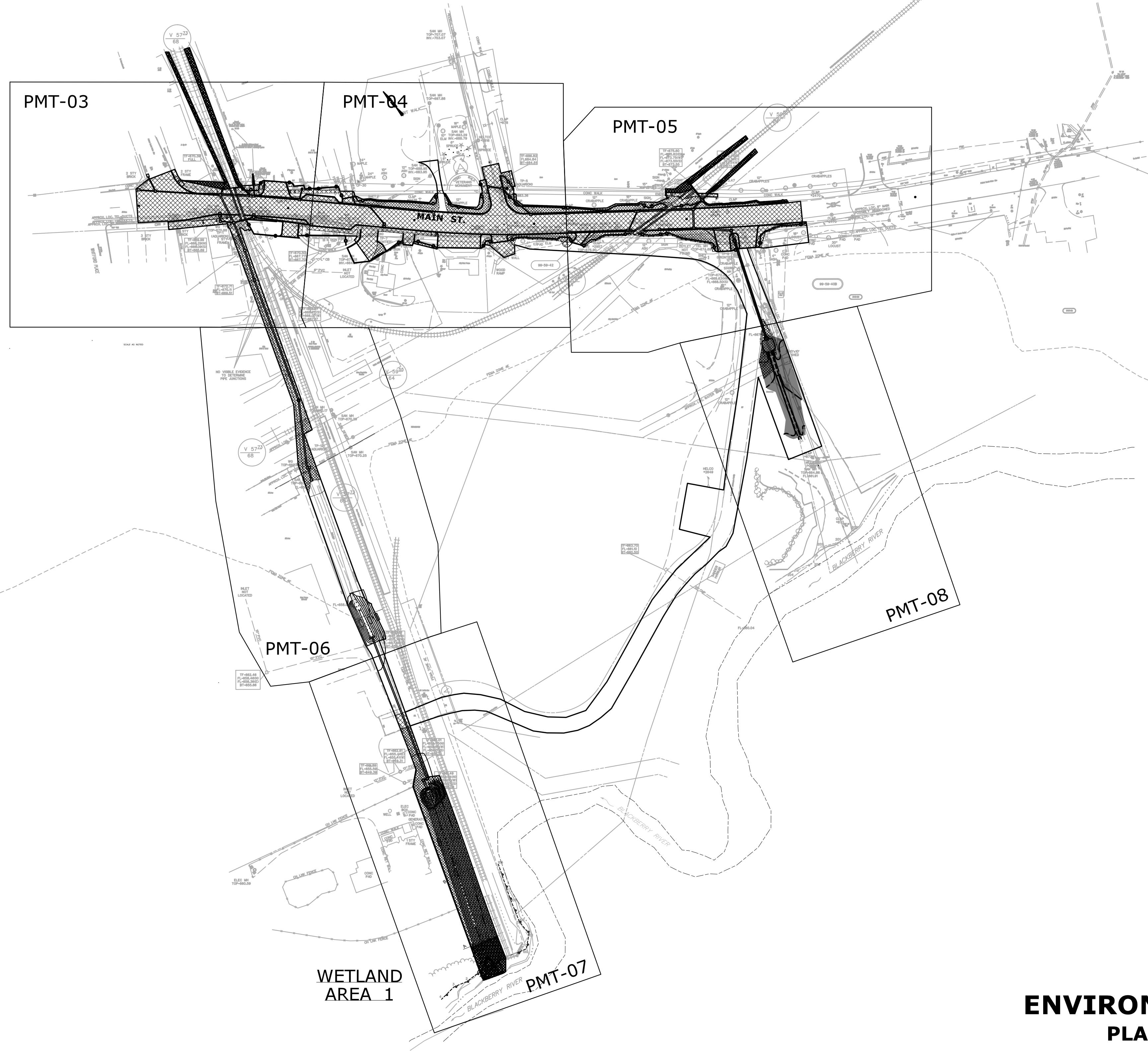
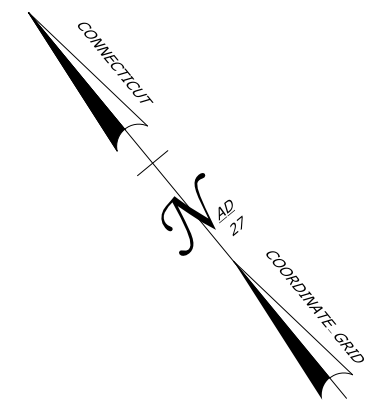


LOCATION PLAN
NOT TO SCALE

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: APRIL 23, 2019

		DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET SCALE 1"=40'	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN DRAWING TITLE: TITLE SHEET	PROJECT NO. 99-114/115 DRAWING NO. PMT-01 SHEET NO.	
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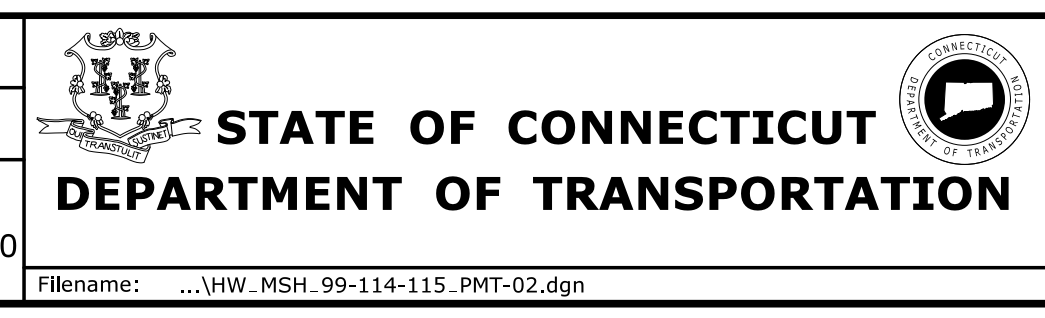


ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
BGR
 CHECKED BY:
DMC
 SCALE IN FEET
 0 100 200
 SCALE 1"=100'



SIGNATURE/
 BLOCK:

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
 CROSSING IMPROVEMENTS
 U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN
 DRAWING TITLE:
INDEX PLAN

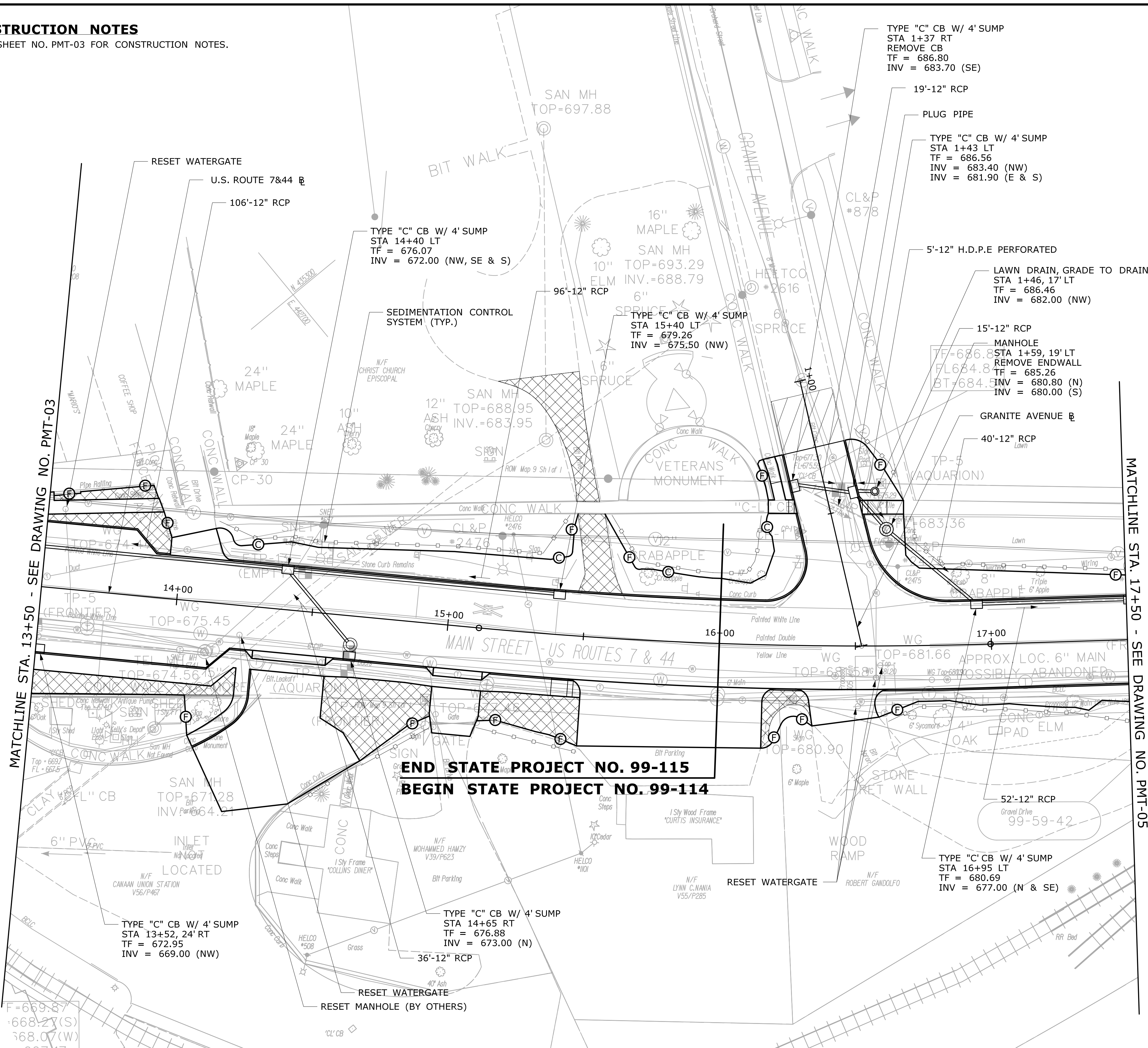
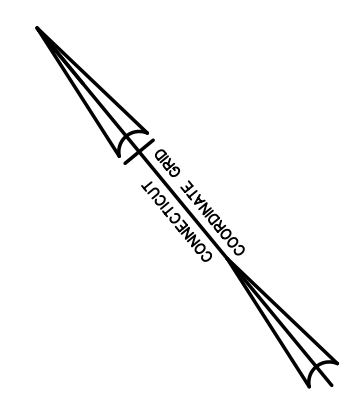
PROJECT NO.
99-114/115
 DRAWING NO.
PMT-02
 SHEET NO.

Plotted Date: 4/23/2019

Filename: ...VHW_MSH_99-114-115_PMT-02.dgn

CONSTRUCTION NOTES

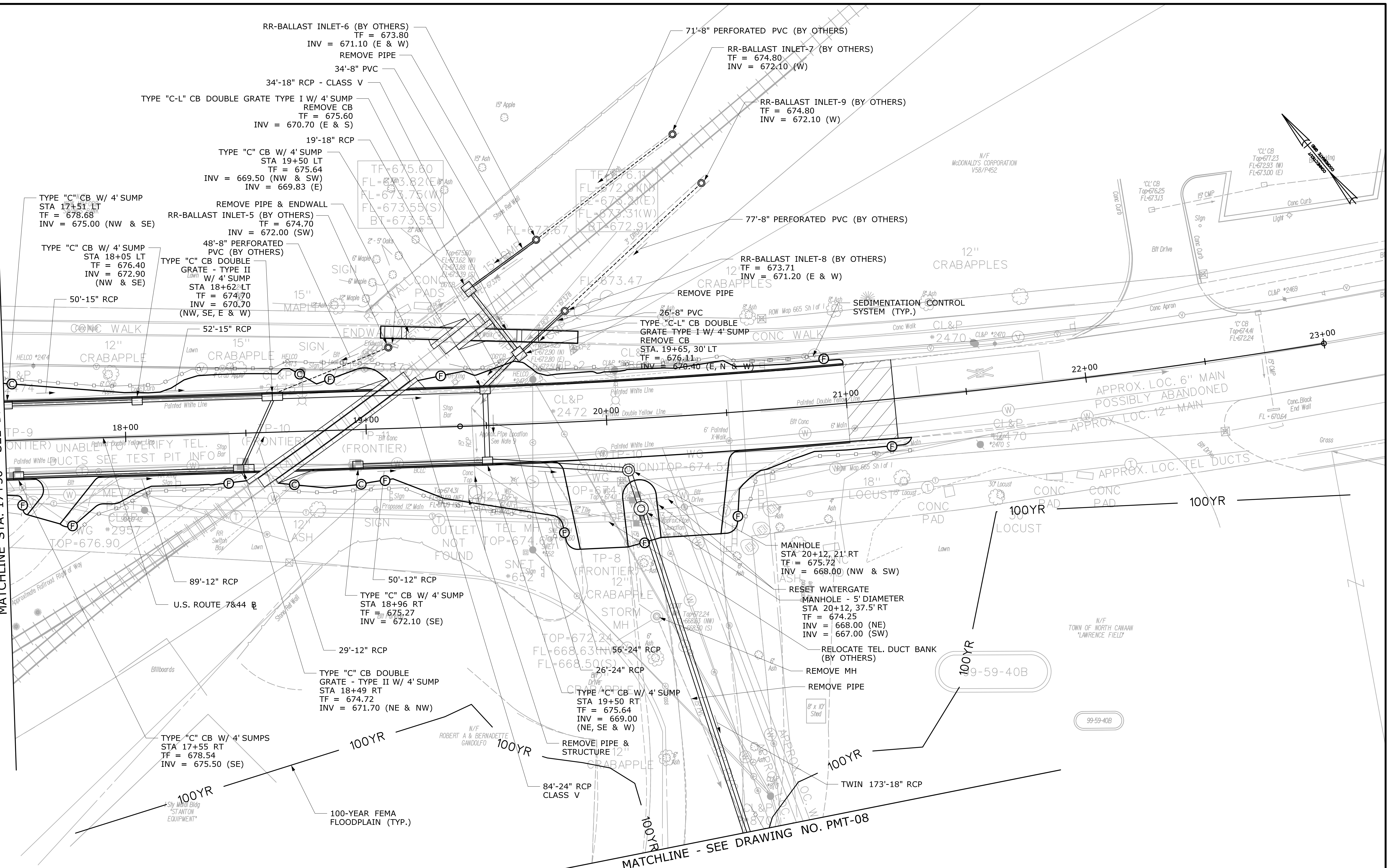
1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

REV. DATE REVISION DESCRIPTION SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115	
							DRAWING NO. PMT-04	
Plotted Date: 4/23/2019						DRAWING TITLE: GENERAL SITE PLAN		SHEET NO.

MATCHLINE STA. 17+50 - SEE DRAWING NO. PMT-04



CONSTRUCTION NOTES
 1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

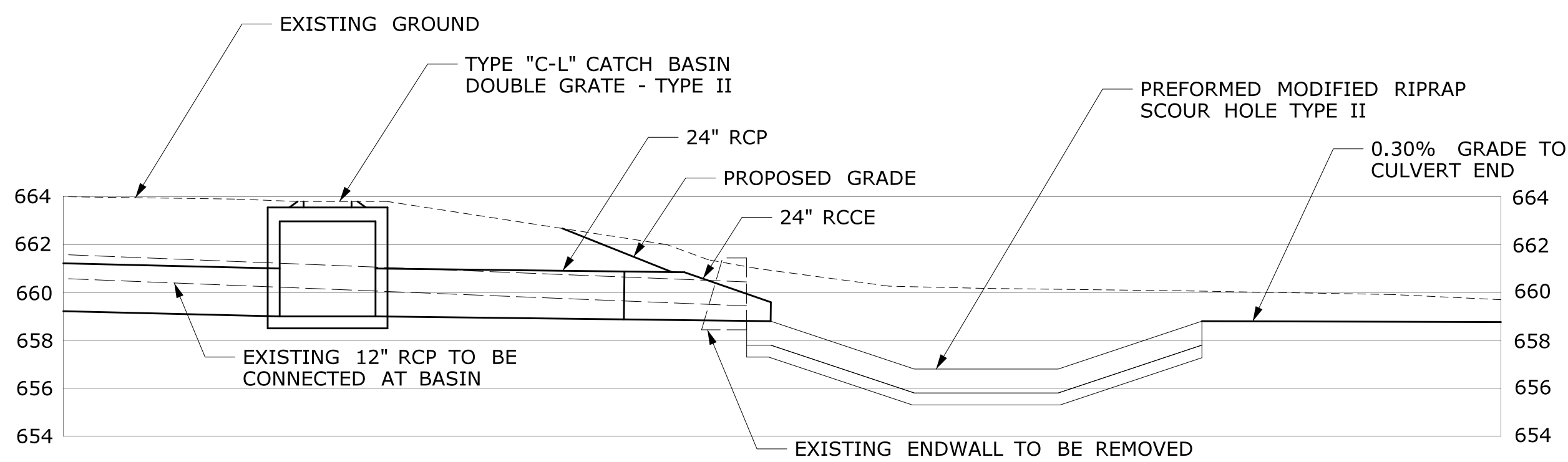
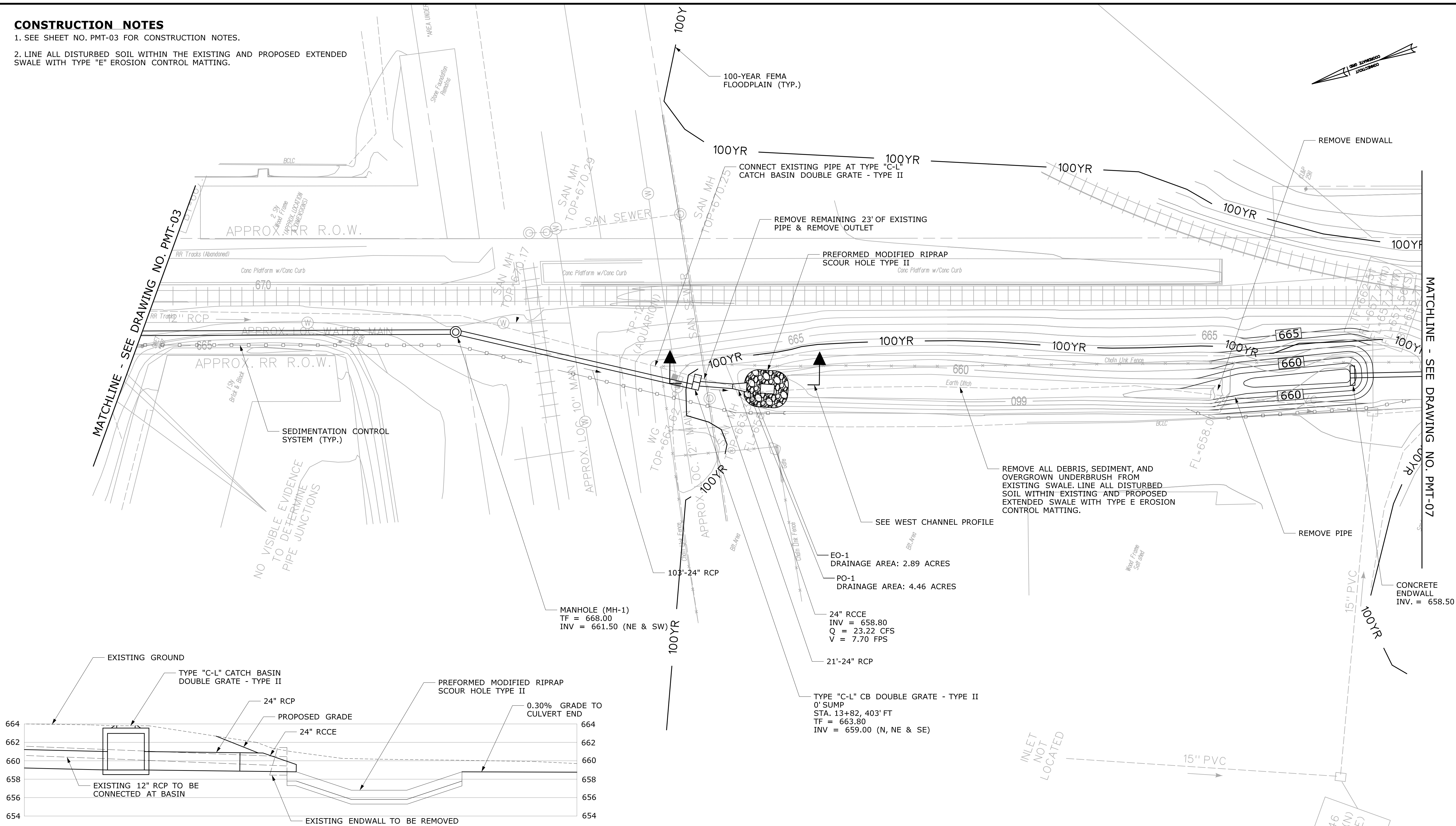
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CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.
2. LINE ALL DISTURBED SOIL WITHIN THE EXISTING AND PROPOSED EXTENDED SWALE WITH TYPE "E" EROSION CONTROL MATTING.

MATCHLINE - SEE DRAWING NO. PMT-03

MATCHLINE - SEE DRAWING NO. PMT-07



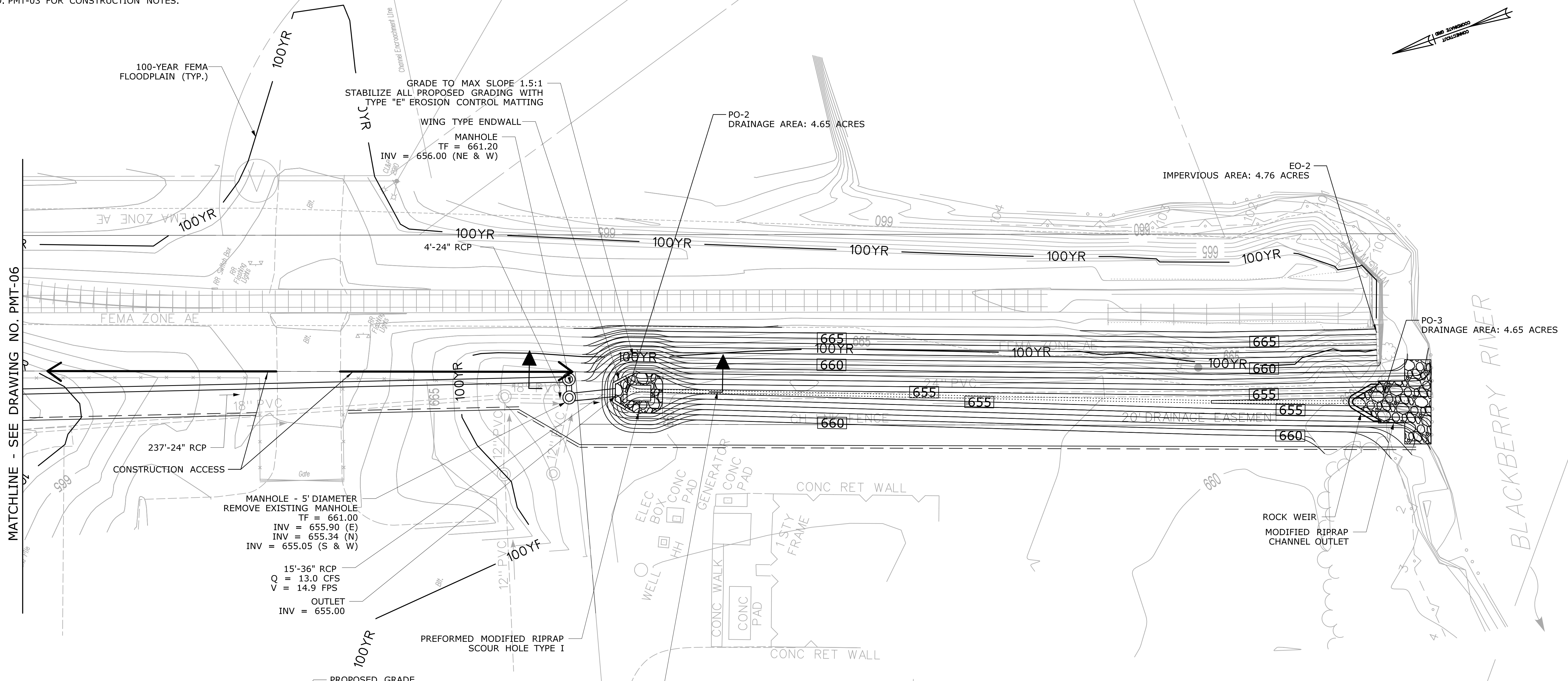
WEST CHANNEL PROFILE
SCALE: 1" = 5'

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

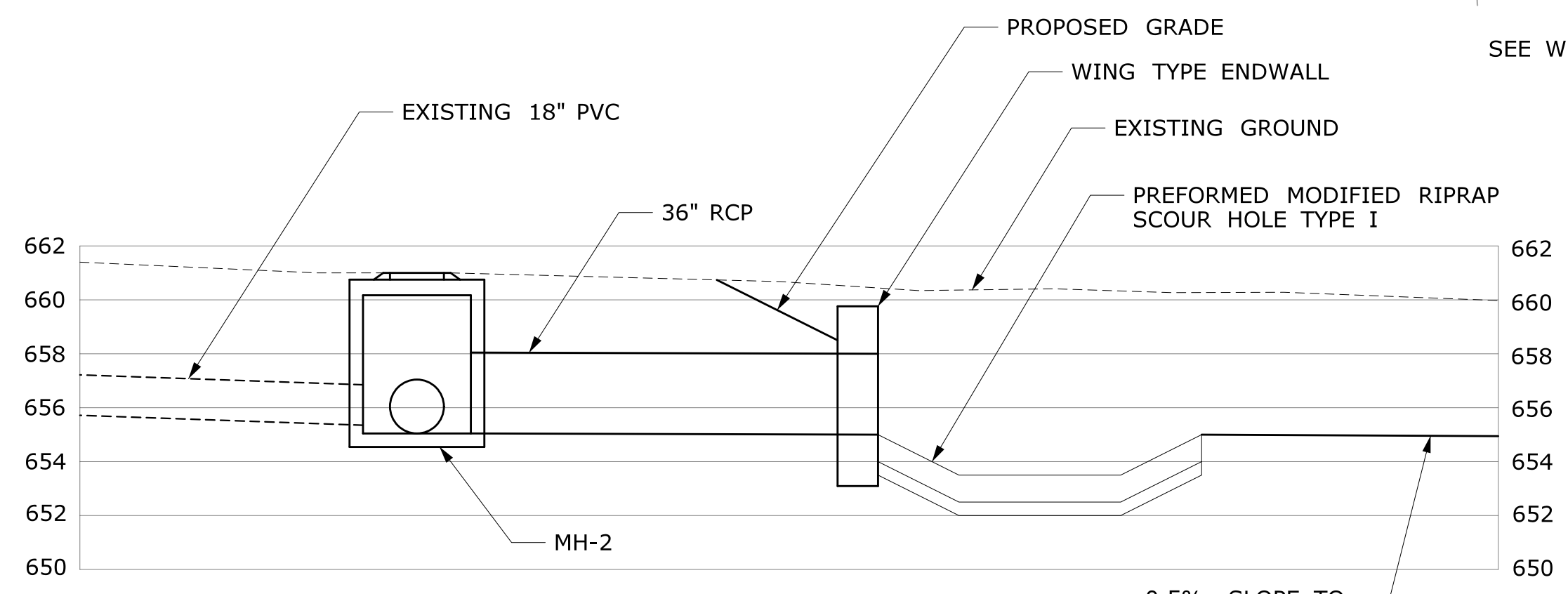
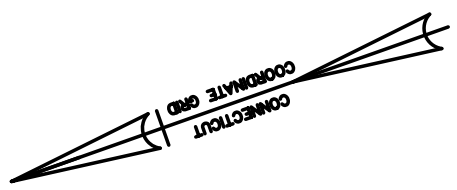
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 4/23/2019					

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



MATCHLINE - SEE DRAWING NO. PMT-06



WEST OUTLET PROFILE
SCALE: 1" = 5'

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

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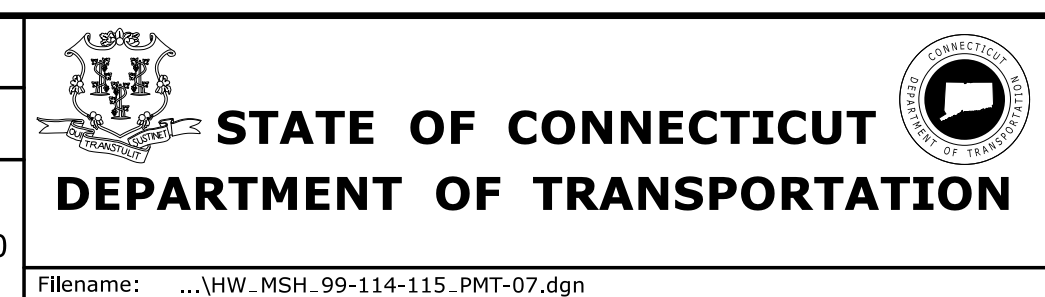
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 4/30/2019

DESIGNER/DRAFTER:
BGR

CHECKED BY:
DMC

SCALE IN FEET
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SCALE 1"=20'



SIGNATURE/
BLOCK:

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN

DRAWING TITLE:
GENERAL SITE PLAN

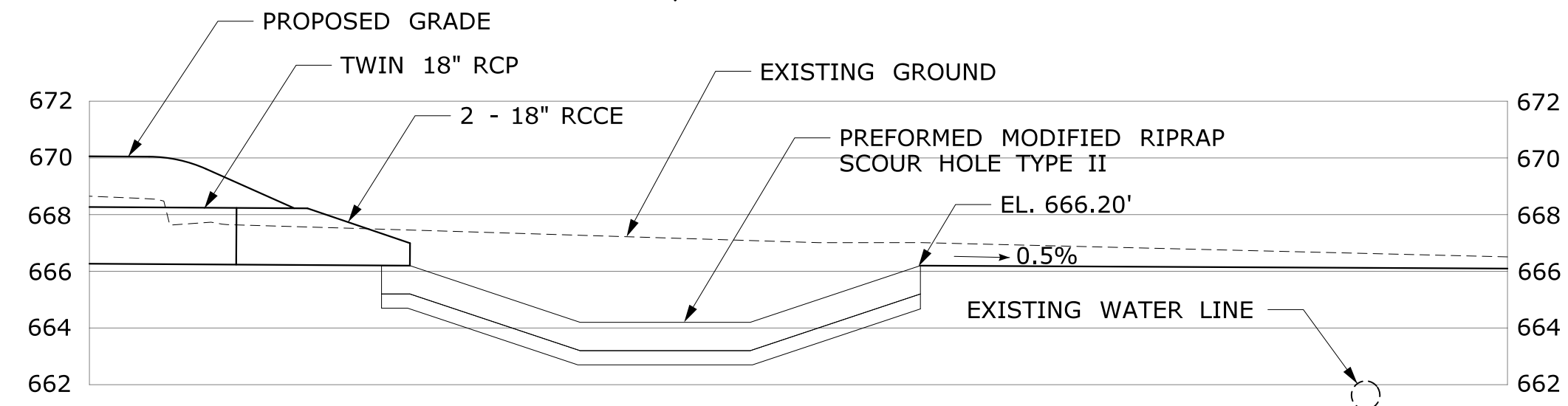
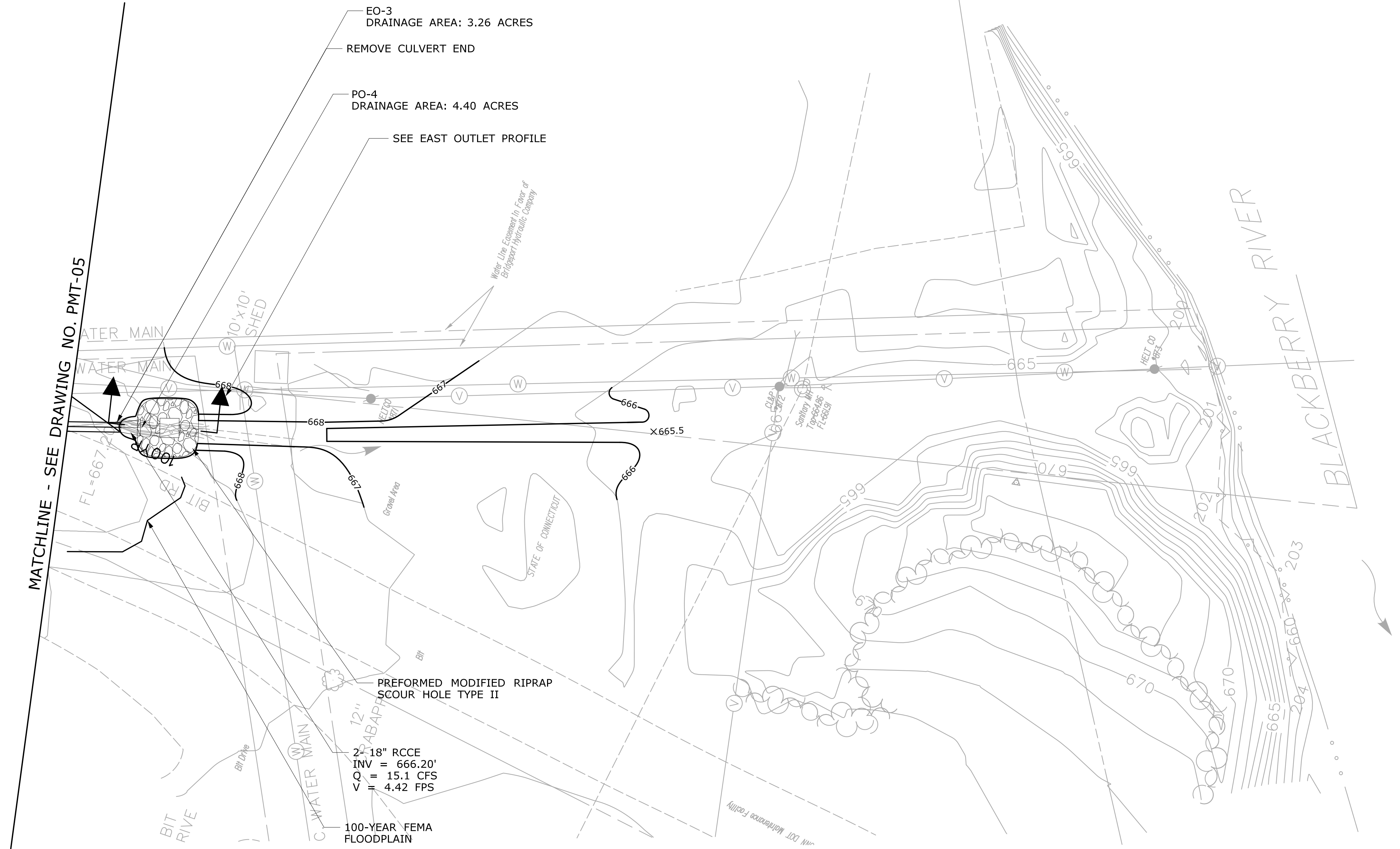
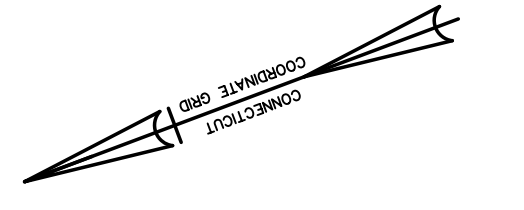
PROJECT NO.
99-114/115

DRAWING NO.
PMT-07

SHEET NO.

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



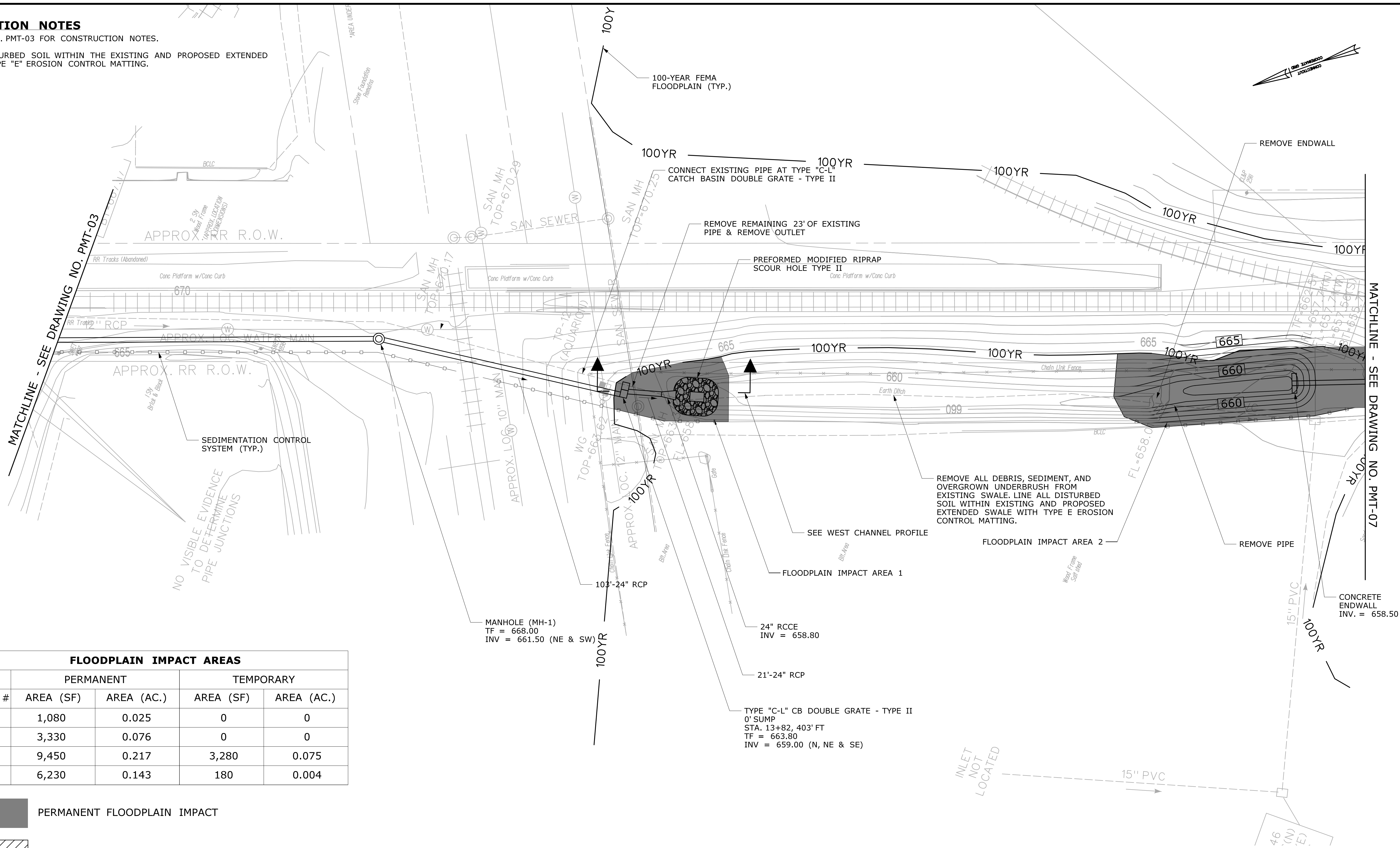
EAST OUTLET PROFILE
SCALE: 1" = 5'

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

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	REV.	DATE	REVISION DESCRIPTION	SHEET NO.											
CHECKED BY: DMC	SCALE IN FEET 0 20 40 SCALE 1"=20'	DRAWING NO. PMT-08													

CONSTRUCTION NOTES

- SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.
- LINE ALL DISTURBED SOIL WITHIN THE EXISTING AND PROPOSED EXTENDED SWALE WITH TYPE "E" EROSION CONTROL MATTING.



MATCHLINE - SEE DRAWING NO. PMT-03

MATCHLINE - SEE DRAWING NO. PMT-07

FLOODPLAIN IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,230	0.143	180	0.004

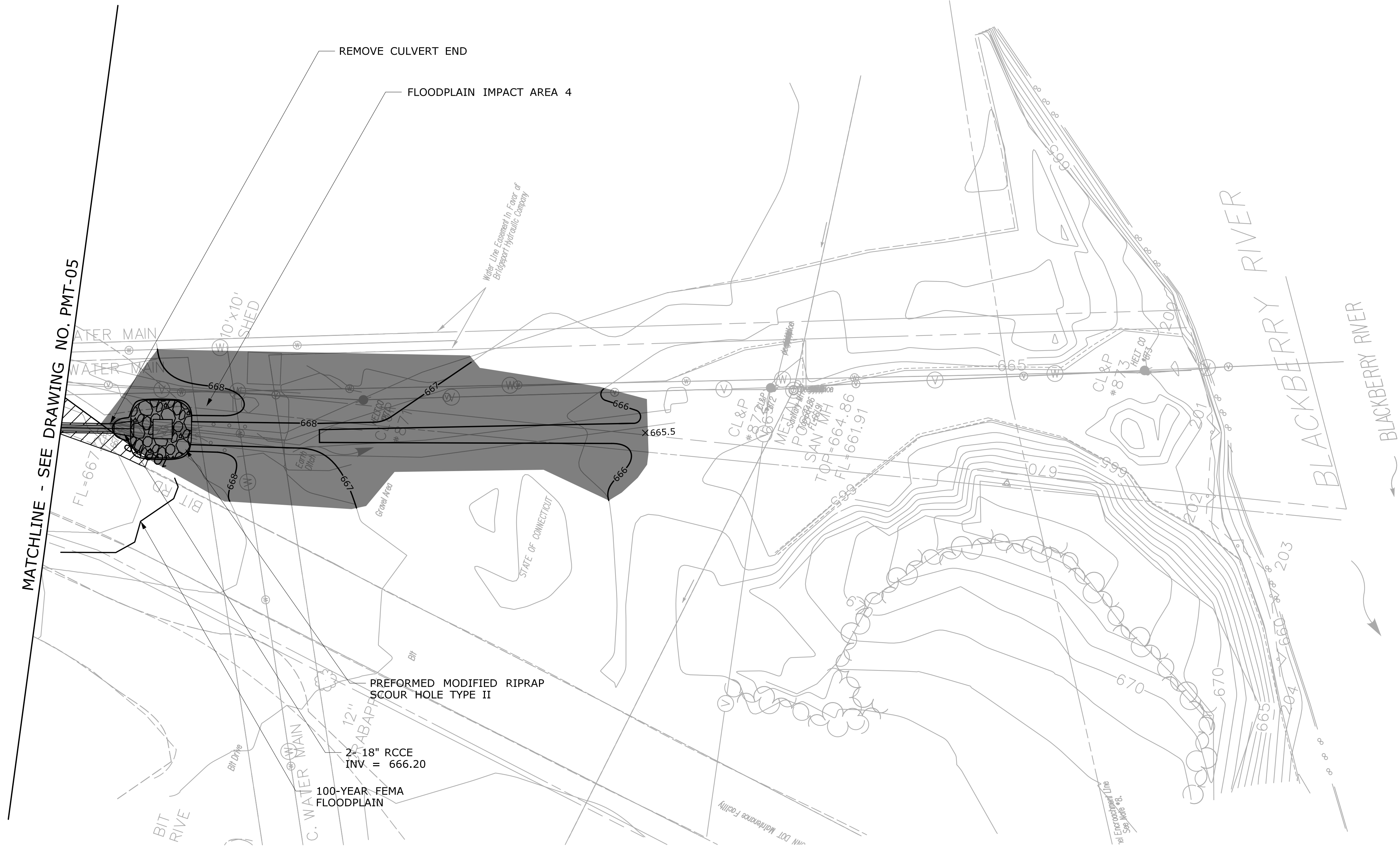
- PERMANENT FLOODPLAIN IMPACT
- TEMPORARY FLOODPLAIN IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

<p>DESIGNER/DRAFTER: BGR</p> <p>CHECKED BY: DMC</p> <p>SCALE IN FEET 0 20 40 SCALE 1"=20'</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>Filename: ...VHW_MSH_99-114-115_PMT-09.dgn</p>	<p>SIGNATURE/BLOCK:</p>	<p>PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)</p>	<p>TOWN: NORTH CANAAN</p>	<p>PROJECT NO. 99-115</p> <p>DRAWING NO. PMT-09</p> <p>SHEET NO.</p>
<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>	<p>REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 4/23/2019</p>				

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



FLOODPLAIN IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,230	0.143	180	0.004

WETLAND IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	610	0.014	0	0

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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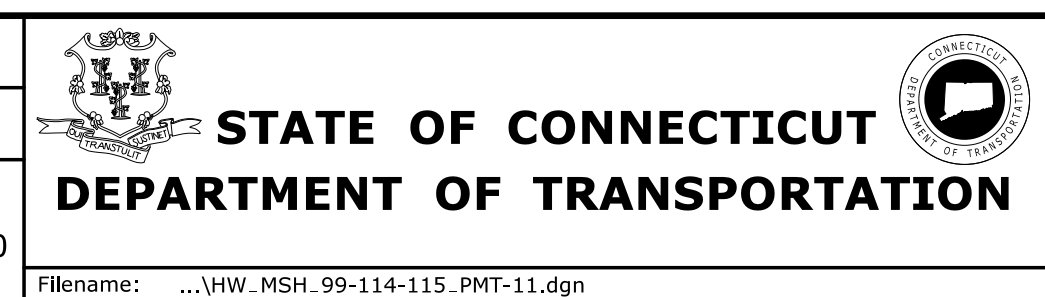
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 4/23/2019

DESIGNER/DRAFTER:
BGR

CHECKED BY:
DMC

SCALE IN FEET
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SCALE 1"=20'



SIGNATURE/
BLOCK:

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)**

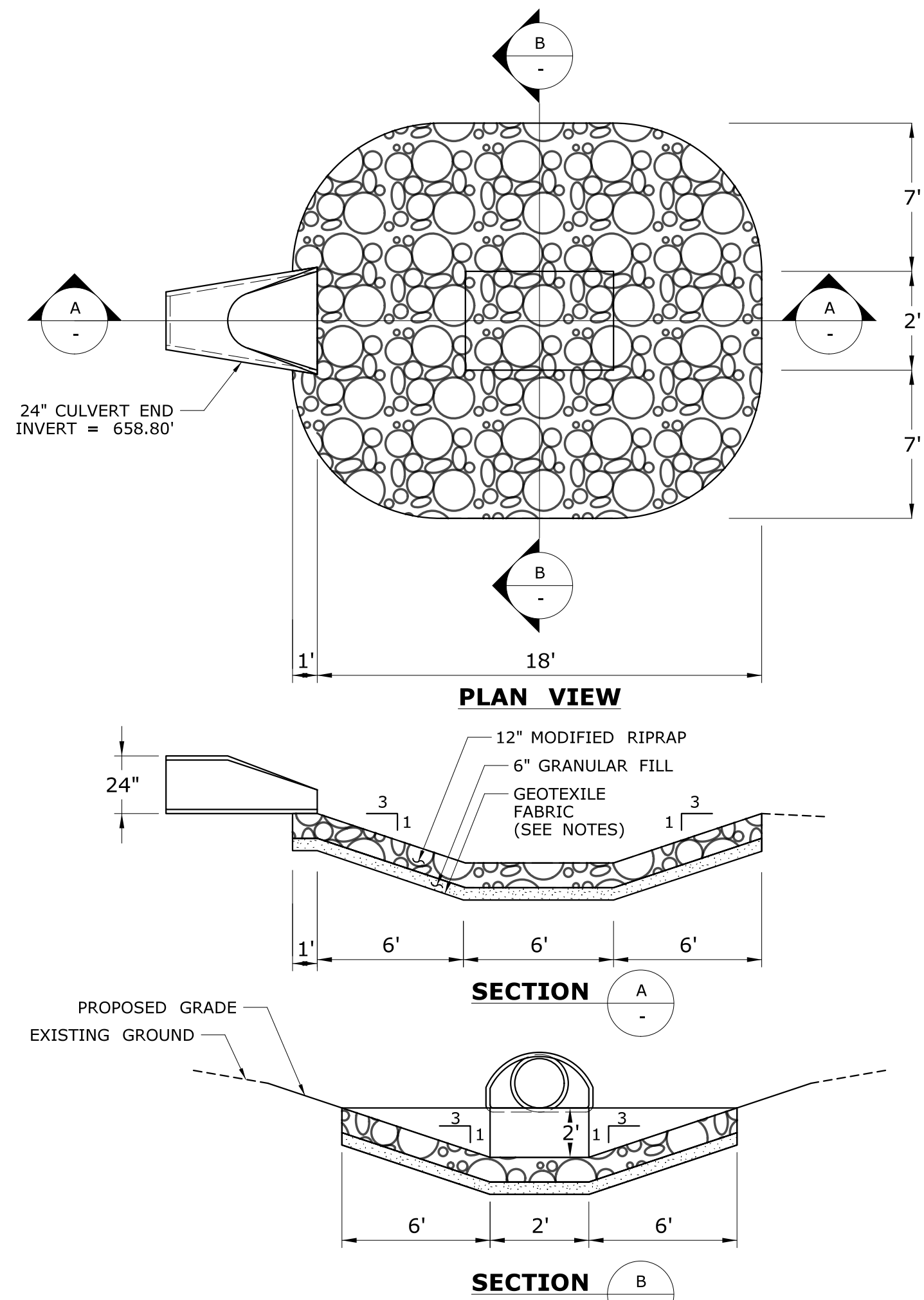
TOWN:
NORTH CANAAN

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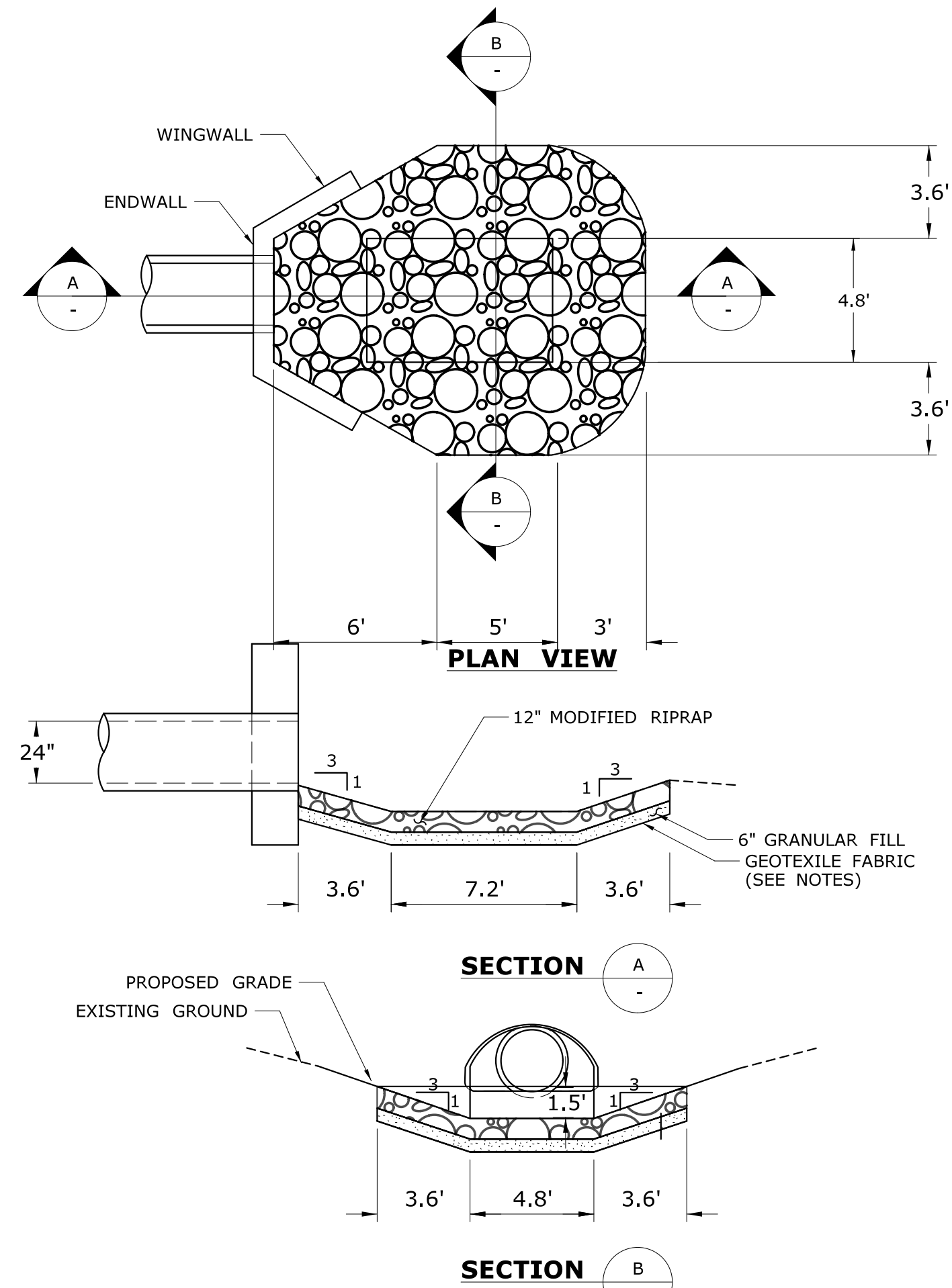
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99-114/115

DRAWING NO.
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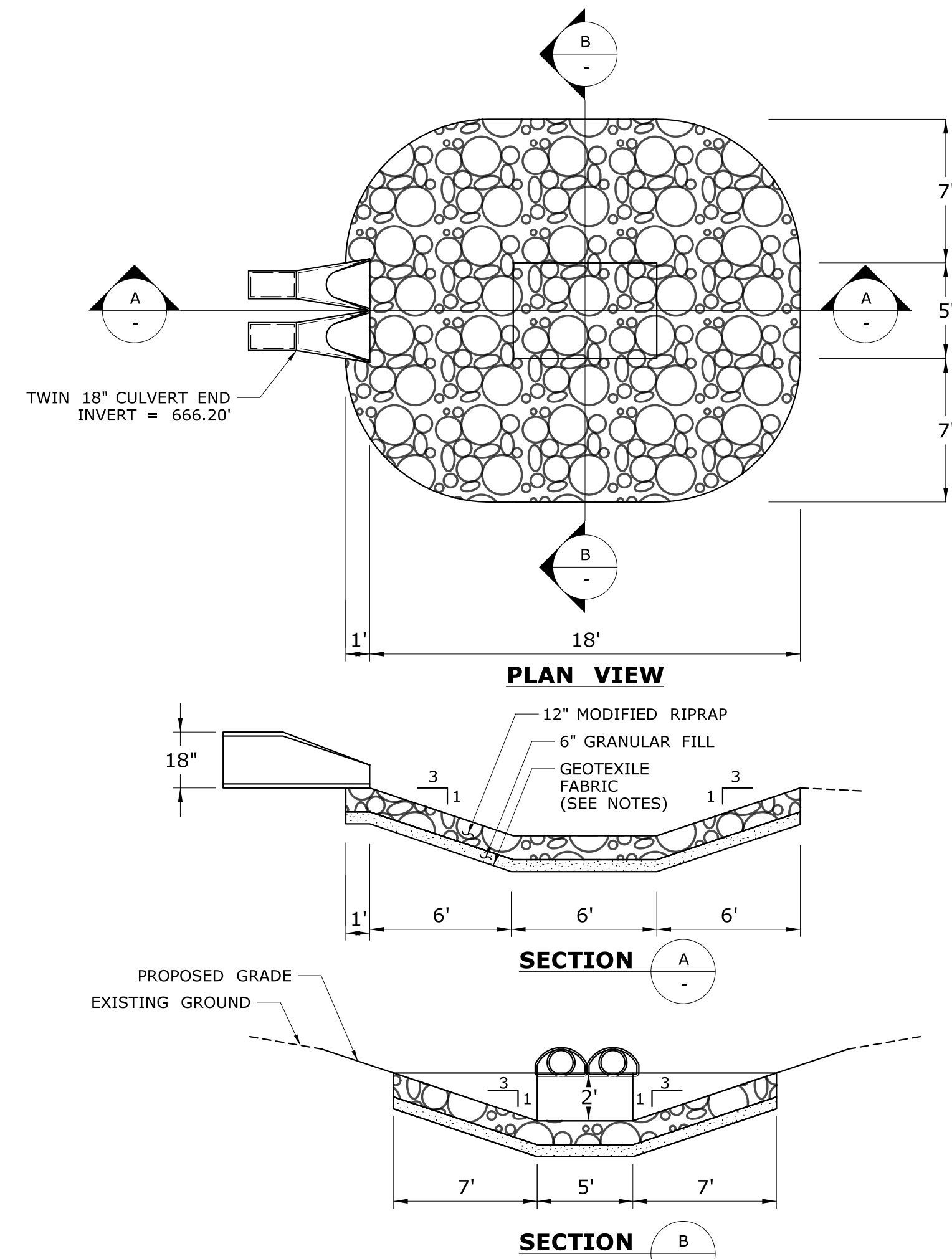
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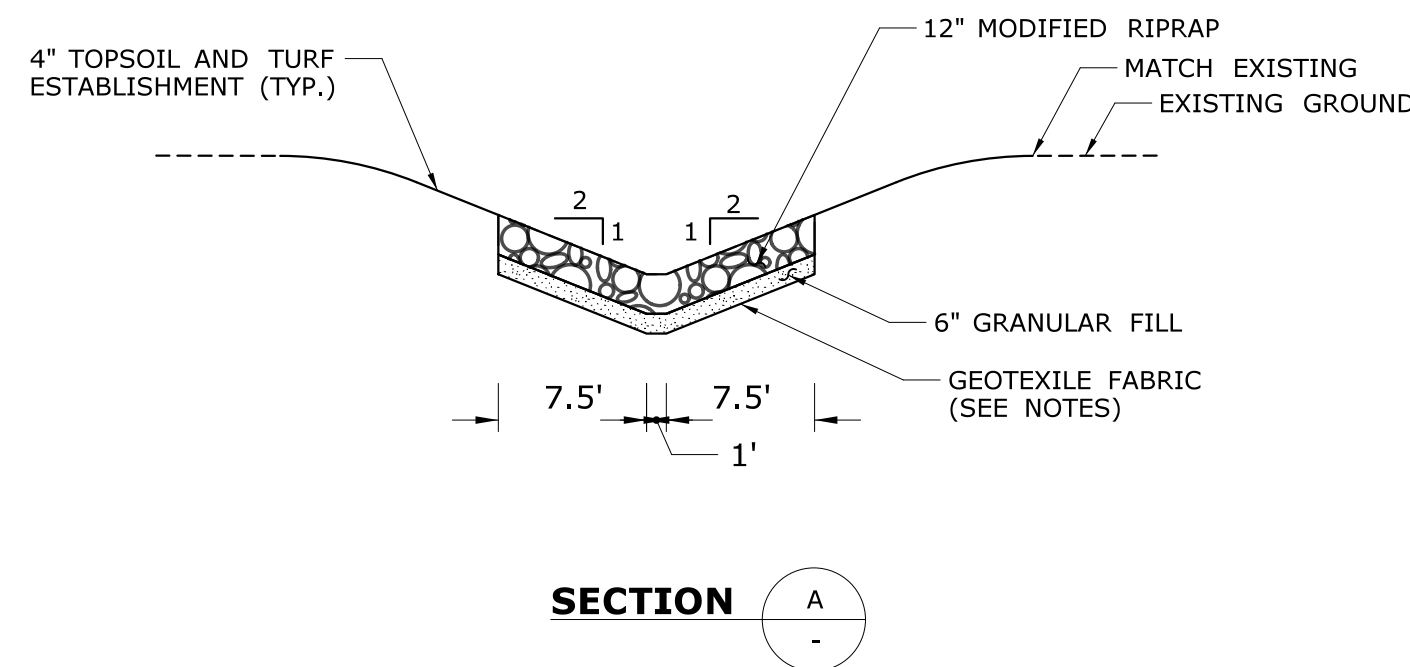
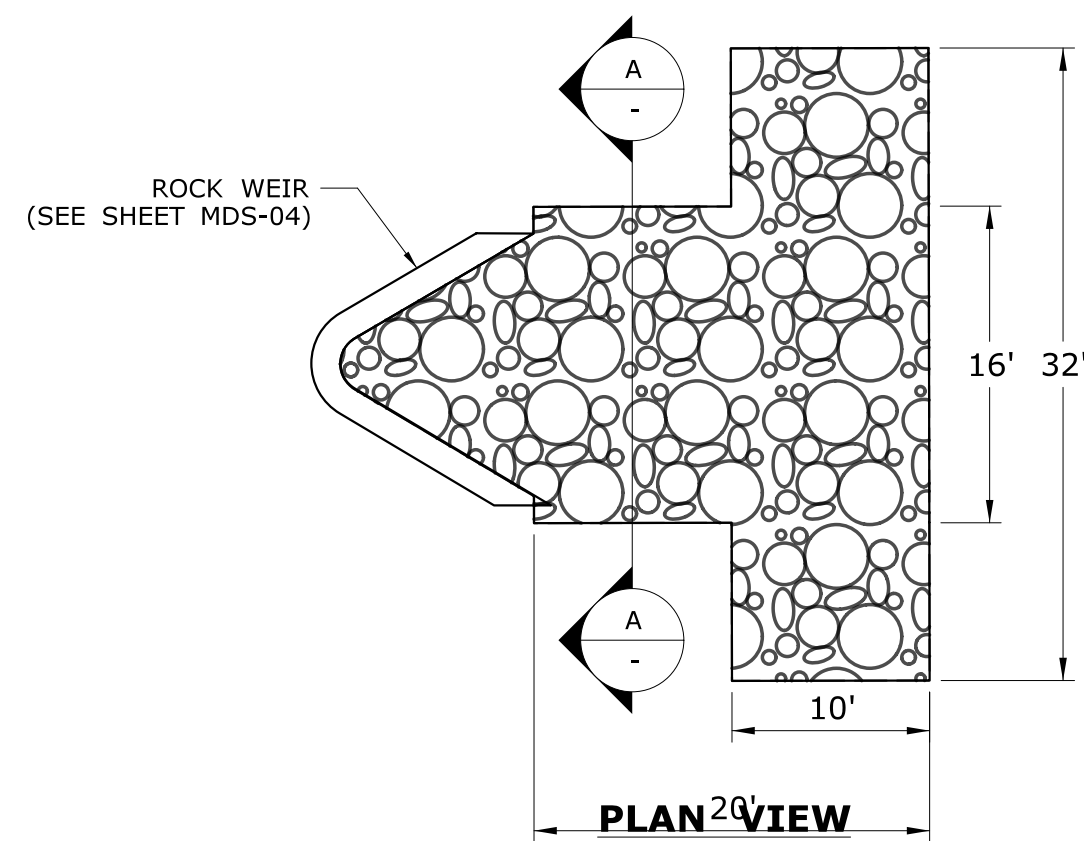
PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - WESTERN OUTLET
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE I
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - EASTERN OUTLET
NOT TO SCALE



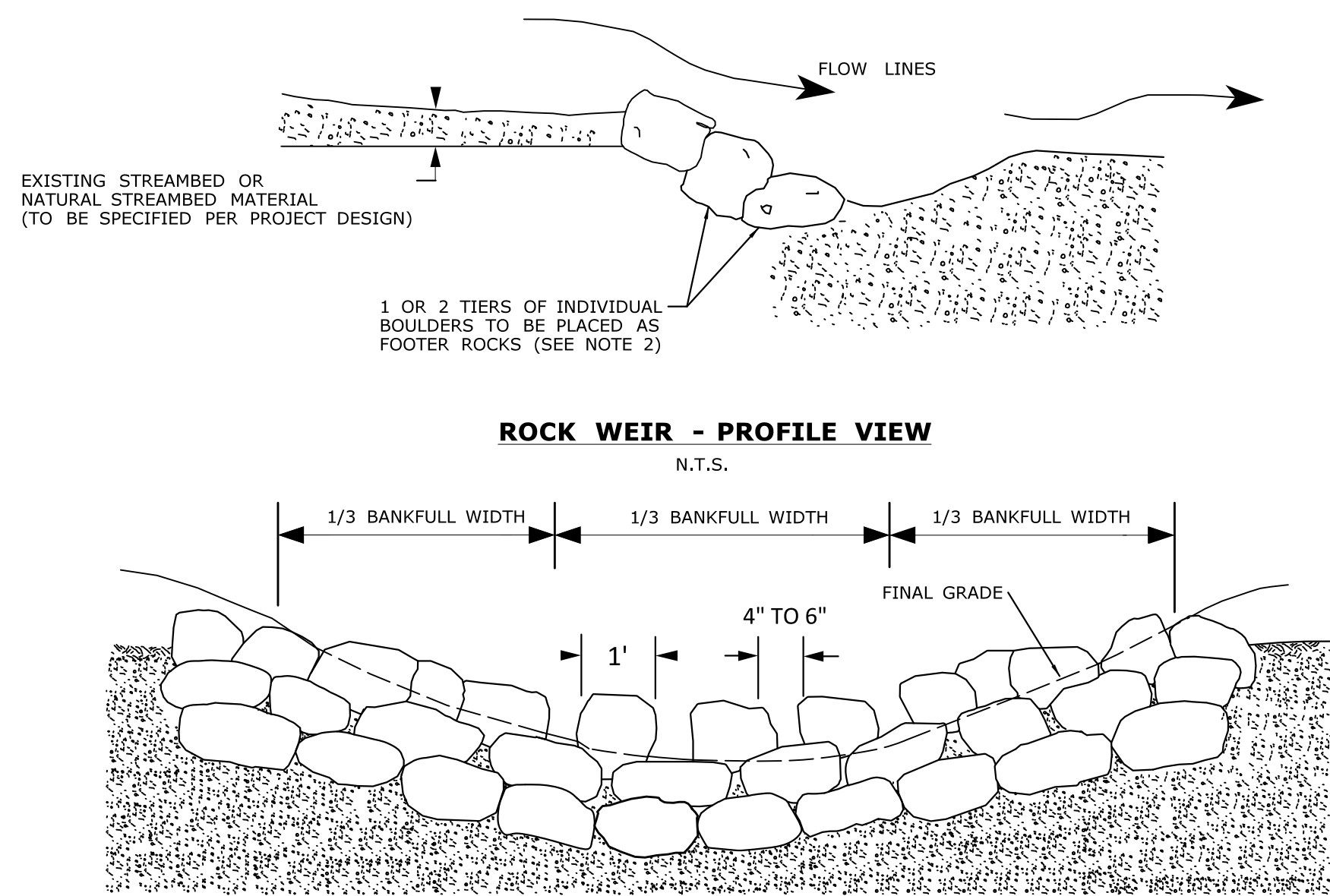
MODIFIED RIPRAP CHANNEL OUTLET
NOT TO SCALE

- NOTES:
 1. THE CONTRACTOR SHALL INSTALL A LAYER OF GEOTEXTILE FABRIC PRIOR TO INSTALLING THE LAYER OF GRANULAR FILL.
 2. THE GEOTEXTILE FABRIC SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS & SECTION M.08.01-19 OF THE STANDARD SPECIFICATIONS FORM 817.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

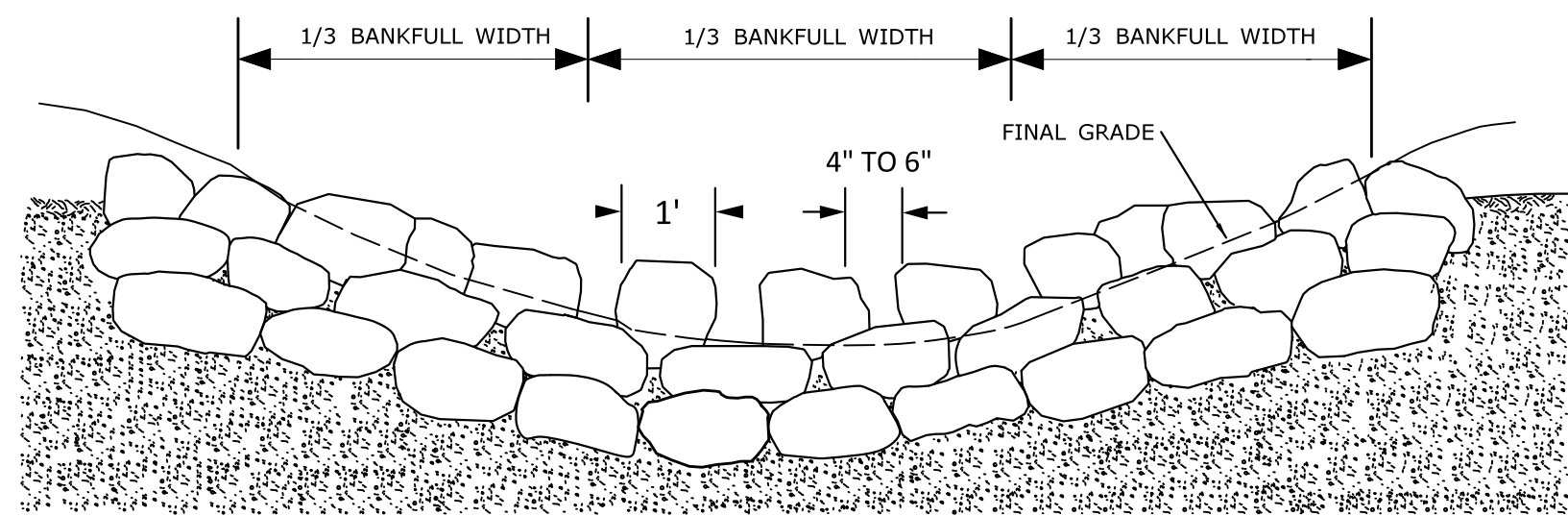
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																
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-	-	-	-																																
-	-	-	-																																

DRAWING TITLE:
MISCELLANEOUS DETAIL SHEET



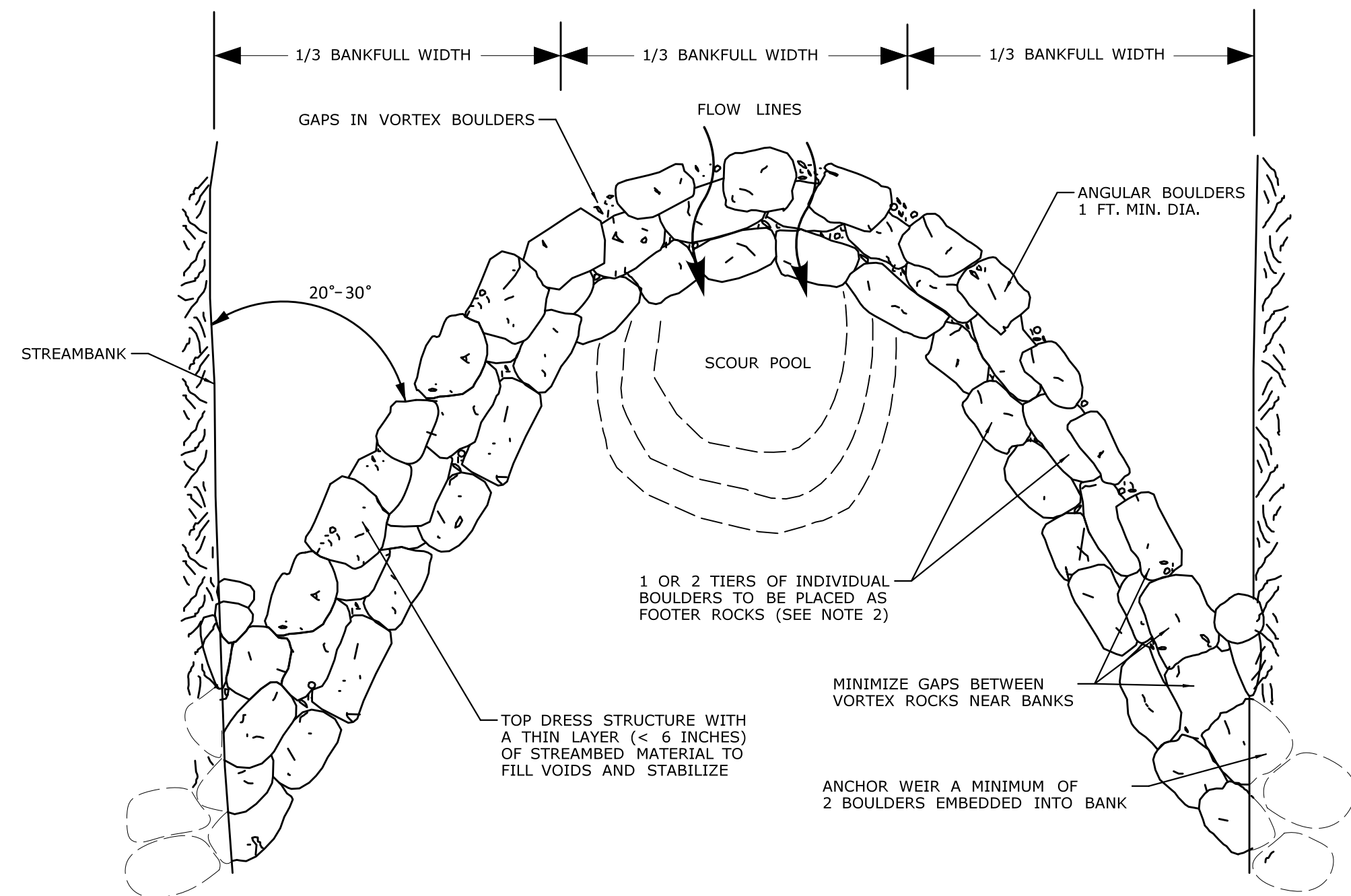
ROCK WEIR - PROFILE VIEW

N.T.S.



ROCK WEIR - SECTION VIEW (UPSTREAM)

N.T.S.

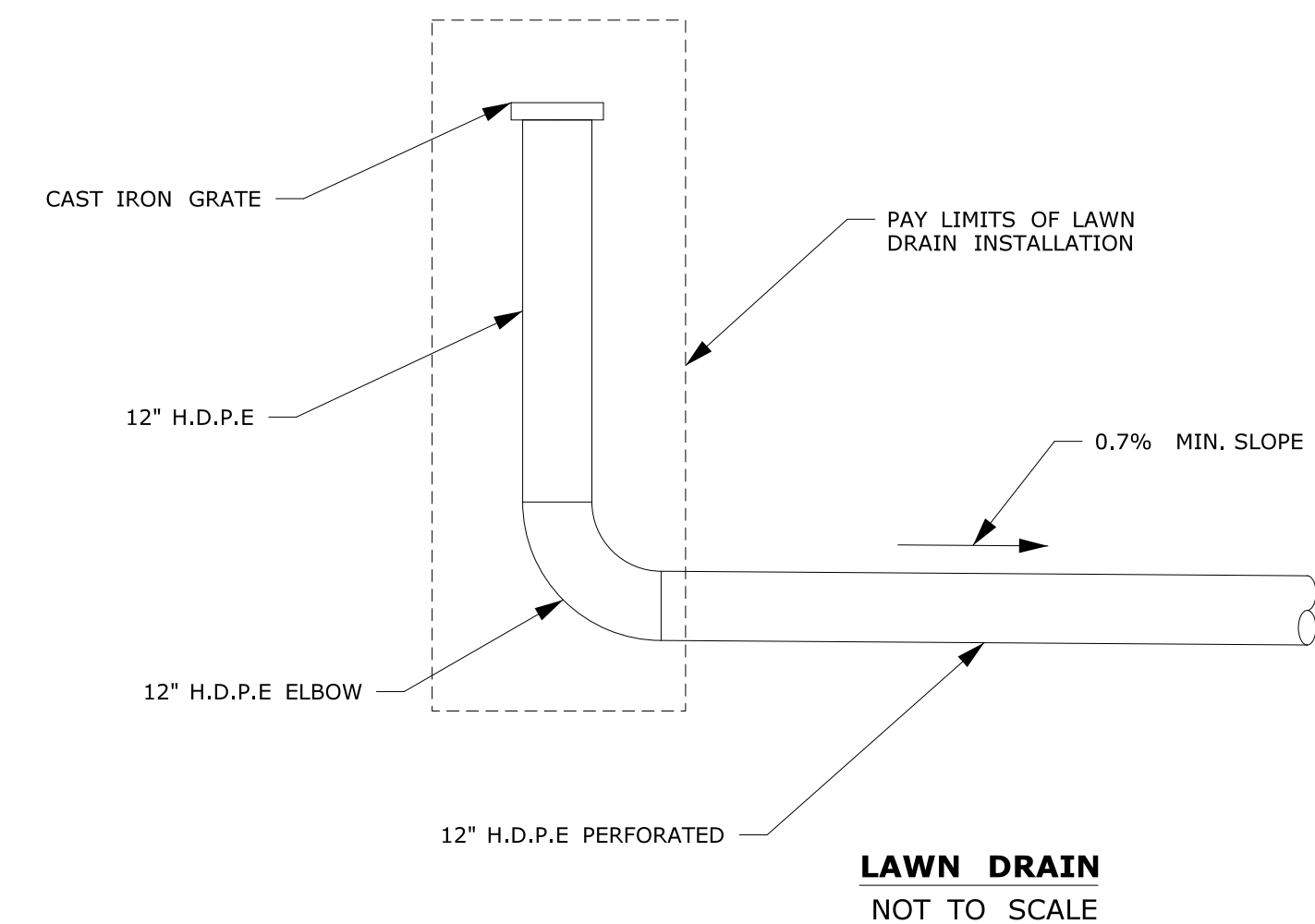


ROCK WEIR - PLAN VIEW

N.T.S.

NOTE:

1. PLACEMENT OF THE ROCK WEIR SHALL BE DIRECTED IN THE FIELD BY THE ENGINEER OR THEIR AUTHORIZED DELEGATE. SEE SPECIAL PROVISION "ROCK WEIR".
2. FOOTER ROCKS SHALL SERVE AS THE FOUNDATION FOR THE TOP LAYER OF THE WEIR. FOOTER ROCKS SHALL HAVE REASONABLE FLAT TOPS AND BOTTOMS TO ENABLE BETTER PLACEMENT OF THE TOP LAYER OF THE WEIR.

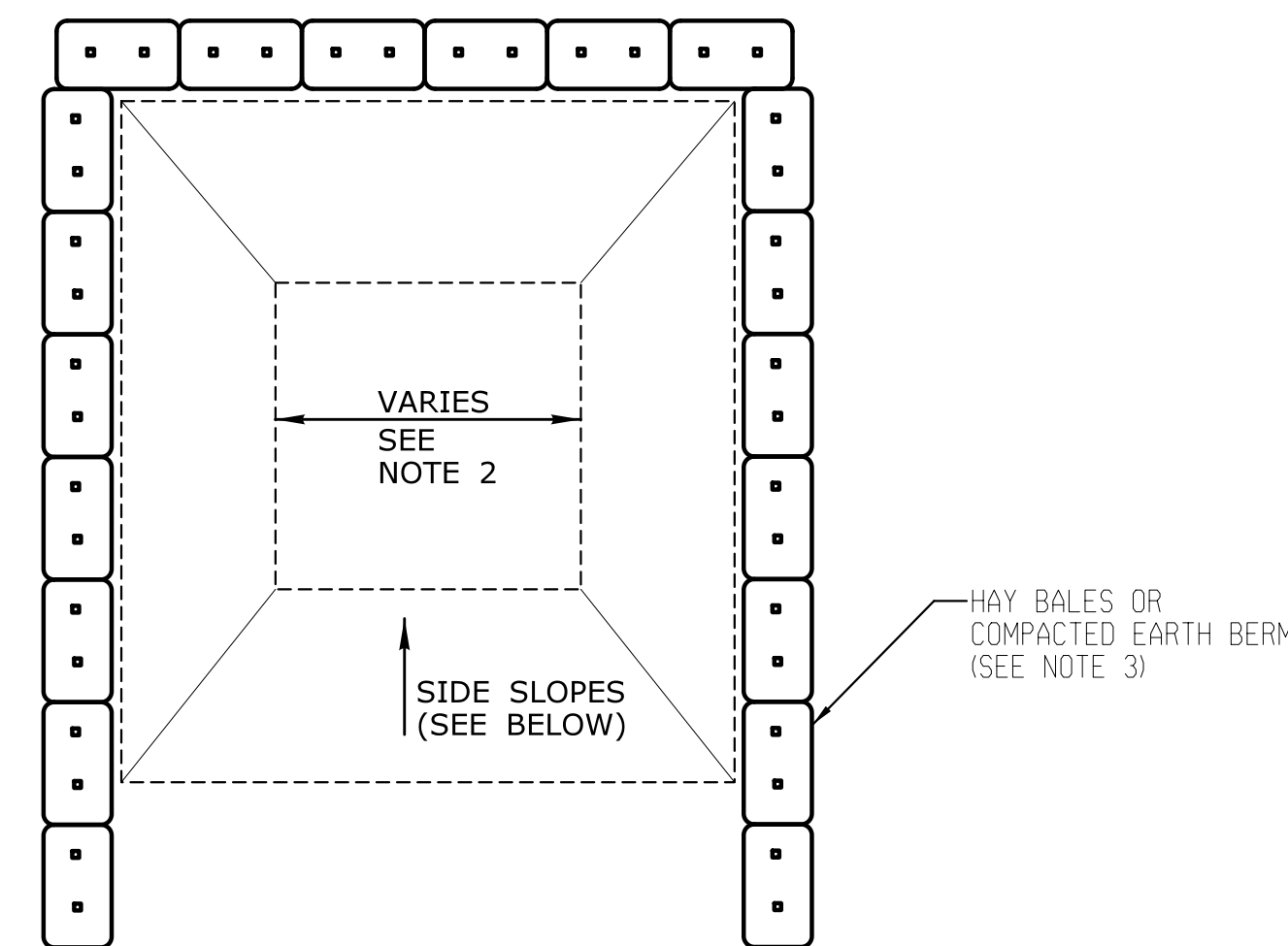


LAWN DRAIN

NOT TO SCALE

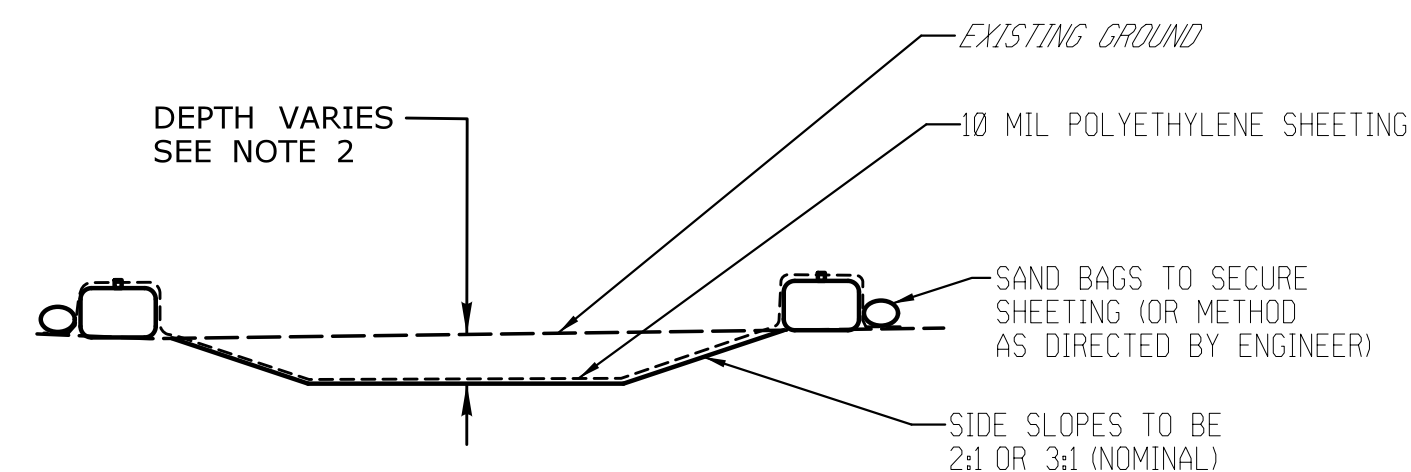
NOTES

1. CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. THE CONCRETE WASHOUT AREA SHALL BE ENTIRELY SELF-CONTAINED.
2. THE CONTRACTOR SHALL SUBMIT THE DESIGN, LOCATION AND SIZING OF THE CONCRETE WASHOUT AREA(S) WITH THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN AND SHALL BE APPROVED BY THE ENGINEER.
LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED AT LEAST 50 FEET FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE. THE FLOOD CONTINGENCY PLAN MUST ADDRESS THE CONCRETE WASHOUT IF THE WASHOUT IS TO BE LOCATED WITHIN THE FLOODPLAIN.
SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.
3. SURFACE DISCHARGE IS UNACCEPTABLE. THEREFORE, HAY BALES OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT.
4. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER APPROVED METHOD.
5. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTEGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. (AS REQUIRED BY THE CONSTRUCTION SITE ENVIRONMENTAL INSPECTION REPORT) WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS.
6. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S HEIGHT. THE WASTE CAN BE STORED AT AN UPLAND LOCATION, AS APPROVED BY THE ENGINEER. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS, REGULATIONS, AND GUIDELINES.
7. PAYMENT FOR THIS ITEM IS TO BE INCLUDED UNDER THE GENERAL COST OF THE WORK FOR THE PROJECT, INCLUDING SITE RESTORATION.



CONCRETE WASHOUT AREA

NOT TO SCALE
(SEE NOTE 2)



NOTES:

1. THE CONTRACTOR SHALL FURNISH, IN CONFORMANCE WITH SECTION 1.06 - CONTROL OF MATERIALS, FORM 817, PRODUCT CUT SHEETS AND DESCRIPTIVE LITERATURE FOR LAWN DRAINS (INCLUDING THE GRATE SIZE AND STYLE) TO THE ENGINEER FOR APPROVAL.
2. INSTALLATION OF LAWN DRAIN SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS & SECTION 5.07 IN THE STANDARD SPECIFICATIONS FORM 817.
3. GRATE, ELBOW AND VERTICAL H.D.P.E. PIPE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "LAWN DRAIN."

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: APRIL 23, 2019

<table border="1"> <tr> <td>REV.</td> <td>DATE</td> <td>REVISION DESCRIPTION</td> <td>SHEET NO.</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>	<p>DESIGNER/DRAFTER: B.G.R.</p> <p>CHECKED BY: D.M.C.</p> <p>SCALE AS NOTED</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>Filename: ...VHW_MSH_99-114-115_PMT-13.dgn</p>	<p>SIGNATURE/ BLOCK:</p>	<p>PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)</p>	<p>TOWN: NORTH CANAAN</p> <p>DRAWING TITLE: MISCELLANEOUS DETAIL SHEET</p>	<p>PROJECT NO. 99-114/115</p> <p>DRAWING NO. PMT-13</p> <p>SHEET NO.</p>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																				
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**State Project No. 99-114/115
U.S. Route 7 & 44 (Main Street)**

Stormwater Pollution Control Plan

**Appendix D
Stormwater Monitoring Report**

**U.S. Route 7 & 44 Rail Crossings
North Canaan, Connecticut**



**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, issued 8/21/13, effective 10/1/13**
Stormwater Monitoring Report

SITE INFORMATION

Permittee: Connecticut Department of Transportation, District 4 Construction

Mailing Address: 359 South Main Street, Thomaston, CT 06787

Business Phone: 203-591-3540 ext.: _____ Fax: _____

Contact Person: John S. Dunham Title: District 4 Engineer

Site Name: Project No. 99-114/115

Site Address: State Route 7/44 Housatonic Railroad crossings

Receiving Water (name, basin): Blackberry River, 6100

Stormwater Permit No. GSN

SAMPLING INFORMATION (Submit a separate form for each outfall)

Outfall Designation: _____ Date/Time Collected: _____

Outfall Location(s) (lat/lon or map link): _____

Person Collecting Sample: _____

Storm Magnitude (inches): _____ Storm Duration (hours): _____

Size of Disturbed Area at any time: _____

MONITORING RESULTS

Sample #	Parameter	Method	Results (units)	Laboratory (if applicable)
1	Turbidity			
2	Turbidity			
3	Turbidity			
4	Turbidity			

(provide an attachment if more than 4 samples were taken for this outfall)

Avg = _____

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: _____

Signature: _____ Date: _____

Please send completed form to:

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
79 ELM STREET
HARTFORD, CT 06106-5127
ATTN: NEAL WILLIAMS

**State Project No. 99-114/115
U.S. Route 7 & 44 (Main Street)**

Stormwater Pollution Control Plan

**Appendix E
Notice of Termination Form**

**U.S. Route 7 & 44 Rail Crossings
North Canaan, Connecticut**



General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Notice of Termination Form

Please complete and submit this form in accordance with the general permit (DEP-PED-GP-015) in order to ensure the proper handling of your termination. Print or type unless otherwise noted.

Note: Ensure that for commercial and industrial facilities, registrations under the *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (DEP-PED-GP-014) or the *General Permit for the Discharge of Stormwater from Commercial Activities* (DEP-PED-GP-004) have been filed where applicable. For questions about the applicability of these general permits, please call the Department at 860-424-3018.

Part I: Registrant Information

1. Permit number: GSN			
2. Fill in the name of the registrant(s) as indicated on the registration certificate: Registrant: Connecticut Department of Transportation			
3. Site Address: U.S. Route 7 & 44 (Main Street) Housatonic Railroad Crossings			
City/Town: North Canaan	State: CT	Zip Code: 06018	
4. Date all storm drainage structures were cleaned of construction sediment: Date of Completion of Construction: Date of Last Inspection (must be at least three months after final stabilization pursuant to Section 6(b)(6)(D) of the general permit):			
5. Check the post-construction activities at the site (check all that apply):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Residential	<input type="checkbox"/> Commercial	<input type="checkbox"/> Capped Landfill
<input type="checkbox"/> Other (describe):			

Part II: Certification

"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
_____ Name of Permittee (print or type)	_____ Title (if applicable)

Note: Please submit this Notice of Termination Form to:

STORMWATER PERMIT COORDINATOR
BUREAU OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Project No.: 99-114/115

Description: Railroad-Highway Crossing Grade
Improvements – U.S. Route 7 & 44

Town: North Canaan

Date: 4/23/2019

m e m o r a n d u m

to: Mr. Michael E. Masayda
Trans. Principal Engineer
Hydraulics and Drainage
Bureau of Engineering and Highway Operations

from: Mr. Barry A. Schilling
Trans. Supervising Engineer
Traffic Engineering and Project Design
Bureau of Engineering and Construction

Please review this request for Flood Management General Certification and indicate your concurrence below.

