SP

COMMONWEALTH OF MASSACHUSETTS



CONTRACT DOCUMENTS AND SPECIAL PROVISIONS

PROPOSAL NO.	608862-136646
P.V. =	$9,141,000.00
PLANS	YES

FOR

Federal Aid Project No. STP(BR-OFF)-003S(948)X
Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

in the Town of

SOUTHBRIDGE

In accordance with the STANDARD SPECIFICATIONS
for HIGHWAYS and BRIDGES dated 2026

This Proposal to be opened and read: **TUESDAY, OCTOBER 20, 2026 at 2:00 P.M.**

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT 00010

TABLE OF CONTENTS

DOCUMENT 00010
TABLE OF CONTENTS ..... 00010-1 through 2

DOCUMENT 00104
NOTICE TO CONTRACTORS ..... 00104- 1 through 2

DOCUMENT 00210
REQUIREMENTS OF MASSACHUSETTS GENERAL
LAWS CHAPTER 30 SECTION 39R; CHAPTER 30, SECTION 39O ..... 00210-1 through 4

DOCUMENT 00331
LOCUS MAP ..... 00331-1 through 2

DOCUMENT 00439
CONTRACTOR PROJECT EVALUATION FORM ..... 00439-1 through 2

DOCUMENT 00440
SUBCONTRACTOR PROJECT EVALUATION FORM ..... 00440-1 through 2

DOCUMENT 00710
GENERAL CONTRACT PROVISIONS ..... 00710-1 through 2

DOCUMENT 00715
SUPPLEMENTAL SPECIFICATIONS ..... 00715-1 through 20

DOCUMENT 00760
REQUIRED CONTRACT PROVISIONS FOR FEDERAL-AID
CONSTRUCTION CONTRACTS ..... 00760-1 through 12

DOCUMENT 00811
MONTHLY PRICE ADJUSTMENT FOR HOT MIX ASPHALT
(HMA) MIXTURES ..... 00811-1 through 2

DOCUMENT 00812
MONTHLY PRICE ADJUSTMENT FOR DIESEL FUEL AND GASOLINE ..... 00812-1 through 2

DOCUMENT 00813
PRICE ADJUSTMENT FOR STRUCTURAL STEEL
AND REINFORCING STEEL ..... 00813-1 through 4

DOCUMENT 00814
PRICE ADJUSTMENT FOR PORTLAND CEMENT CONCRETE MIXES ..... 00814-1 through 2

DOCUMENT 00820
THE COMMONWEALTH OF MASSACHUSETTS
SUPPLEMENTAL EQUAL EMPLOYMENT OPPORTUNITY,
NON-DISCRIMINATION AND AFFIRMATIVE ACTION PROGRAM ..... 00820-1 through 6

DOCUMENT 00821
ELECTRONIC REPORTING REQUIREMENTS
CIVIL RIGHTS PROGRAM AND CERTIFIED PAYROLL ..... 00821-1 through 2

DOCUMENT 00859
CONTRACTOR/SUBCONTRACTOR CERTIFICATION FORM ..... 00859-1 through 2

DOCUMENT 00860
COMMONWEALTH OF MASSACHUSETTS PUBLIC EMPLOYMENT LAWS ..... 00860-1 through 2

TABLE OF CONTENTS (Continued)

DOCUMENT 00861
STATE PREVAILING WAGE RATES ..... 00861-1 through 38

DOCUMENT 00870
STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS ..... 00870-1 through 8

DOCUMENT 00880
MINIMUM WAGES FOR FEDERAL AND FEDERALLY
ASSISTED CONTRACTS..... 00880-1 through 32

DOCUMENT A00801
SPECIAL PROVISIONS ..... A00801-1 through 230

DOCUMENT A00802
DETAIL SHEETS..... A00802-1 through 10

DOCUMENT A00807
TOWN OF SOUTHBRIDGE
SOUTHBRIDGE WATER DEPARTMENT STANDARD SPECIFICATIONS ..... A00807-1 through 20

DOCUMENT A00808
PROJECT UTILITY COORDINATION FORM..... A00808-1 through 8

DOCUMENT A00810
MASSDOT HERBICIDE USE REPORT ..... A00810-1 through 2

DOCUMENT A00811
WATERING LOG FOR MASSDOT PLANTINGS..... A00811-1 through 2

DOCUMENT A00820
REQUEST FOR RELEASE OF MASSDOT AUTOCAD FILES FORM..... A00820-1 through 2

DOCUMENT A00830
U.S. ARMY CORPS OF ENGINEERS
SELF-VERIFICATION NOTIFICATION ..... A00830-1 through 84

DOCUMENT A00831
U.S. ARMY CORPS OF ENGINEERS
GENERAL PERMITS FOR THE COMMONWEALTH OF MASSACHUSETTS ..... A00831-1 through 94

DOCUMENT A00840
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER QUALITY CERTIFICATION APPLICATION ..... A00840-1 through 158

DOCUMENT A00841
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER QUALITY CERTIFICATION ..... A00841-1 through 22

DOCUMENT A00856
UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE CONCURRENCE VERIFICATION LETTER ..... A00841-1 through 12

DOCUMENT A00875
POLICY DIRECTIVE P-22-001 AND POLICY DIRECTIVE P-22-002 ..... A00875-1 through 8

DOCUMENT B00420
PROPOSAL.....B00420-1 through 22

*** END OF DOCUMENT ***

DOCUMENT 00104

NOTICE TO CONTRACTORS

Electronic proposals for the following project will be received through the internet using www.bidx.com until the date and time stated below and will be posted on www.bidx.com forthwith after the bid submission deadline. No paper copies of bids will be accepted. All Bidders must have a valid vendor code issued by MassDOT in order to bid on projects. Bidders need to apply for a Digital ID at least 14 days prior to a scheduled bid opening date with www.bidx.com.

TUESDAY, OCTOBER 20, 2026 at 2:00 P.M. **
SOUTHBRIDGE
Federal Aid Project No. STP(BR-OFF)-003S(948)X
Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

****Date Subject to Change**

PROJECT VALUE = $9,141,000.00

Bidders must be pre-qualified by the Department in the BRIDGE - CONSTRUCTION category to bid on the above project. An award will not be made to a Contractor who is not pre-qualified by the Department prior to the opening of Proposals.

All prospective Bidders who intend to bid on this project must obtain "Request Proposal Form (R109)". The blank "Request Proposal Form (R109)" can be obtained at: https://www.mass.gov/prequalification-of-horizontal-construction-firms.

All prospective Bidders must complete and e-mail an electronic copy of "Request Proposal Form (R109)" to the MassDOT Director of Prequalification for approval: prequal.r109@dot.state.ma.us.

Proposal documents for official bidders are posted on www.bidx.com. Other interested parties may receive informational Contract Documents containing the Plans and Special Provisions, free of charge.

Bids will be considered, and the contract awarded in accordance with statutes governing such contracts in accordance with Massachusetts General Laws Chapter 30 § 39M.

The Project Bids File Attachments folder for proposals at www.bidx.com shall be used for submitting at the time of bid required information such as the Bid Bond required document, and other documents that may be requested in the proposal.

All parties who wish to have access to information plans and specification must send a "Request for Informational Documents" to MassDOTBidDocuments@dot.state.ma.us.

NOTICE TO CONTRACTORS (Continued)

A Proposal Guaranty in the amount of 5% of the value of the bid is required.

This project is subject to the schedule of prevailing wage rates as determined by the Commissioner of the Massachusetts Department of Labor and Workforce Development, and the Division of Occupational Safety, and the United States Department of Labor.

The Massachusetts Department of Transportation, in accordance with Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby affirmatively ensures that for any contract entered into pursuant to this advertisement, all bidders, including disadvantaged business enterprises, will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin in consideration for an Award.

This Proposal contains the "STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)". The goals and timetables applicable to this proposal for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all work, are contained in Appendices A and B-80 of the above specifications.

The Contractor (hereinafter includes consultants) will comply with the Acts and Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this Contract as contained in Appendices C and D of the above specifications.

PRICE ADJUSTMENTS

This Contract contains price adjustments for hot mix asphalt and Portland cement mixtures, diesel fuel, and gasoline. For reference the base prices are as follows: liquid asphalt $712.50 per ton, Portland cement $452.13 per ton, diesel fuel $4.693 per gallon, and gasoline $3.341 per gallon, and Steel Base Price Index 384.0. MassDOT posts the **Price Adjustments** on their Highway Division's website at
https://www.mass.gov/massdot-contract-price-adjustments

This Contract contains Price Adjustments for steel. See Document 00813 - PRICE ADJUSTMENT FOR STRUCTURAL STEEL AND REINFORCING STEEL for their application and base prices.

MassDOT projects are subject to the rules and regulations of the Architectural Access Board (521 CMR 1.00 et seq.)

Prospective bidders and interested parties can access this information and more via the internet at WWW.COMMBUYS.COM.

BY: Phillip Eng, Interim MassDOT Secretary
Jonathan L. Gulliver, Undersecretary and Highway Administrator
SATURDAY, SEPTEMBER 5, 2026

DOCUMENT 00210

REQUIREMENTS OF MASSACHUSETTS GENERAL LAWS
CHAPTER 30, SECTION 39R;
CHAPTER 30, SECTION 39O

July 1, 1981, updated October 2016

M.G.L. c. 30, § 39R. Award of Contracts; Accounting Statements; Annual Financial Statements; Definitions.

(a) The words defined herein shall have the meaning stated below whenever they appear in this section:

(1) “Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a contract pursuant to sections thirty-eight A1/2 to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-nine M of chapter thirty, or sections forty-four A to forty-four H, inclusive, of chapter one hundred and forty-nine, which is for an amount or estimated amount greater than one hundred thousand dollars.

(2) "Contract" means any contract awarded or executed pursuant to sections thirty-eight A1/2 to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-nine M of chapter thirty, or sections forty-four A through forty-four H, inclusive, of chapter one hundred and forty-nine, which is for amount or estimated amount greater than one hundred thousand dollars.

(3) “Records" means books of original entry, accounts, checks, bank statements and all other banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.

(4) “Independent Certified Public Accountant" means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his residence or principal office and who is in fact independent. In determining whether an accountant is independent with respect to a particular person, appropriate consideration should be given to all relationships between the accountant and that person or any affiliate thereof. Determination of an accountant's independence shall not be confined to the relationships existing in connection with the filing of reports with the awarding authority.

(5) “Audit", when used in regard to financial statements, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing standards for the purpose of expressing a certified opinion thereon, or, in the alternative, a qualified opinion or a declination to express an opinion for stated reasons.

(6) "Accountant's Report", when used in regard to financial statements, means a document in which an independent certified public accountant indicates the scope of the audit which he has made and sets forth his opinion regarding the financial statements taken as a whole with a listing of noted exceptions and qualifications, or an assertion to the effect that an overall opinion cannot be expressed. When an overall opinion cannot be expressed the reason therefor shall be stated. An accountant's report shall include as a part thereof a signed statement by the responsible corporate officer attesting that management has fully disclosed all material facts to the independent certified public accountant, and that the audited financial statement is a true and complete statement of the financial condition of the contractor.

(7) “Management", when used herein, means the chief executive officers, partners, principals or other person or persons primarily responsible for the financial and operational policies and practices of the contractor.

(8) Accounting terms, unless otherwise defined herein, shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

(b) Subsection (a)(2) hereof notwithstanding, every agreement or contract awarded or executed pursuant to sections thirty-eight A 1/2 to thirty-eight O, inclusive, of chapter seven, or eleven C of chapter twenty-five A, and pursuant to section thirty-nine M of chapter thirty or to section forty-four A through H, inclusive, of chapter one hundred and forty-nine, shall provide that:

(1) The contractor shall make, and keep for at least six years after final payment, books, records, and accounts which in reasonable detail accurately and fairly reflect the transactions and dispositions of the contractor, and

(2) Until the expiration of six years after final payment, the office of inspector general, and the commissioner of capital asset management and maintenance shall have the right to examine any books, documents, papers or records of the contractor or of his subcontractors that directly pertain to, and involve transactions relating to, the contractor or his subcontractors, and

(3) If the agreement is a contract as defined herein, the contractor shall describe any change in the method of maintaining records or recording transactions which materially affect any statements filed with the awarding authority, including in his description the date of the change and reasons therefor, and shall accompany said description with a letter from the contractor's independent certified public accountant approving or otherwise commenting on the changes, and

(4) If the agreement is a contract as defined herein, the contractor has filed a statement of management on internal accounting controls as set forth in paragraph (c) below prior to the execution of the contract, and

(5) If the agreement is a contract as defined herein, the contractor has filed prior to the execution of the contracts and will continue to file annually, an audited financial statement for the most recent completed fiscal year as set forth in paragraph (d) below.

(c) Every contractor awarded a contract shall file with the awarding authority a statement of management as to whether the system of internal accounting controls of the contractor and its subsidiaries reasonably assures that:

(1) transactions are executed in accordance with management's general and specific authorization;

(2) transactions are recorded as necessary

i. to permit preparation of financial statements in conformity with generally accepted accounting principles, and

ii. to maintain accountability for assets;

(3) access to assets is permitted only in accordance with management's general or specific authorization; and

(4) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

Every contractor awarded a contract shall also file with the awarding authority a statement prepared and signed by an independent certified public accountant, stating that he has examined the statement of management on internal accounting controls, and expressing an opinion as to:

(1) whether the representations of management in response to this paragraph and paragraph (b) above are consistent with the result of management's evaluation of the system of internal accounting controls; and

(2) whether such representations of management are, in addition, reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statements.

(d) Every contractor awarded a contract by the commonwealth or by any political subdivision thereof shall annually file with the commissioner of capital asset management and maintenance during the term of the contract a financial statement prepared by an independent certified public accountant on the basis of an audit by such accountant. The final statement filed shall include the date of final payment. All statements shall be accompanied by an accountant's report. Such statements shall be made available to the awarding authority upon request.

(e) The office of inspector general, the commissioner of capital asset management and maintenance and any other awarding authority shall enforce the provisions of this section. The commissioner of capital asset management and maintenance may after providing an opportunity for the inspector general and other interested parties to comment, promulgate pursuant to the provisions of chapter thirty A such rules, regulations and guidelines as are necessary to effectuate the purposes of this section. Such rules, regulations and guidelines may be applicable to all awarding authorities. A contractor's failure to satisfy any of the requirements of this section may be grounds for debarment pursuant to section forty-four C of chapter one hundred and forty-nine.

(f) Records and statements required to be made, kept or filed under the provisions of this section shall not be public records as defined in section seven of chapter four and shall not be open to public inspection; provided, however, that such records and statements shall be made available pursuant to the provisions of clause (2) of paragraph (b).

M.G.L. c. 30, § 39O: Suspension, Delay, or Interruption or Failure to Act by Awarding Authority; Adjustment in Contract Price; Submission of Claims.

Section 39O. Every contract subject to the provisions of section thirty-nine M of this chapter or subject to section forty-four A of chapter one hundred forty-nine shall contain the following provisions (a) and (b) in their entirety and, in the event a suspension, delay, interruption or failure to act of the awarding authority increases the cost of performance to any subcontractor, that subcontractor shall have the same rights against the general contractor for payment for an increase in the cost of his performance as provisions (a) and (b) give the general contractor against the awarding authority, but nothing in provisions (a) and (b) shall in any way change, modify or alter any other rights which the general contractor or the subcontractor may have against each other.

(a) The awarding authority may order the general contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as it may determine to be appropriate for the convenience of the awarding authority; provided however, that if there is a suspension, delay or interruption for fifteen days or more or due to a failure of the awarding authority to act within the time specified in this contract, the awarding authority shall make an adjustment in the contract price for any increase in the cost of performance of this contract but shall not include any profit to the general contractor on such increase; and provided further, that the awarding authority shall not make any adjustment in the contract price under this provision for any suspension, delay, interruption or failure to act to the extent that such is due to any cause for which this contract provides for an equitable adjustment of the contract price under any other contract provisions.

(b) The general contractor must submit the amount of a claim under provision (a) to the awarding authority in writing as soon as practicable after the end of the suspension, delay, interruption or failure to act and, in any event, not later than the date of final payment under this contract and, except for costs due to a suspension order, the awarding authority shall not approve any costs in the claim incurred more than twenty days before the general contractor notified the awarding authority in writing of the act or failure to act involved in the claim.

<<<<<<<<<<◇>>>>>>>>>>
END OF DOCUMENT

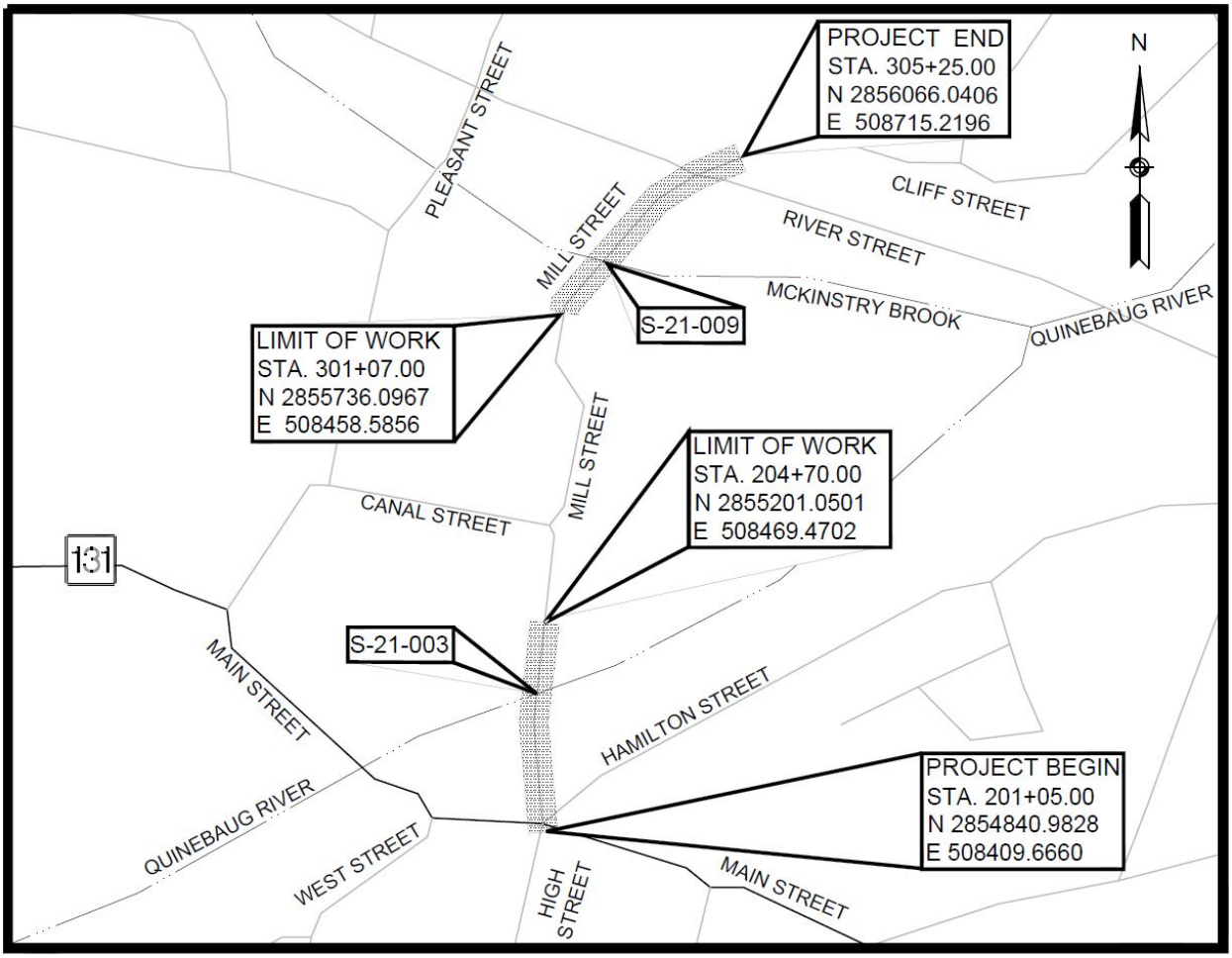
THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00331

LOCUS MAP

SOUTHBRIDGE

Federal Aid Project No. STP(BR-OFF)-003S(948)X
Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River



NO SCALE

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT 00439

Final Report ☐

Interim Report ☐

CONTRACTOR PROJECT EVALUATION FORM

For instructions on using this form, see Engineering Directive E-10-002, Dated 4/20/2010

Date: _____

City/Town: _____ Contractor:_____

Project: _____ Address:_____

F.A. No. _____ Contract Number: _____

Bid Price: _____ Notice to Proceed: _____

Funds: State:_____ Fed Aid:_____ Current Contract Completion Date:_____

Date Work Started: _____ Date Work Completed*: _____

Contractor's Superintendent: _____

Division: (indicates class of work) Highway:_____Bridge:_____Maintenance: _____

*If work was NOT completed within specified time (including extensions) give reasons on following page.

	Excellent 10	Very Good 9	Average 8	7	Fair 6	5	Poor 4	% Rating
1. Workmanship								x 2=
2. Safety								x 2=
3. Schedule								x 1.5=
4. Home Office Support								x 1=
5. Subcontractors Performance								x 1=
6. Field Supervision/ Superintendent								x 1=
7. Contract Compliance								x 0.5=
8. Equipment								x 0.5=
9. Payment of Accounts								x 0.5=
(use back for additional comments)						**Overall Rating:**		

(Give explanation of items 1 through 9 on the following page in numerical order if overall rating is below 80%. Use additional sheets if necessary.)

_____ _____

District Construction Engineer's Signature/Date Resident Engineer's Signature/Date

_____

Contractor's Signature Acknowledging Report/Date

Contractor Requests Meeting with the District: No ☐ Yes ☐ Date Meeting Held:_____

Contractor's Comments/Meeting Notes (extra sheets may be added to this form and noted here if needed):_____

_____

_____

CONTRACTOR PROJECT EVALUATION FORM (Continued)

Date: _____ Contract Number:_____

INFORMATION FOR DISTRICT HIGHWAY DIRECTORS RELATING TO PREQUALIFICATION

A deduction shall be recommended for unsatisfactory performance if computed overall rating is under 80%.
A deduction may be recommended for this project being completed late due to the Contractor's fault.

RECOMMENDATIONS FOR DEDUCTIONS FROM CONTRACTORS' ASSIGNED FACTOR
(*Write Yes or No in space provided*)

I recommend a deduction for Contractor's unsatisfactory performance: _____

I recommend a deduction for project completed late:_____

Signed: _____
District Highway Director

EXPLANATION OF RATINGS 1 – 9:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

WORK NOT COMPLETED WITHIN SPECIFIED TIME: _____

_____

_____

_____

_____

_____

_____

Revised: 04/28/17

*** END OF DOCUMENT ***

DOCUMENT 00440

Final Report ☐

Interim Report ☐

SUBCONTRACTOR PROJECT EVALUATION FORM

For instructions on using this form, see Engineering Directive E-10-002, Dated 4/20/2010

Date: _____

City/Town: _____ Subcontractor: _____

Project: _____ Address: _____

F.A. No.: _____ Contract Number: _____

Prime Contractor _____ Current Contract Completion Date: _____

Date Work Started: _____ Date Work Completed*: _____

Subcontractor's Superintendent: _____

Type of Work Performed by Subcontractor: _____

*If work was NOT completed within specified time (including extensions) give reasons on following page.

	Excellent 10	Very Good 9	Average 8	7	Fair 6	5	Poor 4	% Rating
1. Workmanship								x 2=
2. Safety								x 2=
3. Schedule								x 1.5=
4. Home Office Support								x 1.5=
5. Field Supervision/ Superintendent								x 1=
6. Contract Compliance								x 1=
7. Equipment								x 0.5=
8. Payment of Accounts								x 0.5=
(use back for additional comments)							**Overall Rating:**	

(Give explanation of items 1 through 8 on the following page in numerical order if overall rating is below 80%. Use additional sheets if necessary.)