Certification (to be completed by designer)

I have read the Flood Management General Certification and the descriptions for the approved DOT minor activities. This project qualifies for the Flood Management General Certification under:


- Minor Safety Improvements and Streetscape Projects
- Roadway Repaving, Maintenance & Underground Utilities
- Minor Stormwater Drainage Improvements
- Removal of Sediment or Debris from a Floodplain
- Wetland Restoration Creation or Enhancement
- Scour Repairs at Structures; (*Must acquire DEEP Fisheries Concurrence to be eligible*)
- Guide Rail Installation
- Deck and Superstructure Replacements
- Minor Bridge Repairs and Access
- Fisheries Enhancements
- Surveying and Testing
- Bicycle / Pedestrian, Multi Use Trails and Enhancement Projects

The following required documentation is attached in support of this certification:

- Project description
- Location plan
- Description of Floodplain involvement and how project qualifies for general certification
- 8-1/2" by 11" excerpt copy of the FEMA Flood Insurance Rate Map (FIRM) and Floodway Boundary Map (if applicable)
- Design plans, (dated April 2019) with FEMA floodplain and floodway boundaries plotted, cross sections and profiles, as necessary, that clearly depict the floodplain involvement
- FEMA 100-year flood elevation plotted on elevation view (for structures)

Print Name: Ken Radziwon

Title: Project Manager

Signature: 

Date: 4.26.2019

Concurrence (to be completed by Hydraulics and Drainage)

Based on the documentation submitted, I hereby concur that the project qualifies for Flood Management General Certification.

If there are any changes to the proposed activities within the floodplain or floodway, the project must be re-submitted for review and approval.

Signature

Date 5-24-19



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: 860-594-2931

September 4, 2019

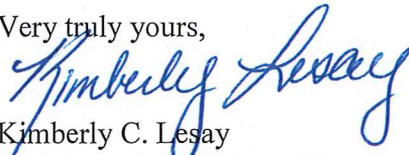
Ms. Susan Lee
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Subject: State Project No. 99-114/115
Railroad-Highway Crossing Grade Improvements
U.S. Route 7 & 44 (Main Street)
Town of North Canaan

Dear Ms. Lee:

Enclosed please find the Self-Verification Notification Form for GP 18 with attachments for your files. A copy has also been submitted to the Connecticut Department of Energy and Environmental Protection. The project has been submitted to the USFWS under the final 4(d) streamlined consultation process for the Northern Long-Eared bat. Any questions pertaining to this application may be directed to Mr. Jason M. Coite, Transportation Supervising Engineer of my staff, at 860-594-3448.

Very truly yours,


Kimberly C. Lesay
Transportation Assistant Planning Director
Bureau of Policy and Planning

Attachments

cc: Nathan Margason – USEPA



**US Army Corps
of Engineers**[®]
New England District

Appendix E: Self-Verification Notification Form

This form is required for all **non-tidal projects in Connecticut**, but **not** required if work is done within boundaries of Mashantucket Pequot or Mohegan Tribal Lands. **Before** work commences, complete **all** fields (write “none” if applicable); attach project plans (not required for projects involving the installation of construction mats only); and any state or local approval(s); and send to:

Permits & Enforcement Branch B
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751
or cenae-r@usace.army.mil

and

CT DEEP
Inland Water Resources Division
79 Elm Street
Hartford, CT 06106-5127

State or local Permit Number: _____
Date of State or local Permit: _____
State/local Project Manager: _____

Permittee: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Contractor: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Consultant/Engineer/Designer: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Wetland/Soil Scientist Consultant: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Project Location (provide detailed description & locus map): _____

Address, City, State & Zip: _____

Latitude/Longitude Coordinates: _____

Waterway Name: _____

Project Purpose (include all aspects of the project including those not within Corps jurisdiction):

Work Description: _____

Work will be done under the following GP(s) (check all that have associated impacts):

 GP. 2 - Repair or maintenance of authorized or grandfathered structures/fills

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 5 - Boat ramps/marine railways

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 6 - Utility line activities (include calculations for each single & complete crossing

- attach additional sheet if necessary)

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 9 - Shoreline and bank stabilization projects

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 10 - Aquatic habitat restoration, establishment and enhancement activities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 11 - Fish & wildlife harvesting, enhancement and attraction devices and activities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 12 - Oil Spill and Hazardous material cleanup

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 13 - Cleanup of hazardous and toxic waste

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 14 - Scientific measurements devices

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 15 - Survey activities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 17 - New/expanded developments & recreational facilities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

GP. 18 - Linear transportation projects- wetland crossings only (include calculations for each single & complete crossing - attach additional sheet if necessary)

Area of total wetland impacts: temporary 0 SF permanent 2,120 SF
Area of total waterway impacts: temporary 0 SF permanent 0 SF

GP. 19 - Stream, river & brook crossings – not including wetland crossings (include calculations for each single & complete crossing – attach additional sheet if necessary)

Area of total wetland impacts: temporary _____ SF permanent _____ SF
Area of total waterway impacts: temporary _____ SF permanent _____ SF

GP. 21 - Temporary fill not associated with any other GP activities

Area of total wetland impacts: temporary _____ SF permanent _____ SF
Area of total waterway impacts: temporary _____ SF permanent _____ SF

Does your project include any secondary effects? Yes _____ No

(Secondary effects include, but are not limited to non-tidal waters or wetlands drained, flooded, fragmented, or mechanically cleared resulting from a single and complete project. See Appendix F - Definitions.) If YES, describe here: _____

Proposed Work Dates: Start: August 2019 Finish: October 2020

Your name/signature below, as permittee, confirms that your project meets the self-verification criteria and that you accept and agree to comply with the applicable terms and conditions in the Connecticut General Permits.

Thomas J. Masjan
Signature of Permittee

9-4-2019
Date

ACOE Self-Verification Project Description

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Crossing Grade Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT

The scope of this project is to rehabilitate the existing roadway and drainage system at two railroad crossings along U.S. Route 7 & 44 (Main Street) in North Canaan, CT. The proposed railroad crossing improvements cannot be built due to the inadequate existing drainage systems at the crossing locations.

The project is located on U.S. Route 7 & 44 at the railroad-highway grade crossing with the Housatonic Railroad Company's mainline (99-115, westerly crossing) and their spur line (99-114, easterly crossing). These two separate State projects have been combined into one design because of their proximity (approximately 650-feet apart from each other). These projects were initiated to install railroad flashing lights and vehicular gates with minor reconstruction and vertical alignment revisions to the roadway approaches. The roadway is comprised of one travel lane in each direction at the crossings.

The at-grade crossings receive an excessive amount of runoff causing street flooding, track settlement and channel degradation. The project will install drainage and rehabilitate the pavement of U.S. Route 7 & 44 approaching the crossings and between the crossings. This work is required for the proposed flashing lights and gates as they could be compromised due to the existing conditions.

The project will raise the mainline tracks as much as the U.S. Route 7 & 44 vertical geometry will allow. This translates to an approximately 6-inch raise in the profile at the westerly track crossing. The vertical alignment was constrained by the need to accommodate a minimum of 0.5% cross slope on the sidewalk adjacent to the businesses along the southern edge of U.S. Route 7 & 44. Maintaining a minimum 0.5% cross slope of the sidewalk away from the business is essential to mitigate potential drainage issues. The existing grade of the tracks at the easterly crossing will be maintained in the proposed condition.

Within the railroad areas, drainage structures, including ballast inlets with catch basin tops and underdrains, will replace pipe inlets within existing drainage ditches. The underdrains will contain and convey stormwater below the ground surface. Beyond the railroad areas, the proposed system will replace the existing drainage structures and pipes within the project area and provide new outlets discharging toward the Blackberry River. The few existing roadway structures will be replaced as well as the existing pipes as they are undersized and do not safely convey the 10-year design storm discharge. Preformed scour holes will also be installed at pipe outlets located at existing drainage channels.

There are two existing stormwater outlets. Both systems are inadequate in conveying the design storm flows. The existing western outlet discharges to the southwest of the western crossing, parallel to the tracks, directly into Blackberry River. The existing eastern outlet discharges into a small drainage ditch where it flows overland and eventually into Blackberry River approximately 200 feet away.

Beyond the limits of U.S. Route 7 & 44, the existing western system is piped into a single drainage channel. The single existing channel leads into a pipe (running parallel to the railroad tracks) which conveys runoff to an outfall into Blackberry River.

The proposed western system extends the existing drainage channel and excavates a new drainage channel in place of the existing parallel pipe mentioned above. The first outlet in this system discharges into the existing drainage channel – which will be extended an additional 65 feet to the south. From here, stormwater will be piped under the DOT Maintenance Drive and into into a newly excavated proposed drainage channel, 300 feet in length, to discharge into the Blackberry River. The outlet end of the drainage channel at the river will be protected with riprap.

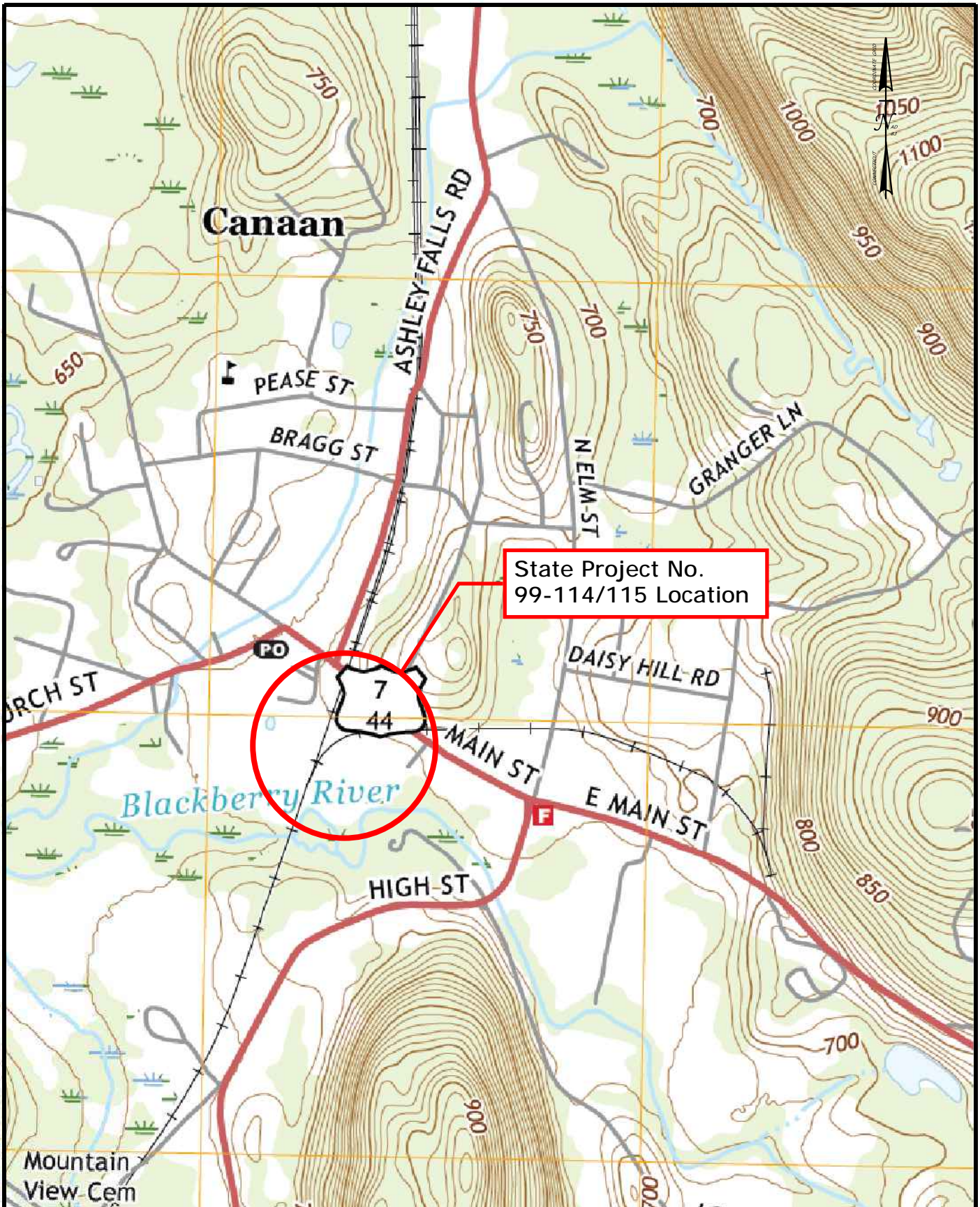
At the easterly crossing, proposed drainage structures will be installed in a similar fashion to the westerly crossing within the railroad areas to alleviate the flooding problem. The existing structures are located too high for the underdrains to properly drain to. The railroad drainage will be combined with the roadway drainage east of the railroad tracks. Conflicting utilities on this side of the project are to be relocated. The drainage will be conveyed to a reformed drainage channel east of the ConnDOT Maintenance Facility driveway and ultimately into the Blackberry River.

Various utilities lie within the project limits. There are overhead utility transmission poles, underground telecommunication conduits, utility manholes, water mains, and sanitary sewer mains within the site limits primarily concentrated around and along U.S. Route 7 & 44.

The southwesterly portion of the project area is located within a FEMA floodplain. The area is moderately developed on the northeast side of the floodplain near the eastern outlet, and less developed near the western outlet, where it becomes more rural and open.

There is not space available for ponds or formed wetlands, however the project scope involves the construction and extension of drainage swales. As a result, water quality will be improved before discharging into the river. Furthermore, deep sumps will be installed in all the proposed Type “C” and “C-L” catch basins to improve stormwater quality to the extent practicable. A hydrodynamic separator is not proposed due to private property impact and access difficulty for cleaning.

Proper erosion and sedimentation controls, and work period restrictions will minimize turbidity and avoid and minimize adverse impacts to nearby water resources. The anticipated project duration is two construction seasons.



**RAILROAD-HIGHWAY
GRADE CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN STREET)
NORTH CANAAN, CT**

LOCATION MAP
 PROJ. NO.: 99-114/115
 SCALE: 1" = 1000'

ACOE
Permit Plan Sheets

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT

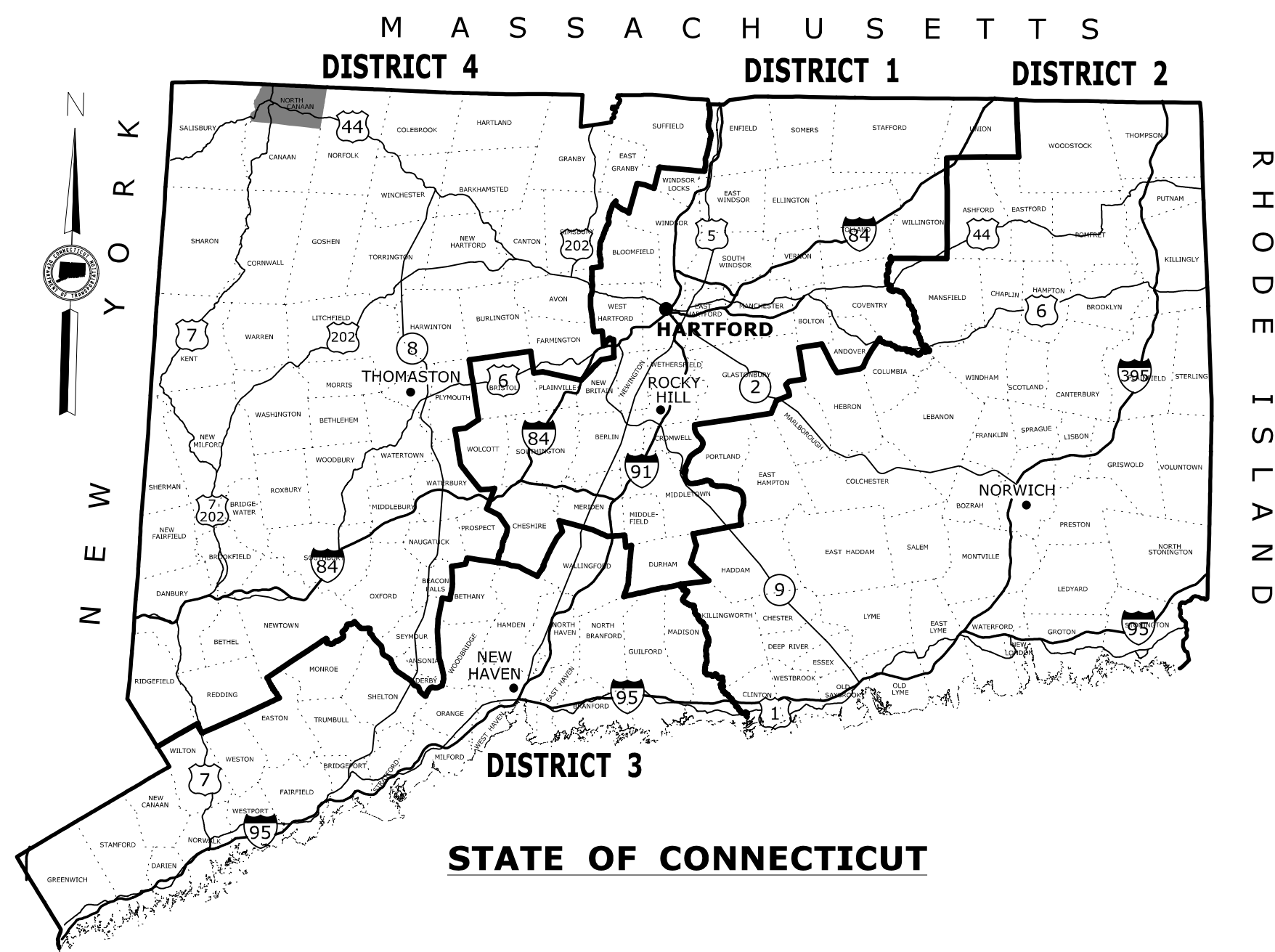
Figure	Description
PMT-01	Title Sheet
PMT-02	Index Map
PMT-03 – PMT-08	General Site Plan
PMT-09 – PMT-11	Impact Plan
PMT-12 – PMT-13	Miscellaneous Details

ENVIRONMENTAL PERMIT PLANS

STATE PROJECT 99-114/115

U.S. ROUTE 7 & 44 (MAIN STREET)

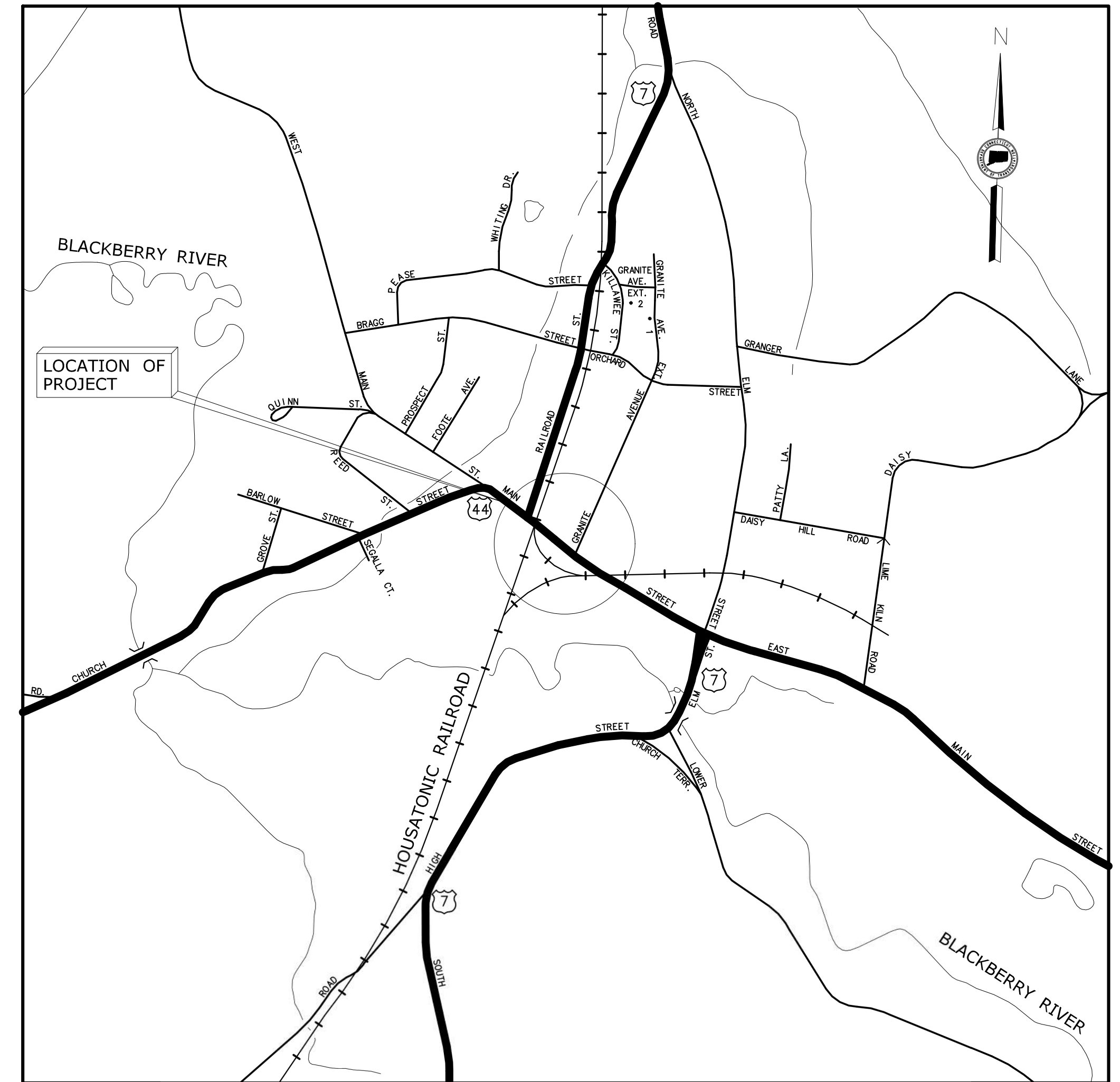
TOWN OF NORTH CANAAN



GENERAL NOTES:

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND ACOE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLAND AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1983
VERTICAL DATUM BASED ON NAVD OF 1983
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW BEST MANAGEMENT PRACTICES (BMP) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.

LIST OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
PMT-01	TITLE SHEET
PMT-02	INDEX MAP
PMT-03 - PMT-08	GENERAL SITE PLAN
PMT-09 - PMT-11	IMPACT PLAN
PMT-12 - PMT-13	MISCELLANEOUS DETAILS



LOCATION PLAN
NOT TO SCALE

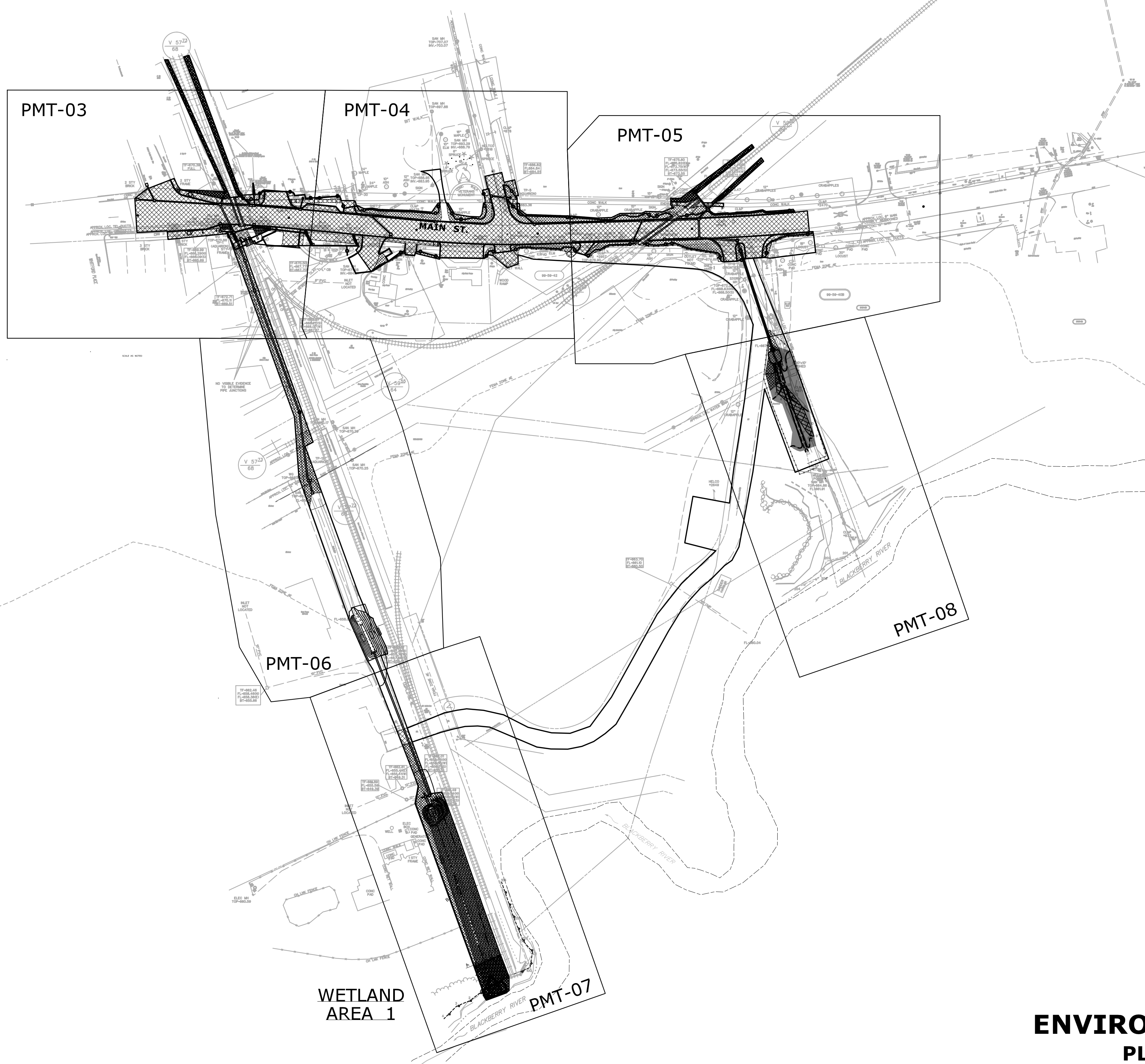
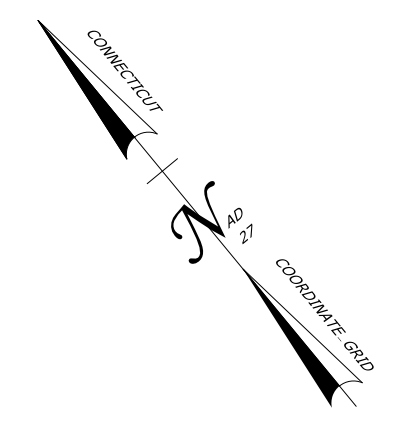
DESIGNED BY:
BL COMPANIES, INC.

David Cicia
2019.06.25
10:41:06-04'00"

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JUNE 12, 2019

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">REV.</th> <th style="text-align: left;">DATE</th> <th style="text-align: left;">REVISION DESCRIPTION</th> <th style="text-align: left;">SHEET NO.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.					<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>	<p>DESIGNER/DRAFTER: BGR</p> <p>CHECKED BY: DMC</p> <p style="text-align: center;">SCALE IN FEET</p> <p style="text-align: center;">0 40 80</p> <p style="text-align: center;">SCALE 1"=40'</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p style="font-size: small;">Filename: ...VHW_MSH_99-114-115_PMT.dgn</p>	<p>SIGNATURE/ BLOCK:</p> <p>DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450</p>	<p>PROJECT TITLE:</p> <p style="text-align: center;">RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)</p>	<p>TOWN:</p> <p style="text-align: center;">NORTH CANAAN</p> <p>DRAWING TITLE:</p> <p style="text-align: center;">TITLE SHEET</p>	<p>PROJECT NO. 99-114/115</p> <p>DRAWING NO. PMT-01</p> <p>SHEET NO.</p>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.												

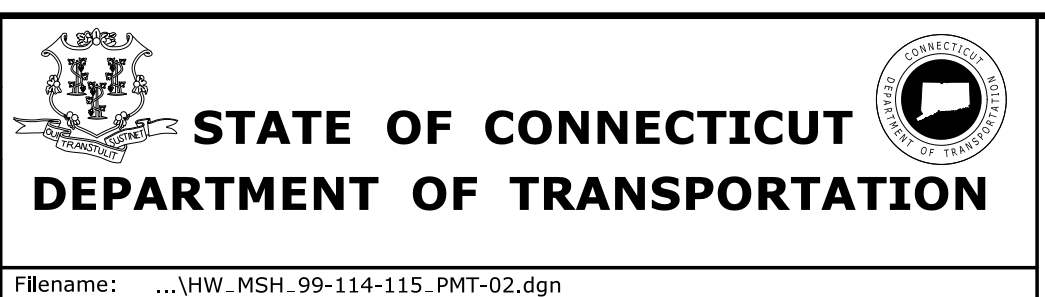


ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:
BGR
 CHECKED BY:
DMC
 SCALE IN FEET
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 SCALE 1"=100'



SIGNATURE/BLOCK:

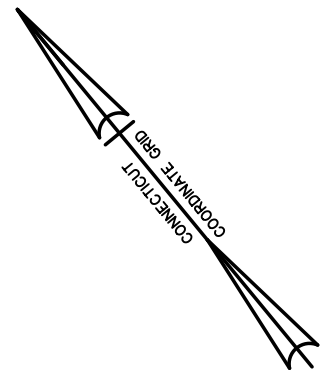
 DESIGNED BY:
BL
 COMPANIES, INC.
 355 RESEARCH PARKWAY
 MERIDEN, CT 06450

PROJECT TITLE:
RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)

TOWN:
NORTH CANAAN
 DRAWING TITLE:
INDEX PLAN

PROJECT NO.
99-114/115
 DRAWING NO.
PMT-02
 SHEET NO.

Filename: ...\\HW_MSH_99-114-115_PMT-02.dgn



U.S. ROUTE 7 RR
 RR-BALLAST INLET-1 (BY OTHERS)
 TF = 668.40
 INV = 666.30 (N & S)
 25'-8" PERFORATED PVC (BY OTHERS)
 RR-BALLAST INLET-2 (BY OTHERS)
 TF = 668.20
 INV = 666.10 (N & SW)
 18'-8" PVC
 REMOVE CB & PIPE
 TYPE "C" CB W/ 4' SUMP
 STA 12+06 LT
 TF = 670.45
 INV = 665.95 (NE)
 INV = 665.10 (NW)
 INV = 664.50 (S & SE)
 TYPE "C-L" CB (4' SUMP)
 GRADE TO DRAIN
 STA 1+75 RT
 TF = 673.00
 INV = 669.00 (S)

TYPE "C-L" CB W/ 4' SUMP
 GRADE TO DRAIN
 STA 10+80 LT
 TF = 672.64
 INV = 669.00 (SE)

APPROX. LOC. TEL DUCTS
 APPROX. LOC. TEL DUCTS
 APPROX. LOC. 8" WATER MAIN

3 REMOVE CB & PIPE
 BRICK
 RELOCATED WATER MAIN
 (BY OTHERS)
 TYPE "C" CB - OFFSET A
 STA 12+05 RT
 TF = 670.45
 INV = 667.10 (SW)
 4'-12" RCP
 MANHOLE
 STA 12+06, 27' RT
 TF = 671.04
 INV = 667.00 (NE & SE)
 16'-12" RCP
 MANHOLE
 STA 12+28, 28' RT
 TF = 671.50
 INV = 664.00 (N, S & E)
 INV = 666.50 (NW)

SEDIMENTATION CONTROL SYSTEM
 MANHOLE
 STA 12+23, 71' RT
 TF = 669.50
 INV = 663.50 (N & S)
 PLUG PIPE AT ROUND CLCB
 44'-24" RCP
 TYPE "C-L" CB, GRADE TO DRAIN
 0' SUMP
 REMOVE EXISTING CB
 PLUG EXISTING 6" PIPE
 STA 12+56, 115' RT
 TF = 672.71
 INV = 662.50 (N & S)
 INV = 669.51 (E)

200'-8" PERFORATED PVC (BY OTHERS)
 REMOVE CB (BY OTHERS)
 RR-BALLAST INLET-3 (BY OTHERS)
 TF = 667.90
 INV = 665.80 (N & S)
 25'-8" PERFORATED PVC (BY OTHERS)
 RR-BALLAST INLET-4 (BY OTHERS)
 TF = 667.70
 INV = 664.95 (N & SE)
 28'-15" RCP
 CUT AND PLUG EXISTING PIPE
 REMOVE CB & PIPES
 CONNECT 15" RCP INTO
 EXISTING DRYWELL
 INV = 668.60 (SE)
 33'-15" RCP
 TYPE "C" CB DOUBLE GRATE
 - TYPE II W/ 4' SUMP
 STA 12+55 LT
 TF = 670.46
 INV = 665.90 (SE)
 INV = 664.80 (NW & W)
 INV = 666.50 (N)

71'-12" RCP
 LAWN DRAIN
 (SEE SHEET MDS-05 FOR GRADING)
 STA 13+31, 33' LT
 TF = 674.10
 INV = 668.00 (SW)
 10'-12" H.D.P.E PERFORATED
 TYPE "C" CB W/ 4' SUMP
 STA 13+31 LT
 TF = 672.47
 INV = 667.60 (NW & SE)
 INV = 668.00 (NE)

MATCHLINE STA. 13+50
 SEE DRAWING NO. PMT-04

TF=670.50
 FL=667.77
 BT=667.70

TYPE "C" CB - OFFSET A
 STA 12+55 RT
 TF = 670.47
 INV = 666.00 (SE)
 INV = 664.50 (W)

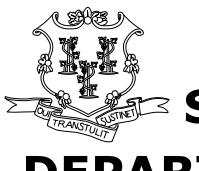


28'-15" RCP
 CLASS V

CONSTRUCTION NOTES

1. PROPOSED DRAINAGE STRUCTURES SHOWN WITHIN THE RAILROAD RIGHT-OF-WAY WILL BE INSTALLED BY THE HOUSATONIC RAILROAD COMPANY.
2. THERE IS NO INDIVIDUAL ITEM FOR PLUGGING EXISTING PIPING WITHIN THE PROJECT LIMITS. THIS WORK IS TO BE PAID FOR UNDER THE APPROPRIATE PIPE ITEM (ITEM NO. 0651XXX).
3. UNLESS NOTED OTHERWISE, PROPOSED TYPE "C" CATCH BASINS, TYPE "C-L" CATCH BASINS, AND OFFSET TYPE "C" CATCH BASINS ARE TO BE INSTALLED WITH A 2' SUMP.
4. CATCH BASIN TOP ELEVATIONS REFER TO THE GUTTER LINE ELEVATION. SEE STANDARD DETAIL SHEETS TO DETERMINE REQUIRED DEPRESSION.
5. SEE SHEET PMT-07 FOR PAVEMENT RESTORATION AT TRENCHES.

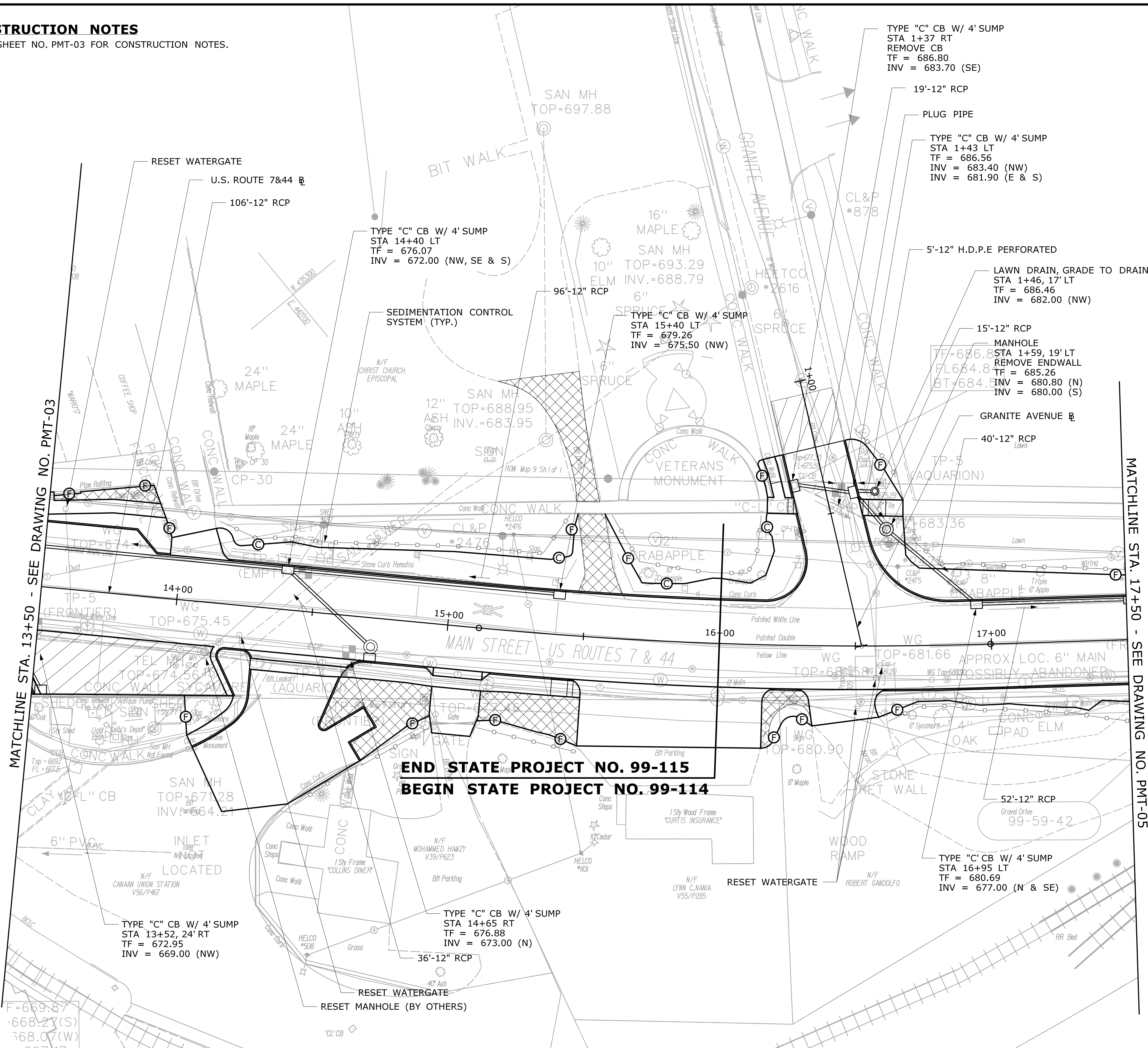
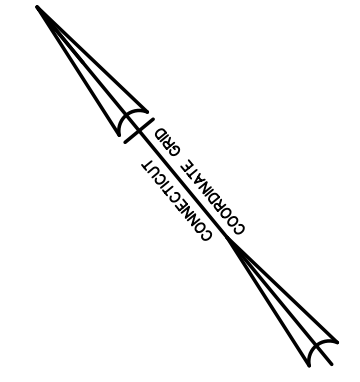
MATCHLINE
 SEE DRAWING NO. PMT-06

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20' Plotted Date: 6/14/2019		 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION File name: ...VHW_MSH_99-114-115_PMT-03.dgn		SIGNATURE/ BLOCK:  DESIGNED BY:  BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450		PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)		TOWN: NORTH CANAAN DRAWING TITLE: GENERAL SITE PLAN		PROJECT NO. 99-114/115 DRAWING NO. PMT-03 SHEET NO.	
REV.	DATE	REVISION DESCRIPTION	SHEET NO.								

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



MATCHLINE STA. 13+50 - SEE DRAWING NO. PMT-03

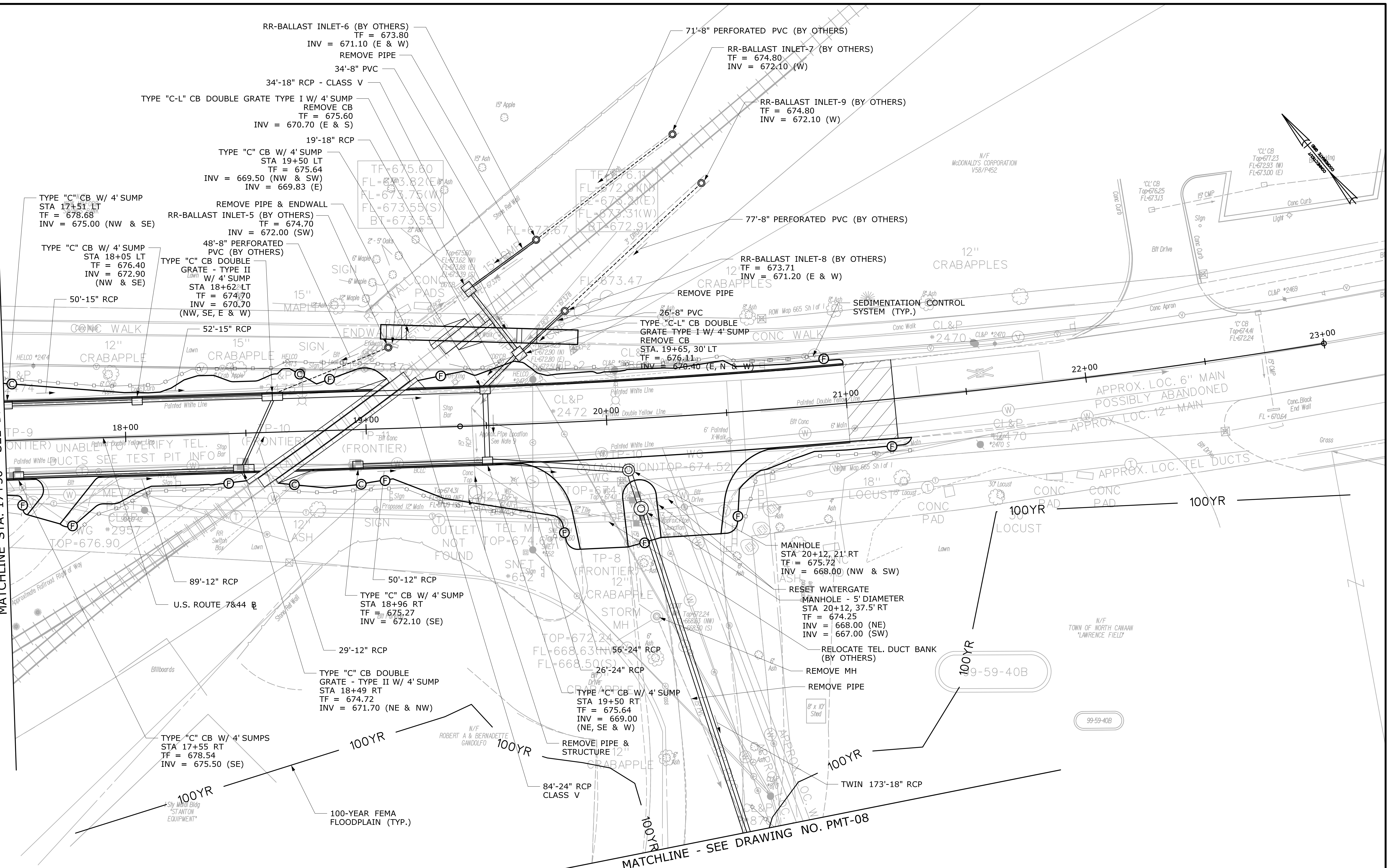
MATCHLINE STA. 17+50 - SEE DRAWING NO. PMT-05

END STATE PROJECT NO. 99-115
BEGIN STATE PROJECT NO. 99-114

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.					THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 6/14/2019	DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20' STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN DRAWING TITLE: GENERAL SITE PLAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-04 SHEET NO.
	REV.	DATE	REVISION DESCRIPTION	SHEET NO.										
FILENAME: ...VHW_MSH_99-114-115_PMT-04.dgn														

MATCHLINE STA. 17+50 - SEE DRAWING NO. PMT-04



CONSTRUCTION NOTES
 1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

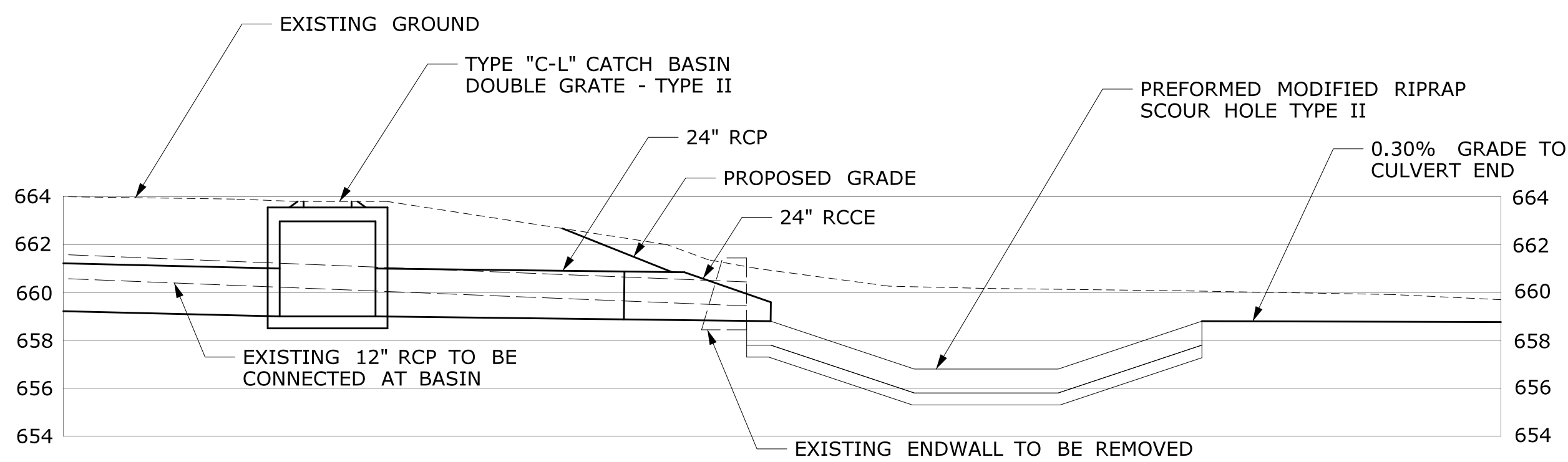
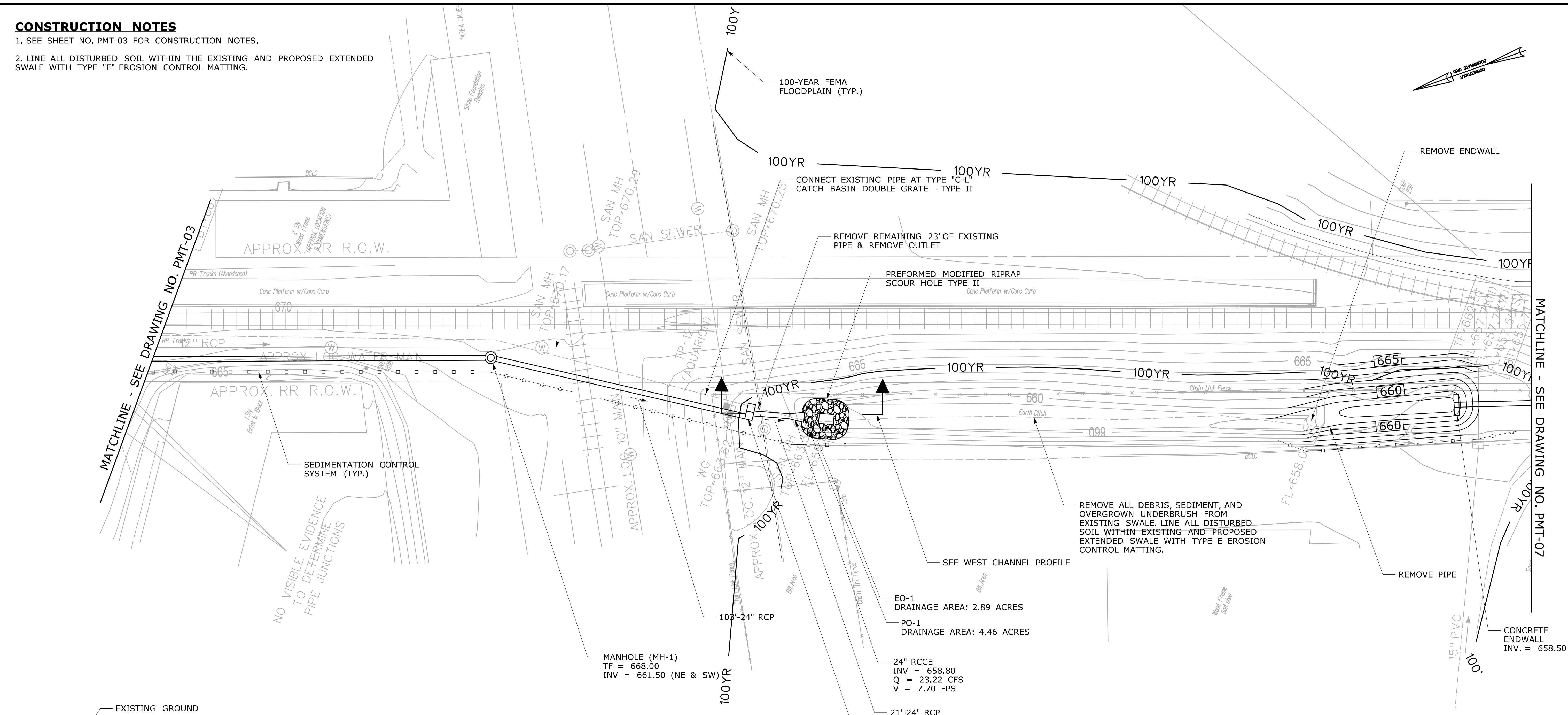
REV. DATE REVISION DESCRIPTION SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: BGR	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
		CHECKED BY: DMC					
Plotted Date: 6/14/2019	SCALE IN FEET SCALE 1"=20'	FILENAME: ...VHW_MSH_99-114-115_PMT-05.dgn	SHEET NO.				

CONSTRUCTION NOTES

- SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.
- LINE ALL DISTURBED SOIL WITHIN THE EXISTING AND PROPOSED EXTENDED SWALE WITH TYPE "E" EROSION CONTROL MATTING.

MATCHLINE - SEE DRAWING NO. PMT-03

MATCHLINE - SEE DRAWING NO. PMT-07



WEST CHANNEL PROFILE
SCALE: 1" = 5'

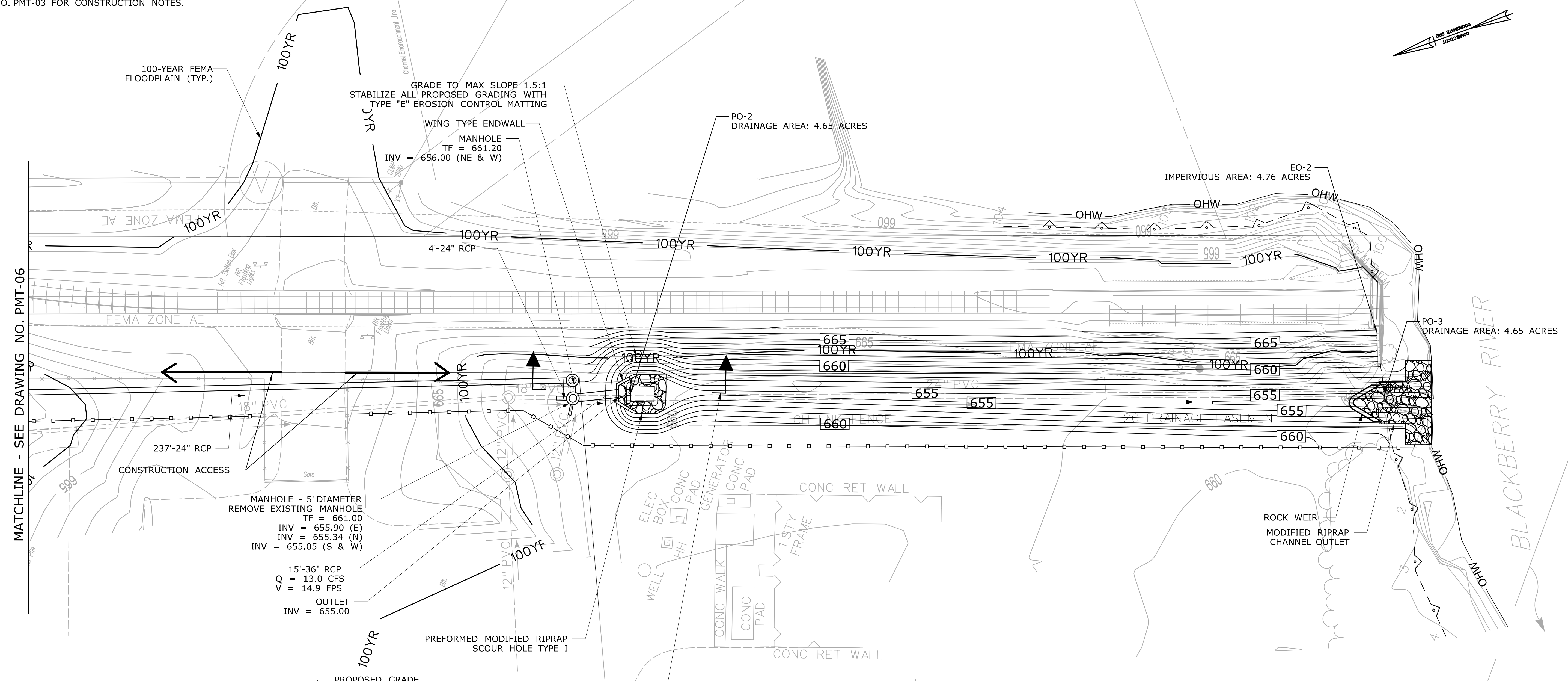
LEGEND	
	100YR FEMA 100-YEAR FLOODPLAIN
	LIMIT OF INLAND WETLANDS
	ORDINARY HIGH WATER LINE
	SEDIMENTATION CONTROL SYSTEM

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

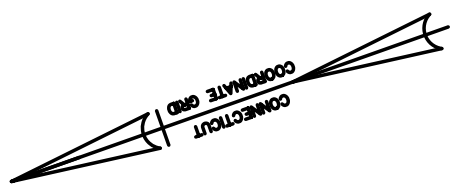
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	REV.	DATE	REVISION DESCRIPTION	SHEET NO.											
CHECKED BY: DMC	SCALE IN FEET SCALE 1"=20'	DRAWING NO. PMT-06	SHEET NO.												

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



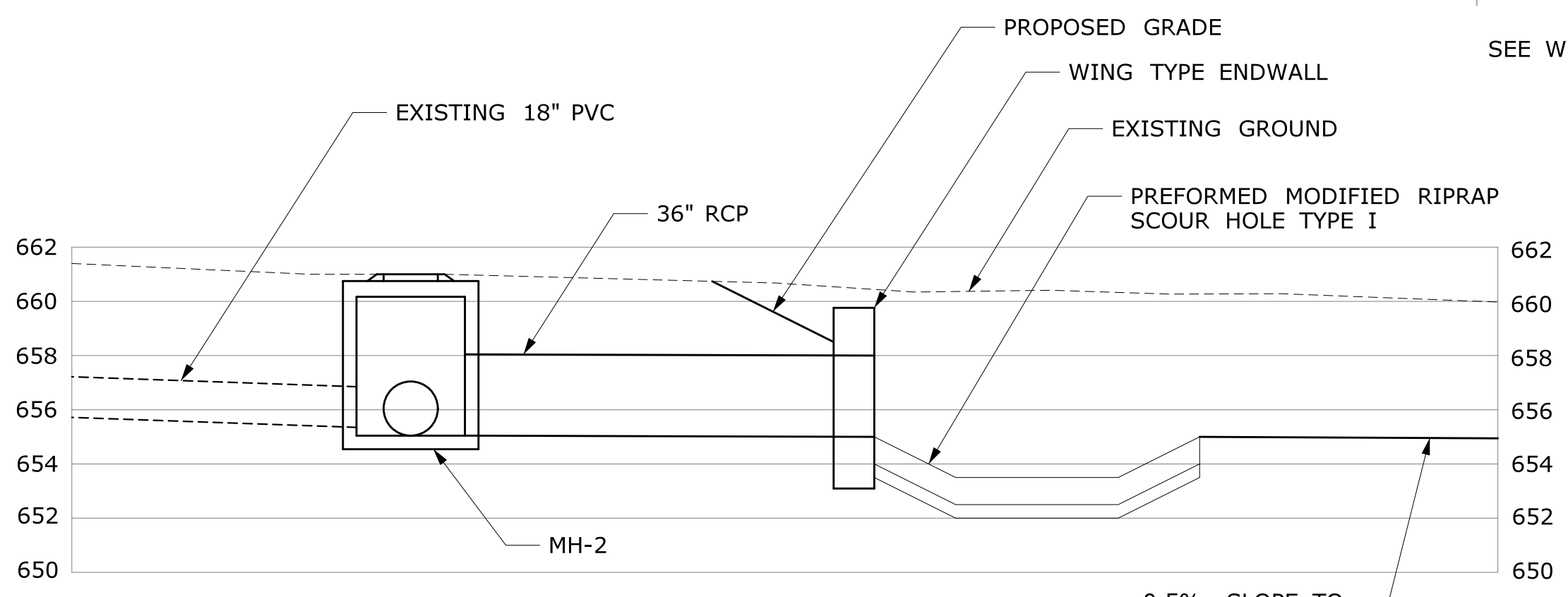
MATCHLINE - SEE DRAWING NO. PMT-06



MANHOLE - 5' DIAMETER
REMOVE EXISTING MANHOLE
TF = 661.00
INV = 655.90 (E)
INV = 655.34 (N)
INV = 655.05 (S & W)

15'-36" RCP
Q = 13.0 CFS
V = 14.9 FPS
OUTLET
INV = 655.00

PREFORMED MODIFIED RIPRAP
SCOUR HOLE TYPE I



WEST OUTLET PROFILE
SCALE: 1" = 5'

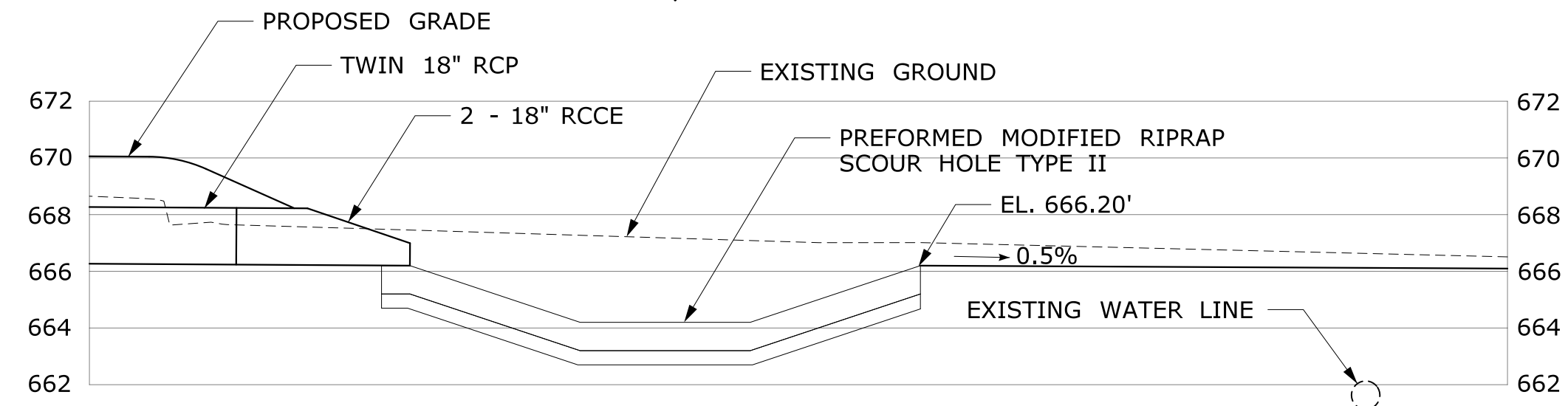
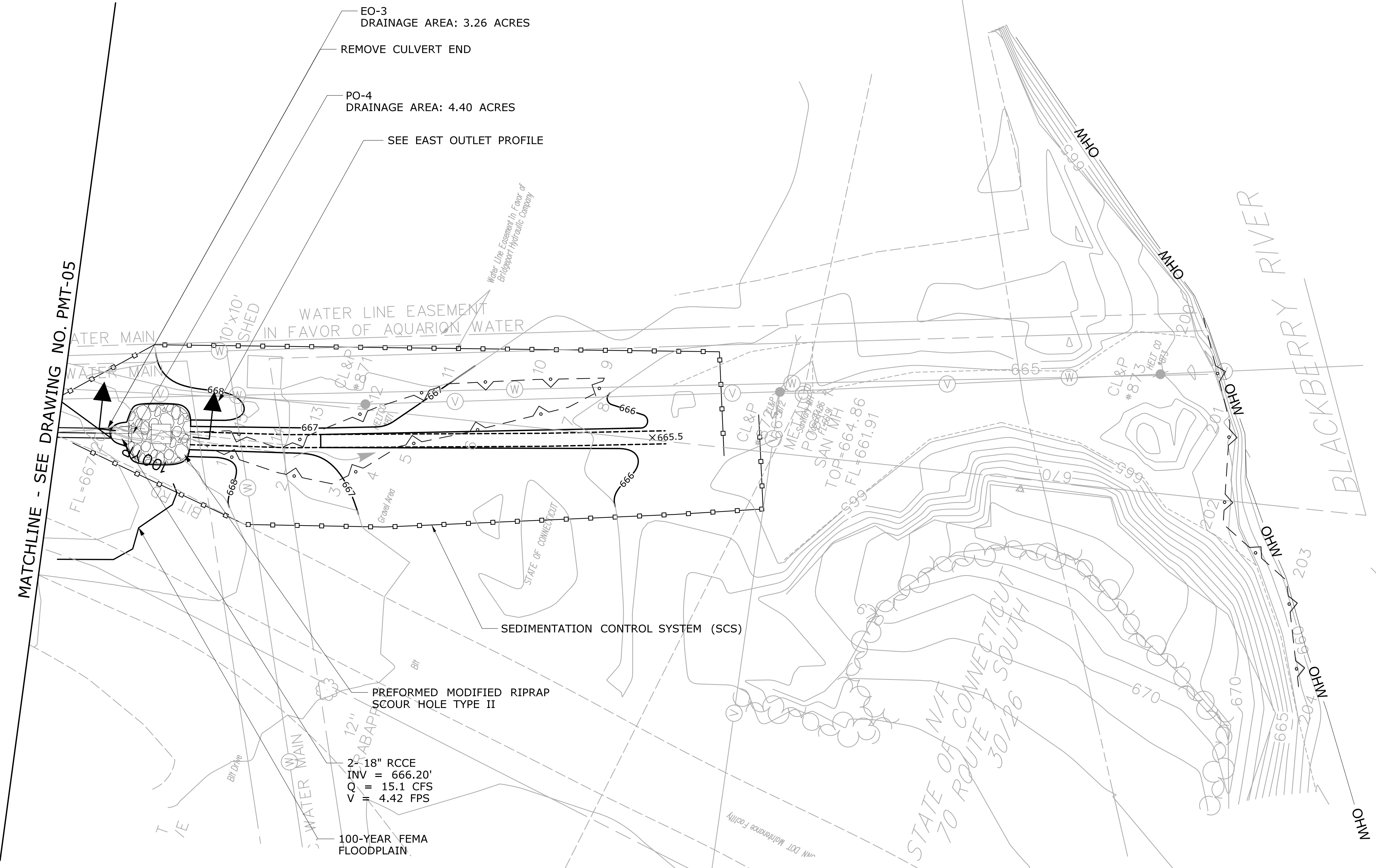
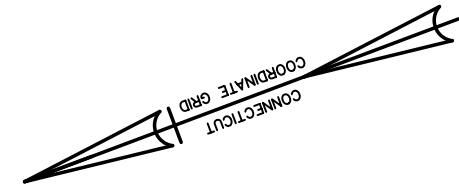
LEGEND	
	100YR FEMA 100-YEAR FLOODPLAIN
	LIMIT OF INLAND WETLANDS
	OHW ORDINARY HIGH WATER LINE
	SEDIMENTATION CONTROL SYSTEM

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

<table border="1"> <thead> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																									THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 6/24/2019	DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20' STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION FILENAME: ...VHW_MSH_99-114-115_PMT-07.dgn	SIGNATURE/BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-07 SHEET NO.
	REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																														
					DRAWING TITLE: GENERAL SITE PLAN																																													

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



EAST OUTLET PROFILE
SCALE: 1" = 5'

LEGEND

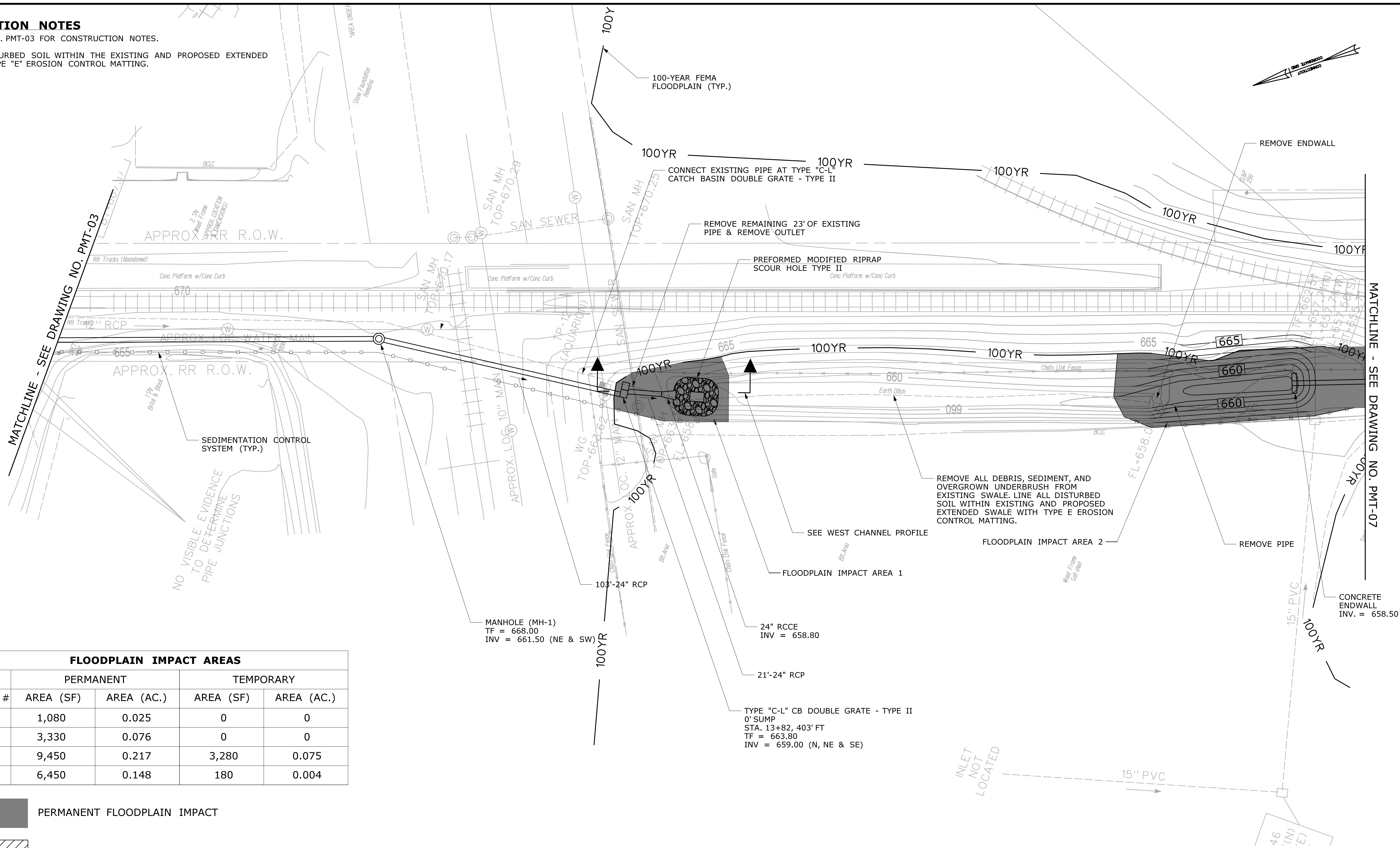
- 100YR FEMA 100-YEAR FLOODPLAIN
- LIMIT OF INLAND WETLANDS
- OHW ORDINARY HIGH WATER LINE
- SEDIMENTATION CONTROL SYSTEM

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.												

CONSTRUCTION NOTES

- SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.
- LINE ALL DISTURBED SOIL WITHIN THE EXISTING AND PROPOSED EXTENDED SWALE WITH TYPE "E" EROSION CONTROL MATTING.



FLOODPLAIN IMPACT AREAS

AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,450	0.148	180	0.004

- PERMANENT FLOODPLAIN IMPACT
- TEMPORARY FLOODPLAIN IMPACT

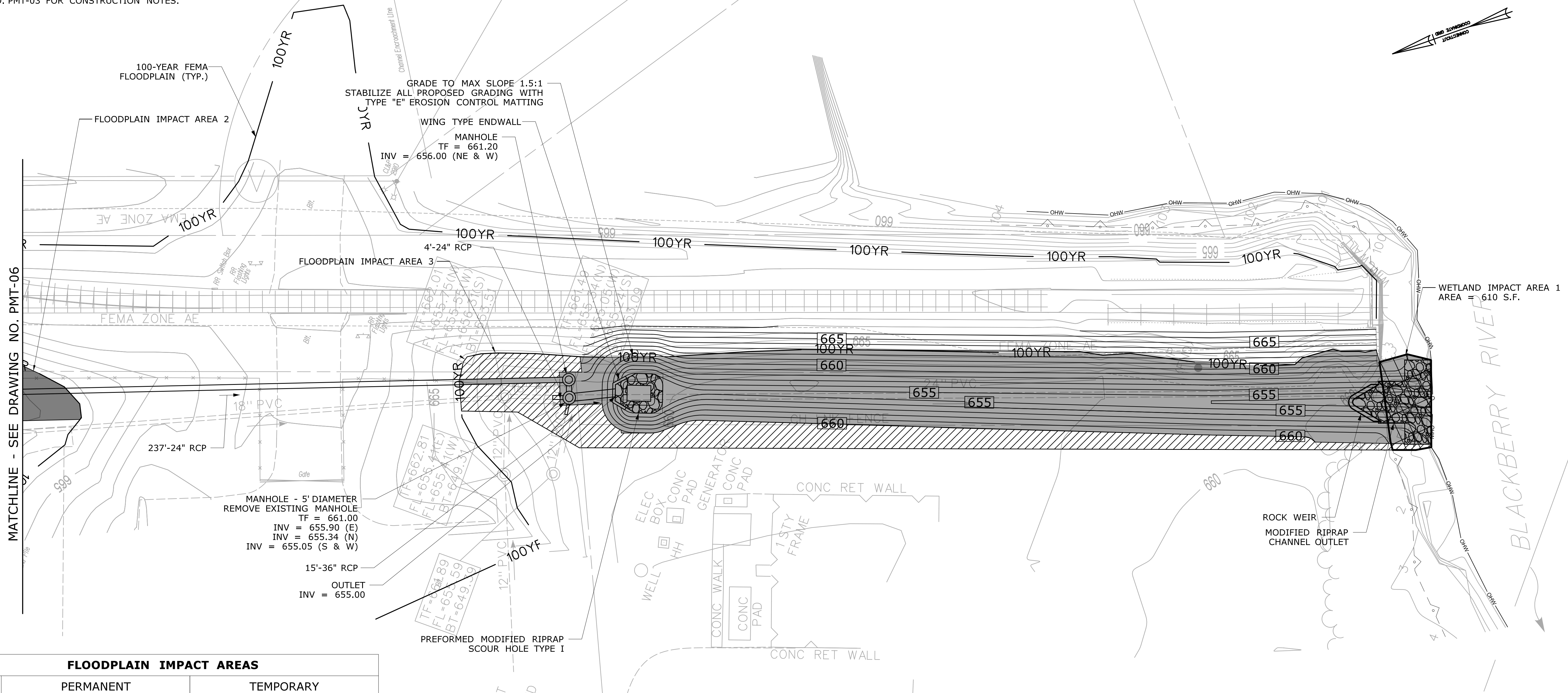
ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.												

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.

MATCHLINE - SEE DRAWING NO. PMT-06



FLOODPLAIN IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,450	0.148	180	0.004

WETLAND IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	610	0.014	0	0
2	1,510	0.035	0	0

PERMANENT FLOODPLAIN IMPACT
 TEMPORARY FLOODPLAIN IMPACT
 PERMANENT WETLAND IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
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Plotted Date: 6/25/2019

DESIGNER/DRAFTER:
BGR

CHECKED BY:
DMC

SCALE IN FEET
0 20 40
SCALE 1"=20'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...VHW_MSH_99-114-115_PMT-10.dgn

SIGNATURE/BLOCK:

DESIGNED BY:

BL COMPANIES, INC.
355 RESEARCH PARKWAY
MERIDEN, CT 06450

PROJECT TITLE:
RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)

TOWN:
NORTH CANAAN

DRAWING TITLE:
IMPACT PLAN

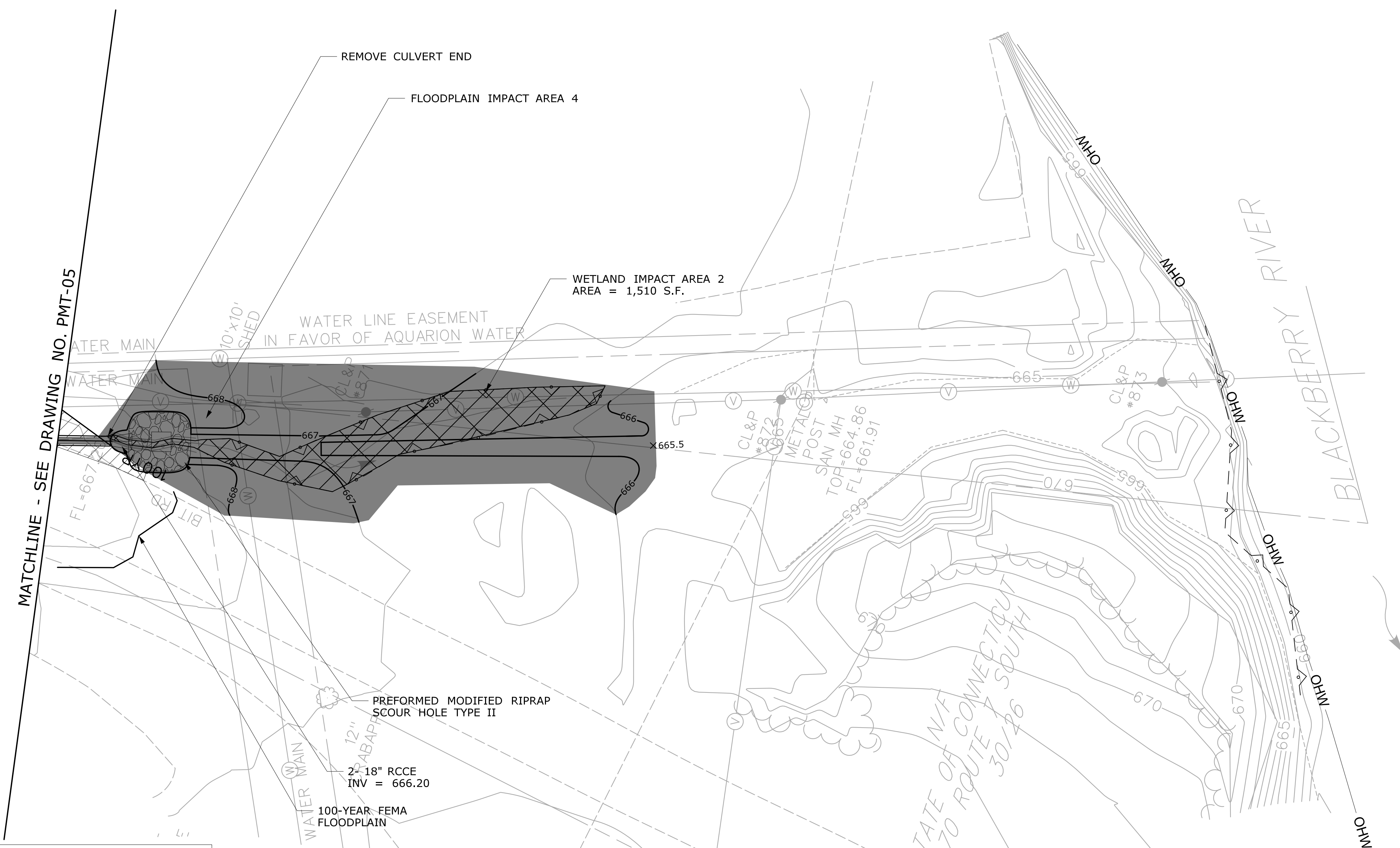
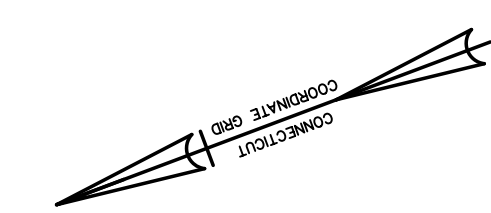
PROJECT NO.
99-114/115

DRAWING NO.
PMT-10

SHEET NO.


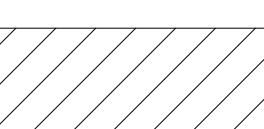

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



FLOODPLAIN IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,450	0.148	180	0.004

WETLAND IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	610	0.014	0	0
2	1,510	0.035	0	0

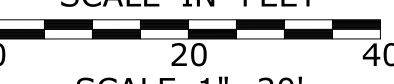
 PERMANENT FLOODPLAIN IMPACT
 TEMPORARY FLOODPLAIN IMPACT
 PERMANENT WETLAND IMPACT


ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019



REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 6/24/2019

DESIGNER/DRAFTER:
BGR
 CHECKED BY:
DMC
 SCALE IN FEET

 SCALE 1"=20'

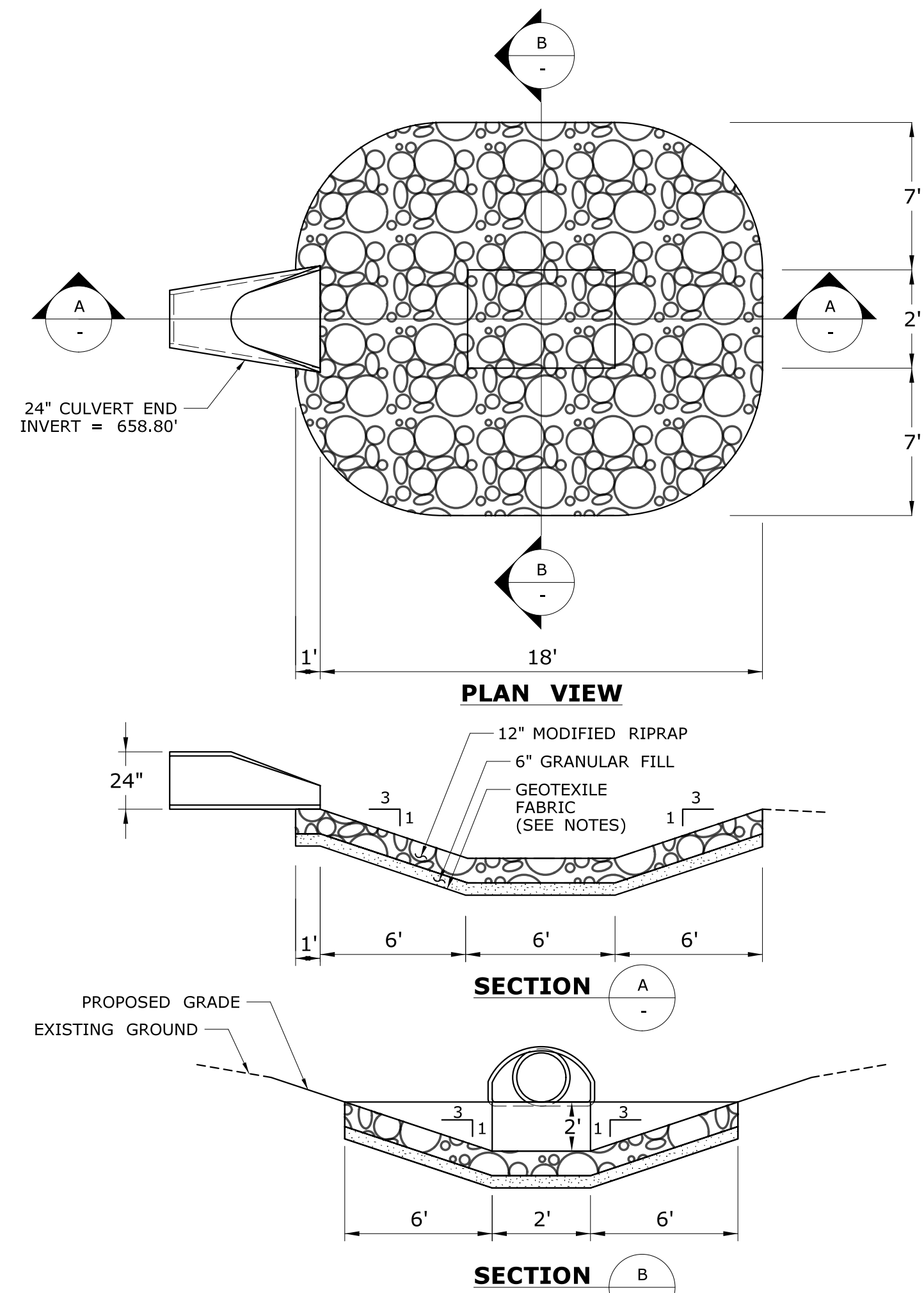

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
 File name: ...VHW_MSH_99-114-115_PMT-11.dgn

SIGNATURE/BLOCK:

 DESIGNED BY:

 BL COMPANIES, INC.
 355 RESEARCH PARKWAY
 MERIDEN, CT 06450

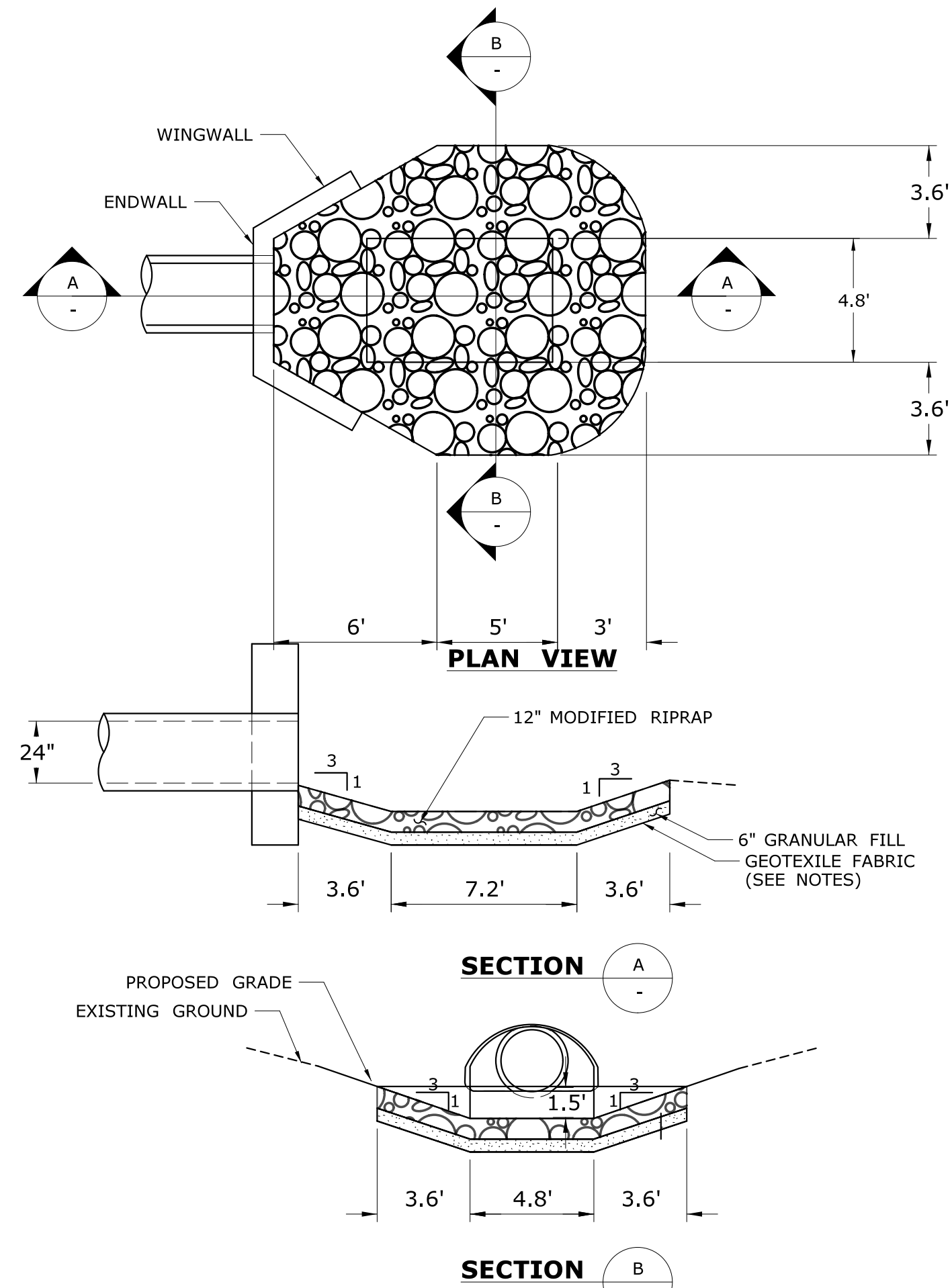
PROJECT TITLE:
RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)

TOWN:
NORTH CANAAN
 DRAWING TITLE:
IMPACT PLAN

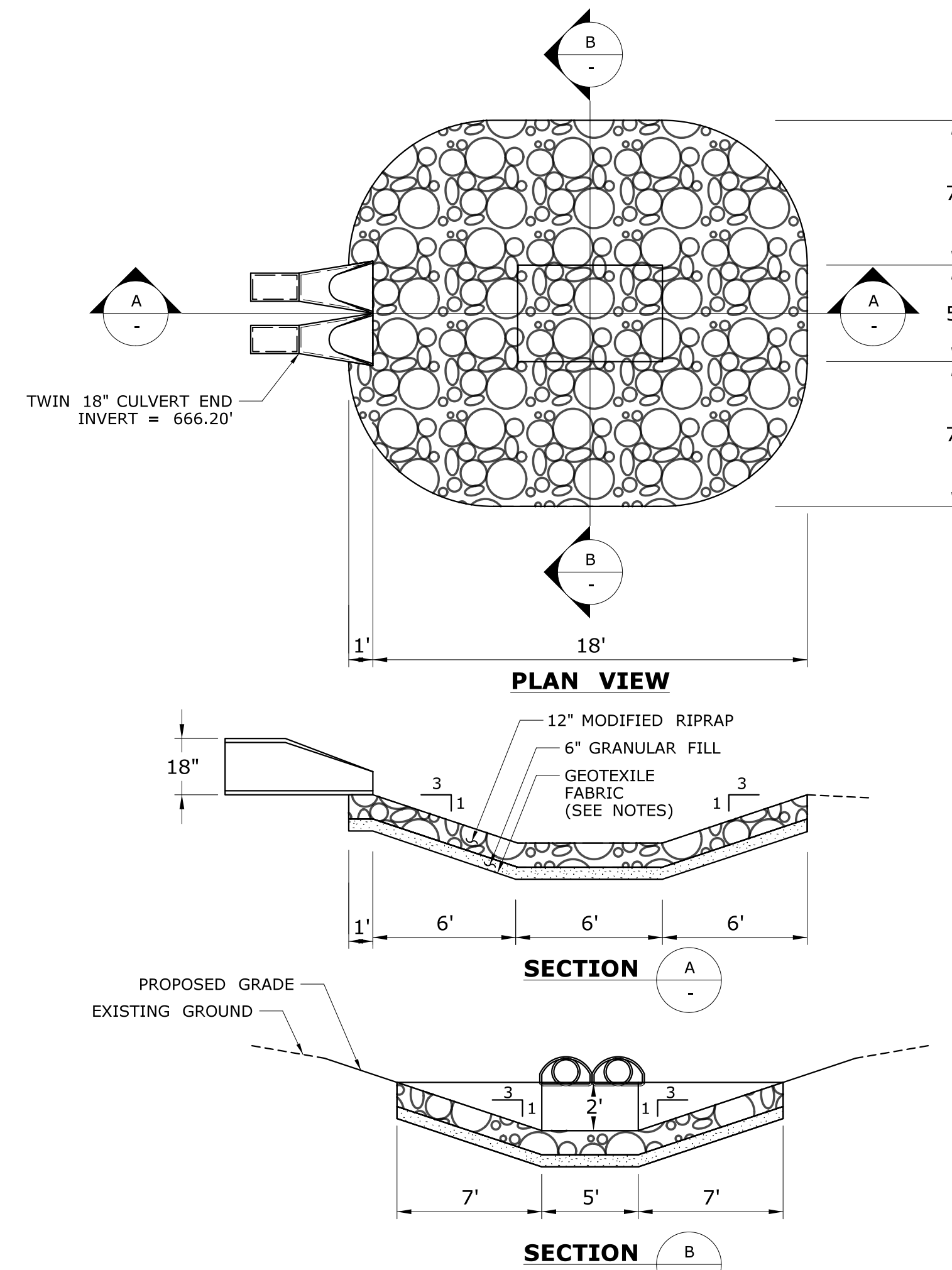
PROJECT NO.
99-114/115
 DRAWING NO.
PMT-11
 SHEET NO.



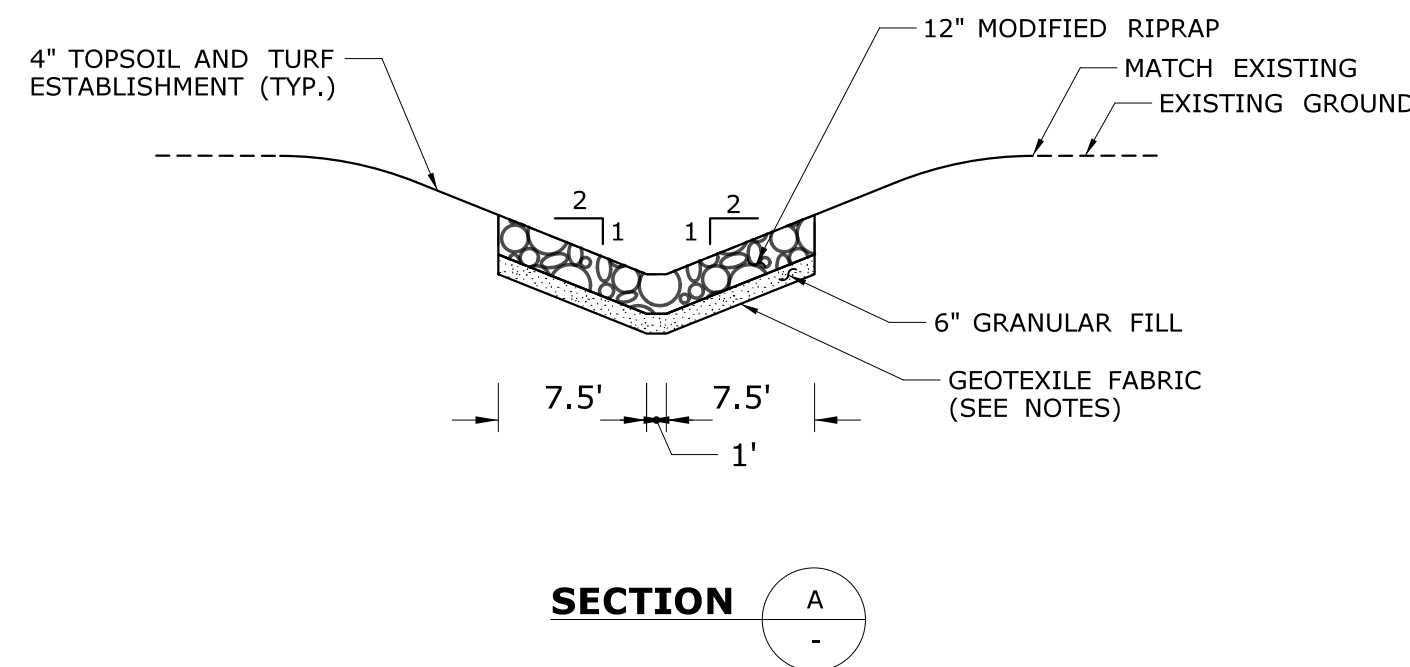
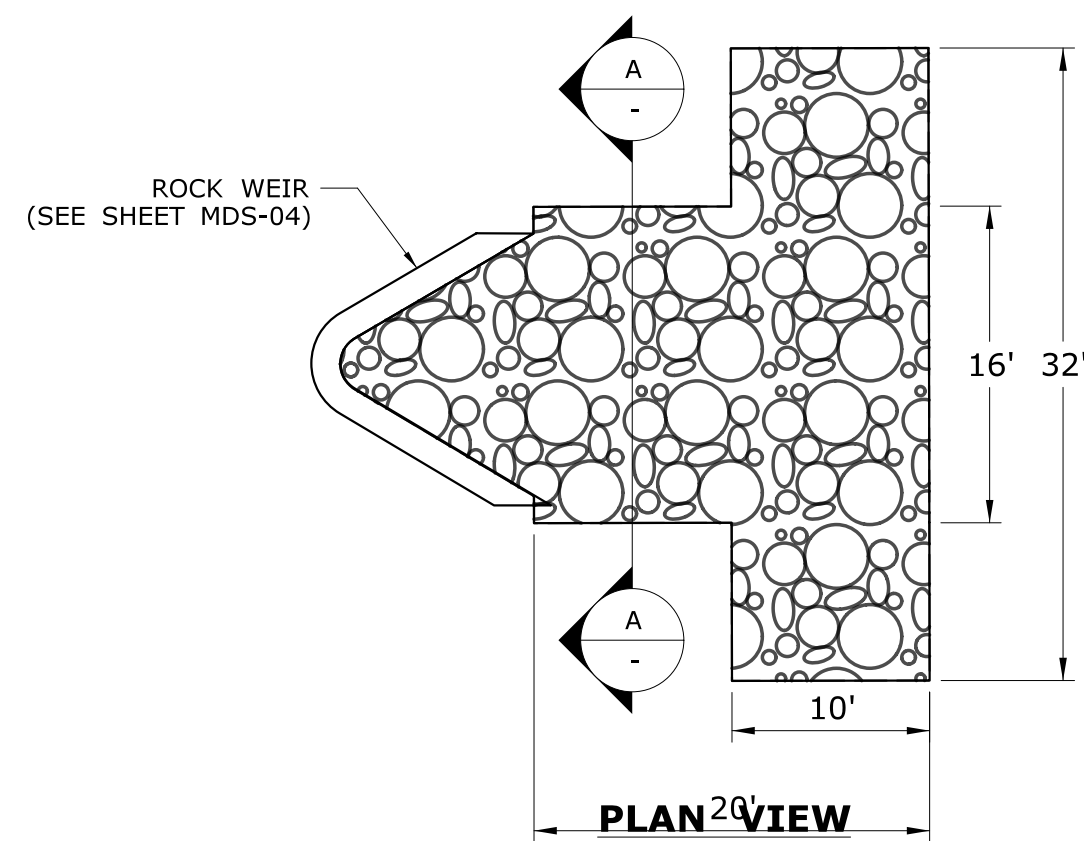
PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - WESTERN OUTLET
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE I
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - EASTERN OUTLET
NOT TO SCALE

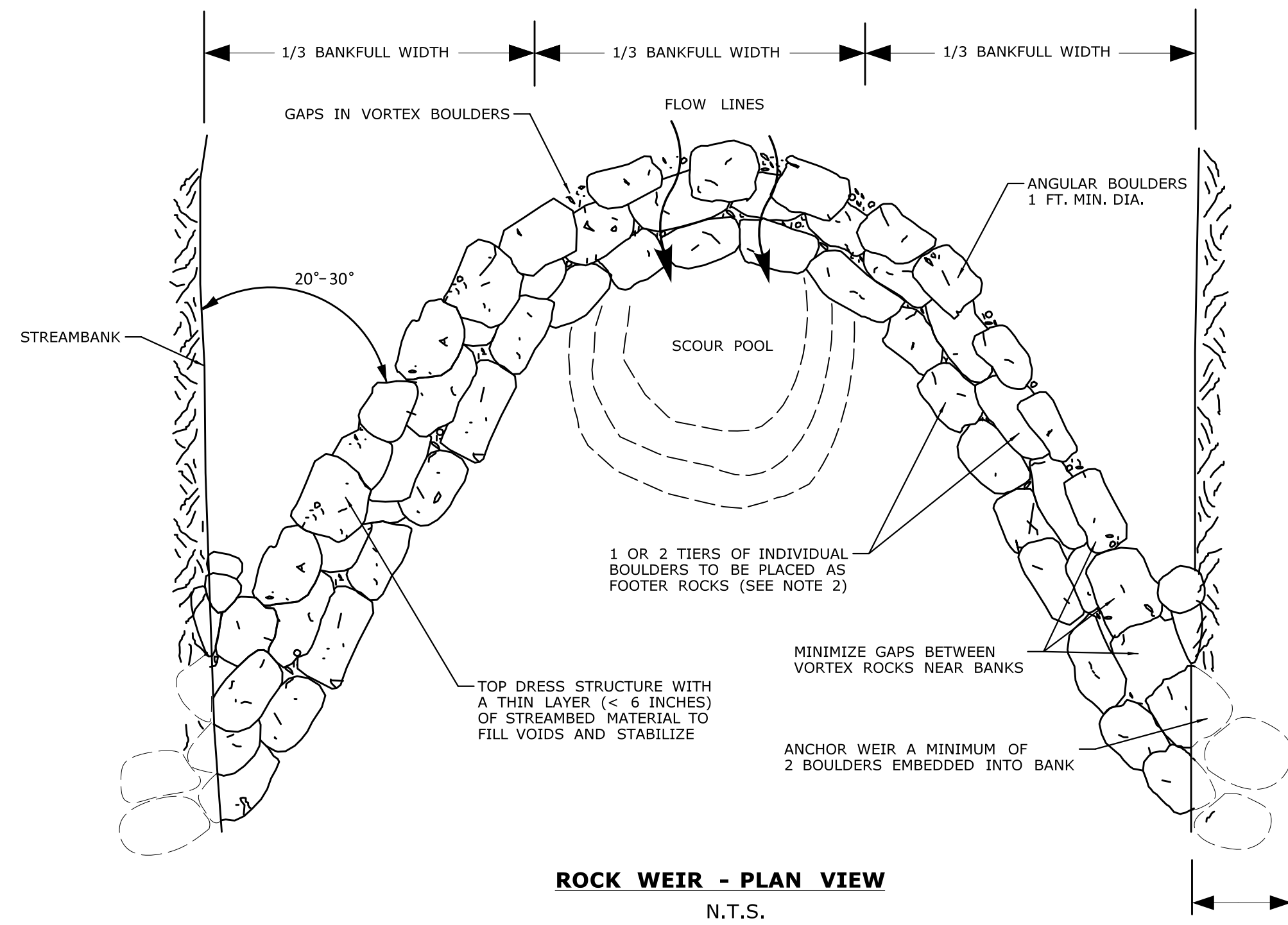
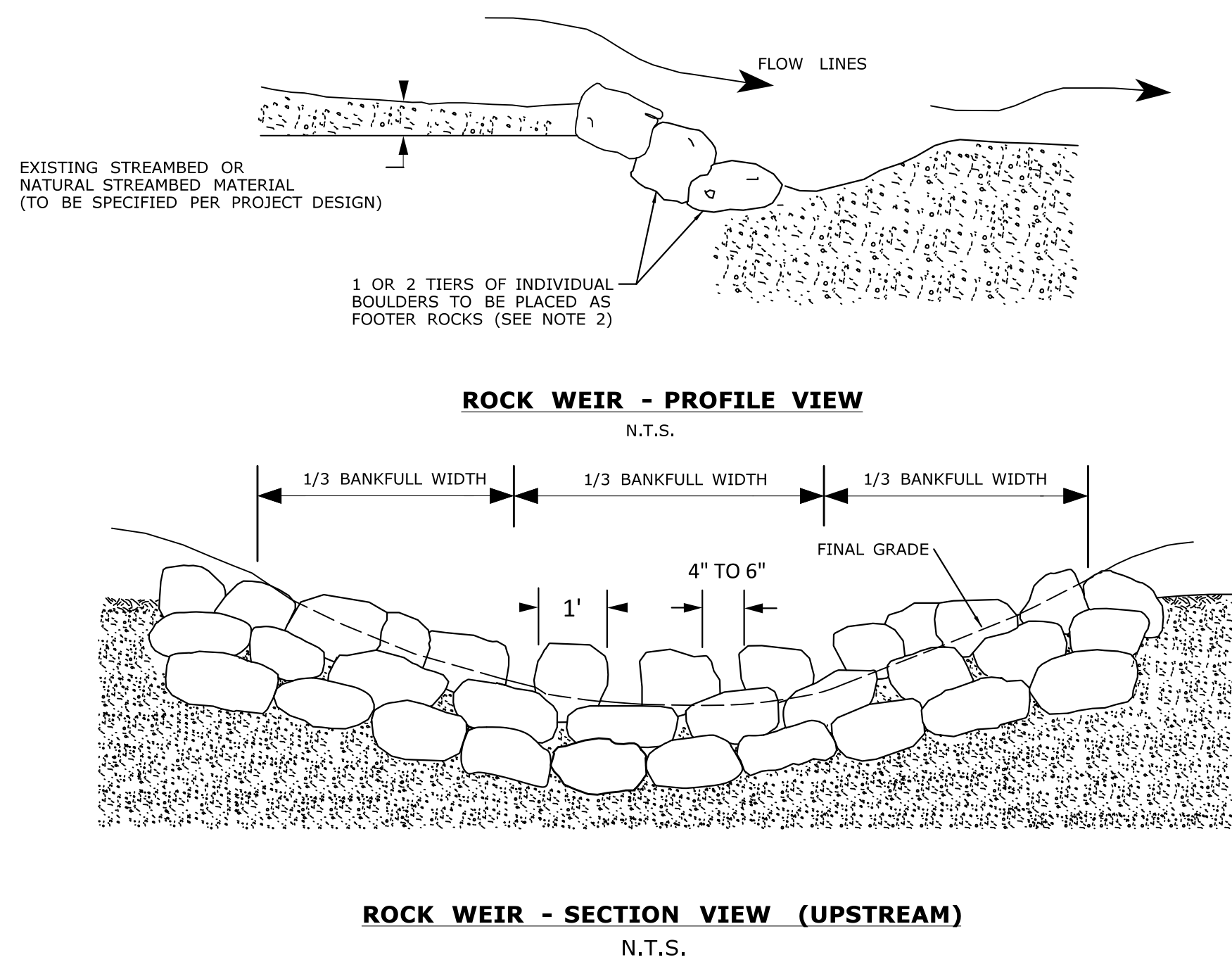


MODIFIED RIPRAP CHANNEL OUTLET
NOT TO SCALE

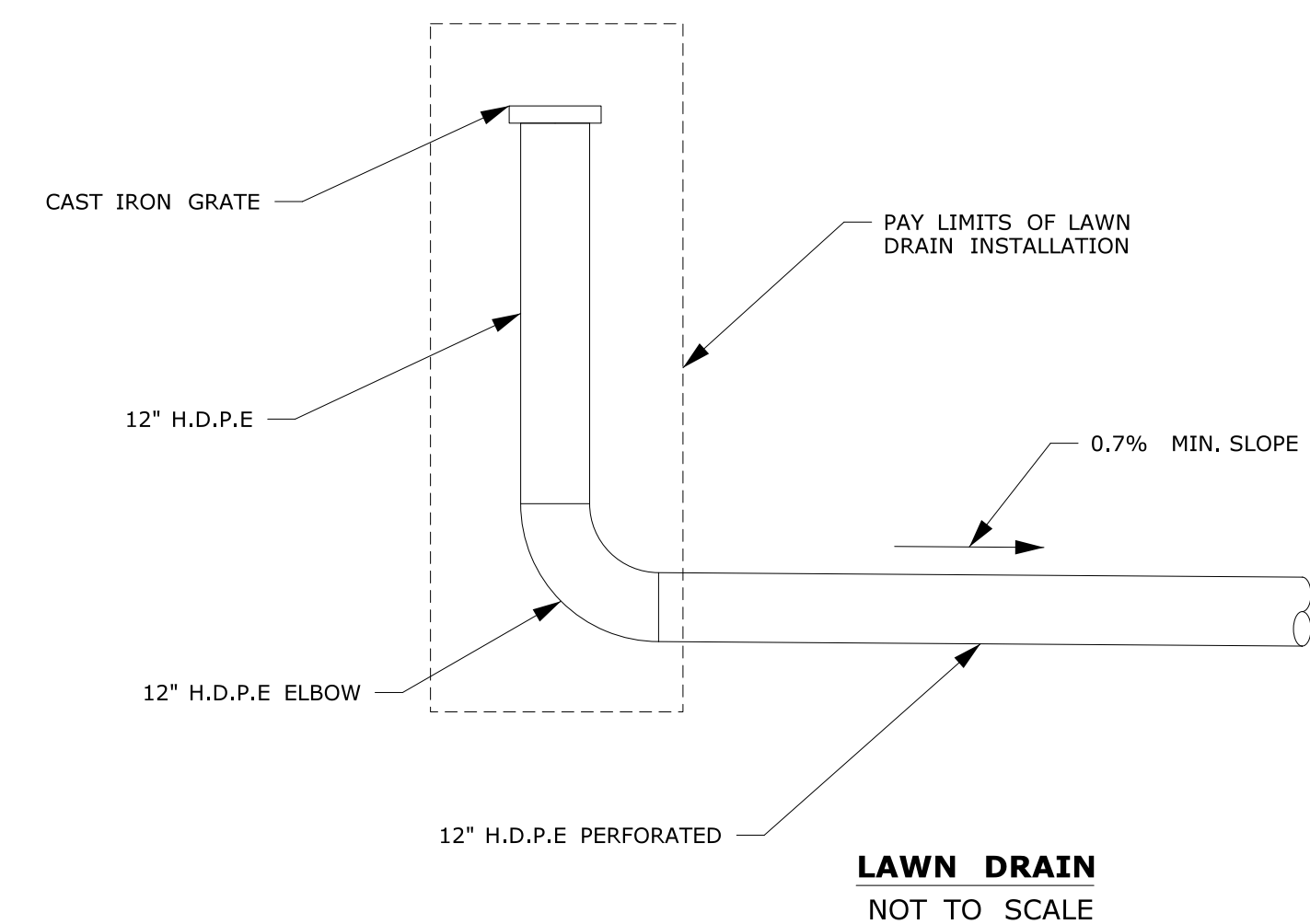
- NOTES:
 1. THE CONTRACTOR SHALL INSTALL A LAYER OF GEOTEXTILE FABRIC PRIOR TO INSTALLING THE LAYER OF GRANULAR FILL.
 2. THE GEOTEXTILE FABRIC SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS & SECTION M.08.01-19 OF THE STANDARD SPECIFICATIONS FORM 817.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV. DATE REVISION DESCRIPTION SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 6/14/2019	DESIGNER/DRAFTER: B.G.R. CHECKED BY: D.M.C. SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...VHW_MSH_99-114-115_PMT-12.dgn	SIGNATURE/BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN DRAWING TITLE: MISCELLANEOUS DETAIL SHEET	PROJECT NO. 99-114/115 DRAWING NO. PMT-12 SHEET NO.
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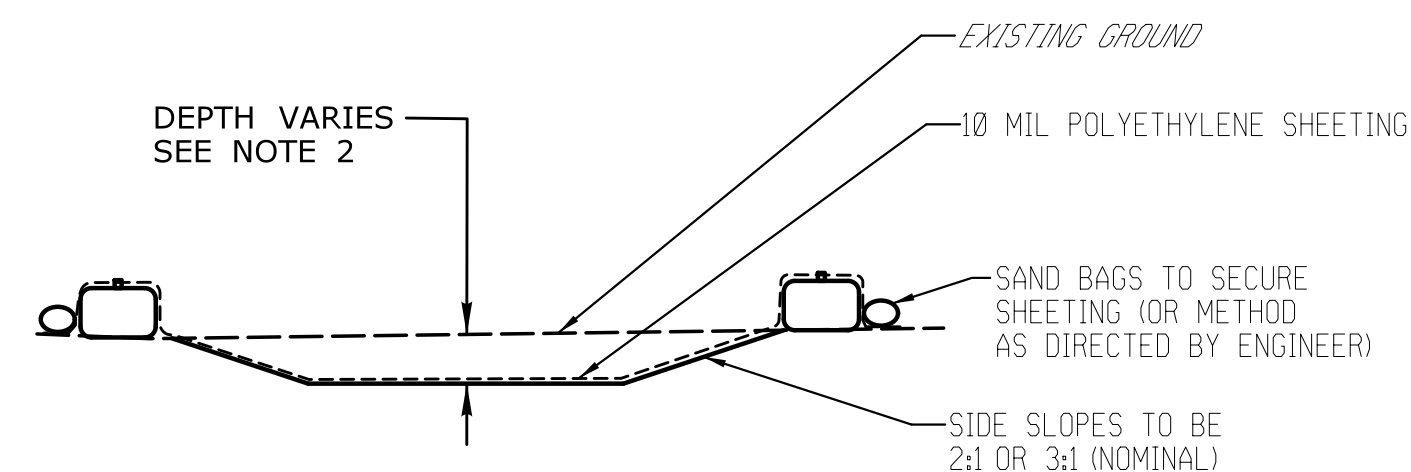
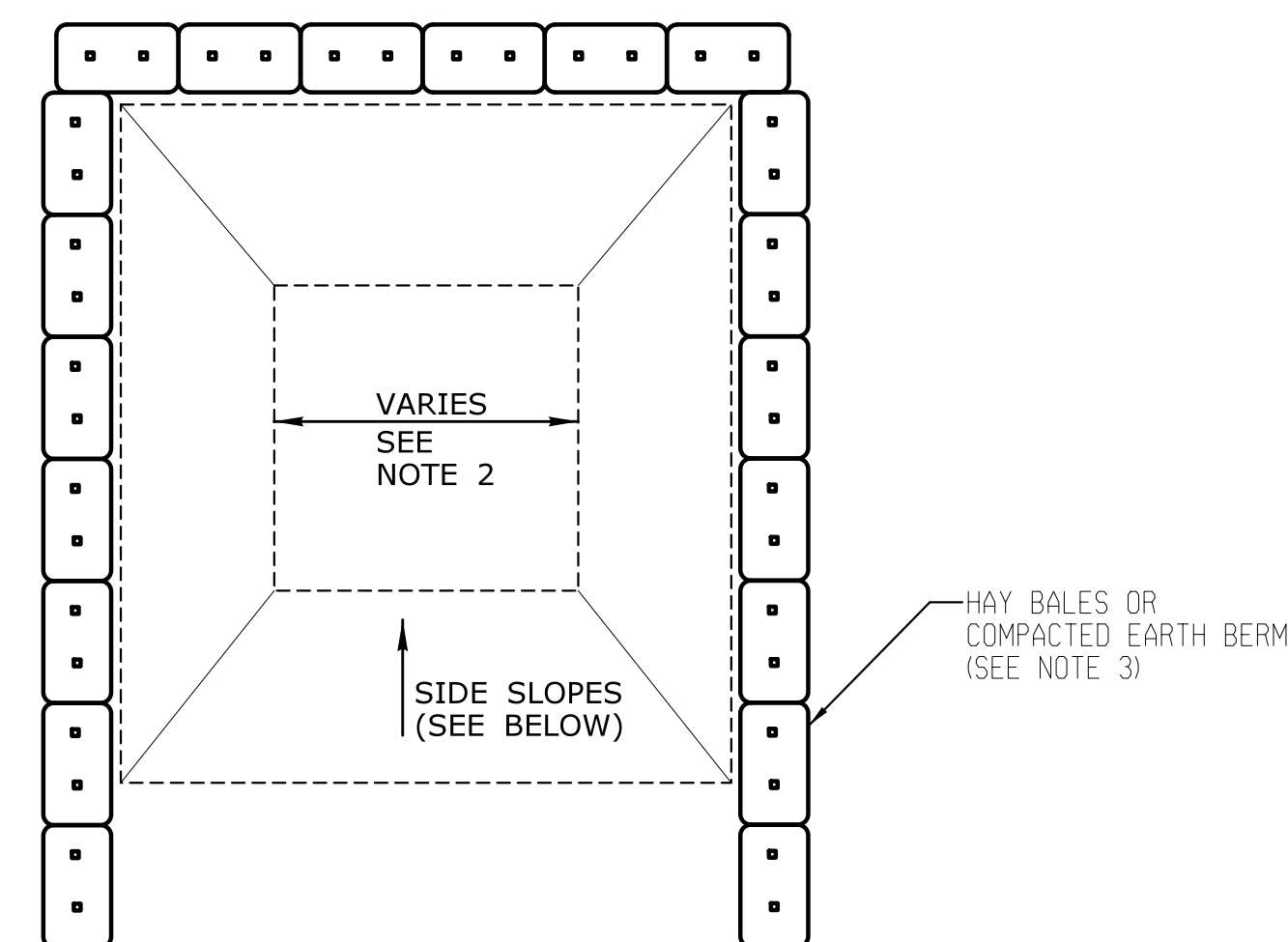


- NOTE:**
1. PLACEMENT OF THE ROCK WEIR SHALL BE DIRECTED IN THE FIELD BY THE ENGINEER OR THEIR AUTHORIZED DELEGATE. SEE SPECIAL PROVISION "ROCK WEIR".
 2. FOOTER ROCKS SHALL SERVE AS THE FOUNDATION FOR THE TOP LAYER OF THE WEIR. FOOTER ROCKS SHALL HAVE REASONABLE FLAT TOPS AND BOTTOMS TO ENABLE BETTER PLACEMENT OF THE TOP LAYER OF THE WEIR.



NOTES

1. CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. THE CONCRETE WASHOUT AREA SHALL BE ENTIRELY SELF-CONTAINED.
2. THE CONTRACTOR SHALL SUBMIT THE DESIGN, LOCATION AND SIZING OF THE CONCRETE WASHOUT AREA(S) WITH THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN AND SHALL BE APPROVED BY THE ENGINEER.
LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED AT LEAST 50 FEET FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE. THE FLOOD CONTINGENCY PLAN MUST ADDRESS THE CONCRETE WASHOUT IF THE WASHOUT IS TO BE LOCATED WITHIN THE FLOODPLAIN.
SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.
3. SURFACE DISCHARGE IS UNACCEPTABLE. THEREFORE, HAY BALES OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT.
4. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER APPROVED METHOD.
5. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTEGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. (AS REQUIRED BY THE CONSTRUCTION SITE ENVIRONMENTAL INSPECTION REPORT) WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS.
6. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S HEIGHT. THE WASTE CAN BE STORED AT AN UPLAND LOCATION, AS APPROVED BY THE ENGINEER. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS, REGULATIONS, AND GUIDELINES.
7. PAYMENT FOR THIS ITEM IS TO BE INCLUDED UNDER THE GENERAL COST OF THE WORK FOR THE PROJECT, INCLUDING SITE RESTORATION.



CONCRETE WASHOUT AREA

NOT TO SCALE
(SEE NOTE 2)

- NOTES:**
1. THE CONTRACTOR SHALL FURNISH, IN CONFORMANCE WITH SECTION 1.06 - CONTROL OF MATERIALS, FORM 817, PRODUCT CUT SHEETS AND DESCRIPTIVE LITERATURE FOR LAWN DRAINS (INCLUDING THE GRATE SIZE AND STYLE) TO THE ENGINEER FOR APPROVAL.
 2. INSTALLATION OF LAWN DRAIN SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS & SECTION 5.07 IN THE STANDARD SPECIFICATIONS FORM 817.
 3. GRATE, ELBOW AND VERTICAL H.D.P.E. PIPE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "LAWN DRAIN."

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 6/14/2019	DESIGNER/DRAFTER: B.G.R.	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/ BLOCK:	DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
-	-	-	-	-	CHECKED BY: D.M.C.		SCALE AS NOTED	FILENAME: ...VHW_MSH_99-114-115_PMT-13.dgn			DRAWING NO. PMT-13
											DRAWING TITLE: MISCELLANEOUS DETAIL SHEET

**DEEP/USACE/EPA/DOT
 Interagency Coordination Meeting Project
 Meeting Notes – 11/29/2018**

Project 99-114/115, Modernize Railroad Crossings and Drainage Improvements, North Canaan

11/29/2018 – The project includes reconstruction of two at-grade railroad crossings, including reconstruction of the crossing surfaces, roadway and sidewalks, installation of new flashing lights and gates, minor signal revisions, new sidewalk pacers and luminaires and installation of new drainage systems. For project No. 99-115 a drainage outfall will be constructed and a new open channel will convey flows to the Blackberry River. Riprap stabilization will be provided at the confluence of the drainage channel and the Blackberry River and a rock weir will be placed within the drainage channel at the confluence as previously requested by DEEP Fisheries. For Project No. 99-114, the proposed outlet discharges into wetlands adjacent to the Blackberry River. A modified riprap scour hole will be installed at the outlet which will impact the wetlands

Project Impacts:

99-115

Impacts sq. ft	Wetland	Watercourse	Total
Temporary	0	0	0
Permanent	801.75 (0.02 ac.)	204.81 (0.004 ac)	1006.56 (0.02 ac)
Total	801.75 (0.02 ac.)	204.81 (0.004 ac)	1006.56 (0.02 ac)

99-114

Impacts sq. ft	Wetland	Watercourse	Total
Temporary	0	0	0
Permanent	58.81 (0.001 ac)	0	58.51 (0.001 ac)
Total	58.81(0.001 ac)	0	58.51 (0.001 ac)

Permitting Requirements: Flood Management General Certification (see agency comments), Self- Verification Form, DEEP IW General and Stormwater General Permit

Agency Comments: DEEP H&D commented that as long as the proposed pipe is equal to or less than 36” diameter, it qualifies under the Flood Management General Certification.

Action Items: Verify the pipe diameter will not be greater than 36”.



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

6 September 2019

Regulatory Division
File Number: NAE-2019-02379

Kimberly Lesay
CT DOT Project No. 99-114/115
2800 Berlin Turnpike
Newington, CT 06131

Dear Ms. Lesay:

PROPOSED WORK/LOCATION: Install Flashing Lights, Vehicular Gates at Housatonic Railroad Company Crossing and Alleviate Historic Localized Flooding at the Crossings by Replacement of Existing Drainage Network in North Canaan, CT.

We have reviewed your proposal to perform work within Corps of Engineers jurisdiction. We have assigned this file number NAE-2019-02379. Please reference this number in any future correspondence with us.

Since your project may have only minimal individual and cumulative impacts on waters and wetlands of the United States, it is authorized by the Corps of Engineers under the Connecticut General Permits (GPs). This authorization does not obviate the need to obtain other federal, state, or local approvals. You are responsible for ensuring that the work meets the terms and conditions of the CT GPs. We have recorded this project as permittee self-verification of the CT GPs in our database.

Please contact me at (978) 318-8703 if you have any questions.

Sincerely,

Kevin R. Kotelly, P.E.
Chief, Permits & Enforcement Branch
Regulatory Division

cc:

CT DEEP, Chief, Land & Water Resources Division – via email

**INTERDEPARTMENTAL
MESSAGE**

STATE OF CONNECTICUT

To	<small>NAME, TITLE</small> Central Permit Processing Unit, 1 st Floor	<small>DATE</small> September 4, 2019
	<small>AGENCY, ADDRESS</small> Department of Energy & Environmental Protection, 79 Elm Street, Hartford, CT 06106	
From	<small>NAME, TITLE</small> Kimberly C. Lesay, Transportation Assistant Planning Director	<small>TELEPHONE</small> 860-594-2931
	<small>AGENCY, ADDRESS</small> Department of Transportation, 2800 Berlin Turnpike, Newington, CT 06131	

Subject: **State Project No. 99-114/115**
U.S. Route 7 & 44 (Main Street)
Railroad-Highway Crossing Grade Improvements
Town of North Canaan

Attached is an Inland Wetlands General Permit associated with the above referenced project. Any questions pertaining to this application may be directed to Mr. Jason M. Coite, Transportation Supervising Engineer of my staff, at 860-594-3448.

Attachment

David M. Cicia/dmc

cc: Barry Schilling – LeVance James
Jason M. Coite – Aaron M. Ferraro
David W. Harms
John S. Dunham – Richard Symonds (District 4)
Ken Radziwon – Steve Fraysier – David M. Cicia (BL Companies)



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-3448

September 4, 2019

TO: Inland Wetland and Conservation Commission
Town of North Canaan
100 Pease Street
Canaan, CT 06018

FROM: Kimberly C. Lesay
Transportation Assistant Planning Director
Bureau of Policy and Planning

SUBJECT: Notification of Submittal of Application to the Department of Energy and
Environmental Protection (DEEP) for a General Permit for Water Resource
Construction Activities

PROJECT: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Routes 7 & 44 (Main Street) over Housatonic Railroad Company Crossings
Town of North Canaan

Enclosed is a copy of our Request for Authorization under the State of Connecticut Department of Energy and Environmental Protection's General Permit for Water Resource Construction Activities. If your agency wishes to comment on the enclosed application, comments must be submitted to the State Department of Energy and Environmental Protection.

Comments should be directed to:

Inland Water Resources Division
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

If we can provide additional information, please contact me at 860-594-3448.

Enclosures

cc: DEEP Permit File

bcc: Jason M. Coite – Aaron M. Ferraro
Barry Schilling – LeVance James
Robert E. Obey
Ken Radziwon – David M. Cicia (BL Companies)



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-3448

September 4, 2019

TO: Planning & Zoning Commission
Town of North Canaan
100 Pease Street
Canaan, CT 06018

FROM: Kimberly C. Lesay *Kimberly Lesay*
Transportation Assistant Planning Director
Bureau of Policy and Planning

SUBJECT: Notification of Submittal of Application to the Department of Energy and
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Enclosures

cc: DEEP Permit File

bcc: Jason M. Coite – Aaron M. Ferraro
Barry Schilling – LeVance James
Robert E. Obey
Ken Radziwon – David M. Cicia (BL Companies)



**Connecticut Department of
Energy & Environmental Protection**

CPPU USE ONLY

App #: _____

Doc #: _____

Check #: _____

Permit Application Transmittal Form

Please complete this transmittal form in accordance with the instructions in order to ensure the proper handling of your application(s) and the associated fee(s). Print legibly or type.

Part I: Applicant Information:

- *If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, applicant's name shall be stated **exactly** as it is registered with the Secretary of State.
- If an applicant 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.).

Applicant: Connecticut Department of Transportation			
Mailing Address: 2800 Berlin Turnpike			
City/Town: Newington	State: CT	Zip Code: 06131	
Business Phone: 860-594-2931	ext.:		
Contact Person: Kimerly C. Lesay	Phone: 860-594-2931 ext.		
E-Mail: kimberly.lesay@ct.gov			
Applicant (check one): <input type="checkbox"/> individual <input type="checkbox"/> *business entity <input type="checkbox"/> federal agency <input checked="" type="checkbox"/> state agency <input type="checkbox"/> municipality <input type="checkbox"/> tribal			
*If a business entity, list type (e.g., corporation, limited partnership, etc.):			
<input type="checkbox"/> Check if any co-applicants. If so, attach additional sheet(s) with the required information as supplied above.			
Please provide the following information to be used for <i>billing purposes only</i> , if different:			
Company/Individual Name:			
Mailing Address:			
City/Town:	State:	Zip Code:	
Contact Person:	Phone:	ext.	

Part II: Project Information

Brief Description of Project: <i>(Example: Development of a 50 slip marina on Long Island Sound)</i>					
Drainage network rehab, installation of flashing lights, vehicular gates, roadway/crossing surface modifications.					
Location (City/Town): North Canaan					
Other Project Related Permits (<i>not</i> included with this form):					
Permit Description	Issuing Authority	Submittal Date	Issuance Date	Denial Date	Permit #
Self-Verification	US ACOE	Concurrent Submission			
FMGC	CT DOT	4/23/2019	5/24/2019		
Stormwater Discharge	CT DEEP	6/6/2019			ezFile #49081

Part III: Individual Permit Application and Fee Information

New, Mod. or Renew	Individual Permit Applications	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
	New Source Review <input type="checkbox"/> Revision <input type="checkbox"/> minor mod	\$940.00			1 + 0
	Title V Operating Permits <input type="checkbox"/> Revision <input type="checkbox"/> minor mod <input type="checkbox"/> non-minor mod	none			1 + 0
	Title IV	none			1 + 0
	Clean Air Interstate Rule (CAIR)	none			1 + 0
	WATER DISCHARGES				
	To Groundwater	\$1300.00			1 + 1
	To Sanitary Sewer (POTW)	\$1300.00			1 + 1
	To Surface Water (NPDES)	\$1300.00			1 + 1
	WATER PLANNING AND MANAGEMENT				
	Dam Safety	none			1 + 2
	Domestic Sewage Treatment Works (For municipal and private sewage treatment facilities discharging to surface waters)	\$1300.00/ Mod = \$940			1 + 1
	Water Diversion (consumptive) and Registrations	★			1 + 5
	LAND AND WATER RESOURCES				
	Flood Management Certification	none			1 + 1
	Flood Management Certification Exemption	none			1 + 1
	Inland Wetlands and Watercourses (State Agencies Only)	none			1 + 5
	Inland 401 Water Quality Certification	none			1 + 5
	FERC- Hydropower Projects- 401 Water Quality Certification	none			
	Water Diversion (non-consumptive)	★			1 + 5
	Certificate of Permission	\$375.00			1 + 2
	Coastal 401 Water Quality Certification	none			1 + 2
	Structures and Dredging/and Fill/Tidal Wetlands	\$660.00			1 + 2
	WASTE MANAGEMENT				
	Aerial Pesticide Application	★			1 + 2
	Aquatic Pesticide Application	\$200.00			1 + 0
	CGS Section 22a-454 Waste Facilities	★			1 + 1
	Disruption of a Solid Waste Disposal Area	\$0			1 + 1
	Hazardous Waste Treatment, Storage and Disposal Facilities	★			1 + 1
	Marine Terminal License	\$100.00			1 + 0
	Stewardship	\$4000.00			1 + 1
	Solid Waste Facilities	★			1 + 1
	Waste Transportation	★			1 + 0
		Subtotal ➡	0	0	
GENERAL PERMITS and AUTHORIZATIONS		Subtotals Page 3 & 4 ➡	1	0	
Enter subtotals from Part IV, pages 3 - 6 of this form		Subtotals Page 5 ➡	0	0	
		Subtotals Page 6 ➡	0	0	
		TOTAL ➡	1	0	
<input type="checkbox"/> Indicate whether municipal discount or state waiver applies. Less Applicable Discount		➡		0	
		AMOUNT REMITTED ➡		0	
Check # ➡	<input type="text"/>	Check or money order should be made payable to: "Department of Energy and Environmental Protection"			

★ See fee schedule on individual application.

Part IV: General Permit Registrations and Requests for Other Authorizations Application and Fee Information

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
AIR EMISSIONS					
<input type="checkbox"/>	Limit Potential to Emit from Major Stationary Sources of Air Pollution	\$2760.00			1 + 0
<input type="checkbox"/>	Diagnostic and Therapeutic X-Ray Devices (Medical X-Ray) Registration	\$190.00/Xray device			1 + 0
<input type="checkbox"/>	Radioactive Materials and Industrial Device Registration (Ionizing Radiation)	\$200.00			1 + 0
<input type="checkbox"/>	Emergency/Temporary Authorization	★★			★★
<input type="checkbox"/>	License Revocation Request	\$0			★★
<input type="checkbox"/>	Other, (please specify):				
WATER DISCHARGES					
Categorical Industry User to a POTW					
<input type="checkbox"/>	Discharges ≥ 10,000 gpd	\$6250.00			1 + 0
<input type="checkbox"/>	Discharges < 10,000 gpd	\$3125.00			
Comprehensive Discharges to Surface Water and Groundwater					
<input type="checkbox"/>	Registration Only	\$625.00			1 + 0
<input type="checkbox"/>	Approval of Registration by DEEP	\$1250.00			
<input type="checkbox"/>	Domestic Sewage	\$625.00			1 + 0
<input type="checkbox"/>	Food Service Establishment Wastewater	No Registration			
Groundwater Remediation Wastewater					
<input type="checkbox"/>	Registration Only	\$625.00			1 + 0
<input type="checkbox"/>	Approval of Registration by DEEP	\$1250.00			
Miscellaneous Discharges of Sewer Compatible Wastewater					
<input type="checkbox"/>	Registration Only	\$500.00			1 + 0
<input type="checkbox"/>	Approval of Registration by DEEP	\$1000.00			
<input type="checkbox"/>	Nitrogen Discharges	No Registration			
<input type="checkbox"/>	Point Source Discharges from Application of Pesticides	\$200.00			1 + 0
<input type="checkbox"/>	Stormwater Associated with Commercial Activities	\$300.00			1 + 0
Stormwater Associated with Industrial Activities					
<input type="checkbox"/>	No Exposure Certification	\$250.00			1 + 0
<input type="checkbox"/>	<50 employees—see general permit for additional requirements	\$500.00			
<input type="checkbox"/>	>50 employees—see general permit for additional requirements	\$1000.00			
<input type="checkbox"/>	Stormwater & Dewatering Wastewaters-Construction Activities	★			1 + 0
<input type="checkbox"/>	Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)	\$625.00			1 + 0
<input type="checkbox"/>	Stormwater from DOT Separate Storm Sewer Systems (DOT MS4)	\$0			1 + 0
<input type="checkbox"/>	Subsurface Sewage Disposal Systems Serving Existing Facilities	★★			1 + 0
<input type="checkbox"/>	Swimming Pool Wastewater - Public Pools and Contractors	\$500.00			1 + 0
Vehicle Maintenance Wastewater					
<input type="checkbox"/>	Registration Only	\$625.00			1 + 0
<input type="checkbox"/>	Approval of Registration by DEEP	\$1250.00			
<input type="checkbox"/>	Emergency/Temporary Authorization - Discharge to POTW	\$1500.00			1 + 0
<input type="checkbox"/>	Emergency/Temporary Authorization - Discharge to Surface Water	\$1500.00			1 + 0
<input type="checkbox"/>	Emergency/Temporary Authorization - Discharge to Groundwater	\$1500.00			1 + 0
<input type="checkbox"/>	Other, (please specify):				
Note: Carry subtotals over to Part III, page 2 of this form.		Subtotal →	0	0	

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information.
(Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

<input checked="" type="checkbox"/> General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
AQUIFER PROTECTION PROGRAM				
<input type="checkbox"/> Registration for Regulated Activities	\$625.00			1 + 0
<input type="checkbox"/> Permit Application to Add a Regulated Activity	\$1250.00			1 + 0
<input type="checkbox"/> Exemption Application from Registration	\$1250.00			1 + 0
WATER PLANNING AND MANAGEMENT				
<input type="checkbox"/> Dam Safety Repair and Alteration: Non Filing	No Registration			
<input type="checkbox"/> Dam Safety Repair and Alteration: Filing – No PE	\$100.00			1 + 0
<input type="checkbox"/> Dam Safety Repair and Alteration: Filing – PE	\$200.00			1 + 0
<input type="checkbox"/> Dam Safety Repair and Alteration: Approval of Filing	\$250.00			1 + 0
<input type="checkbox"/> Diversion of Remediation Groundwater	No Registration			
<input type="checkbox"/> Diversion of Water for Consumptive Use: Reauthorization Categories	\$2500.00			1 + 0
<input type="checkbox"/> Diversion of Water for Consumptive Use: Authorization Required	\$2500.00			1 + 4
<input type="checkbox"/> Diversion of Water for Consumptive Use: Filing Only	\$1500.00			1 + 1
<input checked="" type="checkbox"/> Water Resource Construction Activities	★	1	0	1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★★			★★
<input type="checkbox"/> Notice of High Hazard Dam or a Significant Hazard Dam	\$0			1 + 0
<input type="checkbox"/> Other, (please specify):				
LAND AND WATER RESOURCES				
Minor Coastal Structures				
<input type="checkbox"/> 4/40 Docks/Access Stairs	\$700.00			1 + 1
<input type="checkbox"/> Beach Grading	No Registration			
<input type="checkbox"/> Buoys or Markers	No Registration			
<input type="checkbox"/> Experimental Activities/Scientific Monitoring Devices	No Registration			
<input type="checkbox"/> Harbor Moorings	No Registration			
<input type="checkbox"/> Non-harbor Moorings	\$250.00			1 + 1
<input type="checkbox"/> Osprey Platforms and Perch Poles	No Registration			
<input type="checkbox"/> Pump-out Facilities	No Registration			
<input type="checkbox"/> Swim Floats	No Registration			
Coastal Maintenance				
<input type="checkbox"/> Backflow Prevention Structure	No Registration			
<input type="checkbox"/> Beach Grading/Raking	No Registration			
<input type="checkbox"/> Catch Basin Cleaning	No Registration			
<input type="checkbox"/> Coastal Remedial Activities Required by Order	\$700.00			1 + 1
<input type="checkbox"/> Coastal Restoration	No Registration			
<input type="checkbox"/> DEEP Boat Launch Infrastructures	No Registration			
<input type="checkbox"/> DOT Infrastructures	No Registration			
<input type="checkbox"/> Marina and Mooring Field Reconfiguration	\$700.00			1 + 1
<input type="checkbox"/> Minor Seawall Repair	No Registration			
<input type="checkbox"/> Placement of Cultch	No Registration			
<input type="checkbox"/> Reconstruction of Legally Existing Structure/Obstruction/Encroachment	\$300.00			1 + 1
<input type="checkbox"/> Removal of Derelict Structures	No Registration			
<input type="checkbox"/> Residential Flood Hazard Mitigation	\$100.00			1 + 1
<input type="checkbox"/> Temporary Access of Construction Vehicles/Equipment	No Registration			
<input type="checkbox"/> Programmatic General Permit	★			1 + 1
<input type="checkbox"/> Emergency/Temporary Authorization				
<input type="checkbox"/> Other, (please specify):				
Note: Carry subtotals over to Part III, page 2 of this form.		Subtotal ➡	1	0

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information.
(Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

<input checked="" type="checkbox"/> General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
WASTE MANAGEMENT				
<input type="checkbox"/> Addition of Grass Clippings at Registered Leaf Composting Facilities	\$500.00			1 + 0
<input type="checkbox"/> Beneficial Use Determination	★			1 + 0
<input type="checkbox"/> Collection and Storage of Post Consumer Paint	\$0			1 + 0
<input type="checkbox"/> Connecticut Solid Waste Demonstration Project	\$1000.00			1 + 0
Construct and Operate a Commercial Facility for the Management of Recyclable Materials and Certain Solid Wastes (Commercial GP)				
<input type="checkbox"/> Asbestos Containing Materials	\$1,250.00/\$ 625			1 + 0
<input type="checkbox"/> Ash Residue	\$1,250.00/\$ 625			1 + 0
<input type="checkbox"/> Clean Wood: Tier III	\$500.00/\$250			1 + 0
<input type="checkbox"/> Clean Wood: Tier II	\$250.00/\$125			1 + 0
<input type="checkbox"/> Construction and Demolition Waste: Tier III	\$1,250.00/\$625			1 + 0
<input type="checkbox"/> Construction and Demolition Waste: Tier II	\$500.00/\$250			1 + 0
<input type="checkbox"/> Non-RCRA Hazardous Waste/Compatible Solid Wastes	\$1,250.00/\$625			1 + 0
<input type="checkbox"/> Recyclables	\$500.00/\$250			1 + 0
<input type="checkbox"/> Universal Wastes/Compatible Solid Wastes	\$1,250.00/\$625			1 + 0
Contaminated Soil and/or Staging Management (Staging/Transfer)				
<input type="checkbox"/> New Registrations	\$250.00			1 + 0
<input type="checkbox"/> New Approval of Registrations	\$1500.00			1 + 0
<input type="checkbox"/> Renewal of Registrations	\$250.00			1 + 0
<input type="checkbox"/> Renewal of Approval of Registrations	\$750.00			1 + 0
<input type="checkbox"/> Disassembling Used Electronics	\$2000.00			1 + 0
<input type="checkbox"/> Leaf Composting Facility	\$0			1 + 1
<input type="checkbox"/> Municipal Transfer Station	\$800.00			1 + 1
<input type="checkbox"/> One Day Collection of Certain Wastes and Household Hazardous Waste	\$1000.00			1 + 0
<input type="checkbox"/> Sheet Leaf Composting Notification	\$0			★★
Special Waste Authorization				
<input type="checkbox"/> Landfill or RRF Disposal	\$660.00			1 + 0
<input type="checkbox"/> Asbestos Disposal	\$300.00			
<input type="checkbox"/> homeowner	\$0			
<input type="checkbox"/> Storage and Processing of Asphalt Roofing Shingle Waste	\$2500.00			1 + 0
<input type="checkbox"/> Storage and Processing of Scrap Tires for Beneficial Use	\$1250.00			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★★			★★
<input type="checkbox"/> Other, (please specify):				
REMEDIATION				
<input type="checkbox"/> In Situ Groundwater Remediation: Enhance Aerobic Biodegradation	★			1 + 2
<input type="checkbox"/> In Situ Groundwater Remediation: Chemical Oxidation	\$500.00			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★			★★
Note: Carry subtotals over to Part III, page 2 of this form.		Subtotal →	0	0

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information.

(Contact numbers are provided in the instructions)

Affirmative Action, Equal Employment Opportunity and Americans with Disabilities

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). Please contact us at (860) 418-5910 or deep.accommodations@ct.gov if you: have a disability and need a communication aid or service; have limited proficiency in English and may need information in another language; or if you wish to file an ADA or Title VI discrimination complaint.



Connecticut Department of
 Energy & Environmental Protection
 Bureau of Water Protection & Land Reuse
 Inland Water Resources Division

Request for Authorization Form for the General Permit for Water Resource Construction Activities

Please complete this form in accordance with the [general permit](#) (DEEP-IWRD-GP-013) to ensure the proper handling of your request. Print or type unless otherwise noted. You must submit the fee along with this completed form.

CPPU USE ONLY
App #: _____
Doc #: _____
Check #: _____
Program: GP IWRD Construction Activities

Part I: Request and Fee Type

Check the appropriate box identifying the request type.

<input type="checkbox"/> \$5000 [#1757] for each Request for Authorization for Section 3(a)(1), (a)(2), (a)(3), (a)(4), (a)(5), (a)(6), or (a)(7) activities under the subject general permit, unless you qualify as one of the following: <input type="checkbox"/> \$2500 for any municipality <input type="checkbox"/> \$2500 for electronic filing*	<input checked="" type="checkbox"/> \$2500 [#1758] for each Request for Authorization for Section 3(a)(8) or 3(a)(9) activities under the subject general permit, unless you qualify as one of the following: <input type="checkbox"/> \$1250 for any municipality <input type="checkbox"/> \$1250 for electronic filing*
---	--

**In order to file electronically, ALL supporting documents under Part VI of this application must be submitted in an electronic format on a CD, along with this original completed application in hard copy.*

The request will not be processed without the fee. The fee shall be non-refundable and shall be paid by check or money order to the Department of Energy and Environmental Protection.

Town where site is located: North Canaan

Brief Description of Project: The project proposes to install railroad flashing lights and vehicular gates along with reconstruction and vertical alignment revisions to the roadway approaches at the Housatonic Railroad Company's track crossings on U.S. Route 7 & 44 (Main Street). The proposed design will also address the localized flooding at both crossings by installing additional drainage structures and a new drainage trunkline for each crossing.

Part II: Requestor Information

- If a requester is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, requester's name shall be stated **exactly** as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of State's database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)
- If a requester 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.).
- If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the [Request to Change Company/Individual Information](#) to the address indicated on the form. If there is a change in name of the entity holding a DEEP license or a change in ownership, contact the Office of Planning and Program Development (OPPD) at 860-424-3003. For any other changes you must contact the specific program from which you hold a current DEEP license.

1. Requester Name: Connecticut Department of Transportation

Mailing Address: 2800 Berlin Turnpike

City/Town: Newington

State: CT Zip Code: 06131

Business Phone: 860-594-2931

ext.:

Contact Person: Kimberly C. Lesay

Phone: 860-594-2931 ext.

E-mail: kimberly.lesay@ct.gov

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject request. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

a) Requester Type (check one):

individual federal agency state agency municipality tribal

*business entity (*If a business entity complete i through iii):

i) check type: corporation limited liability company limited partnership
 limited liability partnership statutory trust Other: _____

ii) provide Secretary of the State business ID #: _____ This information can be accessed at database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)

iii) Check here if your business is **not** registered with the Secretary of State's office.

Check here if any co-registrants. If so, attach additional sheet(s) with the required information as requested above.

b) Requester's interest in property at which the proposed activity is to be located:

site owner option holder lessee easement holder operator

other (specify): _____

Part II: Requestor Information (continued)

2. Billing contact, if different than the requester.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

Email:

3. Primary contact for departmental correspondence and inquiries, if different than the requester.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

Email:

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject request. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

4. Attorney or other representative, if applicable:

Firm Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Attorney:

Email:

5. Site Owner, if different than the requester.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

Email:

Part II: Requestor Information (continued)

6. Engineer(s) or other consultant(s) employed or retained to assist in preparing the request or in designing or constructing the activity.

Name: **BL Companies**

Mailing Address: **355 Research Parkway**

City/Town: **Meriden**

State: **CT**

Zip Code: **06450**

Business Phone: **203-630-1406**

ext.

Contact Person: **Ken Radziwon**

Title: **Project Manager**

Email: **kradziwon@blcompanies.com**

Service Provided: **Roadway Engineering & Permit Preparation**

Check here if additional sheets are necessary, and label and attach them to this sheet.

Part III: Site Information

1. SITE NAME AND LOCATION

Name of Site : **State Project No. 99-114/115**

Street Address or Location Description: **Housatonic Railroad Co. crossings on U.S. Route 7 & 44**

City/Town: **North Canaan**

State: **CT**

Zip Code: **06018**

Tax Assessor's Reference: Map

Block

Lot

Latitude and longitude of the exact location of the proposed activity in degrees, minutes, and seconds or in decimal degrees: Latitude: **42.026274** Longitude: **-73.328572**

Method of determination (check one):

GPS USGS Map Other (please specify): **Google Maps**

If a USGS Map was used, provide the quadrangle name:

2. INDIAN LANDS: Is or will the facility be located on federally recognized Indian lands? Yes No

3. 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

If yes, and this registration is for a new authorization, or a modification of an existing authorization where the physical footprint of the subject activity is modified, you must submit a [Coastal Consistency Review Form](#) (DEEP-APP-004) with your registration as Attachment C.

Information on the coastal boundary is available at www.cteco.uconn.edu/map_catalog.asp (Select the town and then select coastal boundary. If the town is not within the coastal boundary you will not be able to select the coastal boundary map.) or the local town hall or on the "Coastal Boundary Map" available at DEEP Maps and Publications (860-424-3555).

Part III: Site Information (continued)

4. **ENDANGERED OR THREATENED SPECIES:** According to the most current "State and Federal Listed Species and Natural Communities Map", is the project site located within an area identified as a habitat for endangered, threatened or special concern species? Yes No Date of Map: **Dec. 2018**

If yes, complete and submit a [Request for NDDDB State Listed Species Review Form](#) (DEEP-APP-007) to the address specified on the form. **Please note NDDDB review generally takes 4 to 6 weeks and may require additional documentation from the registrant.**

A **copy** of the completed *Request for NDDDB State Listed Species Review Form* and the CT NDDDB response **must** be submitted with this completed registration as Attachment D.

For more information visit the DEEP website at www.ct.gov/deep/nddbrequest or call the NDDDB at 860-424-3011.

5. **AQUIFER PROTECTION AREAS:** Is the site located within a mapped Level A or Level B [Aquifer Protection Area](#), as defined in CGS section 22a-354a through 22a-354bb?

Yes No If **yes**, check one: Level A or Level B

If **Level A**, are any of the [regulated activities](#), as defined in RCSA section 22a-354i-1(34), conducted on this site? Yes No

If **yes**, and your business is **not** already registered with the Aquifer Protection Program, contact the [local aquifer protection agent](#) or DEEP to take appropriate actions.

For more information on the Aquifer Protection Area Program visit the DEEP website at www.ct.gov/deep/aquiferprotection or contact the program at 860-424-3020.

6. **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 that this registration is in compliance with the terms of the restriction, must be submitted as Attachment E.

Part IV: Construction Activity Details

- Proposed Date of Initiation of Activity: October 2019
- Anticipated Date of Completion: August 2020
- Name of the wetland or watercourse involved with or adjacent to the subject activity:
Blackberry River
- Is the subject activity within a watercourse or floodplain? Yes No
- Will the subject activity be within a FEMA floodway? Yes No
- If the project requires a Flood Management Certification for the subject activity, provide the Flood Management Certification Number: FMGC approved by CTDOT H&D on 5/24/2019.

Part IV: Construction Activity Details (continued)

7. Disturbance to wetlands, watercourses and flood plains:

Wetlands (acres):

excavation: 0.049 (perm) -fill: 0.000 (temp) total disturbance: 0.049 (perm)

Floodplain (cubic yards):

excavation: 2,160 fill: 100 net: 2,060 cut

Watercourse (linear feet): n/a

8. Describe the present and intended use(s) of the property at which the subject activity will be conducted and the reason for conducting or maintaining the activity.

The project area primarily consists of the existing roadway and the two railroad crossings. The intended use will remain the same. The construction activities involve providing safety improvements to the crossings via flashing railroad lights and vehicular gates while also raising the vertical profile of the road. In order for the proposed crossing improvements to be installed, historical and localized flooding at the crossing will be alleviated through replacement of the existing drainage network to provide sufficient runoff conveyance during storms.

9. Describe all natural and manmade features impacted by the subject activity, including wetlands, watercourses, fish and wildlife habitat, floodplains, and structures and appurtenances thereto, and the impact of the subject activity on such features.

Some of the project activities will be performed within delineated wetlands and the 100-year floodplain. Within the wetland areas, impacts will be limited to the construction of a riprap apron and rock weir at the outlet of the proposed drainage channel into Blackberry River. Within the floodplain, work will be limited to channel excavation, installation of riprap, and replacement of various existing drainage structures, including pipes and catch basins, along the Housatonic Railroad tracks.

There is also a proposed riprap splash pad and drainage channel at the eastern outlet. Impacts to the floodplain and the small wetland area adjacent to the existing drainage channel will be caused by excavation, installation of riprap, and grading to existing ground. The channel becomes increasingly shallow along its length until it matches existing grades where runoff will then flow overland until it reaches the Blackberry River.

Check here if additional sheets are necessary, and label and attach them to this sheet.

Part V: Supporting Documents

Check the applicable box below for each attachment being submitted with this request. When submitting any supporting documents, please label the documents as indicated in this part (e.g., Attachment A, etc.) and be sure to include the requester's name as indicated on this request. ***In order to file electronically, ALL supporting documents must be submitted in an electronic format on a CD with this original completed application in hard copy.***

- Attachment A: Location Map: A depiction, on an 8.5" x 11" copy of the relevant portion of the most recent version of the United States Geologic Survey topographic map (Scale 1:24,000), of the exact location of the property at which such activity will be conducted.
- Attachment B: Site plan pursuant Section 4(c) (2) (I) of the subject general permit.
- Attachment C: [Coastal Consistency Review Form](#) (DEEP-APP-004), if applicable.
- Attachment D: Copy of the completed *Request for NDDDB State Listed Species Review Form* (DEEP-APP-007) and the NDDDB response, if applicable.
- Attachment E: Conservation or Preservation Restriction Information, if applicable.
- Attachment F: A copy of the Category 2 approval letter from the Army Corps of Engineers, or a copy of the Appendix 1A: Category 1 Certification Form filed with the US Army Corps of Engineers, if applicable.
- Attachment G: Drainage Maintenance Plan, Trail Maintenance Plan, Boat Launch Maintenance Plan, or Beach Maintenance Plan for Inland Beaches as defined in Section 2 of the subject general permit, if applicable.
- Attachment H: Other information provided by requester (list):
 - 1. FEMA Flood Insurance Rate Map**
 - 2. Inland Wetlands & Watercourses Activity Reporting Form**
 - 3. Photographs**
 - 4. SHPO & Tribal Correspondence**
 - 5. CTDEEP Fisheries sign-off**
 - 6. Interagency Notes**

Part VI: Requester Certification

The requester *and* the individual(s) responsible for actually preparing the request must sign this part. A request will be considered incomplete unless all required signatures are provided. If the requester is the preparer, please mark N/A in the spaces provided for the preparer.



"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 the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I certify that this general permit request for authorization is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I understand that the subject activity is authorized only on or after the date the commissioner issues a written approval of registration with respect to such activity.

I certify that a complete copy of this request for authorization, including all documents attached thereto, was sent by regular or certified mail or was hand delivered to the municipal wetlands agency, zoning commission, planning commission or combined planning and zoning commission, and conservation commission of each municipality which is or may be affected by the subject activity.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

<p style="text-align: center;"></p> <p>Signature of Requester</p>	<p style="text-align: center;"><u>9-4-2019</u></p> <p>Date</p>
<p>Thomas J. Maziarz</p> <p>Name of Requester (print or type)</p>	<p>Bureau Chief, Policy & Planning</p> <p>Title (if applicable)</p>
<p style="text-align: center;"></p> <p>Signature of Preparer (if different than above)</p>	<p style="text-align: center;">6.25.2019</p> <p>Date</p>
<p>Ken Radziwon</p> <p>Name of Preparer (print or type)</p>	<p>Project Manager, BL Companies</p> <p>Title (if applicable)</p>

Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this registration (i.e., professional engineers, surveyors, soil scientists, consultants, etc.)

Note: Please submit this completed Request for Authorization, Fee, and all Supporting Documents to:

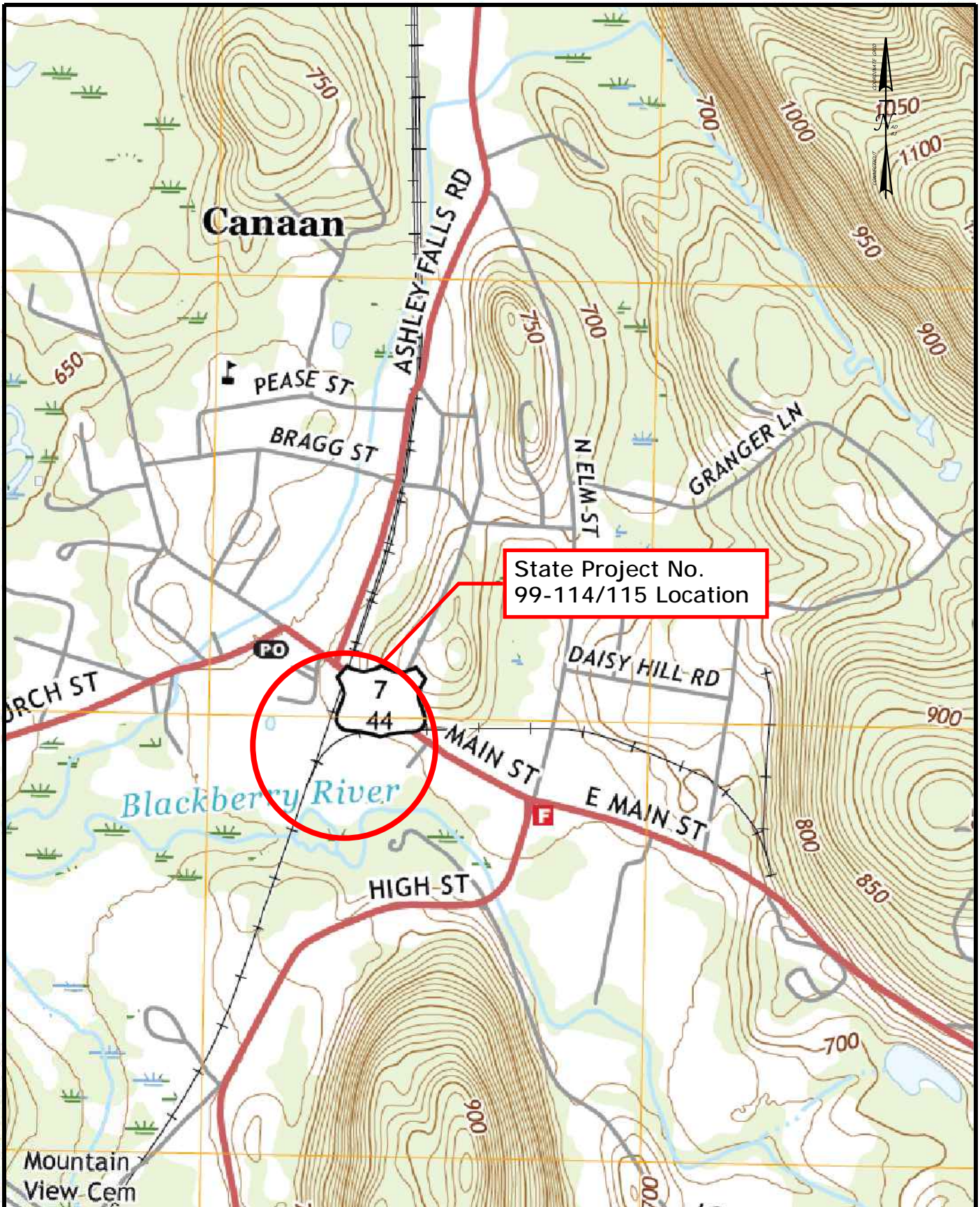
CENTRAL PERMIT PROCESSING UNIT
 DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

You must submit a complete copy of this completed request for authorization, including supporting documents, to the municipal wetlands agency, zoning commission, planning commission or combined planning and zoning commission, and conservation commission of each municipality which is or may be affected by the subject activity.

IWGP

Attachment A: USGS Topographic Map

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT



**RAILROAD-HIGHWAY
GRADE CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN STREET)
NORTH CANAAN, CT**

LOCATION MAP
 PROJ. NO.: 99-114/115
 SCALE: 1" = 1000'

IWGP

Attachment B: Permit Plan Sheets

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT

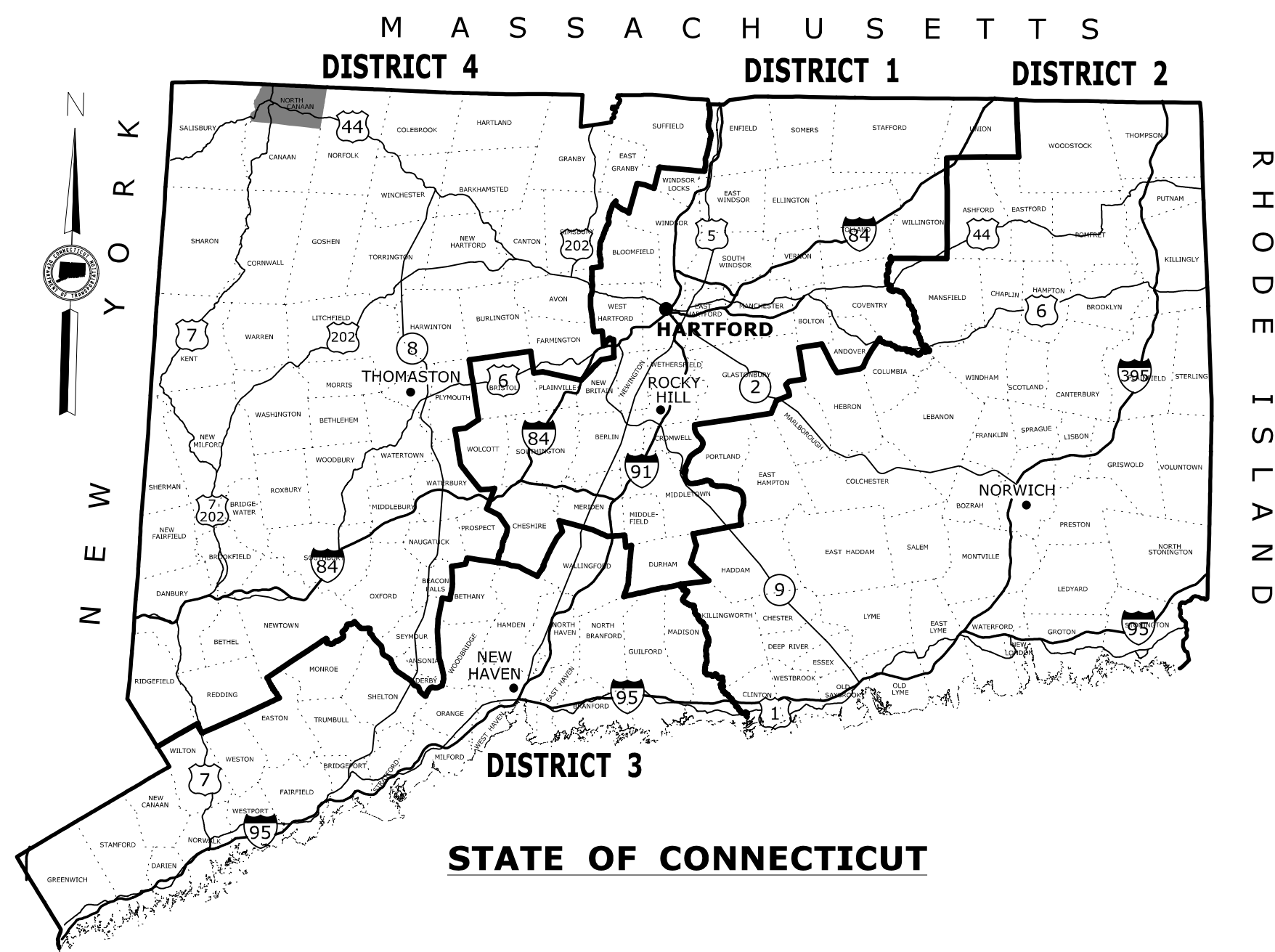
Figure	Description
PMT-01	Title Sheet
PMT-02	Index Map
PMT-03 – PMT-08	General Site Plan
PMT-09 – PMT-11	Impact Plan
PMT-12 – PMT-13	Miscellaneous Details

ENVIRONMENTAL PERMIT PLANS

STATE PROJECT 99-114/115

U.S. ROUTE 7 & 44 (MAIN STREET)

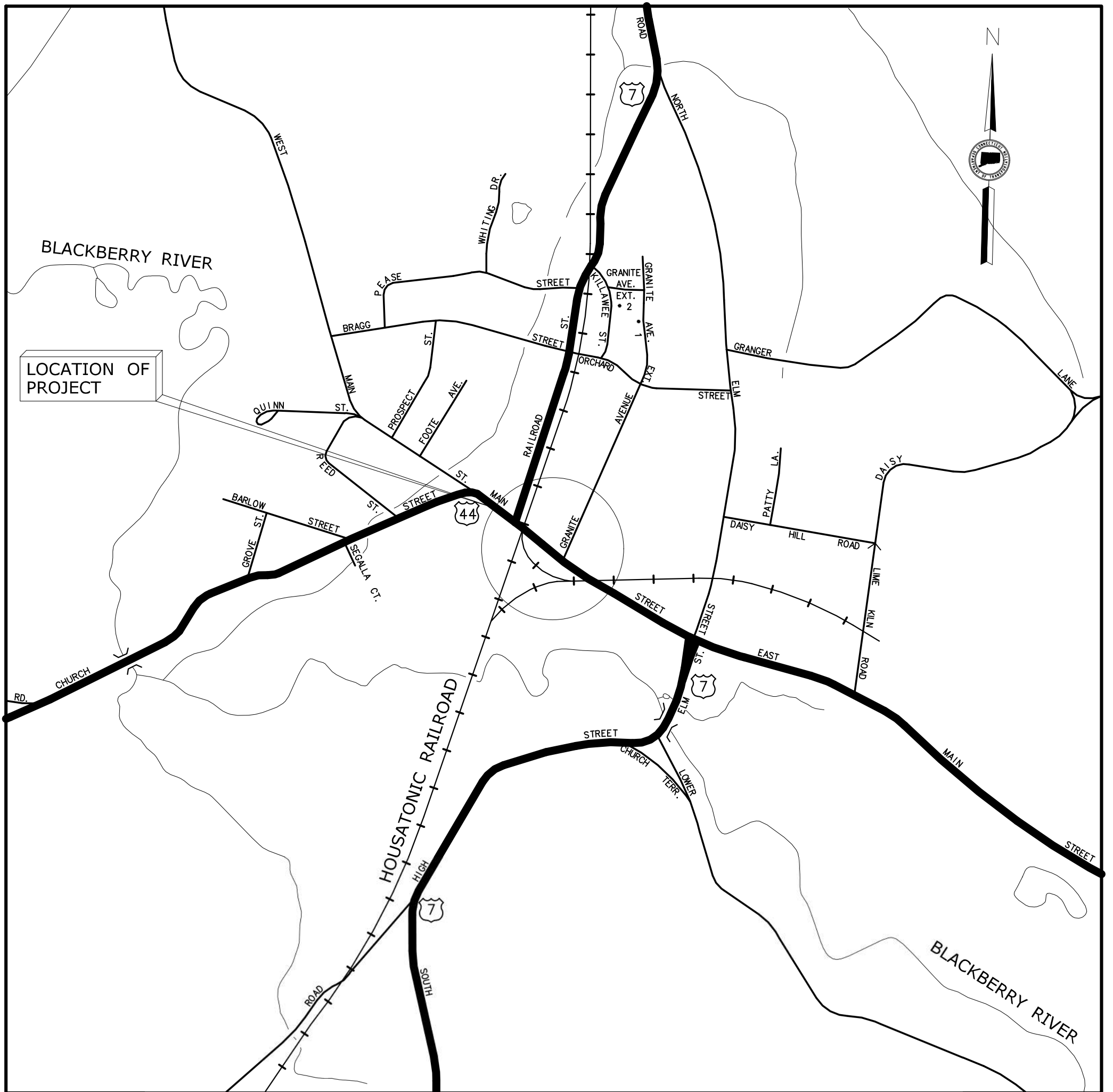
TOWN OF NORTH CANAAN



GENERAL NOTES:

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND ACOE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLAND AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1983
VERTICAL DATUM BASED ON NAVD OF 1983
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW BEST MANAGEMENT PRACTICES (BMP) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.

LIST OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
PMT-01	TITLE SHEET
PMT-02	INDEX MAP
PMT-03 - PMT-08	GENERAL SITE PLAN
PMT-09 - PMT-11	IMPACT PLAN
PMT-12 - PMT-13	MISCELLANEOUS DETAILS



LOCATION PLAN
NOT TO SCALE

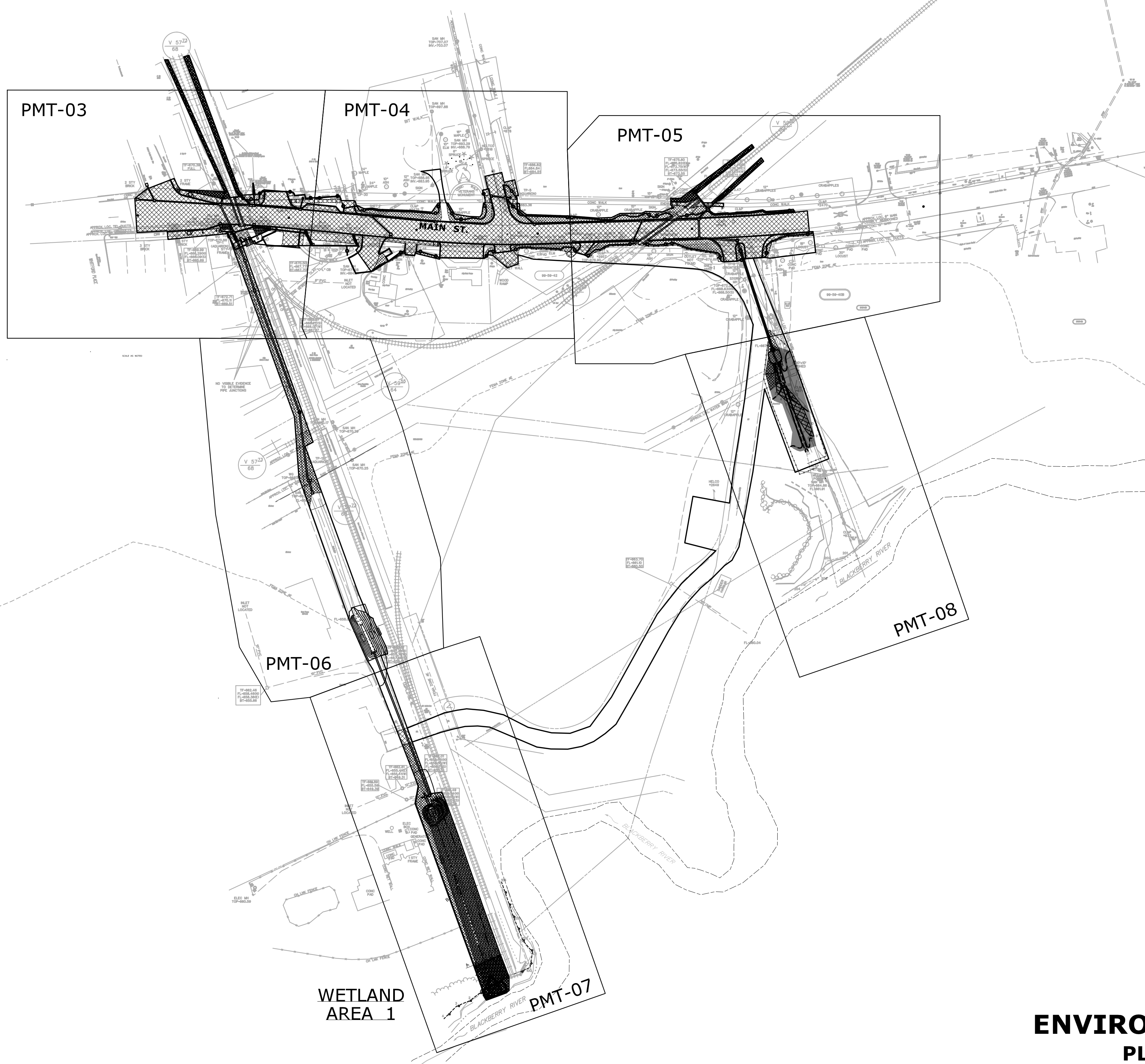
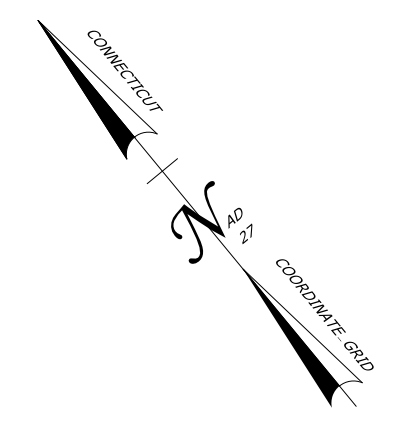
DESIGNED BY:
BL COMPANIES, INC.

David Cicia
2019.06.25
10:41:06-04'00"

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JUNE 12, 2019

		DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET SCALE 1"=40'	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/ BLOCK: DESIGNED BY: BL COMPANIES, INC. <small>355 RESEARCH PARKWAY MERIDEN, CT 06450</small>	PROJECT TITLE: <p style="text-align: center;">RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)</p>	TOWN: <p style="text-align: center;">NORTH CANAAN</p>	PROJECT NO. 99-114/115 DRAWING NO. PMT-01 SHEET NO.		
REV. DATE 	REVISION DESCRIPTION 	SHEET NO. 	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.					DRAWING TITLE: <p style="text-align: center;">TITLE SHEET</p>	

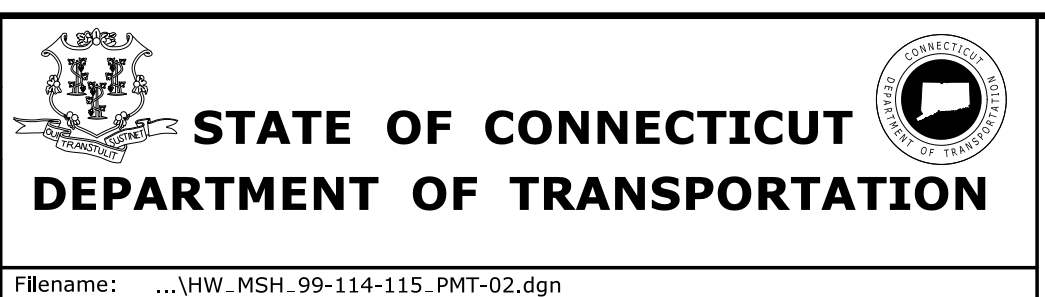


ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
BGR
 CHECKED BY:
DMC
 SCALE IN FEET
 0 100 200
 SCALE 1"=100'



SIGNATURE/BLOCK:

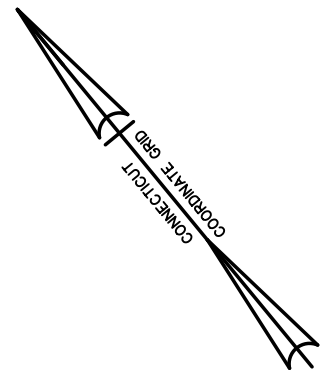
 DESIGNED BY:
BL
 COMPANIES, INC.
 355 RESEARCH PARKWAY
 MERIDEN, CT 06450

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
 CROSSING IMPROVEMENTS
 U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:
NORTH CANAAN
 DRAWING TITLE:
INDEX PLAN

PROJECT NO.
99-114/115
 DRAWING NO.
PMT-02
 SHEET NO.

Filename: ...\\HW_MSH_99-114-115_PMT-02.dgn



U.S. ROUTE 7 RR
 RR-BALLAST INLET-1 (BY OTHERS)
 TF = 668.40
 INV = 666.30 (N & S)
 25'-8" PERFORATED PVC (BY OTHERS)
 RR-BALLAST INLET-2 (BY OTHERS)
 TF = 668.20
 INV = 666.10 (N & SW)
 18'-8" PVC
 REMOVE CB & PIPE
 TYPE "C" CB W/ 4' SUMP
 STA 12+06 LT
 TF = 670.45
 INV = 665.95 (NE)
 INV = 665.10 (NW)
 INV = 664.50 (S & SE)
 TYPE "C-L" CB (4' SUMP)
 GRADE TO DRAIN
 STA 1+75 RT
 TF = 673.00
 INV = 669.00 (S)

TYPE "C-L" CB W/ 4' SUMP
 GRADE TO DRAIN
 STA 10+80 LT
 TF = 672.64
 INV = 669.00 (SE)

APPROX. LOC. TEL DUCTS
 APPROX. LOC. TEL DUCTS
 APPROX. LOC. 8" WATER MAIN

3 REMOVE CB & PIPE
 BRICK
 RELOCATED WATER MAIN
 (BY OTHERS)
 TYPE "C" CB - OFFSET A
 STA 12+05 RT
 TF = 670.45
 INV = 667.10 (SW)
 4'-12" RCP
 MANHOLE
 STA 12+06, 27' RT
 TF = 671.04
 INV = 667.00 (NE & SE)
 16'-12" RCP
 MANHOLE
 STA 12+28, 28' RT
 TF = 671.50
 INV = 664.00 (N, S & E)
 INV = 666.50 (NW)

SEDIMENTATION CONTROL SYSTEM
 MANHOLE
 STA 12+23, 71' RT
 TF = 669.50
 INV = 663.50 (N & S)
 PLUG PIPE AT ROUND CLCB
 44'-24" RCP
 TYPE "C-L" CB, GRADE TO DRAIN
 0' SUMP
 REMOVE EXISTING CB
 PLUG EXISTING 6" PIPE
 STA 12+56, 115' RT
 TF = 672.71
 INV = 662.50 (N & S)
 INV = 669.51 (E)

200'-8" PERFORATED PVC (BY OTHERS)
 REMOVE CB (BY OTHERS)
 RR-BALLAST INLET-3 (BY OTHERS)
 TF = 667.90
 INV = 665.80 (N & S)
 25'-8" PERFORATED PVC (BY OTHERS)
 RR-BALLAST INLET-4 (BY OTHERS)
 TF = 667.70
 INV = 664.95 (N & SE)
 28'-15" RCP
 CUT AND PLUG EXISTING PIPE
 REMOVE CB & PIPES
 CONNECT 15" RCP INTO
 EXISTING DRYWELL
 INV = 668.60 (SE)
 33'-15" RCP
 TYPE "C" CB DOUBLE GRATE
 - TYPE II W/ 4' SUMP
 STA 12+55 LT
 TF = 670.46
 INV = 665.90 (SE)
 INV = 664.80 (NW & W)
 INV = 666.50 (N)

71'-12" RCP
 LAWN DRAIN
 (SEE SHEET MDS-05 FOR GRADING)
 STA 13+31, 33' LT
 TF = 674.10
 INV = 668.00 (SW)
 10'-12" H.D.P.E PERFORATED
 TYPE "C" CB W/ 4' SUMP
 STA 13+31 LT
 TF = 672.47
 INV = 667.60 (NW & SE)
 INV = 668.00 (NE)

MATCHLINE STA. 13+50
 SEE DRAWING NO. PMT-04

TF=670.50
 FL=667.77
 BT=667.70

TYPE "C" CB - OFFSET A
 STA 12+55 RT
 TF = 670.47
 INV = 666.00 (SE)
 INV = 664.50 (W)

28'-15" RCP
 CLASS V

CONSTRUCTION NOTES

1. PROPOSED DRAINAGE STRUCTURES SHOWN WITHIN THE RAILROAD RIGHT-OF-WAY WILL BE INSTALLED BY THE HOUSATONIC RAILROAD COMPANY.
2. THERE IS NO INDIVIDUAL ITEM FOR PLUGGING EXISTING PIPING WITHIN THE PROJECT LIMITS. THIS WORK IS TO BE PAID FOR UNDER THE APPROPRIATE PIPE ITEM (ITEM NO. 0651XXX).
3. UNLESS NOTED OTHERWISE, PROPOSED TYPE "C" CATCH BASINS, TYPE "C-L" CATCH BASINS, AND OFFSET TYPE "C" CATCH BASINS ARE TO BE INSTALLED WITH A 2' SUMP.
4. CATCH BASIN TOP ELEVATIONS REFER TO THE GUTTER LINE ELEVATION. SEE STANDARD DETAIL SHEETS TO DETERMINE REQUIRED DEPRESSION.
5. SEE SHEET PMT-07 FOR PAVEMENT RESTORATION AT TRENCHES.

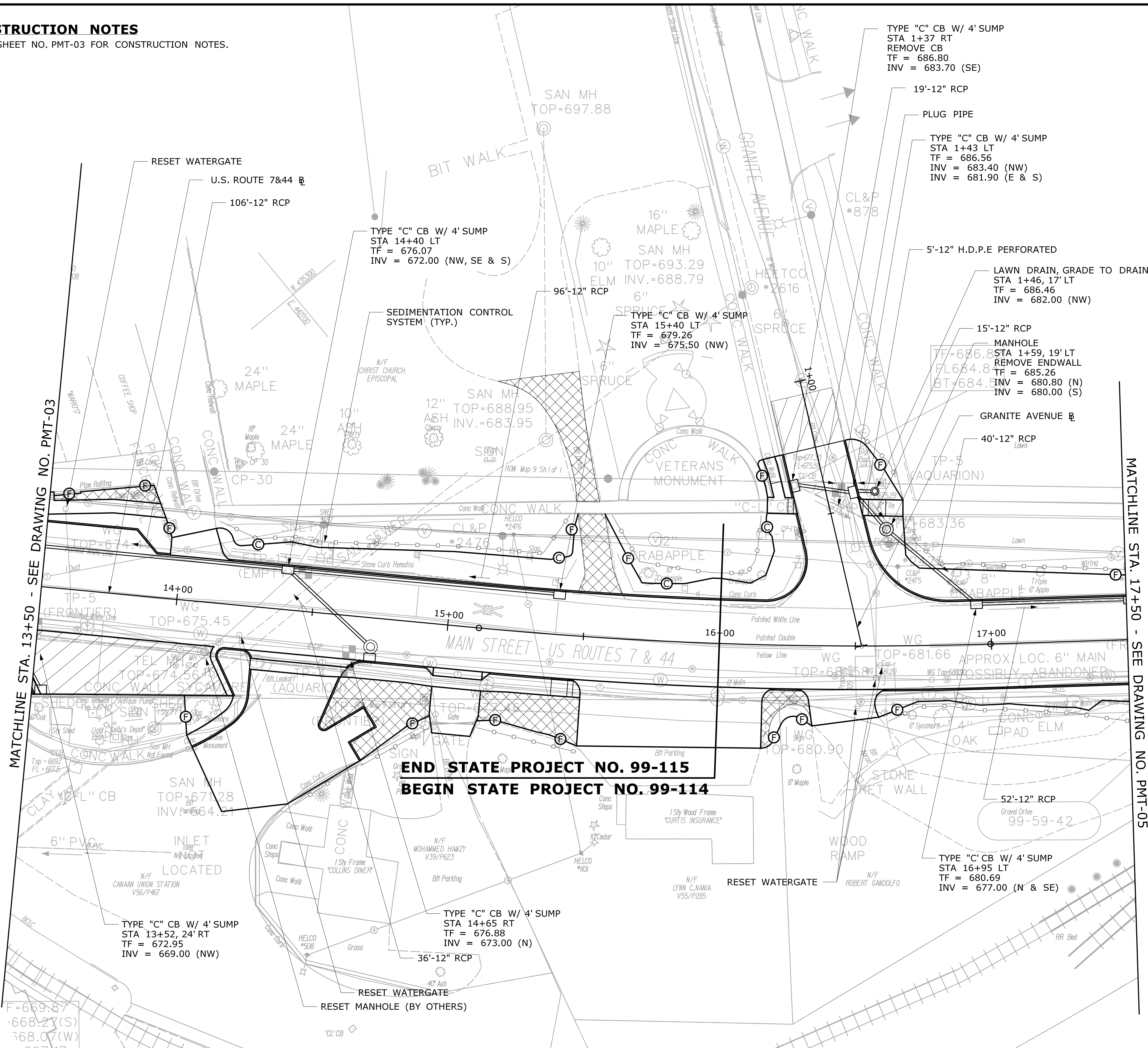
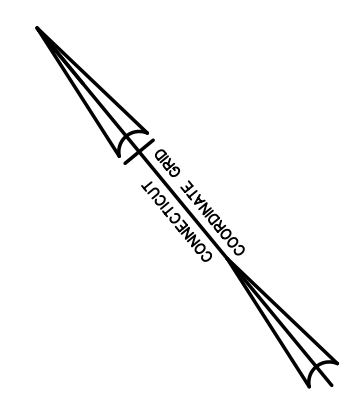
MATCHLINE
 SEE DRAWING NO. PMT-06

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 6/14/2019	DESIGNER/DRAFTER: BGR	CHECKED BY: DMC	SCALE IN FEET 0 20 40 SCALE 1"=20'	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...VHW_MSH_99-114-115_PMT-03.dgn	SIGNATURE/ BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
											DRAWING NO. PMT-03	SHEET NO.
											GENERAL SITE PLAN	

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.