_____ _____

District Construction Engineer's Signature/Date Resident Engineer's Signature/Date

_____ _____

Contractor Signature Acknowledging Report/Date Subcontractor Signature Acknowledging Report/Date

Subcontractor Requests Meeting with the District: No ☐ Yes ☐ Date Meeting Held: _____

Subcontractor's Comments / Meeting Notes (extra sheets may be added to this form and noted here if needed):

_____

_____

Contractor's Comments: _____

_____

SUBCONTRACTOR PROJECT EVALUATION FORM (Continued)

Date: _____ Contract Number:_____

INFORMATION FOR DISTRICT HIGHWAY DIRECTORS RELATING TO PREQUALIFICATION

A deduction shall be recommended for unsatisfactory performance if computed overall rating is under 80%.
A deduction may be recommended for this project being completed late due to the Contractor's fault.

RECOMMENDATIONS FOR DEDUCTIONS FROM CONTRACTORS' ASSIGNED FACTOR
(*Write Yes or No in space provided*)

I recommend a deduction for Contractor's unsatisfactory performance: _____

I recommend a deduction for project completed late:_____

Signed: _____
District Highway Director

EXPLANATION OF RATINGS 1 – 8: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

WORK NOT COMPLETED WITHIN SPECIFIED TIME: _____

_____

_____

_____

_____

_____

_____

Revised: 04/28/17

*** END OF DOCUMENT ***

DOCUMENT 00710
GENERAL CONTRACT PROVISIONS
Revised: 03-31-26

NOTICE OF AVAILABILITY

The STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES dated 2026, the SUPPLEMENTAL SPECIFICATIONS , the 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS; the 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING and the CONSTRUCTION STANDARD DETAILS are available online at https://www.mass.gov/massdot-highway-division-manuals-and-publications

SPECIAL PROVISIONS FOR RIGHT-TO-KNOW ACT REQUIREMENTS

The Contractor's attention is directed to Massachusetts General Laws, Chapter 111F, commonly known as the Right-To-Know Act, and to the regulations promulgated pursuant thereto. Among the provisions of the Right-To-Know Act is a requirement that employers make available to employees Materials Safety Data Sheets (MSDS) for any substance on the Massachusetts Substance List (MSL) to which employees are, have been, or may be exposed.

To ensure prompt compliance with these regulations and legislation, the Contractor shall:

1. Deliver to the Department, prior to the start of any work under this contract, copies of MSDS for all MSL substances to be used, stored, processed or manufactured at the worksite by the Contractor.

2. Train employees of the Department, who may be exposed to MSL substances as a result of the Contractor's work under this contract, with regard to those specific substances in accordance with requirements of the Right-To-Know Act.

3. Observe all safety precautions recommended on the MSDS for any MSL substance to be used, stored, processed, or manufactured at the worksite by the Contractor.

4. Inform the Department in writing regarding specific protective equipment recommended in the MSDS for MSL substances to which employees of the Department may be exposed as a result of the Contractor's work under this contract.

The Department shall not be liable for any delay or suspension of work caused by the refusal of its employees to perform any work due to the Contractor's failure to comply with the Right-To-Know Act. The Contractor agrees to hold the Department or the Commissioner of the Department harmless and fully indemnified for any and all claims, demands, fines, actions, complaints, and causes of action resulting from or arising out of the Contractor's failure to comply with the requirements of the Right-To-Know Act.

ALTERNATIVE DISPUTE RESOLUTION
Forum, Choice of Law and Mediations:

Any actions arising out of a contract shall be governed by the laws of Massachusetts and shall be brought and maintained in a State or federal court in Massachusetts which shall have exclusive jurisdiction thereof. MassDOT and the Contractor may both agree to mediation of any claim and will share the costs of such mediation pro rata based on the number of parties involved.

*** END OF DOCUMENT ***

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT 00715

SUPPLEMENTAL SPECIFICATIONS

JUNE 30, 2026

The 2026 *Standard Specifications for Highways and Bridges* are amended by the following modifications, additions and deletions. These Supplemental Specifications prevail over those published in the Standard Specifications.

The Specifications Committee has issued these Supplemental Specifications for inclusion into each proposal until such time as they are updated or incorporated into the next Standard Specifications.

Contractors are cautioned that these Supplemental Specifications are dated and will change as they are updated.

DIVISION I

GENERAL REQUIREMENTS AND COVENANTS

SECTION 5.00: CONTROL OF WORK

Subsection 5.03: Conformity with Plans and Specifications
Change the MGL reference in the first sentence to Chapter 30, Section 39I (from Section 39L).

DIVISION II

CONSTRUCTION DETAILS

SECTION 200: DRAINAGE

SUBSECTION 227: DRAINAGE SYSTEM SEDIMENT

Subsection 227.30, Method of Measurement
Change the subsection number to 227.80

Subsection 227.31, Basis of Payment
Change the subsection number to 227.81

Subsection 227.31, Payment Items
Change the subsection number to 227.82

SECTION 400: SUB-BASE, BASE COURSE, SHOULDERS, PAVEMENT AND BERMS

SUBSECTION 430: CEMENT CONCRETE BASE COURSE

Subsection 430.40: General
Change Applied Crack Sealer to Hot Applied Crack Sealer.

SUBSECTION 476: CEMENT CONCRETE PAVEMENT

Subsection 476.20: Materials
Delete Preformed Bituminous Joint Filler for Concrete - M3.05.5 and add the following in M number sequence:

Preformed Expansion Joint Filler	M9.14.0

SUBSECTION 477: MILLED RUMBLE STRIPS

Subsection 477: Milled Rumble Strips
Replace this subsection with the following:

DESCRIPTION

477.20: General

The work consists of constructing rumble strips on roadways by milling grooves into finished surfaces. Milled Rumble Strips are categorized as Type A, Type B, Type C, or Type D. Type A are rectangular milled grooves at regular intervals in the paved surface, Type B rumble strips are rectangular grooves at regular intervals with designed gaps between intervals to accommodate bicyclists, and Type C and Type D rumble strips form continuous grooves in the paved surface in the form of a vertical sinusoidal wave pattern.

CONSTRUCTION METHODS

477.61: Equipment

The equipment shall self-align with the slope of the roadway surface and/or any irregularities in the roadway surface.

The Contractor shall demonstrate to the Engineer the ability to achieve the desired groove without tearing or snagging the roadway surface prior to beginning the work.

477.62: Installation of Rumble Strips

Rumble strips shall be installed in accordance with the locations, dimensions, and Type shown on the plans.

Type A and Type B rumble strips shall be installed after the longitudinal pavement markings they supplement (typically edge lines or channelizing lines) are in place. Installation of any diagonal or chevron pavement markings that cross the Type A or Type B rumble strips shall only occur after the rumble strips are in place.

Type C rumble strips shall be installed after the location of the longitudinal pavement markings they supplement (typically center lines) has been laid out, but before the pavement markings are installed. The pavement markings shall only be installed after the Type C rumble strips are in place.

Type D rumble strips shall be installed after the longitudinal pavement markings they supplement (typically center lines) are in place.

477.63: Control of the Work Area

At the end of each working day, all equipment shall be moved to a location where it does not present a hazard to traffic. The pavement shall be cleaned by sweeping and the work area shall be reopened to traffic.

Pavement millings shall become the property of the Contractor and shall be removed and disposed of off-site.

COMPENSATION

477.80: Method of Measurement

Milled Rumble Strip (Type A), Milled Rumble Strip (Type C), and Milled Rumble Strip (Type D) will be measured by the total length of installed rumble strip. Milled Rumble Strip (Type B) will be measured by the total length of installed rumble strip excluding the designed gaps. Breaks at castings, bridge decks, intersections or other breaks will not be measured for payment for all types.

477.81: Basis of Payment

Payment for Milled Rumble Strip (Type A), Milled Rumble Strip (Type B), Milled Rumble Strip (Type C), and Milled Rumble Strip (Type D) will be made at the contract unit price per foot of rumble strips, complete in place. Such payment will be full compensation for furnishing all equipment and labor for satisfactorily performing the work including cleanup and disposal of excess materials.

477.82: Payment Items

Item number	Description	Unit
477.	Milled Rumble Strip (Type A)	Foot
477.1	Milled Rumble Strip (Type B)	Foot
477.2	Milled Rumble Strip (Type C)	Foot
477.3	Milled Rumble Strip (Type D)	Foot

SUBSECTION 482: SAWCUTTING

Subsection 482.80: Method of Measurement
Replace this subsection with the following:

Sawcutting, when included in the Contract as its own bid item, will be measured for payment by the foot along the cut line, regardless of depth.

SECTION 600: HIGHWAY GUARD, FENCES AND WALLS

SUBSECTION 628: IMPACT ATTENUATORS

Subsection 628.82: Payment Items
Replace this subsection with the following:

Item number	Description	Unit
628.302	Permanent Impact Attenuator, Non-Redirective, TL-2	Each
628.303	Permanent Impact Attenuator, Non-Redirective, TL-3	Each
628.304	Temporary Impact Attenuator, Non-Redirective, TL-2	Each
628.305	Temporary Impact Attenuator, Non-Redirective, TL-3	Each
628.312	Permanent Impact Attenuator, Redirective, TL-2	Each
628.313	Permanent Impact Attenuator, Redirective, TL-3	Each
628.314	Temporary Impact Attenuator, Redirective, TL-2	Each
628.315	Temporary Impact Attenuator, Redirective, TL-3	Each
628.322	Permanent Impact Attenuator, Low-Maintenance, TL-2	Each
628.323	Permanent Impact Attenuator, Low-Maintenance, TL-3	Each

SECTION 800: TRAFFIC CONTROL DEVICES

SUBSECTION 813: WIRING, GROUNDING AND SERVICE CONNECTIONS

Subsection 813.20: General
Replace this subsection with the following:

This work shall consist of furnishing and installing wire and cable of the type and size indicated for traffic signals and other traffic control devices, ITS systems, highway lighting and related electrical systems, equipment grounding systems, new ground electrodes or connections to existing ground electrodes, power pedestals, and all materials and equipment necessary to deliver power to such systems.

Service points shown on the plans are approximate only. The Contractor shall determine exact locations for both overhead and underground service access points. The Contractor shall determine riser elevations or connections/routing to manhole facilities from the serving utility, and arrange to complete the service connections.

All work under this Subsection shall comply with the MEC and the National Electrical Safety Code.

Subsection 813.41: Grounding and Bonding Conductions
Replace this subsection with the following:

Grounding and bonding conductors shall conform to M8.16.10: Type 10 Grounding and Bonding Conductors (Solid or Stranded, Insulated or Bare).

Subsection 813.42: Ground Rods
Replace this subsection with the following:

Ground rods shall consist of driven rod(s) conforming to M8.17.0: Ground Rod or other devices approved for the purpose.

Subsection 813.44: Power Pedestal
Add this subsection in numerical order:

A Power Pedestals shall consist of a side-of-post mounted lockable load center enclosure, a load center with circuit breakers, an exterior-mounted electrical meter, signal post and base, equipment bonding, ground rod(s) conforming to 813.42: Ground Rods, and a cement concrete foundation. The enclosure, lock, circuit breakers, signal post and base, and foundation shall all be included in the Shop Drawing submission.

The enclosure shall be rated to meet or exceed NEMA 3R and be suitable for post-mounting and shall be sized appropriately to house the load center. The enclosure shall be capable of being secured with an integrated locking mechanism or by a Contractor-supplied padlock; regardless of locking mechanism, it shall be operated with a #2 key.

The circuit breakers shall be designed for single-phase, 3-wire, 120/240 VAC. Circuit breakers shall provide a means to manually operate a circuit and/or automatically open a circuit that is in overload or short circuit conditions. All circuit breakers shall be UL listed and have CSA certification.

The enclosure shall be furnished with a meter socket installed. The meter socket shall be approved by the servicing electrical utility.

The signal post and base shall conform to M10.05.1: Signal Posts and Bases and the Plans. The Contractor shall supply a square aluminum base with a natural or anodized finish and a Schedule 80 aluminum post with a brushed or spun finish, unless otherwise indicated in the Plans.

The Contractor shall supply mounting equipment recommended by the enclosure manufacturer to side-mount the cabinet to the post.

Bonding for the Power Pedestal shall utilize a #8 AWG or larger ASTM-B3 wire.

The cement concrete foundation shall conform to the Plans and M4.02.0: Concrete Produced by Stationary and Truck Mixers, M4.03.0: Concrete Produced by Volumetric Mixers, M4.06.1: Conventional Concrete, M4.09.0: Precast, Prestressed, and Prefabricated Concrete Products, M4.11.0: Evaporation Reducing Materials, and M4.12.0: Curing Materials, as applicable.

Subsection 813.64: Power Pedestal
Add this subsection in numerical order:

No work shall commence until Shop Drawings have been approved.

The Power Pedestal Cabinet shall be mounted side-of-post to the Signal Post, per the manufacturer's recommendations. The Power Pedestal Cabinet should be installed directly below the meter socket, per the Plans. If dissimilar metals are present, they shall be electrically insulated to prevent galvanic corrosion.

The Contractor shall supply the appropriate type (single pole or double pole) and number of circuit breakers included within the Power Pedestal Cabinet to provide the recommended AC power to each device receiving power from the Cabinet. The circuit breakers shall be clearly labeled as to which device they are powering (e.g. RRFB-1, RRFB-2, Warning Beacon, Speed Feedback Sign, etc.).

The Power Pedestal shall be grounded and bonded per 813.61: Equipment Grounding and Bonding and 813.62: Grounding Electrodes.

Subsection 813.80.E: Power Pedestal
Add this subsection in numerical order:

Power Pedestals will be measured by the number of Power Pedestals each furnished and installed.

Subsection 813.81.E: Power Pedestal
Add this subsection in numerical order:

Power Pedestals will be paid for at the contract unit price for each installed in place. This includes all labor and materials required for a working system.

All costs associated with grounding and bonding of Power Pedestals shall be considered incidental to the item.

All costs associated with providing service connections to Power Pedestals shall be paid for under their respective pay items.

Subsection 813.82: Payment Items
Change the unit of measure for items 813.80 and 813.81 to Each and add the following pay item:

Subsection 815.82: Payment Items
Delete payment items 818.90 to 818.94, 819.39, 819.832, 819.52, 819.53, 819.60 to 819.64, 819.70, 819.71, 819.72, 819.800, 819.801, 819.802, 819.803,:819.810, 819.811, 819.820, 819.821, 819.850, 819.851, 819.852.

Add the following payment item:

813.90	Power Pedestal	Each

SUBSECTION 819: TRAFFIC SIGNAL DETECTION

Subsection 819: Traffic Signal Detection
Add this subsection:

DESCRIPTION

819.20: General

Work under this Subsection consists of furnishing and installing detection devices for vehicles, bicycles, pedestrians, and other road users.

MATERIALS

819.40: General

Materials shall meet the requirements specified in the following Subsections of Division III, Materials:

Material	Section
Vehicle Detection Systems	M10.08.0
Passive Stop Line Detectors	M10.08.1
Passive Advanced Detectors	M10.08.2
Pedestrian Detectors	M10.09.0
Pedestrian Pushbutton Assembly	M10.09.1
APS Pushbutton Assembly	M10.09.2

The Contractor shall furnish Vehicle Detection Systems (VDS) and Pedestrian Detectors that are listed on the QTCE.

Any software, firmware, cables, or adapters required to program, adjust, fine-tune, or monitor VDS or Pedestrian Detectors shall be provided by the Contractor. VDS and Pedestrian Detectors shall have the latest versions of software and/or firmware installed prior to inspection. Manufacturer updates to software and/or firmware shall be included at no cost for the life of the products.

819.40.A: Vehicle Detection Systems

A VDS shall consist of one or more Internet Protocol (IP) -based detector/sensor assemblies and a cabinet interface device that is installed in a Traffic Signal Controller Cabinet or similar device.

Stop Line VDS shall be capable of providing motor vehicle and bicycle detection at all locations shown on the Plans. The Contractor may furnish a VDS that utilizes a single detector/sensor or multiple, as long as all stop line motor vehicle and bicycle detection zones are encompassed and the traffic signal or other device utilizing the detection can operate per the Plans. All Passive Stop Line Detectors required to provide stop line detection at an intersection shall be included in the cost of a single Stop Line Vehicle Detection System.

If the Contractor furnishes a Stop Line VDS that does not utilize an integrated video monitoring system, a separate video monitoring system per 819.41: Video Monitoring System shall be furnished and installed at no additional cost.

Advanced VDS shall be capable of providing motor vehicle detection on a single approach, at the location shown on the Plans. The Contractor Shall furnish Passive Advanced Detectors that utilize, and are compatible with, the same interface device installed in the Traffic Signal Controller Cabinet, or similar device, as the Stop Line VDS.

All VDSs shall be furnished with manufacturer-supplied mounting hardware.

If multiple VDSs over multiple locations are supplied under a single contract, all components furnished by the Contractor shall be of the same make and model.

819.40.B: Pedestrian Detectors

Pedestrian Pushbutton Assembly and Accessible Pedestrian Signal (APS) Pushbutton Assembly shall both include a pushbutton, sign, housing, manufacturer-specified mounting hardware, and wiring. The Contractor shall review the Contract Documents to determine if one or more in-cabinet control units are required to meet the pedestrian detector type and operational requirements. In-cabinet control units shall be considered incidental to the cost of the item.

The Contractor shall provide a pushbutton housing that conforms to the shape of the pole it is mounted to or shall furnish and install a manufacturer-supplied saddle to provide a flush, secure fit, at no additional cost.

An APS Pushbutton Assembly shall include a pedestrian pushbutton sign that conforms to the Plans. If the sign is not integral to the housing, separate mounting equipment shall be furnished and installed by the Contractor. All costs associated with the sign and mounting equipment shall be considered incidental to the cost of the item.

819.41: Video Monitoring System

When required by 819.40.A: Vehicle Detection Systems, the Contractor shall furnish and install a Video Monitoring System. The Video Monitoring System shall consist of one or more IP-based 4K, 1080p, H.264 dome-type CCTV cameras; mounting hardware, including but not limited to: brackets, bands, straps, posts, plates, and pole mount adapters; power distribution and conditioning equipment including surge suppression; and all necessary cabling and wiring.

All equipment provided for the Video Monitoring System shall be commercial, off-the-shelf products. Custom equipment designed specifically for the Contract will not be accepted. All cabling and wiring shall be recommended by the manufacturer and rated for outdoor use. Any special wiring or connectors required by the manufacturer shall be identified in the Shop Drawings.

The Video Monitoring System shall conform to National Electrical Manufactures Association (NEMA) standards, Underwriters' Laboratory (UL), and Military Standards (MIL), as applicable. All components of the Video Monitoring System shall be new and still under production by the manufacturer. Obsolete, no longer produced, and/or no longer supported components will not be accepted.

The Video Monitoring System shall be capable of operating in temperatures ranging from -29°F to +165°F.

The camera shall meet or exceed the requirements found in Table 819.41-1:

Table 819.41-1: Minimum Camera Requirements

Feature	Requirement
Zoom Ratio	The minimum zoom ratio shall be 30x Optical and 12x Digital
Camera Type	The camera shall be an IP-type CCTV camera.
Auto Focus	The camera shall include auto focus with a selection for manual override of auto focus.
Lens Aperture Ratio	Typical: F/1.6 to F/4.7 (wide to telephoto)
On-Screen Direction	The CCTV camera shall display on-screen azimuth indications.
Privacy Zones	The CCTV camera shall be programmable to blank out up to 8, four-sided areas to electronically block portions of the camera's field of view from being

Feature	Requirement
	displayed. These privacy zones shall move and adjust sizing synchronously with camera movements and degree of lens zooming.
On-Screen Labels, Text and Titles	The CCTV camera shall display a minimum of 20 programmable characters for on-screen camera ID, preset position, sector, and alarm titles.
On-Screen Labels, Text and Title Positioning	The position of the on-screen text shall be adjustable to appear at selectable positions on the CCTV camera screen image.
Number of Pixels	The camera shall provide a minimum of 1280H x 720V effective pixels. The camera shall be capable of being configured to operate at all standard lower resolutions down to 320H x 180V effective pixels.
Image Sensor Size	The camera shall include an image sensor of 1/1.8 in., nominal.
Lens Focal Length	The camera shall include a zoom lens of 4.3 mm to 129 mm, minimum focal length.
Color and Black & White Image Selection	The camera shall have Color and Black & White video image display modes incorporating both automatic and manual override image mode selection. The camera shall transition automatically to a Black & White mode (when in automatic mode) when the luminance level reaches a user predefined threshold. At all times the camera shall provide a full motion video output at 30 frames per second.
Image Stabilization	The CCTV camera shall incorporate electronic image stabilization to reduce the effects of vibration and wind gusts on the displayed video image.
Automatic Iris	The camera shall include both automatic iris control and an override for manual iris adjustments.
Wide Dynamic Range	The CCTV camera's wide dynamic range shall be 120 dB.
CCTV Camera Optical Sensitivity	The camera's sensitivity shall be sufficient to provide a clear, usable color video image display with a scene illumination of ≤ 0.1 lux at an aperture of F1.6, nominal.
Power Input	The power input for the CCTV camera and dome shall be PoE+.
Alarms	No alarm contacts shall be wired.

The Contractor shall mount the camera at a location that optimizes line-of-sight for all approaches. The view of each approach shall have a clear line of sight, free from obstructions from trees, overhead wires, buildings, and/or other obstructions. If the Contractor is unable to provide a clear line of sight for all approaches to the satisfaction of the Engineer, a second camera, including mounting hardware, cabling, and wiring, shall be furnished and installed on a different traffic signal structure at no additional cost.

The Contractor shall be responsible for the following items prior to installation:

- Ensure that all components are assembled and factory-tested prior to delivery to the project site.
- Fully configure the camera settings, including but not limited to: camera resolution, camera address, default settings, and pre-set and home positions, per the direction of the Engineer.
- Coordinate with the Engineer to set the camera address number to provide unique identification that is compatible with the CCTV camera addressing schema utilized by the Department.

The Contractor shall deliver the camera(s) fully assembled to the project site.

The Contractor shall provide up to 3 hard copy sets of operating manuals, service manuals, and maintenance instructions for all components of the system. At the request of the Engineer, the number of copies may be reduced if the manuals are provided in .pdf file format.

819.42: Material Warranties

All components of Vehicle Detection Systems, including Video Monitoring Systems, and Pedestrian Detectors shall include a minimum two-year manufacturer's replacement warranty that will commence upon acceptance by the Engineer. The warranty shall cover any manufacturing defects of the products.

Construction Methods

819.60: General

The Contractor shall use discretion in installing the detectors/sensors at locations that optimize the performance of the VDS and to eliminate false calls. The Contractor shall notify the Engineer if the size or location of the detection zones differs from what is shown in the Plans. At the direction of the Engineer, the Contractor will be required to readjust the location of the detection zones and/or modify the detection channels if false calls are observed or the traffic signal system is not operating per the Plans due to the performance of the VDS; this work shall be considered incidental to the cost of the item.

The Contractor shall use manufacturer-specified mounting hardware for all detectors/sensors. If mounted to mast arms or strain poles, any addition weight or wind loading from the detector/sensor shall be accounted for in the structural calculations.

The Contractor shall install the cabinet interface device in the traffic signal controller cabinet. The cabinet interface device shall be connected to the Field Monitoring Unit (FMU) or an ethernet switch in the traffic signal controller cabinet. All communication between devices shall be IP-based. Use of external communications that are not routed through the FMU is prohibited.