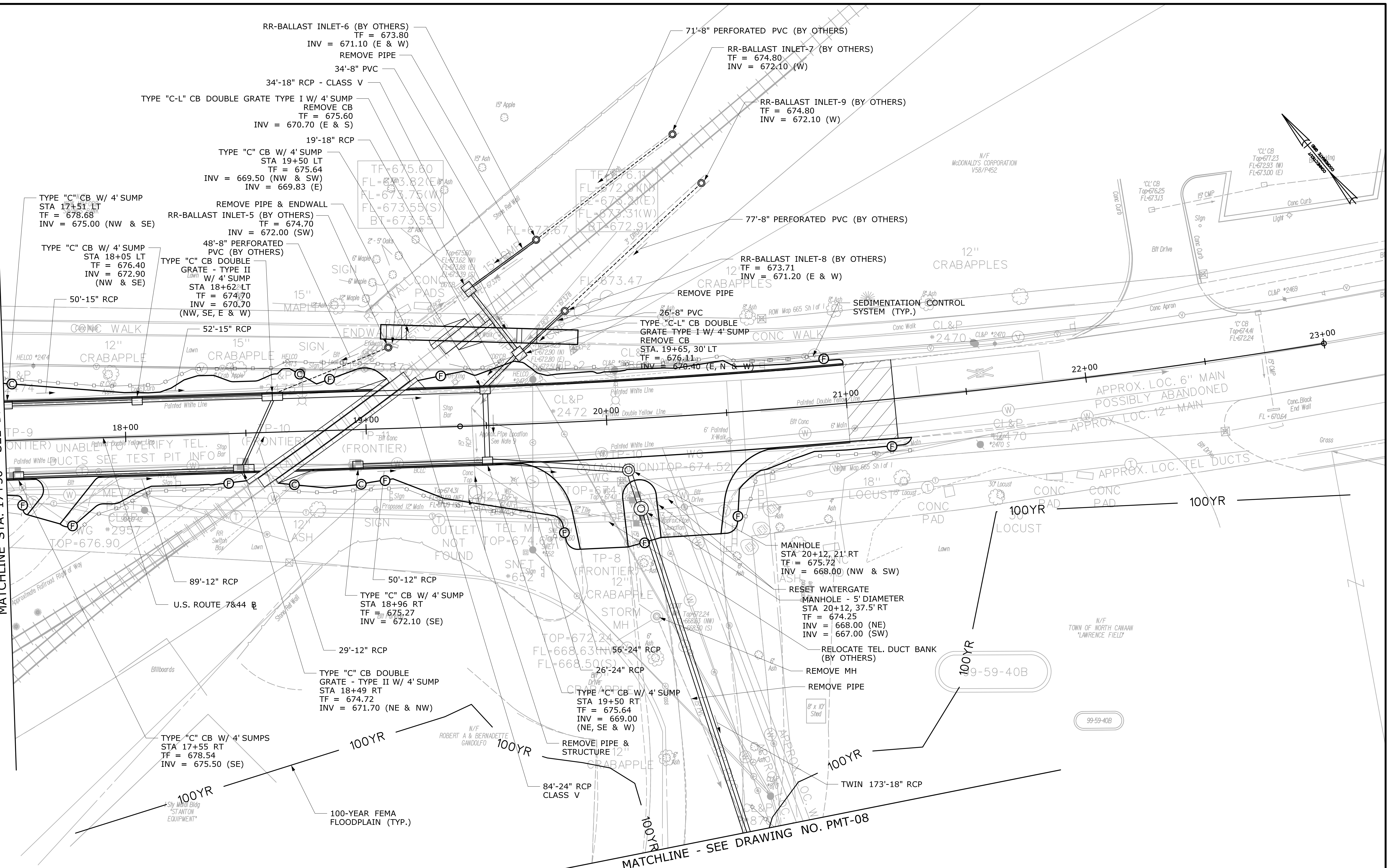


END STATE PROJECT NO. 99-115
BEGIN STATE PROJECT NO. 99-114

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV. DATE REVISION DESCRIPTION SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: BGR	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
		CHECKED BY: DMC					
Plotted Date: 6/14/2019	SCALE IN FEET SCALE 1"=20'	FILENAME: ...VHW_MSH_99-114-115_PMT-04.dgn	SHEET NO.				

MATCHLINE STA. 17+50 - SEE DRAWING NO. PMT-04



CONSTRUCTION NOTES
 1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

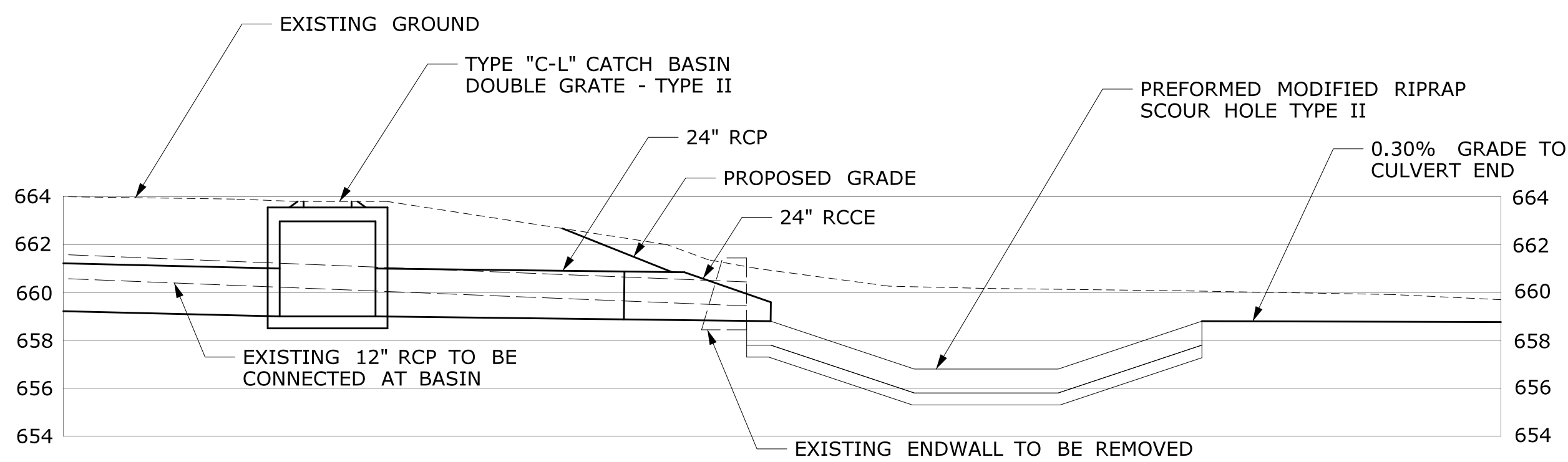
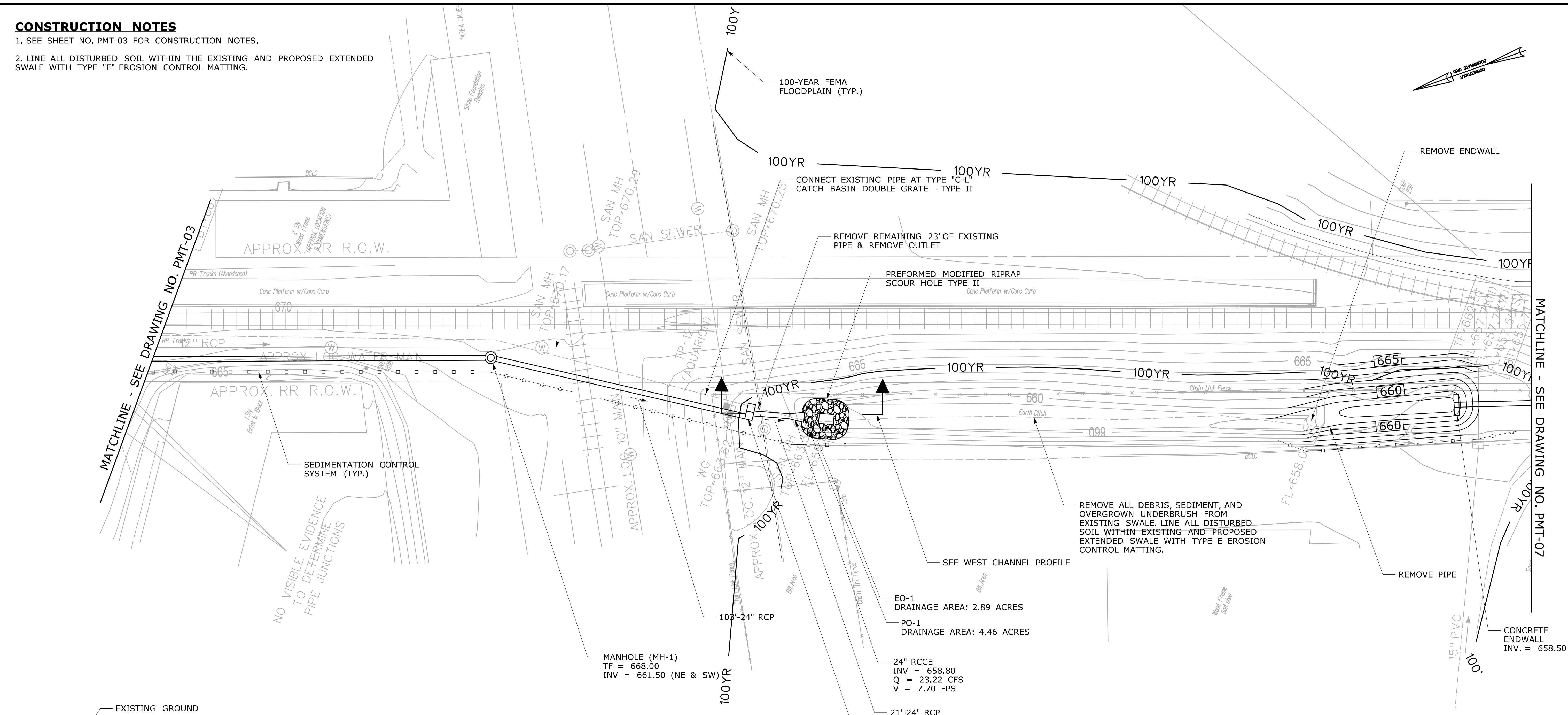
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 6/14/2019	DESIGNER/DRAFTER: BGR	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
	CHECKED BY: DMC					
SCALE IN FEET 0 20 40 SCALE 1"=20'		FILENAME: ...VHW_MSH_99-114-115_PMT-05.dgn			SHEET NO.	

CONSTRUCTION NOTES

- SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.
- LINE ALL DISTURBED SOIL WITHIN THE EXISTING AND PROPOSED EXTENDED SWALE WITH TYPE "E" EROSION CONTROL MATTING.

MATCHLINE - SEE DRAWING NO. PMT-03

MATCHLINE - SEE DRAWING NO. PMT-07



WEST CHANNEL PROFILE
SCALE: 1" = 5'

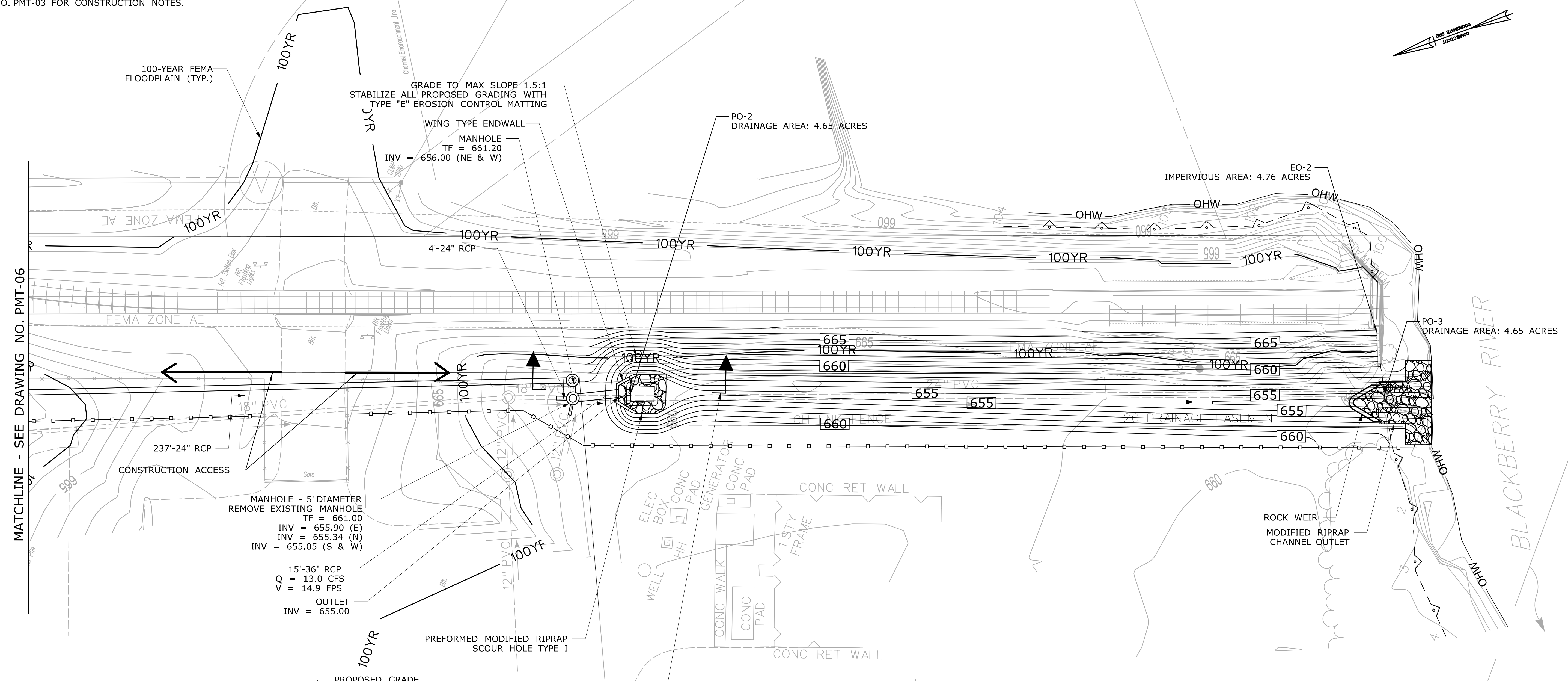
LEGEND	
	100YR FEMA 100-YEAR FLOODPLAIN
	LIMIT OF INLAND WETLANDS
	ORDINARY HIGH WATER LINE
	SEDIMENTATION CONTROL SYSTEM

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

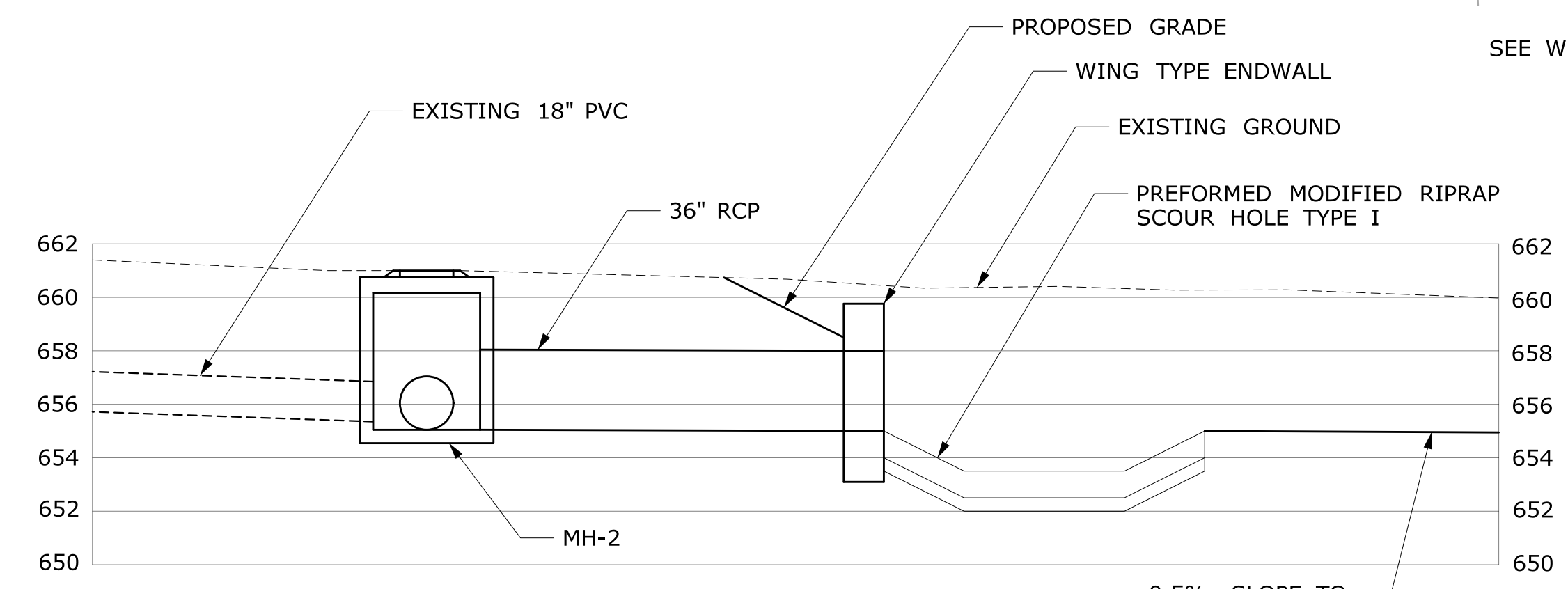
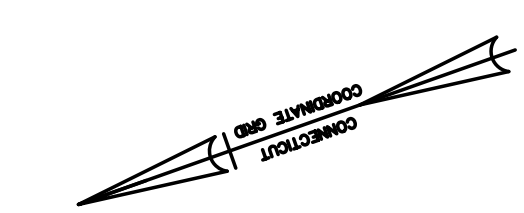
<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.					<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p> <p>Plotted Date: 6/24/2019</p>	<p>DESIGNER/DRAFTER: BGR</p> <p>CHECKED BY: DMC</p> <p>SCALE IN FEET</p> <p>0 20 40</p> <p>SCALE 1"=20'</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>File name: ...VHW_MSH_99-114-115_PMT-06.dgn</p>	<p>SIGNATURE/BLOCK:</p> <p>DESIGNED BY: BL</p> <p>BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450</p>	<p>PROJECT TITLE:</p> <p>RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)</p>	<p>TOWN:</p> <p>NORTH CANAAN</p> <p>DRAWING TITLE:</p> <p>GENERAL SITE PLAN</p>	<p>PROJECT NO. 99-114/115</p> <p>DRAWING NO. PMT-06</p> <p>SHEET NO.</p>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.												

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



MATCHLINE - SEE DRAWING NO. PMT-06



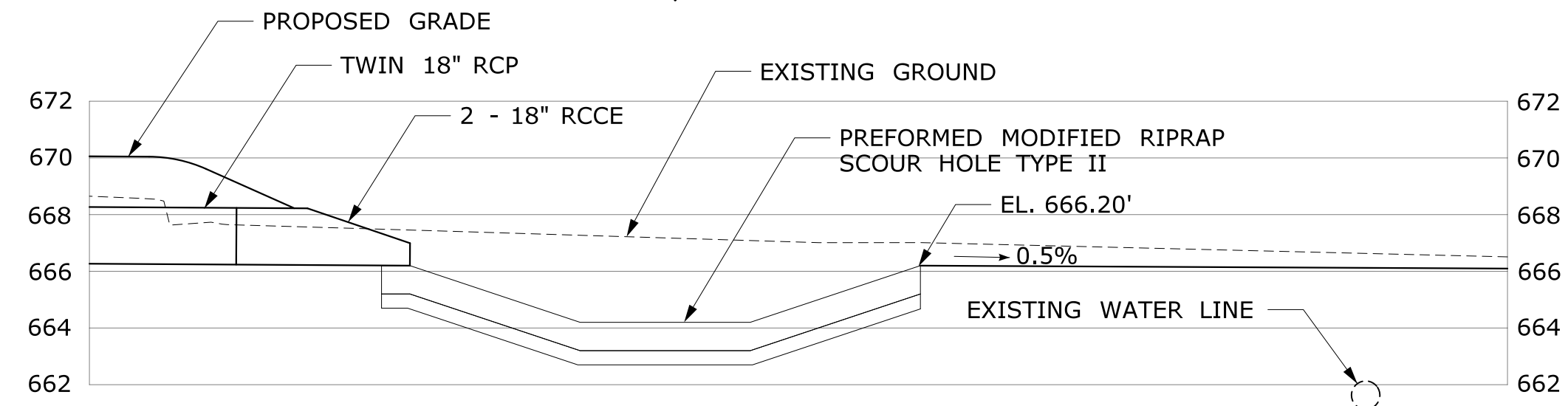
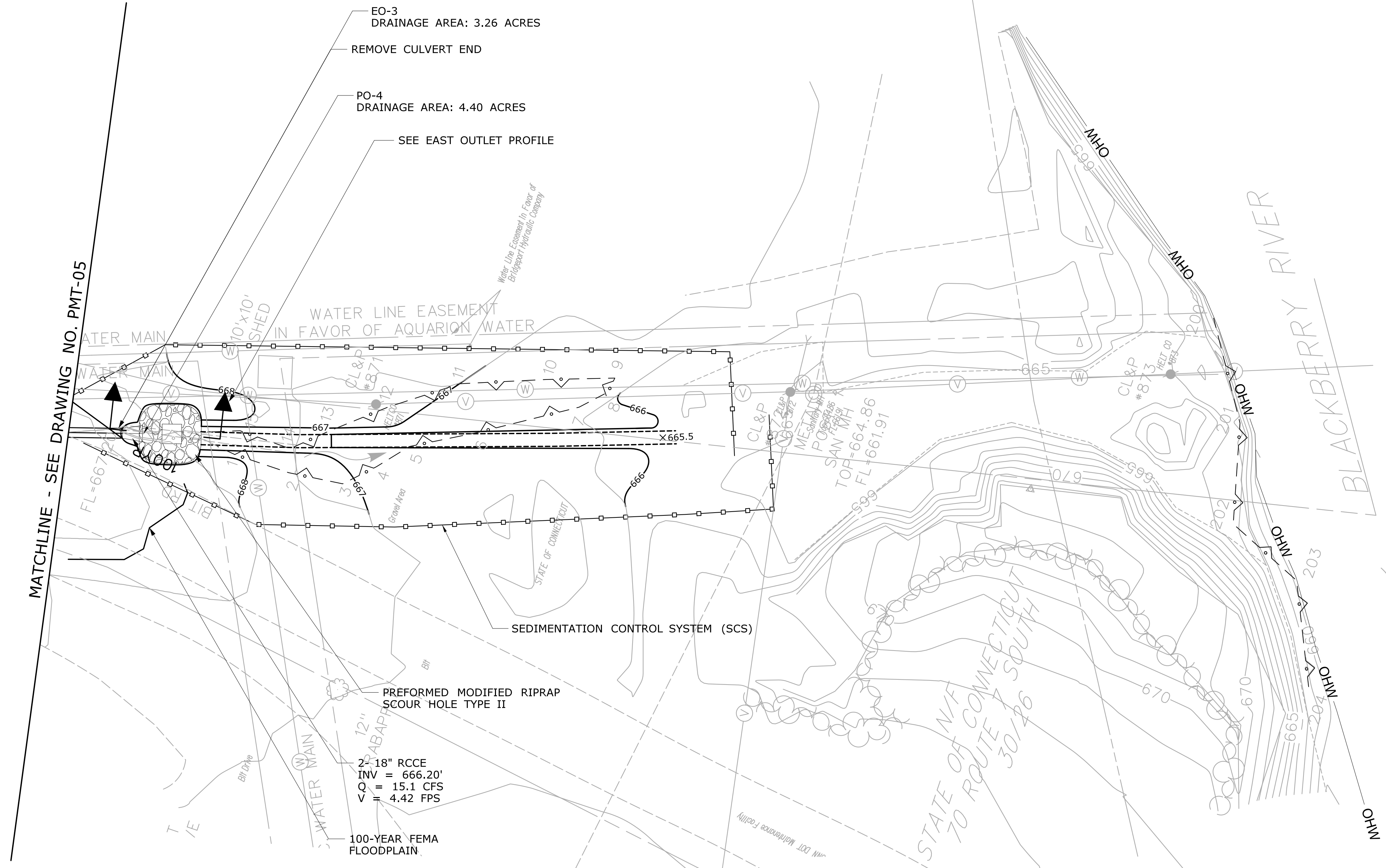
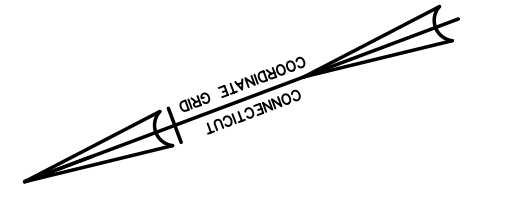
LEGEND	
	100YR FEMA 100-YEAR FLOODPLAIN
	LIMIT OF INLAND WETLANDS
	OHW ORDINARY HIGH WATER LINE
	SEDIMENTATION CONTROL SYSTEM

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

<table border="1"> <thead> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																									THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 6/24/2019	DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20' STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION FILENAME: ...VHW_MSH_99-114-115_PMT-07.dgn	SIGNATURE/BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN DRAWING TITLE: GENERAL SITE PLAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-07 SHEET NO.
	REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																														

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



EAST OUTLET PROFILE
SCALE: 1" = 5'

LEGEND

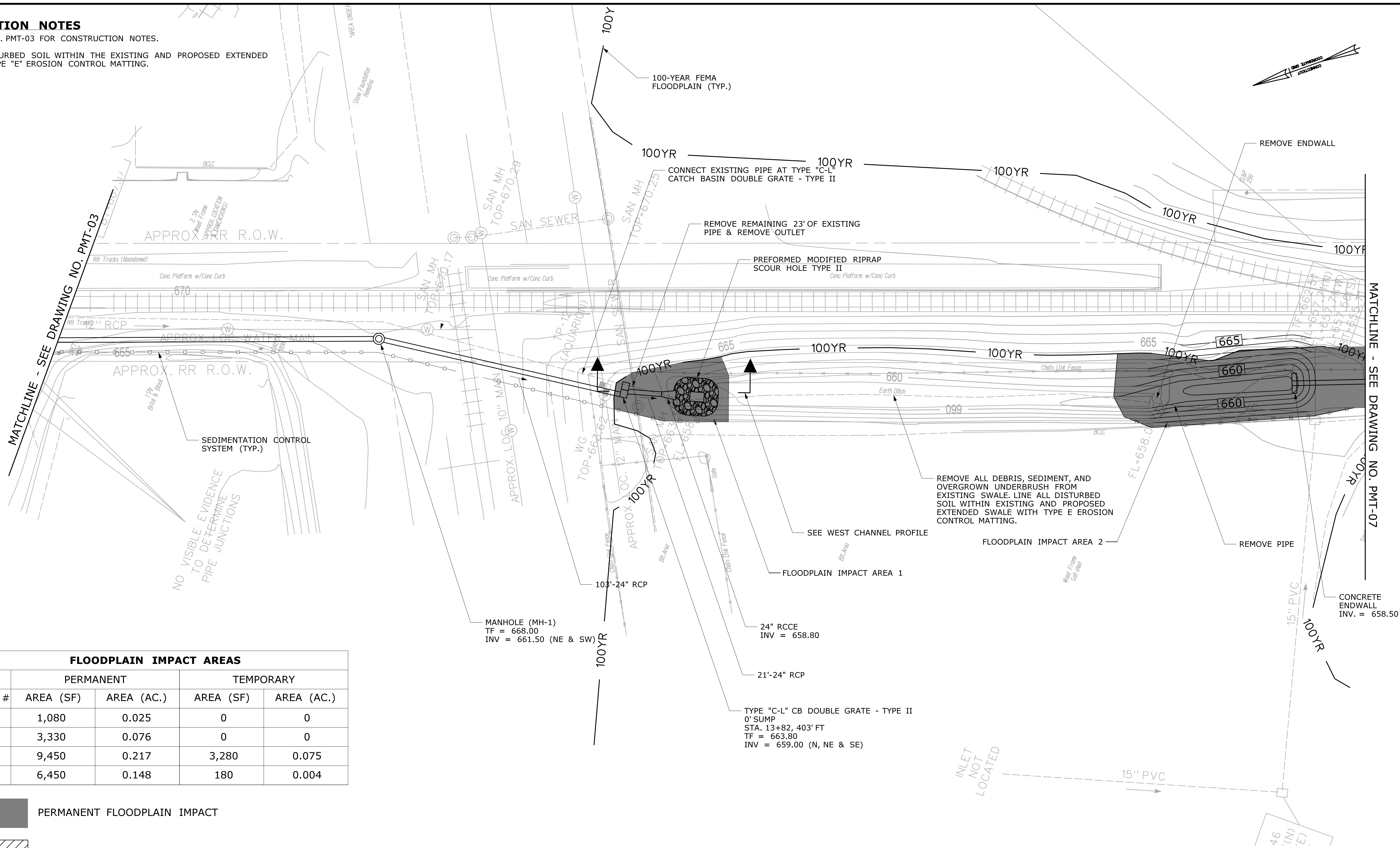
- 100YR FEMA 100-YEAR FLOODPLAIN
- LIMIT OF INLAND WETLANDS
- OHW ORDINARY HIGH WATER LINE
- SEDIMENTATION CONTROL SYSTEM

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

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	REV.	DATE	REVISION DESCRIPTION	SHEET NO.											
CHECKED BY: DMC	SCALE IN FEET SCALE 1"=20'	DRAWING NO. PMT-08	SHEET NO.												

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.
2. LINE ALL DISTURBED SOIL WITHIN THE EXISTING AND PROPOSED EXTENDED SWALE WITH TYPE "E" EROSION CONTROL MATTING.



FLOODPLAIN IMPACT AREAS

AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,450	0.148	180	0.004

- PERMANENT FLOODPLAIN IMPACT
- TEMPORARY FLOODPLAIN IMPACT

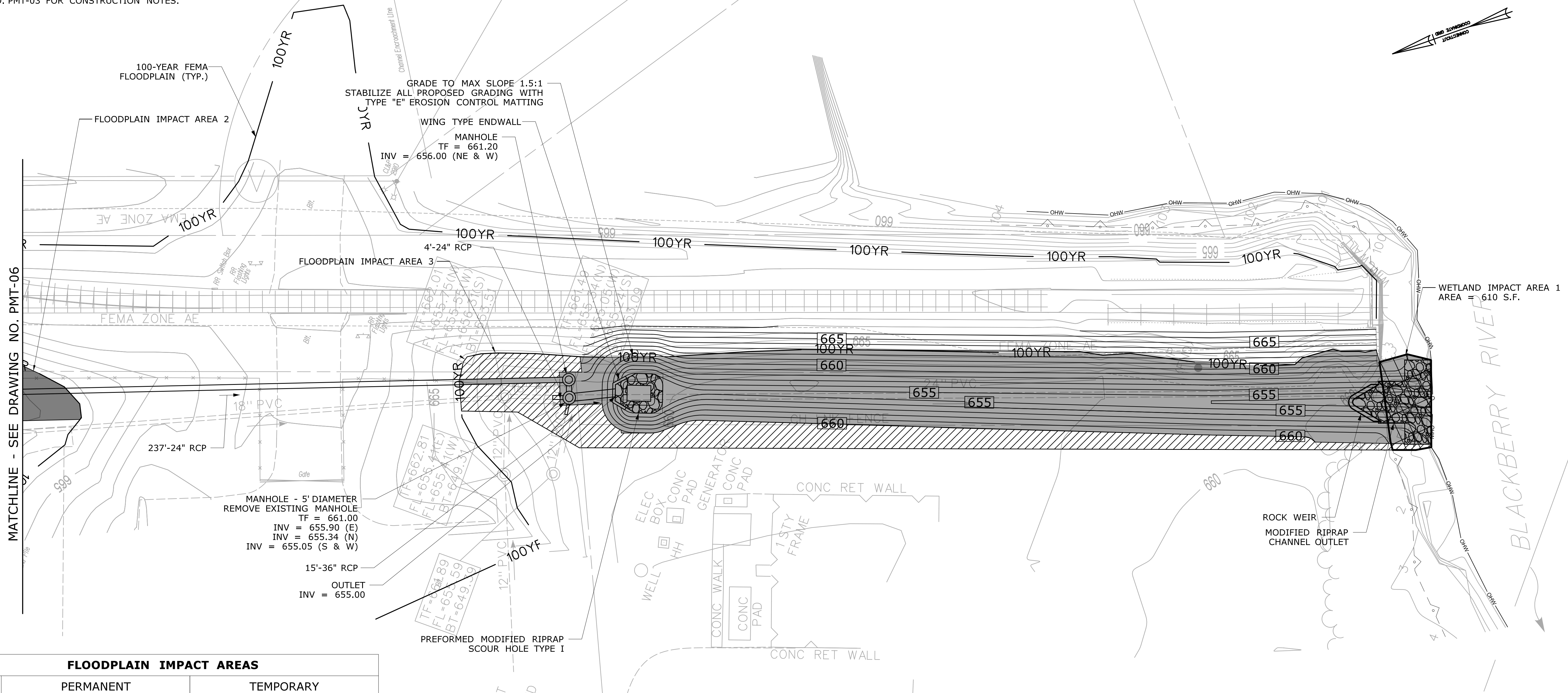
ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.												

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.

MATCHLINE - SEE DRAWING NO. PMT-06



FLOODPLAIN IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,450	0.148	180	0.004

WETLAND IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	610	0.014	0	0
2	1,510	0.035	0	0

PERMANENT FLOODPLAIN IMPACT
 TEMPORARY FLOODPLAIN IMPACT
 PERMANENT WETLAND IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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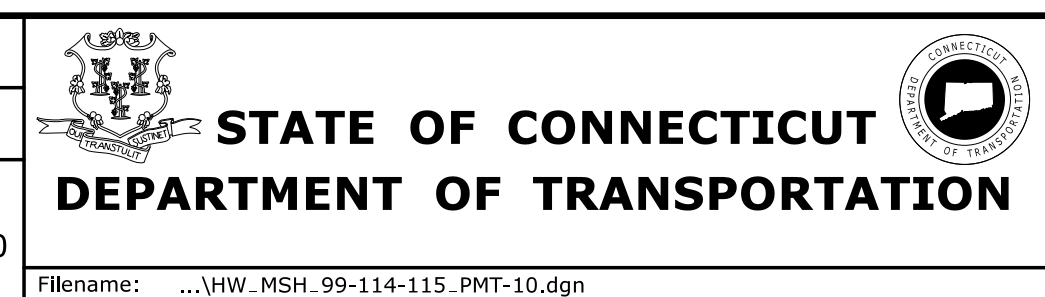
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Plotted Date: 6/25/2019

DESIGNER/DRAFTER:
BGR

CHECKED BY:
DMC

SCALE IN FEET
0 20 40
SCALE 1"=20'



SIGNATURE/BLOCK:

DESIGNED BY:
BL
BL COMPANIES, INC.
355 RESEARCH PARKWAY
MERIDEN, CT 06450

PROJECT TITLE:
RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)

TOWN:
NORTH CANAAN

DRAWING TITLE:
IMPACT PLAN

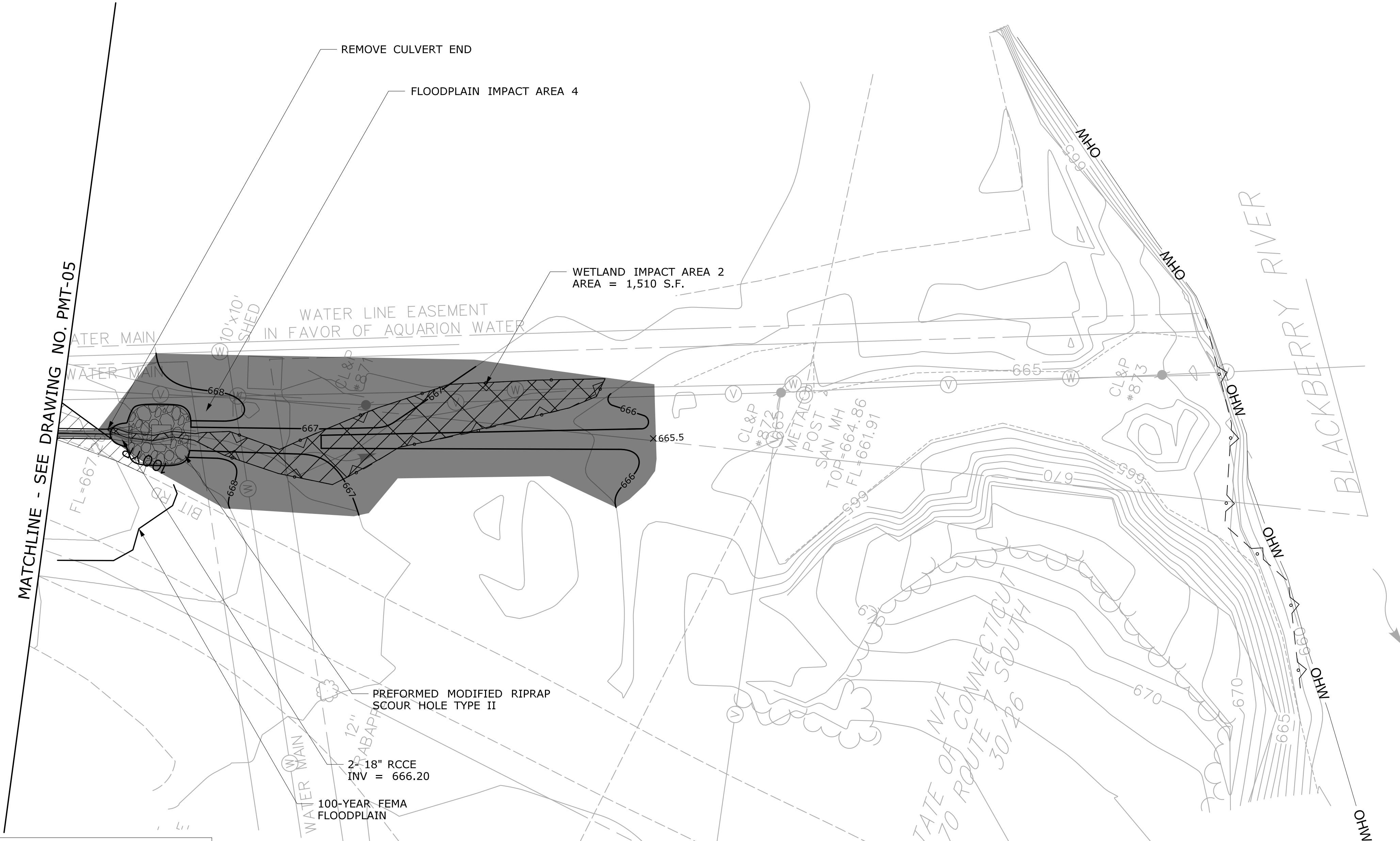
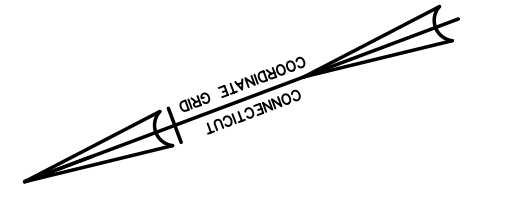
PROJECT NO.
99-114/115

DRAWING NO.
PMT-10

SHEET NO.


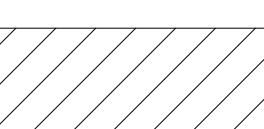

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



FLOODPLAIN IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,450	0.148	180	0.004

WETLAND IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	610	0.014	0	0
2	1,510	0.035	0	0

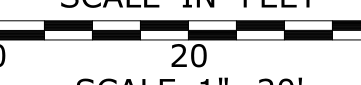
 PERMANENT FLOODPLAIN IMPACT
 TEMPORARY FLOODPLAIN IMPACT
 PERMANENT WETLAND IMPACT


ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 6/24/2019

DESIGNER/DRAFTER:
BGR
 CHECKED BY:
DMC
 SCALE IN FEET

 SCALE 1"=20'


STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
 File name: ...VHW_MSH_99-114-115_PMT-11.dgn

SIGNATURE/BLOCK:

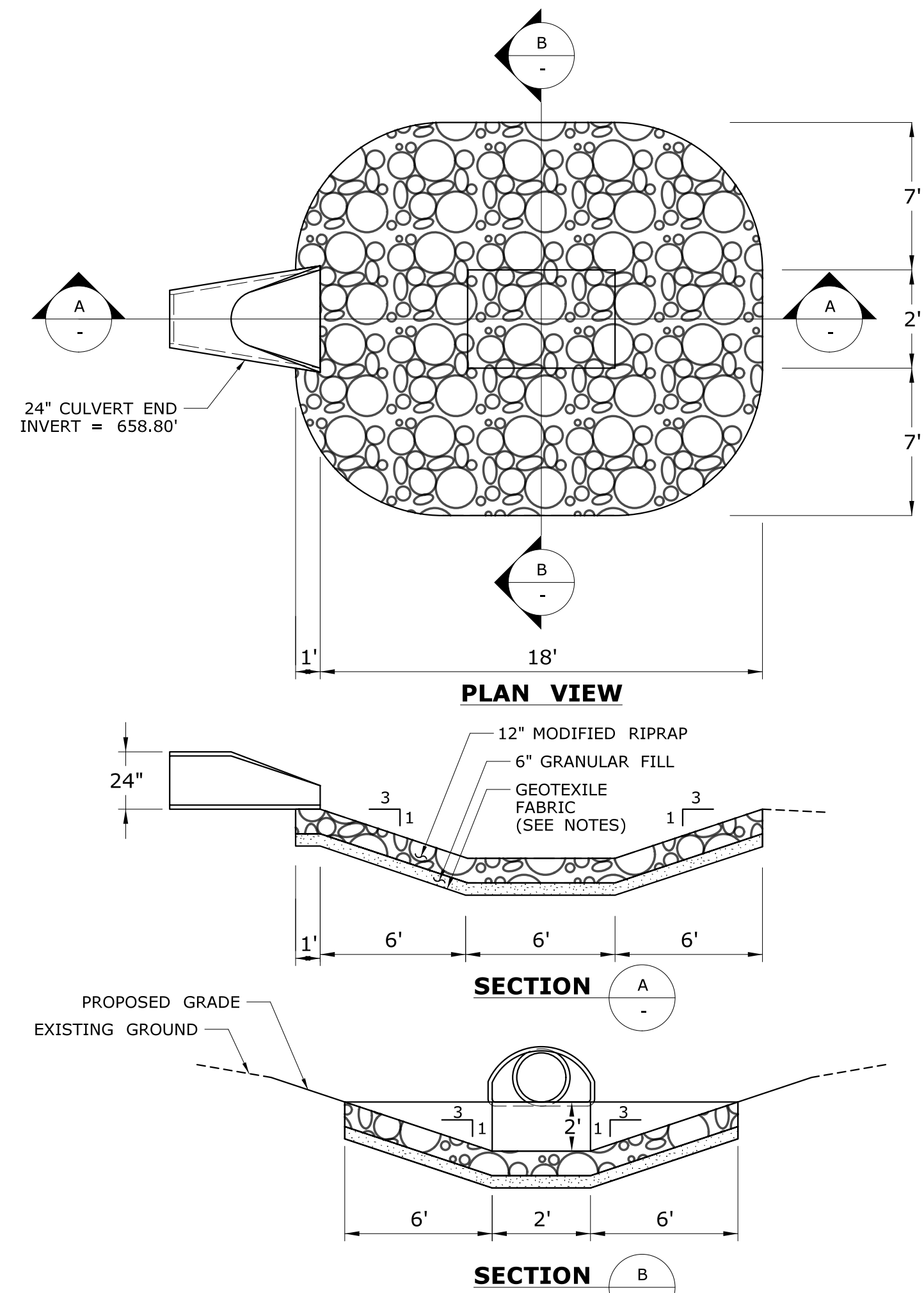
 DESIGNED BY:

 BL COMPANIES, INC.
 355 RESEARCH PARKWAY
 MERIDEN, CT 06450

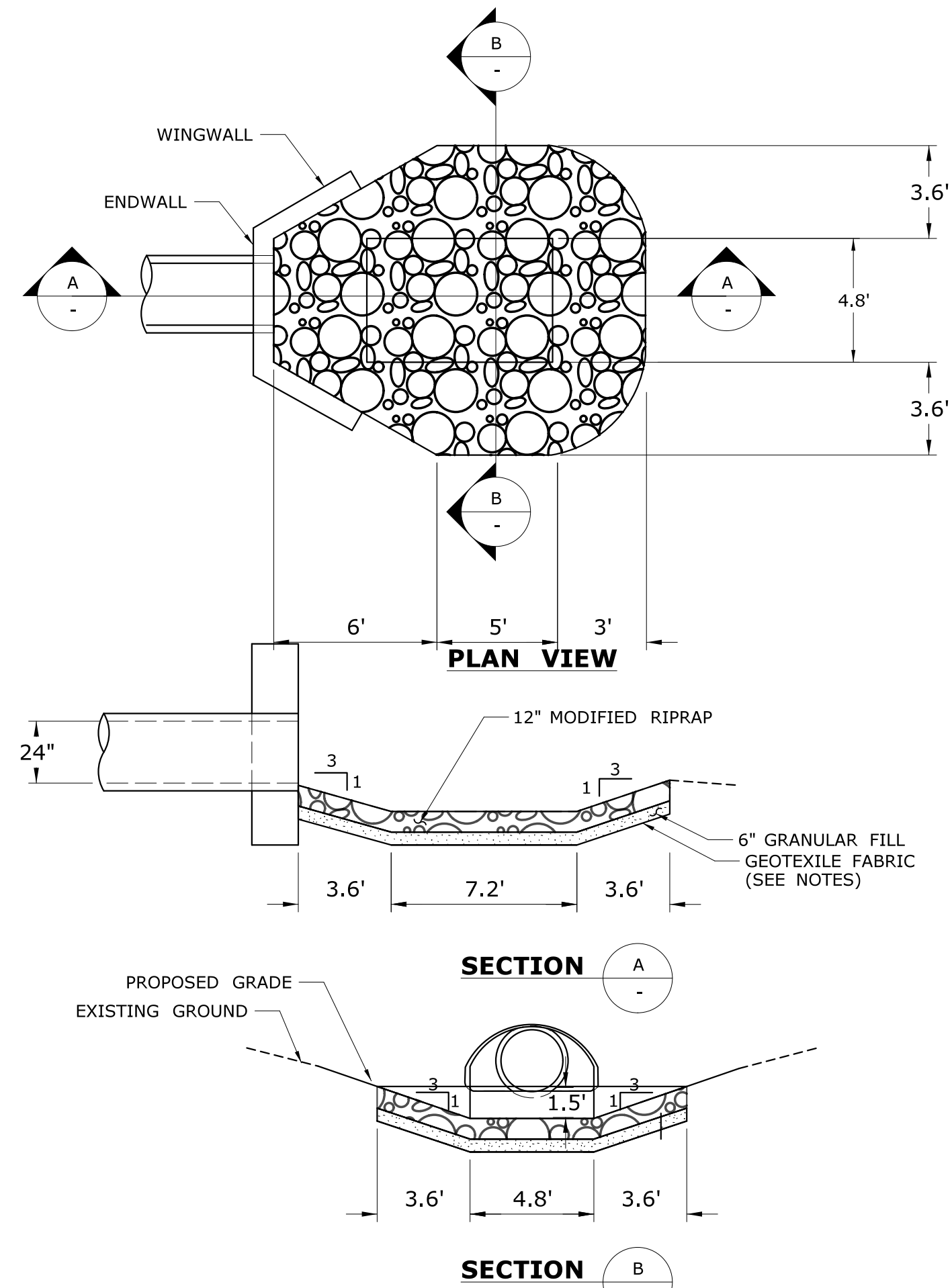
PROJECT TITLE:
RAILROAD-HIGHWAY GRADE
CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN ST.)

TOWN:
NORTH CANAAN
 DRAWING TITLE:
IMPACT PLAN

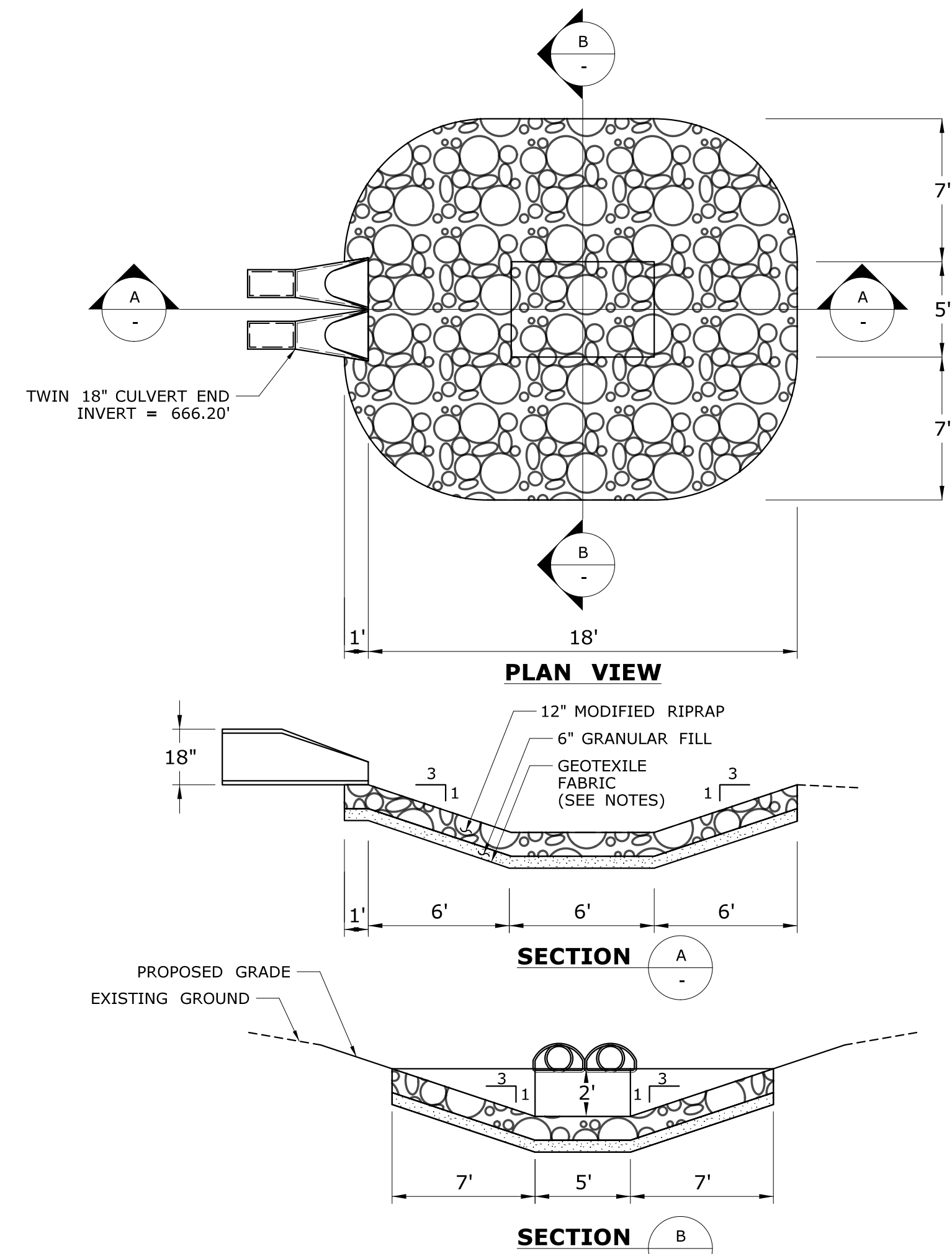
PROJECT NO.
99-114/115
 DRAWING NO.
PMT-11
 SHEET NO.



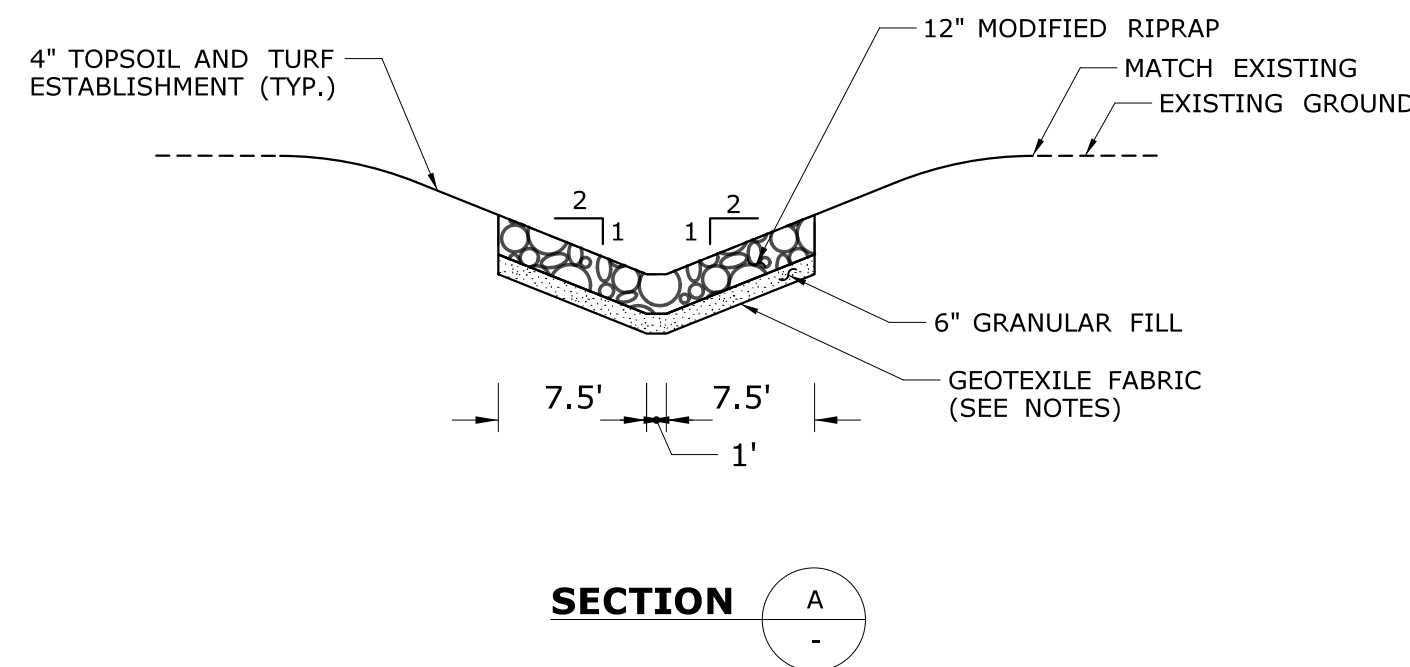
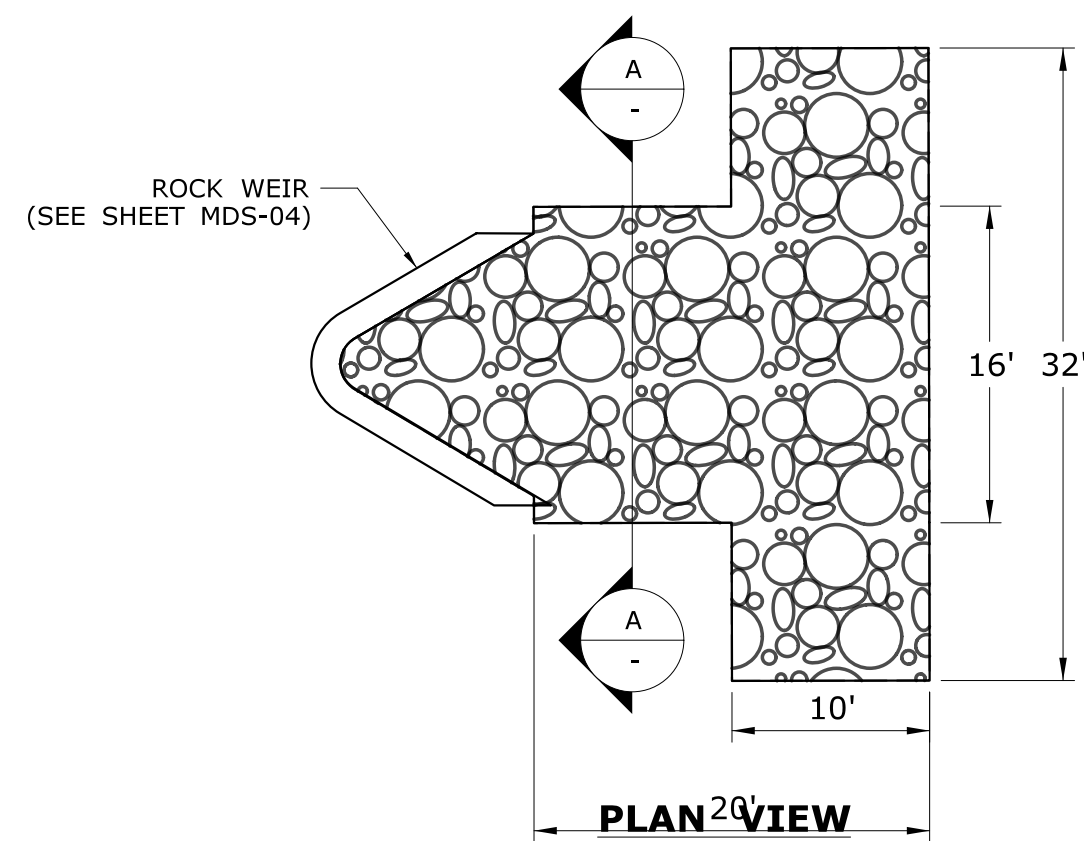
PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - WESTERN OUTLET
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE I
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - EASTERN OUTLET
NOT TO SCALE



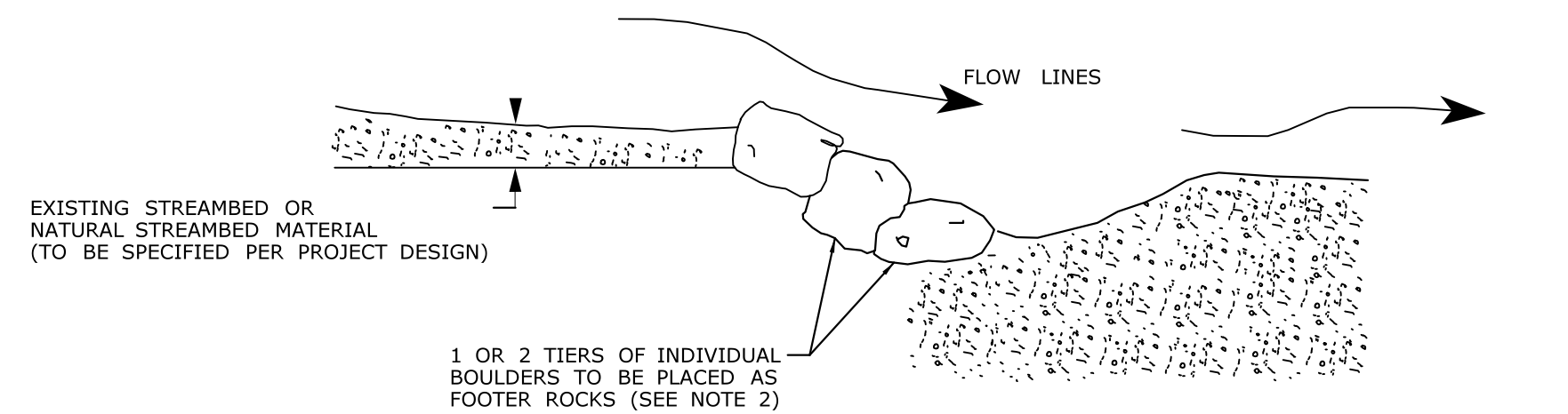
MODIFIED RIPRAP CHANNEL OUTLET
NOT TO SCALE

- NOTES:
 1. THE CONTRACTOR SHALL INSTALL A LAYER OF GEOTEXTILE FABRIC PRIOR TO INSTALLING THE LAYER OF GRANULAR FILL.
 2. THE GEOTEXTILE FABRIC SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS & SECTION M.08.01-19 OF THE STANDARD SPECIFICATIONS FORM 817.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

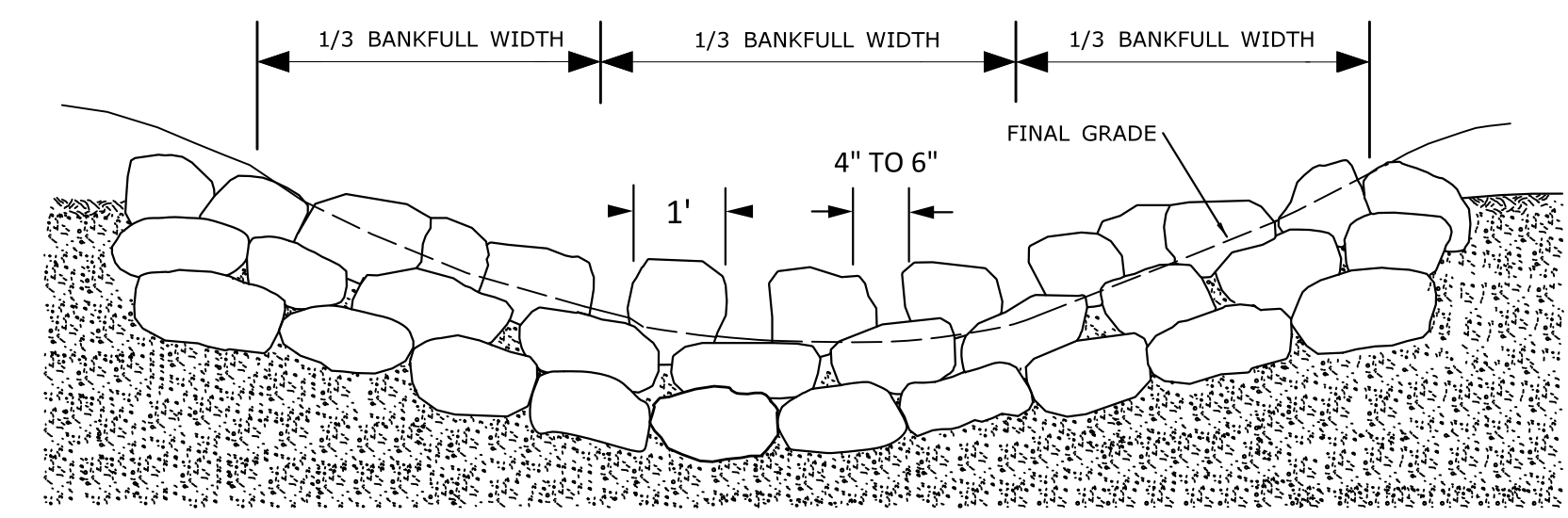
REV. DATE REVISION DESCRIPTION SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 6/14/2019	DESIGNER/DRAFTER: B.G.R. CHECKED BY: D.M.C. SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...VHW_MSH_99-114-115_PMT-12.dgn	SIGNATURE/BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-12 SHEET NO.
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DRAWING TITLE:
MISCELLANEOUS DETAIL SHEET



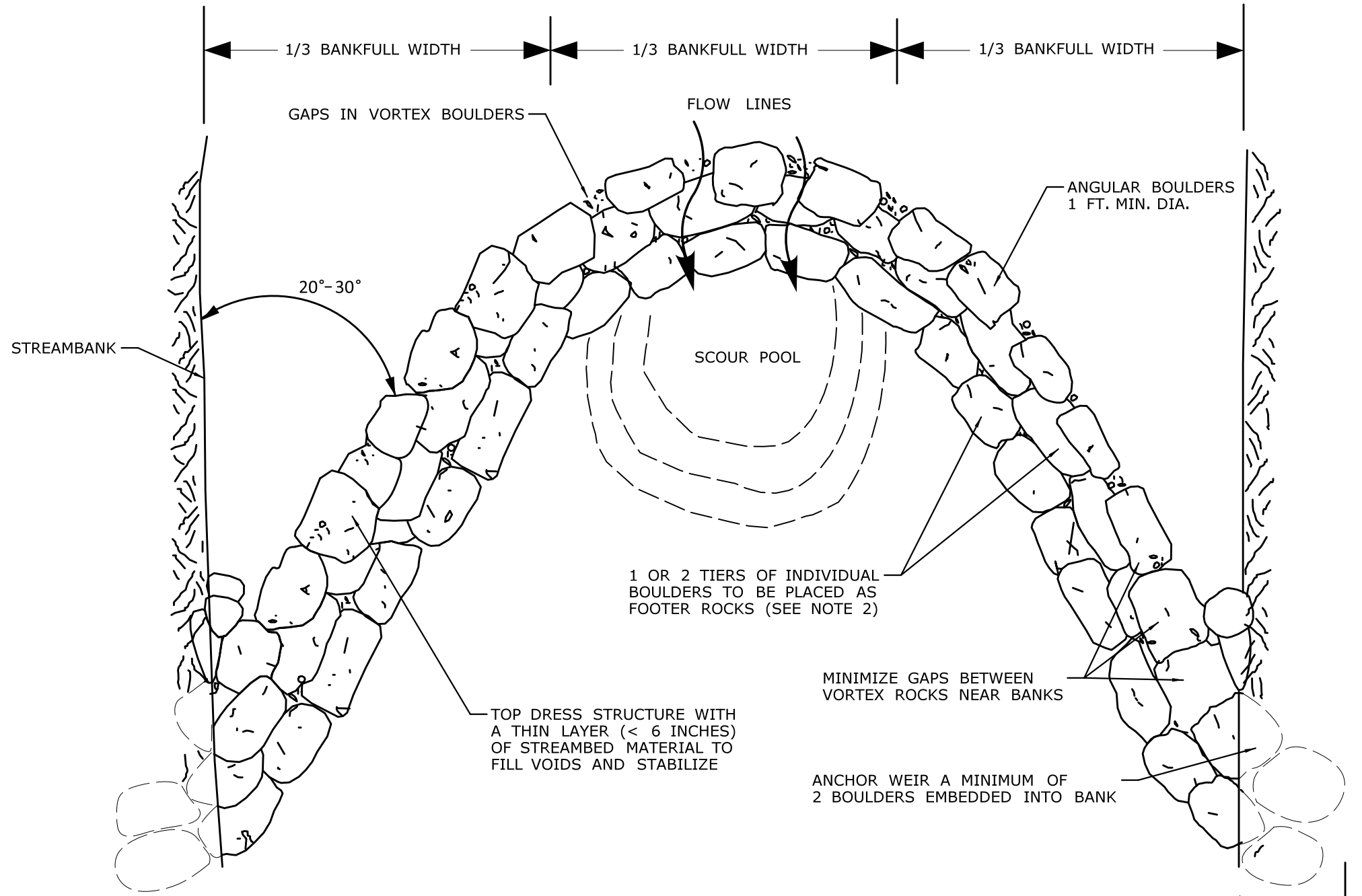
ROCK WEIR - PROFILE VIEW

N.T.S.



ROCK WEIR - SECTION VIEW (UPSTREAM)

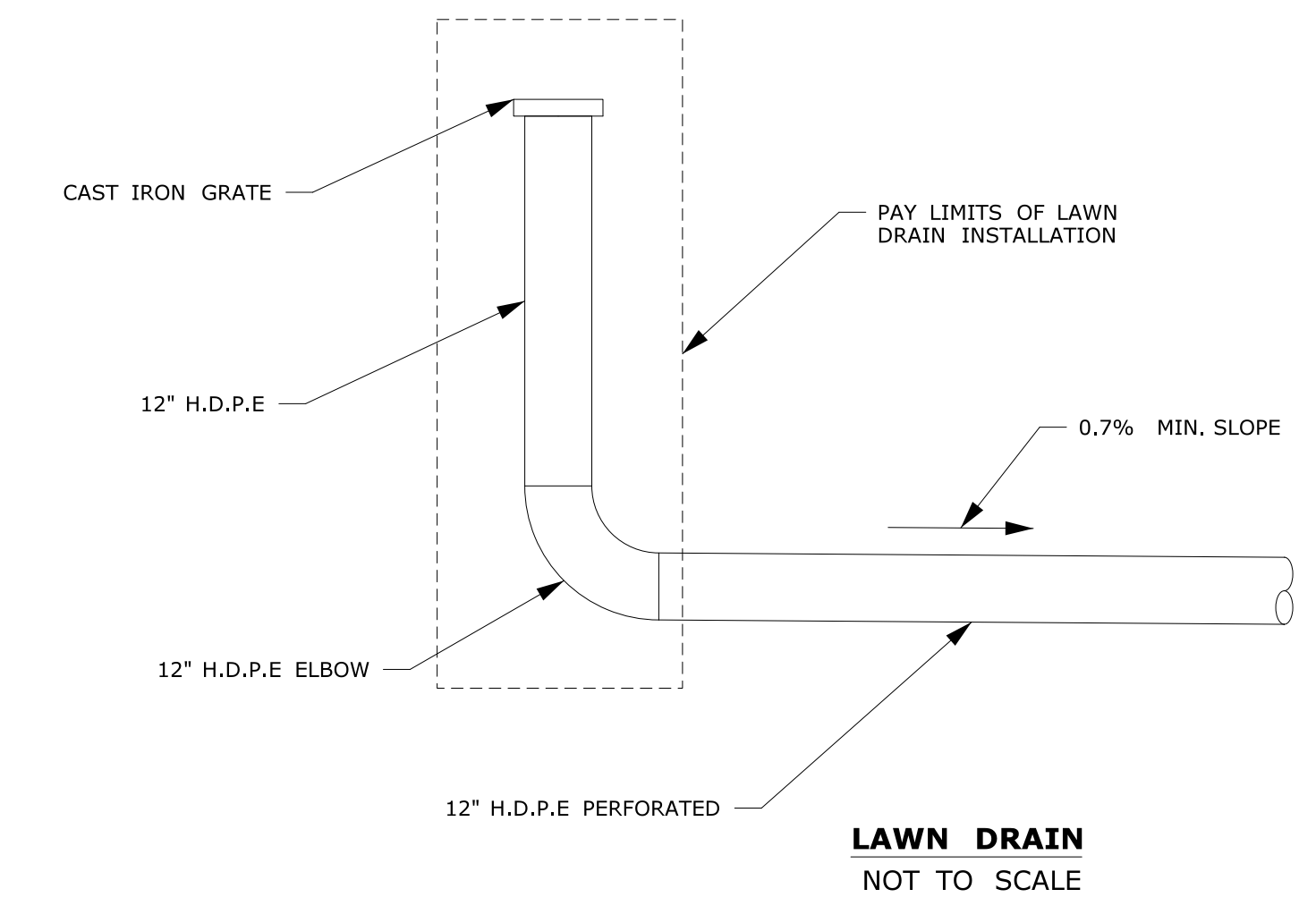
N.T.S.



ROCK WEIR - PLAN VIEW

N.T.S.

- NOTE:**
1. PLACEMENT OF THE ROCK WEIR SHALL BE DIRECTED IN THE FIELD BY THE ENGINEER OR THEIR AUTHORIZED DELEGATE. SEE SPECIAL PROVISION "ROCK WEIR".
 2. FOOTER ROCKS SHALL SERVE AS THE FOUNDATION FOR THE TOP LAYER OF THE WEIR. FOOTER ROCKS SHALL HAVE REASONABLE FLAT TOPS AND BOTTOMS TO ENABLE BETTER PLACEMENT OF THE TOP LAYER OF THE WEIR.

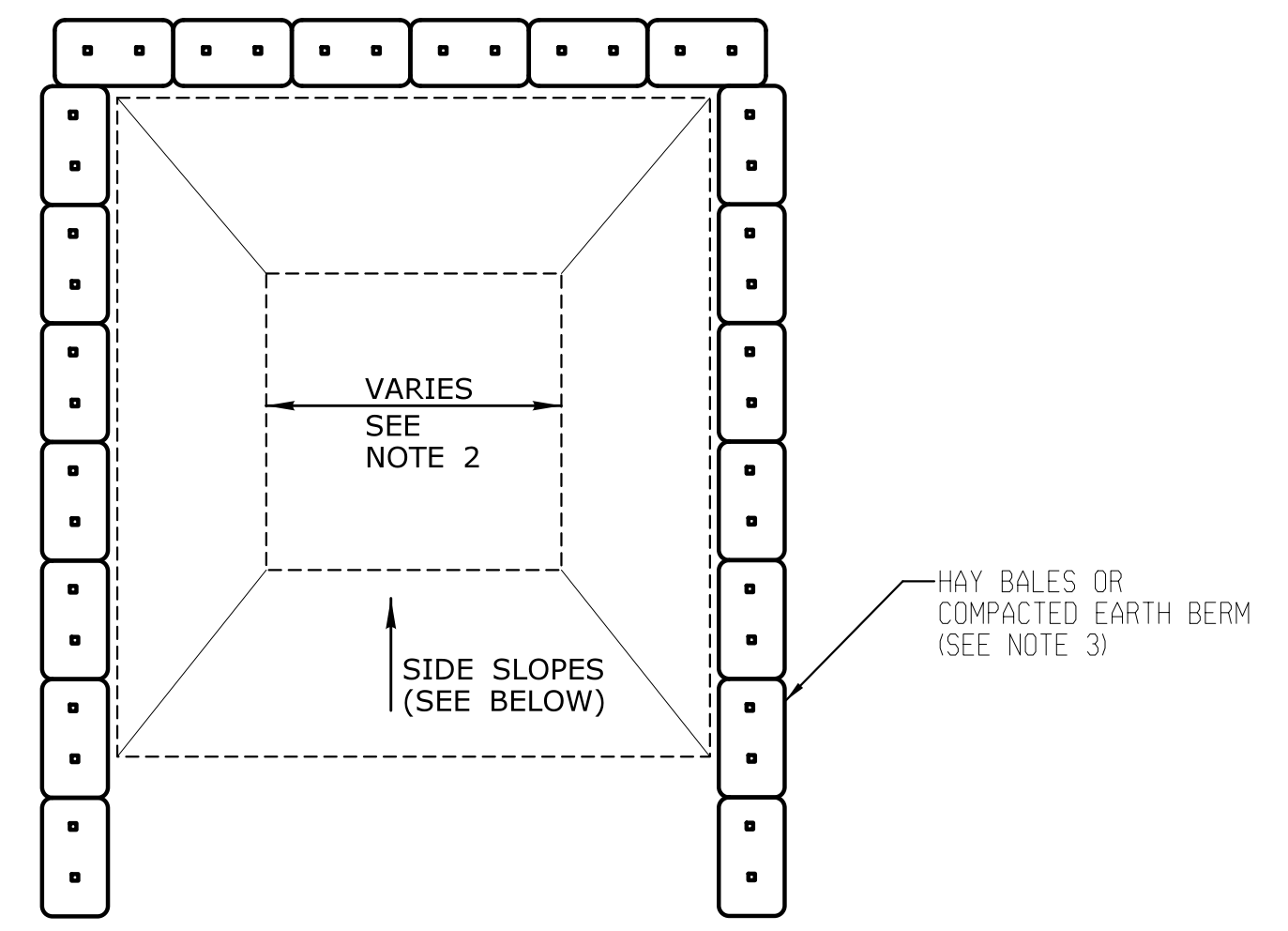


LAWN DRAIN

NOT TO SCALE

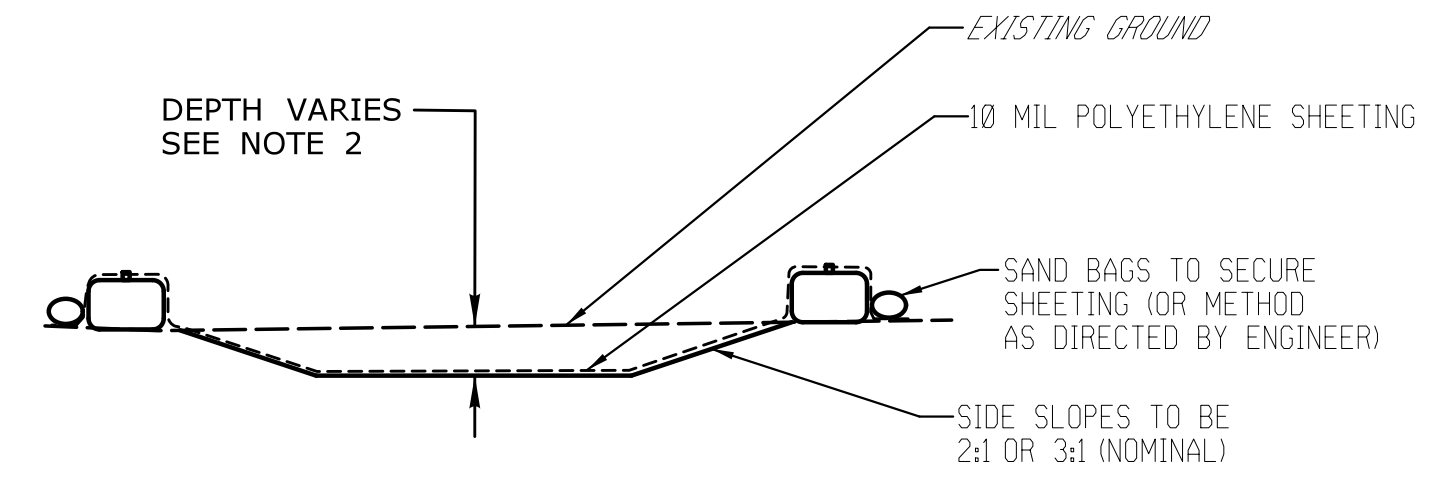
NOTES

1. CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. THE CONCRETE WASHOUT AREA SHALL BE ENTIRELY SELF-CONTAINED.
2. THE CONTRACTOR SHALL SUBMIT THE DESIGN, LOCATION AND SIZING OF THE CONCRETE WASHOUT AREA(S) WITH THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN AND SHALL BE APPROVED BY THE ENGINEER.
LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED AT LEAST 50 FEET FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE. THE FLOOD CONTINGENCY PLAN MUST ADDRESS THE CONCRETE WASHOUT IF THE WASHOUT IS TO BE LOCATED WITHIN THE FLOODPLAIN.
SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.
3. SURFACE DISCHARGE IS UNACCEPTABLE. THEREFORE, HAY BALES OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT.
4. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER APPROVED METHOD.
5. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTEGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. (AS REQUIRED BY THE CONSTRUCTION SITE ENVIRONMENTAL INSPECTION REPORT) WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS.
6. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S HEIGHT. THE WASTE CAN BE STORED AT AN UPLAND LOCATION, AS APPROVED BY THE ENGINEER. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS, REGULATIONS, AND GUIDELINES.
7. PAYMENT FOR THIS ITEM IS TO BE INCLUDED UNDER THE GENERAL COST OF THE WORK FOR THE PROJECT, INCLUDING SITE RESTORATION.



CONCRETE WASHOUT AREA

NOT TO SCALE
(SEE NOTE 2)



- NOTES:**
1. THE CONTRACTOR SHALL FURNISH, IN CONFORMANCE WITH SECTION 1.06 - CONTROL OF MATERIALS, FORM 817, PRODUCT CUT SHEETS AND DESCRIPTIVE LITERATURE FOR LAWN DRAINS (INCLUDING THE GRATE SIZE AND STYLE) TO THE ENGINEER FOR APPROVAL.
 2. INSTALLATION OF LAWN DRAIN SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS & SECTION 5.07 IN THE STANDARD SPECIFICATIONS FORM 817.
 3. GRATE, ELBOW AND VERTICAL H.D.P.E. PIPE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "LAWN DRAIN."

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 6/14/2019	DESIGNER/DRAFTER: B.G.R.	CHECKED BY: D.M.C.	SCALE AS NOTED	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>SIGNATURE/ BLOCK:</p>	<p>DESIGNED BY: BL BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450</p>	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
												DRAWING NO. PMT-13	SHEET NO.
												MISCELLANEOUS DETAIL SHEET	

IWGP

Attachment D: NDDB Determination

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT

August 27, 2018

Aaron M. Ferraro
State Of Connecticut Department Of Transportation
2800 Berlin Tpke
PO Box 317546
Newington, CT 06111
Aarron.ferraro@ct.gov

Project: CT DOT 099-114/115 Railroad-Highway Grade Crossing Improvements on Routes 7 & 44 in North Canaan
NDDDB Determination No.: 201809617

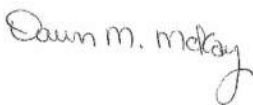
Dear Aaron M. Ferraro,

I have reviewed Natural Diversity Data Base (NDDDB) maps and files regarding the area delineated on the map provided for the proposed CT DOT 099-114/115 Railroad-Highway Grade Crossing Improvements on Routes 7 & 44 in North Canaan, Connecticut. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for two years. Please re-submit a new NDDDB Request for Review if the scope of work changes or if work has not begun on this project by August 27, 2020.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,





Dawn M. McKay
Environmental Analyst 3

Natural Diversity Data Base Areas

NORTH CANAAN, CT

December 2017

-  State and Federal Listed Species & Significant Natural Communities
-  Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources. Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

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 shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

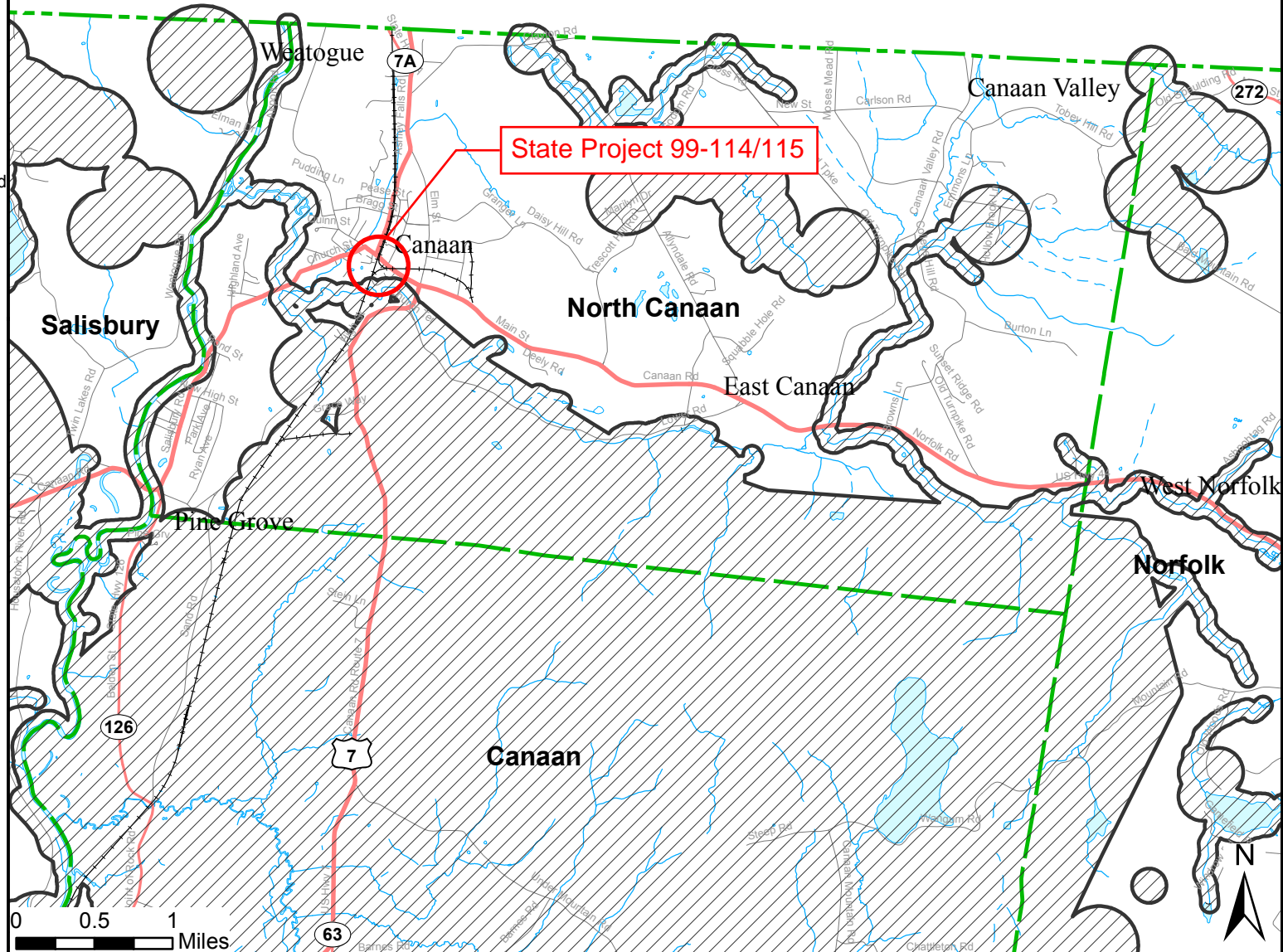
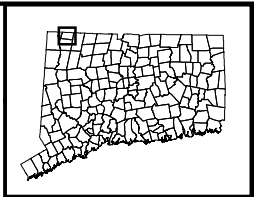
www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.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
Phone (860) 424-3011



Connecticut Department of
Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



IWGP

Attachment F: ACOE Self-Verification Notification Form

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT



**US Army Corps
of Engineers**[®]
New England District

Appendix E: Self-Verification Notification Form

This form is required for all **non-tidal projects in Connecticut**, but **not** required if work is done within boundaries of Mashantucket Pequot or Mohegan Tribal Lands. **Before** work commences, complete **all** fields (write “none” if applicable); attach project plans (not required for projects involving the installation of construction mats only); and any state or local approval(s); and send to:

Permits & Enforcement Branch B
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751
or cenae-r@usace.army.mil

and

CT DEEP
Inland Water Resources Division
79 Elm Street
Hartford, CT 06106-5127

State or local Permit Number: _____
Date of State or local Permit: _____
State/local Project Manager: _____

Permittee: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Contractor: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Consultant/Engineer/Designer: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Wetland/Soil Scientist Consultant: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Project Location (provide detailed description & locus map): _____

Address, City, State & Zip: _____

Latitude/Longitude Coordinates: _____

Waterway Name: _____

Project Purpose (include all aspects of the project including those not within Corps jurisdiction):

Work Description: _____

Work will be done under the following GP(s) (check all that have associated impacts):

_____ GP. 2 - Repair or maintenance of authorized or grandfathered structures/fills

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 5 - Boat ramps/marine railways

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 6 - Utility line activities (include calculations for each single & complete crossing

- attach additional sheet if necessary)

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 9 - Shoreline and bank stabilization projects

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 10 - Aquatic habitat restoration, establishment and enhancement activities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 11 - Fish & wildlife harvesting, enhancement and attraction devices and activities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 12 - Oil Spill and Hazardous material cleanup

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 13 - Cleanup of hazardous and toxic waste

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 14 - Scientific measurements devices

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 15 - Survey activities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

_____ GP. 17 - New/expanded developments & recreational facilities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

GP. 18 - Linear transportation projects- wetland crossings only (include calculations for each single & complete crossing - attach additional sheet if necessary)

Area of total wetland impacts: temporary 0 SF permanent 2,120 SF
Area of total waterway impacts: temporary 0 SF permanent 0 SF

GP. 19 - Stream, river & brook crossings – not including wetland crossings (include calculations for each single & complete crossing – attach additional sheet if necessary)

Area of total wetland impacts: temporary _____ SF permanent _____ SF
Area of total waterway impacts: temporary _____ SF permanent _____ SF

GP. 21 - Temporary fill not associated with any other GP activities

Area of total wetland impacts: temporary _____ SF permanent _____ SF
Area of total waterway impacts: temporary _____ SF permanent _____ SF

Does your project include any secondary effects? Yes _____ No

(Secondary effects include, but are not limited to non-tidal waters or wetlands drained, flooded, fragmented, or mechanically cleared resulting from a single and complete project. See Appendix F - Definitions.) If YES, describe here: _____

Proposed Work Dates: Start: August 2019 Finish: October 2020

Your name/signature below, as permittee, confirms that your project meets the self-verification criteria and that you accept and agree to comply with the applicable terms and conditions in the Connecticut General Permits.

Thomas J. Masjan
Signature of Permittee

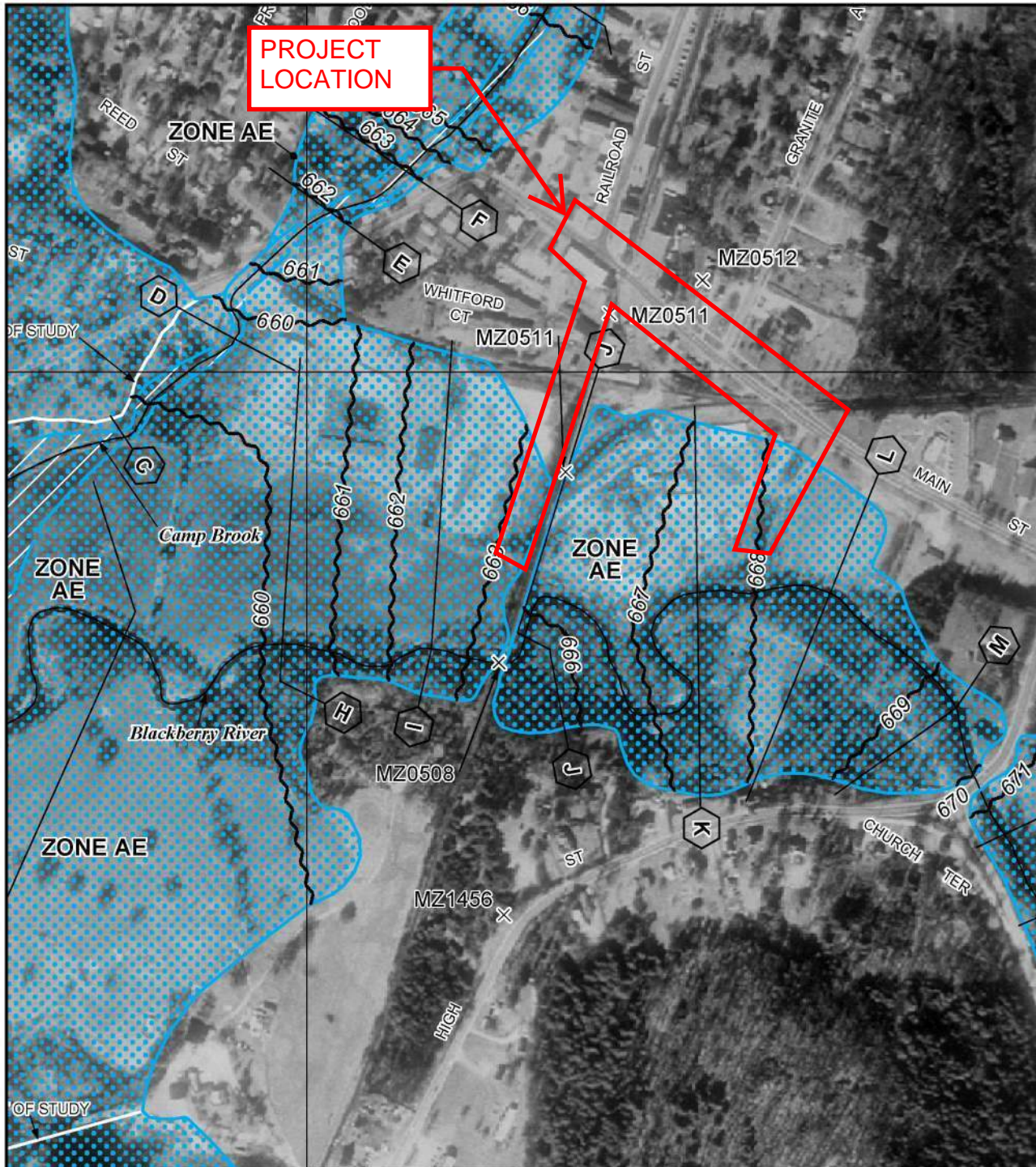
9-4-2019
Date

IWGP

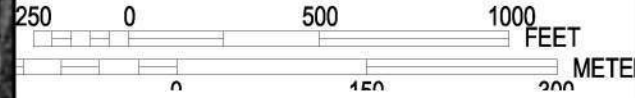
Attachment H: Other Information

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT

- FEMA Flood Insurance Rate Map (Q1)
- DEEP Inland Wetlands & Watercourses Activity Reporting Form (Q2)
- Photographs (Q3.1-Q3.5)
- SHPO Correspondence
- CTDEEP Fisheries Sign-off
- Inter-agency Notes



MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0014C

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
NORTH CANAAN,
CONNECTICUT
LITCHFIELD COUNTY

PANEL 14 OF 100
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NORTH CANAAN, TOWN OF	090149	0014	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
0901490014C
MAP REVISED
JANUARY 2, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



GIS CODE #: _____
 For DEP Use Only

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Complete, print, sign, and mail this form in accordance with the instructions on pages 2 and 3.