The Contractor shall furnish and install low voltage power cabling surge protection equipment required for all data and power lines associated with VDS, Video Monitoring Systems, and/or Pedestrian Detection Systems entering the traffic signal controller cabinet.

The Contractor shall install the manufacturer-specified cable between the detectors/sensors to the cabinet interface device in the traffic signal controller cabinet via traffic signal structures, conduit, and/or pullboxes. This shall include all connectors, sealing tape, and incidental work to complete the connection(s). All equipment installation and wiring shall be installed in a neat and orderly manner and per the manufacturer's specifications.

The VDS shall be powered through one of the power outlets available on the FMU. The VDS shall be capable of being powered down and remotely restarted through remote control of the power outlet on the FMU.

Under the supervision of the Engineer, the Contractor shall install the VDS software that allows visual confirmation of the detection zones on Department computers.

The Contractor shall install Pedestrian Detectors at the location(s) and mounting height shown on the Plans.

The Contractor shall mount and orient the APS Pushbutton Assembly in a manner so that the vibrotactile arrow is aligned parallel to the crosswalk.

Prior to acceptance, the Contractor shall furnish all passwords for Vehicle Detection Systems and Pedestrian Detectors to the Engineer. The use of default passwords is prohibited.

819.61: Programming APS Pushbuttons

Each APS Pushbutton shall have an audible walk indication during the associated walk interval. The duration of the audible walk indication shall match the duration of the walk interval unless the pedestrian signal is programmed to rest in walk. If programmed to rest in walk, the audible walk indication shall be limited to 7 seconds in length but may be recalled by a subsequent button press during the walk interval.

The APS Pushbutton locator tone and audible walk indication shall be programmed to broadcast at volume 5 dBA louder than ambient sound, except when audible beaconing is provided in response to an extended pushbutton press. The broadcast volume shall be programmed to not exceed 100 dBA at 3 ft. from the emitter, regardless of ambient noise conditions.

The locator tone shall have a duration of 0.15 seconds or less and shall repeat at 1-second intervals.

The locator tone shall be active during all signal intervals, except for the following conditions:

- When the audible walk indication is being broadcast.
- If the signal is programmed to rest in walk, the locator tone shall resume 7 seconds after the start of the walk interval.
- The locator tone shall be disabled if the traffic control signal or pedestrian hybrid beacon is operating in an emergency or fault flashing mode.

The locator tone shall be active during the flashing yellow and alternating flashing red intervals of a pedestrian hybrid beacon phasing sequence.

Upon button press, the locator tone at that pushbutton shall be interrupted and a speech message of “Wait” shall be broadcast.

The normal status of the pilot light shall be dark. The pilot light shall illuminate upon button press and stay illuminated until the start of the walk interval, when it shall return to dark. If the associated pedestrian phase is set to pedestrian recall, the pilot light shall stay illuminated for all intervals except for the walk interval.

The audible walk indication shall an audible tone unless a speech message is called for in the Plans. The audible tone shall repeat at 8 to 10 ticks per second, in multiple frequencies, with the dominant component at 880 Hz.

If a speech message is used, the following shall apply:

- For exclusive pedestrian phases, during the walk interval the speech message shall be: “walk sign is on for all crossings.” This message shall be broadcast a single instance.
- *For concurrent pedestrian phases, during the walk interval the speech message shall be: “[STREET NAME]. Walk sign is on for [STREET NAME].” This message shall be broadcast a single instance.
- If the signal is programmed to rest in walk, the concurrent pedestrian speech message shall be repeated upon each subsequent button press.

*Note: See Plans for Street Name information.

The vibrotactile arrow shall vibrate during the walk interval.

The Contractor shall include a fault relay that will default to placing a constant pedestrian call from any pushbutton assembly that fails to communicate back to the in-cabinet control unit.

The Contractor shall connect the in-cabinet control unit to the Field Monitoring Unit (FMU) via an open ethernet port.

819.62: VDS Testing and Evaluation

After the VDS is installed, but prior to acceptance, the Contractor shall conduct an evaluation of the system in the presence of the Engineer. The purpose of the evaluation is to certify the system is operating per the requirements of M10.08.0: Vehicle Detection Systems, M10.08.1: Passive Stop Line Detectors, and M10.08.2: Passive Advanced Detectors, as applicable. The Contractor shall submit their testing and evaluation plan as a part of the Shop Drawing submittal.

The testing and evaluation shall take place for a minimum of 30 minutes under moderate live traffic conditions. Testing shall not be conducted during inclement weather.

If the Engineer determines that the system does not meet the operational requirements, the Contractor will be required to adjust the location, orientation, and/or number of detector/sensors. The Contractor may also adjust the location of the detection zones at this time. Upon completion of this work, the system shall be reevaluated in the presence of the Engineer. This process shall be repeated until the operational requirements are met.

All costs associated with testing and evaluation of the VDS, including the repositioning or addition of new materials, shall be considered incidental to the item.

Compensation

819.80: Method of Measurement

Stop Line Vehicle Detection Systems will be measured as each system furnished and installed.

Advanced Vehicle Detection Systems will be measured as each system furnished and installed.

Pedestrian Pushbuttons and APS Pushbuttons will be measured as each pushbutton furnished and installed.

819.81: Basis of Payment

Stop Line Vehicle Detection Systems will be paid for each system installed at an intersection. For the purposes of this work, an intersection shall be defined as all roadway, path, and/or trail approaches controlled by a single traffic signal controller. Where a Video Monitoring System is required per 819.40: General, it shall be included in the cost of Item 819.840.

Advanced Vehicle Detection System will be paid for each system installed on an intersection approach.

Pedestrian Pushbutton and APS Pushbutton will be paid for each pushbutton assembly installed. The pedestrian sign mounted directly above the pushbutton shall be considered incidental to the item.

The unit cost of each vehicle detection system or pushbutton item shall include all wiring, cabling, mounting hardware, software, firmware, video monitoring system (if required), testing, calibrating, Department Acceptance, training, and all other labor and materials required for the system(s) to operate per the Plans.

819.82: Payment Items

Item number	Description	Unit
819.840	Stop Line Vehicle Detection System	Each
819.845	Advanced Vehicle Detection System	Each
819.850	Pedestrian Pushbutton	Each
819.855	APS Pushbutton	Each

SUBSECTION 850: TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS

Subsection 850.25: Arrow Board
Subsection 850.45: Arrow Board
Subsection 850.65: Arrow Board
Delete these subsections.

Subsection 850.80: Method of Measurement
Delete the 7th paragraph beginning with "Arrow Board will be measured …"

Subsection 850.81: Basis of Payment
Delete the 7th paragraph beginning with "Arrow Board will be paid for …"

Subsection 850.82: Payment Items
Revise description and unit of item 852. to Safety Signing for Traffic Management / Square Foot.
Delete item number 856.

SUBSECTION 856: CONNECTED WORK ZONE NOTIFICATION SYSTEM AND ASSOCIATED DEVICES

Subsection 856: Connected Work Zone Notification System and Associated Devices
Add this new subsection.

DESCRIPTION

856.20: General

The Connected Work Zone Notification System (CWZNS) is a system of field devices that transmit real-time location-based data about work zones. CWZNS field device data is provided in a Work Zone Data Exchange (WZDx) Device Feed in accordance with the United States Department of Transportation (USDOT) WZDx Specification. The Device Feed is consumed by the MassDOT Work Zone Manager (WZM) application.

The Contractor shall be responsible for furnishing, installing, repositioning, operating, maintaining, and removing these CWZNS devices.

MATERIALS

856.40: General

Materials shall meet the requirements specified in the following Subsections of Division III, Materials:

Material	Section
Connected Work Zone Notification System Devices	M10.18.0
Location Marker	M10.18.1
Connected Arrow Board	M10.18.2

End Location Markers shall conform to M10.18.1: Location Marker and include power and communication status lights and an on/off switch.

856.41: Arrow Board

Arrow Boards shall consist of a matrix of yellow elements that may be illuminated in flashing or sequential patterns, on a non-reflective, black background. The light output from the Arrow Board shall meet the minimum legibility distance, per the MUTCD. The elements shall be capable of at least 50% dimming from full brilliance to avoid nighttime glare. Arrow Boards that are continuously operational in both daylight and nighttime conditions shall automatically adjust the light output based upon ambient light conditions.

The mounting height of the Arrow Board, when in operation, shall be per the Plans.

The minimum dimensions and number of elements for Arrow Boards shall be per Table 856.41-1.

Table 856.41-1: Arrow Board Dimensions and Elements

Item Numbers	MUTCD Type	Minimum Dimensions (width by height)	Minimum Number of Elements
856.060, 856.160	B	60 in. by 30 in.	13
856.096, 856.196	C	96 in. by 48 in.	15

Arrow Boards shall be capable of the following operating modes, per the MUTCD:

- Four Corners Flashing Caution
- Alternating Diamond Caution
- Flashing Arrow (left or right)
- Sequential Chevron (left or right)
- Flashing Double Arrow

Arrow Boards that are categorized as "Connected Arrow Boards" (Items 856.160 and 856.196) shall meet the requirements of M10.18.2: Connected Arrow Board in addition to the requirements of an Arrow Board described in this Subsection.

856.42: Shop Drawings

Within 30 days of the Notice to Proceed, the Contractor shall submit to the Engineer for review and approval cut sheets for each model of CWZNS device to be used. The cut sheets shall document device specifications, including details of how the CWZNS device will communicate. Work that requires the use of CWZNS devices shall not commence until the submission has been approved.

CONSTRUCTION METHODS

856.60: General

At least 15 days prior to deploying CWZNS devices, the Contractor shall visit the site to verify cellular coverage. If the devices the Contractor plans to deploy do not have coverage, the Contractor shall swap out the cellular modem, SIM card, or both to a carrier that provides coverage. If no adequate cellular coverage exists from 4G LTE or 5G providers, the Contractor shall immediately notify the Engineer.

The Contractor shall install CWZNS devices at the locations shown on the Plans.

Per the WZDx Specification Device Feed, an End Location Marker shall have a single MarkedLocation with the "type" property as "work-zone-end".

The Contractor shall install and power on the End Location Marker coinciding with the deployment of the temporary traffic control setup that calls for its use. The Contractor shall power down and remove the Location Marker at the conclusion of the removal of the temporary traffic control setup. If the location of the work moves during a work shift, the Contractor shall power down the Location Marker, relocate it, and then power it back on.

The operating mode for the Arrow Board or Connected Arrow Board shall be per the Plans. When activated, the minimum element on-time shall be 50% for the flashing mode, with equal intervals of 25% for each sequential phase. The flashing rate shall be not less than 25 or more than 40 flashes per minute.

If a Connected Arrow Board is being used to transmit its location without utilizing other arrow board functions, such as operating a Flashing Arrow, the arrow board shall remain dark and removed from the roadway or protected from approaching traffic while the data is being transmitted.

The Contractor shall be responsible for remediating any CWZNS device that is not operating as specified, at no additional cost to the Department.

CWZNS devices that are lost, stolen, vandalized, damaged, destroyed, or deemed unacceptable while their use is required on the project shall be replaced by the Contractor at no additional cost to the Department.

COMPENSATION

856.80: Method of Measurement

Arrow Boards and Connected Arrow Boards will be measured by the Day. Each period of up to 24 hours during which an Arrow Board or Connected Arrow Board is in use will be measured as one day, regardless of the number of times that the unit is positioned, repositioned, removed, or returned to service.

End Location Markers will be measured by the Day. Each period of up to 24 hours during which a End Location Marker is in use will be measured as one day, regardless of the number of times that the unit is positioned, repositioned, removed, or returned to service.

856.81: Basis of Payment

Arrow Boards and Connected Arrow Boards will be paid for at the contract unit price per day which shall include full compensation for labor and materials, positioning, repositioning, and removing or returning to service.

End Location Markers will be paid for at the contract unit price per day which shall include full compensation for labor and materials, positioning, repositioning, and removing or returning to service.

If an End Location Marker is attached to another traffic control device that is not otherwise called for in the Plans or Specifications, that ancillary device shall be considered incidental to the cost of the End Location Marker.

Licenses, fees, communication costs, power costs, and access to real-time and recorded data associated with the Device Feed for CWZNS devices shall be considered incidental to the cost of the item.

The Department will not pay for CWZNS devices that fail to operate as specified.

856.82: Payment Items

Item number	Description	Unit
856.060	Arrow Board (Type B)	Day
856.096	Arrow Board (Type C)	Day
856.160	Connected Arrow Board (Type B)	Day
856.196	Connected Arrow Board (Type C)	Day
856.201	End Location Marker	Day

SECTION 900: STRUCTURES

SUBSECTION 901: CEMENT CONCRETE

Subsection 901.20: Materials

Delete Asphaltic Materials – M3, Preformed Bituminous Fiber Joint Filler – M3.05.3 and add the following in M number sequence:

Preformed Expansion Joint Filler	M9.14.0

SUBSECTION 983: REVETMENT

Subsection 983.40: General
Delete Preformed Bituminous Fiber Joint Filler – M3.05.3 and add the following in M number sequence:

Preformed Expansion Joint Filler	M9.14.0

DIVISION III

MATERIALS SPECIFICATIONS

SECTION M3: ASPHALTIC MATERIALS

Subsection M3.05.5: Preformed Bituminous Joint Filler for Concrete
Delete this subsection.

SECTION M9: MISCELLANEOUS MATERIALS

Subsection M9.14.0: Preformed Expansion Joint Filler
Replace this subsection with the following:

Preformed expansion joint filler for concrete applications and structural construction shall meet the requirements specified herein. The Contractor shall provide certified test data which documents compliance with the required physical properties. The certified test data shall be submitted to the Engineer for approval.

Table M9.14.0-1: Types of Preformed Expansion Joint Filler

Specification	Type and Description
AASHTO M 153	Type I – Sponge Rubber Type II – Cork Type III – Self-Expanding Cork Type IV – Polyurethane-Bonded Recycled Rubber
AASHTO M 213	Type I – Asphalt-Saturated Cellulosic Fiber Type II – Asphalt Binder-Cork with Asphalt-Saturated or Glass Fiber Felt Type III – Polyurethane-Bonded Recycled Rubber
ASTM D1752	Type IV – Recycled PVC
ASTM D7174	Type I – Closed-Cell Polyethylene or Blended Polyethylene Foam
ASTM D8139	Type I – Closed-Cell Polypropylene Foam

Subsection M9.14.2: Closed Cell Foam Joint Filler
Delete this subsection:

M10.03.1: Field Monitoring Unit

All Field Monitoring Units (FMU) shall be compatible with the MassDOT Critical Operations Multi-jurisdictional Modular System (MCOMMS), cloud-based management system.

Subsection M9.14.2: Closed Cell Foam Joint Filler
Delete this subsection:

SECTION M10: TRAFFIC CONTROL DEVICES

Subsection M10.03.1: Field Monitoring Unit
Add these new subsections:

M10.03.1: Field Monitoring Unit

All Field Monitoring Units (FMU) shall be compatible with the MassDOT Critical Operations Multi-jurisdictional Modular System (MCOMMS), cloud-based management system.

FMUs shall be capable of operating independently from the brand of traffic signal controller, vehicle and pedestrian detection systems, battery backup system (BBS), and any other Ethernet-based, web accessible device present in the traffic signal controller cabinet.

M10.03.1.A: Hardware

The FMU shall communicate via an Ethernet port with an RJ45 connector and have an integrated Ethernet switch with a minimum of four ports.

The FMU shall be powered via standard 120 VAC input power. The FMU shall include an integrated battery and battery charging/monitoring circuit that will allow the FMU to fully function even if all other electrical service to the cabinet has been interrupted. The battery shall continue to supply the FMU with power for a minimum of 5 hours on a single charge.

The FMU shall have an integrated GPS that will allow for automated telemetry without additional configuration. The GPS shall be capable of providing a time sync pulse to the internal clock of a connected traffic signal controller. The FMU shall utilize the integrated GPS to geolocate itself on a map via the FMU management software.

M10.03.1.B: Software

The configuration of the FMU shall be accomplished by accessing FMU management software via an internet browser. It shall be possible to configure the FMU without any special software.

The FMU shall operate without requiring a static IP address. The only configuration required at the FMU is to enter the URL to the host of the FMU management software.

The FMU shall utilize HTTPS protocols and XML data structure for communications with the FMU management software. The data shall be scalable for future expansion; proprietary protocols shall not be used.

M10.03.1.C: Wireless Connectivity

The FMU shall be supplied with an internal 4G LTE cellular modem.

The modem shall support future upgrades to 5G service, when available, and shall be compatible with SIM cards from multiple cellular carriers.

M10.03.1.D: Remote Access

Remote access to any traffic signal cabinet component that has a web interface via the FMU shall not require the end user to create a separate Virtual Private Network (VPN) connection.

Subsection M10.08.0: Vehicle Detection Systems
Subsection M10.08.0: Vehicle Detection Systems
Subsection M10.08.0: Vehicle Detection Systems
Add theses new subsections:

M10.08.0: Vehicle Detection Systems

Vehicle Detection Systems (VDS) shall be capable of detecting the presence of all motor vehicle types and bicycles in designated areas and sending corresponding detector outputs to a traffic signal controller.

All in-cabinet components of VDS shall be compatible with the following standards:

- ATCC 5301 v02
- ATC 5201 v06
- NEMA TS2 environmental standards

Through an ethernet-based connection to the detection module and/or cabinet interface device in the field or through the internal network of the traffic signal controller cabinet, the VDS shall support remote management of motor vehicle and bicycle detection configurations and access to data including:

- The number, location, and size of detection zones.
- Configuration of the detector channel and assigned phase for each zone.
- Configuration of detection zones for signal performance measurement data collection.
- The ability to add and remove users.
- Signal performance data:
  - Monitoring and recording the status of the phase and detector channels from the traffic signal controller through the SIU bus at a frequency of no less than 10 times per second.
  - Estimation of the speed of vehicles at defined, user-configurable points, such as entering or exiting a detection zone.
  - Retrieval of the signal performance data through an http-based Application Programming Interface (API), or equivalent process, in .xml, .json, or .csv format.
  - The data shall be available in a per vehicle format, be viewable in real time, and store at least 168 hours of data locally on the device.

VDS shall be capable of supporting user-based restrictions to limit functionality, including:

- The ability to make changes to the VDS settings.
- The ability to view imagery or digital video streams.
- The ability to view and download signal performance data.

VDS shall be capable of automatically determining if the system's ability to accurately detect vehicles and shall default to a constant call state if this system error is detected.

VDS shall be capable of classifying vehicles based upon length and/or number of axles.

VDS shall be capable of performing all detection, classification, and data collection functions in the absence of an internet connection.

VDS shall be capable of providing remote access to the latest images or digital video stream of all IP video units through either an HTTP request or through a Real Time Streaming Protocol compatible with RFC2326 standards. VDS that do not utilize video shall be able to display the current state of the vehicle detection zones and approximate vehicle locations in a digital twin model of the intersection.

M10.08.1: Passive Stop Line Detectors

Passive Stop Line Detectors shall demonstrate a reliability of 99% or greater for vehicle detection functions.

Passive Stop Line Detectors shall be able to track and classify turning movements for all motor vehicle types and bicycles and shall demonstrate an accuracy of 95% or greater for turning movement counts.

M10.08.2: Passive Advanced Detectors

Passive Advanced Detectors shall be capable of detecting all motor vehicle types at a minimum distance of 600 ft upstream of the stop line.

Subsection M10.09.0: Pedestrian Detectors
Subsection M10.09.1: Pedestrian Pushbutton Assembly
Subsection M10.09.2: APS Pushbutton Assembly
Add theses new subsections:

M10.09.0: Pedestrian Detectors

Pedestrian Detectors shall be capable of detecting the presence of pedestrians and placing a corresponding call for a phase in a traffic signal controller or similar device.

Pedestrian Detectors may be pushbuttons or passive detection devices.

Components of Pedestrian Detectors shall meet NEMA TS2 compliance for temperature and humidity, mechanical shock and vibration, transient voltage protection, transient suppression, and electrical reliability.

If Pedestrian Detectors include an in-cabinet control unit, it shall meet the following requirements:

- Operate on a cabinet-supplied 120 VAC power source.
- Include labelled LED indicators for each channel operation.
- Include a 10/100BaseT, RJ45 ethernet connector port.
- Capable of communication with the Pedestrian Detectors to allow for remote programming and firmware updates via the ethernet connection.
- Capable of supporting a minimum of 4 pedestrian detectors per NEMA pedestrian phase and up to 16 pushbuttons.
- Will automatically reset upon loss of internal communication.

M10.09.1: Pedestrian Pushbutton Assembly

A Pedestrian Pushbutton Assembly shall consist of a pushbutton, a sign, and a housing to mount those devices to a post.

The pushbutton shall be a minimum of 2 in. in diameter and the force to activate it shall be no greater than 5 lbs. The pushbutton must be weather-tight and tamper-resistant.

The pushbutton shall meet one of the following criteria:

- A normally open, mechanical phenolic enclosed, positive-acting, spring-loaded, audible (i.e., click) snap-action switch with single pole, single throw contacts; or
- A piezo-driven solid state switch rated for a minimum of 50 V, a minimum of 20 million cycles, and capable of providing an audible indication of actuation.

The pushbutton shall have an operating voltage range of 12 to 36 VDC.

The housing shall be yellow.

Housings that include an integral sign mount for the pedestrian pushbutton sign shall be capable of mounting a 9 in. by 12 in. or 9 in. by 15 in. sign (width by height).

M10.09.2: APS Pushbutton Assembly

An APS Pushbutton Assembly shall meet all of the requirements of M10.09.1: Pedestrian Pushbutton Assembly, and the following.

The pushbutton shall have a vibrotactile arrow. The arrow shall have high visual contrast (light on dark or dark on light).

APS Pushbutton Assembly shall be capable of the following:

- Emitting a locator tone.
- Providing two types of audible walk indications: an audible tone in multiple frequencies and a speech message. The type of audible walk indication will be programmed by Contractor per the Plans.
- Emitting sound via one or more speakers that automatically adjust to ambient noise and shall also be capable of being capped at a preprogrammed level.
- Providing three functions as a result of an extended pushbutton press: increased crossing time, audible beaconing, and speech pushbutton information. The function of the extended pushbutton press will be programmed by the Contractor per the Plans.

APS Pushbutton Assembly shall include a latching red LED pilot light.

Subsection M10.18.: Connected Work Zone Notification System Devices
Add this new subsection.

M10.18.0: Connected Work Zone Notification System Devices

Connected Work Zone Notification System (CWZNS) devices shall include the following:

- An internal 4G LTE or 5G cellular modem. The modem shall be compatible with SIM cards from multiple cellular carriers, or the device shall be capable of using a cellular modem from more than one cellular carrier.
- An integrated GPS that will allow for automated telemetry without additional configuration.
- A self-contained power source that can be recharged without manual intervention. The power source shall enable uninterrupted operation of the CWZNS field device.
- Mounting and supporting hardware and wiring necessary to complete a working system.

CWZNS devices shall be capable of operating in temperatures ranging from -40°F to +122°F with no degradation in operation due to rain, fog, snow, ice, darkness, dust, or road debris.

CWZNS devices shall be physically and digitally secured to prevent unauthorized access.

When powered on, real-time data from CWZNS devices shall be provided in a USDOT Work Zone Data Exchange (WZDx) Specification Device Feed version 4.2. The Device Feed shall then be able to be consumed by the MassDOT Work Zone Manager (WZM) application. The Device Feed shall meet the following requirements:

- Each manufacturer of CWZNS field devices and Smart Work Zone (SWZ) field devices shall provide a single statewide Device Feed (a single URL) that consists of that manufacturer's field devices that are used by or under the direction of the Department.
- The Device Feed shall be made available via an HTTP GET request. The response shall be the WZDx Device Feed JSON object without a wrapper or paging.
- The Device Feed shall be public or use "Basic" HTTP Authentication.
- The Device Feed shall be provided over HTTPS.
- The Device Feed shall reflect changes in CWZNS field device status (e.g., display changed or device moved) no later than 60 seconds after they occur.
- For each CWZNS field device, the "update date" property shall be no older than 60 minutes, except when it has stopped communicating or is otherwise in error.
- The "id" property of each CWZNS field device feature in the Device Feed shall stay the same for the duration of the Contract and shall be a Universally Unique IDentifier (UUID) to guarantee uniqueness between feeds and over time.

M10.18.1: Location Marker

Location Markers shall meet the requirements of M10.18.0: Connected Work Zone Notification System Devices.

Location Markers may be standalone devices or an attachment to a channelizing device. Either type shall be certified to comply with the relevant minimum TL-3 testing requirements of the *Manual on Assessing Safety Hardware*.

<<<<<<<<<<>>>>>>>>>>

END OF SUPPLEMENTAL SPECIFICATIONS

THIS PAGE IS INTENTIONALLY LEFT BLANK

CONTRACT PROVISIONS FOR
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Davis-Bacon and Related Act Provisions
IV. Contract Work Hours and Safety Standards Act Provisions
V. Subletting or Assigning the Contract
VI. Safety: Accident Prevention
VII. False Statements Concerning Highway Projects
VIII. Implementation of Clean Air Act and Federal Water Pollution Control Act
IX. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
X. Certification Regarding Use of Contract Funds for Lobbying
XI. Use of United States-Flag Vessels

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only).

I. GENERAL

1. Historically, contracting agencies using Federal-aid highway funds were required to ensure Form FHWA-1273 was physically incorporated into all contracts and subcontracts. Effective June 10, 2026, this requirement was eliminated [91 FR 25492]. Future use of Form FHWA-1273 is now optional on the part of the contracting agency using Federal-aid highway funds. FHWA continues to make Form FHWA-1273 available as a convenience to contracting agencies. Contracting agencies must continue to ensure compliance with the provisions cited in Form FHWA-1273 in accordance with the provisions regardless of the use of Form FHWA-1273. Accordingly, the contracting agency retains the authority to determine whether the contractor must use Form FHWA-1273 to physically incorporate required contract provisions in each subcontract and in lower tier contracts. Where permitted by the contracting agency, the contractor may choose other ways to include required contract provisions in each subcontract, besides incorporating Form FHWA-1273. Contract provisions in Form FHWA-1273 are not required to be physically included in subcontracts for design services on Federal-aid design-build contracts, or in purchase orders, rental agreements and other agreements for supplies or services.

The applicable provisions 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 or design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents.

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. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION

The contractor and all subcontractors must comply with the following policies: 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27, including any amendments thereto.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27, including any amendments thereto.

The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract.

1.Assurances Required:

a. The requirements of 49 CFR Part 26, including any amendments thereto, and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26, including any amendments thereto, in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E, including any amendments thereto, are incorporated by reference. 49 CFR Part 21.

III. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the

classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph 2.a. of this section or Section IV, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number

of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with 29 CFR part 30, including any amendments thereto.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section III. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs (1) through (11) of this section, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the

contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

IV. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $33 as of January 15, 2025 (See 90 FR 1859) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section III paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

V. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1. of this section refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph 1. of this section is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however,

contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VI. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

VIII. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

IX. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

X. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XI. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (40 U.S.C. sections 14501(d) and 14701 and the Appalachian Regional Commission Code as authorized under 40 U.S.C. section 14302)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 40 U.S.C. 14501 allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

DOCUMENT 00811

SPECIAL PROVISIONS
MONTHLY PRICE ADJUSTMENT FOR HOT MIX ASPHALT (HMA) MIXTURES
Revised: 02/03/2023

This provision applies to all projects using greater than 100 tons of hot mix asphalt (HMA) mixtures containing liquid asphalt cement as stipulated in the Notice to Contractors section of the bid documents.

Price Adjustments will be based on the variance in price, for the liquid asphalt component only, between the Base Price and the Period Price. They shall not include transportation or other charges. Price Adjustments will occur on a monthly basis.

Base Price
The Base Price of liquid asphalt on a project as listed in the Notice to Contractors section of the bid documents is a fixed price determined by the Department at the time of the bid using the same method as the determination of the Period Price detailed below. The Base Price shall be used in all bids.

Period Price
The Period Price is the price of liquid asphalt for each monthly period as determined by the Department using the average selling price per standard ton of PG64-28 paving grade (primary binder classification) asphalt, FOB manufacturer's terminal, as listed under the "East Coast Market - New England, Boston, Massachusetts area" section of the Poten & Partners, Inc. "Asphalt Weekly Monitor". This average selling price is listed in the issue having a publication date of the second Friday of the month and will be posted as the Period Price for that month. The Department will post this Period Price on its website at https://www.mass.gov/service-details/massdot-current-contract-price-adjustments following its receipt of the relevant issue of the "Asphalt Weekly Monitor". Poten and Partners has granted the Department the right to publish this specific asphalt price information sourced from the Asphalt Weekly Monitor.

Price Adjustment Determination, Calculation and Payment
The Contract Price of the HMA mixture will be paid under the respective item in the Contract. Price Adjustments, as herein provided, either upwards or downwards, will be made after the work has been performed using the monthly period price for the month during which the work was performed.

Price Adjustments will be paid only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments.

The Price Adjustment applies only to the actual virgin liquid asphalt content in the mixture placed on the job in accordance with the approved Job Mix Formula.

Price Adjustments will be separate payment items. The pay item numbers are 999.401 for a positive price adjustment (a payment) and 999.402 for a negative price adjustment (a deduction). Price Adjustments will be calculated using the following equation:

Price Adjustment = Tons of HMA Placed X Liquid Asphalt Content % X RAP Factor X (Period Price - Base Price)

No Price Adjustment will be allowed beyond the Completion Date of this Contract, unless there is a Department-approved extension of time.

******** END OF DOCUMENT ********

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00812

SPECIAL PROVISIONS
MONTHLY PRICE ADJUSTMENT FOR DIESEL FUEL AND GASOLINE –
ENGLISH UNITS
Revised: 02/01/2021

This monthly fuel price adjustment is inserted in this contract because the national and worldwide energy situation has made the future cost of fuel unpredictable. This adjustment will provide for either additional compensation to the Contractor or repayment to the Commonwealth, depending on an increase or decrease in the average price of diesel fuel or gasoline.

This adjustment will be based on fuel usage factors for various items of work developed by the Highway Research Board in Circular 158, dated July 1974. These factors will be multiplied by the quantities of work done in each item during each monthly period and further multiplied by the variance in price from the Base Price to the Period Price.

The Base Price of Diesel Fuel and Gasoline will be the price as indicated in the Department's web site https://www.mass.gov/service-details/massdot-current-contract-price-adjustments for the month in which the contract was bid, which includes State Tax.

The Period Price will be the average of prices charged to the State, including State Tax for the bulk purchases made during each month.

This adjustment will be effected only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments.

No adjustment will be paid for work done beyond the extended completion date of any contract.

Any adjustment (increase or decrease) to estimated quantities made to each item at the time of final payment will have the fuel price adjustment figured at the average period price for the entire term of the project for the difference of quantity.

The fuel price adjustment will apply only to the following items of work at the fuel factors shown:

ITEMS COVERED	**FUEL FACTORS**	
	Diesel	**Gasoline**
Excavation: and Borrow Work: Items 120, 120.1, 121, 123, 124, 125, 127, 129.3, 140, 140.1, 141, 142, 143, 144, 150, 150.1, 151 and 151.1 (Both Factors used)	0.29 Gallons / CY.	0.15 Gallons / CY
Surfacing Work: All Items containing Hot Mix Asphalt	2.90 Gallons / Ton	Does Not Apply

*** END OF DOCUMENT ***

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00813

SPECIAL PROVISIONS

PRICE ADJUSTMENTS FOR STRUCTURAL STEEL AND REINFORCING STEEL

September 10, 2026

This special provision applies to all projects containing the use of structural steel and/or reinforcing steel as specified elsewhere in the Contract work. It applies to all structural steel and all reinforcing steel, as defined below, on the project. Compliance with this provision is mandatory, i.e., there are no "opt-in" or "opt-out" clauses. Price adjustments will be handled as described below and shall only apply to unfabricated reinforcing steel bars and unfabricated structural steel material, consisting of rolled shapes, plate steel, sheet piling, pipe piles, steel castings and steel forgings.

Price adjustments will be variances between Base Prices and Period Prices. Base Prices and Period Prices are defined below.

Price adjustments will only be made if the variances between Base Prices and Period Prices are 5% or more. A variance can result in the Period Price being either higher or lower than the Base Price. Once the 5% threshold has been achieved, the adjustment will apply to the full variance between the Base Price and the Period Price.

Price adjustments will be calculated by multiplying the number of pounds of unfabricated structural steel material or unfabricated reinforcing steel bars on a project by the index factor calculated as shown below under Example of a Period Price Calculation.

Price adjustments will ***not*** include guardrail panels or the costs of shop drawing preparation, handling, fabrication, coatings, transportation, storage, installation, profit, overhead, fuel costs, fuel surcharges, or other such charges not related to the cost of the unfabricated structural steel and unfabricated reinforcing steel.

The weight of steel subject to a price adjustment shall not exceed the final shipping weight of the fabricated part by more than 10%.

Base Prices and Period Prices are defined as follows:

Base Prices of unfabricated structural steel and unfabricated reinforcing steel on a project are fixed prices determined by the Department and found in the table below. While it is the intention of the Department to make this table comprehensive, some of a project's unfabricated structural steel and/or unfabricated reinforcing steel may be inadvertently omitted. Should this occur, the Contractor shall bring the omission to the Department's attention so that a contract alteration may be processed that adds the missing steel to the table and its price adjustments to the Contract.

The Base Price Date is the month and year of the most recent finalized period price index at the time that MassDOT opened bids for the project. The Base Price Index for this contract is the Steel PPI listed in the Notice to Contractors.

Period Prices of unfabricated structural steel and unfabricated reinforcing steel on a project are variable prices that have been calculated using the Period Price Date and an index of steel prices to adjust the Base Price.

The Period Price Date is the date the steel was delivered to the fabricator as evidenced by an official bill of lading submitted to the Department containing a description of the shipped materials, weights of the shipped materials and the date of shipment. This date is used to select the Period Price Index.

The index used for the calculation of Period Prices is the U.S. Department of Labor Bureau of Labor Statistics Producer Price Index (PPI) Series ID WPU101702 (Not Seasonally Adjusted, Group: Metals and Metal Products, Item: Semi-finished Steel Mill Products.) As this index is subject to revision for a period of up to four (4) months after its original publication, no price adjustments will be made until the index for the period is finalized, i.e., the index is no longer suffixed with a "(P)".

Period Prices are determined as follows:

Period Price = Base Price X Index Factor
Index Factor = Period Price Index / Base Price Index

Example of a Period Price Calculation:

Calculate the Period Price for December 2009 using a Base Price from March 2009 of $0.82/Pound for 1,000 Pounds of ASTM A709 (AASHTO M270) Grade A36 Structural Steel Plate.

The Period Price Date is December 2009. From the PPI website*, the Period Price Index = 218.0.

The Base Price Date is March 2009. From the PPI website*, the Base Price Index = 229.4.

Index Factor = Period Price Index / Base Price Index = 218.0 / 229.4 = 0.950
Period Price = Base Price X Index Factor = $0.82/Pound X 0.950 = $0.78/Pound

Since $0.82 - $0.78 = $0.04 is less than 5% of $0.82, no price adjustment is required.

If the $0.04 difference shown above was greater than 5% of the Base Price, then the price adjustment would be 1,000 Pounds X $0.04/Pound = $40.00. Since the Period Price of $0.78/Pound is less than the Base Price of $0.82/Pound, indicating a drop in the price of steel between the bid and the delivery of material, a credit of $40.00 would be owed to MassDOT. When the Period Price is higher than the Base Price, the price adjustment is owed to the Contractor.

* To access the PPI website and obtain a Base Price Index or a Period Price Index, go to http://data.bls.gov/cgi-bin/srgate

End of example.

The Contractor will be paid for unfabricated structural steel and unfabricated reinforcing steel under the respective contract pay items for all components constructed of either structural steel or reinforced Portland cement concrete under their respective Contract Pay Items.

Price adjustments, as herein provided for, will be paid separately as follows:

Structural Steel
Pay Item Number 999.449 for positive (+) pay adjustments (payments to the Contractor)

Pay Item Number 999.457 for negative (-) pay adjustments (credits to MassDOT Highway Division)

Reinforcing Steel
Pay Item Number 999.466 for positive (+) pay adjustments (payments to the Contractor)

Pay Item Number 999.467 for negative (-) pay adjustments (credits to MassDOT Highway Division)

No price adjustment will be made for price changes after the Contract Completion Date, unless the MassDOT Highway Division has approved an extension of Contract Time for the Contract.

TABLE

Steel Type		Price per Pound
1	ASTM A615/A615M Grade 60 (AASHTO M31 Grade 60 or 420) Reinforcing Steel	$0.59
2	ASTM A27 (AASHTO M103) Steel Castings, H-Pile Points & Pipe Pile Shoes (See Note below.)	$0.83
3	ASTM A668 / A668M (AASHTO M102) Steel Forgings	$0.83
4	ASTM A108 (AASHTO M169) Steel Forgings for Shear Studs	$0.85
5	ASTM A709/A709M Grade 36 / AASHTO M270M/M270 Grade 36 or 250 Structural Steel Plate	$0.89
6	ASTM A709/A709M Grade 36 / AASHTO M270M/M270 Grade 36 or 250 Structural Steel Shapes	$0.84
7	ASTM A709/A709M Grade 50 / AASHTO M270M/M270 Grade 50 or 345 Structural Steel Plate	$0.89
8	ASTM A709/A709M Grade 50 / AASHTO M270M/M270 Grade 50 or 345 Structural Steel Shapes	$0.84
9	ASTM A709/A709M Grade 50WT / AASHTO M270M/M270 Grade 50WT or 345WT Structural Steel Plate	$0.92
10	ASTM A709/A709M Grade 50WT / AASHTO M270M/M270 Grade 50WT or 345WT Structural Steel Shapes	$0.85
11	ASTM A709/A709M Grade 50W / AASHTO M270M/M270 Grade 50W 345W Structural Steel Plate	$0.92
12	ASTM A709/A709M Grade 50W / AASHTO M270M/M270 Grade 50W or 345W Structural Steel Shapes	$0.85
13	ASTM A709/A709M Grade HPS 50W / AASHTO M270M/M270 Grade HPS 50W or 345W Structural Steel Plate	$0.97
14	ASTM A709/A709M Grade HPS 70W / AASHTO M270M/M270 Grade HPS 70W or 485W Structural Steel Plate	$1.04
15	ASTM A514/A514M-05 Grade HPS 100W / AASHTO M270M/M270 Grade HPS 100W or 690W Structural Steel Plate	$1.59
16	ASTM A992/A992M Grade 50S / AASHTO M270M/M270 Grade 50S or 345S Structural Steel Plate	$0.92
17	ASTM A992/A992M Grade 50S / AASHTO M270M/M270 Grade 50S or 345S Structural Steel Shapes	$0.85
18	ASTM A276 Type 316 Stainless Steel	$4.78
19	ASTM A240 Type 316 Stainless Steel	$4.78
20	ASTM A148 Grade 80/50 Steel Castings (See Note below.)	$1.64
21	ASTM A53 Grade B Structural Steel Pipe	$1.04
22	ASTM A500 Grades A, B, 36 & 50 Structural Steel Pipe	$1.04
23	ASTM A252, Grades 240 (36 KSI) & 414 (60 KSI) Pipe Pile	$0.83
24	ASTM 252, Grade 2 Permanent Steel Casing	$0.83
25	ASTM A36 (AASHTO M183) for H-piles, steel supports and sign supports	$0.87
26	ASTM A328 / A328M, Grade 50 (AASHTO M202) Steel Sheetpiling	$1.57
27	ASTM A572 / A572M, Grade 50 Sheetpiling	$1.57
28	ASTM A36/36M, Grade 50	$0.89
29	ASTM A570, Grade 50	$0.87
30	ASTM A572 (AASHTO M223), Grade 50 H-Piles	$0.89
31	ASTM A1085 Grade A (50 KSI) Steel Hollow Structural Sections (HSS), heat-treated per ASTM A1085 Supplement S1	$1.04
32	AREA 140 LB Rail and Track Accessories	$0.54

NOTE: Steel Castings are generally used only on moveable bridges. Cast iron frames, grates and pipe are not "steel" castings and will not be considered for price adjustments.

END OF DOCUMENT

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT 00814

SPECIAL PROVISIONS
PRICE ADJUSTMENT FOR PORTLAND CEMENT CONCRETE MIXES

January 12, 2009

This provision applies to all projects using greater than 100 Cubic Yards (76 Cubic Meters) of Portland cement concrete containing Portland cement as stipulated in the Notice to Contractors section of the Bid Documents. This Price Adjustment will occur on a monthly basis.

The Price Adjustment will be based on the variance in price for the Portland cement component only from the Base Price to the Period Price. It shall not include transportation or other charges.

The Base Price of Portland cement on a project is a fixed price determined at the time of bid by the Department by using the same method as for the determination of the Period Price (see below) and found in the Notice to Contractors.

The Period Price of Portland cement will be determined by using the latest published price, in dollars per ton (U.S.), for Portland cement (Type I) quoted for Boston, U.S.A. in the **Construction Economics** section of *ENR Engineering News-Record* magazine or at the ENR website http://www.enr.com under **Construction Economics**. The Period Price will be posted on the MassDOT website the Wednesday immediately following the publishing of the monthly price in ENR, which is normally the first week of the month.

The Contract Price of the Portland cement concrete mix will be paid under the respective item in the Contract. The price adjustment, as herein provided, upwards or downwards, will be made after the work has been performed, using the monthly period price for the month during which the work was performed.

The price adjustment applies only to the actual Portland cement content in the mix placed on the job in accordance with the Standard Specifications for Highways and Bridges, Division III, Section M4.02.01. No adjustments will be made for any cement replacement materials such as fly ash or ground granulated blast furnace slag.

The Price Adjustment will be a separate payment item. It will be determined by multiplying the number of cubic yards of Portland cement concrete placed during each monthly period times the Portland cement content percentage times the variance in price between the Base Price and Period Price of Portland cement.

This Price Adjustment will be paid only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments.

No Price Adjustment will be allowed beyond the Completion Date of this Contract, unless there is a Department-approved extension of time.

*** END OF DOCUMENT ***

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00820

THE COMMONWEALTH OF MASSACHUSETTS SUPPLEMENTAL EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION AND AFFIRMATIVE ACTION PROGRAM

I. Definitions

For purposes of this contract,

"Minority" means a person who meets one or more of the following definitions:

(a) American Indian or Native American means: all persons having origins in any of the original peoples of North America and who are recognized as an Indian by a tribe or tribal organization.
(b) Asian means: All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian sub-continent, or the Pacific Islands, including, but Not limited to China, Japan, Korea, Samoa, India, and the Philippine Islands.
(c) Black means: All persons having origins in any of the Black racial groups of Africa, including, but not limited to, African-Americans, and all persons having origins in any of the original peoples of the Cape Verdean Islands.
(d) Eskimo or Aleut means: All persons having origins in any of the peoples of Northern Canada, Greenland, Alaska, and Eastern Siberia.
(e) Hispanic means: All persons having their origins in any of the Spanish-speaking peoples of Mexico, Puerto Rico, Cuba, Central or South America, or the Caribbean Islands.

"State construction contract" means a contract for the construction, reconstruction, installation, demolition, maintenance or repair of a building or capital facility, or a contract for the construction, reconstruction, alteration, remodeling or repair of a public work undertaken by a department, agency, board, or commission of the commonwealth.

"State assisted construction contract" means a contract for the construction, reconstruction, installation, demolition, maintenance or repair of a building or capital facility undertaken by a political subdivision of the commonwealth, or two or more political subdivisions thereof, an authority, or other instrumentality and whose costs of the contract are paid for, reimbursed, grant funded, or otherwise supported, in whole or in part, by the commonwealth.

II. Equal Opportunity, Non-Discrimination and Affirmative Action

During the performance of this Contract, the Contractor and all subcontractors (hereinafter collectively referred to as "the Contractor") for a state construction contract or a state assisted construction contract, for him/herself, his/her assignees and successors in interest, agree to comply with all applicable equal employment opportunity, non-discrimination and affirmative action requirements, including but not limited to the following:

In connection with the performance of work under this contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, sex, sexual orientation, genetic information, military service, age, ancestry or disability, shall not discriminate in the selection or retention of subcontractors, and shall not discriminate in the procurement of materials and rentals of equipment.

The aforesaid provision shall include, but not be limited to, the following: employment upgrading, demotion, or transfer; recruitment advertising, layoff or termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship or on-the-job training opportunity. The Contractor shall comply with the provisions of chapter 151B of the Massachusetts General Laws, as amended, and all other applicable anti-discrimination and equal opportunity laws, all of which are herein incorporated by reference and made a part of this Contract.

The Contractor shall post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Massachusetts Commission Against Discrimination setting forth the provisions of the Fair Employment Practices Law of the Commonwealth (Massachusetts General Laws Chapter l51 B).

In connection with the performance of work under this contract, the Contractor shall undertake, in good faith, affirmative action measures to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, sex, sexual orientation, genetic information, military service, age, ancestry or disability. Such affirmative action measures shall entail positive and aggressive measures to ensure nondiscrimination and to promote equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, layoff or termination, rate of compensation, apprenticeship and on-the-job training programs. A list of positive and aggressive measures shall include, but not be limited to, advertising employment opportunities in minority and other community news media; notifying minority, women and other community-based organizations of employment opportunities; validating all job specifications, selection requirements, and tests; maintaining a file of names and addresses of each worker referred to the Contractor and what action was taken concerning such worker; and notifying the administering agency in writing when a union with whom the Contractor has a collective bargaining agreement has failed to refer a minority or woman worker. These and other affirmative action measures shall include all actions required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, sex, sexual orientation, genetic information, military service, age, ancestry or disability. One purpose of this provision is to ensure to the fullest extent possible an adequate supply of skilled tradesmen for this and future Commonwealth public construction projects.

III. Minority and Women Workforce Participation

Pursuant to his/her obligations under the preceding section, the Contractor shall strive to achieve on this project the labor participation goals contained herein. Said participation goals shall apply in each job category on this project including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers and those classes of work enumerated in Section 44F of Chapter 149 of the Massachusetts General Laws. The participation goals for this project shall be 15.3% for minorities and 6.9% for women. The participation goals, as set forth herein, shall not be construed as quotas or set-asides; rather, such participation goals will be used to measure the progress of the Commonwealth's equal opportunity, non-discrimination and affirmative action program. Additionally, the participation goals contained herein should not be seen or treated as a floor or as a ceiling for the employment of particular individuals or group of individuals.

IV. Liaison Committee

At the discretion of the agency that administers the contract for the construction project there may be established for the life of the contract a body to be known as the Liaison Committee. The Liaison Committee shall be composed of one representative each from the agency or agencies administering the contract for the construction project, hereinafter called the administering agency, a representative from the Office of Affirmative action, and such other representatives as may be designated by the administering agency. The Contractor (or his/her agent, if any, designated by him/her as the on-site equal employment opportunity officer) shall recognize the Liaison Committee as an affirmative action body, and shall establish a continuing working relationship with the Liaison Committee, consulting with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.