PART I: To Be Completed By The Municipal Inland Wetlands Agency Only

- DATE ACTION WAS TAKEN (use drop-down box): Year Month
- ACTION TAKEN (use drop-down box):
- WAS A PUBLIC HEARING HELD? (select one only) Yes No
- NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
 (print): _____ (signature) _____

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

- TOWN IN WHICH THE ACTION IS OCCURRING: **North Canaan**
 Does this project cross municipal boundaries? (select one only) Yes No
 If Yes, list the other town(s) in which the action is occurring:
- LOCATION: [USGS Quad Map Name](#) (see hyperlink): **Ashley Falls, MA-CT**
[Quad Number](#) (see hyperlink): **210**
 Subregional Drainage [Basin Number](#) (see hyperlink): **6100**
- NAME OF APPLICANT, VIOLATOR OR PETITIONER: **CT Department of Transportation**
- NAME & ADDRESS/LOCATION OF PROJECT SITE: **Railroad-Highway Grade Crossing Improv.
 Housatonic Railroad Co. Crossings
 U.S. Route 7 & 44 (Main Street)**
 Briefly describe the action/project/activity: Temporary Permanent
Installation of Railroad crossing lights, vehicular gates and replacement of existing drainage systems and full-depth roadway reconstruction.
- ACTIVITY PURPOSE CODE (Use drop-down box): N
- ACTIVITY TYPE CODE(S) (Use drop-down box) 10 , 2 , 9 ,
- WETLAND / WATERCOURSE AREA ALTERED [must be provided in acres or linear feet as indicated]:
 Wetlands: **0.049** acres Open Water Body: **0** acres Stream: **0** linear feet
- UPLAND REVIEW AREA ALTERED [must be provided in acres]: **3.31** acres
- AREA OF WETLANDS AND / OR WATERCOURSES RESTORED, ENHANCED OR CREATED: **0** acres
 [must be provided in acres]

PART III: To Be Completed By The DEP

DATE RECEIVED: _____ DATE RETURNED TO DEP: _____
 FORM COMPLETED: YES NO FORM CORRECTED / COMPLETED: YES NO



Photo No. 1 – Western crossing looking northwest



Photo No. 2 – Eastern crossing looking east



Photo No. 3 – Eastern outlet



Photo No. 4 – Eastern outlet channel



Photo No. 5 – Western drainage trunk looking north



Photo No. 6 – Western drainage trunk looking south



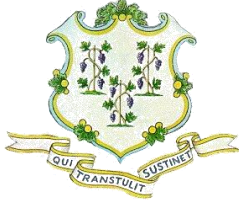
Photo No. 7 – Western outlet



Photo No. 8 – Area of western outlet



Photo No. 9 – Housatonic Railroad over Blackberry River



STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546



Transmittal:

From: Mark McMillan
Date: August 29, 2019
Through: Kimberly Lesay, Transportation Assistant Planning Director
To: Catherine Labadia, Deputy State Historic Preservation Officer

Project: State No.: 99-114 / 115
F.A.P. No.: 6053(010)
Project Title: Railroad-Highway Grade Crossing Improvements
Route 7 & Route 44 (Main Street)
Town: North Canaan

Subject: SHPO Consultation Documentation

Project Description

Using state and federal funds, the Connecticut Department of Transportation (CTDOT) proposes to implement improvements to two at-grade railroad/highway crossings in North Canaan. Originally proposed as two individual undertakings, State Project #99-115 addresses Route 44's crossing of the Housatonic Railroad's main line while Project #99-114 addresses the crossing of Route 44 over the Connecticut Western railroad spur line, which is located 650 feet east of the aforementioned Housatonic line crossing. Because of their proximity, they will be combined as under a single construction project. The work proposed includes the following tasks:

- Modernizing the railroad flashing lights
- Installing a new drainage for each crossing (added to scope in 2013)
- Reconstructing the roadway/rail crossing surfaces
- Introducing a minor signal revision by adding a pedestrian crossing signal button and crosswalk to the eastern leg of Routes 7 & 44
- Installing new sidewalk pavers and luminaires within the project area

In 2007, both projects individually underwent Section 106 review and were found to have No Adverse to Historic Properties.¹

¹ Karen Senich (SHPO) letter to John Carey (CTDOT), *State Project #99-114, Railroad-Highway Grade Crossing, North Canaan* and *State Project #99-115, Railroad-Highway Crossing, North Canaan*, each letter dated October 24, 2007

In 2013, CTDOT's archaeologists investigated the combined State Project #99-114/115 area with regard to impacts caused by drainage improvements. They recommended to the federally-recognized tribes that the undertaking would have no effect on historic or cultural resources because the areas had been previously disturbed. The Mashantucket Pequot Tribal Nation expressed that they had no concerns regarding the project as proposed.²

State Project #99-114/115 is being resubmitted for Section 106 evaluation because more than three years have elapsed since the previous finding was made. In addition, CTDOT received a request from the North Canaan Board of Selectman to revisit the previous *No Adverse Effect* finding.³ At issue is the reconfiguration of the access driveways to the "Depot Plaza" located between the Union Depot station and Main Street (Route 44). CTDOT will reevaluate the previous Section 106 finding in light of the information provided.

Technical Review of Project

State Projects #99-114 and #99-115 address at-grade road crossings of the Housatonic rail line and Connecticut Western rail spur, respectively. In addition to the work at the crossings, the combined project includes roadway and sidewalk improvements to the segment of Route 44 between the two crossings. This work will provide standardized vehicle lane and shoulder widths within the project area and make spot improvements to sidewalks. The roadway will be widened to accommodate 11-12 foot wide travel lanes with 5-foot wide shoulders. This corrects the existing substandard conditions, but does create new lanes or add capacity to the road.

The Area of Potential Effect (APE) of this undertaking follows a 1,200 foot-long segment of Route 44 that begins at the intersection of Route 44 (Main Street) and Route 7 (Railroad Street). The eastern terminus of the project is 220 feet east of Route 44's at-grade crossing of the Connecticut Western railroad line. Within the project area, the following ten properties will be subject to right to grade and right to reconstruct driveway impacts. Unless otherwise noted, all of the properties are within the Canaan Village Historic District.

76 Main Street

Bordered to the west by the Housatonic Railroad line and the south by Main Street (Route 44) is a 1-story "Rite Aid" pharmacy. The building was constructed in 1984 and is situated on 0.62 acre rectangular parcel. It is a non-contributing element of the Canaan Village Historic District.

75 Main Street "Union Depot"

This 0.92 acre parcel is bounded to the west by the Housatonic Railroad line, to the north by Route 44 and to the south by the alignment of the Connecticut Western rail line (no longer extant).

² Kathleen Knowles, (Mashantucket Pequot TPHO) email to Glenn Elliot (FHWA), *State Project #99-114 & 99-115 – Improvements to Two Rail Crossings of Route 7/44, North Canaan*, dated May 14, 2013.

³ Geoffrey Drury to Mark McMillan, (CTDOT), dated March 15, 2019 (Appendix A).

At the southwest corner of the parcel is the Union Depot building, which a contributing element of the Canaan Village Historic District and individually listed on the National Register of Historic Places (NRHP).⁴ A spur line of the Connecticut Western rail cuts through the parcel from the east and curves northward in front of the station before join the Housatonic main line (Image 1).

The paved area between the curving rail line and Route 44 is not mentioned in the NRHP Nomination form for Union Depot, nor is it specifically discussed in the Canaan Village Historic District nomination. It is identified as “Depot Plaza” in a letter CTDOT received from the Board of Selectman that describes the plaza as architecturally and aesthetically important to the setting of Union Depot.

The plaza is semi-circular swath of land connected to Route 44 by two driveways. Between the driveways is a semi-elliptical island defined by a concrete retaining wall to the north and a curving southern arc lined with a brick paver sidewalk with a granite curb. There is no documentation as to whether the plaza and island were a designed element of the overall Depot Station or if they evolved in response to use patterns over time.

An examination of the Sanborn Fire Insurance maps and from 1896, 1901, 1909, and 1923 and available archival photographs suggest that the configuration of the plaza area shifted several times. The plaza area’s access to Main Street, the buildings and railroad features (signals, outbuildings) located on it, and even the appearance and shape of the island has developed over time (Image 2). Today, the island is the site of railroad elements like the Also on the property is a crossing tender’s shanty and semaphore signal (ca. 1910) that were relocated from the west side of the tracks in 1973 (Image 3). A free-standing clock was installed on the island in 2008.

Archival photographs show the plaza area as being packed soil/gravel and later paved. It is now fully paved for use by vehicles for parking, delivery trucks, and busses. The asphalt is striped to designate parking spaces that are grouped in two locations: an array of 17 spaces that are perpendicular to the railroad track and a group of 4 parking spaces that are parallel to the southern curb of the island. Pavement markings also define the northwest entrance driveway to the plaza and no standing areas around the island.

Despite its utilitarian appearance, the parking area provides an open space that is the used for community event such as musical performances and the annual celebration of Canaan Railroad Days.

The project will install sidewalk pavers at the entrances to the western driveway and around the island. These are approximately the same size and shape as the painted median and no standing zones.

⁴ National Park Service, *Union Depot* (NPS #72001317), listed on April 24, 1972.

Pavers will be installed on the elliptical island to extend its footprint northward and formalize the off-street parking area. The existing retaining wall and features of the island will remain as they are currently (Figure 1). The proposed changes will not take any parking spaces from the plaza nor will they limit the overall size of the open space. In light of the changes to the plaza over time, the proposed paving changes do not



Figure 1: Proposed alterations at 75 Main Street. The yellow highlighted areas show the approximate size and location of pavers that will define the entrances and the semi-elliptical island at Depot Plaza.

62 Main Street

On the north side of Main Street is a 2-story brick mixed use commercial building situated on a 0.37 acre parcel. The building was constructed in 1951 and is a non-contributing element of the district. Includes detached commercial garage, 2 small utility sheds.

58 Main Street

This 0.73 acre parcel features three structures that were built for the Episcopalian church. They are a 1-story stone chapel that was built in 1845, a 1-story wood-frame fellowship hall that was built ca. 1900 and a free-standing stone bell tower that was built in 1931. The property is a contributing element of the Canaan Village Historic District.

The project will require right to grade the southern end of the parcel and also proposes to remove the existing asphalt driveway that connects the church with Route 44 (Image 3). The driveway path will be filled with topsoil and the turf reestablished. There is an existing concrete sidewalk that runs parallel to Route 44 that will remain in place when the driveway is removed.

53 Main Street “Collin’s Diner”

Located at the eastern side of Depot Plaza is a 0.13 acre parcel on which is a Streamline Moderne diner. The diner was manufactured by the Jerry O’Mahoney Company in 1942 and is a contributing element to the historic district. The project will reconstruct the driveway behind (east side) of the diner.

49 Main Street

This 0.32 acre parcel was original constructed as a 1-story service station that was designed in Tudor Revival style. It was later converted to office/commercial use and is home to an insurance company. The property is a contributing element to the Canaan Village Historic District. It will be subject right to grade and right to reconstructs its driveway.

37 Main Street

Abutting the south side of Route 44 and the east side of the Connecticut Western rail line is a 0.29 acre parcel that is largely vacant. At the western end is a 1-story restroom building that was built in 2005. The building is only visible from the south, as there is a rail boxcar positioned in front of the building. The property is outside of the Canaan Village Historic District.

10 Granite Avenue

This property is located at the southwest corner of Main Street and Granite Avenue. It is a 2.3 acre parcel on which is a 1-story medical office that was constructed in 1983. The property is located outside the Canaan Village Historic District.

2 Gandolfo Drive

Abutting the southeast corner of Route 44 and the Connecticut Western rail line is a 6.7 acre parcel. On it are six buildings that were constructed between 1960 and 1985. They include a small office building, a storage garage, and an auto center. The property is outside of the Canaan Village Historic District. The project will require right to reconstruct the driveway of this property.

Block 15 / Lot 016-1

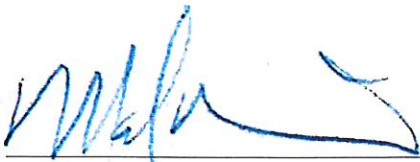
This 1.9 acre parcel abuts the southeast end of the APE. It is owned by the Town of North Canaan and features a 1-story wood framed pavilion structure. The property is outside of the Canaan Village Historic District.

Except where mentioned in the previous sections of this document, the project does not anticipate creating ground-disturbing activities beyond the existing road right of way, which was previously assessed by CTDOT archaeologists and found to have no potential for archaeological resources. Soils in the project APE show evidence of previous disturbance caused by the construction of the roadway and railroad, installation of drainage and subterranean utility lines and natural events such as the reported flooding of the area. As proposed, the undertaking does not pose a foreseeable risk to archaeological resources within the project area.

Recommendation

Qualified staff from CTDOT's Office of Environmental Planning have reviewed the project design documents for State Project #99-114/115 in North Canaan. They note that the overall scope of work has not significantly changed since the undertaking was last reviewed in 2013.

Taking into consideration the concerns expressed by the Board of Selectman regarding the impacts of this project, staff recommend that the proposed reconfiguration of the driveways and installation of sidewalk improvements within the project APE will not significantly diminish the overall historic integrity of either Union Depot or the Canaan Village Historic District. As such, they recommend that State Project #99-114/115 will have No Adverse Effect on Historic Properties.



Mark McMillan
National Register Specialist
Office of Environmental Planning
Connecticut Department of Transportation

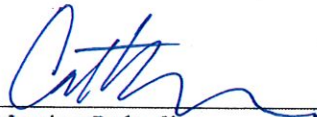
SHPO Use Only

Based on the information provided to the State Historic Preservation Office, we:

Concur Do Not Concur (*additional comments attached*)

with CTDOT's Office of Environmental Planning's opinion that
State Project #99-114/115 in North Canaan will cause:

No Adverse Effect to Historic Properties



Catherine Labadia
Deputy State Historic Preservation Officer

9/4/19

Date



Department of Economic and
Community Development

Connecticut
still revolutionary

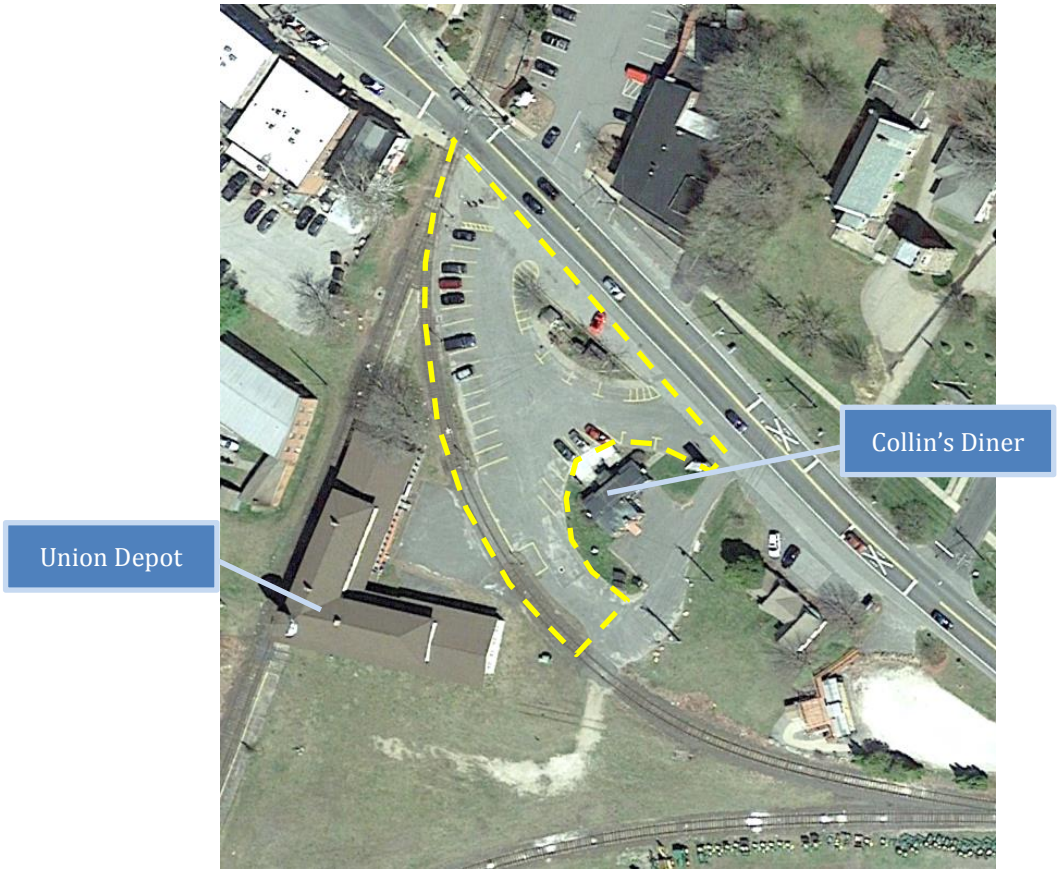


Image 1: Aerial view of Depot Plaza (outlined in yellow). Union Depot station is labeled for reference.

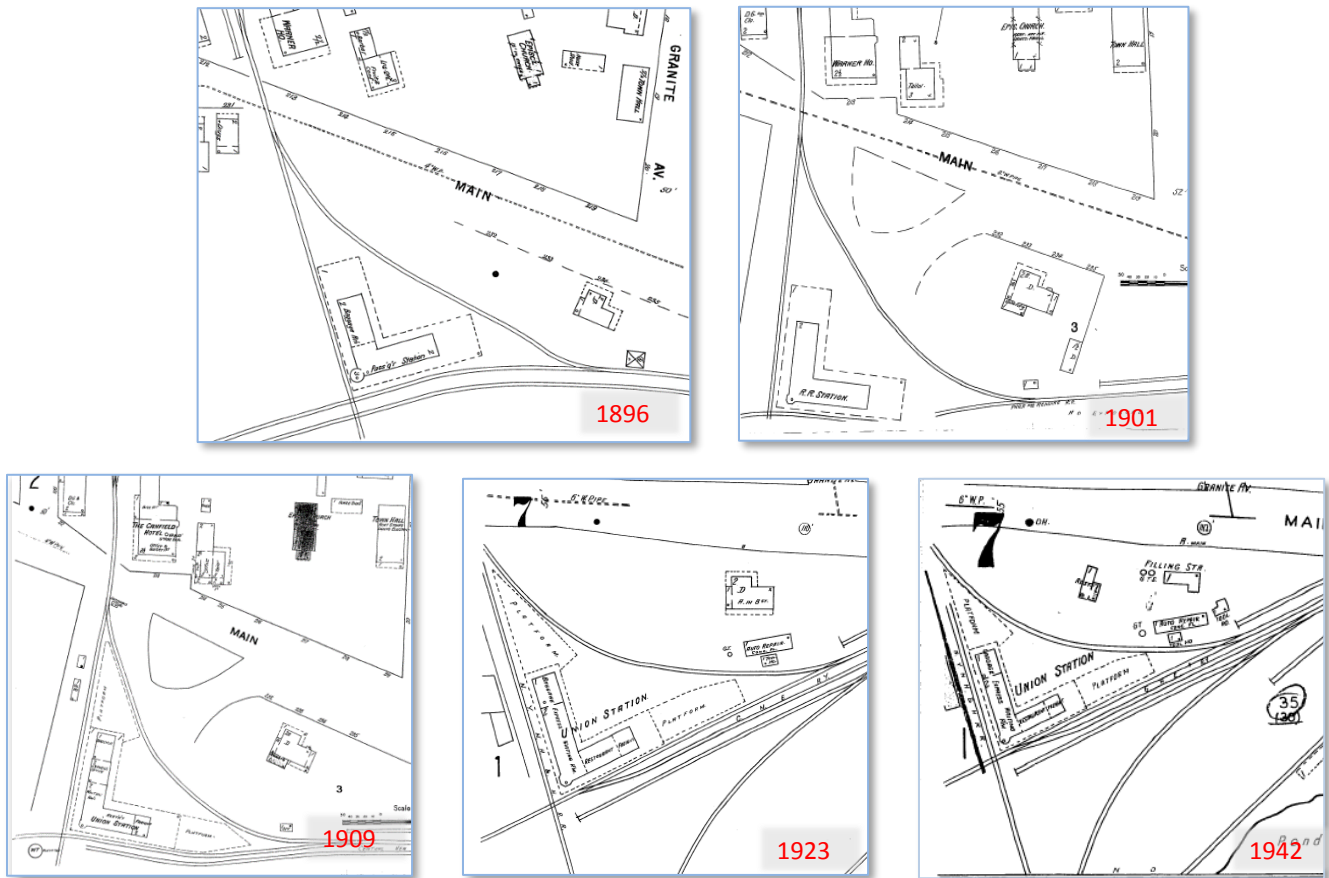


Image 2: Sanborn Fire Insurance Maps of Union Depot between 1896-1942.

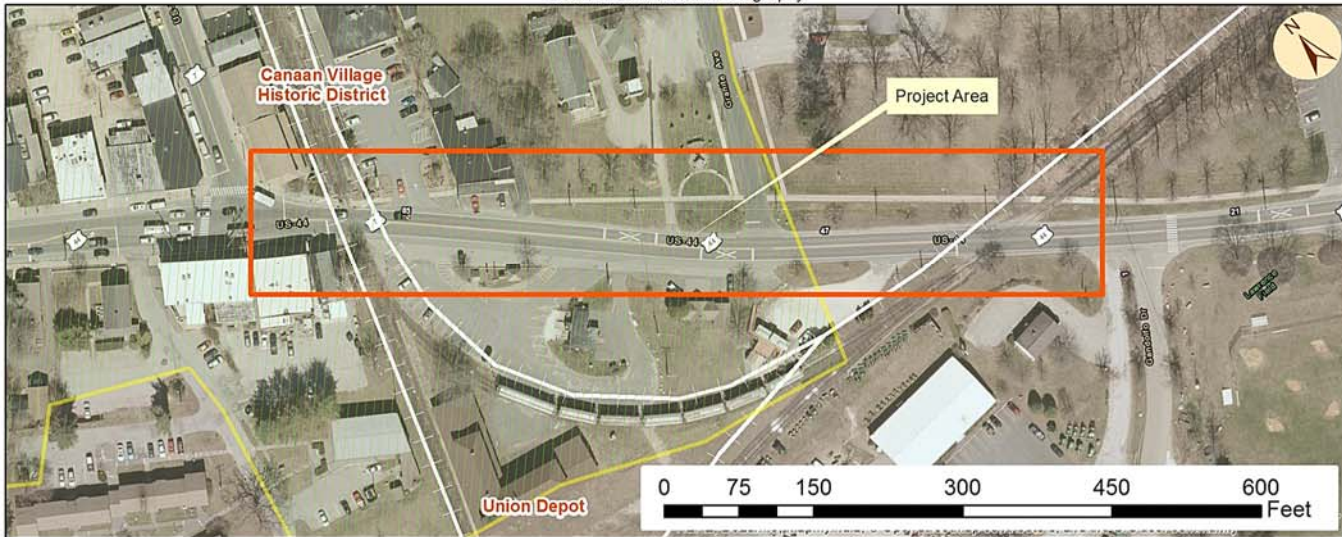


Image 3: Semi-elliptical island at Union Depot.

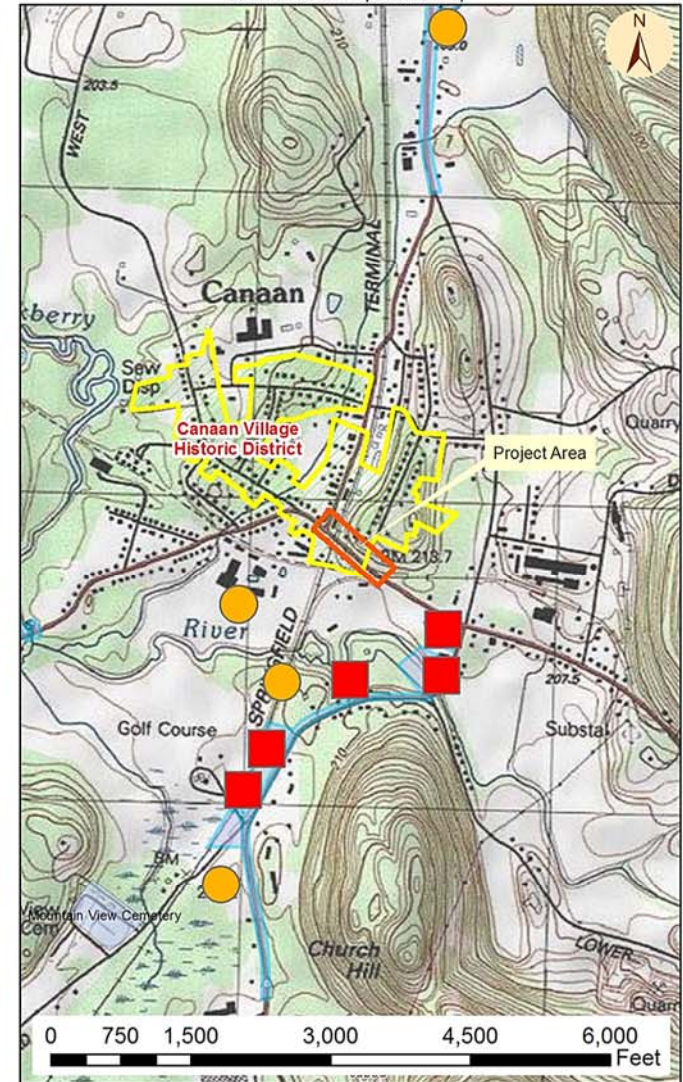


Image 4: Driveway that will be removed from 53 Main Street. In place of the existing asphalt, the path will be filled with topsoil the turf re-established. The existing concrete sidewalk will remain in place.

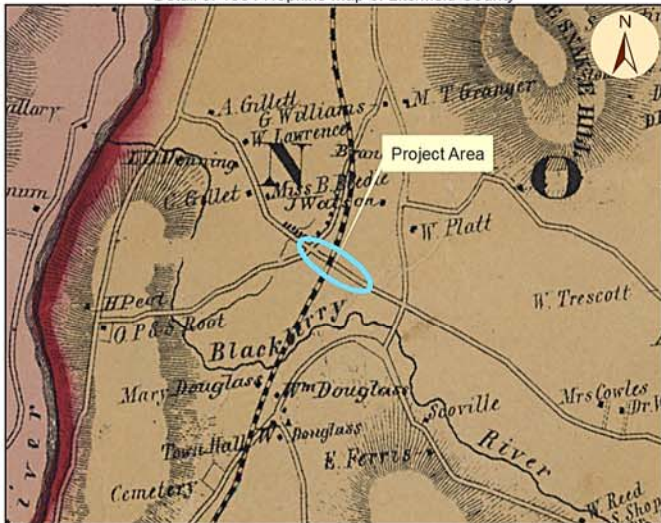
Detail of 2018 Aerial Photography



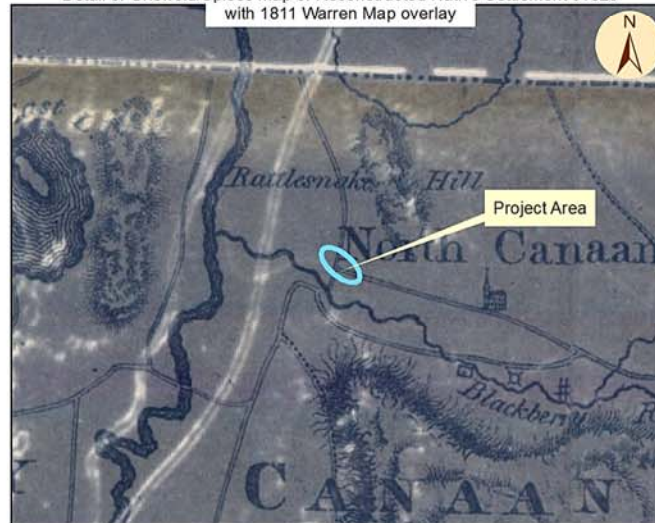
Detail of USGS Topo Quad Map



Detail of 1854 Hopkins Map of Litchfield County



Detail of Griswold/Spies Map of Reconstructed Native Settlement c1625 with 1811 Warren Map overlay



**Office of Environmental Planning
Environmental Review - Historical and
Archaeological Resources**

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State Project No. 99-114/115
F.I.D.#: 6053(010)
Railroad-Highway Grade Crossing
Improvements at Route 7 & Route 44
North Canaan

Predicted Archaeological Soil Sensitivity

	High		Low
	Moderate		Poor
	Variable		Unknown

National Register Historic District

Cemetery/ 4(f) Resource

Approximate Location of Archaeological Site

Historic

Pre-Contact

Unknown



August 30, 2018

McMillan, Mark J.

From: Geoffrey Drury <GDrury@drurypatz.com>
Sent: Friday, March 15, 2019 1:49 PM
To: McMillan, Mark J.
Cc: James, LeVance H.; Schilling, Barry A.; selectman@northcanan.org; Geoffrey Drury; George Johannesen; Christian Allyn; cppbonbon@hotmail.com; Tom Zetterstrom; 'Patrick Sullivan'; CWigren@cttrust.org; briva@calindell.com; deh1047@gmail.com; Paul Koneazny (paul@curtisinsurance.com); kathrynwboughton@gmail.com; cfdstupt@att.net; missbunny@snet.net; Anthony J. Nania
Subject: DOT Grade Crossing Project Nos. 099-114/115 - Request for updated environmental/historical review

Dear Mr. McMillan:

This request for an updated environmental review relates to DOT Grade Crossing Project Nos. 099-114/115 in the Town of North Canaan. It is being addressed to you by the North Canaan Board of Selectmen and the Warden of the Canaan Fire District, as the historian in the DOT Office of Environmental Planning with responsibility for environmental reviews of State construction activities impacting historical and cultural resources in Connecticut.

This project has been on the DOT drawing boards for many years. It involves the rebuilding of a grade crossing close to the intersection of Routes 7 and 44 in downtown North Canaan, including the installation of crossing gates and the re-engineering of drainage to solve long-standing flooding problems at the crossing. It is our understanding that an environmental review of the project conducted in 2007 concluded that it would have no adverse historical or archaeological impact, and that an update of some sort in 2013 came to the same conclusion.

We are requesting that the DOT revisit that conclusion and conduct a further updating environmental/historical review of the project. It has been 12 years since the original review was undertaken, and six years since the partial update. In that time the project has evolved into something very different from its original conception, with expanded project limits and construction impacts well beyond the grade crossing that was its first focus. In its present form it is not the same project as the one reviewed in 2007 and 2013.

We are particularly concerned about the impact of the expanded project on the historic Depot Plaza just to the south and east of the grade crossing that is to be upgraded. That plaza is included in the area designated in 1990 in the National Register as the Canaan Village Historic District, and has for well over 100 years served as the economic, architectural and aesthetic heart of the village downtown.

During the long heyday of the two railroads that gave North Canaan its historic Canaan Union Depot, the Depot Plaza and the Depot itself functioned together as a commercial crossroads for freight and passenger service for the whole of the northwestern part of the state and for portions of Massachusetts and New York as well. Architecturally and aesthetically the plaza framed and set off the Depot, with a long arc of track across the front of the building defining the plaza's southwesterly edge and with wide, sweeping entrances off Route 44 providing welcoming and practical access for everything from the largest freight vehicles to the countless pedestrians passing to and from the Depot and the trains. An elliptical island separating the two entrances, facing the Depot across the open plaza, further served to define the distinctive shape and character of the entire

space. This ellipse later became the natural location for a sheltered bus stop, where passengers boarded the buses to and from Hartford that began running when the east-west railroad ceased operations.

With the decline of the railroads the Canaan Union Depot was adapted internally to a range of other commercial uses. Its historic exterior, however, remained essentially unmodified, and the plaza in front of it changed not at all. (Ample photographic documentation is available back to the beginning of the last century if that would be helpful in your review.) Following a tragic fire in 2001 the Depot has been carefully restored to its former glory, and now houses a thriving craft brewery and an exciting railroad history museum being developed by the Connecticut Railroad Historical Association, which holds title to both the Depot and the Depot Plaza. The plaza itself is now leased by the Town for municipal parking, but continues to function as a commercial and civic gateway and gathering point for the community.

The historic Collin's Diner, listed along with the Depot in the National Register of Historic Places, sits directly across the plaza from the Depot, where it has served both local patrons and tourist visitors for more than 75 years. Semi-trailers use the plaza to access the new brewery, and to make deliveries to nearby businesses lacking the space to accommodate large vehicles. Outdoor musical performances and other community activities are staged in the plaza every summer during the town-wide celebration of Canaan Railroad Days. When North Canaan celebrated the pitching victories of native son Steve Blass in the 1971 World Series, the Depot Plaza (rechristened Steve Blass Plaza for the occasion) was the only logical place for the cheering crowds to gather. And as noted above, the plaza (with a shelter constructed with volunteer labor by local Boy Scouts and with Collin's Diner to provide refreshment and a place to sit) has long served as a convenient off-highway bus stop for the long-haul buses that pass through the town.

Through all of this the Depot Plaza has anchored the village center in unchanged form for more than a century. Now, however, the DOT's expanded grade crossing project threatens to change both the visual and functional character of the plaza, and in doing so to make fundamental changes in how the plaza relates to the town and to the flow of commerce and people in and through it. As the latest iteration of the project plans now makes clear, in conjunction with its grade crossing work the DOT is proposing to severely restrict access to the plaza by drastically narrowing and straightening the existing entrances and limiting in and out traffic to a one-way flow, effectively preventing access by semi-trailers, buses and other large vehicles.

Whatever the intention, this will have the effect of changing an open and integral part of our town center into a functional backwater, a plaza in name only, serving primarily as a small-vehicle parking lot that will not look the same, feel the same or function in the same manner as its historical predecessor. Sweeping entrances may be disfavored by traffic engineers and their draftsmen, but in this case they are an integral part of the Depot Plaza's aesthetics and history, as well as essential to the viability of the plaza as an easily-accessed commercial hub for surrounding businesses – not to mention their importance for bus and emergency vehicle access.

We consider the Depot Plaza in its current, long-established configuration to be a historical resource deserving of preservation for the aesthetic, cultural and functional reasons outlined above. The changes now proposed as part of the DOT's grade crossing project deliberately sever the physical connection between the plaza and the surrounding village downtown area, and significantly degrade the value of that resource to our community. It is our hope that a new and historically sensitive environmental review of this aspect of the project's impact will encourage the project engineers to rethink their approach to North Canaan's Depot Plaza, and will result in preserving the historical integrity of the plaza without compromising the success of the grade crossing upgrades to which the project is intended to be addressed.

Very truly yours,

Charles P. Perotti, First Selectman
Christian P. Allyn, Selectman

Craig Whiting, Selectman

Anthony J. Nania, Warden
Canaan Fire District



Connecticut Commission on Culture & Tourism

October 24, 2007

Historic Preservation
& Museum Division

Mr. John F. Carey *CSH*
Traffic Engineering
ConnDOT
2800 Berlin Turnpike
Newington, CT

59 South Prospect Street
Hartford, Connecticut
06106

(v) 860.566.3005
(f) 860.566.5078

Subject: Route 44 at Route 7
Railroad-Highway Grade Crossing
North Canaan, CT
ConnDOT #99-114

Dear Mr. Carey:

The State Historic Preservation Office has reviewed the above-named project. This office notes that the proposed transportation improvements are located in immediate proximity to the Canaan Village Historic District, which is listed on the National Register of Historic Places.

In the opinion of the State Historic Preservation Office, the proposed grade crossing improvements will effect the historic and architectural character of the Canaan Village Historic District. However, this office believes that the proposed undertaking will constitute no adverse effect upon historic, architectural and archaeological resources associated with this National Register historic district.

This State Historic Preservation Office appreciates the opportunity to have reviewed and commented upon the proposed project.

For further assistance, please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

Karen Senich
Deputy State Historic Preservation Officer

cc: Ms. Cynthia Holden/ConnDOT
Mr. Robert Turner/FHWA

RECEIVED

OCT 30 2007

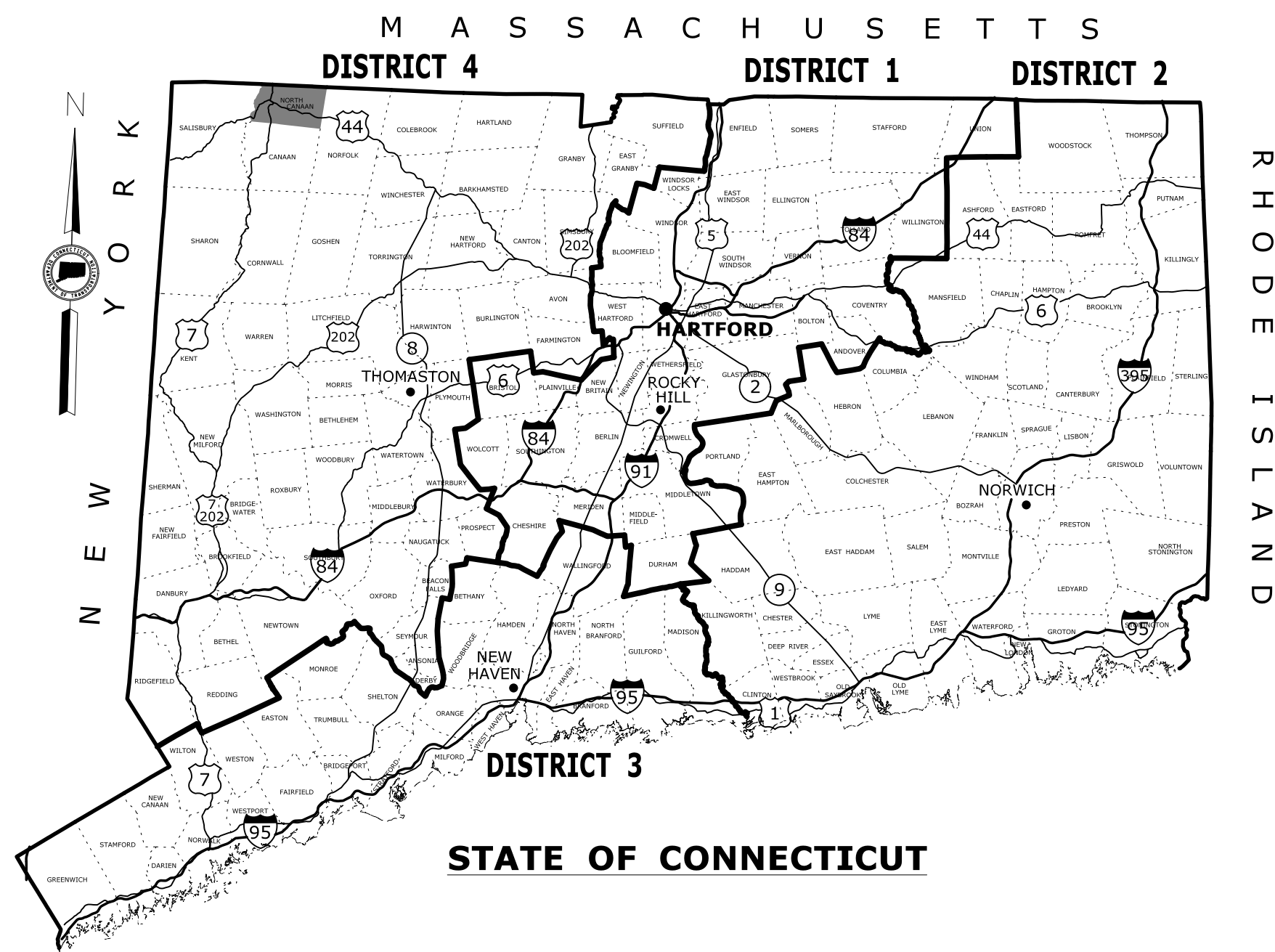
TRAFFIC ENGINEERING

ENVIRONMENTAL PERMIT PLANS

STATE PROJECT 99-114/115

U.S. ROUTE 7 & 44 (MAIN STREET)

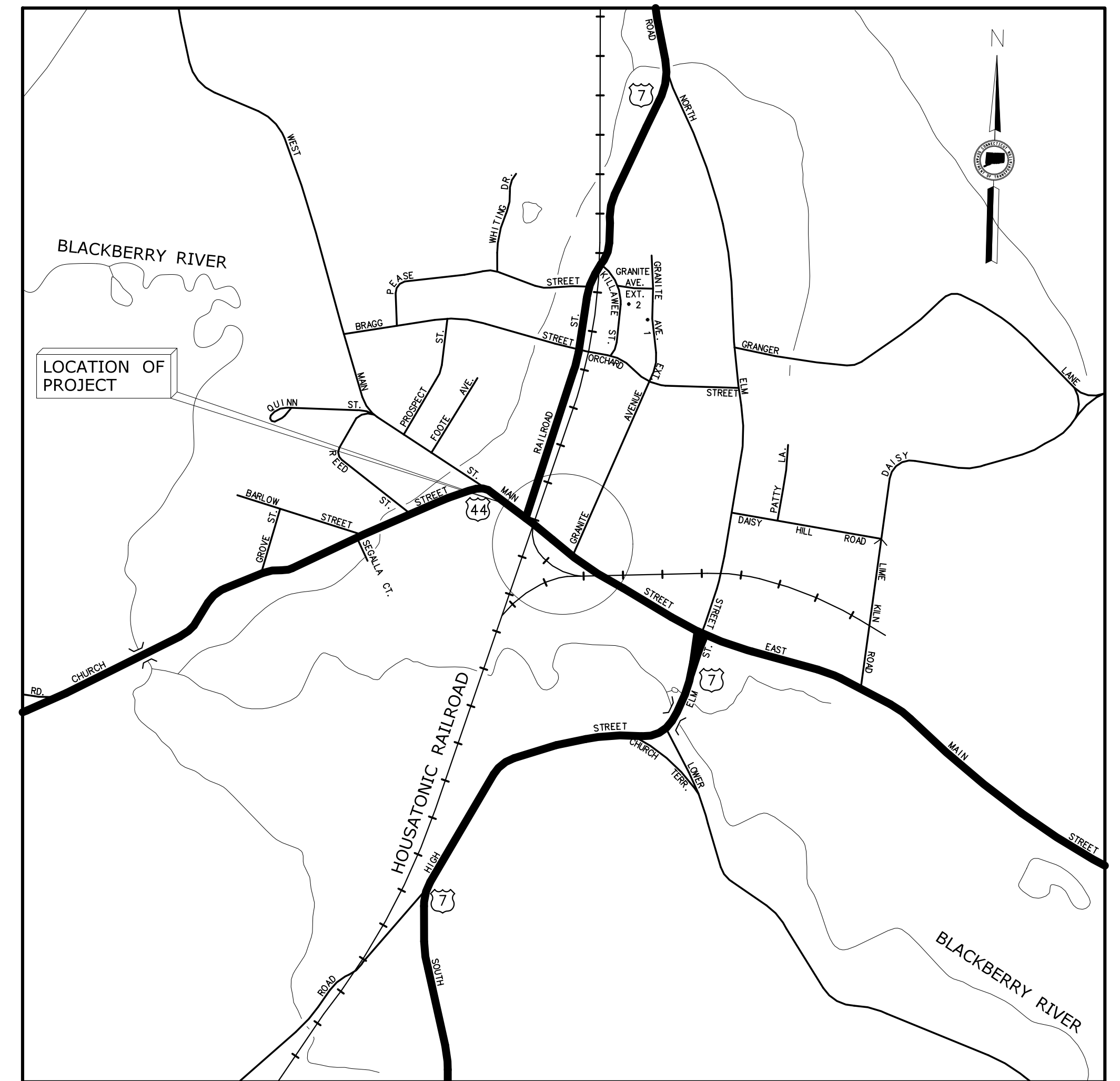
TOWN OF NORTH CANAAN



Steve Cephal
CTDEEP/Fisheries

GENERAL NOTES:

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND ACOE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLAND AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1983
VERTICAL DATUM BASED ON NAVD OF 1983
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW BEST MANAGEMENT PRACTICES (BMP) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.



LOCATION PLAN
NOT TO SCALE

LIST OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
PMT-01	TITLE SHEET
PMT-02	INDEX MAP
PMT-03 - PMT-08	GENERAL SITE PLAN
PMT-09 - PMT-11	IMPACT PLAN
PMT-12 - PMT-13	MISCELLANEOUS DETAILS

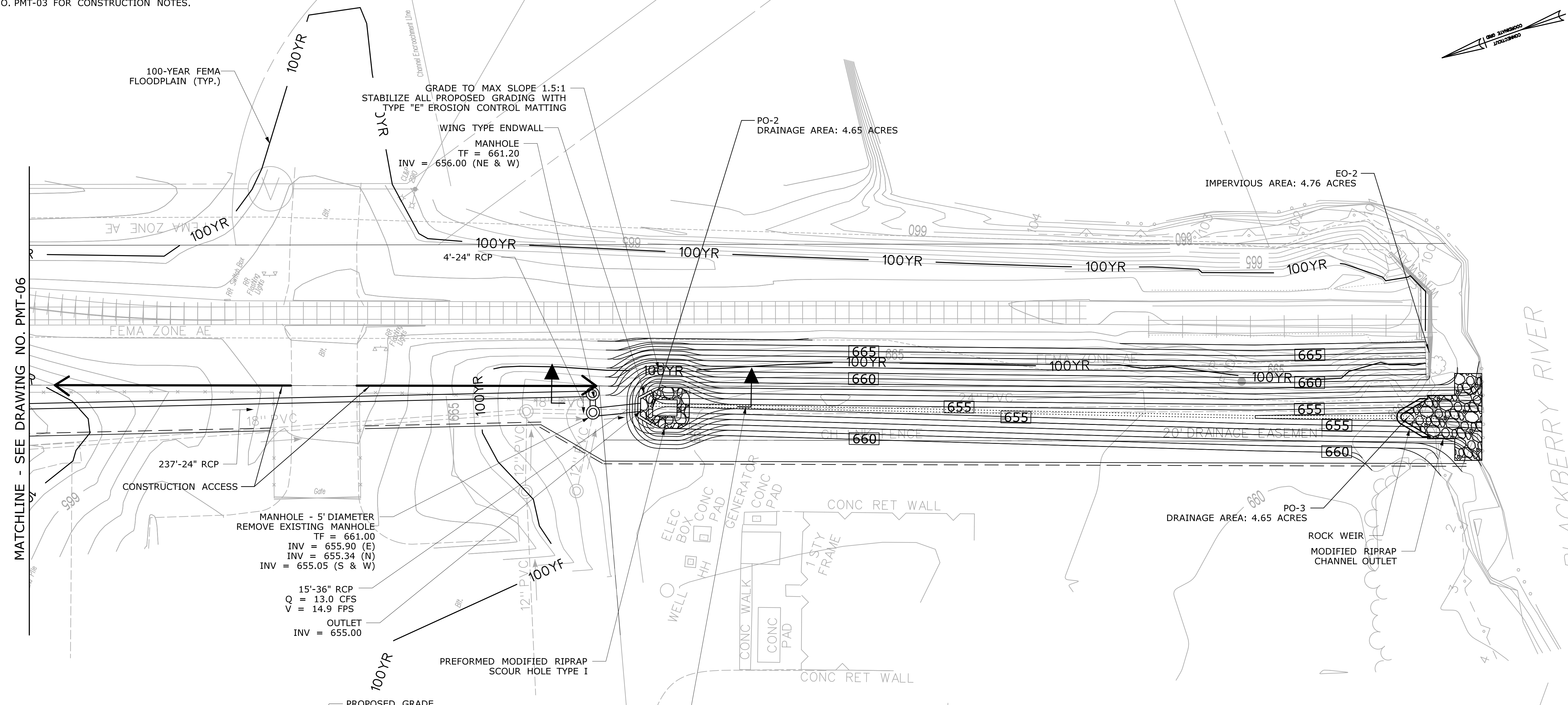
ENVIRONMENTAL PERMIT PLANS

PLAN DATE: APRIL 23, 2019

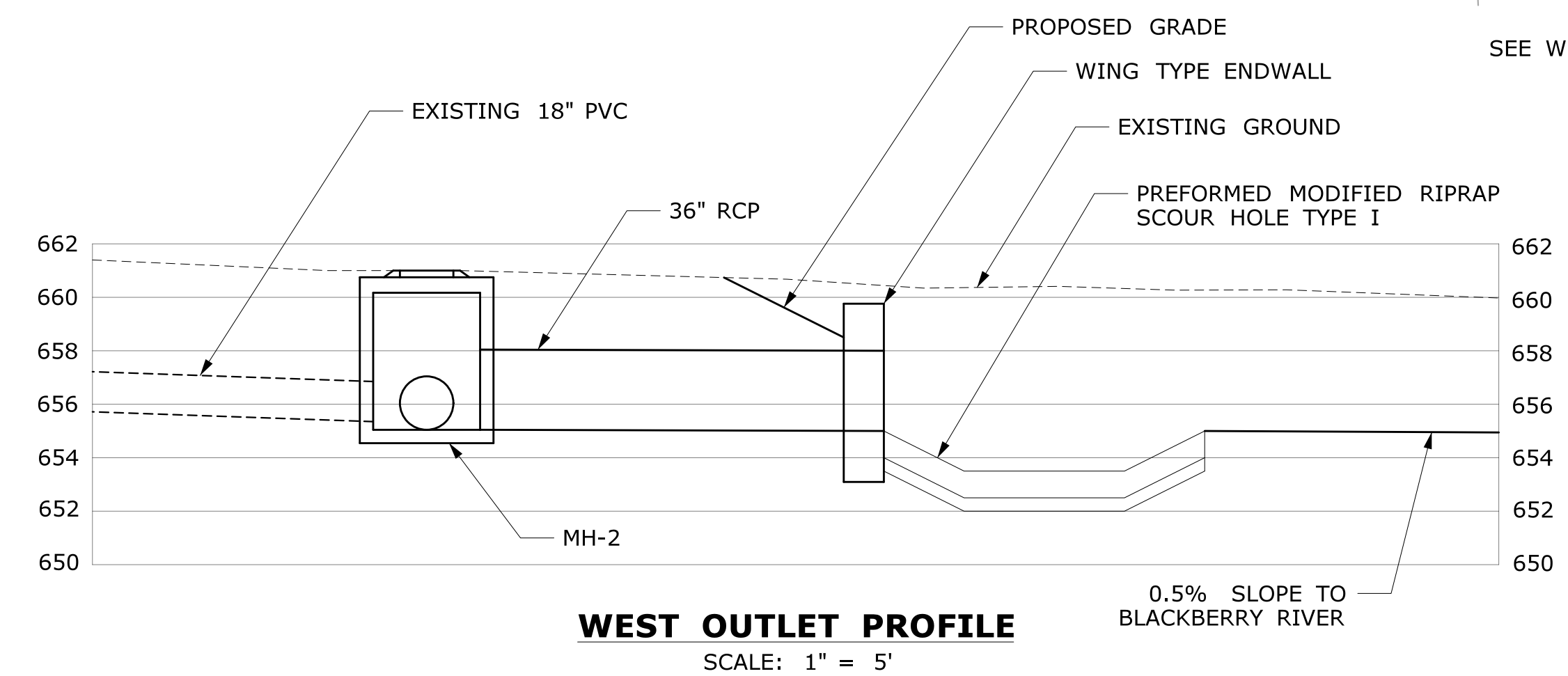
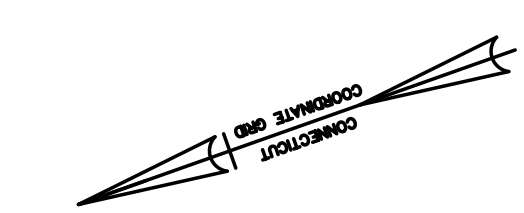
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REV.	DATE												
REVISION DESCRIPTION	SHEET NO.												

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



MATCHLINE - SEE DRAWING NO. PMT-06



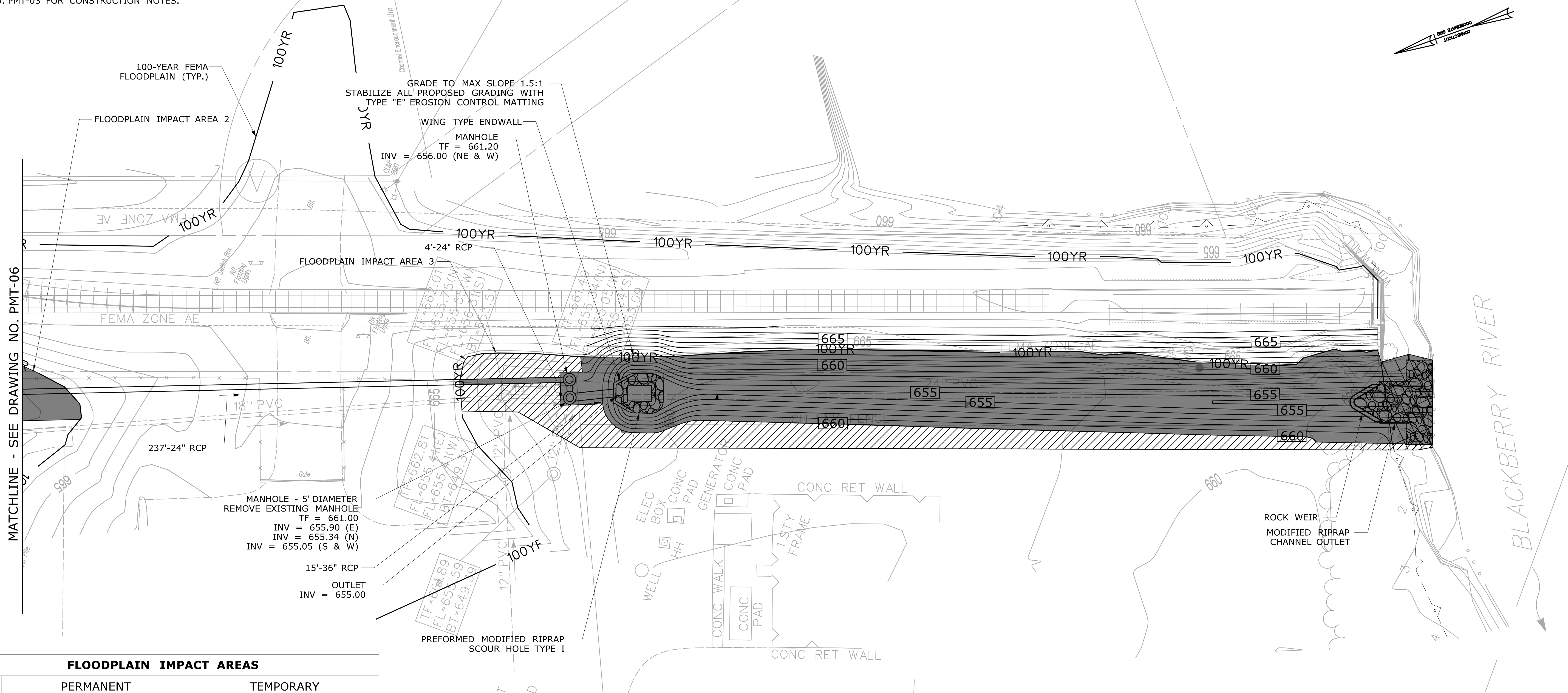
Steve Cephal
CTDEEP/Fisheries

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20' Filename: ...VHW_MSH_99-114-115_PMT-07.dgn	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN DRAWING TITLE: GENERAL SITE PLAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-07 SHEET NO.
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 4/23/2019		

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



FLOODPLAIN IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,230	0.143	180	0.004

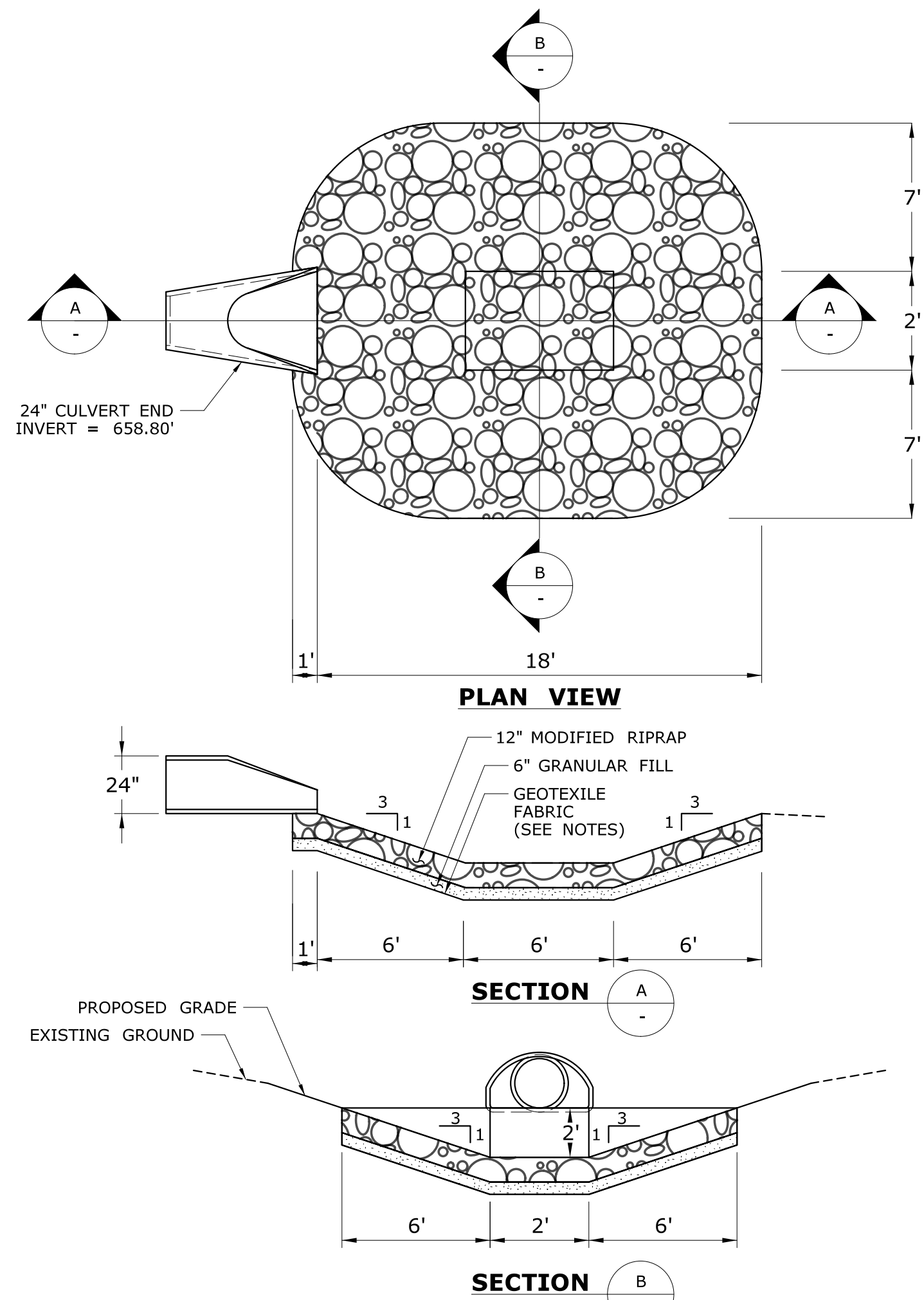
WETLAND IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
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1	610	0.014	0	0

Steve Cephal
CTDEEP/Fisheries

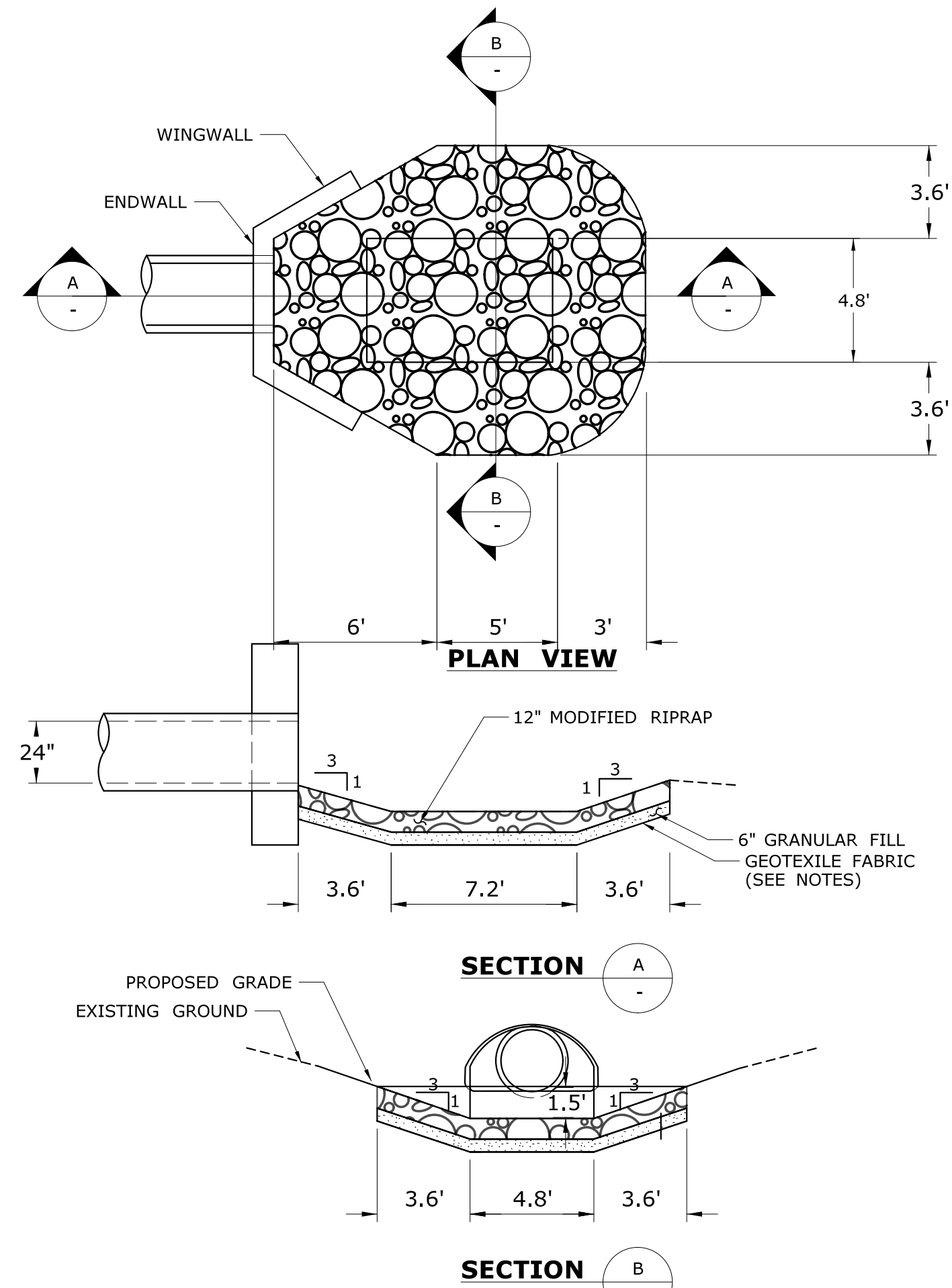
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- TEMPORARY FLOODPLAIN IMPACT
- PERMANENT WETLAND IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

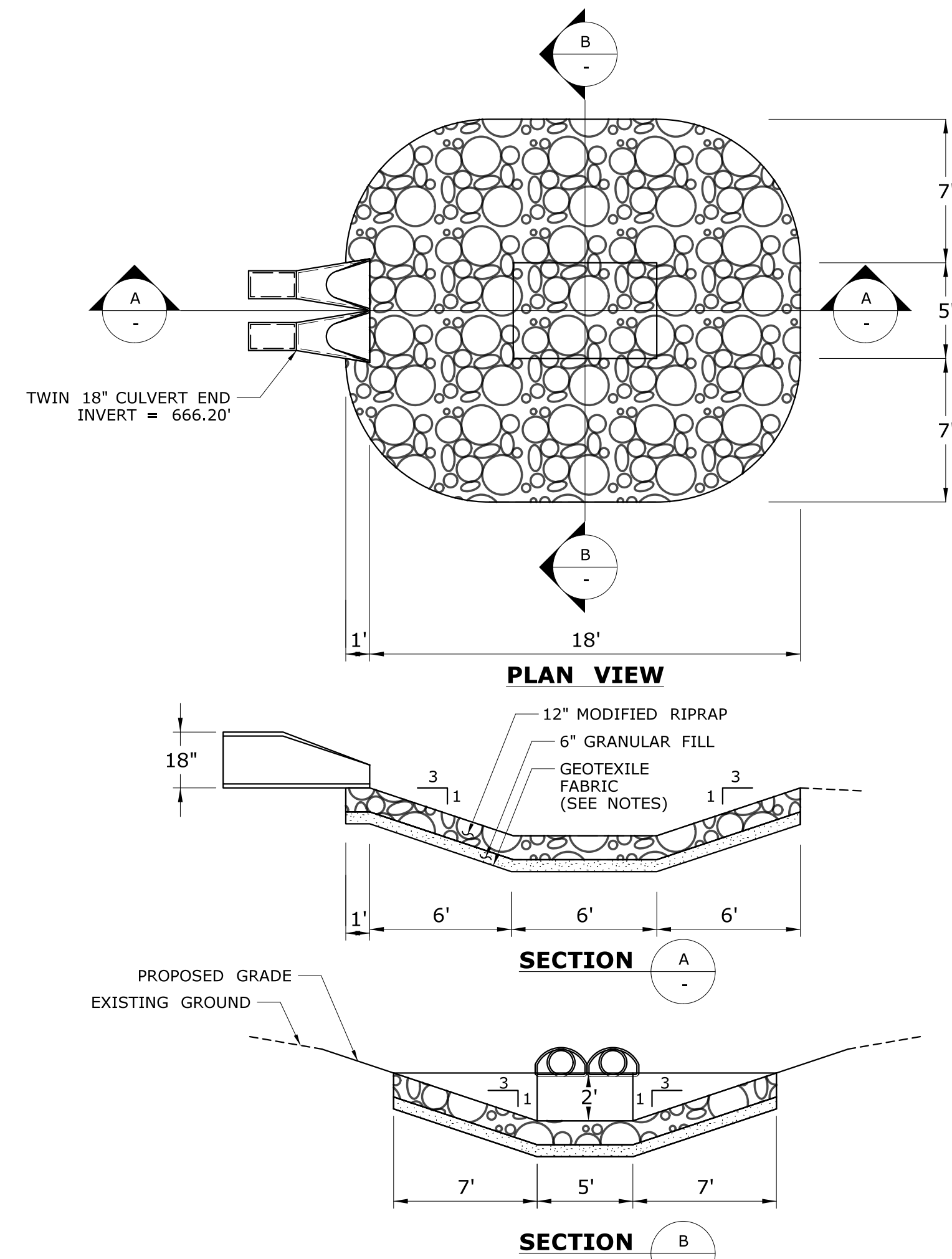
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.												



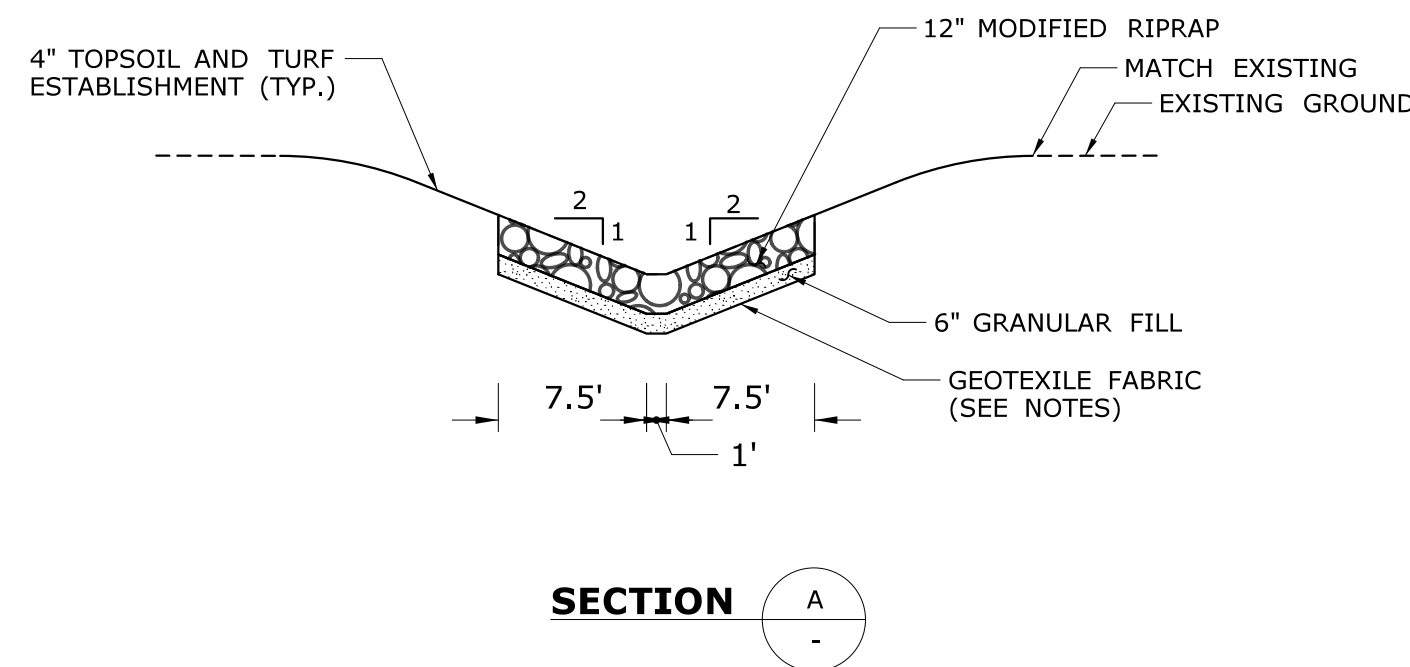
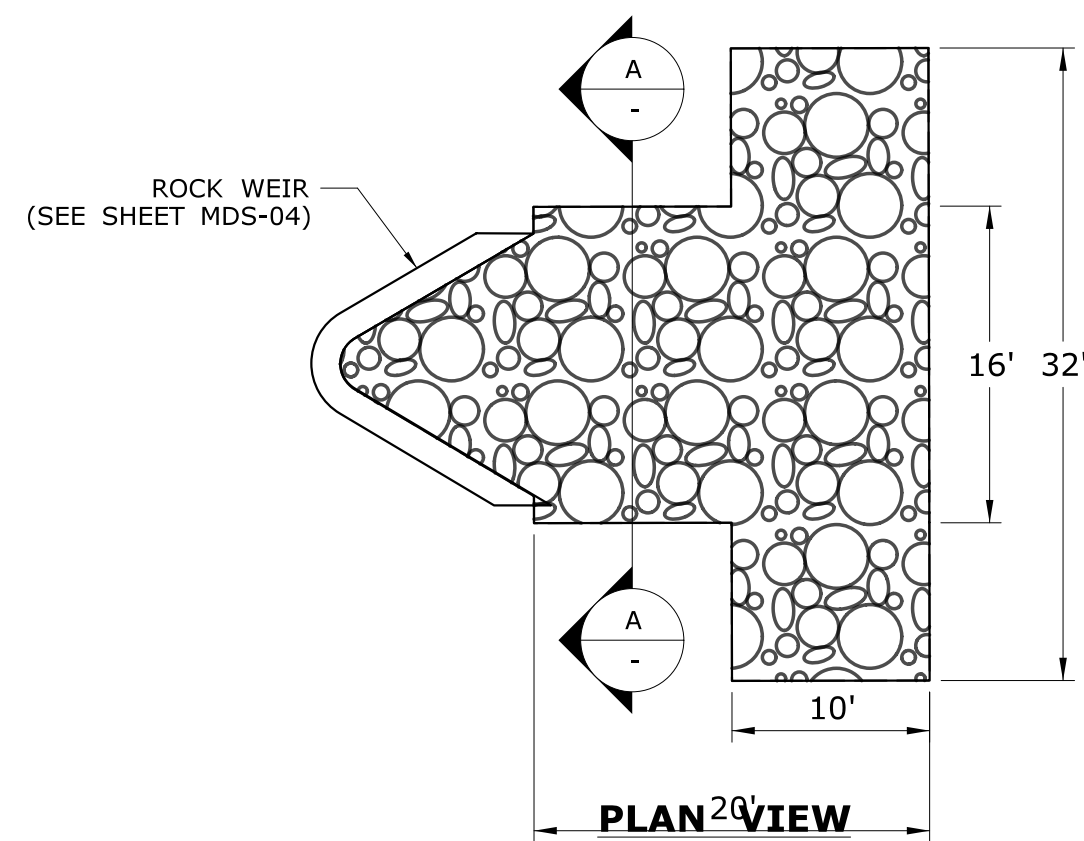
PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - WESTERN OUTLET
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE I
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - EASTERN OUTLET
NOT TO SCALE



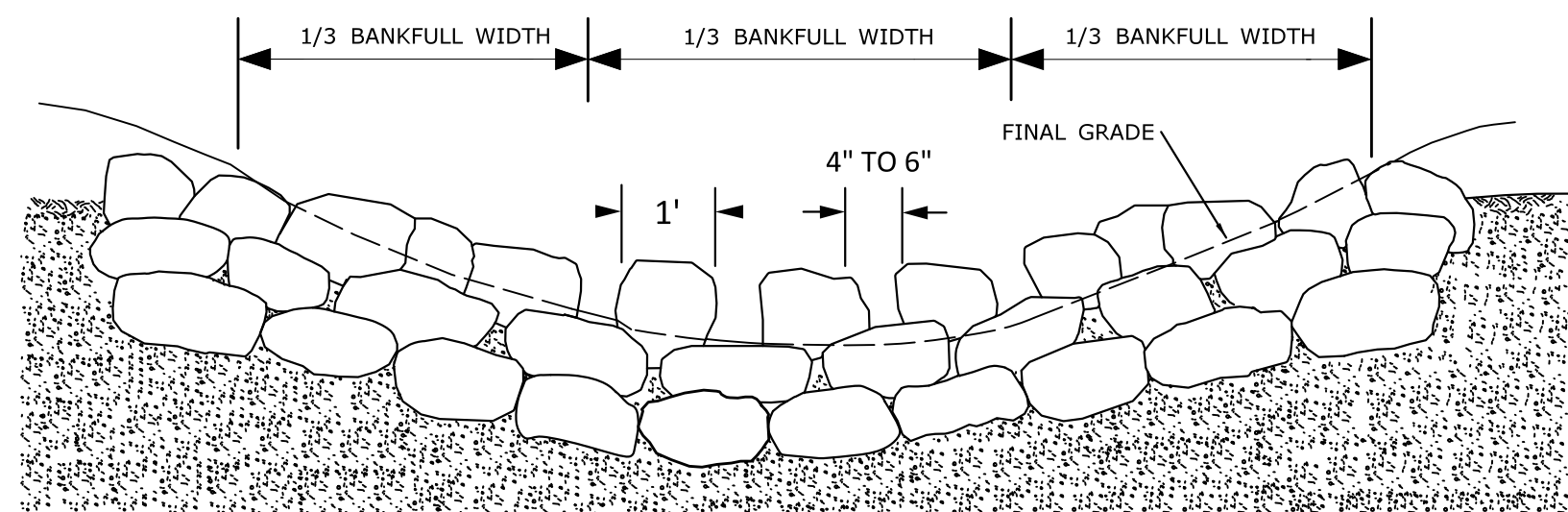
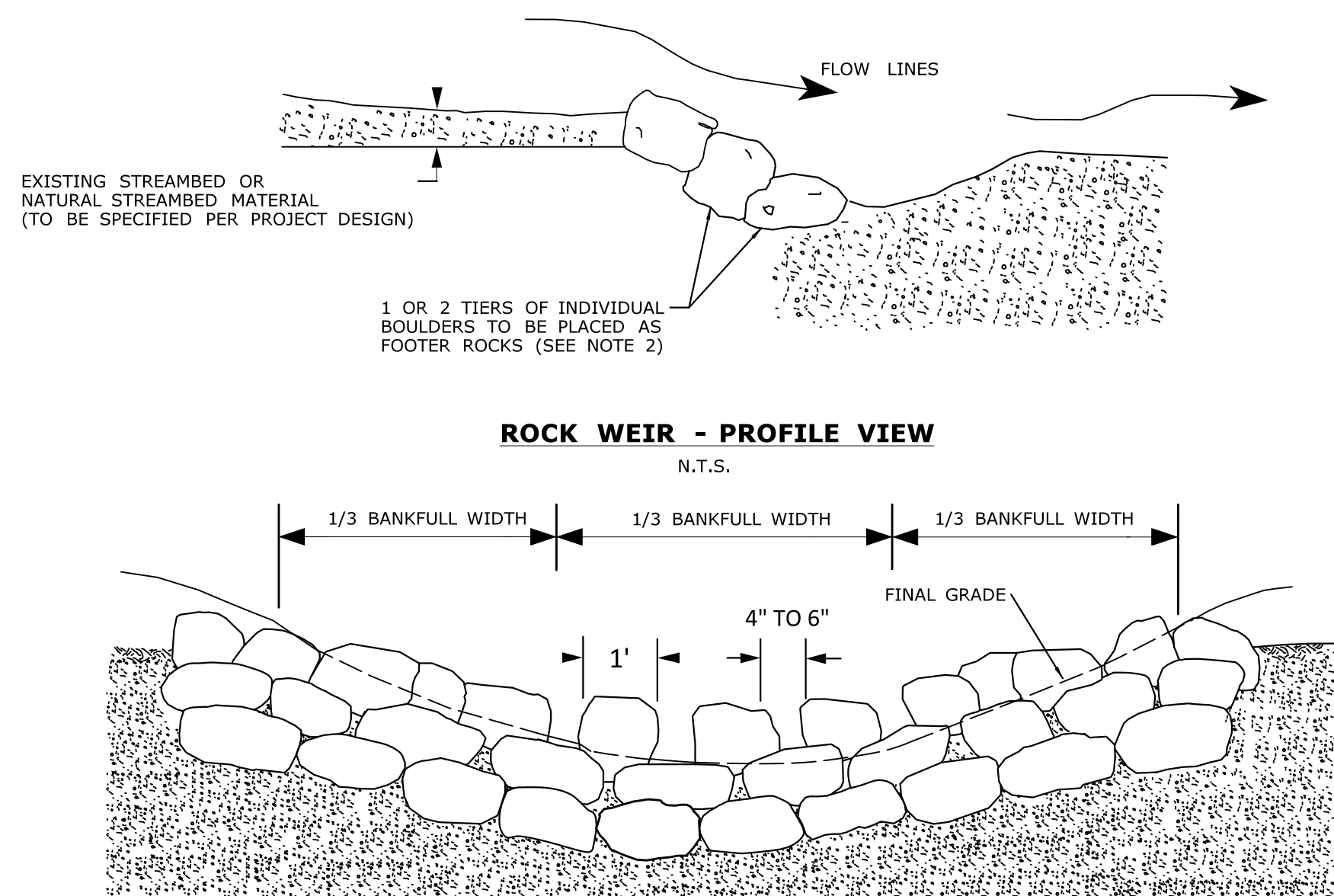
MODIFIED RIPRAP CHANNEL OUTLET
NOT TO SCALE

NOTES:
1. THE CONTRACTOR SHALL INSTALL A LAYER OF GEOTEXTILE FABRIC PRIOR TO INSTALLING THE LAYER OF GRANULAR FILL.
2. THE GEOTEXTILE FABRIC SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS & SECTION M.08.01-19 OF THE STANDARD SPECIFICATIONS FORM 817.

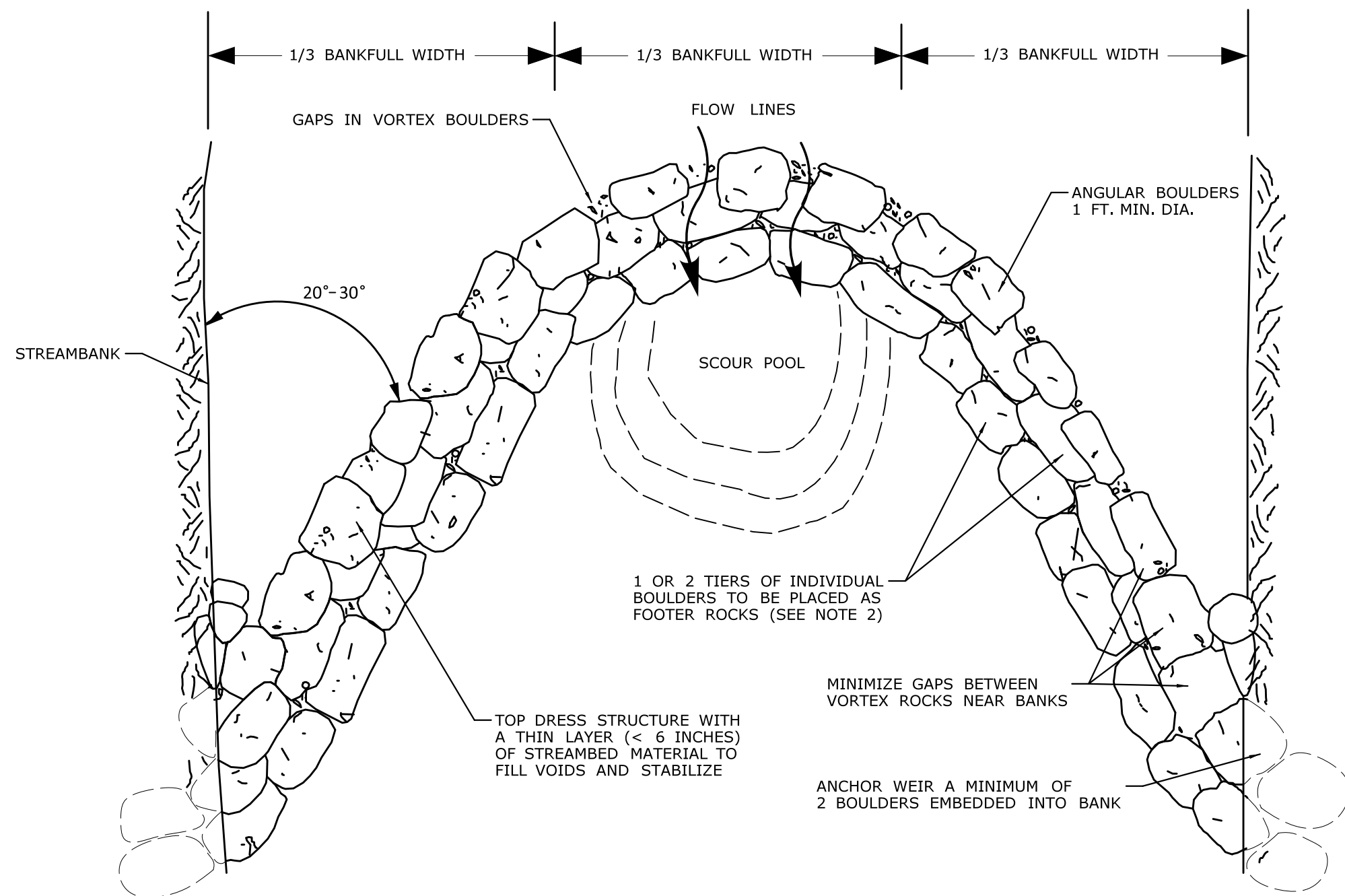
Steve Cephal
CTDEEP/Fisheries

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 4/23/2019	DESIGNER/DRAFTER: B.G.R.	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/ BLOCK:	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
-	-	-	-	-	CHECKED BY: D.M.C.		SCALE AS NOTED	FILENAME: ...VHW_MSH_99-114-115_PMT-12.dgn	MISCELLANEOUS DETAIL SHEET	DRAWING NO. PMT-12

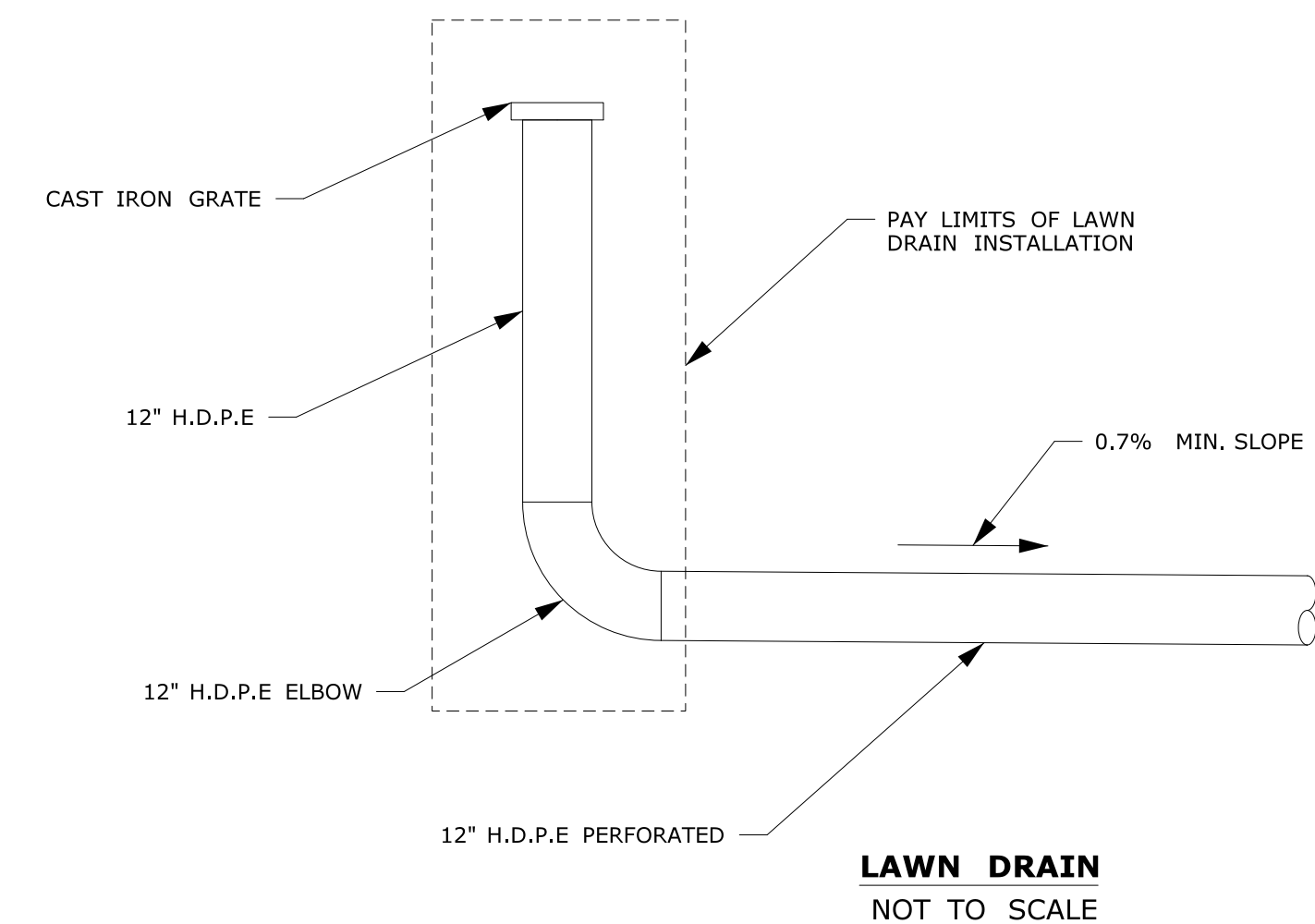


ROCK WEIR - SECTION VIEW (UPSTREAM)
N.T.S.



ROCK WEIR - PLAN VIEW
N.T.S.