V. Reports and Records

The Contractor shall prepare projected workforce tables on a quarterly basis when required by the administering agency. These shall be broken down into projections, by week, of workers required in each trade. Copies shall be furnished one week in advance of the commencement of the period covered, and also, when updated, to the administering agency and the Liaison Committee when required.

The Contractor shall prepare weekly reports in a form approved by the administering agency, unless information required is required to be reported electronically by the administering agency, the number of hours worked in each trade by each employee, identified as woman, minority, or non-minority. Copies of these shall be provided at the end of each such week to the administering agency and the Liaison Committee.

Records of employment referral orders, prepared by the Contractor, shall be made available to the administering agency on request.

The Contractor will provide all information and reports required by the administering agency on instructions issued by the administering agency and will permit access to its facilities and any books, records, accounts and other sources of information which may be determined by the administering agency to effect the employment of personnel. This provision shall apply only to information pertinent to the Commonwealth's supplementary non-discrimination, equal opportunity and access and opportunity contract requirements. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the administering agency and shall set forth what efforts he has made to obtain the information.

VI. Access to Work Site

A designee of the administering agency and a designee of the Liaison Committee shall each have a right to access the work site.

VII. Solicitations for Subcontracts, and for the Procurement of Materials and Equipment

In all solicitations either by competitive bidding or negotiation made by the Contractor either for work to be performed under a subcontract or for the procurement of materials or equipment, each potential subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under this contract relative to non-discrimination and equal opportunity.

VIII. Sanctions

Whenever the administering agency believes the General or Prime Contractor or any subcontractor may not be operating in compliance with the provisions of the Fair Employment Practices Law of the Commonwealth (Massachusetts General Laws Chapter 151B), the administering agency may refer the matter to the Massachusetts Commission Against Discrimination ("Commission") for investigation.

Following the referral of a matter by the administering agency to the Massachusetts Commission Against Discrimination, and while the matter is pending before the MCAD, the administering agency may withhold payments from contractors and subcontractors when it has documentation that the contractor or subcontractor has violated the Fair Employment Practices Law with respect to its activities on the Project, or if the administering agency determines that the contractor has materially failed to comply with its obligations and the requirements of this Section. The amount withheld shall not exceed a withhold of payment to the General or Prime Contractor of 1/100 or 1% of the contract award price or $5,000, whichever sum is greater, or, if a subcontractor is in non-compliance, a withhold by the administering agency from the General Contractor, to be assessed by the General Contractor as a charge against the subcontractor, of 1/100 or 1% of the subcontractor price, or $1,000 whichever sum is greater, for each violation of the applicable law or contract requirements. The total withheld from anyone General or Prime Contractor or subcontractor on a Project shall not exceed $20,000 overall. No withhold of payments or investigation by the Commission or its agent shall be initiated without the administering agency providing prior notice to the Contractor.

If, after investigation, the Massachusetts Commission Against Discrimination finds that a General or Prime Contractor or subcontractor, in commission of a state construction contract or state-assisted construction contract, violated the provisions of the Fair Employment Practices Law, the administering agency may convert the amount withheld as set forth above into a permanent sanction, as a permanent deduct from payments to the General or Prime Contractor or subcontractor, which sanction will be in addition to any such sanctions, fines or penalties imposed by the Massachusetts Commission Against Discrimination.

No sanction enumerated under this Section shall be imposed by the administering agency except after notice to the General or Prime Contractor or subcontractor and an adjudicatory proceeding, as that term is used, under Massachusetts General Laws Chapter 30A, has been conducted.

IX. Severability

The provisions of this section are severable, and if any of these provisions shall be held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the remaining provisions.

X. Contractor's Certification

After award and prior to the execution of any contract for a state construction contract or a state assisted construction contract, the Prime or General Contractor shall certify that it will comply with all provisions of this Document 00820 Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program, by executing Document 00859 Contractor/Subcontractor Certification Form.

XI. Subcontractor Requirements

Prior to the award of any subcontract for a state construction contract or a state assisted construction contract, the Prime or General Contractor shall provide all prospective subcontractors with a complete copy of this Document 00820 entitled "Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program" and will incorporate the provisions of this Document 00820 into any and all contracts or work orders for all subcontractors providing work on the Project. In order to ensure that the said subcontractor's certification becomes a part of all subcontracts under the prime contract, the Prime or General Contractor shall certify in writing to the administering agency that it has complied with the requirements as set forth in the preceeding paragraph by executing Document 00859 Contractor/Subcontractor Certification Form.

Rev'd 03/07/14

*** END OF DOCUMENT ***

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00821

ELECTRONIC REPORTING REQUIREMENTS
CIVIL RIGHTS PROGRAMS AND CERTIFIED PAYROLL

Implemented on March 2, 2009 Revised June 04, 2019

The Massachusetts Department Of Transportation (MassDOT) has replaced the CHAMP reporting system with Equitable Business Opportunity Solution (EBO), a new web-based civil rights reporting software system. This system is capable of handling both civil rights reporting requirements and certified payrolls. The program's functions include the administration of Equal Employment Opportunity (EEO) requirements, On-The-Job Training requirements (OJT), Disadvantage Business Enterprise (DBE) and/or Minority / Women's Business Enterprise (M/WBE) subcontracting requirements, and the electronic collection of certified payrolls associated with MassDOT projects. In addition, this system is used to generate various data required as part of the American Recovery and Reinvestment Act (ARRA). Contractors are responsible for all coordination with all sub-contractors to ensure timely and accurate electronic submission of all required data.

Contractor and Sub-Contractor EBO User Certification

All contractors and sub-contractors must use the EBO software system. The software vendor, Internet Government Solutions (IGS), has developed an online EBO Training Module that is available to contractors and sub-contractors. This module is a self-tutorial which allows all users in the company to access the training, complete the tutorial, and become certified as EBO users for a one time fee of $75.00. This is the only cost to contractors and sub-contractors associated with the EBO software system. The online EBO Training Module can be accessed at www.ebotraining.com. Click the "Register My Company" button on the login page to begin your training registration. Questions regarding EBO online training should be directed to Gerry Anguilano, IGS at (440) 238-1684.

MassDOT will track contractors and sub-contractors who have successfully completed the on-line training module. All persons performing civil rights program and/or certified payroll functions should be EBO certified.

Vetting of Firms and Designated Firm Individuals

Contractors must authorize a Primary Log-In ID Holder who has completed EBO on-line training to have access to the EBO system by completing and submitting the "Request For EBO System Log-In/Password Form" located on the MassDOT website at: https://www.mass.gov/how-to/how-to-get-an-ebo-login
Contractors must also agree to comply with the EBO system user agreement located on the MassDOT website.

All subcontracts entered into on a project must include language that identifies the submission and training requirements that the sub-contractor must perform. Sub-contractors will be approved by the respective District Office of MassDOT through the existing approval process. When new sub-contractors, who have not previously worked for MassDOT, are initially selected by a general contractor, the new sub-contractor must be approved by the District before taking the EBO on-line training module.

Interim Reporting Requirements

Until MassDOT is satisfied that the EBO system is fully operational and functioning as designed, contractors and sub-contractors will be required to submit certified payrolls manually. There will be a transition period where dual reporting, through manual and electronic submission, will be required. MassDOT, however, will notify contractors and sub-contractors when they may cease manual submission of certified payrolls.

*** END OF DOCUMENT ***

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00859

CONTRACTOR/SUBCONTRACTOR CERTIFICATION FORM ‡

The contractor shall submit this completed document 00859 to MassDOT for each subcontract.

_____ **(Contractor)** **Date:** _____

_____ **(Subcontractor)** ☐ District Approved Subcontractor

Contract No: 136646 **Project No.** 608862 **Federal Aid No.:** STP(BR-OFF)-003S(948)X

Location: SOUTHBRIDGE

Project Description: Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

PART 1 CONTRACTOR CERTIFICATION: I hereby certify, as an authorized official of this company, that to the best of my knowledge, information and belief, the company is in compliance with all applicable federal and state laws, rules, and regulations governing fair labor and employment practices, that the company will not discriminate in their employment practices, that the company will make good faith efforts to comply with the minority employee and women employee workforce participation ratio goals and specific affirmative action steps contained in Contract Document 00820 The Commonwealth of Massachusetts Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program, and that the company will comply with the special provisions and documentation indicated below (as checked).

I further hereby certify, as an authorized official of this company, that the special provisions and documentation indicated below (as checked) have been or are included in, and made part of, the Subcontractor Agreement entered into with the firm named above.

☐ **This is not a Federally-aided construction project**

Document #

☐ 00718 –Participation By Minority Or Women's Business Enterprises and SDVOBE†
☐ 00761 –Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion
☐ 00820 – MA Supplemental Equal Employment Opportunity, Non-Discrimination, and Affirmative Action Program
☐ 00821 – Electronic Reporting Requirements, Civil Rights Programs, and Certified Payroll
☐ 00859 – Contractor/Subcontractor Certification Form (this document)
☐ 00860 – MA Employment Laws
☐ 00861 – Applicable State Wage Rates in the Contract Proposal**
☐ B00842 – MA Schedule of Participation By Minority or Women Business Enterprises (M/WBEs)†
☐ B00843 – MA Letter of Intent – M/WBEs†

** Does not apply to Material Suppliers, unless performing work on-site
† Applies only if Subcontractor is a M/WBE; only include these forms for the particular M/WBE Entity

☐ B00844 - Schedule of Participation By SDVOBE
☐ B00845 - Letter of Intent – SDVOBE
☐ B00846 – M/WBE or SDVOBE Joint Check Arrangement Approval Form
☐ B00847 – Joint Venture Affidavit

☐ **This is a Federally-aided construction project (Federal Aid Number is present)**

Document #

☐ 00719 – Special Provisions for Participation by Disadvantaged Business Enterprises†
☐ 00760 - Form FHWA 1273 - Required Contract Provisions for Federal-Aid Construction Contracts
☐ 00820 – MA Supplemental Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program
☐ 00821 – Electronic Reporting Requirements, Civil Rights Programs and Certified Payroll
☐ 00859 – Contractor/Subcontractor Certification Form (this document)
☐ 00860 – MA Employment Laws
☐ 00870 – Standard Federal Equal Employment Opportunity Construction Contract Specifications Executive Order 11246, (41 CFR Parts 60-4.2 and 60-4.3 (Solicitations and Equal Opportunity Clauses)*
☐ 00875 – Federal Trainee Special Provisions

☐ B00853 – Schedule of Participation by Disadvantaged Business Enterprise†
☐ B00854 – Letter of Intent – DBEs†
☐ B00855 – DBE Joint Check Arrangement Approval Form
☐ B00856 – Joint Venture Affidavit
☐ 00861/00880 - Applicable state and federal wage rates from Contract Proposal**

*Applicable only to Contracts or Subcontracts in excess of $10,000
**Does not apply to Material Suppliers, unless performing work on-site
† Applies only if Subcontractor is a DBE; only include these forms for the particular DBE Entity

Signed this _____ Day of _____, 20_____ Under The Pains And Penalties Of Perjury.

_____ _____
(Print Name and Title) (Authorized Signature)

PART 2

PART 2 SUBCONTRACTOR CERTIFICATION: I hereby certify, as an authorized official of this company, that the required documents in Part 1 above were physically incorporated in our Agreement/Subcontract with the Contractor and give assurance that this company will fully comply or make every good faith effort to comply with the same. I further certify that:

1. This company recognizes that if this is a Federal-Aid Project, then this Contract is covered by the equal employment opportunity laws administered and enforced by the United States Department of Labor ("USDOL"), Office of Federal Contract Compliance Programs ('OFCCP"). By signing below, we acknowledge that this company has certain reporting obligations to the OFCCP, as specified by 41 CFR Part 60-4.2.
2. This company further acknowledges that any contractor with fifty (50) or more employees on a Federal-aid Contract with a value of fifty-thousand ($50,000) dollars or more must annually file an EEO-1 Report (SF 100) to the EEOC, Joint Reporting Committee, on or before September 30th, each year, as specified by 41 CFR Part 60-1.7a.
3. For more information regarding the federal reporting requirements, please contact the USDOL, OFCCP Regional Office, at 1-646-264-3170 or EEO-1, Joint Reporting Committee at 1-866-286-6440.
4. This company ☐ has, ☐ has not, participated in a previous contract or subcontract subject to the Equal Opportunity clauses set forth in 41 CFR Part 60-4 and Executive Order 11246, and where required, has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance Programs or the EEO Commission all reports due under the applicable filing requirements.
5. This company is in full compliance with applicable Federal and Commonwealth of Massachusetts laws, rules, and regulations and is not currently debarred or disqualified from bidding on or participating in construction contracts in any jurisdiction of the United States. See : https://www.mass.gov/service-details/contractors-and-vendors-suspended-or-debarred-by-massdot
6. This company is properly registered and in good standing with the Office of the Secretary of the Commonwealth.

Signed this _____ Day of _____, 20_____, Under The Pains And Penalties Of Perjury.

Firm: _____
Address: _____
_____
_____
Telephone Number:_____
Federal I.D. Number:_____
Estimated Start Date:_____
Estimated Completion Date:_____
Estimated Dollar Amount:_____

_____
(Print Name and Title)

_____
(Authorized Signature)

_____
(Date)

Rev'd 09/02/22

*** END OF DOCUMENT ***

DOCUMENT 00860

COMMONWEALTH OF MASSACHUSETTS PUBLIC EMPLOYMENT LAWS

Revised February 20, 2019

The Contractor's attention is directed to Massachusetts General Laws, Chapter 149, Sections 26 through 27H, and 150A. This contract is considered to fall within the ambit of that law, which provides that in general, the Prevailing Rate or Total Rate must be paid to employees working on projects funded by the Commonwealth of Massachusetts or any political subdivision including Massachusetts Department of Transportation (MassDOT).

A Federal Aid project is also subject to the Federal Minimum Wage Rate law for construction. When comparing a state minimum wage rate, monitored by the Massachusetts Attorney General, versus federal minimum wage rate, monitored by the U.S. Department of Labor Wage and Hour Division, for a particular job classification the higher wage is at all times to be paid to the affected employee.

Every contractor or subcontractor engaged in this contract to which sections twenty-seven and twenty-seven A apply will keep a true and accurate record of all mechanics and apprentices, teamsters, chauffeurs and laborers employed thereon, showing the name, address and occupational classification of each such employee on this contract, and the hours worked by, and the wages paid to, each such employee, and shall furnish to the MassDOT's Resident Engineer, on a weekly basis, a copy of said record, in a form approved by MassDOT and in accordance with M.G.L. c. 149, § 27B, signed by the employer or his/her authorized agent under the penalties of perjury.

Each such contractor or subcontractor shall preserve its payroll records for a period of three years from the date of completion of the contract.

The Prevailing Wage Rate generally includes the following:

> Minimum Hourly Wage + Employer Contributions to Benefit Plans = Prevailing Wage Rate or Total Rate
>
> Any employer who does not make contributions to Benefit Plans must pay the total Prevailing Wage Rate directly to the employee.

Any deduction from the Prevailing Wage Rate or Total Rate for contributions to benefit plans can only be for a Health & Welfare, Pension, or Supplementary Unemployment plan meeting the requirements of the Employee Retirement Income Security Act (ERISA) of 1974. The maximum allowable deduction for these benefits from the prevailing wage rate cannot be greater than the amount allowed by Executive Office of Labor (EOL) for the specified benefits. Any additional expense of providing benefits to the employees is to be borne by the employer and cannot be deducted from the Minimum Hourly Wage. If the employer's benefit expense is less than that so provided by EOL the difference will be paid directly to the employee. The rate established must be paid to all employees who perform work on the project.

When an employer makes deductions from the Minimum Hourly Wage for an employee's contribution to social security, state taxes, federal taxes, and/or other contribution programs, allowed by law, the employer shall furnish each employee a suitable pay slip, check stub or envelope notifying the employee of the amount of the deductions.

No contractor or subcontractor contracting for any part of the contract week shall require or permit any laborer or mechanic to be employed on such work in excess of forty hours in any workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of forty hours in such workweek, whichever is the greater number of overtime hours.

Apprentice Rates are permitted only when there is an Apprentice Agreement registered with the Massachusetts Division of Apprentice Training in accordance with M.G.L. c. 23, § 11E-11L.

The Prevailing Wage Rates issued for each project shall be the rates paid for the entire project. The Prevailing Wage Rates must be posted on the job site at all times and be visible from a public way.

In addition, each such contractor and subcontractor shall furnish to the MassDOT's Resident Engineer, within fifteen days after completion of its portion of the work, a statement, executed by the contractor or subcontractor or by any authorized officer or employee of the contractor or subcontractor who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE

Date: _____

I , _____do hereby state:
(Name of signatory party) (Title)

That I pay or supervise the payment of the persons employed by:

_____
(Contractor or Subcontractor)

on the _____
(MassDOT Project Location and Contract Number)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty-nine of the General Laws.

Signature _____

Title _____

The above-mentioned copies of payroll records and statements of compliance shall be available for inspection by any interested party filing a written request to the MassDOT's Resident Engineer for such inspection and copying.

Massachusetts General Laws c. 149, §27, requires annual updates to prevailing wage schedules for all public construction contracts lasting longer than one year. MassDOT will request the required updates and furnish them to the Contractor. The Contractor is required to pay no less than the wage rates indicated on the annual updated wage schedules.

MassDOT will request the updates no later that two week before the anniversary of the Notice to Proceed date of the contract to allow for adequate processing by the Department of Labor Standards (DLS). The effective date for the new rates will be the anniversary date of the contract (i.e. the notice to proceed date), regardless of the date of issuance on the schedule from DLS.

All bidders are cautioned that the aforementioned laws require that employers pay to covered employees no less than the applicable minimum wages. In addition, the same laws require that the applicable prevailing wages become incorporated as part of this contract. The prevailing minimum wage law establishes serious civil and criminal penalties for violations, including imprisonment and exclusion from future public contracts. Bidders are cautioned to carefully read the relevant sections of the Massachusetts General Laws.

*** END OF DOCUMENT ***

DOCUMENT 00861

STATE PREVAILING WAGE RATES

THIS PAGE INTENTIONALLY LEFT BLANK

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS
Prevailing Wage Rates

MAURA HEALEY
Governor
KIM DRISCOLL
Lt. Governor

As determined by the Director under the provisions of the Massachusetts General Laws, Chapter 149, Sections 26 to 27H

LAUREN JONES
Secretary
MICHAEL FLANAGAN
Director

Awarding Authority:	Massachusetts Highway	**City/Town:**	SOUTHBRIDGE
Wage Request No:	20260922161049	**Job Location:**	Mill Street over the Quinebaug River
Description of Work:	SOUTHBRIDGE - FAP No. STP(BR-OFF)-003S(948)X Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River		
Contract Number:	136646		

§§ 26-27D Construction Project

This Prevailing Wage Schedule establishes the minimum wage rates that employees on this public works construction project must be paid. The project's Wage Request Number is listed above and on all pages of this Schedule. This schedule applies **only** to this specific project.

Awarding Authority Responsibilities

- You must include this Prevailing Wage Schedule (PWS) or an appropriate reference to it in all advertisements and calls for bids.
- The PWS must be incorporated in its entirety into all contracts for this project (G.L. c. 149, § 27).
- The wage rates on this PWS will remain in effect for the duration of the project. **Exception:** You must request an updated schedule for any multi-year construction project no later than 2 weeks before the project's yearly anniversary date.
  - For CM AT RISK projects, the anniversary date is the earlier of the signing date of: (a) the GMP Amendment; or (b) the first amendment to permit procurement of construction services.
  - For all other construction projects, the anniversary date is the date the contract was signed by the Awarding Authority and the General Contractor.
- You must also request an updated PWS if you have not opened bids or selected a contractor within 90 days of the date of issuance on this PWS.
  - For CM AT RISK projects, the earlier of (a) the signing date of the GMP Amendment; or (b) the bid for the first construction scope of work must be within 90 days of the date of issuance on this Schedule.
- You must provide any updated PWS to all contractors working on the project, including general and sub-contractors.
- You must keep the contractors' weekly certified payroll records and Statements of Compliance on file for **3 years.**
- Awarding authorities have other prevailing wage responsibilities not listed above. Learn more at: **[Prevailing wage: for awarding authorities | Mass.gov]** and G.L. c. 149, §§ 26-27D.

Contractor Responsibilities

- You must pay all employees who perform construction work on this project at least the wage rate listed on this PWS. **Warning!** If you do not follow this requirement, you can face civil fines, criminal charges, or private lawsuits.
- You must post this PWS at the worksite where it can be easily seen. (G.L. c. 149, § 27)
- You must file weekly payroll reports and a Statement of Compliance with the awarding authority (**not** DLS). You can file payroll reports by mail or email and must keep them on file for 3 years. Each weekly payroll report must include each employees' name, address, occupational classification(s), hours worked, and wages paid. Find a sample report at: mass.gov/dols/pw.
- You cannot pay any employees at the apprentice rates listed on this PWS unless they are registered with the Massachusetts Division of Apprentice Standards (DAS). Qualifying apprentices must be paid at the applicable step rate and must carry their apprentice ID card during all work hours on the project. Apprentices **not** registered with DAS must be paid at the listed journeyworker's rate, even if they are registered with a different federal/state public agency or private entity. For every week in which apprentice rates are paid, a copy of each apprentice's apprentice ID card issued by DAS shall be attached to the certified payroll records.
- If you don't know what classification or rate applies to the work being performed, you must ask DLS; paying the wrong rate subjects you to enforcement.
- Please contact DLS if you have any questions about the Prevailing Wage Schedule: (617) 626-6953 or **DLS.Feedback@mass.gov**

Employees who are **not** paid the wage listed on the Prevailing Wage Schedule (PWS) may file a complaint with the Attorney General's Fair Labor

Division: **www.mass.gov/ago/fld**; **(617) 727-3465.**

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
(2 AXLE) DRIVER - EQUIPMENT TEAMSTERS JOINT COUNCIL NO. 10 TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	$41.95	$16.17	$21.78	$0.00	$0.00	$79.90
	12/1/2026	$41.95	$16.17	$23.52	$0.00	$0.00	$81.64
	1/1/2027	$41.95	$16.77	$23.52	$0.00	$0.00	$82.24
(3 AXLE) DRIVER - EQUIPMENT TEAMSTERS JOINT COUNCIL NO. 10 TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	$42.02	$16.17	$21.78	$0.00	$0.00	$79.97
	12/1/2026	$42.02	$16.17	$23.52	$0.00	$0.00	$81.71
	1/1/2027	$42.02	$16.77	$23.52	$0.00	$0.00	$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT TEAMSTERS JOINT COUNCIL NO. 10 TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	$42.14	$16.17	$21.78	$0.00	$0.00	$80.09
	12/1/2026	$42.14	$16.17	$23.52	$0.00	$0.00	$81.83
	1/1/2027	$42.14	$16.77	$23.52	$0.00	$0.00	$82.43
ADS/SUBMERSIBLE PILOT PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 2) For apprentice rates see "Apprentice- PILE DRIVER"	8/1/2024	$117.16	$10.08	$11.62	$12.67	$0.00	$151.53
AIR TRACK OPERATOR LABORERS LABORERS - ZONE 2 For apprentice rates see "Apprentice- LABORER"	6/1/2026	$42.41	$10.90	$9.75	$9.11	$0.00	$72.17
	12/1/2026	$43.85	$10.90	$9.75	$9.11	$0.00	$73.61
	6/1/2027	$45.30	$10.90	$9.75	$9.11	$0.00	$75.06
	12/1/2027	$46.75	$10.90	$9.75	$9.11	$0.00	$76.51
	6/1/2028	$48.25	$10.90	$9.75	$9.11	$0.00	$78.01
	12/1/2028	$49.75	$10.90	$9.75	$9.11	$0.00	$79.51
AIR TRACK OPERATOR (HEAVY & HIGHWAY) LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY) For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"	6/1/2026	$42.41	$10.90	$9.75	$9.21	$0.00	$72.27
	12/1/2026	$43.85	$10.90	$9.75	$9.21	$0.00	$73.71
ASBESTOS WORKER (PIPES & TANKS) HEAT & FROST INSULATORS LOCAL 6 HEAT & FROST INSULATORS LOCAL 6 (WORCESTER)	12/1/2025	$44.80	$14.50	$4.30	$6.75	$0.00	$70.35
ASPHALT RAKER LABORERS LABORERS - ZONE 2 For apprentice rates see "Apprentice- LABORER"	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
ASPHALT RAKER (HEAVY & HIGHWAY) LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY) For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"	6/1/2026	$41.91	$10.90	$9.75	$9.21	$0.00	$71.77
	12/1/2026	$43.35	$10.90	$9.75	$9.21	$0.00	$73.21
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4 For apprentice rates see "Apprentice- OPERATING ENGINEERS"	6/1/2026	$59.38	$17.05	$13.35	$3.25	$0.00	$93.03
	12/1/2026	$60.83	$17.05	$13.35	$3.25	$0.00	$94.48

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
BACKHOE/FRONT-END LOADER	6/1/2026	$59.38	$17.05	$13.35	$3.25	$0.00	$93.03
OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.83	$17.05	$13.35	$3.25	$0.00	$94.48
OPERATING ENGINEERS LOCAL 4							
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
BARCO-TYPE JUMPING TAMPER	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
LABORERS - ZONE 2	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							
BLOCK PAVER, RAMMER / CURB SETTER	6/1/2026	$42.41	$10.90	$9.75	$9.11	$0.00	$72.17
LABORERS	12/1/2026	$43.85	$10.90	$9.75	$9.11	$0.00	$73.61
LABORERS - ZONE 2	6/1/2027	$45.30	$10.90	$9.75	$9.11	$0.00	$75.06
	12/1/2027	$46.75	$10.90	$9.75	$9.11	$0.00	$76.51
	6/1/2028	$48.25	$10.90	$9.75	$9.11	$0.00	$78.01
	12/1/2028	$49.75	$10.90	$9.75	$9.11	$0.00	$79.51
For apprentice rates see "Apprentice- LABORER"							
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY)	6/1/2026	$42.41	$10.90	$9.75	$9.21	$0.00	$72.27
LABORERS	12/1/2026	$43.85	$10.90	$9.75	$9.21	$0.00	$73.71
LABORERS - ZONE 2 (HEAVY & HIGHWAY)							
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
BOILER MAKER	1/1/2024	$48.12	$7.07	$14.60	$6.00	$0.00	$75.79
BOILERMAKERS LOCAL 29							
BOILERMAKERS LOCAL 29							

Apprentice: BOILER MAKER

Effective Date: 1/1/2024

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	65.00	$31.28	$7.07	$9.32	$3.90	$0.00	$51.57
2	65.00	$31.28	$7.07	$9.32	$3.90	$0.00	$51.57
3	70.00	$33.68	$7.07	$10.03	$4.20	$0.00	$54.98
4	75.00	$36.09	$7.07	$10.74	$4.50	$0.00	$58.40
5	80.00	$38.50	$7.07	$11.45	$4.80	$0.00	$61.82
6	85.00	$40.90	$7.07	$12.18	$5.10	$0.00	$65.25
7	90.00	$43.31	$7.07	$12.88	$5.40	$0.00	$68.66
8	95.00	$45.71	$7.07	$13.62	$5.70	$0.00	$72.10

Apprentice to Journeyworker Ratio: 1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	8/1/2026	$68.01	$12.84	$15.57	$7.33	$0.00	$103.75
BRICKLAYERS LOCAL 3	2/1/2027	$69.41	$12.84	$15.57	$7.33	$0.00	$105.15
BRICKLAYERS LOCAL 3 (WORCESTER)							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Apprentice: BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)

Effective Date: 8/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$34.01	$12.84	$15.57	$7.33	$0.00	$69.75
2	60.00	$40.81	$12.84	$15.57	$7.33	$0.00	$76.55
3	70.00	$47.61	$12.84	$15.57	$7.33	$0.00	$83.35
4	80.00	$54.41	$12.84	$15.57	$7.33	$0.00	$90.15
5	90.00	$61.21	$12.84	$15.57	$7.33	$0.00	$96.95

Apprentice: BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)

Effective Date: 2/1/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$34.71	$12.84	$15.57	$7.33	$0.00	$70.45
2	60.00	$41.65	$12.84	$15.57	$7.33	$0.00	$77.39
3	70.00	$48.59	$12.84	$15.57	$7.33	$0.00	$84.33
4	80.00	$55.53	$12.84	$15.57	$7.33	$0.00	$91.27
5	90.00	$62.47	$12.84	$15.57	$7.33	$0.00	$98.21

Apprentice to Journeyworker Ratio: 1:5

BULLDOZER/GRADER/SCRAPER	6/1/2026	$58.70	$17.05	$13.35	$3.25	$0.00	$92.35
OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.14	$17.05	$13.35	$3.25	$0.00	$93.79
OPERATING ENGINEERS LOCAL 4							
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
CAISSON & UNDERPINNING BOTTOM MAN	6/1/2026	$50.40	$10.90	$9.75	$9.80	$0.00	$80.85
LABORERS	12/1/2026	$51.90	$10.90	$9.75	$9.80	$0.00	$82.35
LABORERS - FOUNDATION AND MARINE							
For apprentice rates see "Apprentice- LABORER"							
CAISSON & UNDERPINNING LABORER	6/1/2026	$49.25	$10.90	$9.75	$9.80	$0.00	$79.70
LABORERS	12/1/2026	$50.75	$10.90	$9.75	$9.80	$0.00	$81.20
LABORERS - FOUNDATION AND MARINE							
For apprentice rates see "Apprentice- LABORER"							
CAISSON & UNDERPINNING TOP MAN	6/1/2026	$49.58	$10.90	$9.75	$9.80	$0.00	$80.03
LABORERS	12/1/2026	$51.08	$10.90	$9.75	$9.80	$0.00	$81.53
LABORERS - FOUNDATION AND MARINE							
For apprentice rates see "Apprentice- LABORER"							
CARBIDE CORE DRILL OPERATOR	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
LABORERS - ZONE 2	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
CARPENTER CARPENTERS CARPENTERS -ZONE 2 (Eastern Massachusetts)	9/1/2026	$52.10	$11.08	$11.47	$8.50	$0.00	$83.15
	3/1/2027	$53.35	$11.08	$11.47	$8.50	$0.00	$84.40

Apprentice: CARPENTER

Effective Date: 9/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	$23.45	$11.08	$0.00	$1.73	$0.00	$36.26
2	45.00	$23.45	$11.08	$0.00	$1.73	$0.00	$36.26
3	55.00	$28.66	$11.08	$0.00	$3.40	$0.00	$43.14
4	55.00	$28.66	$11.08	$0.00	$3.40	$0.00	$43.14
5	70.00	$36.47	$11.08	$11.41	$5.10	$0.00	$64.06
6	70.00	$36.47	$11.08	$11.41	$5.10	$0.00	$64.06
7	80.00	$41.68	$11.08	$11.44	$6.80	$0.00	$71.00
8	80.00	$41.68	$11.08	$11.44	$6.80	$0.00	$71.00

Apprentice: CARPENTER

Effective Date: 3/1/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	$24.01	$11.08	$0.00	$1.73	$0.00	$36.82
2	45.00	$24.01	$11.08	$0.00	$1.73	$0.00	$36.82
3	55.00	$29.34	$11.08	$0.00	$3.40	$0.00	$43.82
4	55.00	$29.34	$11.08	$0.00	$3.40	$0.00	$43.82
5	70.00	$37.35	$11.08	$11.41	$5.10	$0.00	$64.94
6	70.00	$37.35	$11.08	$11.41	$5.10	$0.00	$64.94
7	80.00	$42.68	$11.08	$11.44	$6.80	$0.00	$72.00
8	80.00	$42.68	$11.08	$11.44	$6.80	$0.00	$72.00

Apprentice to Journeyworker Ratio: 1:5

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
CARPENTER WOOD FRAME CARPENTERS CARPENTERS-ZONE 3 (Wood Frame)	10/1/2025	$27.37	$7.38	$4.47	$1.00	$0.00	$40.22
	10/1/2026	$28.47	$7.38	$4.47	$1.00	$0.00	$41.32

All Aspects of New Wood Frame Work

Apprentice: CARPENTER WOOD FRAME

Effective Date: 10/1/2025

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	$16.42	$7.38	$0.00	$0.00	$0.00	$23.80
2	60.00	$16.42	$7.38	$0.00	$0.00	$0.00	$23.80
3	65.00	$17.79	$7.38	$0.00	$1.00	$0.00	$26.17
4	70.00	$19.16	$7.38	$0.00	$1.00	$0.00	$27.54
5	75.00	$20.53	$7.38	$3.80	$1.00	$0.00	$32.71
6	80.00	$21.90	$7.38	$3.80	$1.00	$0.00	$34.08

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Apprentice: CARPENTER WOOD FRAME

Effective Date: 10/1/2025

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
7	85.00	$23.26	$7.38	$3.80	$1.00	$0.00	$35.44
8	90.00	$24.63	$7.38	$3.80	$1.00	$0.00	$36.81

Apprentice: CARPENTER WOOD FRAME

Effective Date: 10/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	$17.08	$7.38	$0.00	$0.00	$0.00	$24.46
2	60.00	$17.08	$7.38	$0.00	$0.00	$0.00	$24.46
3	65.00	$18.51	$7.38	$0.00	$1.00	$0.00	$26.89
4	70.00	$19.93	$7.38	$0.00	$1.00	$0.00	$28.31
5	75.00	$21.35	$7.38	$3.80	$1.00	$0.00	$33.53
6	80.00	$22.78	$7.38	$3.80	$1.00	$0.00	$34.96
7	85.00	$24.20	$7.38	$3.80	$1.00	$0.00	$36.38
8	90.00	$25.62	$7.38	$3.80	$1.00	$0.00	$37.80

Apprentice to Journeyworker Ratio: 1:5

CEMENT MASONRY/PLASTERING PLASTERERS AND CEMENT MASONS LOCAL 534 Plasterers and Cement Masons - Zone 1	7/1/2026	$54.49	$13.35	$16.43	$7.78	$1.80	$93.85
	1/1/2027	$55.94	$13.35	$16.43	$7.78	$1.80	$95.30
	7/1/2027	$57.29	$13.35	$16.43	$7.78	$1.80	$96.65
	1/1/2028	$58.64	$13.35	$16.43	$7.78	$1.80	$98.00

Apprentice: CEMENT MASONRY/PLASTERING

Effective Date: 7/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$27.25	$13.35	$16.43	$0.00	$0.00	$57.03
2	60.00	$32.69	$13.35	$16.43	$7.78	$1.80	$72.05
3	65.00	$35.42	$13.35	$16.43	$7.78	$1.80	$74.78
4	70.00	$38.14	$13.35	$16.43	$7.78	$1.80	$77.50
5	75.00	$40.87	$13.35	$16.43	$7.78	$1.80	$80.23
6	80.00	$43.59	$13.35	$16.43	$7.78	$1.80	$82.95
7	90.00	$49.04	$13.35	$16.43	$7.78	$0.00	$86.60

Apprentice: CEMENT MASONRY/PLASTERING

Effective Date: 1/1/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$27.97	$13.35	$16.43	$0.00	$0.00	$57.75
2	60.00	$33.56	$13.35	$16.43	$7.78	$1.80	$72.92

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: CEMENT MASONRY/PLASTERING							
Effective Date: 1/1/2027							
Step / Percent		**Apprentice Base Wage**					
3 / 65.00		$36.36	$13.35	$16.43	$7.78	$1.80	$75.72
4 / 70.00		$39.16	$13.35	$16.43	$7.78	$1.80	$78.52
5 / 75.00		$41.96	$13.35	$16.43	$7.78	$1.80	$81.32
6 / 80.00		$44.75	$13.35	$16.43	$7.78	$1.80	$84.11
7 / 90.00		$50.35	$13.35	$16.43	$0.00	$0.00	$80.13
Apprentice to Journeyworker Ratio: 1:5							
CHAIN SAW OPERATOR	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
LABORERS - ZONE 2	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	6/1/2026	$60.61	$17.05	$13.35	$3.25	$0.00	$94.26
OPERATING ENGINEERS LOCAL 4	12/1/2026	$62.09	$17.05	$13.35	$3.25	$0.00	$95.74
OPERATING ENGINEERS LOCAL 4							
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
COMPRESSOR OPERATOR	6/1/2026	$37.63	$17.05	$13.35	$3.25	$0.00	$71.28
OPERATING ENGINEERS LOCAL 4	12/1/2026	$38.58	$17.05	$13.35	$3.25	$0.00	$72.23
OPERATING ENGINEERS LOCAL 4							
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
DELEADER (BRIDGE)	1/1/2026	$59.56	$10.35	$12.00	$12.60	$0.00	$94.51
PAINTERS LOCAL 35							
PAINTERS LOCAL 35 - ZONE 2							
Apprentice: DELEADER (BRIDGE)							
Effective Date: 1/1/2026							
Step / Percent		**Apprentice Base Wage**					
1 / 50.00		$29.78	$10.35	$0.00	$0.00	$0.00	$40.13
2 / 55.00		$32.76	$10.35	$0.00	$6.93	$0.00	$50.04
3 / 60.00		$35.74	$10.35	$0.00	$7.56	$0.00	$53.65
4 / 65.00		$38.71	$10.35	$0.00	$8.19	$0.00	$57.25
5 / 70.00		$41.69	$10.35	$12.00	$8.82	$0.00	$72.86
6 / 75.00		$44.67	$10.35	$12.00	$9.45	$0.00	$76.47
7 / 80.00		$47.65	$10.35	$12.00	$10.08	$0.00	$80.08
8 / 90.00		$53.60	$10.35	$12.00	$11.34	$0.00	$87.29
Apprentice to Journeyworker Ratio: 1:1							
DEMO: ADZEMAN	6/1/2026	$49.30	$10.90	$9.75	$9.65	$0.00	$79.60

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
LABORERS LABORERS - ZONE 2	12/7/2026	$50.80	$10.90	$9.75	$9.65	$0.00	$81.10
	6/7/2027	$52.40	$10.90	$9.75	$9.65	$0.00	$82.70
	12/6/2027	$54.00	$10.90	$9.75	$9.65	$0.00	$84.30
	6/5/2028	$55.68	$10.90	$9.75	$9.65	$0.00	$85.98
	12/4/2028	$57.35	$10.90	$9.75	$9.65	$0.00	$87.65
For apprentice rates see "Apprentice- LABORER"							
DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS LABORERS - ZONE 2	6/1/2026	$50.30	$10.90	$9.75	$9.65	$0.00	$80.60
	12/7/2026	$51.80	$10.90	$9.75	$9.65	$0.00	$82.10
	6/7/2027	$53.40	$10.90	$9.75	$9.65	$0.00	$83.70
	12/6/2027	$55.00	$10.90	$9.75	$9.65	$0.00	$85.30
	6/5/2028	$56.68	$10.90	$9.75	$9.65	$0.00	$86.98
	12/4/2028	$58.35	$10.90	$9.75	$9.65	$0.00	$88.65
For apprentice rates see "Apprentice- LABORER"							
DEMO: BURNERS LABORERS LABORERS - ZONE 2	6/1/2026	$50.05	$10.90	$9.75	$9.65	$0.00	$80.35
	12/7/2026	$51.55	$10.90	$9.75	$9.65	$0.00	$81.85
	6/7/2027	$53.15	$10.90	$9.75	$9.65	$0.00	$83.45
	12/6/2027	$54.75	$10.90	$9.75	$9.65	$0.00	$85.05
	6/5/2028	$56.43	$10.90	$9.75	$9.65	$0.00	$86.73
	12/4/2028	$58.10	$10.90	$9.75	$9.65	$0.00	$88.40
For apprentice rates see "Apprentice- LABORER"							
DEMO: CONCRETE CUTTER/SAWYER LABORERS LABORERS - ZONE 2	6/1/2026	$50.30	$10.90	$9.75	$9.65	$0.00	$80.60
	12/7/2026	$51.80	$10.90	$9.75	$9.65	$0.00	$82.10
	6/7/2027	$53.40	$10.90	$9.75	$9.65	$0.00	$83.70
	12/6/2027	$55.00	$10.90	$9.75	$9.65	$0.00	$85.30
	6/5/2028	$56.68	$10.90	$9.75	$9.65	$0.00	$86.98
	12/4/2028	$58.35	$10.90	$9.75	$9.65	$0.00	$88.65
For apprentice rates see "Apprentice- LABORER"							
DEMO: JACKHAMMER OPERATOR LABORERS LABORERS - ZONE 2	6/1/2026	$50.05	$10.90	$9.75	$9.65	$0.00	$80.35
	12/7/2026	$51.55	$10.90	$9.75	$9.65	$0.00	$81.85
	6/7/2027	$53.15	$10.90	$9.75	$9.65	$0.00	$83.45
	12/6/2027	$54.75	$10.90	$9.75	$9.65	$0.00	$85.05
	6/5/2028	$56.43	$10.90	$9.75	$9.65	$0.00	$86.73
	12/4/2028	$58.10	$10.90	$9.75	$9.65	$0.00	$88.40
For apprentice rates see "Apprentice- LABORER"							
DEMO: WRECKING LABORER LABORERS LABORERS - ZONE 2	6/1/2026	$49.30	$10.90	$9.75	$9.65	$0.00	$79.60
	12/7/2026	$50.80	$10.90	$9.75	$9.65	$0.00	$81.10
	6/7/2027	$52.40	$10.90	$9.75	$9.65	$0.00	$82.70
	12/6/2027	$54.00	$10.90	$9.75	$9.65	$0.00	$84.30
	6/5/2028	$55.68	$10.90	$9.75	$9.65	$0.00	$85.98
	12/4/2028	$57.35	$10.90	$9.75	$9.65	$0.00	$87.65
For apprentice rates see "Apprentice- LABORER"							
DIRECTIONAL DRILL MACHINE OPERATOR OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	6/1/2026	$58.70	$17.05	$13.35	$3.25	$0.00	$92.35
	12/1/2026	$60.14	$17.05	$13.35	$3.25	$0.00	$93.79
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
DIVER PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 2)	8/1/2024	$78.11	$10.08	$11.62	$12.67	$0.00	$112.48
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Diver wage 70/80/90 2A $69.83, 3A $91.79,4A $102.14 Total Rate							
DIVER TENDER PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 2)	8/1/2024	$51.97	$10.08	$11.62	$12.67	$0.00	$86.34
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Piledriver wage 70/80/90 2A $54.20, 3A $73.93,4A $82.05 Total Rate							
DIVER TENDER (EFFLUENT) PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 2)	8/1/2024	$83.69	$10.08	$11.62	$12.67	$0.00	$118.06
For apprentice rates see "Apprentice- PILE DRIVER"							
DIVER/SLURRY (EFFLUENT) PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 2)	8/1/2024	$117.16	$10.08	$11.62	$12.67	$0.00	$151.53
For apprentice rates see "Apprentice- PILE DRIVER"							
DRAWBRIDGE OPERATOR (Construction) DRAWBRIDGE - SEIU LOCAL 888 DRAWBRIDGE - SEIU LOCAL 888	7/1/2020	$26.77	$6.67	$3.93	$0.00	$0.16	$37.53
ELECTRICIAN ELECTRICIANS LOCAL 96 ELECTRICIANS LOCAL 96	9/6/2026	$49.38	$15.96	$14.57	$5.43	$0.00	$85.34

Apprentice: ELECTRICIAN

Effective Date: 9/6/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	40.00	$19.75	$15.96	$0.59	$0.00	$0.00	$36.30
2	45.00	$22.22	$15.96	$0.67	$0.00	$0.00	$38.85
3	48.00	$23.70	$15.96	$13.80	$2.61	$0.00	$56.07
4	55.00	$27.16	$15.96	$13.90	$2.99	$0.00	$60.01
5	65.00	$32.10	$15.96	$14.05	$3.53	$0.00	$65.64
6	80.00	$39.50	$15.96	$14.28	$4.35	$0.00	$74.09

Apprentice to Journeyworker Ratio: 2:3

ELEVATOR CONSTRUCTOR	1/1/2026	$69.23	$16.38	$11.06	$10.70	$0.00	$107.37
ELEVATOR CONSTRUCTORS LOCAL 41 ELEVATOR CONSTRUCTORS LOCAL 41	1/1/2027	$72.23	$16.48	$11.16	$11.00	$0.00	$110.87

Apprentice: ELEVATOR CONSTRUCTOR

Effective Date: 1/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$34.62	$16.38	$0.00	$0.00	$0.00	$51.00

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Apprentice: ELEVATOR CONSTRUCTOR

Effective Date: 1/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
2	55.00	$38.08	$16.38	$11.06	$10.70	$0.00	$76.22
3	65.00	$45.00	$16.38	$11.06	$10.70	$0.00	$83.14
4	70.00	$48.46	$16.38	$11.06	$10.70	$0.00	$86.60
5	80.00	$55.38	$16.38	$11.06	$10.70	$0.00	$93.52

Apprentice: ELEVATOR CONSTRUCTOR

Effective Date: 1/1/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$36.12	$16.48	$0.00	$0.00	$0.00	$52.60
2	55.00	$39.73	$16.48	$11.16	$11.00	$0.00	$78.37
3	65.00	$46.95	$16.48	$11.16	$11.00	$0.00	$85.59
4	70.00	$50.56	$16.48	$11.16	$11.00	$0.00	$89.20
5	80.00	$57.78	$16.48	$11.16	$11.00	$0.00	$96.42

Apprentice to Journeyworker Ratio: 1:1

ELEVATOR CONSTRUCTOR HELPER	1/1/2026	$48.46	$16.38	$11.06	$10.70	$0.00	$86.60
ELEVATOR CONSTRUCTORS LOCAL 41	1/1/2027	$50.56	$16.48	$11.16	$11.00	$0.00	$89.20
ELEVATOR CONSTRUCTORS LOCAL 41							
For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"							
FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY)	6/1/2026	$41.91	$10.90	$9.75	$9.21	$0.00	$71.77
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.21	$0.00	$73.21
LABORERS - ZONE 2 (HEAVY & HIGHWAY)							
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY	5/1/2026	$54.40	$16.55	$13.35	$3.25	$0.00	$87.55
OPERATING ENGINEERS LOCAL 4	11/1/2026	$55.69	$16.55	$13.35	$3.25	$0.00	$88.84
OPERATING ENGINEERS LOCAL 4	5/1/2027	$57.12	$16.55	$13.35	$3.25	$0.00	$90.27
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY	5/1/2026	$56.02	$16.55	$13.35	$3.25	$0.00	$89.17
OPERATING ENGINEERS LOCAL 4	11/1/2026	$57.32	$16.55	$13.35	$3.25	$0.00	$90.47
OPERATING ENGINEERS LOCAL 4	5/1/2027	$58.77	$16.55	$13.35	$3.25	$0.00	$91.92
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY	5/1/2026	$26.28	$16.55	$13.35	$3.25	$0.00	$59.43
OPERATING ENGINEERS LOCAL 4	11/1/2026	$27.04	$16.55	$13.35	$3.25	$0.00	$60.19
OPERATING ENGINEERS LOCAL 4	5/1/2027	$27.89	$16.55	$13.35	$3.25	$0.00	$61.04
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
FIRE ALARM INSTALLER	9/6/2026	$49.38	$15.96	$14.57	$5.43	$0.00	$85.34
ELECTRICIANS LOCAL 96							
ELECTRICIANS LOCAL 96							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- ELECTRICIAN"							
FIRE ALARM REPAIR / MAINT/COMMISSIONING ELECTRICIANS LOCAL 96 ELECTRICIANS LOCAL 96	9/6/2026	$49.38	$15.96	$14.57	$5.43	$0.00	$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"							
FIREMAN (ASST. ENGINEER) OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	6/1/2026	$47.55	$17.05	$13.35	$3.25	$0.00	$81.20
	12/1/2026	$48.73	$17.05	$13.35	$3.25	$0.00	$82.38
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
FLAGGER & SIGNALER (HEAVY & HIGHWAY) LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	$29.21	$10.90	$9.75	$9.21	$0.00	$59.07
	12/1/2026	$29.21	$10.90	$9.75	$9.21	$0.00	$59.07
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
FLOORCOVERER FLOORCOVERERS LOCAL 2168 FLOORCOVERERS LOCAL 2168 ZONE II	3/1/2024	$48.93	$10.33	$11.47	$8.80	$0.00	$79.53

Apprentice: FLOORCOVERER

Effective Date: 3/1/2024

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$24.47	$10.33	$0.00	$1.76	$0.00	$36.56
2	55.00	$26.91	$10.33	$0.00	$1.76	$0.00	$39.00
3	60.00	$29.36	$10.33	$0.00	$3.52	$0.00	$43.21
4	65.00	$31.80	$10.33	$0.00	$3.52	$0.00	$45.65
5	70.00	$34.25	$10.33	$11.47	$5.28	$0.00	$61.33
6	75.00	$36.70	$10.33	$11.47	$5.28	$0.00	$63.78
7	80.00	$39.14	$10.33	$11.47	$7.04	$0.00	$67.98
8	85.00	$41.59	$10.33	$11.47	$7.04	$0.00	$70.43

Apprentice Notes

Steps are 750 hrs.