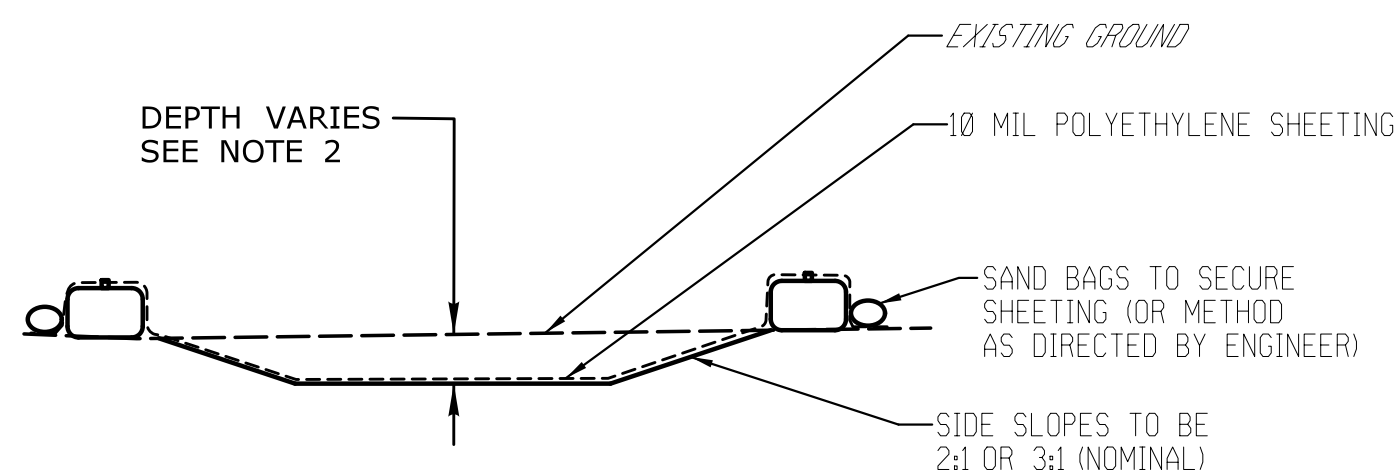
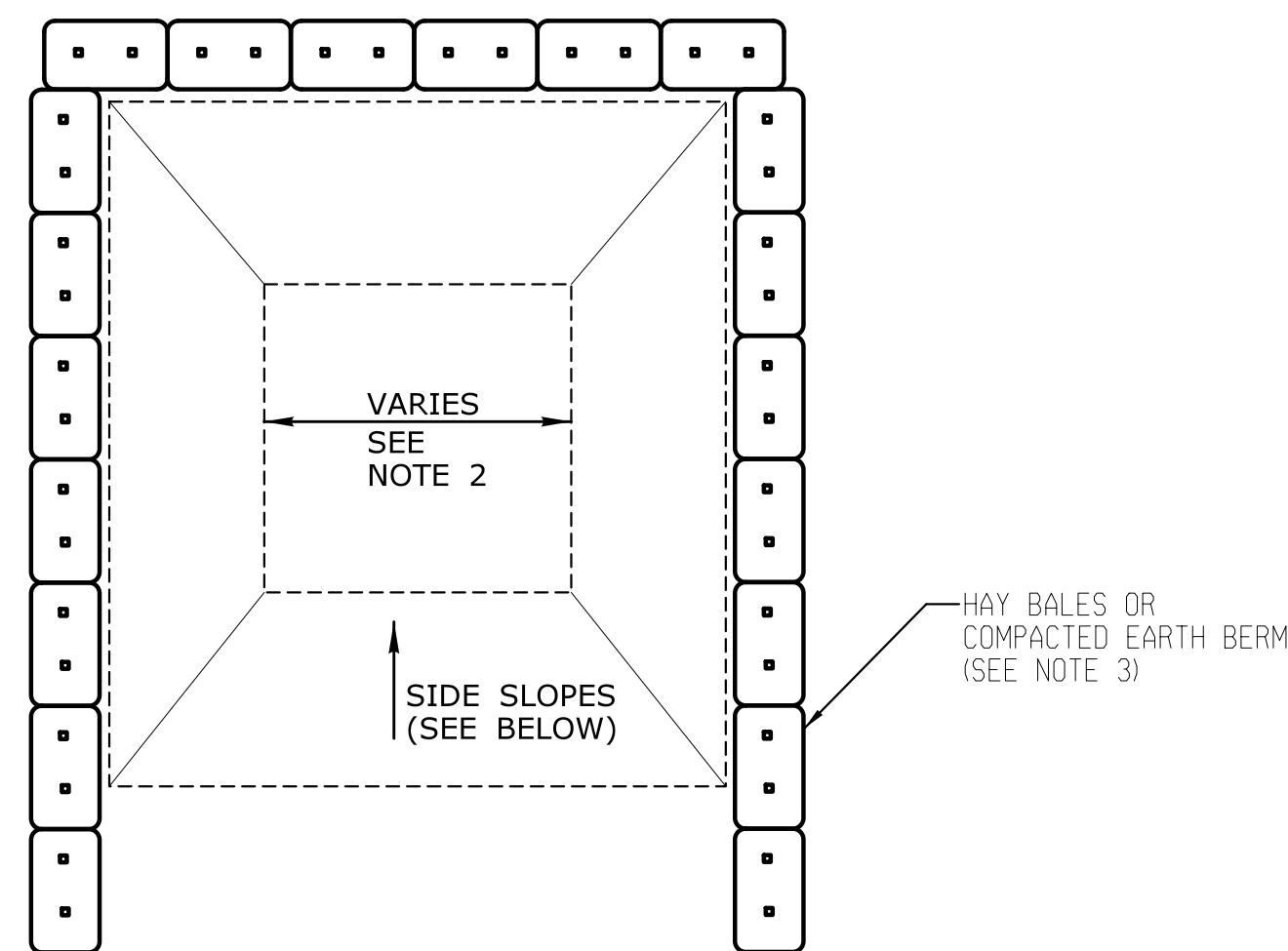
NOTE:
1. PLACEMENT OF THE ROCK WEIR SHALL BE DIRECTED IN THE FIELD BY THE ENGINEER OR THEIR AUTHORIZED DELEGATE. SEE SPECIAL PROVISION "ROCK WEIR".
2. FOOTER ROCKS SHALL SERVE AS THE FOUNDATION FOR THE TOP LAYER OF THE WEIR. FOOTER ROCKS SHALL HAVE REASONABLE FLAT TOPS AND BOTTOMS TO ENABLE BETTER PLACEMENT OF THE TOP LAYER OF THE WEIR.



NOTES:
1. THE CONTRACTOR SHALL FURNISH, IN CONFORMANCE WITH SECTION 1.06 - CONTROL OF MATERIALS, FORM 817, PRODUCT CUT SHEETS AND DESCRIPTIVE LITERATURE FOR LAWN DRAINS (INCLUDING THE GRATE SIZE AND STYLE) TO THE ENGINEER FOR APPROVAL.
2. INSTALLATION OF LAWN DRAIN SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS & SECTION 5.07 IN THE STANDARD SPECIFICATIONS FORM 817.
3. GRATE, ELBOW AND VERTICAL H.D.P.E. PIPE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "LAWN DRAIN."

NOTES

1. CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. THE CONCRETE WASHOUT AREA SHALL BE ENTIRELY SELF-CONTAINED.
2. THE CONTRACTOR SHALL SUBMIT THE DESIGN, LOCATION AND SIZING OF THE CONCRETE WASHOUT AREA(S) WITH THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN AND SHALL BE APPROVED BY THE ENGINEER.
LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED AT LEAST 50 FEET FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE. THE FLOOD CONTINGENCY PLAN MUST ADDRESS THE CONCRETE WASHOUT IF THE WASHOUT IS TO BE LOCATED WITHIN THE FLOODPLAIN.
SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.
3. SURFACE DISCHARGE IS UNACCEPTABLE. THEREFORE, HAY BALES OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT.
4. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER APPROVED METHOD.
5. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTEGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. (AS REQUIRED BY THE CONSTRUCTION SITE ENVIRONMENTAL INSPECTION REPORT) WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS.
6. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S HEIGHT. THE WASTE CAN BE STORED AT AN UPLAND LOCATION, AS APPROVED BY THE ENGINEER. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS, REGULATIONS, AND GUIDELINES.
7. PAYMENT FOR THIS ITEM IS TO BE INCLUDED UNDER THE GENERAL COST OF THE WORK FOR THE PROJECT, INCLUDING SITE RESTORATION.



CONCRETE WASHOUT AREA

NOT TO SCALE
(SEE NOTE 2)

Steve Cephal
CTDEEP/Fisheries

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 4/23/2019	DESIGNER/DRAFTER: B.G.R.	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>Filename: ...VHW_MSH_99-114-115_PMT-13.dgn</p>	SIGNATURE/ BLOCK:	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
-	-	-	-	-	CHECKED BY: D.M.C.		SCALE AS NOTED		MISCELLANEOUS DETAIL SHEET	DRAWING NO. PMT-13

**DEEP/USACE/EPA/DOT
 Interagency Coordination Meeting Project
 Meeting Notes – 11/29/2018**

Project 99-114/115, Modernize Railroad Crossings and Drainage Improvements, North Canaan

11/29/2018 – The project includes reconstruction of two at-grade railroad crossings, including reconstruction of the crossing surfaces, roadway and sidewalks, installation of new flashing lights and gates, minor signal revisions, new sidewalk pacers and luminaires and installation of new drainage systems. For project No. 99-115 a drainage outfall will be constructed and a new open channel will convey flows to the Blackberry River. Riprap stabilization will be provided at the confluence of the drainage channel and the Blackberry River and a rock weir will be placed within the drainage channel at the confluence as previously requested by DEEP Fisheries. For Project No. 99-114, the proposed outlet discharges into wetlands adjacent to the Blackberry River. A modified riprap scour hole will be installed at the outlet which will impact the wetlands

Project Impacts:

99-115

Impacts sq. ft	Wetland	Watercourse	Total
Temporary	0	0	0
Permanent	801.75 (0.02 ac.)	204.81 (0.004 ac)	1006.56 (0.02 ac)
Total	801.75 (0.02 ac.)	204.81 (0.004 ac)	1006.56 (0.02 ac)

99-114

Impacts sq. ft	Wetland	Watercourse	Total
Temporary	0	0	0
Permanent	58.81 (0.001 ac)	0	58.51 (0.001 ac)
Total	58.81(0.001 ac)	0	58.51 (0.001 ac)

Permitting Requirements: Flood Management General Certification (see agency comments), Self- Verification Form, DEEP IW General and Stormwater General Permit

Agency Comments: DEEP H&D commented that as long as the proposed pipe is equal to or less than 36” diameter, it qualifies under the Flood Management General Certification.

Action Items: Verify the pipe diameter will not be greater than 36”.

**INTERDEPARTMENTAL
MESSAGE**

STATE OF CONNECTICUT

To	<small>NAME, TITLE</small> Central Permit Processing Unit, 1 st Floor	<small>DATE</small> September 4, 2019
	<small>AGENCY, ADDRESS</small> Department of Energy & Environmental Protection, 79 Elm Street, Hartford, CT 06106	
From	<small>NAME, TITLE</small> Kimberly C. Lesay, Transportation Assistant Planning Director	<small>TELEPHONE</small> 860-594-2931
	<small>AGENCY, ADDRESS</small> Department of Transportation, 2800 Berlin Turnpike, Newington, CT 06131	

Subject: **State Project No. 99-114/115**
U.S. Route 7 & 44 (Main Street)
Railroad-Highway Crossing Grade Improvements
Town of North Canaan

Attached is an Inland Wetlands General Permit associated with the above referenced project. Any questions pertaining to this application may be directed to Mr. Jason M. Coite, Transportation Supervising Engineer of my staff, at 860-594-3448.

Attachment

David M. Cicia/dmc

cc: Barry Schilling – LeVance James
Jason M. Coite – Aaron M. Ferraro
David W. Harms
John S. Dunham – Richard Symonds (District 4)
Ken Radziwon – Steve Fraysier – David M. Cicia (BL Companies)



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-3448

September 4, 2019

TO: Inland Wetland and Conservation Commission
Town of North Canaan
100 Pease Street
Canaan, CT 06018

FROM: Kimberly C. Lesay
Transportation Assistant Planning Director
Bureau of Policy and Planning

SUBJECT: Notification of Submittal of Application to the Department of Energy and
Environmental Protection (DEEP) for a General Permit for Water Resource
Construction Activities

PROJECT: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Routes 7 & 44 (Main Street) over Housatonic Railroad Company Crossings
Town of North Canaan

Enclosed is a copy of our Request for Authorization under the State of Connecticut Department of Energy and Environmental Protection's General Permit for Water Resource Construction Activities. If your agency wishes to comment on the enclosed application, comments must be submitted to the State Department of Energy and Environmental Protection.

Comments should be directed to:

Inland Water Resources Division
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

If we can provide additional information, please contact me at 860-594-3448.

Enclosures

cc: DEEP Permit File

bcc: Jason M. Coite – Aaron M. Ferraro
Barry Schilling – LeVance James
Robert E. Obey
Ken Radziwon – David M. Cicia (BL Companies)



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-3448

September 4, 2019

TO: Planning & Zoning Commission
Town of North Canaan
100 Pease Street
Canaan, CT 06018

FROM: Kimberly C. Lesay *Kimberly Lesay*
Transportation Assistant Planning Director
Bureau of Policy and Planning

SUBJECT: Notification of Submittal of Application to the Department of Energy and
Environmental Protection (DEEP) for a General Permit for Water Resource
Construction Activities

PROJECT: State Project No. 99-114/115
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If we can provide additional information, please contact me at 860-594-3448.

Enclosures

cc: DEEP Permit File

bcc: Jason M. Coite – Aaron M. Ferraro
Barry Schilling – LeVance James
Robert E. Obey
Ken Radziwon – David M. Cicia (BL Companies)



**Connecticut Department of
Energy & Environmental Protection**

CPPU USE ONLY

App #: _____

Doc #: _____

Check #: _____

Permit Application Transmittal Form

Please complete this transmittal form in accordance with the instructions in order to ensure the proper handling of your application(s) and the associated fee(s). Print legibly or type.

Part I: Applicant Information:

- *If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, applicant's name shall be stated **exactly** as it is registered with the Secretary of State.
- If an applicant 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.).

Applicant: Connecticut Department of Transportation	
Mailing Address: 2800 Berlin Turnpike	
City/Town: Newington	State: CT Zip Code: 06131
Business Phone: 860-594-2931	ext.:
Contact Person: Kimerly C. Lesay	Phone: 860-594-2931 ext.
E-Mail: kimberly.lesay@ct.gov	
Applicant (check one): <input type="checkbox"/> individual <input type="checkbox"/> *business entity <input type="checkbox"/> federal agency <input checked="" type="checkbox"/> state agency <input type="checkbox"/> municipality <input type="checkbox"/> tribal	
*If a business entity, list type (e.g., corporation, limited partnership, etc.):	
<input type="checkbox"/> Check if any co-applicants. If so, attach additional sheet(s) with the required information as supplied above.	
Please provide the following information to be used for <i>billing purposes only</i> , if different:	
Company/Individual Name:	
Mailing Address:	
City/Town:	State: Zip Code:
Contact Person:	Phone: ext.

Part II: Project Information

Brief Description of Project: <i>(Example: Development of a 50 slip marina on Long Island Sound)</i>					
Drainage network rehab, installation of flashing lights, vehicular gates, roadway/crossing surface modifications.					
Location (City/Town): North Canaan					
Other Project Related Permits (<i>not</i> included with this form):					
Permit Description	Issuing Authority	Submittal Date	Issuance Date	Denial Date	Permit #
Self-Verification	US ACOE	Concurrent Submission			
FMGC	CT DOT	4/23/2019	5/24/2019		
Stormwater Discharge	CT DEEP	6/6/2019			ezFile #49081

Part III: Individual Permit Application and Fee Information

New, Mod. or Renew	Individual Permit Applications	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
	New Source Review <input type="checkbox"/> Revision <input type="checkbox"/> minor mod	\$940.00			1 + 0
	Title V Operating Permits <input type="checkbox"/> Revision <input type="checkbox"/> minor mod <input type="checkbox"/> non-minor mod	none			1 + 0
	Title IV	none			1 + 0
	Clean Air Interstate Rule (CAIR)	none			1 + 0
	WATER DISCHARGES				
	To Groundwater	\$1300.00			1 + 1
	To Sanitary Sewer (POTW)	\$1300.00			1 + 1
	To Surface Water (NPDES)	\$1300.00			1 + 1
	WATER PLANNING AND MANAGEMENT				
	Dam Safety	none			1 + 2
	Domestic Sewage Treatment Works (For municipal and private sewage treatment facilities discharging to surface waters)	\$1300.00/ Mod = \$940			1 + 1
	Water Diversion (consumptive) and Registrations	★			1 + 5
	LAND AND WATER RESOURCES				
	Flood Management Certification	none			1 + 1
	Flood Management Certification Exemption	none			1 + 1
	Inland Wetlands and Watercourses (State Agencies Only)	none			1 + 5
	Inland 401 Water Quality Certification	none			1 + 5
	FERC- Hydropower Projects- 401 Water Quality Certification	none			
	Water Diversion (non-consumptive)	★			1 + 5
	Certificate of Permission	\$375.00			1 + 2
	Coastal 401 Water Quality Certification	none			1 + 2
	Structures and Dredging/and Fill/Tidal Wetlands	\$660.00			1 + 2
	WASTE MANAGEMENT				
	Aerial Pesticide Application	★			1 + 2
	Aquatic Pesticide Application	\$200.00			1 + 0
	CGS Section 22a-454 Waste Facilities	★			1 + 1
	Disruption of a Solid Waste Disposal Area	\$0			1 + 1
	Hazardous Waste Treatment, Storage and Disposal Facilities	★			1 + 1
	Marine Terminal License	\$100.00			1 + 0
	Stewardship	\$4000.00			1 + 1
	Solid Waste Facilities	★			1 + 1
	Waste Transportation	★			1 + 0
		Subtotal ➡	0	0	
GENERAL PERMITS and AUTHORIZATIONS		Subtotals Page 3 & 4 ➡	1	0	
Enter subtotals from Part IV, pages 3 - 6 of this form		Subtotals Page 5 ➡	0	0	
		Subtotals Page 6 ➡	0	0	
		TOTAL ➡	1	0	
<input type="checkbox"/> Indicate whether municipal discount or state waiver applies. Less Applicable Discount		➡		0	
		AMOUNT REMITTED ➡		0	
Check # ➡	<input type="text"/>	Check or money order should be made payable to: "Department of Energy and Environmental Protection"			

★ See fee schedule on individual application.

**Part IV: General Permit Registrations and Requests for Other Authorizations
Application and Fee Information**

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
AIR EMISSIONS					
<input type="checkbox"/>	Limit Potential to Emit from Major Stationary Sources of Air Pollution	\$2760.00			1 + 0
<input type="checkbox"/>	Diagnostic and Therapeutic X-Ray Devices (Medical X-Ray) Registration	\$190.00/Xray device			1 + 0
<input type="checkbox"/>	Radioactive Materials and Industrial Device Registration (Ionizing Radiation)	\$200.00			1 + 0
<input type="checkbox"/>	Emergency/Temporary Authorization	★★			★★
<input type="checkbox"/>	License Revocation Request	\$0			★★
<input type="checkbox"/>	Other, (please specify):				
WATER DISCHARGES					
Categorical Industry User to a POTW					
<input type="checkbox"/>	Discharges ≥ 10,000 gpd	\$6250.00			1 + 0
<input type="checkbox"/>	Discharges < 10,000 gpd	\$3125.00			
Comprehensive Discharges to Surface Water and Groundwater					
<input type="checkbox"/>	Registration Only	\$625.00			1 + 0
<input type="checkbox"/>	Approval of Registration by DEEP	\$1250.00			
<input type="checkbox"/>	Domestic Sewage	\$625.00			1 + 0
<input type="checkbox"/>	Food Service Establishment Wastewater		No Registration		
Groundwater Remediation Wastewater					
<input type="checkbox"/>	Registration Only	\$625.00			1 + 0
<input type="checkbox"/>	Approval of Registration by DEEP	\$1250.00			
Miscellaneous Discharges of Sewer Compatible Wastewater					
<input type="checkbox"/>	Registration Only	\$500.00			1 + 0
<input type="checkbox"/>	Approval of Registration by DEEP	\$1000.00			
<input type="checkbox"/>	Nitrogen Discharges		No Registration		
<input type="checkbox"/>	Point Source Discharges from Application of Pesticides	\$200.00			1 + 0
<input type="checkbox"/>	Stormwater Associated with Commercial Activities	\$300.00			1 + 0
Stormwater Associated with Industrial Activities					
<input type="checkbox"/>	No Exposure Certification	\$250.00			1 + 0
<input type="checkbox"/>	<50 employees—see general permit for additional requirements	\$500.00			
<input type="checkbox"/>	>50 employees—see general permit for additional requirements	\$1000.00			
<input type="checkbox"/>	Stormwater & Dewatering Wastewaters-Construction Activities	★			1 + 0
<input type="checkbox"/>	Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)	\$625.00			1 + 0
<input type="checkbox"/>	Stormwater from DOT Separate Storm Sewer Systems (DOT MS4)	\$0			1 + 0
<input type="checkbox"/>	Subsurface Sewage Disposal Systems Serving Existing Facilities	★★			1 + 0
<input type="checkbox"/>	Swimming Pool Wastewater - Public Pools and Contractors	\$500.00			1 + 0
Vehicle Maintenance Wastewater					
<input type="checkbox"/>	Registration Only	\$625.00			1 + 0
<input type="checkbox"/>	Approval of Registration by DEEP	\$1250.00			
<input type="checkbox"/>	Emergency/Temporary Authorization - Discharge to POTW	\$1500.00			1 + 0
<input type="checkbox"/>	Emergency/Temporary Authorization - Discharge to Surface Water	\$1500.00			1 + 0
<input type="checkbox"/>	Emergency/Temporary Authorization - Discharge to Groundwater	\$1500.00			1 + 0
<input type="checkbox"/>	Other, (please specify):				
Note: Carry subtotals over to Part III, page 2 of this form.		Subtotal ➡	0	0	

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information.
(Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

<input checked="" type="checkbox"/> General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
AQUIFER PROTECTION PROGRAM				
<input type="checkbox"/> Registration for Regulated Activities	\$625.00			1 + 0
<input type="checkbox"/> Permit Application to Add a Regulated Activity	\$1250.00			1 + 0
<input type="checkbox"/> Exemption Application from Registration	\$1250.00			1 + 0
WATER PLANNING AND MANAGEMENT				
<input type="checkbox"/> Dam Safety Repair and Alteration: Non Filing	No Registration			
<input type="checkbox"/> Dam Safety Repair and Alteration: Filing – No PE	\$100.00			1 + 0
<input type="checkbox"/> Dam Safety Repair and Alteration: Filing – PE	\$200.00			1 + 0
<input type="checkbox"/> Dam Safety Repair and Alteration: Approval of Filing	\$250.00			1 + 0
<input type="checkbox"/> Diversion of Remediation Groundwater	No Registration			
<input type="checkbox"/> Diversion of Water for Consumptive Use: Reauthorization Categories	\$2500.00			1 + 0
<input type="checkbox"/> Diversion of Water for Consumptive Use: Authorization Required	\$2500.00			1 + 4
<input type="checkbox"/> Diversion of Water for Consumptive Use: Filing Only	\$1500.00			1 + 1
<input checked="" type="checkbox"/> Water Resource Construction Activities	★	1	0	1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★★			★★
<input type="checkbox"/> Notice of High Hazard Dam or a Significant Hazard Dam	\$0			1 + 0
<input type="checkbox"/> Other, (please specify):				
LAND AND WATER RESOURCES				
Minor Coastal Structures				
<input type="checkbox"/> 4/40 Docks/Access Stairs	\$700.00			1 + 1
<input type="checkbox"/> Beach Grading	No Registration			
<input type="checkbox"/> Buoys or Markers	No Registration			
<input type="checkbox"/> Experimental Activities/Scientific Monitoring Devices	No Registration			
<input type="checkbox"/> Harbor Moorings	No Registration			
<input type="checkbox"/> Non-harbor Moorings	\$250.00			1 + 1
<input type="checkbox"/> Osprey Platforms and Perch Poles	No Registration			
<input type="checkbox"/> Pump-out Facilities	No Registration			
<input type="checkbox"/> Swim Floats	No Registration			
Coastal Maintenance				
<input type="checkbox"/> Backflow Prevention Structure	No Registration			
<input type="checkbox"/> Beach Grading/Raking	No Registration			
<input type="checkbox"/> Catch Basin Cleaning	No Registration			
<input type="checkbox"/> Coastal Remedial Activities Required by Order	\$700.00			1 + 1
<input type="checkbox"/> Coastal Restoration	No Registration			
<input type="checkbox"/> DEEP Boat Launch Infrastructures	No Registration			
<input type="checkbox"/> DOT Infrastructures	No Registration			
<input type="checkbox"/> Marina and Mooring Field Reconfiguration	\$700.00			1 + 1
<input type="checkbox"/> Minor Seawall Repair	No Registration			
<input type="checkbox"/> Placement of Cultch	No Registration			
<input type="checkbox"/> Reconstruction of Legally Existing Structure/Obstruction/Encroachment	\$300.00			1 + 1
<input type="checkbox"/> Removal of Derelict Structures	No Registration			
<input type="checkbox"/> Residential Flood Hazard Mitigation	\$100.00			1 + 1
<input type="checkbox"/> Temporary Access of Construction Vehicles/Equipment	No Registration			
<input type="checkbox"/> Programmatic General Permit	★			1 + 1
<input type="checkbox"/> Emergency/Temporary Authorization				
<input type="checkbox"/> Other, (please specify):				
Note: Carry subtotals over to Part III, page 2 of this form.		Subtotal ➔	1	0

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information.
(Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

<input checked="" type="checkbox"/> General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
WASTE MANAGEMENT				
<input type="checkbox"/> Addition of Grass Clippings at Registered Leaf Composting Facilities	\$500.00			1 + 0
<input type="checkbox"/> Beneficial Use Determination	★			1 + 0
<input type="checkbox"/> Collection and Storage of Post Consumer Paint	\$0			1 + 0
<input type="checkbox"/> Connecticut Solid Waste Demonstration Project	\$1000.00			1 + 0
Construct and Operate a Commercial Facility for the Management of Recyclable Materials and Certain Solid Wastes (Commercial GP)				
<input type="checkbox"/> Asbestos Containing Materials	\$1,250.00/\$ 625			1 + 0
<input type="checkbox"/> Ash Residue	\$1,250.00/\$ 625			1 + 0
<input type="checkbox"/> Clean Wood: Tier III	\$500.00/\$250			1 + 0
<input type="checkbox"/> Clean Wood: Tier II	\$250.00/\$125			1 + 0
<input type="checkbox"/> Construction and Demolition Waste: Tier III	\$1,250.00/\$625			1 + 0
<input type="checkbox"/> Construction and Demolition Waste: Tier II	\$500.00/\$250			1 + 0
<input type="checkbox"/> Non-RCRA Hazardous Waste/Compatible Solid Wastes	\$1,250.00/\$625			1 + 0
<input type="checkbox"/> Recyclables	\$500.00/\$250			1 + 0
<input type="checkbox"/> Universal Wastes/Compatible Solid Wastes	\$1,250.00/\$625			1 + 0
Contaminated Soil and/or Staging Management (Staging/Transfer)				
<input type="checkbox"/> New Registrations	\$250.00			1 + 0
<input type="checkbox"/> New Approval of Registrations	\$1500.00			1 + 0
<input type="checkbox"/> Renewal of Registrations	\$250.00			1 + 0
<input type="checkbox"/> Renewal of Approval of Registrations	\$750.00			1 + 0
<input type="checkbox"/> Disassembling Used Electronics	\$2000.00			1 + 0
<input type="checkbox"/> Leaf Composting Facility	\$0			1 + 1
<input type="checkbox"/> Municipal Transfer Station	\$800.00			1 + 1
<input type="checkbox"/> One Day Collection of Certain Wastes and Household Hazardous Waste	\$1000.00			1 + 0
<input type="checkbox"/> Sheet Leaf Composting Notification	\$0			★★
Special Waste Authorization				
<input type="checkbox"/> Landfill or RRF Disposal	\$660.00			1 + 0
<input type="checkbox"/> Asbestos Disposal	\$300.00			
<input type="checkbox"/> homeowner	\$0			
<input type="checkbox"/> Storage and Processing of Asphalt Roofing Shingle Waste	\$2500.00			1 + 0
<input type="checkbox"/> Storage and Processing of Scrap Tires for Beneficial Use	\$1250.00			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★★			★★
<input type="checkbox"/> Other, (please specify):				
REMEDIATION				
<input type="checkbox"/> In Situ Groundwater Remediation: Enhance Aerobic Biodegradation	★			1 + 2
<input type="checkbox"/> In Situ Groundwater Remediation: Chemical Oxidation	\$500.00			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★			★★
Note: Carry subtotals over to Part III, page 2 of this form.		Subtotal →	0	0

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information.

(Contact numbers are provided in the instructions)

Affirmative Action, Equal Employment Opportunity and Americans with Disabilities

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). Please contact us at (860) 418-5910 or deep.accommodations@ct.gov if you: have a disability and need a communication aid or service; have limited proficiency in English and may need information in another language; or if you wish to file an ADA or Title VI discrimination complaint.



Connecticut Department of
 Energy & Environmental Protection
 Bureau of Water Protection & Land Reuse
 Inland Water Resources Division

Request for Authorization Form for the General Permit for Water Resource Construction Activities

Please complete this form in accordance with the [general permit](#) (DEEP-IWRD-GP-013) to ensure the proper handling of your request. Print or type unless otherwise noted. You must submit the fee along with this completed form.

CPPU USE ONLY
App #: _____
Doc #: _____
Check #: _____
Program: GP IWRD Construction Activities

Part I: Request and Fee Type

Check the appropriate box identifying the request type.

<input type="checkbox"/> \$5000 [#1757] for each Request for Authorization for Section 3(a)(1), (a)(2), (a)(3), (a)(4), (a)(5), (a)(6), or (a)(7) activities under the subject general permit, unless you qualify as one of the following: <input type="checkbox"/> \$2500 for any municipality <input type="checkbox"/> \$2500 for electronic filing*	<input checked="" type="checkbox"/> \$2500 [#1758] for each Request for Authorization for Section 3(a)(8) or 3(a)(9) activities under the subject general permit, unless you qualify as one of the following: <input type="checkbox"/> \$1250 for any municipality <input type="checkbox"/> \$1250 for electronic filing*
---	--

**In order to file electronically, ALL supporting documents under Part VI of this application must be submitted in an electronic format on a CD, along with this original completed application in hard copy.*

The request will not be processed without the fee. The fee shall be non-refundable and shall be paid by check or money order to the Department of Energy and Environmental Protection.

Town where site is located: North Canaan

Brief Description of Project: The project proposes to install railroad flashing lights and vehicular gates along with reconstruction and vertical alignment revisions to the roadway approaches at the Housatonic Railroad Company's track crossings on U.S. Route 7 & 44 (Main Street). The proposed design will also address the localized flooding at both crossings by installing additional drainage structures and a new drainage trunkline for each crossing.

Part II: Requestor Information

- If a requester is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, requester's name shall be stated **exactly** as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of State's database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)
- If a requester 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.).
- If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the [Request to Change Company/Individual Information](#) to the address indicated on the form. If there is a change in name of the entity holding a DEEP license or a change in ownership, contact the Office of Planning and Program Development (OPPD) at 860-424-3003. For any other changes you must contact the specific program from which you hold a current DEEP license.

1. Requester Name: Connecticut Department of Transportation

Mailing Address: 2800 Berlin Turnpike

City/Town: Newington

State: CT Zip Code: 06131

Business Phone: 860-594-2931

ext.:

Contact Person: Kimberly C. Lesay

Phone: 860-594-2931 ext.

E-mail: kimberly.lesay@ct.gov

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject request. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

a) Requester Type (check one):

individual federal agency state agency municipality tribal

*business entity (*If a business entity complete i through iii):

i) check type: corporation limited liability company limited partnership
 limited liability partnership statutory trust Other: _____

ii) provide Secretary of the State business ID #: _____ This information can be accessed at database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)

iii) Check here if your business is **not** registered with the Secretary of State's office.

Check here if any co-registrants. If so, attach additional sheet(s) with the required information as requested above.

b) Requester's interest in property at which the proposed activity is to be located:

site owner option holder lessee easement holder operator

other (specify): _____

Part II: Requestor Information (continued)

2. Billing contact, if different than the requester.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

Email:

3. Primary contact for departmental correspondence and inquiries, if different than the requester.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

Email:

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject request. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

4. Attorney or other representative, if applicable:

Firm Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Attorney:

Email:

5. Site Owner, if different than the requester.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

Email:

Part II: Requestor Information (continued)

6. Engineer(s) or other consultant(s) employed or retained to assist in preparing the request or in designing or constructing the activity.

Name: **BL Companies**

Mailing Address: **355 Research Parkway**

City/Town: **Meriden**

State: **CT**

Zip Code: **06450**

Business Phone: **203-630-1406**

ext.

Contact Person: **Ken Radziwon**

Title: **Project Manager**

Email: **kradziwon@blcompanies.com**

Service Provided: **Roadway Engineering & Permit Preparation**

Check here if additional sheets are necessary, and label and attach them to this sheet.

Part III: Site Information

1. SITE NAME AND LOCATION

Name of Site : **State Project No. 99-114/115**

Street Address or Location Description: **Housatonic Railroad Co. crossings on U.S. Route 7 & 44**

City/Town: **North Canaan**

State: **CT**

Zip Code: **06018**

Tax Assessor's Reference: Map

Block

Lot

Latitude and longitude of the exact location of the proposed activity in degrees, minutes, and seconds or in decimal degrees: Latitude: **42.026274** Longitude: **-73.328572**

Method of determination (check one):

GPS USGS Map Other (please specify): **Google Maps**

If a USGS Map was used, provide the quadrangle name:

2. INDIAN LANDS: Is or will the facility be located on federally recognized Indian lands? Yes No

3. 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

If yes, and this registration is for a new authorization, or a modification of an existing authorization where the physical footprint of the subject activity is modified, you must submit a [Coastal Consistency Review Form](#) (DEEP-APP-004) with your registration as Attachment C.

Information on the coastal boundary is available at www.cteco.uconn.edu/map_catalog.asp (Select the town and then select coastal boundary. If the town is not within the coastal boundary you will not be able to select the coastal boundary map.) or the local town hall or on the "Coastal Boundary Map" available at DEEP Maps and Publications (860-424-3555).

Part III: Site Information (continued)

4. **ENDANGERED OR THREATENED SPECIES:** According to the most current "State and Federal Listed Species and Natural Communities Map", is the project site located within an area identified as a habitat for endangered, threatened or special concern species? Yes No Date of Map: **Dec. 2018**

If yes, complete and submit a [Request for NDDDB State Listed Species Review Form](#) (DEEP-APP-007) to the address specified on the form. **Please note NDDDB review generally takes 4 to 6 weeks and may require additional documentation from the registrant.**

A **copy** of the completed *Request for NDDDB State Listed Species Review Form* and the CT NDDDB response **must** be submitted with this completed registration as Attachment D.

For more information visit the DEEP website at www.ct.gov/deep/nddbrequest or call the NDDDB at 860-424-3011.

5. **AQUIFER PROTECTION AREAS:** Is the site located within a mapped Level A or Level B [Aquifer Protection Area](#), as defined in CGS section 22a-354a through 22a-354bb?

Yes No If **yes**, check one: Level A or Level B

If **Level A**, are any of the [regulated activities](#), as defined in RCSA section 22a-354i-1(34), conducted on this site? Yes No

If **yes**, and your business is **not** already registered with the Aquifer Protection Program, contact the [local aquifer protection agent](#) or DEEP to take appropriate actions.

For more information on the Aquifer Protection Area Program visit the DEEP website at www.ct.gov/deep/aquiferprotection or contact the program at 860-424-3020.

6. **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 that this registration is in compliance with the terms of the restriction, must be submitted as Attachment E.

Part IV: Construction Activity Details

- Proposed Date of Initiation of Activity: October 2019
- Anticipated Date of Completion: August 2020
- Name of the wetland or watercourse involved with or adjacent to the subject activity:
Blackberry River
- Is the subject activity within a watercourse or floodplain? Yes No
- Will the subject activity be within a FEMA floodway? Yes No
- If the project requires a Flood Management Certification for the subject activity, provide the Flood Management Certification Number: FMGC approved by CTDOT H&D on 5/24/2019.

Part IV: Construction Activity Details (continued)

7. Disturbance to wetlands, watercourses and flood plains:

Wetlands (acres):

excavation: 0.049 (perm) -fill: 0.000 (temp) total disturbance: 0.049 (perm)

Floodplain (cubic yards):

excavation: 2,160 fill: 100 net: 2,060 cut

Watercourse (linear feet): n/a

8. Describe the present and intended use(s) of the property at which the subject activity will be conducted and the reason for conducting or maintaining the activity.

The project area primarily consists of the existing roadway and the two railroad crossings. The intended use will remain the same. The construction activities involve providing safety improvements to the crossings via flashing railroad lights and vehicular gates while also raising the vertical profile of the road. In order for the proposed crossing improvements to be installed, historical and localized flooding at the crossing will be alleviated through replacement of the existing drainage network to provide sufficient runoff conveyance during storms.

9. Describe all natural and manmade features impacted by the subject activity, including wetlands, watercourses, fish and wildlife habitat, floodplains, and structures and appurtenances thereto, and the impact of the subject activity on such features.

Some of the project activities will be performed within delineated wetlands and the 100-year floodplain. Within the wetland areas, impacts will be limited to the construction of a riprap apron and rock weir at the outlet of the proposed drainage channel into Blackberry River. Within the floodplain, work will be limited to channel excavation, installation of riprap, and replacement of various existing drainage structures, including pipes and catch basins, along the Housatonic Railroad tracks.

There is also a proposed riprap splash pad and drainage channel at the eastern outlet. Impacts to the floodplain and the small wetland area adjacent to the existing drainage channel will be caused by excavation, installation of riprap, and grading to existing ground. The channel becomes increasingly shallow along its length until it matches existing grades where runoff will then flow overland until it reaches the Blackberry River.

Check here if additional sheets are necessary, and label and attach them to this sheet.

Part V: Supporting Documents

Check the applicable box below for each attachment being submitted with this request. When submitting any supporting documents, please label the documents as indicated in this part (e.g., Attachment A, etc.) and be sure to include the requester's name as indicated on this request. ***In order to file electronically, ALL supporting documents must be submitted in an electronic format on a CD with this original completed application in hard copy.***

- Attachment A: Location Map: A depiction, on an 8.5" x 11" copy of the relevant portion of the most recent version of the United States Geologic Survey topographic map (Scale 1:24,000), of the exact location of the property at which such activity will be conducted.
- Attachment B: Site plan pursuant Section 4(c) (2) (I) of the subject general permit.
- Attachment C: [Coastal Consistency Review Form](#) (DEEP-APP-004), if applicable.
- Attachment D: Copy of the completed *Request for NDDDB State Listed Species Review Form* (DEEP-APP-007) and the NDDDB response, if applicable.
- Attachment E: Conservation or Preservation Restriction Information, if applicable.
- Attachment F: A copy of the Category 2 approval letter from the Army Corps of Engineers, or a copy of the Appendix 1A: Category 1 Certification Form filed with the US Army Corps of Engineers, if applicable.
- Attachment G: Drainage Maintenance Plan, Trail Maintenance Plan, Boat Launch Maintenance Plan, or Beach Maintenance Plan for Inland Beaches as defined in Section 2 of the subject general permit, if applicable.
- Attachment H: Other information provided by requester (list):
 - 1. FEMA Flood Insurance Rate Map**
 - 2. Inland Wetlands & Watercourses Activity Reporting Form**
 - 3. Photographs**
 - 4. SHPO & Tribal Correspondence**
 - 5. CTDEEP Fisheries sign-off**
 - 6. Interagency Notes**

Part VI: Requester Certification

The requester *and* the individual(s) responsible for actually preparing the request must sign this part. A request will be considered incomplete unless all required signatures are provided. If the requester is the preparer, please mark N/A in the spaces provided for the preparer.



"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 the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I certify that this general permit request for authorization is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I understand that the subject activity is authorized only on or after the date the commissioner issues a written approval of registration with respect to such activity.

I certify that a complete copy of this request for authorization, including all documents attached thereto, was sent by regular or certified mail or was hand delivered to the municipal wetlands agency, zoning commission, planning commission or combined planning and zoning commission, and conservation commission of each municipality which is or may be affected by the subject activity.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

<p style="text-align: center;"></p> <p>Signature of Requester</p>	<p style="text-align: center;"><u>9-4-2019</u></p> <p>Date</p>
<p>Thomas J. Maziarz</p> <p>Name of Requester (print or type)</p>	<p>Bureau Chief, Policy & Planning</p> <p>Title (if applicable)</p>
<p style="text-align: center;"></p> <p>Signature of Preparer (if different than above)</p>	<p style="text-align: center;">6.25.2019</p> <p>Date</p>
<p>Ken Radziwon</p> <p>Name of Preparer (print or type)</p>	<p>Project Manager, BL Companies</p> <p>Title (if applicable)</p>
<p><input type="checkbox"/> Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this registration (i.e., professional engineers, surveyors, soil scientists, consultants, etc.)</p>	

Note: Please submit this completed Request for Authorization, Fee, and all Supporting Documents to:

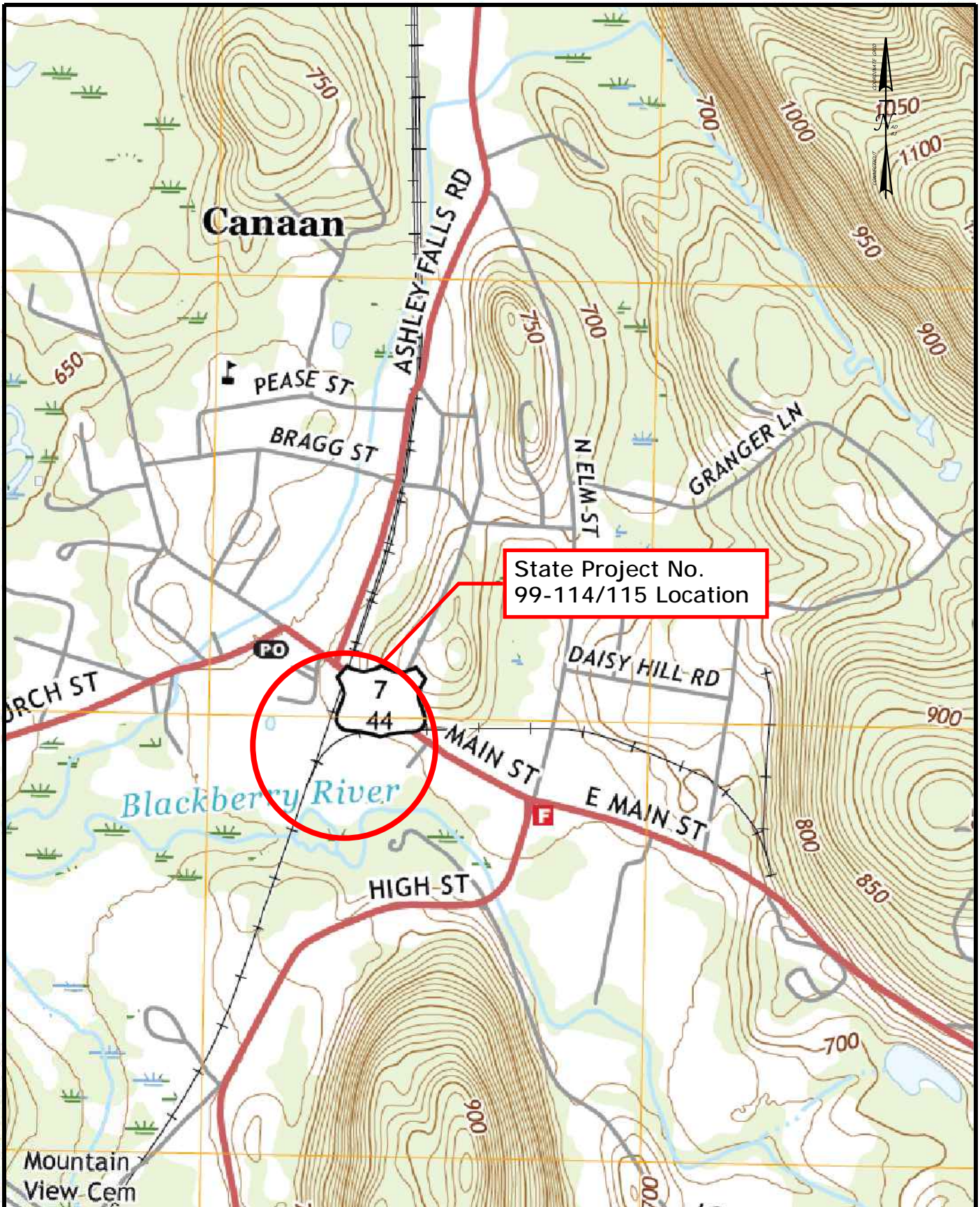
CENTRAL PERMIT PROCESSING UNIT
 DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

You must submit a complete copy of this completed request for authorization, including supporting documents, to the municipal wetlands agency, zoning commission, planning commission or combined planning and zoning commission, and conservation commission of each municipality which is or may be affected by the subject activity.

IWGP

Attachment A: USGS Topographic Map

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT



State Project No.
99-114/115 Location



RAILROAD-HIGHWAY
GRADE CROSSING IMPROVEMENTS
U.S. ROUTES 7&44 (MAIN STREET)
NORTH CANAAN, CT

LOCATION MAP
PROJ. NO.: 99-114/115
SCALE: 1" = 1000'

IWGP

Attachment B: Permit Plan Sheets

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT

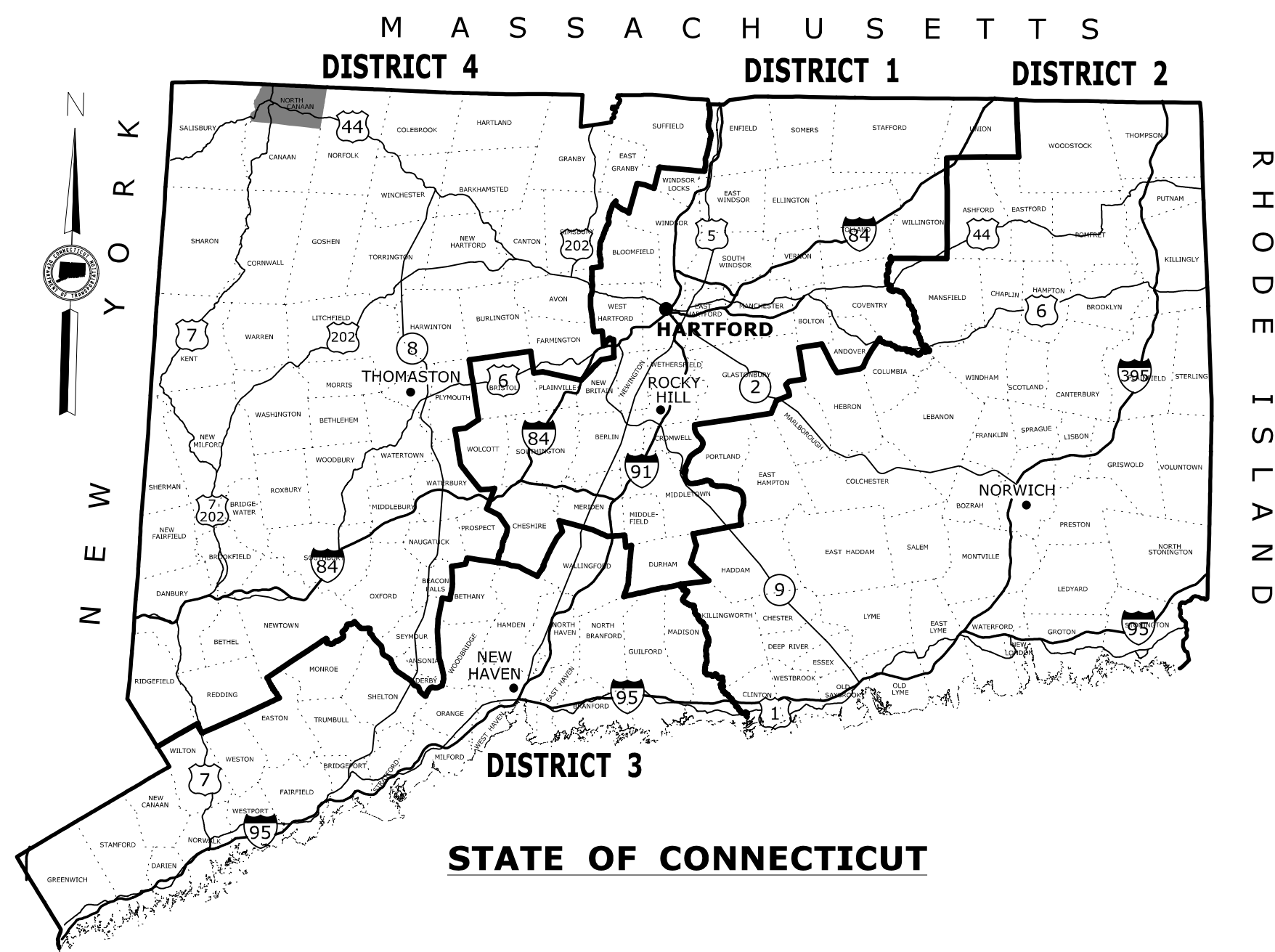
Figure	Description
PMT-01	Title Sheet
PMT-02	Index Map
PMT-03 – PMT-08	General Site Plan
PMT-09 – PMT-11	Impact Plan
PMT-12 – PMT-13	Miscellaneous Details

ENVIRONMENTAL PERMIT PLANS

STATE PROJECT 99-114/115

U.S. ROUTE 7 & 44 (MAIN STREET)

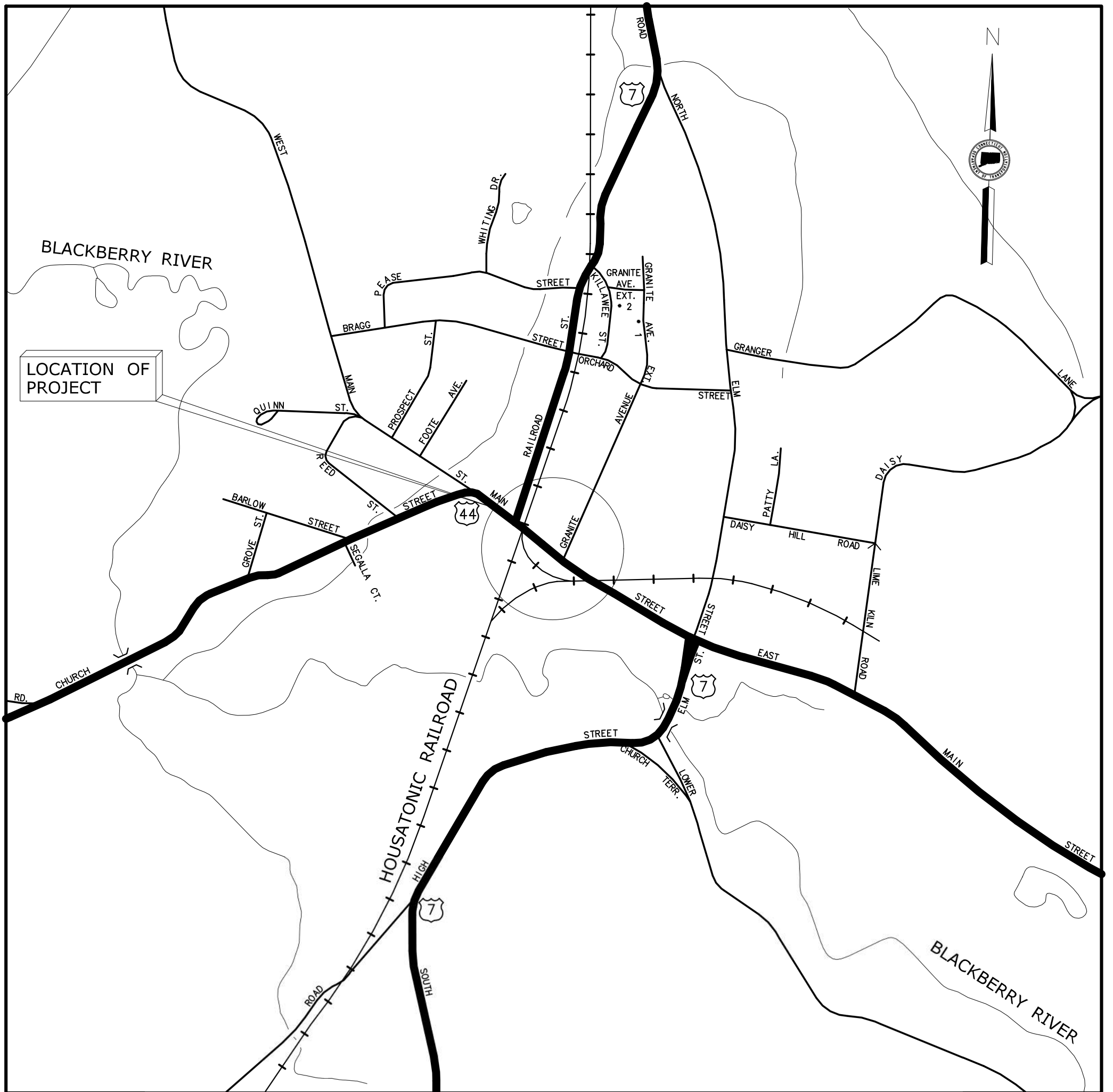
TOWN OF NORTH CANAAN



GENERAL NOTES:

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND ACOE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLAND AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1983
VERTICAL DATUM BASED ON NAVD OF 1983
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW BEST MANAGEMENT PRACTICES (BMP) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.

LIST OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
PMT-01	TITLE SHEET
PMT-02	INDEX MAP
PMT-03 - PMT-08	GENERAL SITE PLAN
PMT-09 - PMT-11	IMPACT PLAN
PMT-12 - PMT-13	MISCELLANEOUS DETAILS



LOCATION PLAN
NOT TO SCALE

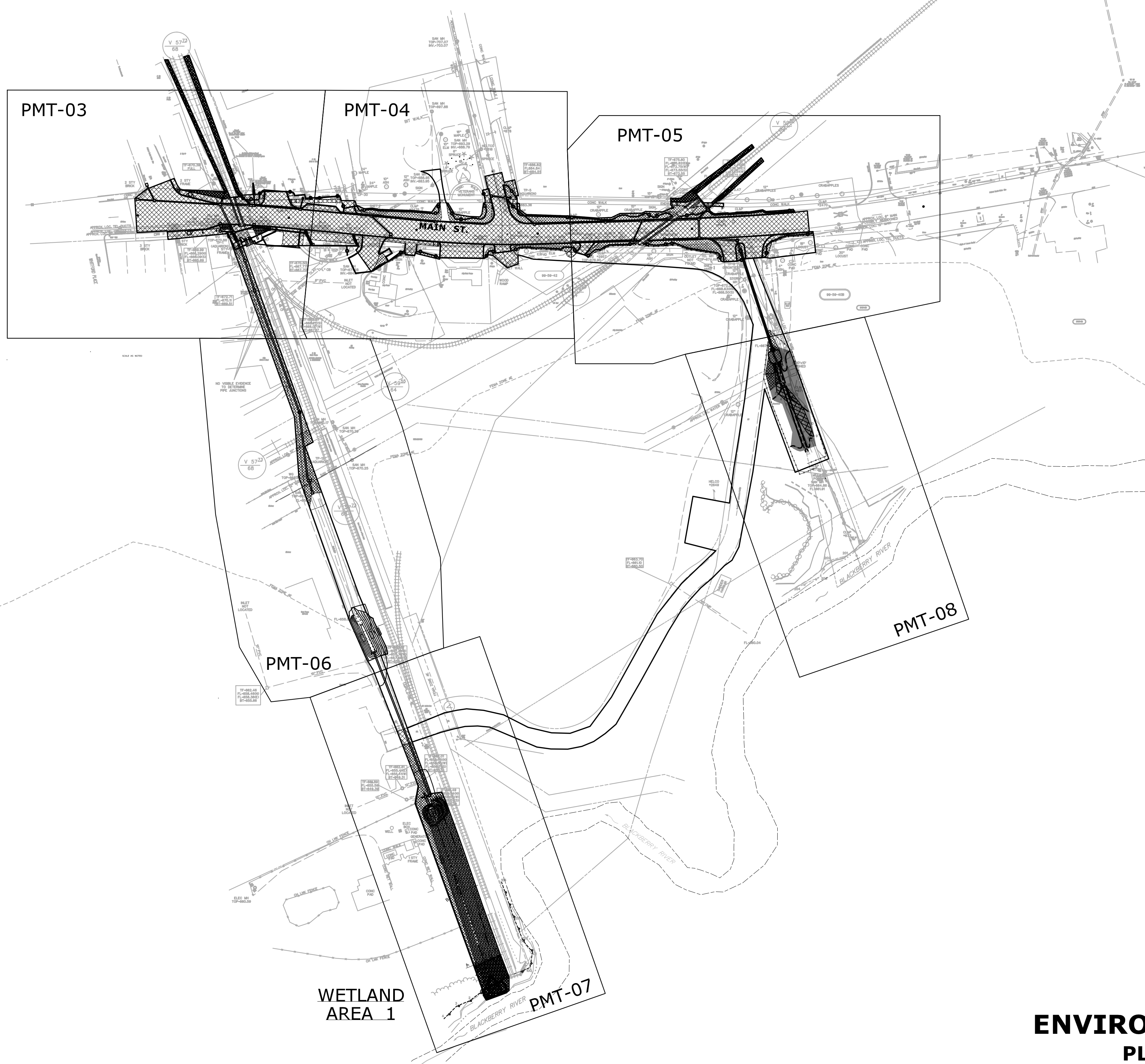
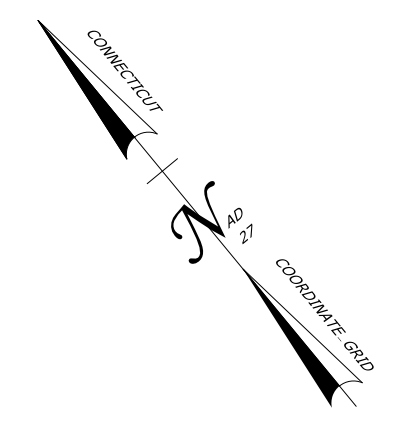
DESIGNED BY:
BL COMPANIES, INC.

David Cicia
2019.06.25
10:41:06-04'00"

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: JUNE 12, 2019

		DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET SCALE 1"=40'	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/ BLOCK: DESIGNED BY: BL COMPANIES, INC. <small>355 RESEARCH PARKWAY MERIDEN, CT 06450</small>	PROJECT TITLE: <p style="text-align: center;">RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)</p>	TOWN: <p style="text-align: center;">NORTH CANAAN</p>	PROJECT NO. 99-114/115 DRAWING NO. PMT-01 SHEET NO.
REV. DATE REVISION DESCRIPTION SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	Plotted Date: 6/14/2019				DRAWING TITLE: <p style="text-align: center;">TITLE SHEET</p>	

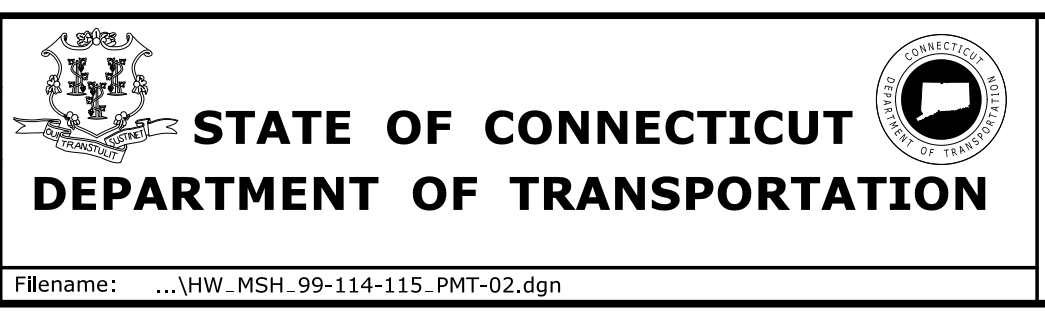


ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
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-	-	-	-
-	-	-	-
-	-	-	-

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
BGR
 CHECKED BY:
DMC
 SCALE IN FEET
 0 100 200
 SCALE 1"=100'



SIGNATURE/BLOCK:
 DESIGNED BY:

 BL COMPANIES, INC.
 355 RESEARCH PARKWAY
 MERIDEN, CT 06450

PROJECT TITLE:
**RAILROAD-HIGHWAY GRADE
 CROSSING IMPROVEMENTS
 U.S. ROUTES 7&44 (MAIN ST.)**

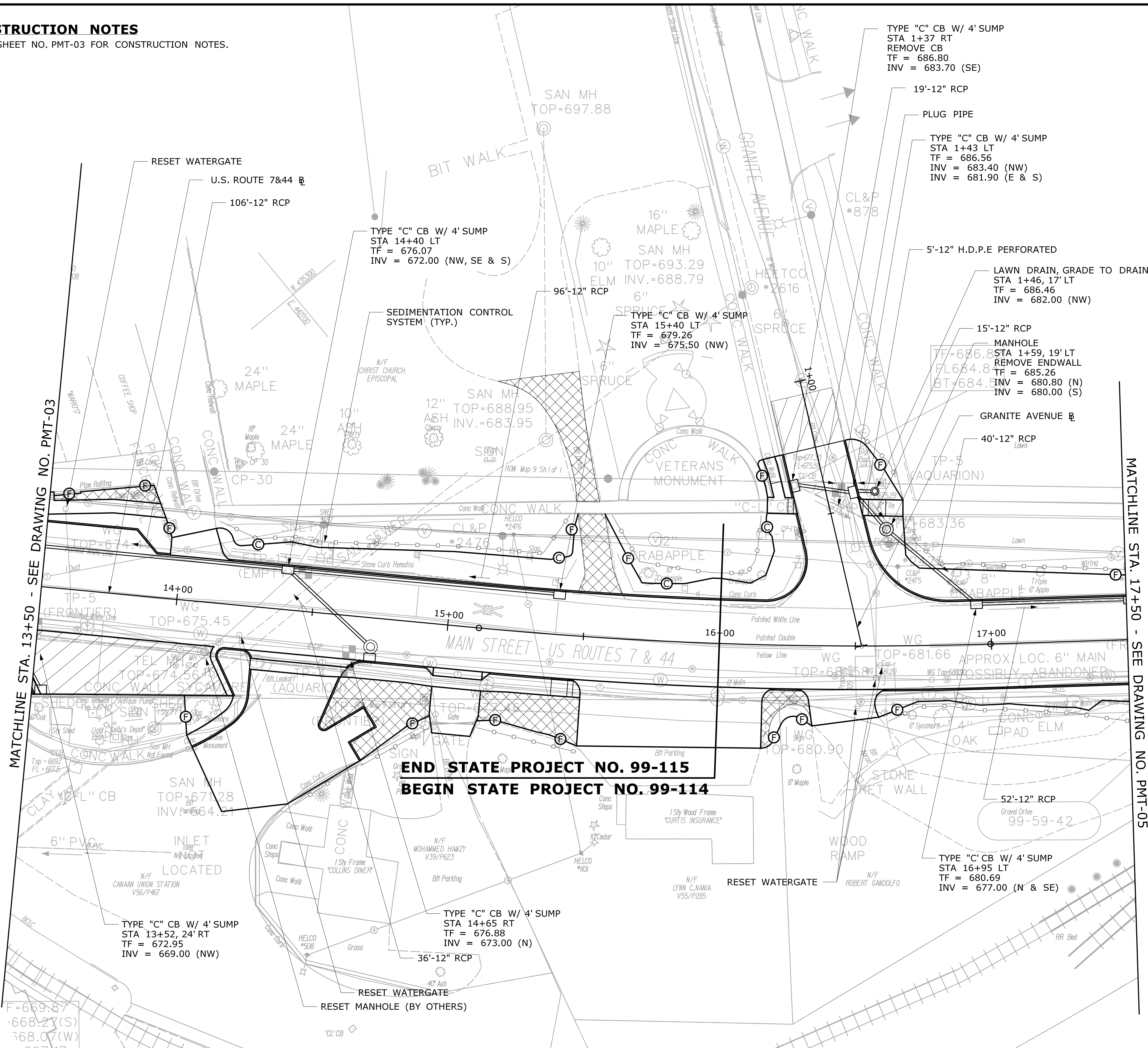
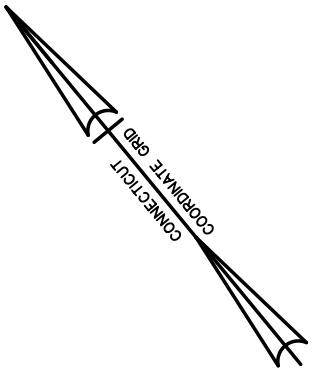
TOWN:
NORTH CANAAN
 DRAWING TITLE:
INDEX PLAN

PROJECT NO.
99-114/115
 DRAWING NO.
PMT-02
 SHEET NO.

Filename: ...\\HW_MSH_99-114-115_PMT-02.dgn

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.

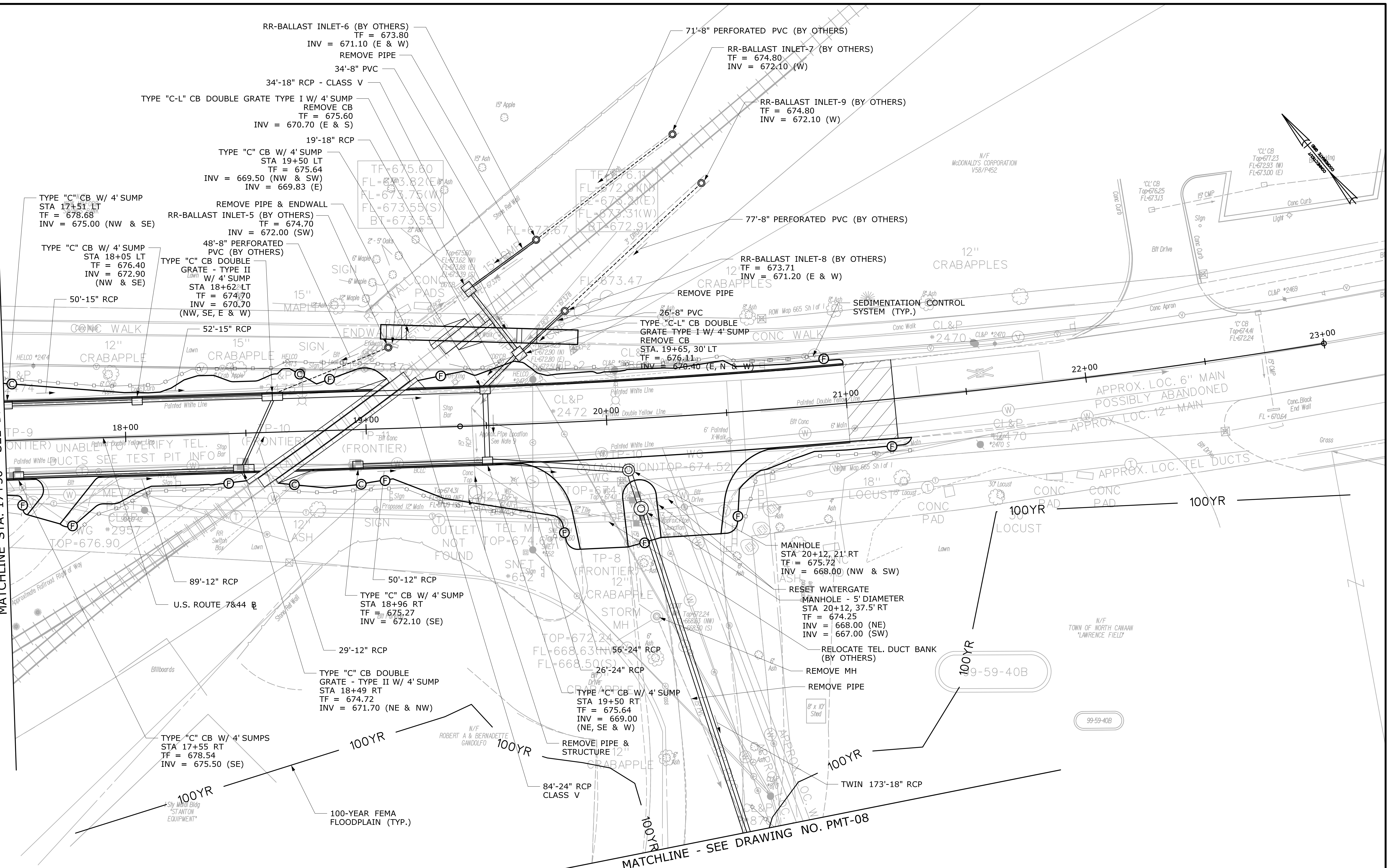


**END STATE PROJECT NO. 99-115
BEGIN STATE PROJECT NO. 99-114**

**ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019**

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET SCALE 1"=20'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-04 SHEET NO.
REV. DATE REVISION DESCRIPTION SHEET NO.	Plotted Date: 6/14/2019	Filename: ...VHW_MSH_99-114-115_PMT-04.dgn	GENERAL SITE PLAN				

MATCHLINE STA. 17+50 - SEE DRAWING NO. PMT-04



CONSTRUCTION NOTES
 1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

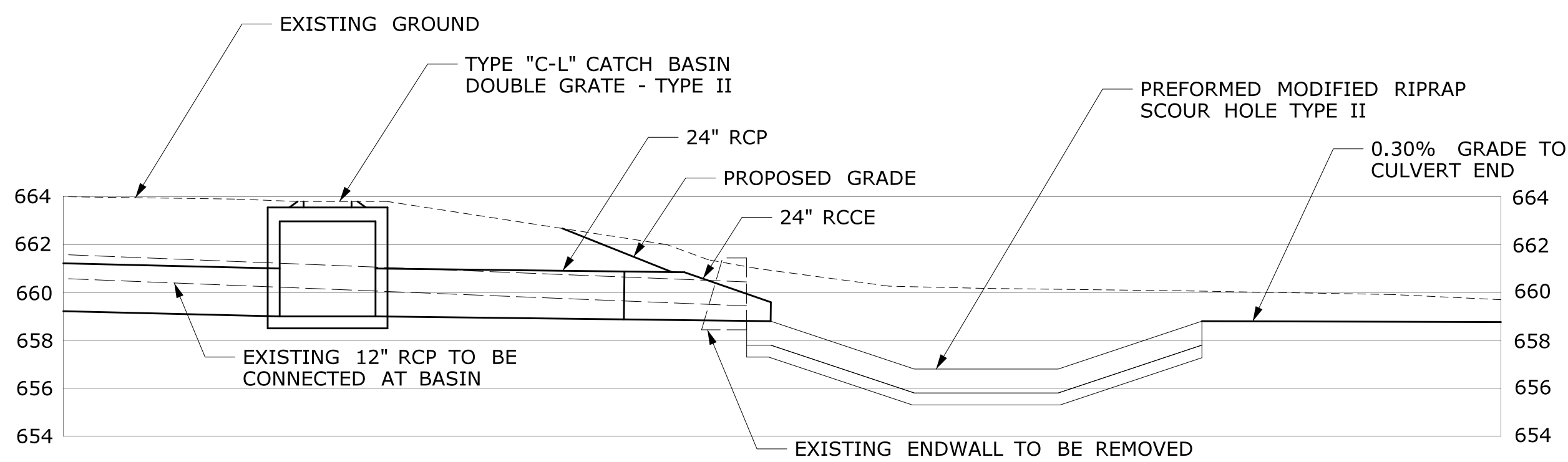
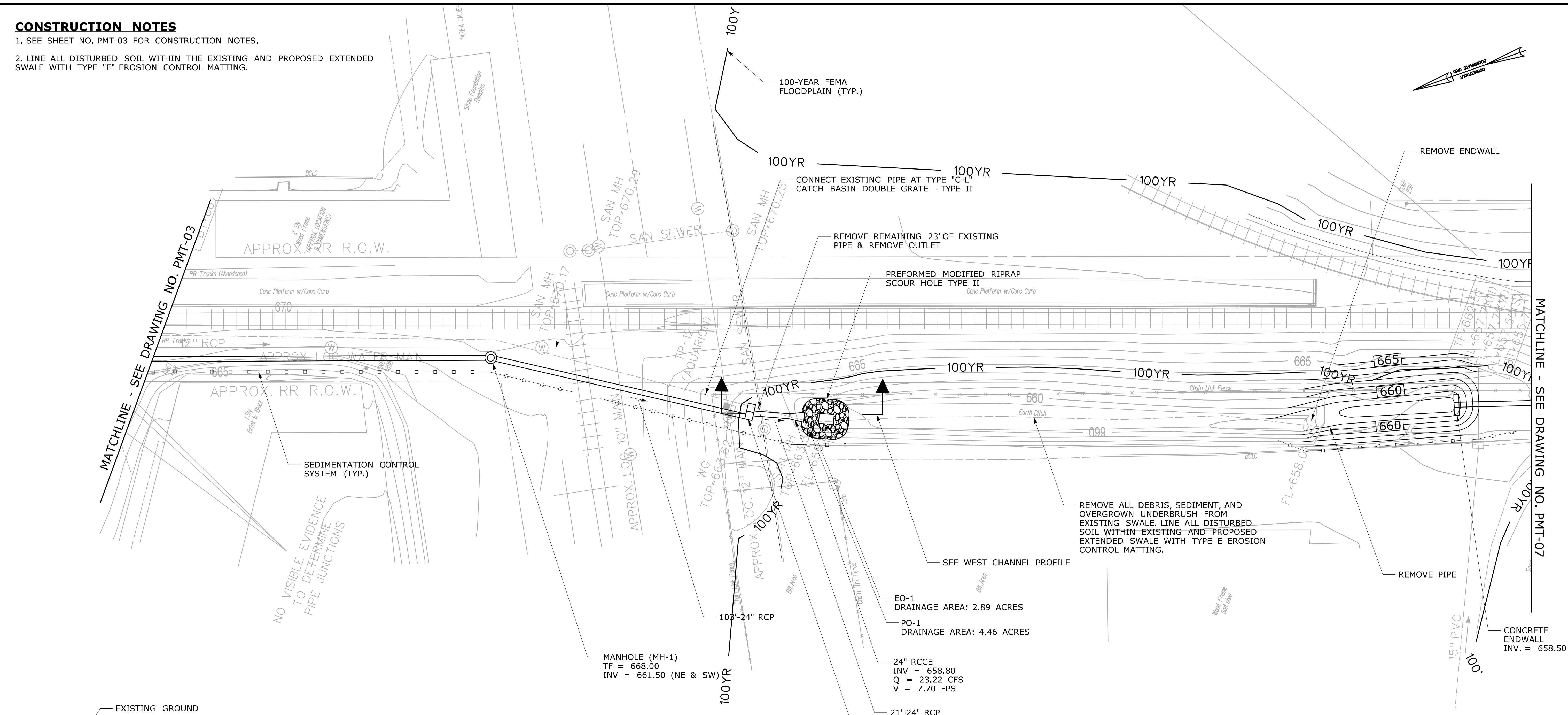
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 6/14/2019	DESIGNER/DRAFTER: BGR	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: 	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
	CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20'					

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.
2. LINE ALL DISTURBED SOIL WITHIN THE EXISTING AND PROPOSED EXTENDED SWALE WITH TYPE "E" EROSION CONTROL MATTING.

MATCHLINE - SEE DRAWING NO. PMT-03

MATCHLINE - SEE DRAWING NO. PMT-07



WEST CHANNEL PROFILE
SCALE: 1" = 5'

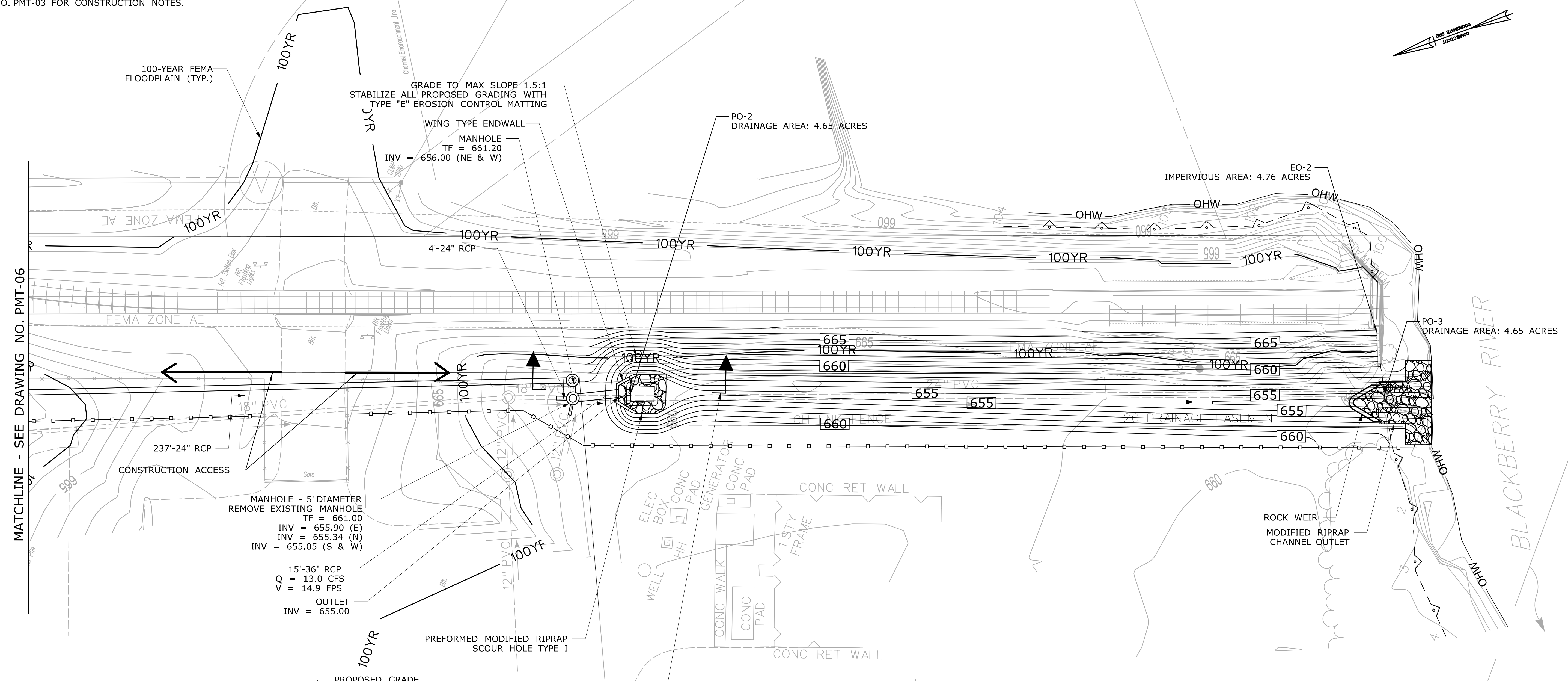
LEGEND	
	100YR FEMA 100-YEAR FLOODPLAIN
	LIMIT OF INLAND WETLANDS
	ORDINARY HIGH WATER LINE
	SEDIMENTATION CONTROL SYSTEM

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

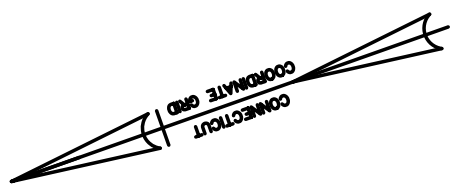
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	REV.	DATE	REVISION DESCRIPTION	SHEET NO.											
DRAWING TITLE: GENERAL SITE PLAN															

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



MATCHLINE - SEE DRAWING NO. PMT-06



100-YEAR FEMA FLOODPLAIN (TYP.)

GRADE TO MAX SLOPE 1.5:1
STABILIZE ALL PROPOSED GRADING WITH TYPE "E" EROSION CONTROL MATTING

WING TYPE ENDWALL
MANHOLE
TF = 661.20
INV = 656.00 (NE & W)

PO-2 DRAINAGE AREA: 4.65 ACRES

EO-2 IMPERVIOUS AREA: 4.76 ACRES

PO-3 DRAINAGE AREA: 4.65 ACRES

FEMA ZONE AE

237'-24" RCP
CONSTRUCTION ACCESS

MANHOLE - 5' DIAMETER
REMOVE EXISTING MANHOLE
TF = 661.00
INV = 655.90 (E)
INV = 655.34 (N)
INV = 655.05 (S & W)

15'-36" RCP
Q = 13.0 CFS
V = 14.9 FPS
OUTLET
INV = 655.00

PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE I

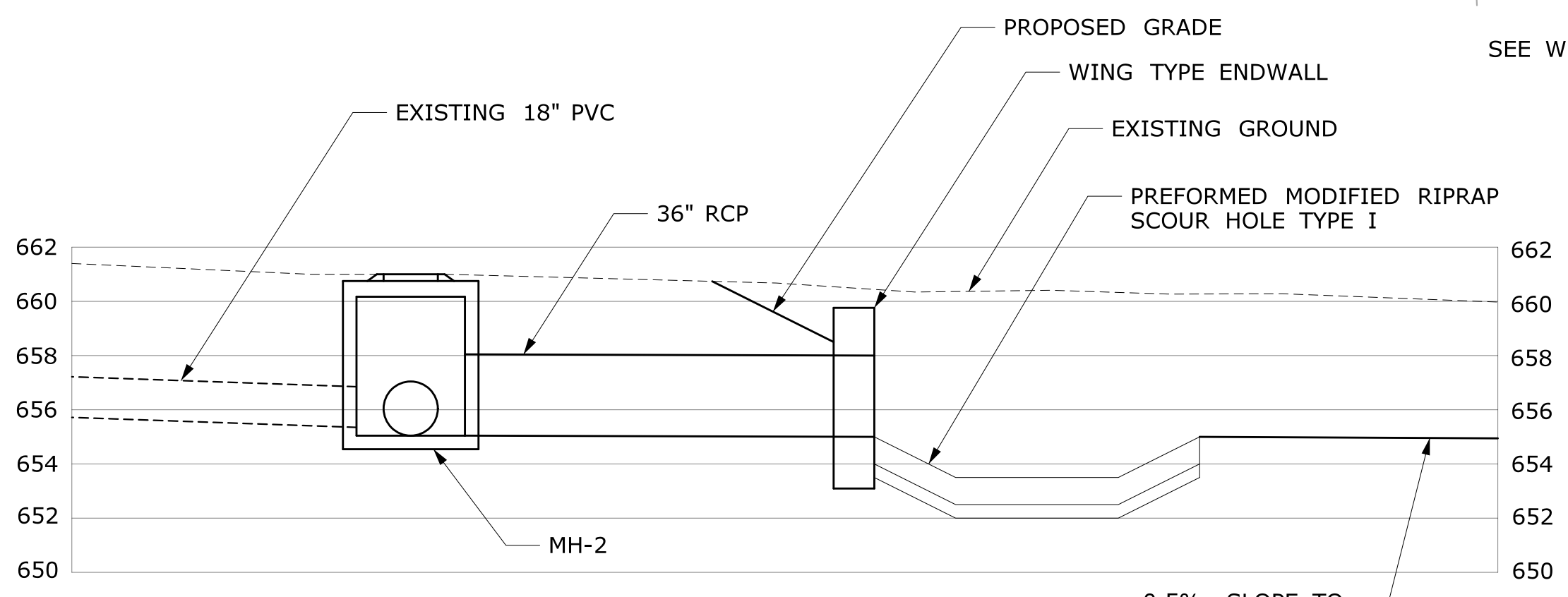
CONC RET WALL

1.5 STY FRAME

CONC RET WALL

ROCK WEIR
MODIFIED RIPRAP
CHANNEL OUTLET

BLACKBERRY RIVER



WEST OUTLET PROFILE
SCALE: 1" = 5'

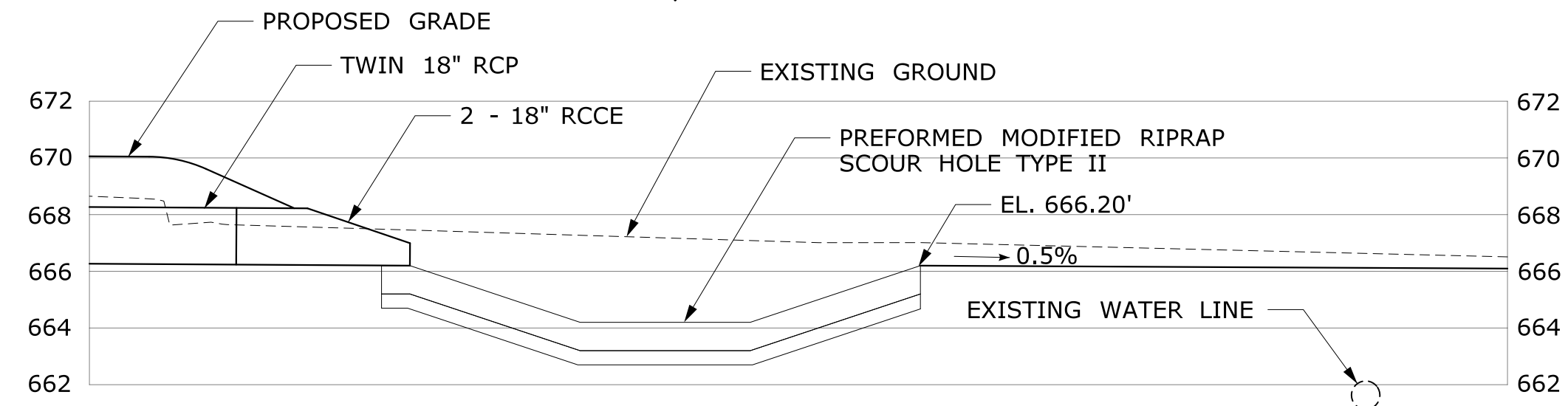
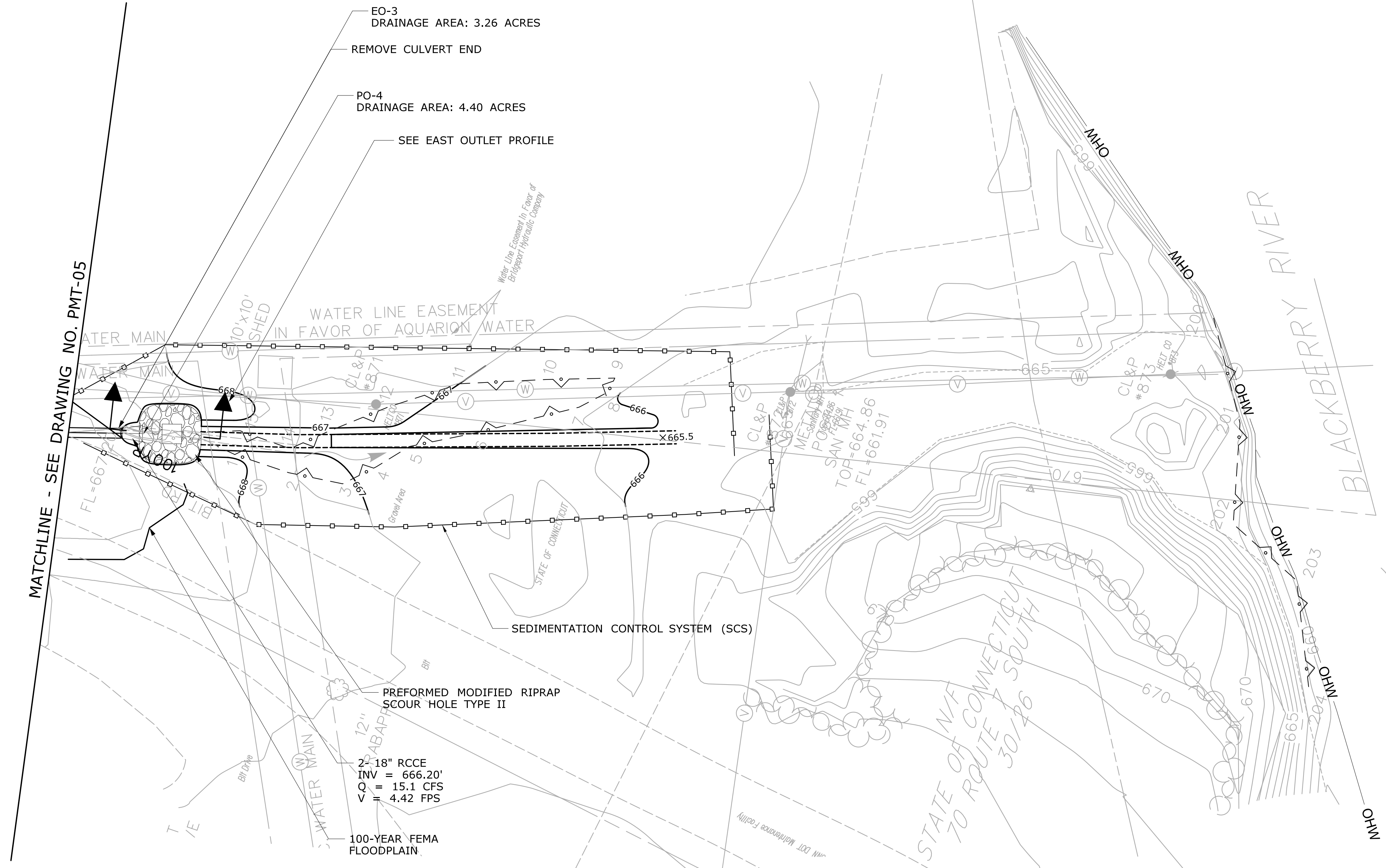
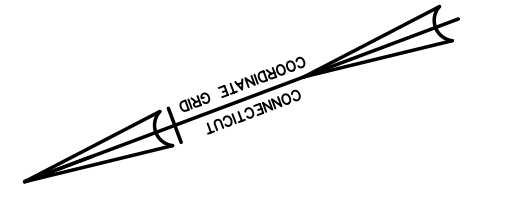
LEGEND	
	100YR FEMA 100-YEAR FLOODPLAIN
	LIMIT OF INLAND WETLANDS
	OHW ORDINARY HIGH WATER LINE
	SEDIMENTATION CONTROL SYSTEM

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.					THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 6/24/2019	DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION FILENAME: ...VHW_MSH_99-114-115_PMT-07.dgn	SIGNATURE/BLOCK: DESIGNED BY: BL CORPORATION 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-07 SHEET NO.
	REV.	DATE	REVISION DESCRIPTION	SHEET NO.											
DRAWING TITLE: GENERAL SITE PLAN															

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



EAST OUTLET PROFILE
SCALE: 1" = 5'

LEGEND

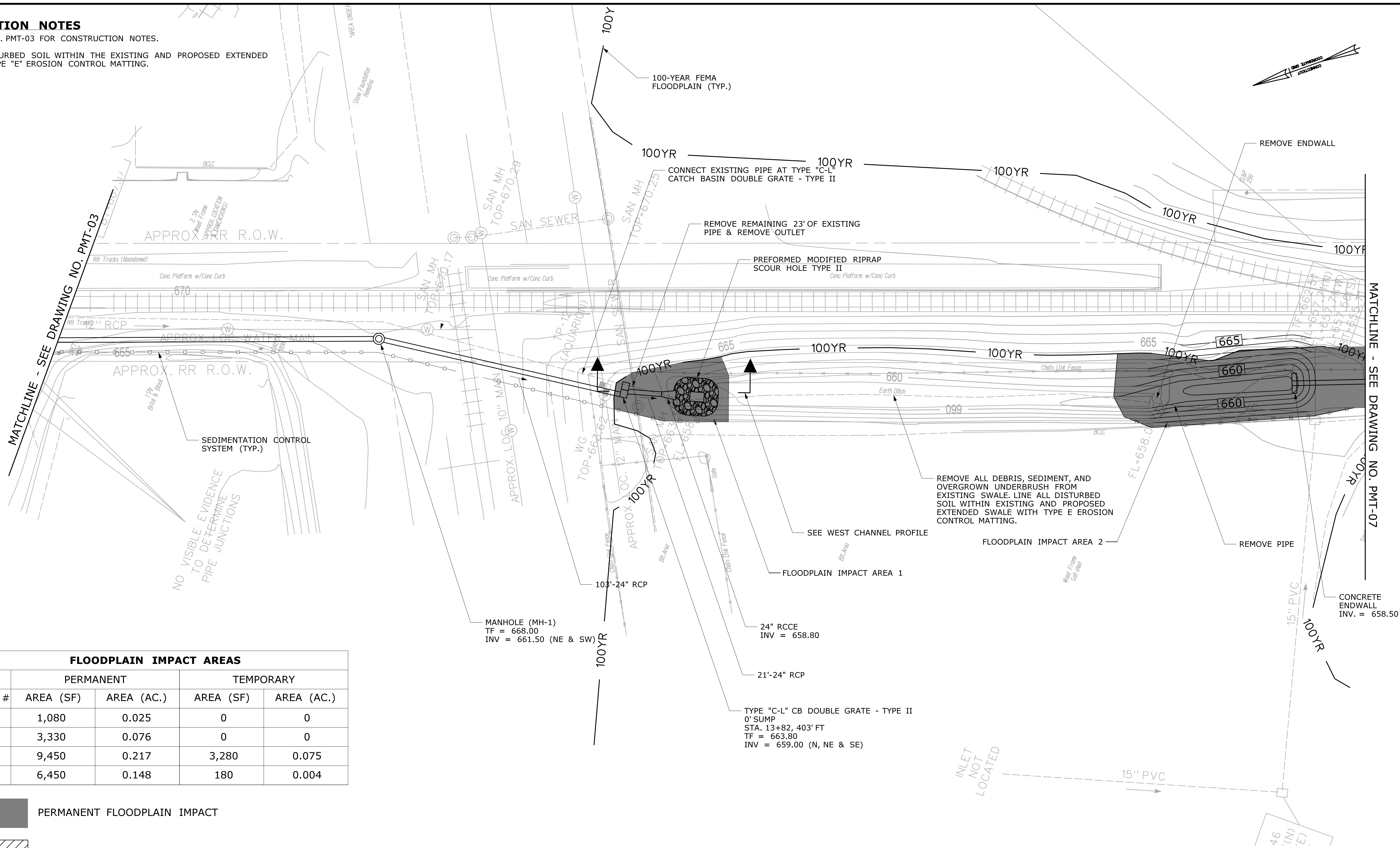
- 100YR FEMA 100-YEAR FLOODPLAIN
- LIMIT OF INLAND WETLANDS
- OHW ORDINARY HIGH WATER LINE
- SEDIMENTATION CONTROL SYSTEM

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.					THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 6/24/2019	DESIGNER/DRAFTER: BGR	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
	REV.	DATE	REVISION DESCRIPTION	SHEET NO.											
CHECKED BY: DMC	SCALE IN FEET SCALE 1"=20'	DRAWING NO. PMT-08													

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.
2. LINE ALL DISTURBED SOIL WITHIN THE EXISTING AND PROPOSED EXTENDED SWALE WITH TYPE "E" EROSION CONTROL MATTING.



FLOODPLAIN IMPACT AREAS

AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,450	0.148	180	0.004

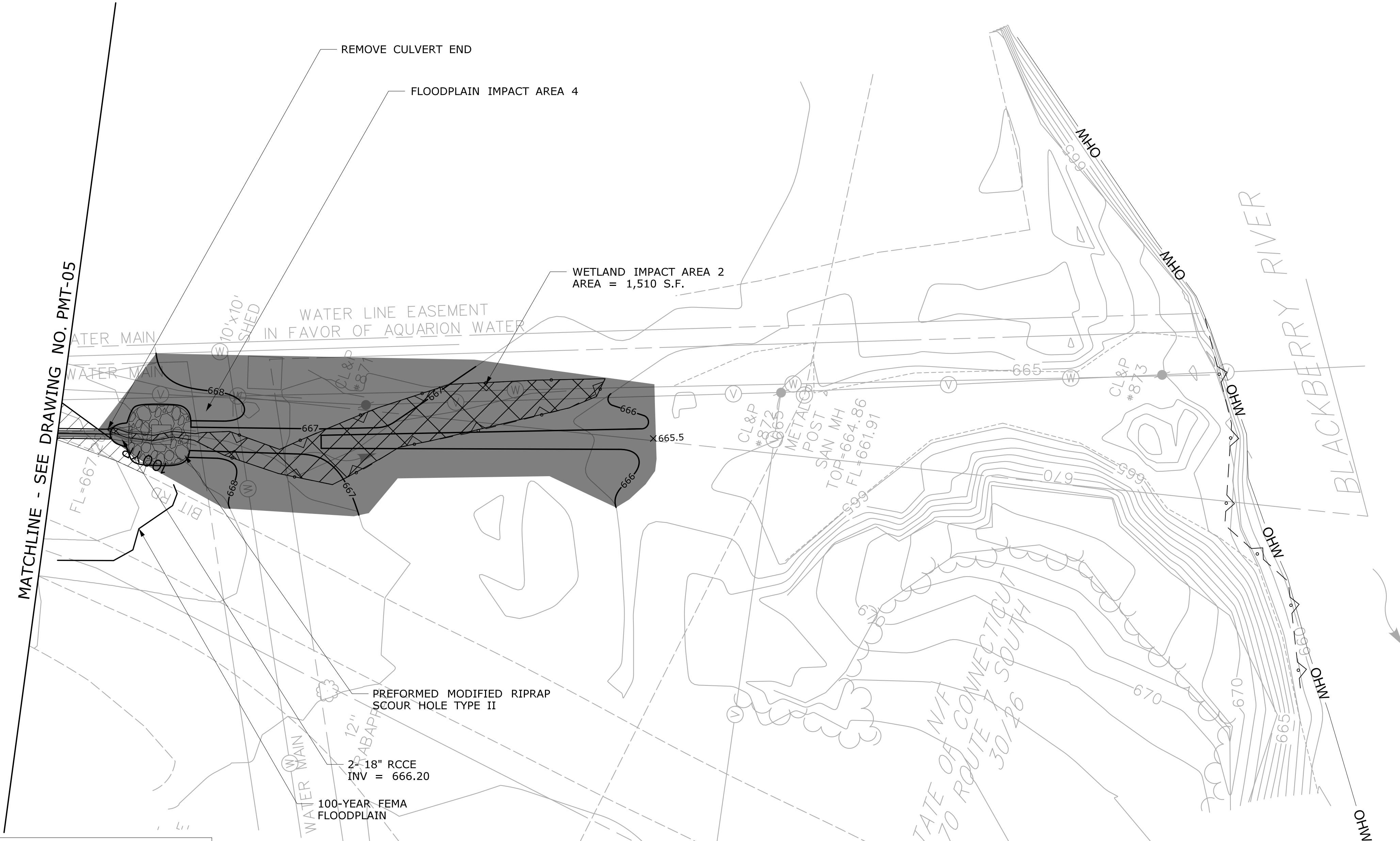
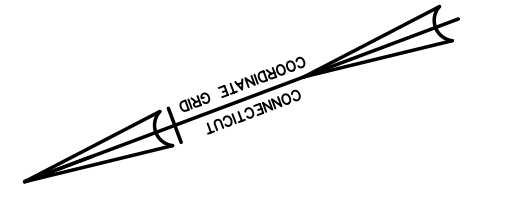
- PERMANENT FLOODPLAIN IMPACT
- TEMPORARY FLOODPLAIN IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.					<p>Plotted Date: 6/24/2019</p>	<p>DESIGNER/DRAFTER: BGR</p> <p>CHECKED BY: DMC</p> <p>SCALE IN FEET 0 20 40 SCALE 1"=20'</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>Filename: ...VHW_MSH_99-114-115_PMT-09.dgn</p>	<p>SIGNATURE/BLOCK:</p> <p>DESIGNED BY: BL CORPORATION BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450</p>	<p>PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)</p>	<p>TOWN: NORTH CANAAN</p> <p>DRAWING TITLE: IMPACT PLAN</p>	<p>PROJECT NO. 99-115</p> <p>DRAWING NO. PMT-09</p> <p>SHEET NO.</p>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.												

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



FLOODPLAIN IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,450	0.148	180	0.004

WETLAND IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	610	0.014	0	0
2	1,510	0.035	0	0

- PERMANENT FLOODPLAIN IMPACT
- TEMPORARY FLOODPLAIN IMPACT
- PERMANENT WETLAND IMPACT

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 6/24/2019

DESIGNER/DRAFTER:
BGR

CHECKED BY:
DMC

SCALE IN FEET

0 20 40

SCALE 1"=20'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...VHW_MSH_99-114-115_PMT-11.dgn

SIGNATURE/BLOCK:

DESIGNED BY:

BL
 CORPORATION
 355 RESEARCH PARKWAY
 MERIDEN, CT 06450

PROJECT TITLE:

**RAILROAD-HIGHWAY GRADE
 CROSSING IMPROVEMENTS
 U.S. ROUTES 7&44 (MAIN ST.)**

TOWN:

NORTH CANAAN

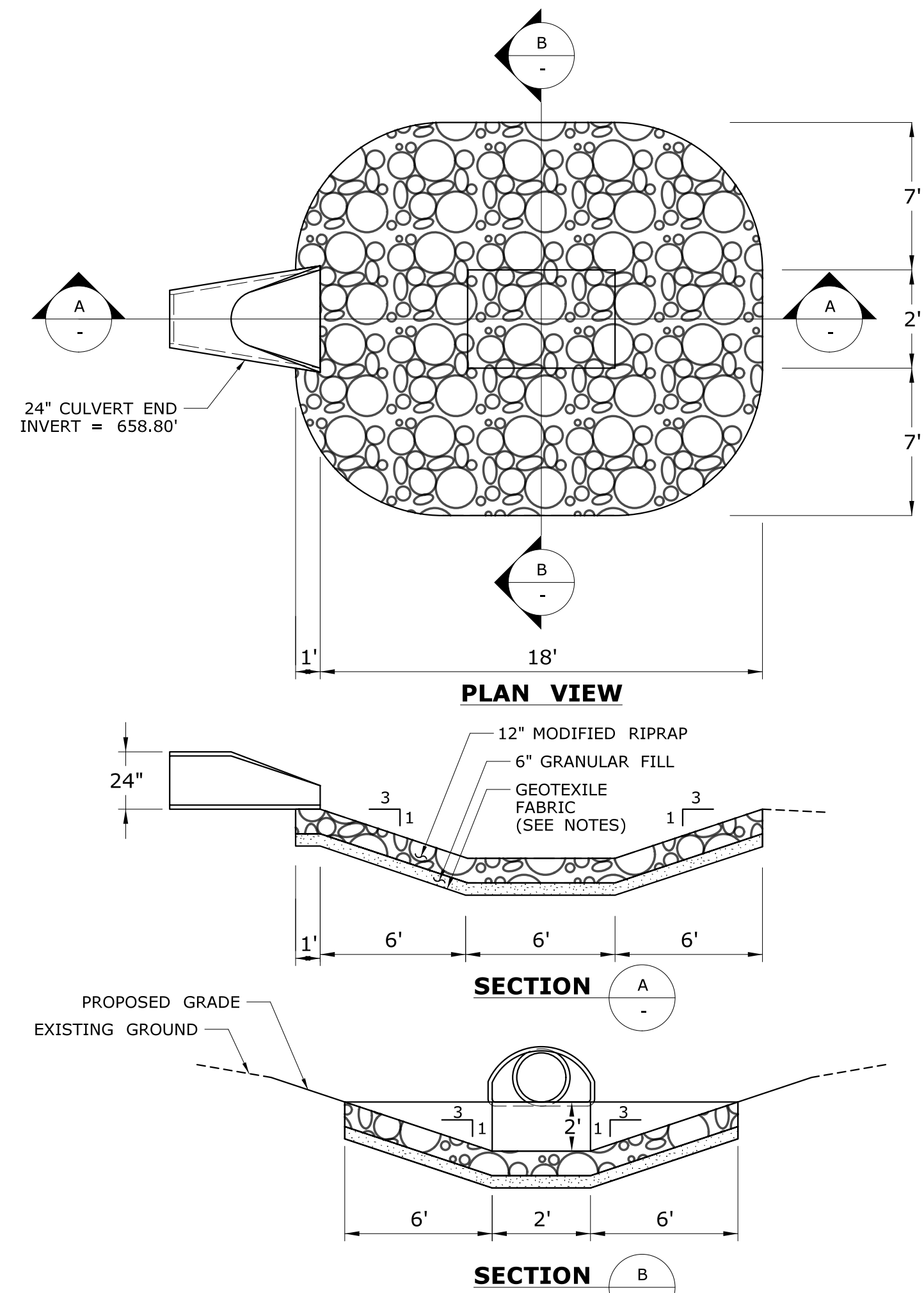
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IMPACT PLAN

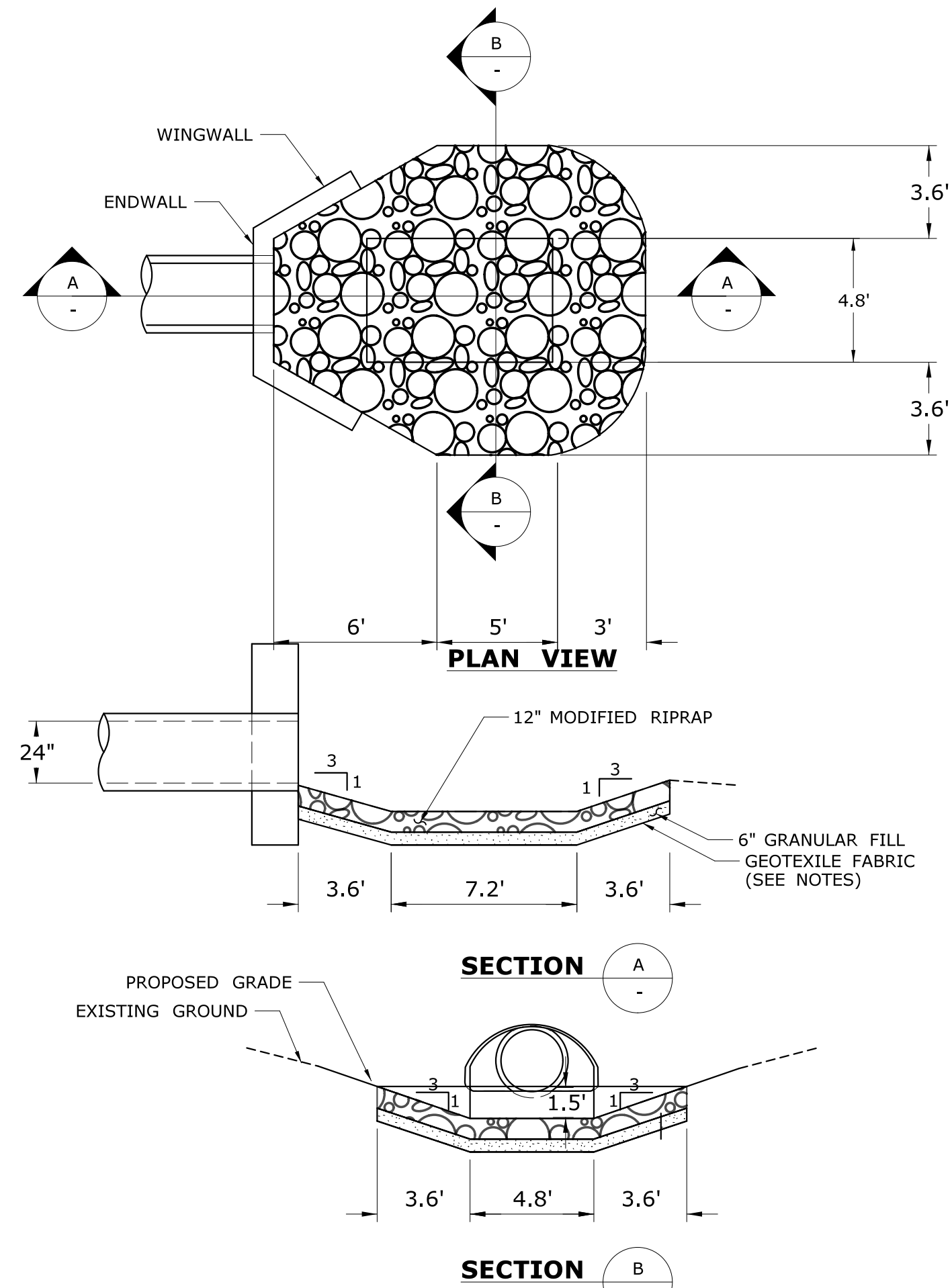
PROJECT NO.
99-114/115

DRAWING NO.
PMT-11

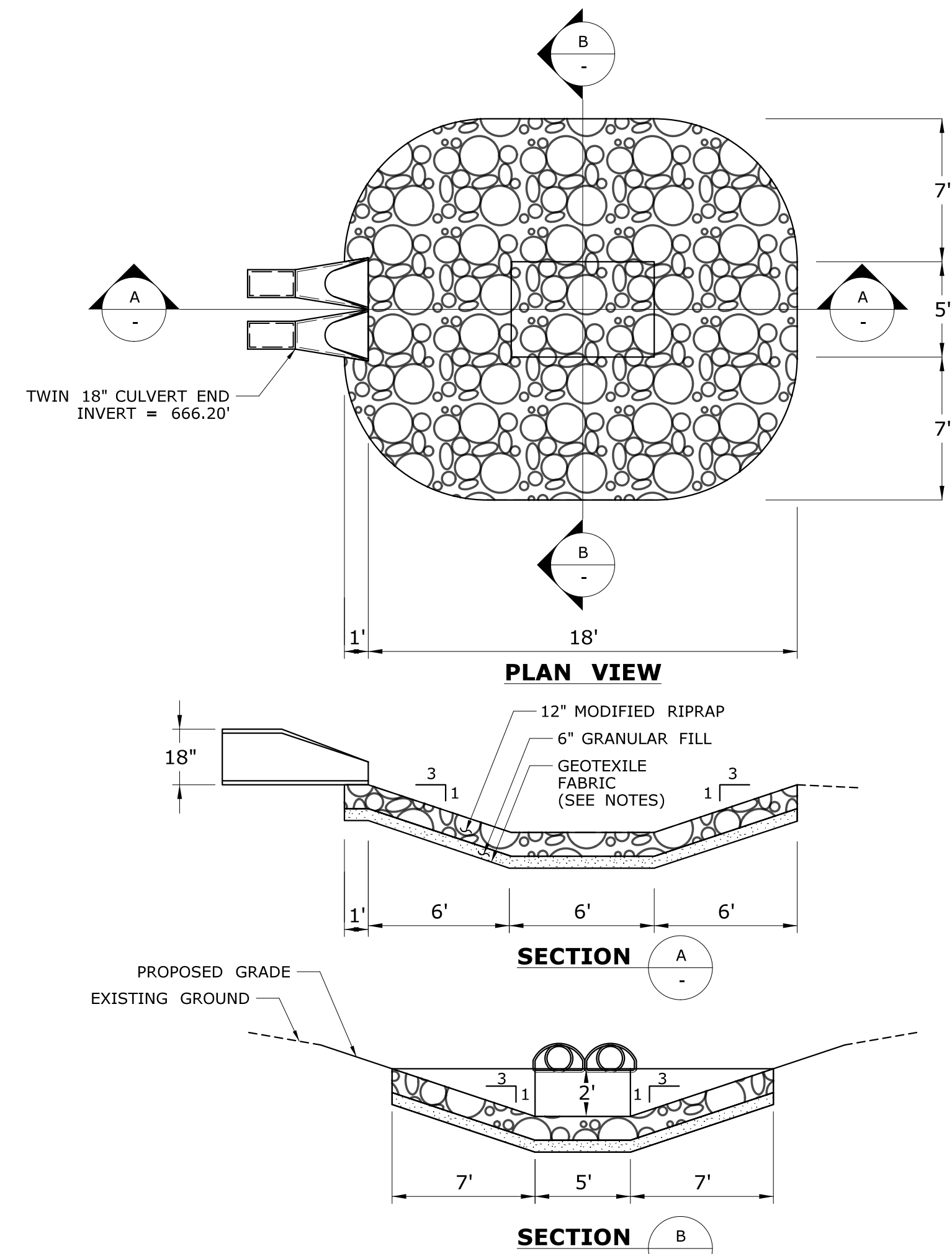
SHEET NO.



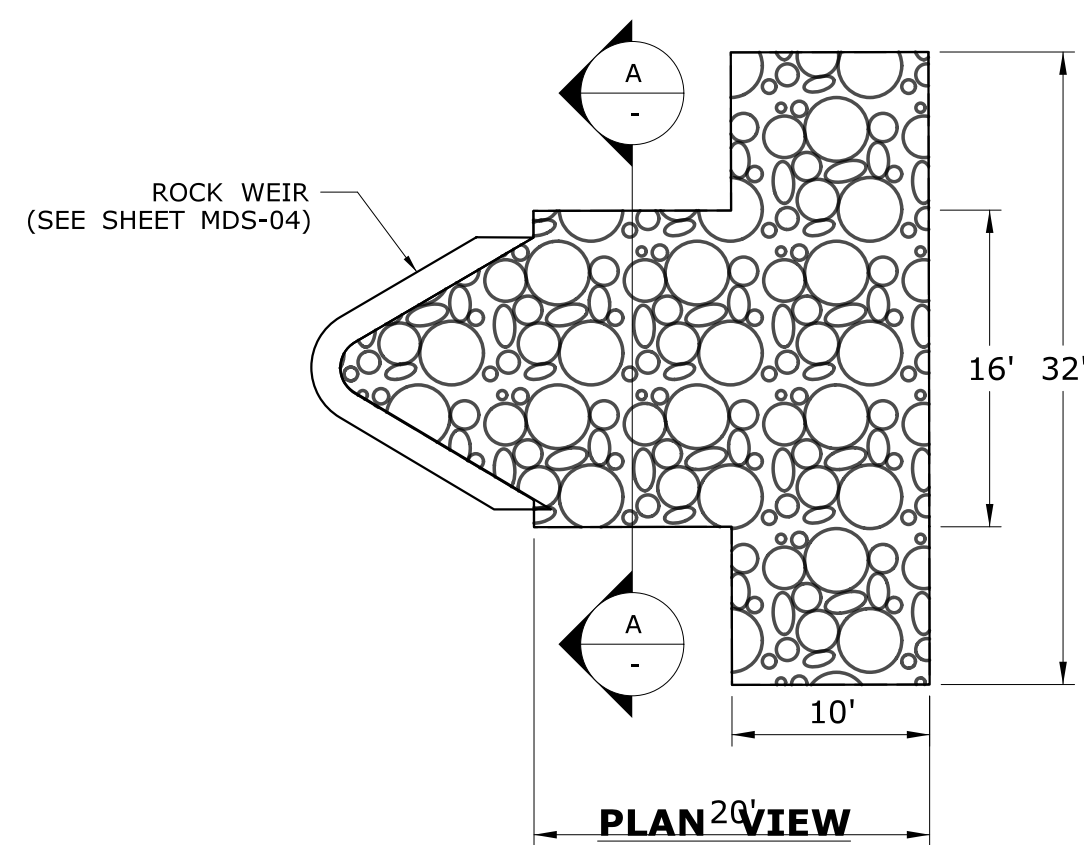
PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - WESTERN OUTLET
NOT TO SCALE



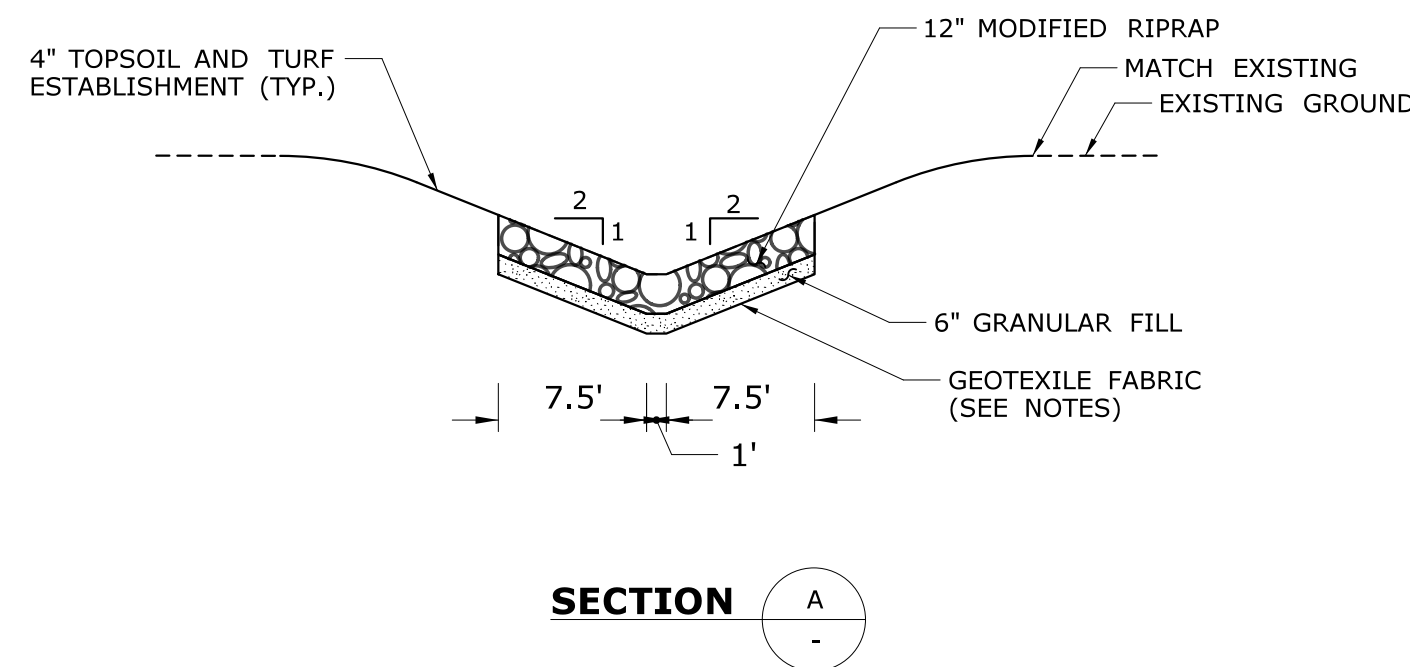
PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE I
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - EASTERN OUTLET
NOT TO SCALE



PLAN VIEW



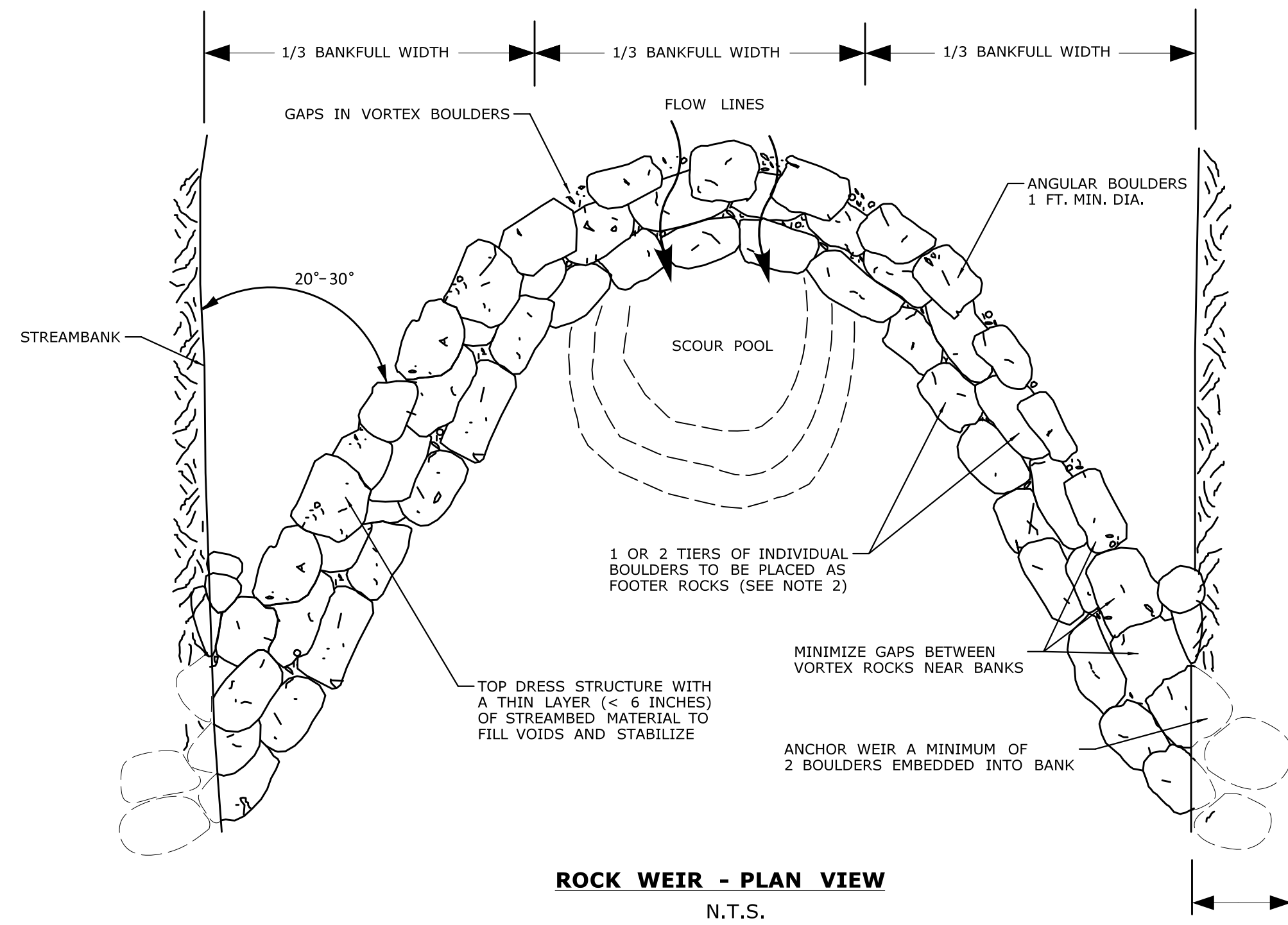
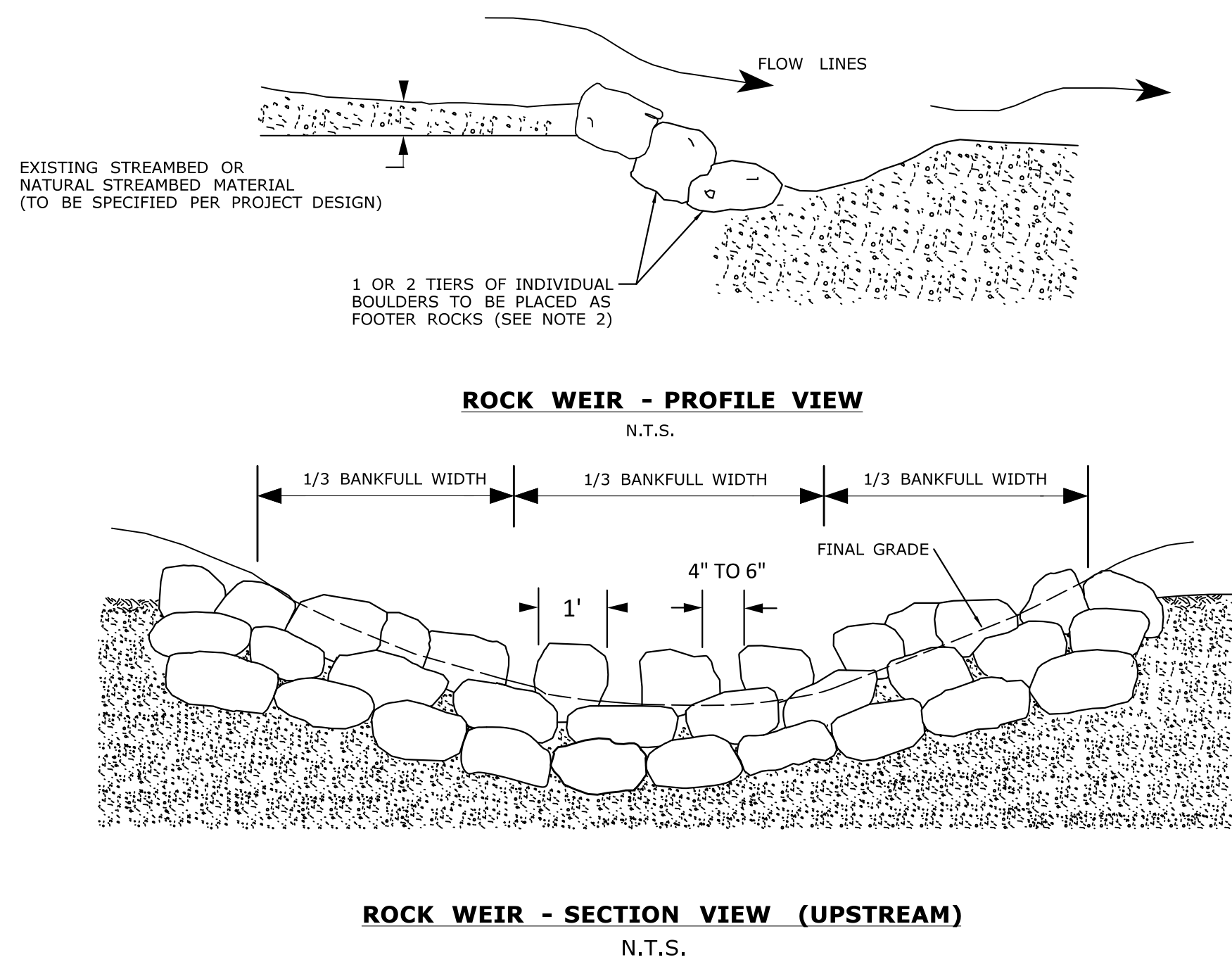
SECTION A

MODIFIED RIPRAP CHANNEL OUTLET
NOT TO SCALE

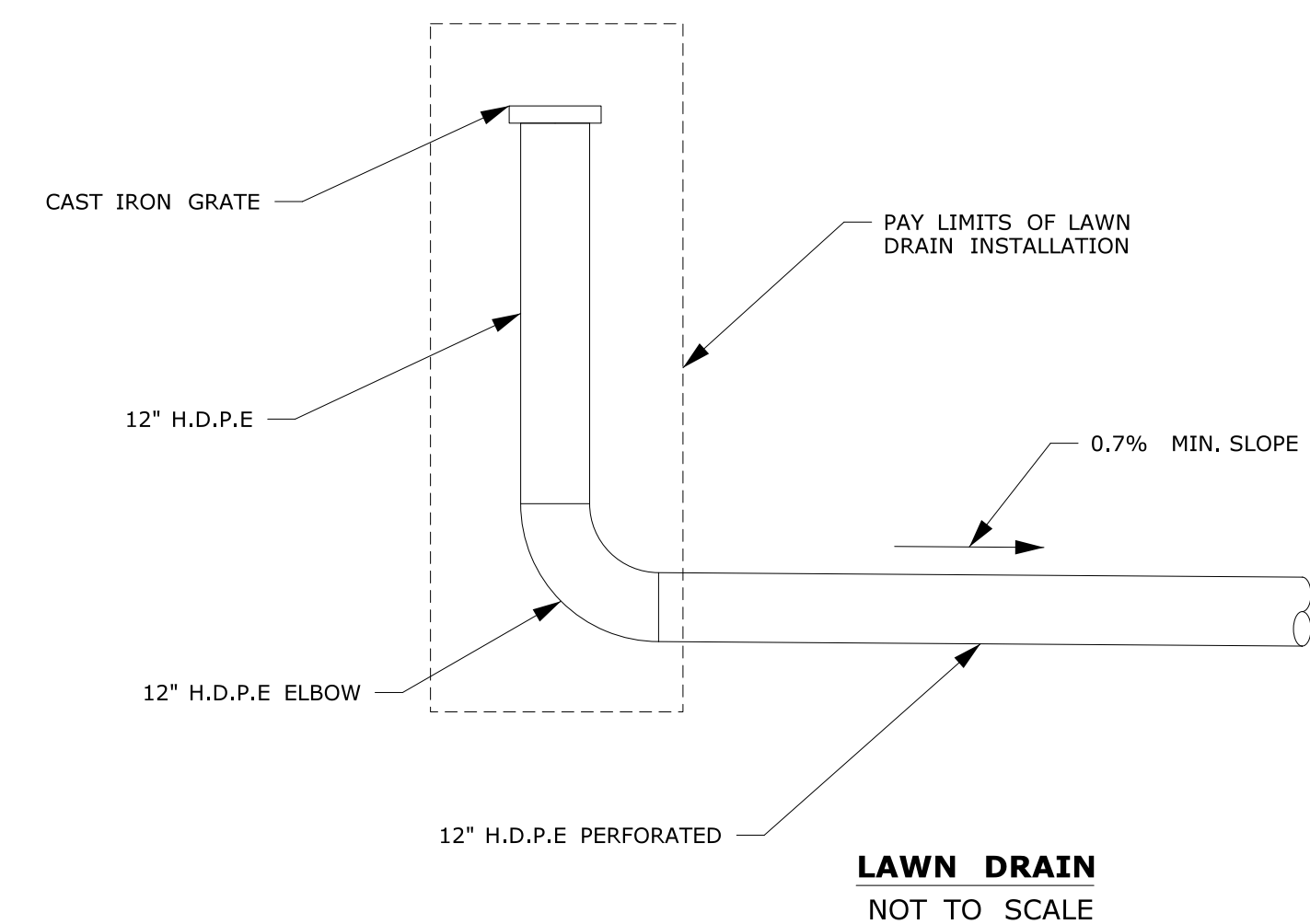
- NOTES:
 1. THE CONTRACTOR SHALL INSTALL A LAYER OF GEOTEXTILE FABRIC PRIOR TO INSTALLING THE LAYER OF GRANULAR FILL.
 2. THE GEOTEXTILE FABRIC SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS & SECTION M.08.01-19 OF THE STANDARD SPECIFICATIONS FORM 817.

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV. DATE REVISION DESCRIPTION SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 6/14/2019	DESIGNER/DRAFTER: B.G.R. CHECKED BY: D.M.C. SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...VHW_MSH_99-114-115_PMT-12.dgn	SIGNATURE/BLOCK: DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN DRAWING TITLE: MISCELLANEOUS DETAIL SHEET	PROJECT NO. 99-114/115 DRAWING NO. PMT-12 SHEET NO.
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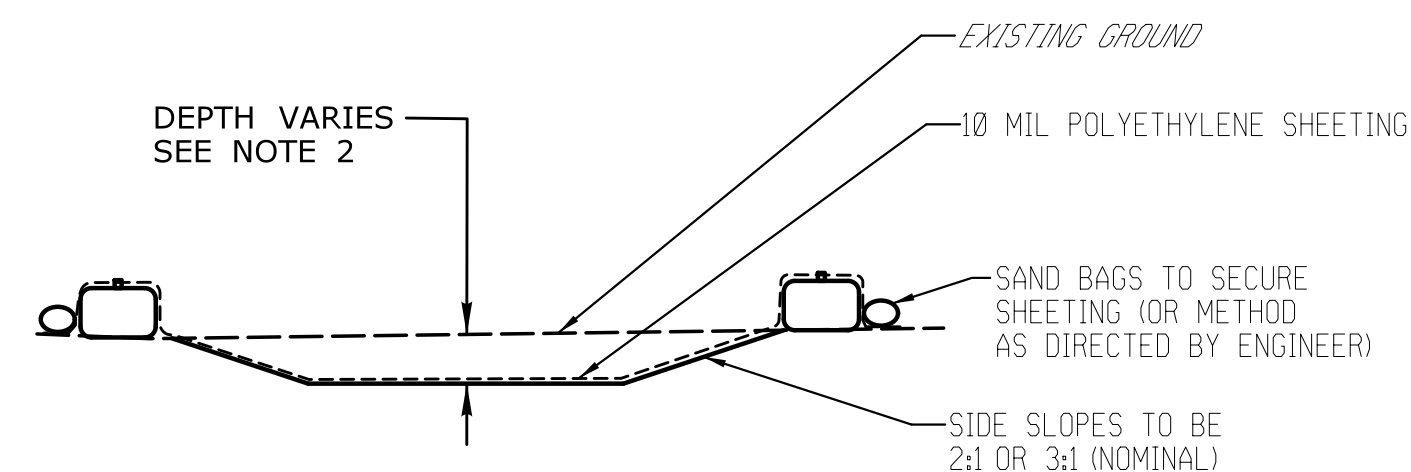
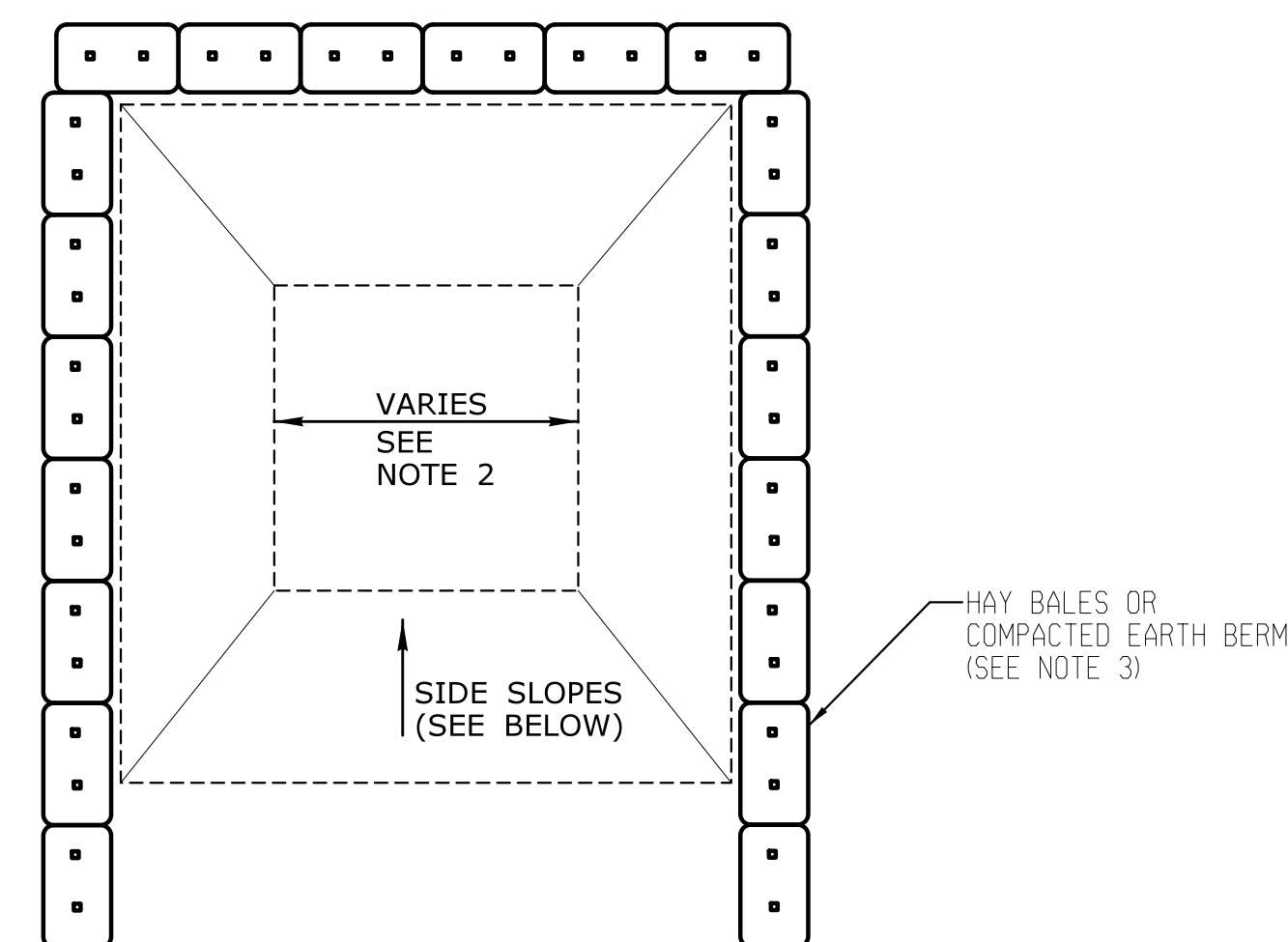


NOTE:
 1. PLACEMENT OF THE ROCK WEIR SHALL BE DIRECTED IN THE FIELD BY THE ENGINEER OR THEIR AUTHORIZED DELEGATE. SEE SPECIAL PROVISION "ROCK WEIR".
 2. FOOTER ROCKS SHALL SERVE AS THE FOUNDATION FOR THE TOP LAYER OF THE WEIR. FOOTER ROCKS SHALL HAVE REASONABLE FLAT TOPS AND BOTTOMS TO ENABLE BETTER PLACEMENT OF THE TOP LAYER OF THE WEIR.



NOTES

1. CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. THE CONCRETE WASHOUT AREA SHALL BE ENTIRELY SELF-CONTAINED.
2. THE CONTRACTOR SHALL SUBMIT THE DESIGN, LOCATION AND SIZING OF THE CONCRETE WASHOUT AREA(S) WITH THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN AND SHALL BE APPROVED BY THE ENGINEER.
 LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED AT LEAST 50 FEET FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE. THE FLOOD CONTINGENCY PLAN MUST ADDRESS THE CONCRETE WASHOUT IF THE WASHOUT IS TO BE LOCATED WITHIN THE FLOODPLAIN.
 SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.
3. SURFACE DISCHARGE IS UNACCEPTABLE. THEREFORE, HAY BALES OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT.
4. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER APPROVED METHOD.
5. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTEGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. (AS REQUIRED BY THE CONSTRUCTION SITE ENVIRONMENTAL INSPECTION REPORT) WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS.
6. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S HEIGHT. THE WASTE CAN BE STORED AT AN UPLAND LOCATION, AS APPROVED BY THE ENGINEER. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS, REGULATIONS, AND GUIDELINES.
7. PAYMENT FOR THIS ITEM IS TO BE INCLUDED UNDER THE GENERAL COST OF THE WORK FOR THE PROJECT, INCLUDING SITE RESTORATION.



CONCRETE WASHOUT AREA
 NOT TO SCALE
 (SEE NOTE 2)

- NOTES:**
1. THE CONTRACTOR SHALL FURNISH, IN CONFORMANCE WITH SECTION 1.06 - CONTROL OF MATERIALS, FORM 817, PRODUCT CUT SHEETS AND DESCRIPTIVE LITERATURE FOR LAWN DRAINS (INCLUDING THE GRATE SIZE AND STYLE) TO THE ENGINEER FOR APPROVAL.
 2. INSTALLATION OF LAWN DRAIN SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS & SECTION 5.07 IN THE STANDARD SPECIFICATIONS FORM 817.
 3. GRATE, ELBOW AND VERTICAL H.D.P.E. PIPE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "LAWN DRAIN."

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: JUNE 12, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 6/14/2019	DESIGNER/DRAFTER: B.G.R.	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:	 DESIGNED BY: BL COMPANIES, INC. 355 RESEARCH PARKWAY MERIDEN, CT 06450	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
					CHECKED BY: D.M.C.		SCALE AS NOTED		FILENAME: ...VHW_MSH_99-114-115_PMT-13.dgn	MISCELLANEOUS DETAIL SHEET	DRAWING NO. PMT-13

IWGP

Attachment D: NDDB Determination

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT

August 27, 2018

Aaron M. Ferraro
State Of Connecticut Department Of Transportation
2800 Berlin Tpke
PO Box 317546
Newington, CT 06111
Aarron.ferraro@ct.gov

Project: CT DOT 099-114/115 Railroad-Highway Grade Crossing Improvements on Routes 7 & 44 in North Canaan
NDDDB Determination No.: 201809617

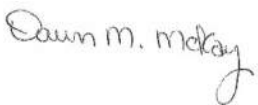
Dear Aaron M. Ferraro,

I have reviewed Natural Diversity Data Base (NDDDB) maps and files regarding the area delineated on the map provided for the proposed CT DOT 099-114/115 Railroad-Highway Grade Crossing Improvements on Routes 7 & 44 in North Canaan, Connecticut. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for two years. Please re-submit a new NDDDB Request for Review if the scope of work changes or if work has not begun on this project by August 27, 2020.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,




Dawn M. McKay
Environmental Analyst 3

Natural Diversity Data Base Areas

NORTH CANAAN, CT

December 2017

 State and Federal Listed Species
& Significant Natural Communities

 Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources. Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

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 shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

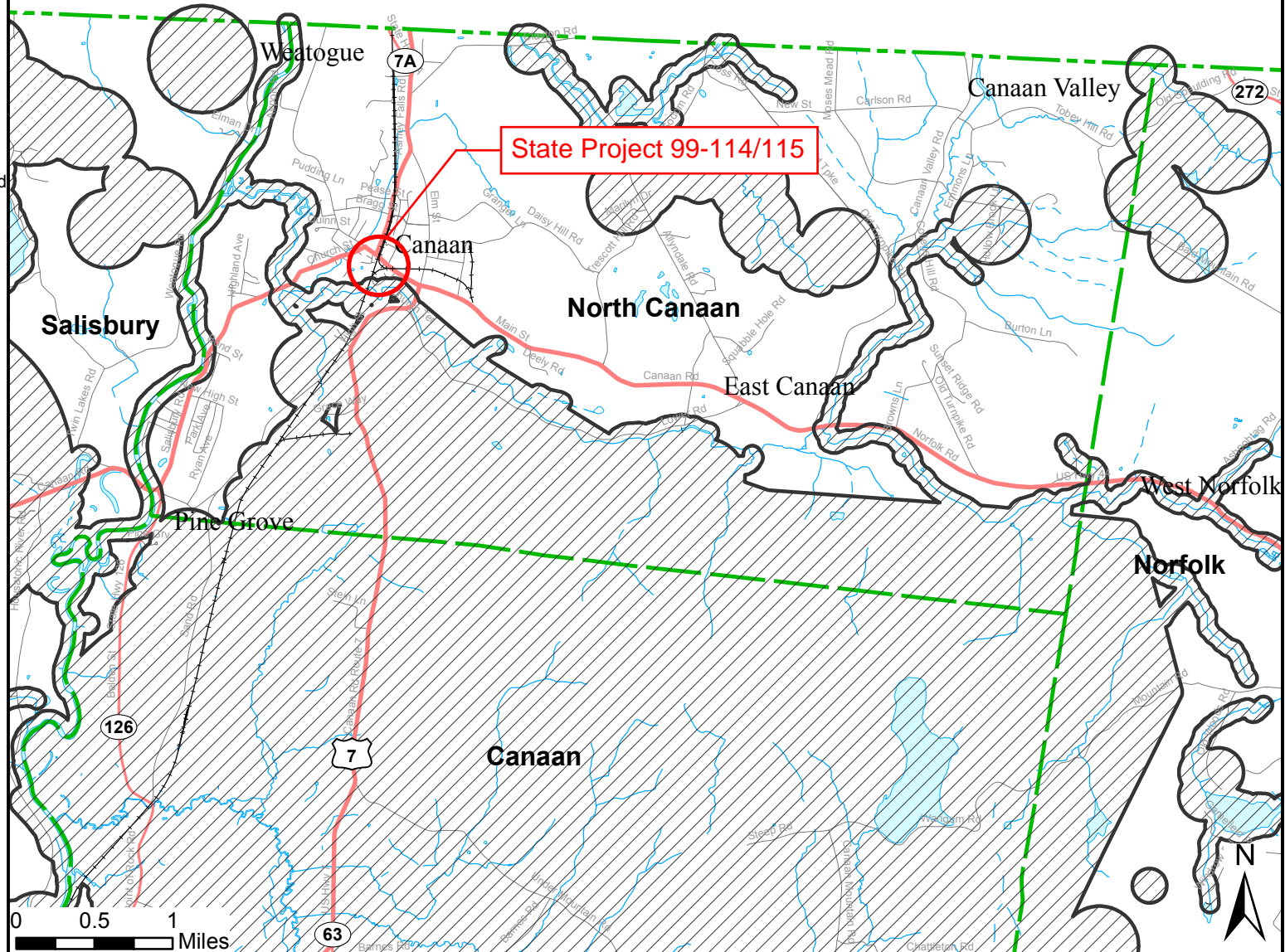
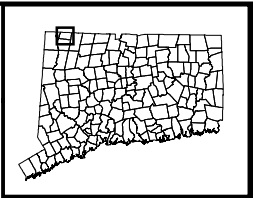
www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.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
Phone (860) 424-3011



Connecticut Department of
Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



IWGP

Attachment F: ACOE Self-Verification Notification Form

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT



**US Army Corps
of Engineers**[®]
New England District

Appendix E: Self-Verification Notification Form

This form is required for all **non-tidal projects in Connecticut**, but **not** required if work is done within boundaries of Mashantucket Pequot or Mohegan Tribal Lands. **Before** work commences, complete **all** fields (write “none” if applicable); attach project plans (not required for projects involving the installation of construction mats only); and any state or local approval(s); and send to:

Permits & Enforcement Branch B
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751
or cenae-r@usace.army.mil

and

CT DEEP
Inland Water Resources Division
79 Elm Street
Hartford, CT 06106-5127

State or local Permit Number: _____
Date of State or local Permit: _____
State/local Project Manager: _____

Permittee: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Contractor: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Consultant/Engineer/Designer: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Wetland/Soil Scientist Consultant: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Project Location (provide detailed description & locus map): _____

Address, City, State & Zip: _____

Latitude/Longitude Coordinates: _____

Waterway Name: _____

Project Purpose (include all aspects of the project including those not within Corps jurisdiction):

Work Description: _____

Work will be done under the following GP(s) (check all that have associated impacts):

 GP. 2 - Repair or maintenance of authorized or grandfathered structures/fills

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 5 - Boat ramps/marine railways

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 6 - Utility line activities (include calculations for each single & complete crossing

- attach additional sheet if necessary)

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 9 - Shoreline and bank stabilization projects

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 10 - Aquatic habitat restoration, establishment and enhancement activities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 11 - Fish & wildlife harvesting, enhancement and attraction devices and activities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 12 - Oil Spill and Hazardous material cleanup

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 13 - Cleanup of hazardous and toxic waste

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 14 - Scientific measurements devices

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 15 - Survey activities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

 GP. 17 - New/expanded developments & recreational facilities

Area of total wetland impacts: temporary _____SF permanent _____SF

Area of total waterway impacts: temporary _____SF permanent _____SF

GP. 18 - Linear transportation projects- wetland crossings only (include calculations for each single & complete crossing - attach additional sheet if necessary)

Area of total wetland impacts: temporary 0 SF permanent 2,120 SF
Area of total waterway impacts: temporary 0 SF permanent 0 SF

GP. 19 - Stream, river & brook crossings – not including wetland crossings (include calculations for each single & complete crossing – attach additional sheet if necessary)

Area of total wetland impacts: temporary _____ SF permanent _____ SF
Area of total waterway impacts: temporary _____ SF permanent _____ SF

GP. 21 - Temporary fill not associated with any other GP activities

Area of total wetland impacts: temporary _____ SF permanent _____ SF
Area of total waterway impacts: temporary _____ SF permanent _____ SF

Does your project include any secondary effects? Yes _____ No

(Secondary effects include, but are not limited to non-tidal waters or wetlands drained, flooded, fragmented, or mechanically cleared resulting from a single and complete project. See Appendix F - Definitions.) If YES, describe here: _____

Proposed Work Dates: Start: August 2019 Finish: October 2020

Your name/signature below, as permittee, confirms that your project meets the self-verification criteria and that you accept and agree to comply with the applicable terms and conditions in the Connecticut General Permits.

Thomas J. Masjary
Signature of Permittee

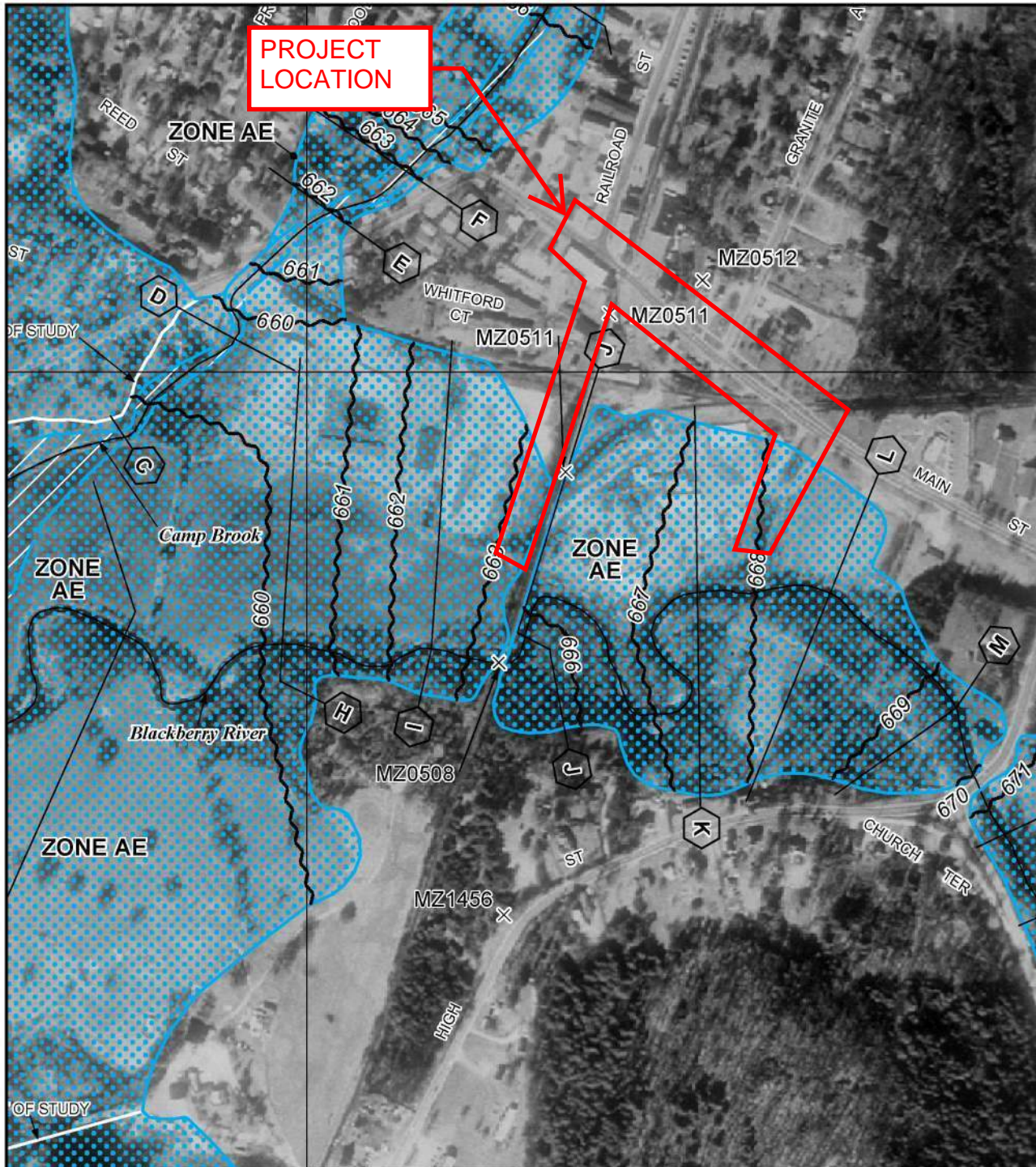
9-4-2019
Date

IWGP

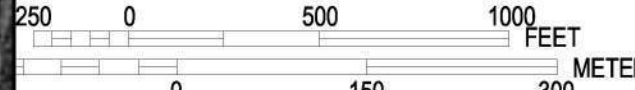
Attachment H: Other Information

Applicant: Connecticut Department of Transportation
Project: State Project No. 99-114/115
Railroad-Highway Grade Crossing Improvements
U.S. Route 7 & 44 (Main Street)
North Canaan, CT

- FEMA Flood Insurance Rate Map (Q1)
- DEEP Inland Wetlands & Watercourses Activity Reporting Form (Q2)
- Photographs (Q3.1-Q3.5)
- SHPO Correspondence
- CTDEEP Fisheries Sign-off
- Inter-agency Notes



MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0014C

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
NORTH CANAAN,
CONNECTICUT
LITCHFIELD COUNTY

PANEL 14 OF 100
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NORTH CANAAN, TOWN OF	090149	0014	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
0901490014C
MAP REVISED
JANUARY 2, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



GIS CODE #: _____
 For DEP Use Only

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Complete, print, sign, and mail this form in accordance with the instructions on pages 2 and 3.

PART I: To Be Completed By The Municipal Inland Wetlands Agency Only

- DATE ACTION WAS TAKEN (use drop-down box): Year Month
- ACTION TAKEN (use drop-down box):
- WAS A PUBLIC HEARING HELD? (select one only) Yes No
- NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
 (print): _____ (signature) _____

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

- TOWN IN WHICH THE ACTION IS OCCURRING: **North Canaan**
 Does this project cross municipal boundaries? (select one only) Yes No
 If Yes, list the other town(s) in which the action is occurring:
- LOCATION: [USGS Quad Map Name](#) (see hyperlink): **Ashley Falls, MA-CT**
[Quad Number](#) (see hyperlink): **210**
 Subregional Drainage [Basin Number](#) (see hyperlink): **6100**
- NAME OF APPLICANT, VIOLATOR OR PETITIONER: **CT Department of Transportation**
- NAME & ADDRESS/LOCATION OF PROJECT SITE: **Railroad-Highway Grade Crossing Improv.
 Housatonic Railroad Co. Crossings
 U.S. Route 7 & 44 (Main Street)**
 Briefly describe the action/project/activity: Temporary Permanent
Installation of Railroad crossing lights, vehicular gates and replacement of existing drainage systems and full-depth roadway reconstruction.
- ACTIVITY PURPOSE CODE (Use drop-down box): N
- ACTIVITY TYPE CODE(S) (Use drop-down box) 10 , 2 , 9 ,
- WETLAND / WATERCOURSE AREA ALTERED [must be provided in acres or linear feet as indicated]:
 Wetlands: **0.049** acres Open Water Body: **0** acres Stream: **0** linear feet
- UPLAND REVIEW AREA ALTERED [must be provided in acres]: **3.31** acres
- AREA OF WETLANDS AND / OR WATERCOURSES RESTORED, ENHANCED OR CREATED: **0** acres
 [must be provided in acres]

PART III: To Be Completed By The DEP

- DATE RECEIVED: _____ DATE RETURNED TO DEP: _____
 FORM COMPLETED: YES NO FORM CORRECTED / COMPLETED: YES NO



Photo No. 1 – Western crossing looking northwest



Photo No. 2 – Eastern crossing looking east



Photo No. 3 – Eastern outlet



Photo No. 4 – Eastern outlet channel



Photo No. 5 – Western drainage trunk looking north



Photo No. 6 – Western drainage trunk looking south



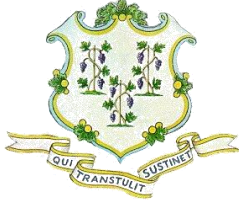
Photo No. 7 – Western outlet



Photo No. 8 – Area of western outlet



Photo No. 9 – Housatonic Railroad over Blackberry River



STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546



Transmittal:

From: Mark McMillan
Date: August 29, 2019
Through: Kimberly Lesay, Transportation Assistant Planning Director
To: Catherine Labadia, Deputy State Historic Preservation Officer

Project: State No.: 99-114 / 115
F.A.P. No.: 6053(010)
Project Title: Railroad-Highway Grade Crossing Improvements
Route 7 & Route 44 (Main Street)
Town: North Canaan

Subject: SHPO Consultation Documentation

Project Description

Using state and federal funds, the Connecticut Department of Transportation (CTDOT) proposes to implement improvements to two at-grade railroad/highway crossings in North Canaan. Originally proposed as two individual undertakings, State Project #99-115 addresses Route 44's crossing of the Housatonic Railroad's main line while Project #99-114 addresses the crossing of Route 44 over the Connecticut Western railroad spur line, which is located 650 feet east of the aforementioned Housatonic line crossing. Because of their proximity, they will be combined as under a single construction project. The work proposed includes the following tasks:

- Modernizing the railroad flashing lights
- Installing a new drainage for each crossing (added to scope in 2013)
- Reconstructing the roadway/rail crossing surfaces
- Introducing a minor signal revision by adding a pedestrian crossing signal button and crosswalk to the eastern leg of Routes 7 & 44
- Installing new sidewalk pavers and luminaires within the project area

In 2007, both projects individually underwent Section 106 review and were found to have No Adverse to Historic Properties.¹

¹ Karen Senich (SHPO) letter to John Carey (CTDOT), *State Project #99-114, Railroad-Highway Grade Crossing, North Canaan* and *State Project #99-115, Railroad-Highway Crossing, North Canaan*, each letter dated October 24, 2007

In 2013, CTDOT's archaeologists investigated the combined State Project #99-114/115 area with regard to impacts caused by drainage improvements. They recommended to the federally-recognized tribes that the undertaking would have no effect on historic or cultural resources because the areas had been previously disturbed. The Mashantucket Pequot Tribal Nation expressed that they had no concerns regarding the project as proposed.²

State Project #99-114/115 is being resubmitted for Section 106 evaluation because more than three years have elapsed since the previous finding was made. In addition, CTDOT received a request from the North Canaan Board of Selectman to revisit the previous *No Adverse Effect* finding.³ At issue is the reconfiguration of the access driveways to the "Depot Plaza" located between the Union Depot station and Main Street (Route 44). CTDOT will reevaluate the previous Section 106 finding in light of the information provided.

Technical Review of Project

State Projects #99-114 and #99-115 address at-grade road crossings of the Housatonic rail line and Connecticut Western rail spur, respectively. In addition to the work at the crossings, the combined project includes roadway and sidewalk improvements to the segment of Route 44 between the two crossings. This work will provide standardized vehicle lane and shoulder widths within the project area and make spot improvements to sidewalks. The roadway will be widened to accommodate 11-12 foot wide travel lanes with 5-foot wide shoulders. This corrects the existing substandard conditions, but does create new lanes or add capacity to the road.

The Area of Potential Effect (APE) of this undertaking follows a 1,200 foot-long segment of Route 44 that begins at the intersection of Route 44 (Main Street) and Route 7 (Railroad Street). The eastern terminus of the project is 220 feet east of Route 44's at-grade crossing of the Connecticut Western railroad line. Within the project area, the following ten properties will be subject to right to grade and right to reconstruct driveway impacts. Unless otherwise noted, all of the properties are within the Canaan Village Historic District.

76 Main Street

Bordered to the west by the Housatonic Railroad line and the south by Main Street (Route 44) is a 1-story "Rite Aid" pharmacy. The building was constructed in 1984 and is situated on 0.62 acre rectangular parcel. It is a non-contributing element of the Canaan Village Historic District.

75 Main Street "Union Depot"

This 0.92 acre parcel is bounded to the west by the Housatonic Railroad line, to the north by Route 44 and to the south by the alignment of the Connecticut Western rail line (no longer extant).

² Kathleen Knowles, (Mashantucket Pequot TPHO) email to Glenn Elliot (FHWA), *State Project #99-114 & 99-115 – Improvements to Two Rail Crossings of Route 7/44, North Canaan*, dated May 14, 2013.

³ Geoffrey Drury to Mark McMillan, (CTDOT), dated March 15, 2019 (Appendix A).

At the southwest corner of the parcel is the Union Depot building, which a contributing element of the Canaan Village Historic District and individually listed on the National Register of Historic Places (NRHP).⁴ A spur line of the Connecticut Western rail cuts through the parcel from the east and curves northward in front of the station before join the Housatonic main line (Image 1).

The paved area between the curving rail line and Route 44 is not mentioned in the NRHP Nomination form for Union Depot, nor is it specifically discussed in the Canaan Village Historic District nomination. It is identified as “Depot Plaza” in a letter CTDOT received from the Board of Selectman that describes the plaza as architecturally and aesthetically important to the setting of Union Depot.

The plaza is semi-circular swath of land connected to Route 44 by two driveways. Between the driveways is a semi-elliptical island defined by a concrete retaining wall to the north and a curving southern arc lined with a brick paver sidewalk with a granite curb. There is no documentation as to whether the plaza and island were a designed element of the overall Depot Station or if they evolved in response to use patterns over time.

An examination of the Sanborn Fire Insurance maps and from 1896, 1901, 1909, and 1923 and available archival photographs suggest that the configuration of the plaza area shifted several times. The plaza area’s access to Main Street, the buildings and railroad features (signals, outbuildings) located on it, and even the appearance and shape of the island has developed over time (Image 2). Today, the island is the site of railroad elements like the Also on the property is a crossing tender’s shanty and semaphore signal (ca. 1910) that were relocated from the west side of the tracks in 1973 (Image 3). A free-standing clock was installed on the island in 2008.

Archival photographs show the plaza area as being packed soil/gravel and later paved. It is now fully paved for use by vehicles for parking, delivery trucks, and busses. The asphalt is striped to designate parking spaces that are grouped in two locations: an array of 17 spaces that are perpendicular to the railroad track and a group of 4 parking spaces that are parallel to the southern curb of the island. Pavement markings also define the northwest entrance driveway to the plaza and no standing areas around the island.

Despite its utilitarian appearance, the parking area provides an open space that is the used for community event such as musical performances and the annual celebration of Canaan Railroad Days.

The project will install sidewalk pavers at the entrances to the western driveway and around the island. These are approximately the same size and shape as the painted median and no standing zones.

⁴ National Park Service, *Union Depot* (NPS #72001317), listed on April 24, 1972.

Pavers will be installed on the elliptical island to extend its footprint northward and formalize the off-street parking area. The existing retaining wall and features of the island will remain as they are currently (Figure 1). The proposed changes will not take any parking spaces from the plaza nor will they limit the overall size of the open space. In light of the changes to the plaza over time, the proposed paving changes do not



Figure 1: Proposed alterations at 75 Main Street. The yellow highlighted areas show the approximate size and location of pavers that will define the entrances and the semi-elliptical island at Depot Plaza.

62 Main Street

On the north side of Main Street is a 2-story brick mixed use commercial building situated on a 0.37 acre parcel. The building was constructed in 1951 and is a non-contributing element of the district. Includes detached commercial garage, 2 small utility sheds.

58 Main Street

This 0.73 acre parcel features three structures that were built for the Episcopalian church. They are a 1-story stone chapel that was built in 1845, a 1-story wood-frame fellowship hall that was built ca. 1900 and a free-standing stone bell tower that was built in 1931. The property is a contributing element of the Canaan Village Historic District.

The project will require right to grade the southern end of the parcel and also proposes to remove the existing asphalt driveway that connects the church with Route 44 (Image 3). The driveway path will be filled with topsoil and the turf reestablished. There is an existing concrete sidewalk that runs parallel to Route 44 that will remain in place when the driveway is removed.

53 Main Street “Collin’s Diner”

Located at the eastern side of Depot Plaza is a 0.13 acre parcel on which is a Streamline Moderne diner. The diner was manufactured by the Jerry O’Mahoney Company in 1942 and is a contributing element to the historic district. The project will reconstruct the driveway behind (east side) of the diner.

49 Main Street

This 0.32 acre parcel was original constructed as a 1-story service station that was designed in Tudor Revival style. It was later converted to office/commercial use and is home to an insurance company. The property is a contributing element to the Canaan Village Historic District. It will be subject right to grade and right to reconstructs its driveway.

37 Main Street

Abutting the south side of Route 44 and the east side of the Connecticut Western rail line is a 0.29 acre parcel that is largely vacant. At the western end is a 1-story restroom building that was built in 2005. The building is only visible from the south, as there is a rail boxcar positioned in front of the building. The property is outside of the Canaan Village Historic District.

10 Granite Avenue

This property is located at the southwest corner of Main Street and Granite Avenue. It is a 2.3 acre parcel on which is a 1-story medical office that was constructed in 1983. The property is located outside the Canaan Village Historic District.

2 Gandolfo Drive

Abutting the southeast corner of Route 44 and the Connecticut Western rail line is a 6.7 acre parcel. On it are six buildings that were constructed between 1960 and 1985. They include a small office building, a storage garage, and an auto center. The property is outside of the Canaan Village Historic District. The project will require right to reconstruct the driveway of this property.

Block 15 / Lot 016-1

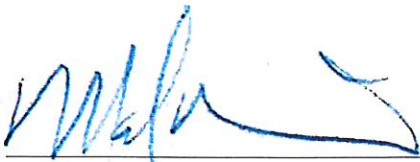
This 1.9 acre parcel abuts the southeast end of the APE. It is owned by the Town of North Canaan and features a 1-story wood framed pavilion structure. The property is outside of the Canaan Village Historic District.

Except where mentioned in the previous sections of this document, the project does not anticipate creating ground-disturbing activities beyond the existing road right of way, which was previously assessed by CTDOT archaeologists and found to have no potential for archaeological resources. Soils in the project APE show evidence of previous disturbance caused by the construction of the roadway and railroad, installation of drainage and subterranean utility lines and natural events such as the reported flooding of the area. As proposed, the undertaking does not pose a foreseeable risk to archaeological resources within the project area.

Recommendation

Qualified staff from CTDOT's Office of Environmental Planning have reviewed the project design documents for State Project #99-114/115 in North Canaan. They note that the overall scope of work has not significantly changed since the undertaking was last reviewed in 2013.

Taking into consideration the concerns expressed by the Board of Selectman regarding the impacts of this project, staff recommend that the proposed reconfiguration of the driveways and installation of sidewalk improvements within the project APE will not significantly diminish the overall historic integrity of either Union Depot or the Canaan Village Historic District. As such, they recommend that State Project #99-114/115 will have No Adverse Effect on Historic Properties.



Mark McMillan
National Register Specialist
Office of Environmental Planning
Connecticut Department of Transportation

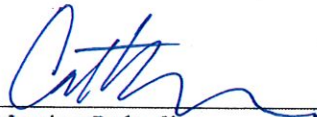
SHPO Use Only

Based on the information provided to the State Historic Preservation Office, we:

Concur Do Not Concur (*additional comments attached*)

with CTDOT's Office of Environmental Planning's opinion that
State Project #99-114/115 in North Canaan will cause:

No Adverse Effect to Historic Properties



Catherine Labadia
Deputy State Historic Preservation Officer

9/4/19

Date



Department of Economic and
Community Development

Connecticut
still revolutionary

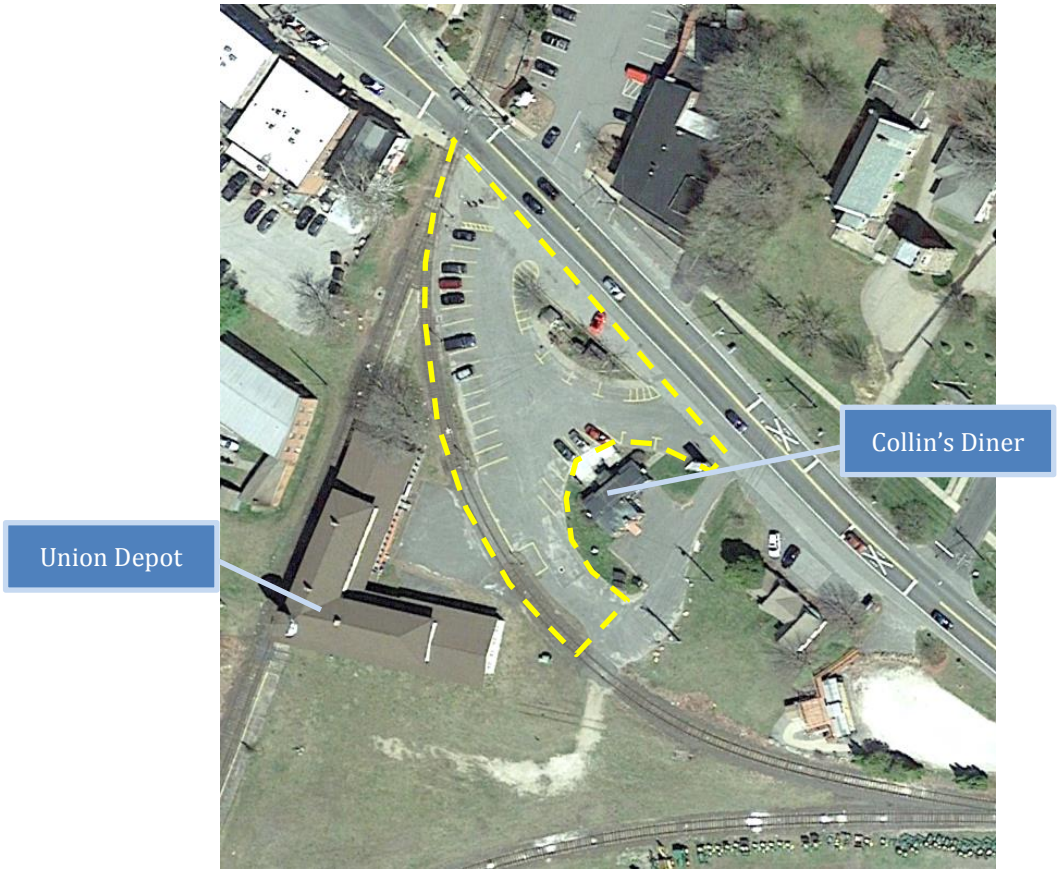


Image 1: Aerial view of Depot Plaza (outlined in yellow). Union Depot station is labeled for reference.

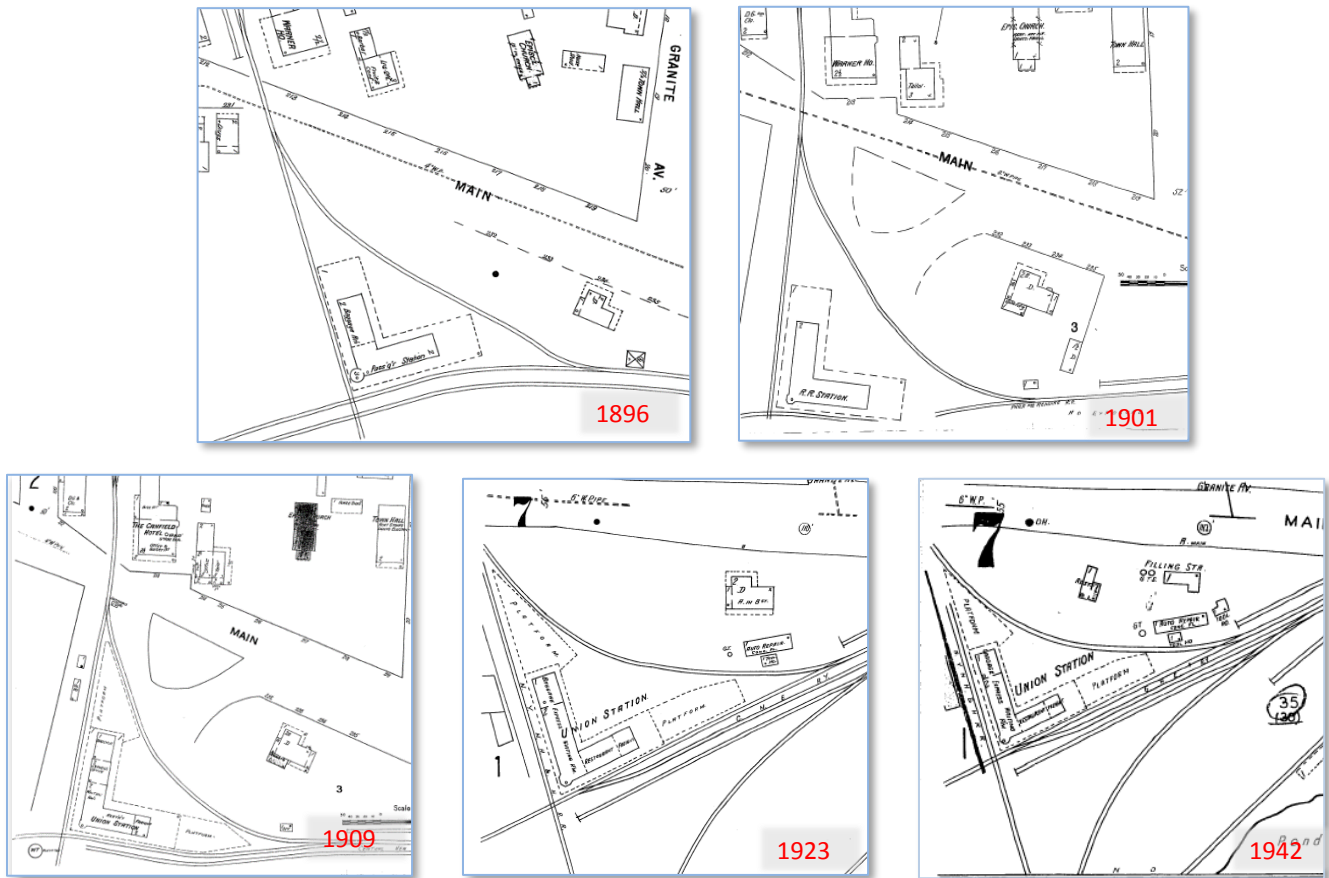


Image 2: Sanborn Fire Insurance Maps of Union Depot between 1896-1942.

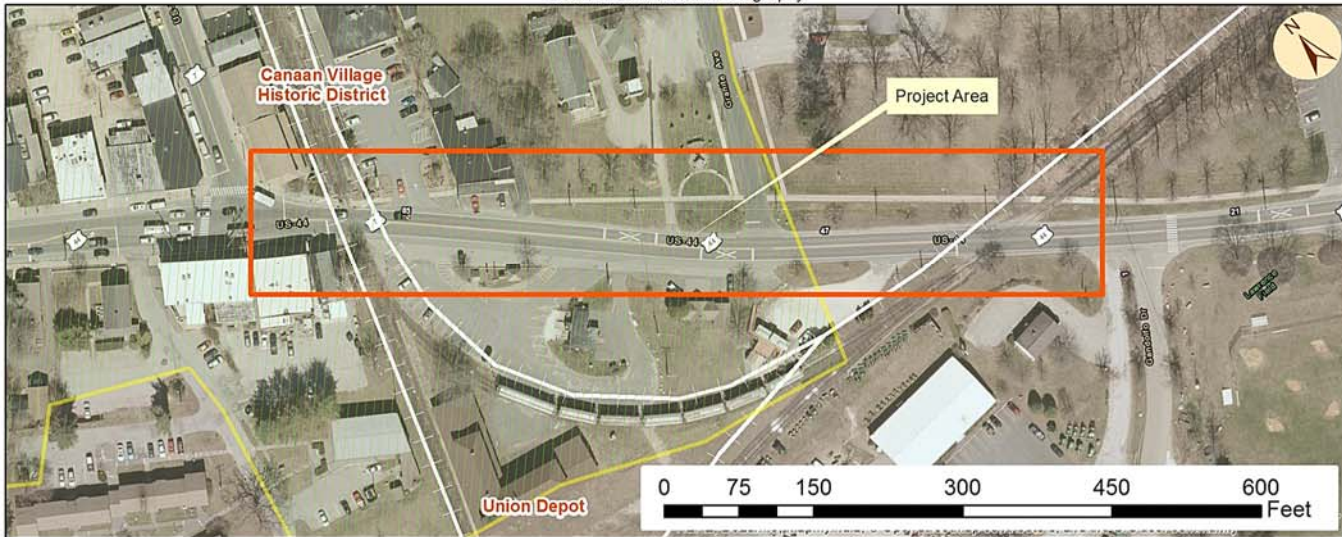


Image 3: Semi-elliptical island at Union Depot.

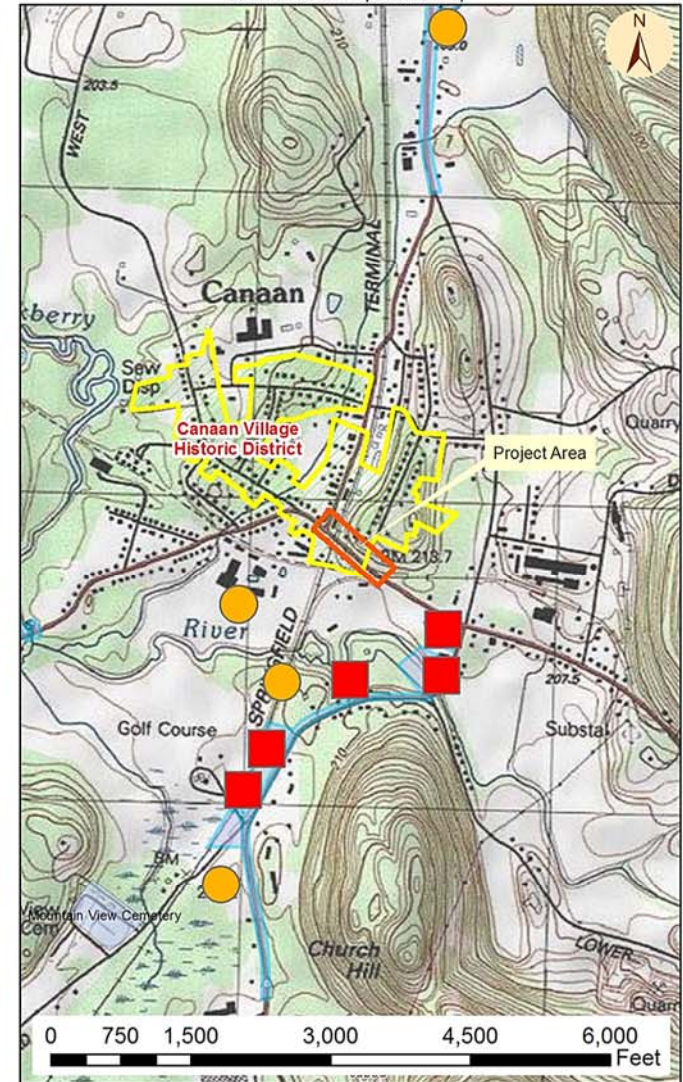


Image 4: Driveway that will be removed from 53 Main Street. In place of the existing asphalt, the path will be filled with topsoil the turf re-established. The existing concrete sidewalk will remain in place.

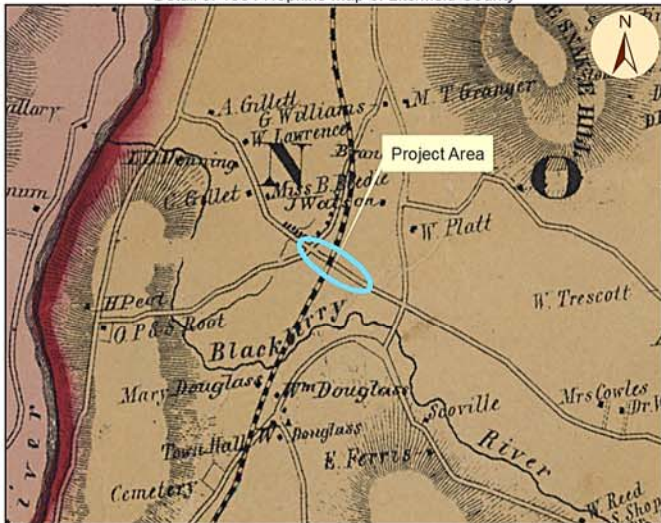
Detail of 2018 Aerial Photography



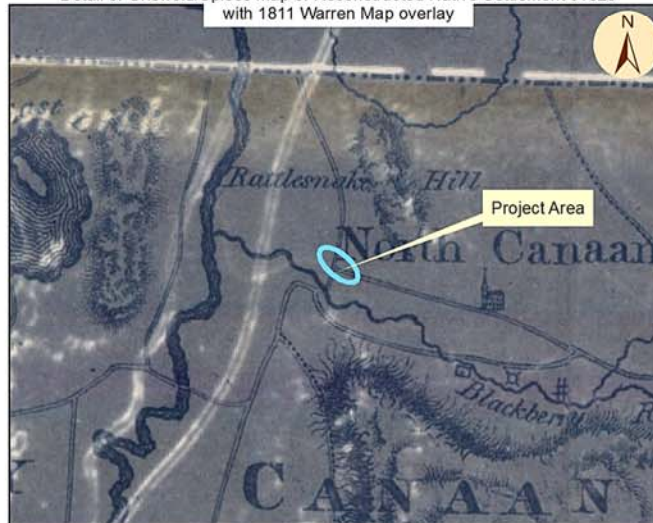
Detail of USGS Topo Quad Map



Detail of 1854 Hopkins Map of Litchfield County



Detail of Griswold/Spies Map of Reconstructed Native Settlement c1625 with 1811 Warren Map overlay



**Office of Environmental Planning
Environmental Review - Historical and
Archaeological Resources**

This product was created using TeleAtlas Information
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State Project No. 99-114/115
F.I.D.#: 6053(010)
Railroad-Highway Grade Crossing
Improvements at Route 7 & Route 44
North Canaan

Predicted Archaeological Soil Sensitivity

	High		Low
	Moderate		Poor
	Variable		Unknown

National Register Historic District

Cemetery/ 4(f) Resource

Approximate Location of Archaeological Site

Historic

Pre-Contact

Unknown



August 30, 2018

McMillan, Mark J.