Apprentice to Journeyworker Ratio: 1:1

FORK LIFT/CHERRY PICKER OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	6/1/2026	$59.38	$17.05	$13.35	$3.25	$0.00	$93.03
	12/1/2026	$60.83	$17.05	$13.35	$3.25	$0.00	$94.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
GENERATOR/LIGHTING PLANT/HEATERS OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	6/1/2026	$37.63	$17.05	$13.35	$3.25	$0.00	$71.28
	12/1/2026	$38.58	$17.05	$13.35	$3.25	$0.00	$72.23
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) GLAZIERS LOCAL 35 GLAZIERS LOCAL 35 (ZONE 2)	1/1/2026	$49.06	$10.35	$12.00	$12.60	$0.00	$84.01

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
HOISTING ENGINEER/CRANES/GRADALLS OPERATING ENGINEERS LOCAL 4	6/1/2026	$59.38	$17.05	$13.35	$3.25	$0.00	$93.03
OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.83	$17.05	$13.35	$3.25	$0.00	$94.48

Apprentice: GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)

Effective Date: 1/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$24.53	$10.35	$0.00	$0.00	$0.00	$34.88
2	55.00	$26.98	$10.35	$0.00	$6.88	$0.00	$44.21
3	60.00	$29.44	$10.35	$0.00	$7.50	$0.00	$47.29
4	65.00	$31.89	$10.35	$0.00	$8.13	$0.00	$50.37
5	70.00	$34.34	$10.35	$12.00	$8.75	$0.00	$65.44
6	75.00	$36.80	$10.35	$12.00	$9.38	$0.00	$68.53
7	80.00	$39.25	$10.35	$12.00	$10.00	$0.00	$71.60
8	90.00	$44.15	$10.35	$12.00	$11.25	$0.00	$77.75

Apprentice to Journeyworker Ratio: 1:1

Apprentice: HOISTING ENGINEER/CRANES/GRADALLS

Effective Date: 6/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	55.00	$32.66	$0.00	$0.00	$0.00	$0.00	$32.66
2	60.00	$35.63	$17.05	$13.35	$3.25	$0.00	$69.28
3	65.00	$38.60	$17.05	$13.35	$3.25	$0.00	$72.25
4	70.00	$41.57	$17.05	$13.35	$3.25	$0.00	$75.22
5	75.00	$44.54	$17.05	$13.35	$3.25	$0.00	$78.19
6	80.00	$47.50	$17.05	$13.35	$3.25	$0.00	$81.15
7	85.00	$50.47	$17.05	$13.35	$3.25	$0.00	$84.12
8	90.00	$53.44	$17.05	$13.35	$3.25	$0.00	$87.09

Apprentice: HOISTING ENGINEER/CRANES/GRADALLS

Effective Date: 12/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	55.00	$33.46	$0.00	$0.00	$0.00	$0.00	$33.46
2	60.00	$36.50	$17.05	$13.35	$3.25	$0.00	$70.15
3	65.00	$39.54	$17.05	$13.35	$3.25	$0.00	$73.19
4	70.00	$42.58	$17.05	$13.35	$3.25	$0.00	$76.23
5	75.00	$45.62	$17.05	$13.35	$3.25	$0.00	$79.27
6	80.00	$48.66	$17.05	$13.35	$3.25	$0.00	$82.31
7	85.00	$51.71	$17.05	$13.35	$3.25	$0.00	$85.36
8	90.00	$54.75	$17.05	$13.35	$3.25	$0.00	$88.40

Apprentice to Journeyworker Ratio: 1:6

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 63 SHEETMETAL WORKERS LOCAL 63	7/1/2026	$43.48	$13.24	$11.01	$9.92	$2.13	$79.78
	1/1/2027	$43.48	$13.54	$11.01	$11.12	$2.13	$81.28
	7/1/2027	$44.98	$13.54	$11.01	$11.12	$2.13	$82.78
	1/1/2028	$46.48	$13.54	$11.01	$11.12	$2.13	$84.28
For apprentice rates see "Apprentice- SHEET METAL WORKER"							
HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 96 ELECTRICIANS LOCAL 96	9/6/2026	$49.38	$15.96	$14.57	$5.43	$0.00	$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"							
HVAC (TESTING AND BALANCING - AIR) SHEETMETAL WORKERS LOCAL 63 SHEETMETAL WORKERS LOCAL 63	7/1/2026	$43.48	$13.24	$11.01	$9.92	$2.13	$79.78
	1/1/2027	$43.48	$13.54	$11.01	$11.12	$2.13	$81.28
	7/1/2027	$44.98	$13.54	$11.01	$11.12	$2.13	$82.78
	1/1/2028	$46.48	$13.54	$11.01	$11.12	$2.13	$84.28
For apprentice rates see "Apprentice- SHEET METAL WORKER"							
HVAC (TESTING AND BALANCING -WATER) PLUMBERS LOCAL 4 PLUMBERS LOCAL 4	3/1/2026	$55.90	$13.10	$9.71	$8.06	$0.00	$86.77
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"							
HVAC MECHANIC PLUMBERS LOCAL 4 PLUMBERS LOCAL 4	3/1/2026	$55.90	$13.10	$9.71	$8.06	$0.00	$86.77
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"							
HYDRAULIC DRILLS LABORERS LABORERS - ZONE 2	6/1/2026	$42.41	$10.90	$9.75	$9.11	$0.00	$72.17
	12/1/2026	$43.85	$10.90	$9.75	$9.11	$0.00	$73.61
	6/1/2027	$45.30	$10.90	$9.75	$9.11	$0.00	$75.06
	12/1/2027	$46.75	$10.90	$9.75	$9.11	$0.00	$76.51
	6/1/2028	$48.25	$10.90	$9.75	$9.11	$0.00	$78.01
	12/1/2028	$49.75	$10.90	$9.75	$9.11	$0.00	$79.51
For apprentice rates see "Apprentice- LABORER"							
HYDRAULIC DRILLS (HEAVY & HIGHWAY) LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	$42.41	$10.90	$9.75	$9.21	$0.00	$72.27
	12/1/2026	$43.85	$10.90	$9.75	$9.21	$0.00	$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
INSULATOR (PIPES & TANKS) HEAT & FROST INSULATORS LOCAL 6 HEAT & FROST INSULATORS LOCAL 6 (WORCESTER)	9/1/2026	$53.12	$16.15	$11.46	$11.49	$0.00	$92.22

Apprentice: INSULATOR (PIPES & TANKS)

Effective Date: 9/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$26.56	$16.15	$11.21	$5.75	$0.00	$59.67
2	60.00	$31.87	$16.15	$11.26	$6.89	$0.00	$66.17
3	70.00	$37.18	$16.15	$11.31	$8.04	$0.00	$72.68

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: INSULATOR (PIPES & TANKS)							
Effective Date: 9/1/2026							
Step 4 — Percent 80.00		**Apprentice Base Wage** $42.50	$16.15	$11.36	$9.19	$0.00	$79.20
Apprentice to Journeyworker Ratio: 1:4							
IRONWORKER/WELDER IRONWORKERS LOCAL 7 IRONWORKERS LOCAL 7 (WORCESTER AREA)	3/16/2026	$58.35	$9.25	$12.75	$15.00	$0.00	$95.35
Apprentice: IRONWORKER/WELDER							
Effective Date: 3/16/2026							
Step 1 — Percent 70.00		**Apprentice Base Wage** $40.85	$9.25	$12.75	$5.00	$0.00	$67.85
Step 2 — Percent 80.00		$46.68	$9.25	$12.75	$5.00	$0.00	$73.68
Step 3 — Percent 90.00		$52.52	$9.25	$12.75	$5.00	$0.00	$79.52
Step 4 — Percent 0.00		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Step 5 — Percent 0.00		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Step 6 — Percent 0.00		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Apprentice to Journeyworker Ratio: 1:4							
JACKHAMMER & PAVING BREAKER OPERATOR LABORERS LABORERS - ZONE 2	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							
LABORER LABORERS LABORERS - ZONE 2	6/1/2026	$41.66	$10.90	$9.75	$9.11	$0.00	$71.42
	12/1/2026	$43.10	$10.90	$9.75	$9.11	$0.00	$72.86
	6/1/2027	$44.55	$10.90	$9.75	$9.11	$0.00	$74.31
	12/1/2027	$46.00	$10.90	$9.75	$9.11	$0.00	$75.76
	6/1/2028	$47.50	$10.90	$9.75	$9.11	$0.00	$77.26
	12/1/2028	$49.00	$10.90	$9.75	$9.11	$0.00	$78.76
Apprentice: LABORER							
Effective Date: 6/1/2026							
Step 1 — Percent 60.00		**Apprentice Base Wage** $25.00	$10.90	$9.75	$9.11	$0.00	$54.76
Step 2 — Percent 70.00		$29.16	$10.90	$9.75	$9.11	$0.00	$58.92
Step 3 — Percent 80.00		$33.33	$10.90	$9.75	$9.11	$0.00	$63.09

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Apprentice: LABORER

Effective Date: 6/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
4	90.00	$37.49	$10.90	$9.75	$9.11	$0.00	$67.25

Apprentice: LABORER

Effective Date: 12/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	$25.86	$10.90	$9.75	$9.11	$0.00	$55.62
2	70.00	$30.17	$10.90	$9.75	$9.11	$0.00	$59.93
3	80.00	$34.48	$10.90	$9.75	$9.11	$0.00	$64.24
4	90.00	$38.79	$10.90	$9.75	$9.11	$0.00	$68.55

Apprentice to Journeyworker Ratio: 1:5

LABORER (HEAVY & HIGHWAY) LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	$41.66	$10.90	$9.75	$9.21	$0.00	$71.52
	12/1/2026	$43.10	$10.90	$9.75	$9.21	$0.00	$72.96

Apprentice: LABORER (HEAVY & HIGHWAY)

Effective Date: 6/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	$25.00	$10.90	$9.75	$9.21	$0.00	$54.86
2	70.00	$29.16	$10.90	$9.75	$9.21	$0.00	$59.02
3	80.00	$33.33	$10.90	$9.75	$9.21	$0.00	$63.19
4	90.00	$37.49	$10.90	$9.75	$9.10	$0.00	$67.24

Apprentice: LABORER (HEAVY & HIGHWAY)

Effective Date: 12/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	$25.86	$10.90	$9.75	$9.21	$0.00	$55.72
2	70.00	$30.17	$10.90	$9.75	$9.21	$0.00	$60.03
3	80.00	$34.48	$10.90	$9.75	$9.21	$0.00	$64.34
4	90.00	$38.79	$10.90	$9.75	$9.21	$0.00	$68.65

Apprentice to Journeyworker Ratio: 1:5

LABORER: CARPENTER TENDER LABORERS LABORERS - ZONE 2	6/1/2026	$41.66	$10.90	$9.75	$9.11	$0.00	$71.42
	12/1/2026	$43.10	$10.90	$9.75	$9.11	$0.00	$72.86
	6/1/2027	$44.55	$10.90	$9.75	$9.11	$0.00	$74.31
	12/1/2027	$46.00	$10.90	$9.75	$9.11	$0.00	$75.76
	6/1/2028	$47.50	$10.90	$9.75	$9.11	$0.00	$77.26

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	12/1/2028	$49.00	$10.90	$9.75	$9.11	$0.00	$78.76
For apprentice rates see "Apprentice- LABORER"							
LABORER: CEMENT FINISHER TENDER	6/1/2026	$41.66	$10.90	$9.75	$9.11	$0.00	$71.42
LABORERS	12/1/2026	$43.10	$10.90	$9.75	$9.11	$0.00	$72.86
LABORERS - ZONE 2	6/1/2027	$44.55	$10.90	$9.75	$9.11	$0.00	$74.31
	12/1/2027	$46.00	$10.90	$9.75	$9.11	$0.00	$75.76
	6/1/2028	$47.50	$10.90	$9.75	$9.11	$0.00	$77.26
	12/1/2028	$49.00	$10.90	$9.75	$9.11	$0.00	$78.76
For apprentice rates see "Apprentice- LABORER"							
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER	6/1/2026	$41.75	$10.90	$9.75	$9.65	$0.00	$72.05
LABORERS	12/7/2026	$43.19	$10.90	$9.75	$9.65	$0.00	$73.49
LABORERS - ZONE 2	6/7/2027	$44.64	$10.90	$9.75	$9.65	$0.00	$74.94
	12/6/2027	$46.09	$10.90	$9.75	$9.65	$0.00	$76.39
	6/5/2028	$47.59	$10.90	$9.75	$9.65	$0.00	$77.89
	12/4/2028	$49.09	$10.90	$9.75	$9.65	$0.00	$79.39
For apprentice rates see "Apprentice- LABORER"							
LABORER: MASON TENDER	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
LABORERS - ZONE 2	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							
LABORER: MASON TENDER (HEAVY & HIGHWAY)	6/1/2026	$41.91	$10.90	$9.75	$9.21	$0.00	$71.77
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.21	$0.00	$73.21
LABORERS - ZONE 2 (HEAVY & HIGHWAY)							
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
LABORER: MULTI-TRADE TENDER	6/1/2026	$41.66	$10.90	$9.75	$9.11	$0.00	$71.42
LABORERS	12/1/2026	$43.10	$10.90	$9.75	$9.11	$0.00	$72.86
LABORERS - ZONE 2	6/1/2027	$44.55	$10.90	$9.75	$9.11	$0.00	$74.31
	12/1/2027	$46.00	$10.90	$9.75	$9.11	$0.00	$75.76
	6/1/2028	$47.50	$10.90	$9.75	$9.11	$0.00	$77.26
	12/1/2028	$49.00	$10.90	$9.75	$9.11	$0.00	$78.76
For apprentice rates see "Apprentice- LABORER"							
LABORER: TREE REMOVER	6/1/2026	$41.66	$10.90	$9.75	$9.11	$0.00	$71.42
LABORERS	12/1/2026	$43.10	$10.90	$9.75	$9.11	$0.00	$72.86
LABORERS - ZONE 2	6/1/2027	$44.55	$10.90	$9.75	$9.11	$0.00	$74.31
	12/1/2027	$46.00	$10.90	$9.75	$9.11	$0.00	$75.76
	6/1/2028	$47.50	$10.90	$9.75	$9.11	$0.00	$77.26
	12/1/2028	$49.00	$10.90	$9.75	$9.11	$0.00	$78.76
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"							
LASER BEAM OPERATOR	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
LABORERS - ZONE 2	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							
LASER BEAM OPERATOR (HEAVY & HIGHWAY) LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	$41.91	$10.90	$9.75	$9.21	$0.00	$71.77
	12/1/2026	$43.35	$10.90	$9.75	$9.21	$0.00	$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
MARBLE & TILE FINISHERS BRICKLAYERS LOCAL 3 BRICKLAYERS LOCAL 3 - MARBLE & TILE	8/1/2026	$53.84	$12.84	$15.57	$5.78	$0.00	$88.03
	2/1/2027	$54.96	$12.84	$15.57	$5.78	$0.00	$89.15

Apprentice: MARBLE & TILE FINISHERS

Effective Date: 8/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$26.92	$12.84	$15.57	$5.78	$0.00	$61.11
2	60.00	$32.30	$12.84	$15.57	$5.78	$0.00	$66.49
3	70.00	$37.69	$12.84	$15.57	$5.78	$0.00	$71.88
4	80.00	$43.07	$12.84	$15.57	$5.78	$0.00	$77.26
5	90.00	$48.46	$12.84	$15.57	$5.78	$0.00	$82.65

Apprentice: MARBLE & TILE FINISHERS

Effective Date: 2/1/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$27.48	$12.84	$15.57	$5.78	$0.00	$61.67
2	60.00	$32.98	$12.84	$15.57	$5.78	$0.00	$67.17
3	70.00	$38.47	$12.84	$15.57	$5.78	$0.00	$72.66
4	80.00	$43.97	$12.84	$15.57	$5.78	$0.00	$78.16
5	90.00	$49.46	$12.84	$15.57	$5.78	$0.00	$83.65

Apprentice to Journeyworker Ratio: 1:5

MARBLE MASONS,TILELAYERS & TERRAZZO MECH BRICKLAYERS LOCAL 3 BRICKLAYERS LOCAL 3 - MARBLE & TILE	8/1/2026	$70.17	$12.84	$15.57	$7.99	$0.00	$106.57
	2/1/2027	$71.57	$12.84	$15.57	$7.99	$0.00	$107.97

Apprentice: MARBLE MASONS,TILELAYERS & TERRAZZO MECH

Effective Date: 8/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$35.09	$12.84	$15.57	$7.99	$0.00	$71.49
2	60.00	$42.10	$12.84	$15.57	$7.99	$0.00	$78.50
3	70.00	$49.12	$12.84	$15.57	$7.99	$0.00	$85.52

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Apprentice: MARBLE MASONS,TILELAYERS & TERRAZZO MECH

Effective Date: 8/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
4	80.00	$56.14	$12.84	$15.57	$7.99	$0.00	$92.54
5	90.00	$63.15	$12.84	$15.57	$7.99	$0.00	$99.55

Apprentice: MARBLE MASONS,TILELAYERS & TERRAZZO MECH

Effective Date: 2/1/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$35.79	$12.84	$15.57	$7.99	$0.00	$72.19
2	60.00	$42.94	$12.84	$15.57	$7.99	$0.00	$79.34
3	70.00	$50.10	$12.84	$15.57	$7.99	$0.00	$86.50
4	80.00	$57.26	$12.84	$15.57	$7.99	$0.00	$93.66
5	90.00	$64.41	$12.84	$15.57	$7.99	$0.00	$100.81

Apprentice to Journeyworker Ratio: 1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	6/1/2026 12/1/2026	$58.70 $60.14	$17.05 $17.05	$13.35 $13.35	$3.25 $3.25	$0.00 $0.00	$92.35 $93.79

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	6/1/2026 12/1/2026	$58.70 $60.14	$17.05 $17.05	$13.35 $13.35	$3.25 $3.25	$0.00 $0.00	$92.35 $93.79

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 3) MILLWRIGHTS LOCAL 1121 MILLWRIGHTS LOCAL 1121 - Zone 3	1/5/2026	$45.20	$10.58	$11.47	$9.75	$0.00	$77.00

Apprentice: MILLWRIGHT (Zone 3)

Effective Date: 1/5/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	55.00	$24.86	$10.58	$0.00	$5.36	$0.00	$40.80
2	65.00	$29.38	$10.58	$0.00	$6.34	$0.00	$46.30
3	75.00	$33.90	$10.58	$11.47	$7.31	$0.00	$63.26
4	85.00	$38.42	$10.58	$11.47	$8.29	$0.00	$68.76

Apprentice Notes

Step 1&2 Appr. indentured after 1/6/2020 receive no pension,

Apprentice to Journeyworker Ratio: 1:4

MORTAR MIXER	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
LABORERS - ZONE 2	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							
OILER (OTHER THAN TRUCK CRANES,GRADALLS)	6/1/2026	$25.07	$17.05	$13.35	$3.25	$0.00	$58.72
OPERATING ENGINEERS LOCAL 4	12/1/2026	$25.74	$17.05	$13.35	$3.25	$0.00	$59.39
OPERATING ENGINEERS LOCAL 4							
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
OILER (TRUCK CRANES, GRADALLS)	6/1/2026	$31.17	$17.05	$13.35	$3.25	$0.00	$64.82
OPERATING ENGINEERS LOCAL 4	12/1/2026	$31.97	$17.05	$13.35	$3.25	$0.00	$65.62
OPERATING ENGINEERS LOCAL 4							
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
OTHER POWER DRIVEN EQUIPMENT - CLASS II	6/1/2026	$58.70	$17.05	$13.35	$3.25	$0.00	$92.35
OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.14	$17.05	$13.35	$3.25	$0.00	$93.79
OPERATING ENGINEERS LOCAL 4							
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
PAINTER (BRIDGES/TANKS)	1/1/2026	$59.56	$10.35	$12.00	$12.50	$0.00	$94.41
PAINTERS LOCAL 35							
PAINTERS LOCAL 35 - ZONE 2							

Apprentice: PAINTER (BRIDGES/TANKS)

Effective Date: 1/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$29.78	$10.35	$0.00	$0.00	$0.00	$40.13
2	55.00	$32.76	$10.35	$0.00	$6.93	$0.00	$50.04
3	60.00	$35.74	$10.35	$0.00	$7.56	$0.00	$53.65
4	65.00	$38.71	$10.35	$0.00	$8.19	$0.00	$57.25
5	70.00	$41.69	$10.35	$12.00	$8.82	$0.00	$72.86
6	75.00	$44.67	$10.35	$12.00	$9.45	$0.00	$76.47
7	80.00	$47.65	$10.35	$12.00	$10.08	$0.00	$80.08
8	90.00	$53.60	$10.35	$12.00	$11.34	$0.00	$87.29

Apprentice to Journeyworker Ratio: 1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	1/1/2026	$50.46	$10.35	$12.00	$12.60	$0.00	$85.41
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.							
PAINTERS LOCAL 35							
PAINTERS LOCAL 35 - ZONE 2							

Apprentice: PAINTER (SPRAY OR SANDBLAST, NEW) *

Effective Date: 1/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Apprentice: PAINTER (SPRAY OR SANDBLAST, NEW) *

Effective Date: 1/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$25.23	$10.35	$0.00	$0.00	$0.00	$35.58
2	55.00	$27.75	$10.35	$0.00	$6.93	$0.00	$45.03
3	60.00	$30.28	$10.35	$0.00	$7.56	$0.00	$48.19
4	65.00	$32.80	$10.35	$0.00	$8.19	$0.00	$51.34
5	70.00	$35.32	$10.35	$12.00	$8.82	$0.00	$66.49
6	75.00	$37.85	$10.35	$12.00	$9.45	$0.00	$69.65
7	80.00	$40.37	$10.35	$12.00	$10.08	$0.00	$72.80
8	90.00	$45.41	$10.35	$12.00	$11.34	$0.00	$79.10