From: Geoffrey Drury <GDrury@drurypatz.com>
Sent: Friday, March 15, 2019 1:49 PM
To: McMillan, Mark J.
Cc: James, LeVance H.; Schilling, Barry A.; selectman@northcanan.org; Geoffrey Drury; George Johannesen; Christian Allyn; cppbonbon@hotmail.com; Tom Zetterstrom; 'Patrick Sullivan'; CWigren@cttrust.org; briva@calindell.com; deh1047@gmail.com; Paul Koneazny (paul@curtisinsurance.com); kathrynwboughton@gmail.com; cfdstupt@att.net; missbunny@snet.net; Anthony J. Nania
Subject: DOT Grade Crossing Project Nos. 099-114/115 - Request for updated environmental/historical review

Dear Mr. McMillan:

This request for an updated environmental review relates to DOT Grade Crossing Project Nos. 099-114/115 in the Town of North Canaan. It is being addressed to you by the North Canaan Board of Selectmen and the Warden of the Canaan Fire District, as the historian in the DOT Office of Environmental Planning with responsibility for environmental reviews of State construction activities impacting historical and cultural resources in Connecticut.

This project has been on the DOT drawing boards for many years. It involves the rebuilding of a grade crossing close to the intersection of Routes 7 and 44 in downtown North Canaan, including the installation of crossing gates and the re-engineering of drainage to solve long-standing flooding problems at the crossing. It is our understanding that an environmental review of the project conducted in 2007 concluded that it would have no adverse historical or archaeological impact, and that an update of some sort in 2013 came to the same conclusion.

We are requesting that the DOT revisit that conclusion and conduct a further updating environmental/historical review of the project. It has been 12 years since the original review was undertaken, and six years since the partial update. In that time the project has evolved into something very different from its original conception, with expanded project limits and construction impacts well beyond the grade crossing that was its first focus. In its present form it is not the same project as the one reviewed in 2007 and 2013.

We are particularly concerned about the impact of the expanded project on the historic Depot Plaza just to the south and east of the grade crossing that is to be upgraded. That plaza is included in the area designated in 1990 in the National Register as the Canaan Village Historic District, and has for well over 100 years served as the economic, architectural and aesthetic heart of the village downtown.

During the long heyday of the two railroads that gave North Canaan its historic Canaan Union Depot, the Depot Plaza and the Depot itself functioned together as a commercial crossroads for freight and passenger service for the whole of the northwestern part of the state and for portions of Massachusetts and New York as well. Architecturally and aesthetically the plaza framed and set off the Depot, with a long arc of track across the front of the building defining the plaza's southwesterly edge and with wide, sweeping entrances off Route 44 providing welcoming and practical access for everything from the largest freight vehicles to the countless pedestrians passing to and from the Depot and the trains. An elliptical island separating the two entrances, facing the Depot across the open plaza, further served to define the distinctive shape and character of the entire

space. This ellipse later became the natural location for a sheltered bus stop, where passengers boarded the buses to and from Hartford that began running when the east-west railroad ceased operations.

With the decline of the railroads the Canaan Union Depot was adapted internally to a range of other commercial uses. Its historic exterior, however, remained essentially unmodified, and the plaza in front of it changed not at all. (Ample photographic documentation is available back to the beginning of the last century if that would be helpful in your review.) Following a tragic fire in 2001 the Depot has been carefully restored to its former glory, and now houses a thriving craft brewery and an exciting railroad history museum being developed by the Connecticut Railroad Historical Association, which holds title to both the Depot and the Depot Plaza. The plaza itself is now leased by the Town for municipal parking, but continues to function as a commercial and civic gateway and gathering point for the community.

The historic Collin's Diner, listed along with the Depot in the National Register of Historic Places, sits directly across the plaza from the Depot, where it has served both local patrons and tourist visitors for more than 75 years. Semi-trailers use the plaza to access the new brewery, and to make deliveries to nearby businesses lacking the space to accommodate large vehicles. Outdoor musical performances and other community activities are staged in the plaza every summer during the town-wide celebration of Canaan Railroad Days. When North Canaan celebrated the pitching victories of native son Steve Blass in the 1971 World Series, the Depot Plaza (rechristened Steve Blass Plaza for the occasion) was the only logical place for the cheering crowds to gather. And as noted above, the plaza (with a shelter constructed with volunteer labor by local Boy Scouts and with Collin's Diner to provide refreshment and a place to sit) has long served as a convenient off-highway bus stop for the long-haul buses that pass through the town.

Through all of this the Depot Plaza has anchored the village center in unchanged form for more than a century. Now, however, the DOT's expanded grade crossing project threatens to change both the visual and functional character of the plaza, and in doing so to make fundamental changes in how the plaza relates to the town and to the flow of commerce and people in and through it. As the latest iteration of the project plans now makes clear, in conjunction with its grade crossing work the DOT is proposing to severely restrict access to the plaza by drastically narrowing and straightening the existing entrances and limiting in and out traffic to a one-way flow, effectively preventing access by semi-trailers, buses and other large vehicles.

Whatever the intention, this will have the effect of changing an open and integral part of our town center into a functional backwater, a plaza in name only, serving primarily as a small-vehicle parking lot that will not look the same, feel the same or function in the same manner as its historical predecessor. Sweeping entrances may be disfavored by traffic engineers and their draftsmen, but in this case they are an integral part of the Depot Plaza's aesthetics and history, as well as essential to the viability of the plaza as an easily-accessed commercial hub for surrounding businesses – not to mention their importance for bus and emergency vehicle access.

We consider the Depot Plaza in its current, long-established configuration to be a historical resource deserving of preservation for the aesthetic, cultural and functional reasons outlined above. The changes now proposed as part of the DOT's grade crossing project deliberately sever the physical connection between the plaza and the surrounding village downtown area, and significantly degrade the value of that resource to our community. It is our hope that a new and historically sensitive environmental review of this aspect of the project's impact will encourage the project engineers to rethink their approach to North Canaan's Depot Plaza, and will result in preserving the historical integrity of the plaza without compromising the success of the grade crossing upgrades to which the project is intended to be addressed.

Very truly yours,

Charles P. Perotti, First Selectman
Christian P. Allyn, Selectman

Craig Whiting, Selectman

Anthony J. Nania, Warden
Canaan Fire District



Connecticut Commission on Culture & Tourism

October 24, 2007

Historic Preservation
& Museum Division

Mr. John F. Carey *CSH*
Traffic Engineering
ConnDOT
2800 Berlin Turnpike
Newington, CT

59 South Prospect Street
Hartford, Connecticut
06106

(v) 860.566.3005
(f) 860.566.5078

Subject: Route 44 at Route 7
Railroad-Highway Grade Crossing
North Canaan, CT
ConnDOT #99-114

Dear Mr. Carey:

The State Historic Preservation Office has reviewed the above-named project. This office notes that the proposed transportation improvements are located in immediate proximity to the Canaan Village Historic District, which is listed on the National Register of Historic Places.

In the opinion of the State Historic Preservation Office, the proposed grade crossing improvements will effect the historic and architectural character of the Canaan Village Historic District. However, this office believes that the proposed undertaking will constitute no adverse effect upon historic, architectural and archaeological resources associated with this National Register historic district.

This State Historic Preservation Office appreciates the opportunity to have reviewed and commented upon the proposed project.

For further assistance, please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

Karen Senich
Deputy State Historic Preservation Officer

cc: Ms. Cynthia Holden/ConnDOT
Mr. Robert Turner/FHWA

RECEIVED

OCT 30 2007

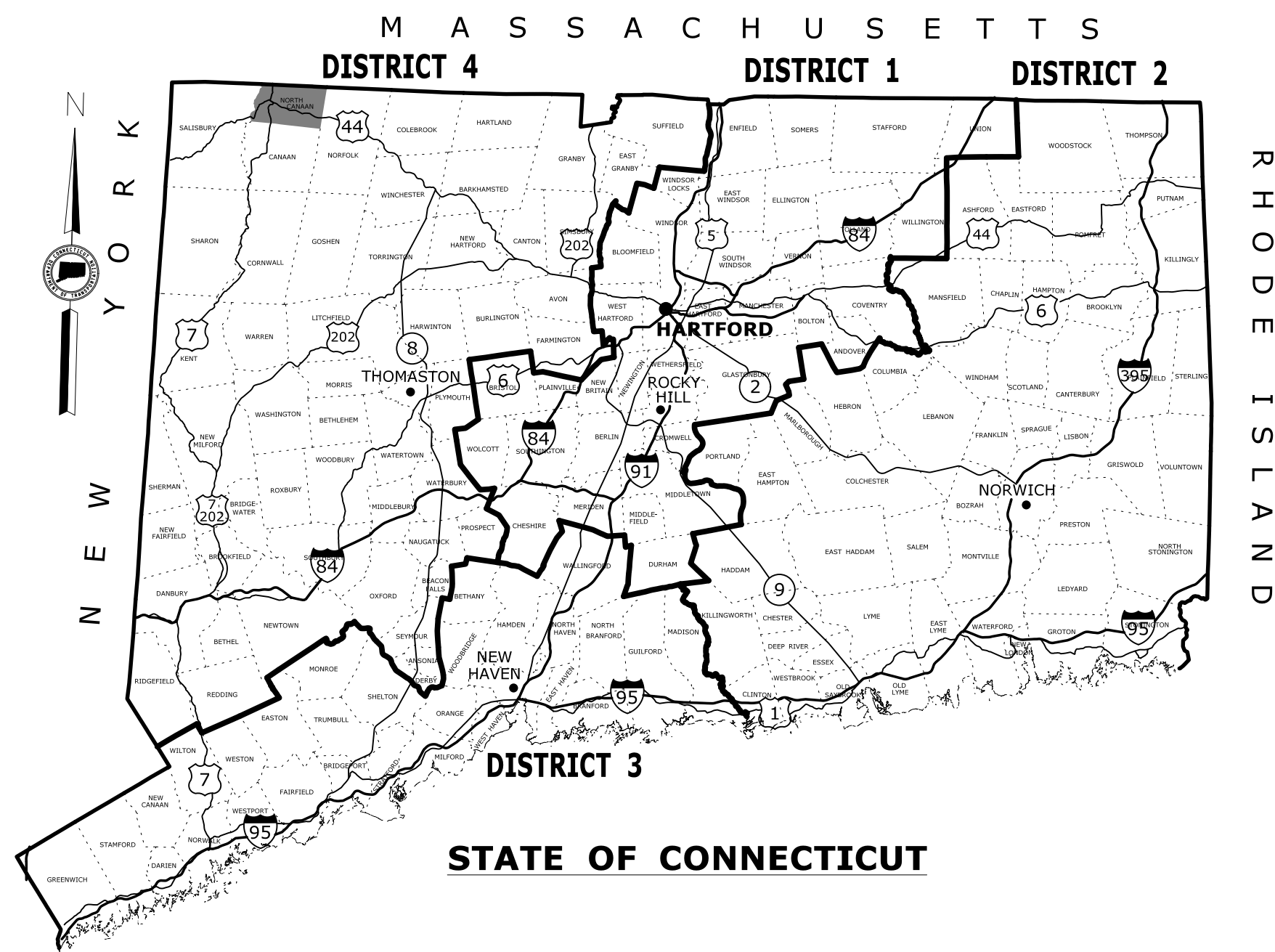
TRAFFIC ENGINEERING

ENVIRONMENTAL PERMIT PLANS

STATE PROJECT 99-114/115

U.S. ROUTE 7 & 44 (MAIN STREET)

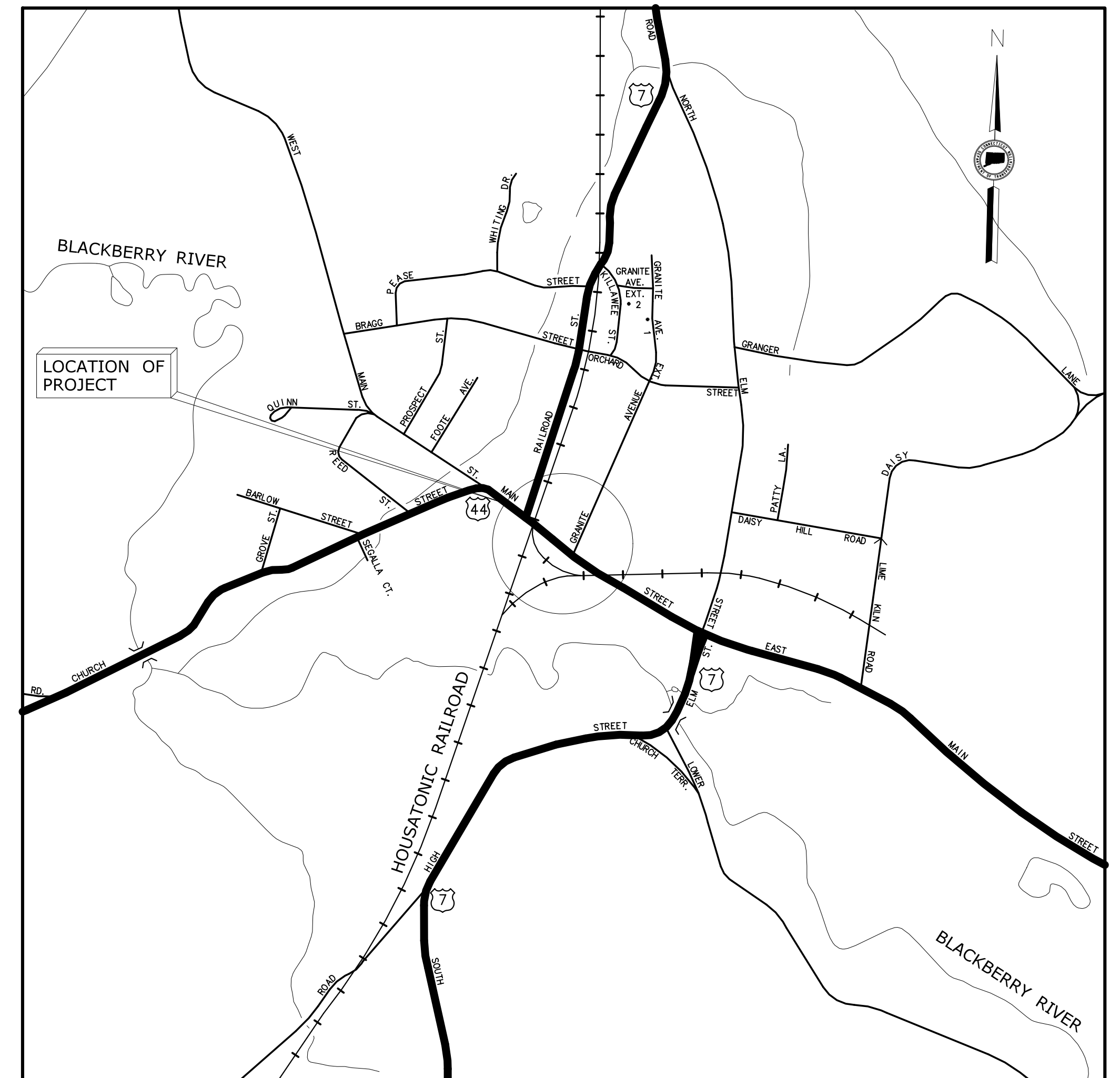
TOWN OF NORTH CANAAN



GENERAL NOTES:

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND ACOE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLAND AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1983
VERTICAL DATUM BASED ON NAVD OF 1983
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW BEST MANAGEMENT PRACTICES (BMP) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.

Steve Cephal
CTDEEP/Fisheries



LOCATION PLAN
NOT TO SCALE

LIST OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
PMT-01	TITLE SHEET
PMT-02	INDEX MAP
PMT-03 - PMT-08	GENERAL SITE PLAN
PMT-09 - PMT-11	IMPACT PLAN
PMT-12 - PMT-13	MISCELLANEOUS DETAILS

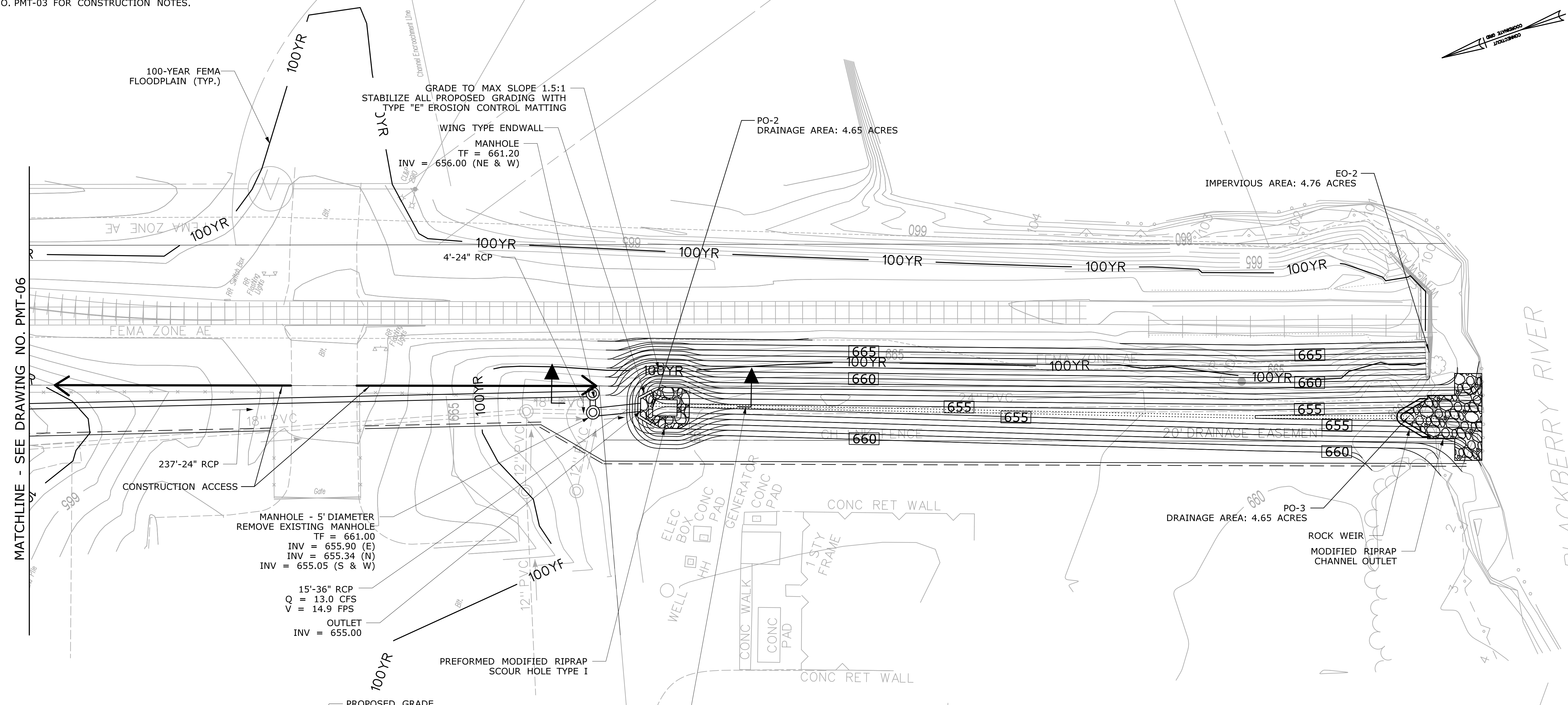
ENVIRONMENTAL PERMIT PLANS

PLAN DATE: APRIL 23, 2019

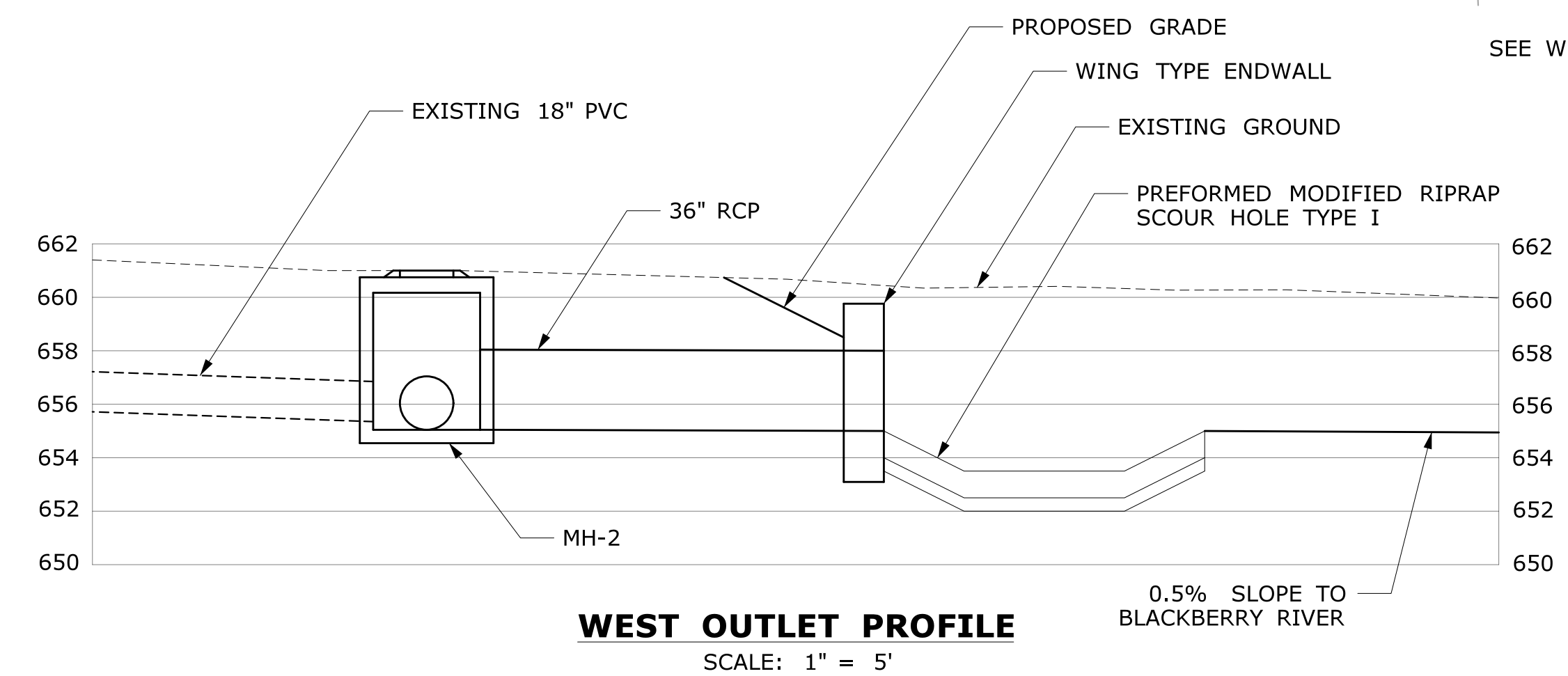
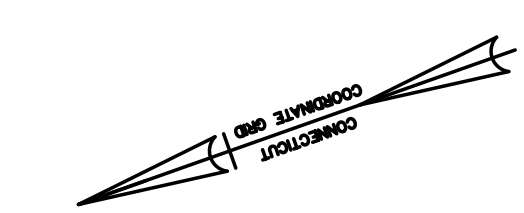
		DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET SCALE 1"=40'	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION <small>Filename: ...VHW_MSH_99-114-115_PMT.dgn</small>	SIGNATURE/ BLOCK: 	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-01 SHEET NO.	
REV. DATE REVISION DESCRIPTION SHEET NO.	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.							DRAWING TITLE: TITLE SHEET

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



MATCHLINE - SEE DRAWING NO. PMT-06



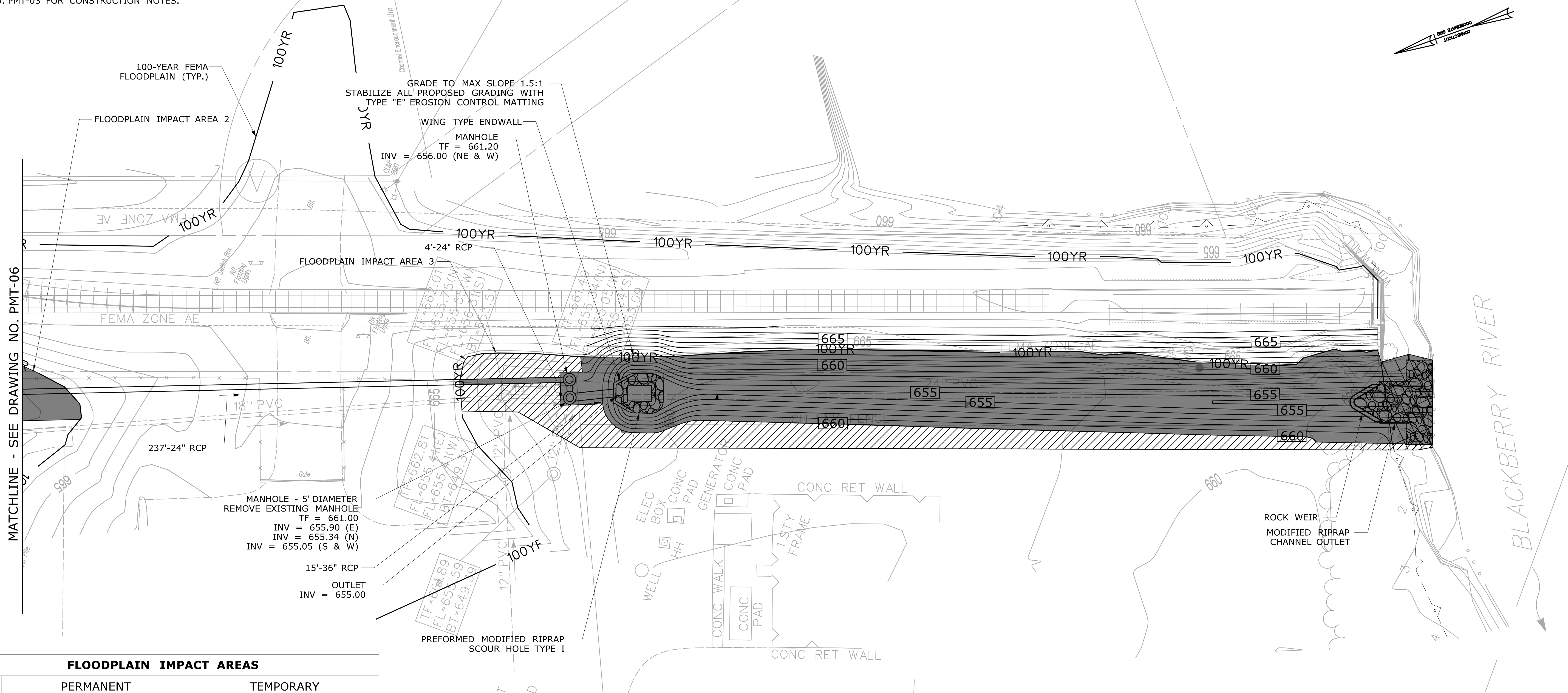
Steve Cephal
CTDEEP/Fisheries

ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20' Filename: ...VHW_MSH_99-114-115_PMT-07.dgn	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN DRAWING TITLE: GENERAL SITE PLAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-07 SHEET NO.
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 4/23/2019		

CONSTRUCTION NOTES

1. SEE SHEET NO. PMT-03 FOR CONSTRUCTION NOTES.



FLOODPLAIN IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	1,080	0.025	0	0
2	3,330	0.076	0	0
3	9,450	0.217	3,280	0.075
4	6,230	0.143	180	0.004

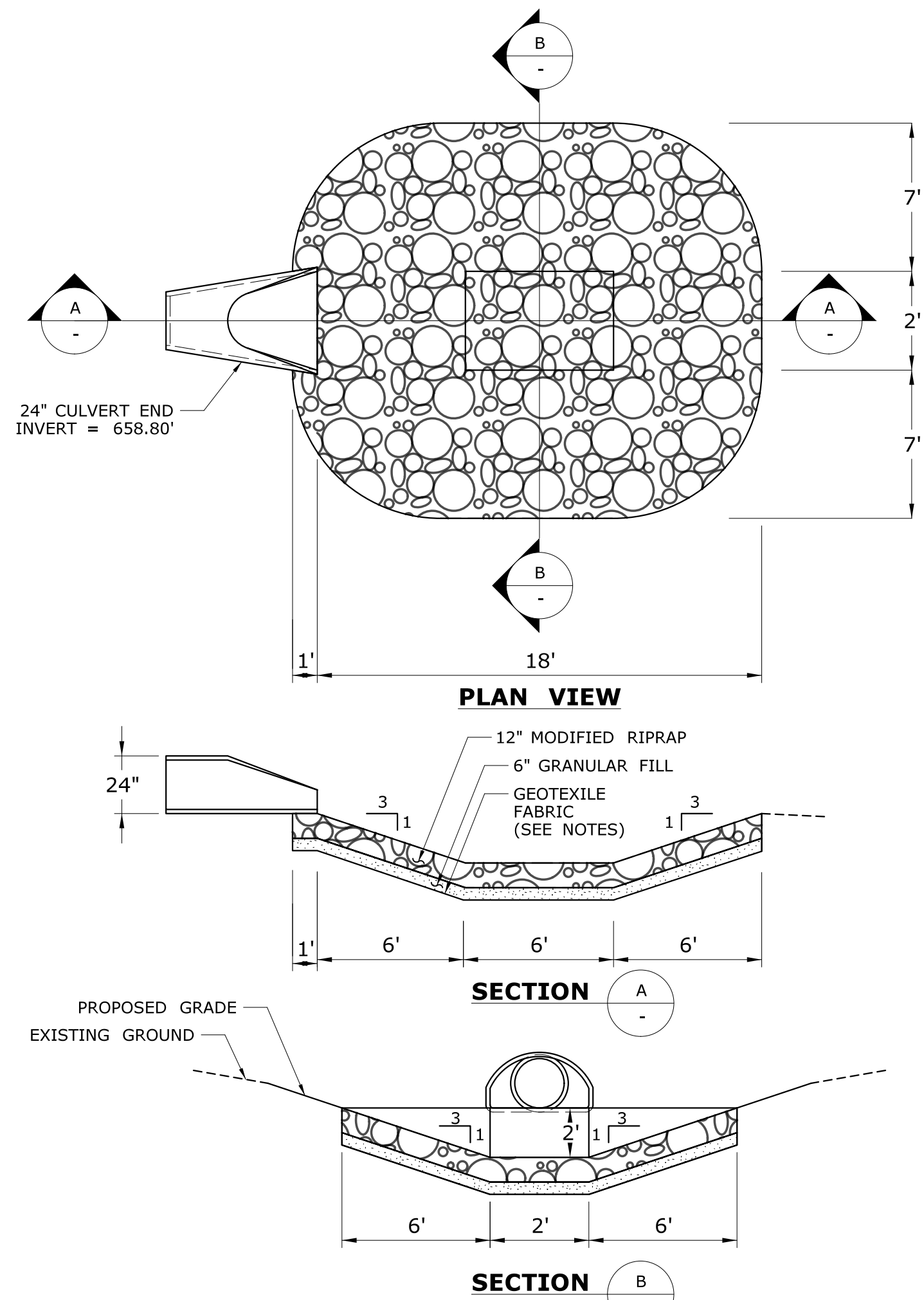
WETLAND IMPACT AREAS				
AREA #	PERMANENT		TEMPORARY	
	AREA (SF)	AREA (AC.)	AREA (SF)	AREA (AC.)
1	610	0.014	0	0

Steve Cephal
 CTDEEP/Fisheries

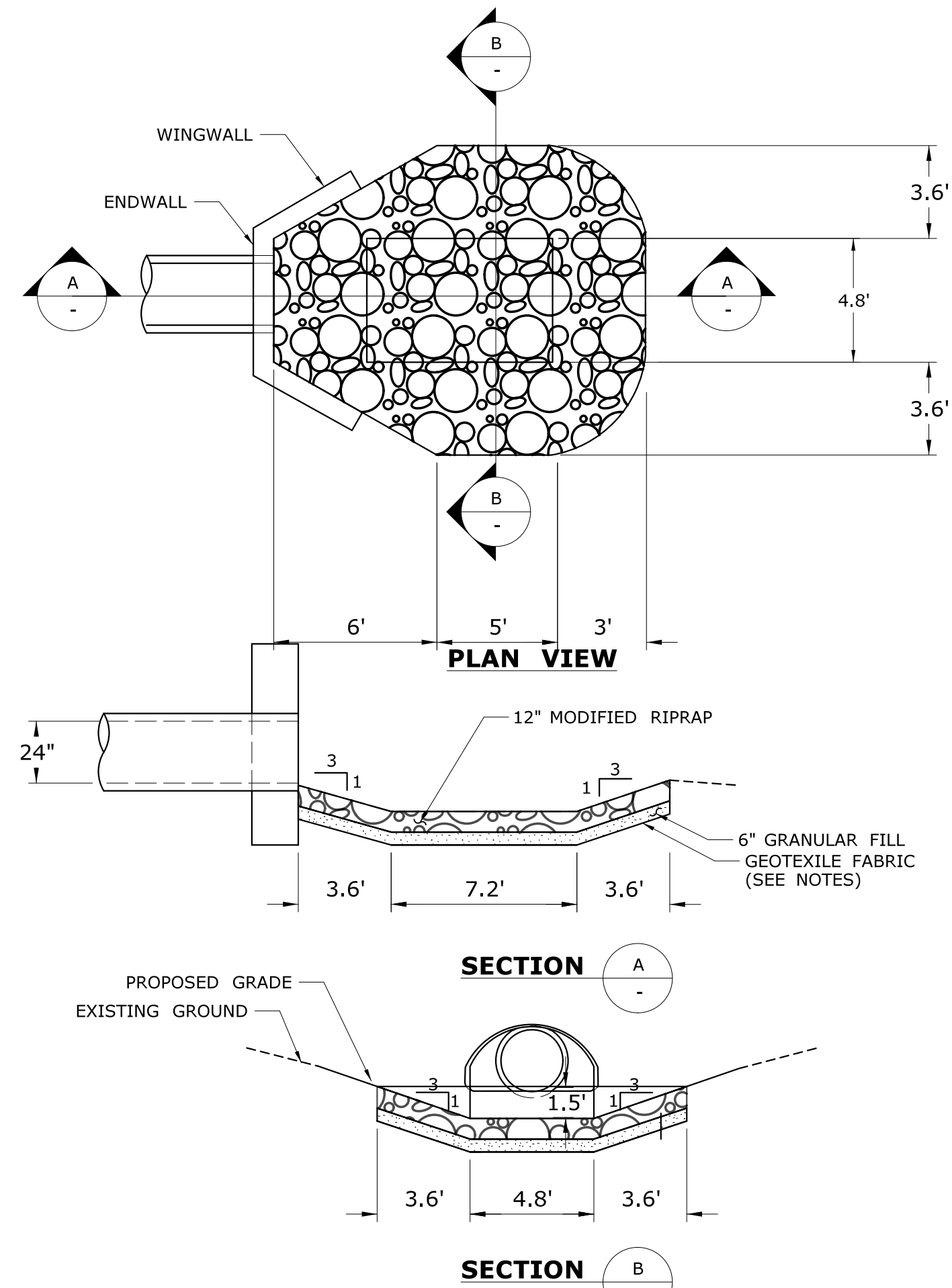
- PERMANENT FLOODPLAIN IMPACT
- TEMPORARY FLOODPLAIN IMPACT
- PERMANENT WETLAND IMPACT

ENVIRONMENTAL PERMIT PLANS
 PLAN DATE: APRIL 23, 2019

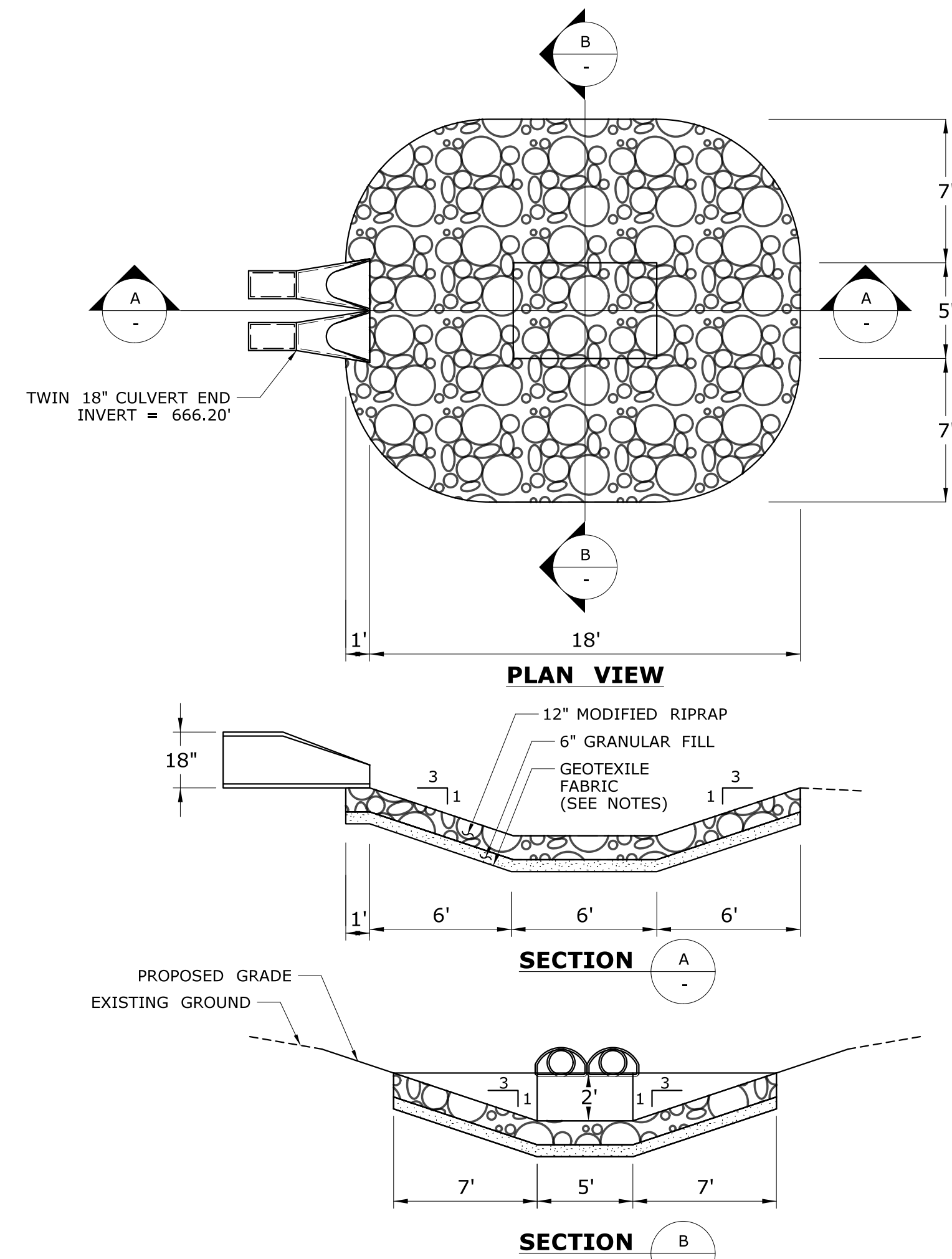
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.					THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. Plotted Date: 4/23/2019	DESIGNER/DRAFTER: BGR CHECKED BY: DMC SCALE IN FEET 0 20 40 SCALE 1"=20'	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...VHW_MSH_99-114-115_PMT-10.dgn	SIGNATURE/ BLOCK: 	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN DRAWING TITLE: IMPACT PLAN	PROJECT NO. 99-114/115 DRAWING NO. PMT-10 SHEET NO.
REV.	DATE	REVISION DESCRIPTION	SHEET NO.												



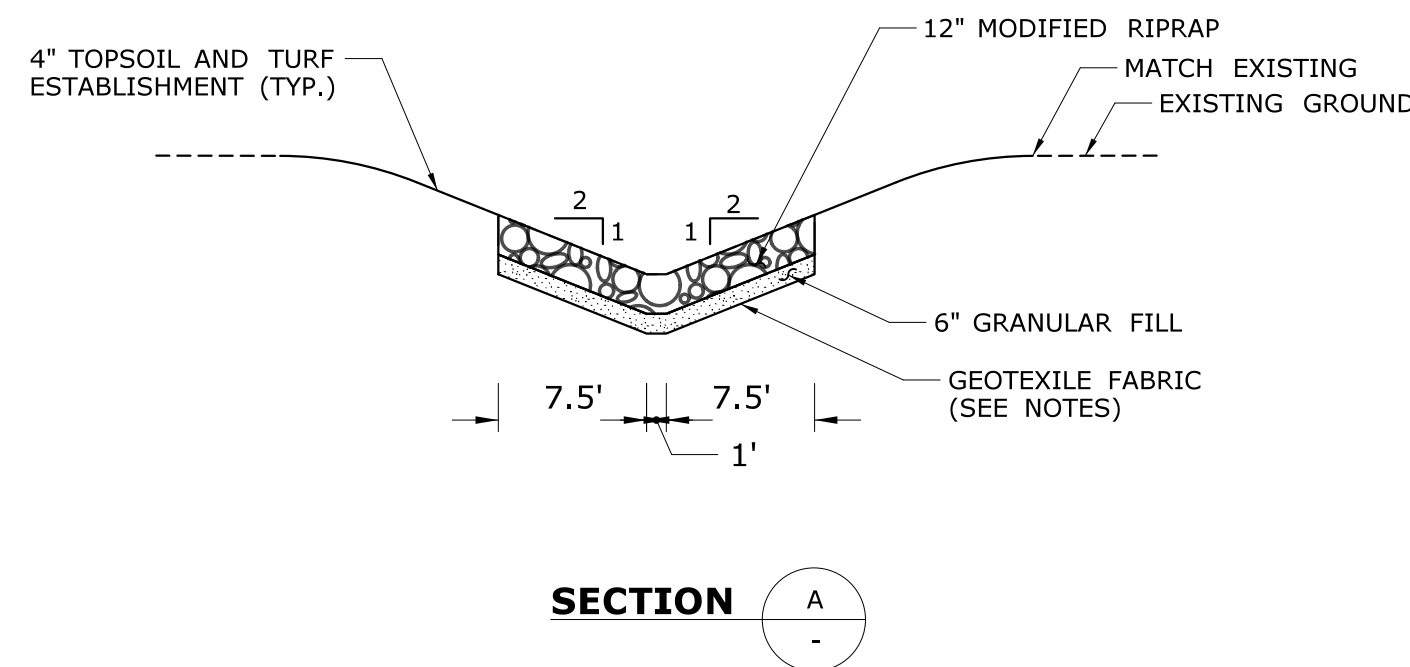
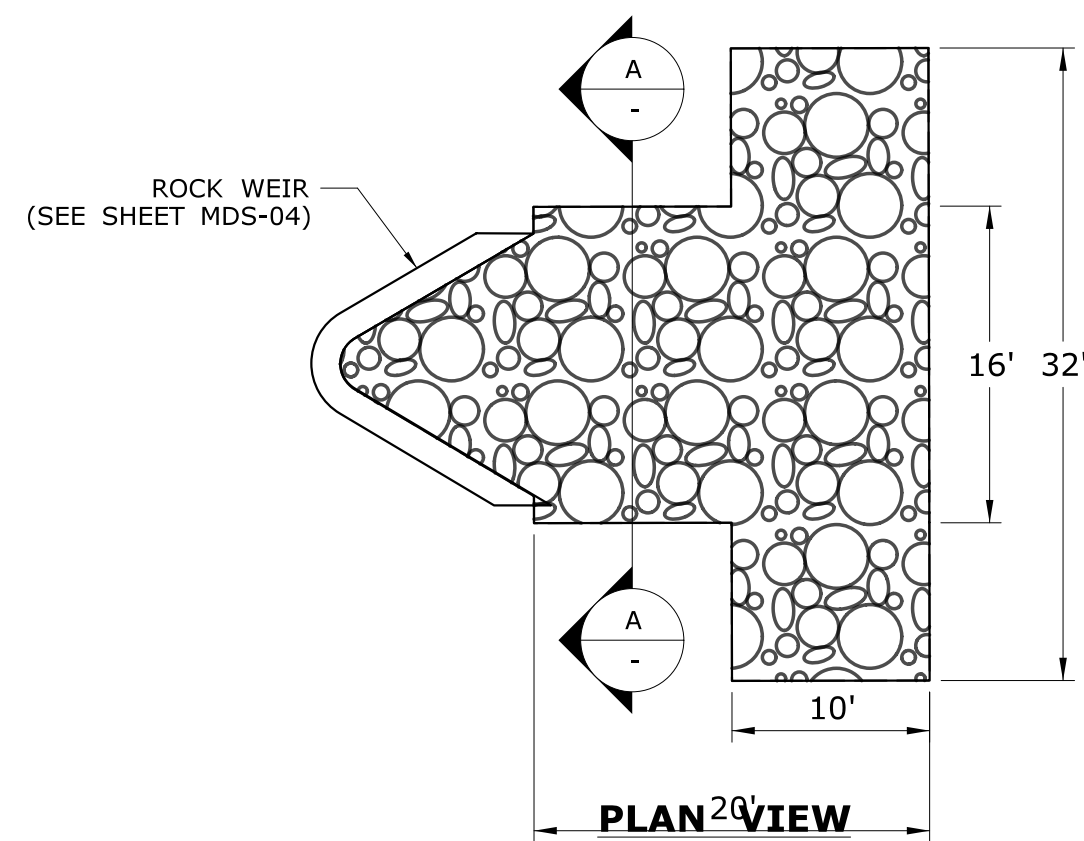
PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - WESTERN OUTLET
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE I
NOT TO SCALE



PREFORMED MODIFIED RIPRAP SCOUR HOLE TYPE II - EASTERN OUTLET
NOT TO SCALE



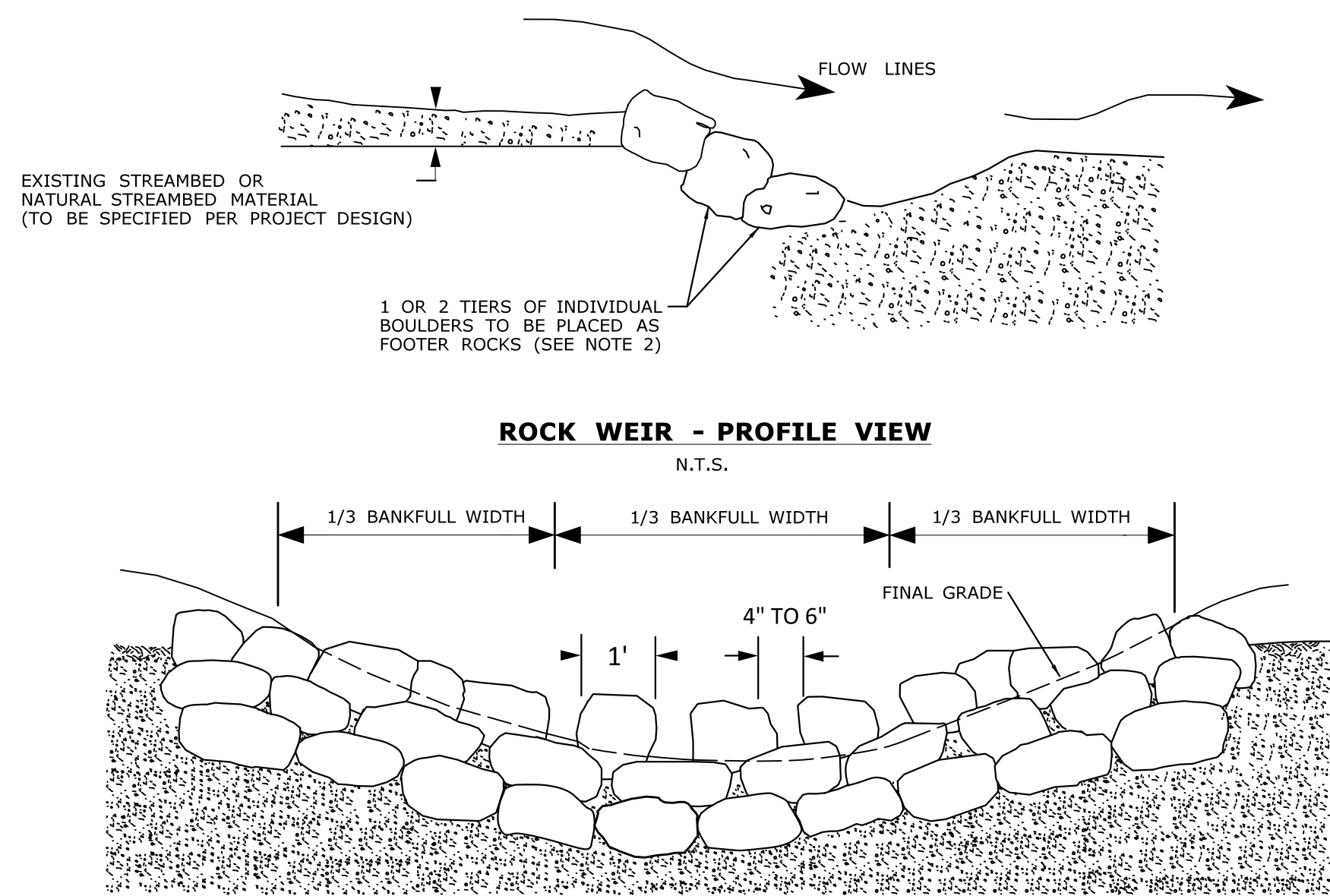
MODIFIED RIPRAP CHANNEL OUTLET
NOT TO SCALE

NOTES:
1. THE CONTRACTOR SHALL INSTALL A LAYER OF GEOTEXTILE FABRIC PRIOR TO INSTALLING THE LAYER OF GRANULAR FILL.
2. THE GEOTEXTILE FABRIC SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS & SECTION M.08.01-19 OF THE STANDARD SPECIFICATIONS FORM 817.

Steve Cephal
CTDEEP/Fisheries

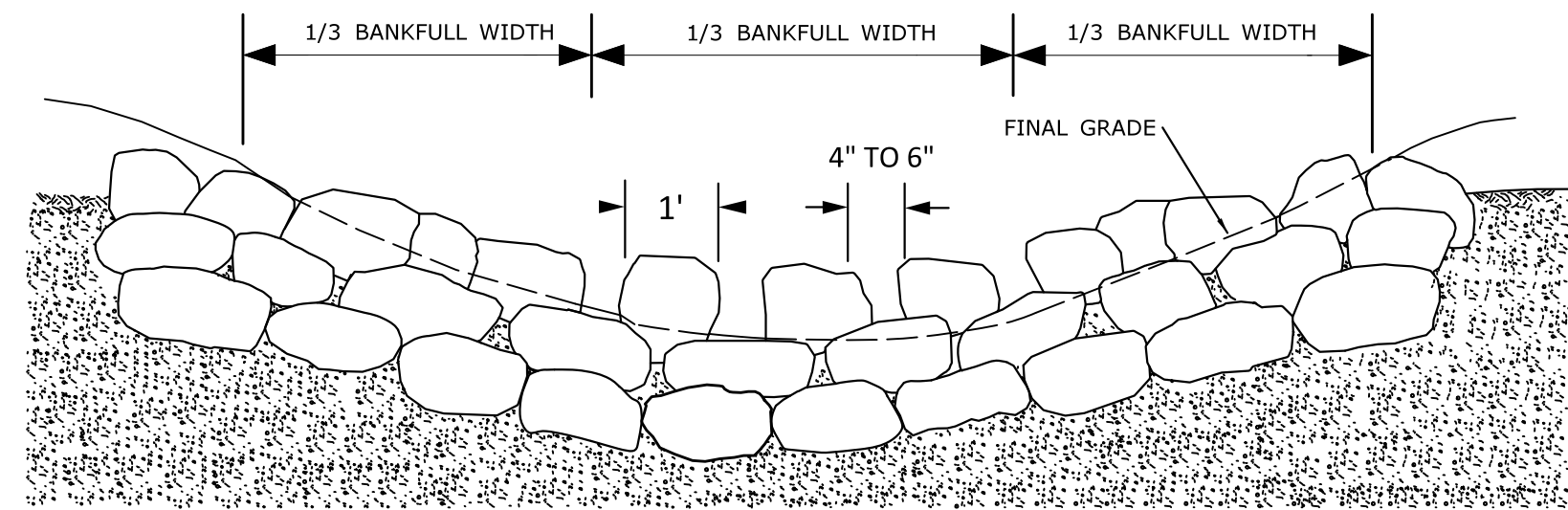
ENVIRONMENTAL PERMIT PLANS
PLAN DATE: APRIL 23, 2019

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: B.G.R. CHECKED BY: D.M.C. SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...VHW_MSH_99-114-115_PMT-12.dgn	SIGNATURE/ BLOCK: PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN DRAWING TITLE: MISCELLANEOUS DETAIL SHEET	PROJECT NO. 99-114/115 DRAWING NO. PMT-12 SHEET NO.
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 4/23/2019					



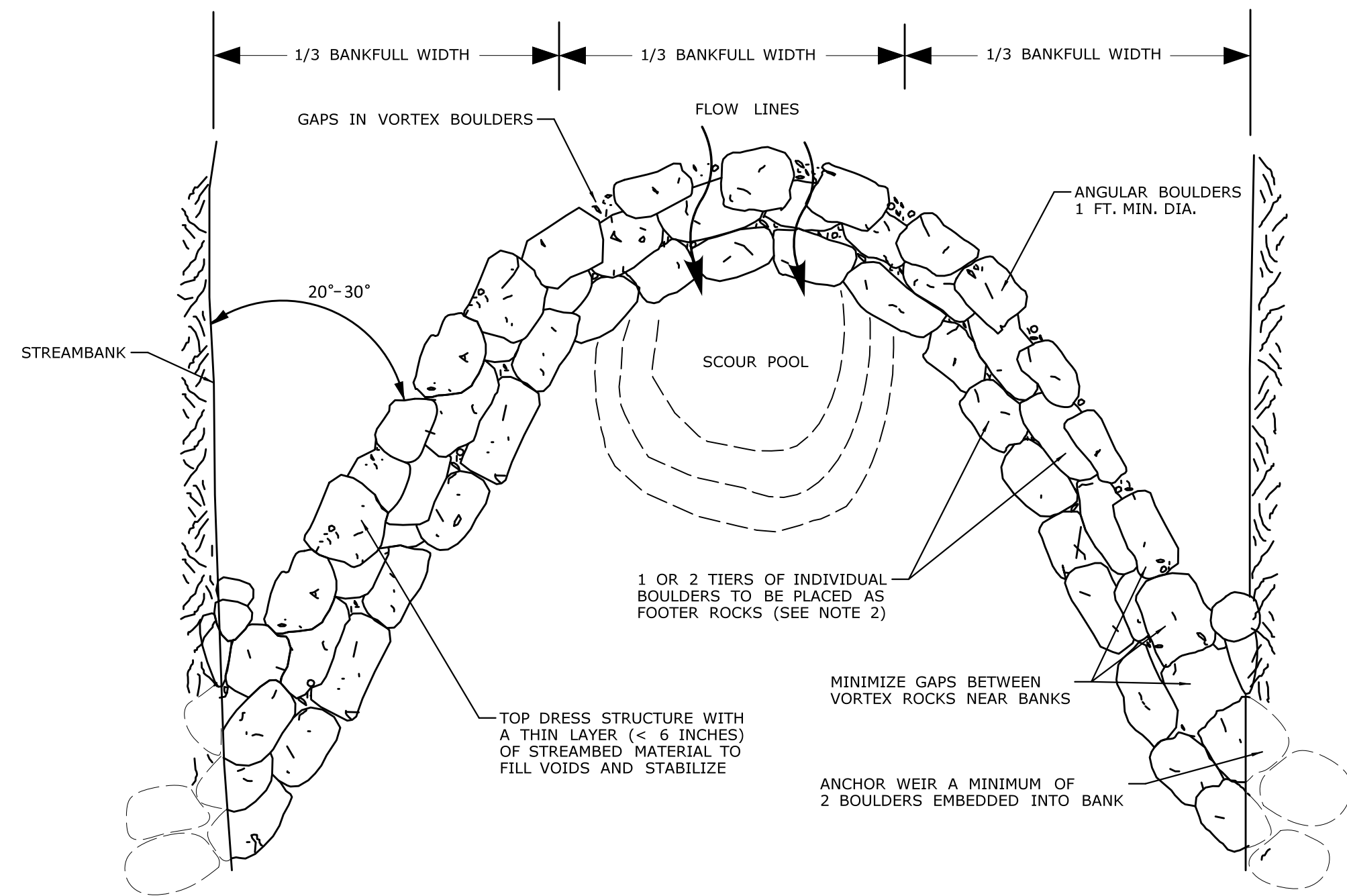
ROCK WEIR - PROFILE VIEW

N.T.S.



ROCK WEIR - SECTION VIEW (UPSTREAM)

N.T.S.

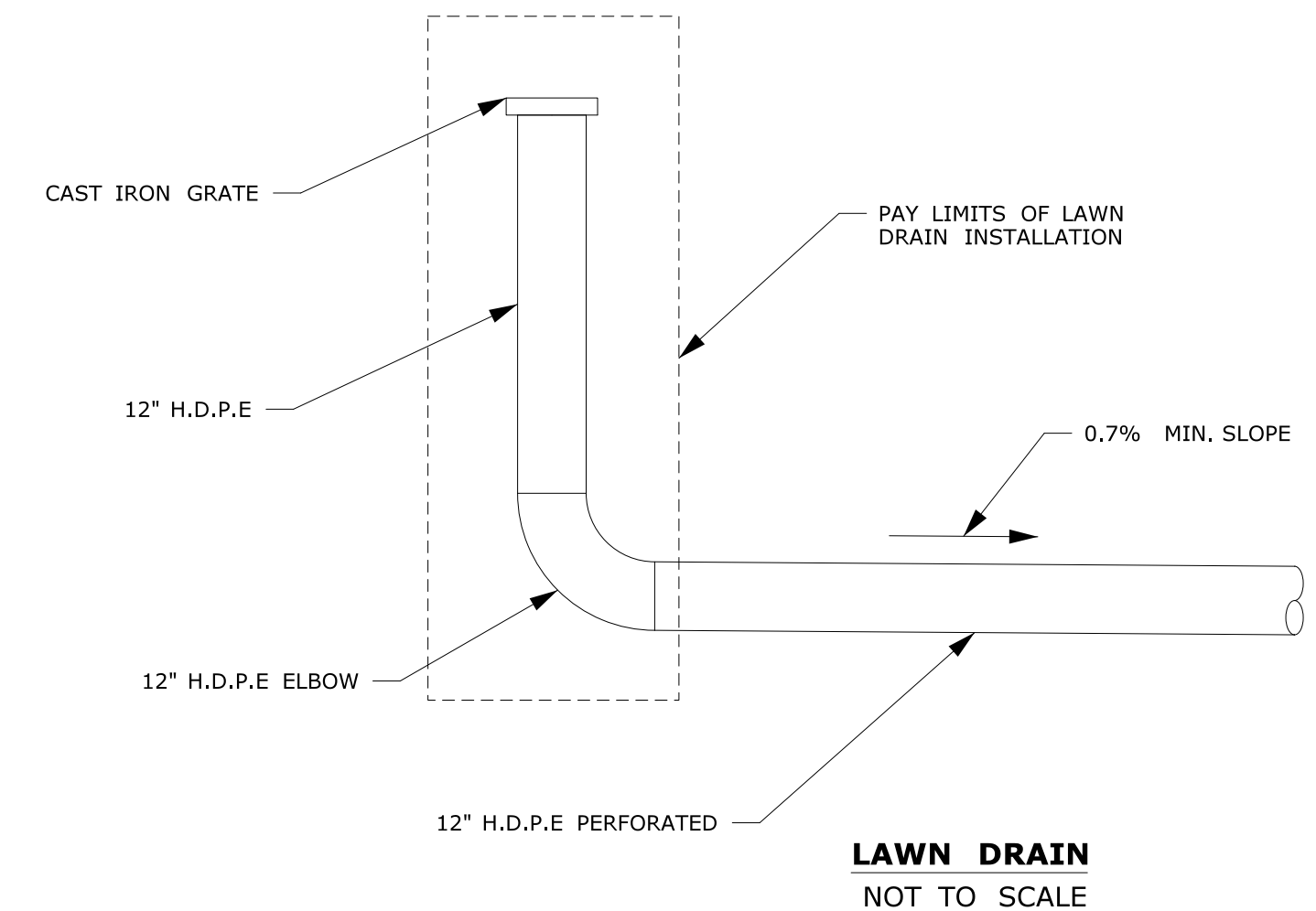


ROCK WEIR - PLAN VIEW

N.T.S.

NOTE:

1. PLACEMENT OF THE ROCK WEIR SHALL BE DIRECTED IN THE FIELD BY THE ENGINEER OR THEIR AUTHORIZED DELEGATE. SEE SPECIAL PROVISION "ROCK WEIR".
2. FOOTER ROCKS SHALL SERVE AS THE FOUNDATION FOR THE TOP LAYER OF THE WEIR. FOOTER ROCKS SHALL HAVE REASONABLE FLAT TOPS AND BOTTOMS TO ENABLE BETTER PLACEMENT OF THE TOP LAYER OF THE WEIR.

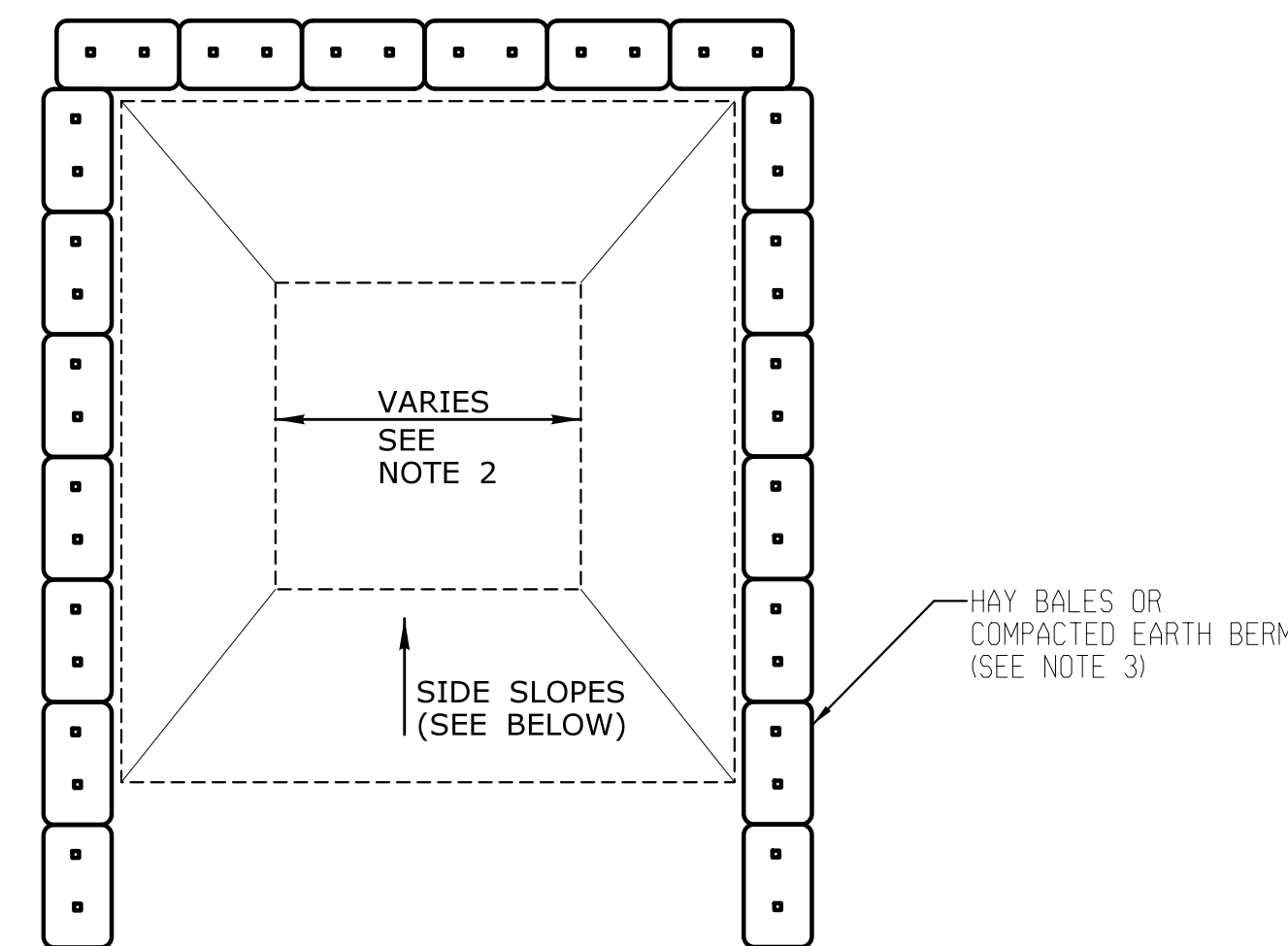


LAWN DRAIN

NOT TO SCALE

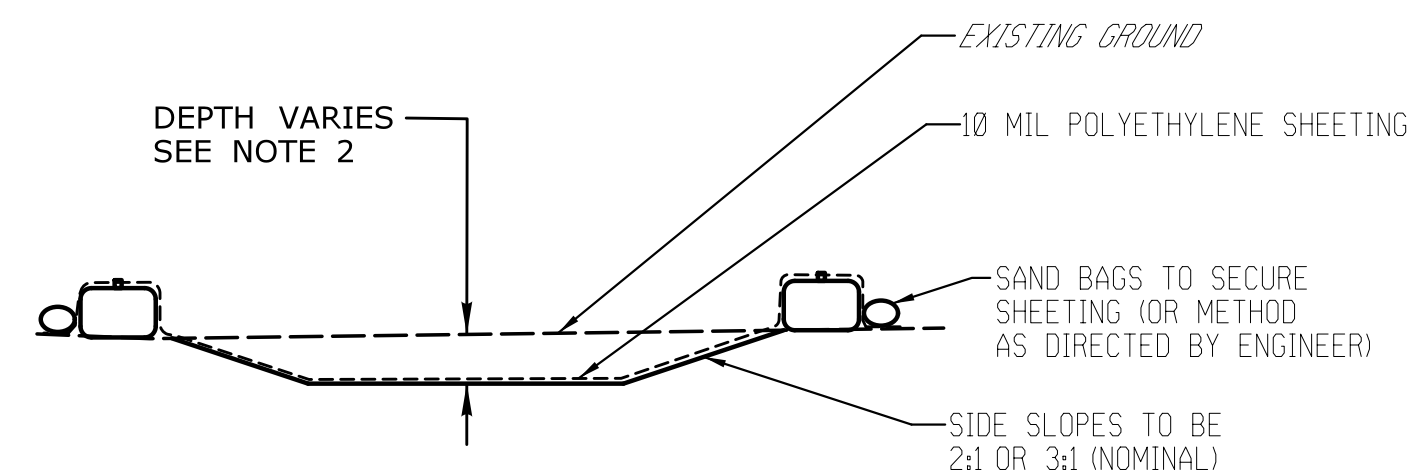
NOTES

1. CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. THE CONCRETE WASHOUT AREA SHALL BE ENTIRELY SELF-CONTAINED.
2. THE CONTRACTOR SHALL SUBMIT THE DESIGN, LOCATION AND SIZING OF THE CONCRETE WASHOUT AREA(S) WITH THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN AND SHALL BE APPROVED BY THE ENGINEER.
LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED AT LEAST 50 FEET FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE. THE FLOOD CONTINGENCY PLAN MUST ADDRESS THE CONCRETE WASHOUT IF THE WASHOUT IS TO BE LOCATED WITHIN THE FLOODPLAIN.
SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.
3. SURFACE DISCHARGE IS UNACCEPTABLE. THEREFORE, HAY BALES OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT.
4. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER APPROVED METHOD.
5. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTEGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. (AS REQUIRED BY THE CONSTRUCTION SITE ENVIRONMENTAL INSPECTION REPORT) WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS.
6. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S HEIGHT. THE WASTE CAN BE STORED AT AN UPLAND LOCATION, AS APPROVED BY THE ENGINEER. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS, REGULATIONS, AND GUIDELINES.
7. PAYMENT FOR THIS ITEM IS TO BE INCLUDED UNDER THE GENERAL COST OF THE WORK FOR THE PROJECT, INCLUDING SITE RESTORATION.



CONCRETE WASHOUT AREA

NOT TO SCALE
(SEE NOTE 2)



CONCRETE WASHOUT AREA

NOT TO SCALE
(SEE NOTE 2)

NOTES:

1. THE CONTRACTOR SHALL FURNISH, IN CONFORMANCE WITH SECTION 1.06 - CONTROL OF MATERIALS, FORM 817, PRODUCT CUT SHEETS AND DESCRIPTIVE LITERATURE FOR LAWN DRAINS (INCLUDING THE GRATE SIZE AND STYLE) TO THE ENGINEER FOR APPROVAL.
2. INSTALLATION OF LAWN DRAIN SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS & SECTION 5.07 IN THE STANDARD SPECIFICATIONS FORM 817.
3. GRATE, ELBOW AND VERTICAL H.D.P.E. PIPE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "LAWN DRAIN."

Steve Cephal
CTDEEP/Fisheries

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: APRIL 23, 2019

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 4/23/2019	DESIGNER/DRAFTER: B.G.R.	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/ BLOCK:	PROJECT TITLE: RAILROAD-HIGHWAY GRADE CROSSING IMPROVEMENTS U.S. ROUTES 7&44 (MAIN ST.)	TOWN: NORTH CANAAN	PROJECT NO. 99-114/115
-	-	-	-	-	CHECKED BY: D.M.C.		SCALE AS NOTED	FILENAME: ...VHW_MSH_99-114-115_PMT-13.dgn	MISCELLANEOUS DETAIL SHEET	DRAWING NO. PMT-13

**DEEP/USACE/EPA/DOT
 Interagency Coordination Meeting Project
 Meeting Notes – 11/29/2018**

Project 99-114/115, Modernize Railroad Crossings and Drainage Improvements, North Canaan

11/29/2018 – The project includes reconstruction of two at-grade railroad crossings, including reconstruction of the crossing surfaces, roadway and sidewalks, installation of new flashing lights and gates, minor signal revisions, new sidewalk pacers and luminaires and installation of new drainage systems. For project No. 99-115 a drainage outfall will be constructed and a new open channel will convey flows to the Blackberry River. Riprap stabilization will be provided at the confluence of the drainage channel and the Blackberry River and a rock weir will be placed within the drainage channel at the confluence as previously requested by DEEP Fisheries. For Project No. 99-114, the proposed outlet discharges into wetlands adjacent to the Blackberry River. A modified riprap scour hole will be installed at the outlet which will impact the wetlands

Project Impacts:

99-115

Impacts sq. ft	Wetland	Watercourse	Total
Temporary	0	0	0
Permanent	801.75 (0.02 ac.)	204.81 (0.004 ac)	1006.56 (0.02 ac)
Total	801.75 (0.02 ac.)	204.81 (0.004 ac)	1006.56 (0.02 ac)

99-114

Impacts sq. ft	Wetland	Watercourse	Total
Temporary	0	0	0
Permanent	58.81 (0.001 ac)	0	58.51 (0.001 ac)
Total	58.81(0.001 ac)	0	58.51 (0.001 ac)

Permitting Requirements: Flood Management General Certification (see agency comments), Self- Verification Form, DEEP IW General and Stormwater General Permit

Agency Comments: DEEP H&D commented that as long as the proposed pipe is equal to or less than 36” diameter, it qualifies under the Flood Management General Certification.

Action Items: Verify the pipe diameter will not be greater than 36”.

**Construction Contracts - Required Contract Provisions
(FHWA Funded Contracts)**

Index

1. Federal Highway Administration (FHWA) Form 1273 (Revised May 1, 2012)
2. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements
3. Contractor Work Force Utilization (Federal Executive Order 11246) / Specific Equal Employment Opportunity
4. Requirements of Title 49, CFR, Part 26, Participation by DBEs
5. Contract Wage Rates
6. Americans with Disabilities Act of 1990, as Amended
7. Connecticut Statutory Labor Requirements
 - a. Construction, Alteration or Repair of Public Works Projects; Wage Rates
 - b. Debarment List - Limitation on Awarding Contracts
 - c. Construction Safety and Health Course
 - d. Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited
 - e. Residents Preference in Work on Other Public Facilities (Not Applicable to Federal Aid Contracts)
8. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)
9. Executive Orders (State of CT)
10. Non Discrimination Requirement (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised)
11. Whistleblower Provision
12. Connecticut Freedom of Information Act
 - a. Disclosure of Records
 - b. Confidential Information
13. Service of Process
14. Substitution of Securities for Retainages on State Contracts and Subcontracts
15. Health Insurance Portability and Accountability Act of 1996 (HIPAA)
16. Forum and Choice of Law
17. Summary of State Ethics Laws

18. Audit and Inspection of Plants, Places of Business and Records
19. Campaign Contribution Restriction
20. Tangible Personal Property
21. Bid Rigging and/or Fraud – Notice to Contractor
22. Consulting Agreement Affidavit
23. Federal Cargo Preference Act Requirements (46 CFR 381.7(a)-(b))

Index of Exhibits

- EXHIBIT A – FHWA Form 1273 (Begins on page 14)
- EXHIBIT B – Title VI Contractor Assurances (page 34)
- EXHIBIT C – Contractor Work Force Utilization (Federal Executive Order 11246) / Equal Employment Opportunity (page 36)
- EXHIBIT D – Health Insurance Portability and Accountability Act of 1996 (HIPAA) (page 43)
- EXHIBIT E - Campaign Contribution Restriction (page 51)
- EXHIBIT F – Federal Wage Rates (Attached at the end)
- EXHIBIT G - State 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. Contractor Work Force Utilization (Federal Executive Order 11246) / Equal Employment Opportunity

- (a) The Contractor shall comply with the Contractor Work Force Utilization (Federal Executive Order 11246) / Equal Employment Opportunity requirements attached at Exhibit C and hereby made part of this Contract, whenever a contractor or subcontractor at any tier performs construction work in excess of \$10,000. These goals shall be included in each contract and subcontract. Goal achievement is calculated for each trade using the hours worked under each trade.
- (b) Companies with contracts, agreements or purchase orders valued at \$10,000 or more will develop and implement an Affirmative Action Plan utilizing the ConnDOT Affirmative Action Plan Guideline. This Plan shall be designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex or national origin, and to promote the full realization of equal employment opportunity through a positive continuation program. Plans shall be updated as required by ConnDOT.

4. 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.”

5. 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 816), 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.

6. 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.

7. 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

8. 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).

9. Executive Orders

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 the contract as if they had been fully set forth in it. The contract may also be subject to Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services and to Executive Order No. 49 of Governor Dannel P. Malloy, promulgated May 22, 2015, mandating disclosure of certain gifts to public employees and contributions to certain candidates for office. If Executive Order No. 14 and/or Executive Order No. 49 are applicable, they are deemed to be incorporated into and are made a part of the contract as if they had been fully set forth in it. At the Contractor's request, the Department shall provide a copy of these orders to the Contractor.

10. Non Discrimination Requirement (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:

- (1) "Commission" means the Commission on Human Rights and Opportunities;
- (2) "Contract" and "contract" include any extension or modification of the Contract or contract;
- (3) "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;
- (4) "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.
- (5) "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;
- (6) "good faith efforts" shall include, but not be 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;
- (7) "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced;
- (8) "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;

- (9) "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and
- (10) "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

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 of Connecticut, including, but not limited to municipalities, unless the contract is a municipal public works contract or quasi-public agency project contract, (2) any other state of the United States, including but not limited to, the District of Columbia, Puerto Rico, U.S. territories and possessions, and federally recognized Indian tribal governments, as defined in Connecticut General Statutes § 1-267, (3) the federal government, (4) a foreign government, or (5) an agency of a subdivision, state or government described in subdivision (1), (2), (3), or (4) of this subsection.

- (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, gender identity or expression, status as a veteran, 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 insure 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, status as a veteran, 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 and 46a-68f; and (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities 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 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; 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 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) (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 sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities 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; (3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56; and (4) the Contractor agrees to provide the Commission on Human Rights and Opportunities 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 which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.
- (h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State 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.

Please be aware the Nondiscrimination Certifications can be found at the Office of Policy and Management website:

<https://portal.ct.gov/OPM/Fin-PSA/Forms/Nondiscrimination-Certification>

11. 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.

12. 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.

13. 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.

14. 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.

15. 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.

16. Forum and Choice of Law

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.

17. Summary of State Ethics Laws

Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.

18. 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.

19. Campaign Contribution Restriction

For all State contracts, defined in Conn. Gen. Stat. §9-612(f)(1) as having a value in a calendar year of \$50,000 or more, or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this contract expressly acknowledges receipt of 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, as set forth in "Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations," a copy of which is attached hereto and hereby made a part of this contract, attached as Exhibit E.

20. 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.

21. 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.

22. Consulting Agreement Affidavit

The Contractor shall comply with Connecticut General Statutes Section 4a-81(a) and 4a-81(b), as revised. Pursuant to Public Act 11-229, after the initial submission of the form, if there is a change in the information contained in the form, a contractor shall submit the updated form, as applicable, either (i) not later than thirty (30) days after the effective date of such change or (ii) prior to execution of any new contract, whichever is earlier.

The Affidavit/Form may be submitted in written format or electronic format through the Department of Administrative Services (DAS) website.

23. Cargo Preference Act Requirements (46 CFR 381.7(a)-(b)) – Use of United States Flag Vessels

The Contractor agrees to comply with the following:

(a) ***Agreement Clauses.***

- (1) Pursuant to Pub. L. 664 ([43 U.S.C. 1241\(b\)](#)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.
- (2) 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 (a)(1) of this section shall be furnished 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.

(b) ***Contractor and Subcontractor Clauses.*** The contractor 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.
- (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 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.

EXHIBIT A

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated 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. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (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).

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.

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). 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 bid proposal or request for proposal 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).

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.

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. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 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 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, 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 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, 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 230, 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 (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 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 35 and 29 CFR 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.

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, 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 who 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.

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 for 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, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure 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. 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, 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, 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 there under. 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, 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 and 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. Assurance Required by 49 CFR 26.13(b):

- a. The requirements of 49 CFR Part 26, and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor 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 contracting agency deems appropriate.

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 \$10,000 or more.

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, 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). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

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

a. All laborers and mechanics employed or working upon the site of the work, 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 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.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. 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 shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). 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 classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall 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. (1) The contracting officer shall 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 shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore 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 utilized 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) 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 shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. 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.

(3) 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 shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour 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.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall 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.

c. 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 shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. 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, 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.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, 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.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, 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 section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) 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 section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall 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. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed 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 Regulations, 29 CFR part 3;

(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 of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, 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 may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed 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 Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall 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 the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall 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, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. 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. 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 journeymen 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.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 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.

9. Disputes concerning labor standards. 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 he or she) 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 section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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 watchmen 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.

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. 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 watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 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.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or 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, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

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” 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:

- (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.

2. 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. 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.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

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 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.

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 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).

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 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 1, 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

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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.

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.

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.

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.

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 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee 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 grantee or subgrantee 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.

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.

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. 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 Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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. 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) 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;

(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; 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.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. 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)

a. By signing and submitting this proposal, the prospective lower tier 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.

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 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 grantee or subgrantee 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 grantee or subgrantee 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.

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.

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 Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall 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 20).

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.

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, 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 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, 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 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 may direct as a means of enforcing such provisions including sanctions for

noncompliance. 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.

TITLE VI CONTRACTOR ASSURANCES APPENDIX E

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**CONTRACTOR WORKFORCE UTILIZATION (FEDERAL EXECUTIVE ORDER 11246) /
EQUAL EMPLOYMENT OPPORTUNITY
(Federal - FHWA)****1. Project Workforce Utilization Goals:**

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted or funded) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where the work is actually performed.

Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications which contain the applicable goals for minority and female participation.

The goals for minority and female utilization are expressed in percentage terms for the contractor's aggregate work-force in each trade on all construction work in the covered area, are referenced in the attached Appendix A.

2. Executive Order 11246

The Contractor's compliance with Executive Order 11246 and 41-CFR Part 60-4 shall be based on its implementation of the specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(A) and its efforts to meet the goals established for the geographical area where the contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hour performed.

If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Pan does not excuse any covered Contractor's or subcontractor's failure to take good faith efforts to achieve the plan goals and timetables.

The Contractor shall implement the specific affirmative action standards provided in a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in

which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs (OFCCP) Office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant hereto.

In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites; and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
- b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off the street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason thereafter; along with whatever additional actions the Contractor may have taken.
- d. Provide immediate written notification to the Director when the Union or Unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or women sent by the Contractor, or when the Contractor has other

information that the Union referral process has impeded the Contractor's efforts to meet its obligations.

- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO Policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company EEO Policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment, decisions including specific Foreman, etc. prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO Policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work-force.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and

employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

- n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review at least annually of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (a through p). The efforts of a contractor association, joint contractor union, contractor community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work-force participation, makes a good faith effort to meet with individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of Executive Order 11246 if a particular group is employed in a substantially disparate manner, (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is under utilized).

The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in these

specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status, (e.g. mechanic, apprentice, trainee, helper, or laborer) dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

Nothing herein provided shall be construed as a limitation upon the application of their laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

The Director of the Office of Federal Contract Compliance Programs, from time to time, shall issue goals and timetables for minority and female utilization which shall be based on appropriate workforce, demographic or other relevant data and which shall cover construction projects or construction contracts performed in specific geographical areas. The goals, which shall be applicable to each construction trade in a covered contractor's or timetables, shall be published as notices in the Federal Register, and shall be inserted by the Contracting officers and applicants, as applicable, in the Notice required by 41 CFR 60-4.2.

FEDERALLY FUNDED OR ASSISTED PROJECTS
APPENDIX A
(Labor Market Goals)

Standard Metropolitan Statistical Area (SMSA)

Female

Minority

Bridgeport – Stamford – Norwalk – Danbury	10.2%
6.9%	

Bethel	Bridgeport	Brookfield	Danbury
Darien	Derby	Easton	Fairfield
Greenwich	Milford	Monroe	New Canaan
New Fairfield	Newton	Norwalk	Redding
Shelton	Stamford	Stratford	Trumbull
Weston	Westport	Wilton	

Hartford – Bristol – New Britain	6.9%
6.9%	

Andover	Avon	Berlin	Bloomfield
Bolton	Bristol	Burlington	Canton
Colchester	Columbia	Coventry	Cromwell
East Granby	East Hampton	East Hartford	East Windsor
Ellington	Enfield	Farmington	Glastonbury
Granby	Hartford	Hebron	Manchester
Marlborough	New Britain	New Hartford	Newington
Plainville	Plymouth	Portland	Rocky Hill
Simsbury	South Windsor	Southington	Stafford
Suffield	Tolland	Vernon	West Hartford
Wethersfield	Willington	Windsor	Windsor Locks

New Haven – Waterbury – Meriden	9.0%
6.9%	

Beacon Falls	Bethany	Branford	Cheshire
Clinton	East Haven	Guilford	Hamden
Madison	Meriden	Middlebury	Naugatuck
New Haven	North Branford	North Haven	Orange
Prospect	Southbury	Thomaston	Wallingford
Waterbury	Watertown	West Haven	Wolcott
Woodbridge	Woodbury		

New London – Norwich	4.5%
6.9%	

Bozrah	East Lyme	Griswold	Groton
Ledyard	Lisbon	Montville	New London
Norwich	Old Lyme	Old Saybrook	Preston
Sprague	Stonington	Waterford	

Non SMSA

Female

Minority

Litchfield – Windham			5.9%
6.9%			
Abington	Ashford	Ballouville	Bantam
Barkhamsted	Bethlehem	Bridgewater	Brooklyn
Canaan	Canterbury	Central Village	Cahplin
Colebrook	Cornwall	Cornwall Bridge	Danielson
Dayville	East Canaan	East Killingly	East Woodstock
Eastford	Falls Village	Gaylordsville	Goshen
Grosvenor Dale	Hampton	Harwinton	Kent
Killigly	Lakeside	Litchfield	Moosup
Morris	New Milford	New Preston	New Preston Marble Dale
Norfolk	North Canaan	No. Grosvenordale	North Windham
Oneco	Pequabuck	Pine Meadow	Plainfield
Pleasant Valley	Pomfret	Pomfret Center	Putnam
Quinebaug	Riverton	Rogers	Roxbury
Salisbury	Scotland	Sharon	South Kent
South Woodstock	Sterling	Taconic	Terryville
Thompson	Torrington	Warren	Warrenville
Washington	Washington Depot	Wauregan	West Cornwall
Willimantic	Winchester	Winchester Center	Windham
Winsted	Woodstock	Woodstock Valley	

EXHIBIT D**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 insure 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 notifications 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 (l)(2) of this Section of the Contract, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity

within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.

(B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

(1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.

(2) Amendment. The Parties agree to take such action as 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.

**Notice to Executive Branch State Contractors and Prospective State
Contractors of Campaign Contribution and Solicitation Limitations**

This notice is provided under the authority of Connecticut General Statutes §9-612 (f) (2) and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined on the reverse side of this page).

CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS

No *state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor*, with regard to a *state contract or state contract solicitation* with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder, of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall **knowingly solicit** contributions from the state contractor's or prospective state contractor's employees or from a *subcontractor or principals of the subcontractor* on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

DUTY TO INFORM

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

PENALTIES FOR VIOLATIONS

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—Up to \$2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to \$2,000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than \$5,000 in fines, or both.

CONTRACT CONSEQUENCES

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may result in the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to "Lobbyist/Contractor Limitations."

DEFINITIONS

“State contractor” means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. “State contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Prospective state contractor” means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. “Prospective state contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a state contractor or prospective state contractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

“State contract” means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. “State contract” does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

“State contract solicitation” means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

“Managerial or discretionary responsibilities with respect to a state contract” means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

“Dependent child” means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

“Solicit” means (A) requesting that a contribution be made, (B) participating in any fundraising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee, serving on the committee that is hosting a fundraising event, introducing the candidate or making other public remarks at a fundraising event, being honored or otherwise recognized at a fundraising event, or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

“Subcontractor” means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. “Subcontractor” does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a subcontractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a dependent child who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

EXHIBIT F

(Federal wage rate package will be inserted here for final executed contract only. Refer to NTC – Federal Wage Determinations)

EXHIBIT G

(State wages will be inserted here)

**Minimum Rates and Classifications for
Heavy/Highway Construction**

ID#: 20-11090

**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: #99-114/-115

Project Town: North Canaan

State#: #99-114/-115

FAP#: #99-114/-115

Project: Routes 7 & 44 Railroad Crossing Improvements

CLASSIFICATION	Hourly Rate	Benefits
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	35.72	33.16
2) Carpenters, Piledrivermen	33.53	25.66
2a) Diver Tenders	33.53	25.66
3) Divers	41.99	25.66
03a) Millwrights	34.94	26.19
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	51.0	21.80
4a) Painters: Brush and Roller	34.62	21.80
4d) Painters: Blast and Spray	37.62	21.80
4e) Painters: Tanks, Tower and Swing	36.62	21.80
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)	39.62	27.25+3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	36.67	35.77 + a

Project: Routes 7 & 44 Railroad Crossing Improvements

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)	43.62	32.06
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----LABORERS-----

8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	30.75	20.84
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9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	31.0	20.84
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10) Group 3: Pipelayers	31.25	20.84
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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	31.25	20.84
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12) Group 5: Toxic waste removal (non-mechanical systems)	32.75	20.84
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13) Group 6: Blasters	32.5	20.84
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Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	31.75	20.84
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Group 8: Traffic control signalmen	18.0	20.84
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Group 9: Hydraulic Drills	29.3	18.90
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----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	32.98	20.84 + a
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13b) Brakemen, Trackmen	32.01	20.84 + a
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----CLEANING, CONCRETE AND CAULKING TUNNEL----

14) Concrete Workers, Form Movers, and Strippers	32.01	20.84 + a
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15) Form Erectors	32.34	20.84 + a
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Project: Routes 7 & 44 Railroad Crossing Improvements

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN
FREE AIR:----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	32.01	20.84 + a
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17) Laborers Topside, Cage Tenders, Bellman	31.9	20.84 + a
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18) Miners	32.98	20.84 + a

----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----

18a) Blaster	39.47	20.84 + a
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19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	39.27	20.84 + a
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20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	37.29	20.84 + a
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21) Mucking Machine Operator	40.06	20.84 + a

----TRUCK DRIVERS----(*see note below)

Two axle trucks	29.51	24.52 + a
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Three axle trucks; two axle ready mix	29.62	24.52 + a
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Three axle ready mix	29.67	24.52 + a
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Four axle trucks, heavy duty trailer (up to 40 tons)	29.72	24.52 + a
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Four axle ready-mix	29.77	24.52 + a
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Heavy duty trailer (40 tons and over)	29.98	24.52 + a
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Specialized earth moving equipment other than conventional type on- the road trucks and semi-trailer (including Euclids)	29.77	24.52 + a

----POWER EQUIPMENT OPERATORS----

Project: Routes 7 & 44 Railroad Crossing Improvements

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required)	40.97	24.80 + a
Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	40.64	24.80 + a
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), 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)	39.88	24.80 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	39.48	24.80 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24	38.87	24.80 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	38.87	24.80 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	38.55	24.80 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24	38.2	24.80 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	37.79	24.80 + a
Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder).	37.34	24.80 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	35.24	24.80 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	35.24	24.80 + a
Group 12: Wellpoint Operator.	35.18	24.80 + a
Group 13: Compressor Battery Operator.	34.58	24.80 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	33.41	24.80 + a

As of: March 17, 2020

Project: Routes 7 & 44 Railroad Crossing Improvements

Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	32.99	24.80 + a
Group 16: Maintenance Engineer/Oiler	32.32	24.80 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	36.76	24.80 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	34.26	24.80 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)---

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20) Lineman, Cable Splicer, Technician	48.19	6.5% + 22.00
21) Heavy Equipment Operator	42.26	6.5% + 19.88
22) Equipment Operator, Tractor Trailer Driver, Material Men	40.96	6.5% + 19.21
23) Driver Groundmen	26.5	6.5% + 9.00
23a) Truck Driver	40.96	6.5% + 17.76

----LINE CONSTRUCTION----

24) Driver Groundmen	30.92	6.5% + 9.70
25) Groundmen	22.67	6.5% + 6.20
26) Heavy Equipment Operators	37.1	6.5% + 10.70
27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20
28) Material Men, Tractor Trailer Drivers, Equipment Operators	35.04	6.5% + 10.45

As of: March 17, 2020

Welders: Rate for craft to which welding is incidental.

**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*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:

- 1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)***
- 2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson***
- 3) Cranes (under 100 ton rated capacity)***

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

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

Project: Routes 7 & 44 Railroad Crossing Improvements

--Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing

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.