Apprentice to Journeyworker Ratio: 1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT) 1/1/2026 $48.52 $10.35 $12.00 $12.60 $0.00 $83.47
PAINTERS LOCAL 35
PAINTERS LOCAL 35 - ZONE 2

Apprentice: PAINTER (SPRAY OR SANDBLAST, REPAINT)

Effective Date: 1/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$24.26	$10.35	$0.00	$0.00	$0.00	$34.61
2	55.00	$26.69	$10.35	$0.00	$6.93	$0.00	$43.97
3	60.00	$29.11	$10.35	$0.00	$7.56	$0.00	$47.02
4	65.00	$31.54	$10.35	$0.00	$8.19	$0.00	$50.08
5	70.00	$33.96	$10.35	$12.00	$8.82	$0.00	$65.13
6	75.00	$36.39	$10.35	$12.00	$9.45	$0.00	$68.19
7	80.00	$38.82	$10.35	$12.00	$10.08	$0.00	$71.25
8	90.00	$43.67	$10.35	$12.00	$11.34	$0.00	$77.36

Apprentice to Journeyworker Ratio: 1:1

PAINTER / TAPER (BRUSH, NEW) * 1/1/2026 $49.06 $10.35 $12.00 $12.60 $0.00 $84.01
* If 30% or more of surfaces to be painted are new construction,
NEW paint rate shall be used.
PAINTERS LOCAL 35
PAINTERS LOCAL 35 - ZONE 2

Apprentice: PAINTER / TAPER (BRUSH, NEW) *

Effective Date: 1/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$24.53	$10.35	$0.00	$0.00	$0.00	$34.88
2	55.00	$26.98	$10.35	$0.00	$6.93	$0.00	$44.26
3	60.00	$29.44	$10.35	$0.00	$7.56	$0.00	$47.35
4	65.00	$31.89	$10.35	$0.00	$8.19	$0.00	$50.43

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: PAINTER / TAPER (BRUSH, NEW) *							
Effective Date: 1/1/2026							
Step / Percent / Apprentice Base Wage							
5 / 70.00		$34.34	$10.35	$12.00	$8.82	$0.00	$65.51
6 / 75.00		$36.80	$10.35	$12.00	$9.45	$0.00	$68.60
7 / 80.00		$39.25	$10.35	$12.00	$10.08	$0.00	$71.68
8 / 90.00		$44.15	$10.35	$12.00	$11.34	$0.00	$77.84
Apprentice to Journeyworker Ratio: 1:1							
PAINTER / TAPER (BRUSH, REPAINT) PAINTERS LOCAL 35 PAINTERS LOCAL 35 - ZONE 2	1/1/2026	$47.12	$10.35	$12.00	$12.60	$0.00	$82.07
Apprentice: PAINTER / TAPER (BRUSH, REPAINT)							
Effective Date: 1/1/2026							
Step / Percent / Apprentice Base Wage							
1 / 50.00		$23.56	$10.35	$0.00	$0.00	$0.00	$33.91
2 / 55.00		$25.92	$10.35	$0.00	$6.93	$0.00	$43.20
3 / 60.00		$28.27	$10.35	$0.00	$7.56	$0.00	$46.18
4 / 65.00		$30.63	$10.35	$0.00	$8.19	$0.00	$49.17
5 / 70.00		$32.98	$10.35	$12.00	$8.82	$0.00	$64.15
6 / 75.00		$35.34	$10.35	$12.00	$9.45	$0.00	$67.14
7 / 80.00		$37.70	$10.35	$12.00	$10.08	$0.00	$70.13
8 / 90.00		$42.41	$10.35	$12.00	$11.34	$0.00	$76.10
Apprentice to Journeyworker Ratio: 1:1							
PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	$41.66	$10.90	$9.75	$9.21	$0.00	$71.52
	12/1/2026	$43.10	$10.90	$9.75	$9.21	$0.00	$72.96
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)							
PANEL & PICKUP TRUCKS DRIVER TEAMSTERS JOINT COUNCIL NO. 10 TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	$41.78	$16.17	$21.78	$0.00	$0.00	$79.73
	12/1/2026	$41.78	$16.17	$23.52	$0.00	$0.00	$81.47
	1/1/2027	$41.78	$16.77	$23.52	$0.00	$0.00	$82.07
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 2)	8/1/2024	$51.97	$10.08	$11.62	$12.67	$0.00	$86.34
For apprentice rates see "Apprentice- PILE DRIVER"							
PILE DRIVER PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 2)	8/1/2024	$51.97	$10.08	$11.62	$12.67	$0.00	$86.34

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: PILE DRIVER							
Effective Date: 8/1/2024							
Step 1 – 45.00		$23.39	$10.08	$0.00	$2.53	$0.00	$36.00
Step 2 – 55.00		$28.58	$10.08	$0.00	$5.07	$0.00	$43.73
Step 3 – 70.00		$36.38	$10.08	$11.62	$7.60	$0.00	$65.68
Step 4 – 80.00		$41.58	$10.08	$11.62	$10.14	$0.00	$73.42
Apprentice to Journeyworker Ratio: 1:5							
PIPELAYER	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
LABORERS - ZONE 2	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							
PIPELAYER (HEAVY & HIGHWAY)	6/1/2026	$41.91	$10.90	$9.75	$9.21	$0.00	$71.77
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.21	$0.00	$73.21
LABORERS - ZONE 2 (HEAVY & HIGHWAY)							
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
PLUMBER & PIPEFITTER	3/1/2026	$55.90	$13.10	$9.71	$8.06	$0.00	$86.77
PLUMBERS LOCAL 4							
PLUMBERS LOCAL 4							
Apprentice: PLUMBER & PIPEFITTER							
Effective Date: 3/1/2026							
Step 1 – 40.00		$22.36	$13.10	$0.00	$0.00	$0.00	$35.46
Step 2 – 50.00		$27.95	$13.10	$0.00	$0.00	$0.00	$41.05
Step 3 – 60.00		$33.54	$13.10	$0.00	$0.00	$0.00	$46.64
Step 4 – 70.00		$39.13	$13.10	$0.00	$8.06	$0.00	$60.29
Step 5 – 80.00		$44.72	$13.10	$0.00	$8.06	$0.00	$65.88
Apprentice to Journeyworker Ratio: 1:3							
PNEUMATIC CONTROLS (TEMP.)	3/1/2026	$55.90	$13.10	$9.71	$8.06	$0.00	$86.77
PLUMBERS LOCAL 4							
PLUMBERS LOCAL 4							
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"							
PNEUMATIC DRILL/TOOL OPERATOR	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
LABORERS - ZONE 2	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							
PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY)	6/1/2026	$41.91	$10.90	$9.75	$9.21	$0.00	$71.77
LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/1/2026	$43.35	$10.90	$9.75	$9.21	$0.00	$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
POWDERMAN & BLASTER	6/1/2026	$42.66	$10.90	$9.75	$9.11	$0.00	$72.42
LABORERS LABORERS - ZONE 2	12/1/2026	$44.10	$10.90	$9.75	$9.11	$0.00	$73.86
	6/1/2027	$45.55	$10.90	$9.75	$9.11	$0.00	$75.31
	12/1/2027	$47.00	$10.90	$9.75	$9.11	$0.00	$76.76
	6/1/2028	$48.50	$10.90	$9.75	$9.11	$0.00	$78.26
	12/1/2028	$50.00	$10.90	$9.75	$9.11	$0.00	$79.76
For apprentice rates see "Apprentice- LABORER"							
POWDERMAN & BLASTER (HEAVY & HIGHWAY)	6/1/2026	$42.66	$10.90	$9.75	$9.21	$0.00	$72.52
LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/1/2026	$44.10	$10.90	$9.75	$9.21	$0.00	$73.96
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
POWER SHOVEL/DERRICK/TRENCHING MACHINE	6/1/2026	$59.38	$17.05	$13.35	$3.25	$0.00	$93.03
OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.83	$17.05	$13.35	$3.25	$0.00	$94.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
PUMP OPERATOR (CONCRETE)	6/1/2026	$58.70	$17.05	$13.35	$3.25	$0.00	$92.35
OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.14	$17.05	$13.35	$3.25	$0.00	$93.79
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
PUMP OPERATOR (DEWATERING, OTHER)	6/1/2026	$37.63	$17.05	$13.35	$3.25	$0.00	$71.28
OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	12/1/2026	$38.58	$17.05	$13.35	$3.25	$0.00	$72.23
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
READY-MIX CONCRETE DRIVER TEAMSTERS 170 TEAMSTERS 170 - Dauphinais (Bellingham)	1/1/2025	$27.60	$11.26	$6.15	$0.00	$0.00	$45.01
RECLAIMERS	6/1/2026	$58.70	$17.05	$13.35	$3.25	$0.00	$92.35
OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.14	$17.05	$13.35	$3.25	$0.00	$93.79
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
RIDE-ON MOTORIZED BUGGY OPERATOR	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
LABORERS LABORERS - ZONE 2	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
ROLLER/SPREADER/MULCHING MACHINE	6/1/2026	$58.70	$17.05	$13.35	$3.25	$0.00	$92.35
OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.14	$17.05	$13.35	$3.25	$0.00	$93.79
OPERATING ENGINEERS LOCAL 4							

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

ROOFER (Inc.Roofer Waterproofng &Roofer Damproofg)	8/1/2026	$55.25	$14.53	$12.67	$9.03	$0.00	$91.48
ROOFERS LOCAL 33	2/1/2027	$57.00	$14.53	$12.67	$9.03	$0.00	$93.23
ROOFERS LOCAL 33	8/1/2027	$58.75	$14.53	$12.67	$9.03	$0.00	$94.98
	2/1/2028	$60.50	$14.53	$12.67	$9.03	$0.00	$96.73
	8/1/2028	$62.25	$14.53	$12.67	$9.03	$0.00	$98.48
	2/1/2029	$64.00	$14.53	$12.67	$9.03	$0.00	$100.23
	8/1/2029	$65.65	$14.53	$12.67	$9.03	$0.00	$101.88
	2/1/2030	$67.40	$14.53	$12.67	$9.03	$0.00	$103.63

Apprentice: ROOFER (Inc.Roofer Waterproofng &Roofer Damproofg)

Effective Date: 8/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	0.00	$0.00	$14.53	$6.34	$0.00	$0.00	$20.87
2	0.00	$0.00	$14.53	$12.67	$9.03	$0.00	$36.23
3	0.00	$0.00	$14.53	$12.67	$9.03	$0.00	$36.23
4	0.00	$0.00	$14.53	$12.67	$9.03	$0.00	$36.23
5	0.00	$0.00	$14.53	$12.67	$9.03	$0.00	$36.23

Apprentice: ROOFER (Inc.Roofer Waterproofng &Roofer Damproofg)

Effective Date: 2/1/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	0.00	$0.00	$14.53	$6.34	$0.00	$0.00	$20.87
2	0.00	$0.00	$14.53	$12.67	$9.03	$0.00	$36.23
3	0.00	$0.00	$14.53	$12.67	$9.03	$0.00	$36.23
4	0.00	$0.00	$14.53	$12.67	$9.03	$0.00	$36.23
5	0.00	$0.00	$14.53	$12.67	$9.03	$0.00	$36.23

Apprentice Notes

** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1

Apprentice to Journeyworker Ratio: 1:5

ROOFER SLATE / TILE / PRECAST CONCRETE	8/1/2026	$55.50	$14.53	$12.67	$9.03	$0.00	$91.73
ROOFERS LOCAL 33	2/1/2027	$57.25	$14.53	$12.67	$9.03	$0.00	$93.48
ROOFERS LOCAL 33	8/1/2027	$59.00	$14.53	$12.67	$9.03	$0.00	$95.23
	2/1/2028	$60.75	$14.53	$12.67	$9.03	$0.00	$96.98
	8/1/2028	$62.50	$14.53	$12.67	$9.03	$0.00	$98.73
	2/1/2029	$64.25	$14.53	$12.67	$9.03	$0.00	$100.48
	8/1/2029	$65.90	$14.53	$12.67	$9.03	$0.00	$102.13
	2/1/2030	$67.65	$14.53	$12.67	$9.03	$0.00	$103.88

For apprentice rates see "Apprentice- ROOFER"

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
SHEETMETAL WORKER SHEETMETAL WORKERS LOCAL 63 SHEETMETAL WORKERS LOCAL 63	7/1/2026	$43.48	$13.24	$11.01	$9.92	$2.13	$79.78
	1/1/2027	$43.48	$13.54	$11.01	$11.12	$2.13	$81.28
	7/1/2027	$44.98	$13.54	$11.01	$11.12	$2.13	$82.78
	1/1/2028	$46.48	$13.54	$11.01	$11.12	$2.13	$84.28

Apprentice: SHEETMETAL WORKER

Effective Date: 7/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	$19.57	$5.96	$4.95	$0.00	$0.85	$31.33
2	50.00	$21.74	$6.62	$5.51	$0.00	$0.94	$34.81
3	55.00	$23.91	$7.28	$9.91	$0.00	$1.15	$42.25
4	60.00	$26.09	$7.94	$9.91	$0.00	$1.23	$45.17
5	65.00	$28.26	$8.60	$9.91	$0.00	$1.31	$48.08
6	70.00	$30.44	$9.27	$9.91	$0.00	$1.39	$51.01
7	75.00	$32.61	$9.93	$9.91	$0.00	$1.47	$53.92
8	80.00	$34.78	$10.59	$9.91	$9.92	$1.78	$66.98
9	85.00	$36.96	$11.25	$9.91	$9.92	$1.86	$69.90
10	90.00	$39.13	$11.92	$9.91	$9.92	$1.94	$72.82

Apprentice: SHEETMETAL WORKER

Effective Date: 1/1/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	$19.57	$6.09	$4.95	$0.00	$0.85	$31.46
2	50.00	$21.74	$6.77	$5.51	$0.00	$0.94	$34.96
3	55.00	$23.91	$7.45	$9.91	$0.00	$1.15	$42.42
4	60.00	$26.09	$8.36	$9.91	$0.00	$1.23	$45.59
5	65.00	$28.26	$8.86	$9.91	$0.00	$1.31	$48.34
6	70.00	$30.44	$9.48	$9.91	$0.00	$1.39	$51.22
7	75.00	$32.61	$10.15	$9.91	$0.00	$1.47	$54.14
8	80.00	$34.78	$10.83	$9.91	$11.12	$1.78	$68.42
9	85.00	$36.96	$11.51	$9.91	$11.12	$1.86	$71.36
10	90.00	$39.13	$12.18	$9.91	$11.12	$1.94	$74.28

Apprentice to Journeyworker Ratio: 1:3

SPECIALIZED EARTH MOVING EQUIP < 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	$42.24	$16.17	$21.78	$0.00	$0.00	$80.19
	12/1/2026	$42.24	$16.17	$23.52	$0.00	$0.00	$81.93
	1/1/2027	$42.24	$16.77	$23.52	$0.00	$0.00	$82.53
SPECIALIZED EARTH MOVING EQUIP > 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	$42.53	$16.17	$21.78	$0.00	$0.00	$80.48
	12/1/2026	$42.53	$16.17	$23.52	$0.00	$0.00	$82.22
	1/1/2027	$42.53	$16.77	$23.52	$0.00	$0.00	$82.82
SPRINKLER FITTER SPRINKLER FITTERS LOCAL 669 SPRINKLER FITTERS LOCAL 669	7/1/2026	$56.54	$13.60	$7.45	$9.41	$0.00	$87.00
	10/1/2026	$56.54	$13.60	$7.45	$9.41	$0.00	$87.00
	1/1/2027	$56.54	$14.55	$7.50	$9.41	$0.00	$88.00

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	4/1/2027	$59.83	$14.55	$7.50	$9.41	$0.00	$91.29
	7/1/2027	$59.83	$14.55	$7.50	$9.41	$0.00	$91.29
	10/1/2027	$59.83	$14.55	$7.50	$9.41	$0.00	$91.29
	1/1/2028	$59.83	$15.50	$7.55	$9.41	$0.00	$92.29

Apprentice: SPRINKLER FITTER

Effective Date: 7/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	43.00	$28.36	$9.64	$0.00	$0.00	$0.00	$38.00
2	48.00	$31.66	$9.64	$0.00	$0.00	$0.00	$41.30
3	52.00	$34.29	$13.60	$7.45	$1.15	$0.00	$56.49
4	56.00	$36.93	$13.60	$7.45	$1.15	$0.00	$59.13
5	59.00	$38.91	$13.60	$7.45	$1.40	$0.00	$61.36
6	64.00	$42.21	$13.60	$7.45	$1.40	$0.00	$64.66
7	68.00	$44.85	$13.60	$7.45	$1.40	$0.00	$67.30
8	72.00	$47.48	$13.60	$7.45	$1.40	$0.00	$69.93
9	76.00	$50.12	$13.60	$7.45	$1.40	$0.00	$72.57
10	80.00	$52.76	$13.60	$7.45	$1.40	$0.00	$75.21

Apprentice: SPRINKLER FITTER

Effective Date: 10/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	43.00	$28.36	$0.00	$0.00	$0.00	$0.00	$28.36
2	48.00	$31.66	$0.00	$0.00	$0.00	$0.00	$31.66
3	52.00	$34.29	$0.00	$0.00	$1.15	$0.00	$35.44
4	56.00	$36.93	$0.00	$0.00	$1.15	$0.00	$38.08
5	59.00	$38.91	$0.00	$0.00	$1.40	$0.00	$40.31
6	64.00	$42.21	$0.00	$0.00	$1.40	$0.00	$43.61
7	68.00	$44.85	$0.00	$0.00	$1.40	$0.00	$46.25
8	72.00	$47.48	$0.00	$0.00	$1.40	$0.00	$48.88
9	76.00	$50.12	$0.00	$0.00	$1.40	$0.00	$51.52
10	80.00	$52.76	$0.00	$0.00	$1.40	$0.00	$54.16

Apprentice to Journeyworker Ratio: 1:1

STEAM BOILER OPERATOR	6/1/2026	$58.70	$17.05	$13.35	$3.25	$0.00	$92.35
OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.14	$17.05	$13.35	$3.25	$0.00	$93.79
OPERATING ENGINEERS LOCAL 4							

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN	6/1/2026	$58.70	$17.05	$13.35	$3.25	$0.00	$92.35
OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.14	$17.05	$13.35	$3.25	$0.00	$93.79
OPERATING ENGINEERS LOCAL 4							

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TERRAZZO FINISHERS	8/1/2026	$69.09	$12.84	$15.57	$8.02	$0.00	$105.52
BRICKLAYERS LOCAL 3	2/1/2027	$70.49	$12.84	$15.57	$8.02	$0.00	$106.92
BRICKLAYERS LOCAL 3 - MARBLE & TILE							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Apprentice: TERRAZZO FINISHERS

Effective Date: 8/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$34.55	$12.84	$15.57	$8.02	$0.00	$70.98
2	60.00	$41.45	$12.84	$15.57	$8.02	$0.00	$77.88
3	70.00	$48.36	$12.84	$15.57	$8.02	$0.00	$84.79
4	80.00	$55.27	$12.84	$15.57	$8.02	$0.00	$91.70
5	90.00	$62.18	$12.84	$15.57	$8.02	$0.00	$98.61

Apprentice: TERRAZZO FINISHERS

Effective Date: 2/1/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$35.25	$12.84	$15.57	$8.02	$0.00	$71.68
2	60.00	$42.29	$12.84	$15.57	$8.02	$0.00	$78.72
3	70.00	$49.34	$12.84	$15.57	$8.02	$0.00	$85.77
4	80.00	$56.39	$12.84	$15.57	$8.02	$0.00	$92.82
5	90.00	$63.44	$12.84	$15.57	$8.02	$0.00	$99.87

Apprentice to Journeyworker Ratio: 1:5

TEST BORING DRILLER LABORERS LABORERS - FOUNDATION AND MARINE	6/1/2026	$53.25	$10.90	$9.75	$9.80	$0.00	$83.70
	12/1/2026	$54.75	$10.90	$9.75	$9.80	$0.00	$85.20
For apprentice rates see "Apprentice- LABORER"							
TEST BORING DRILLER HELPER LABORERS LABORERS - FOUNDATION AND MARINE	6/1/2026	$49.37	$10.90	$9.75	$9.80	$0.00	$79.82
	12/1/2026	$50.87	$10.90	$9.75	$9.80	$0.00	$81.32
For apprentice rates see "Apprentice- LABORER"							
TEST BORING LABORER LABORERS LABORERS - FOUNDATION AND MARINE	6/1/2026	$49.25	$10.90	$9.75	$9.80	$0.00	$79.70
	12/1/2026	$50.75	$10.90	$9.75	$9.80	$0.00	$81.20
For apprentice rates see "Apprentice- LABORER"							
TRACTORS/PORTABLE STEAM GENERATORS OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS LOCAL 4	6/1/2026	$58.70	$17.05	$13.35	$3.25	$0.00	$92.35
	12/1/2026	$60.14	$17.05	$13.35	$3.25	$0.00	$93.79
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
TRAILERS FOR EARTH MOVING EQUIPMENT TEAMSTERS JOINT COUNCIL NO. 10 TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	$42.82	$16.17	$21.78	$0.00	$0.00	$80.77
	12/1/2026	$42.82	$16.17	$23.52	$0.00	$0.00	$82.51
	1/1/2027	$42.82	$16.77	$23.52	$0.00	$0.00	$83.11
TUNNEL WORK - COMPRESSED AIR LABORERS LABORERS (COMPRESSED AIR)	6/1/2026	$61.48	$10.90	$9.75	$10.25	$0.00	$92.38
	12/1/2026	$62.98	$10.90	$9.75	$10.25	$0.00	$93.88

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"							
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE)	6/1/2026	$63.48	$10.90	$9.75	$10.25	$0.00	$94.38
LABORERS	12/1/2026	$64.98	$10.90	$9.75	$10.25	$0.00	$95.88
LABORERS (COMPRESSED AIR)							
For apprentice rates see "Apprentice- LABORER"							
TUNNEL WORK - FREE AIR	6/1/2026	$53.55	$10.90	$9.75	$10.25	$0.00	$84.45
LABORERS	12/1/2026	$55.05	$10.90	$9.75	$10.25	$0.00	$85.95
LABORERS (FREE AIR TUNNEL)							
For apprentice rates see "Apprentice- LABORER"							
TUNNEL WORK - FREE AIR (HAZ. WASTE)	6/1/2026	$55.55	$10.90	$9.75	$10.25	$0.00	$86.45
LABORERS	12/1/2026	$57.05	$10.90	$9.75	$10.25	$0.00	$87.95
LABORERS (FREE AIR TUNNEL)							
For apprentice rates see "Apprentice- LABORER"							
VAC-HAUL	6/1/2026	$42.24	$16.17	$21.78	$0.00	$0.00	$80.19
TEAMSTERS JOINT COUNCIL NO. 10	12/1/2026	$42.24	$16.17	$23.52	$0.00	$0.00	$81.93
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	1/1/2027	$42.24	$16.77	$23.52	$0.00	$0.00	$82.53
VOICE-DATA-VIDEO TECHNICIAN	9/6/2026	$37.04	$15.96	$14.20	$4.07	$0.00	$71.27
ELECTRICIANS LOCAL 96							
ELECTRICIANS LOCAL 96							

Apprentice: VOICE-DATA-VIDEO TECHNICIAN

Effective Date: 9/6/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	$18.52	$15.96	$0.56	$4.07	$0.00	$39.11
2	55.00	$20.37	$15.96	$0.61	$4.07	$0.00	$41.01
3	60.00	$22.22	$15.96	$13.76	$4.07	$0.00	$56.01
4	65.00	$24.08	$15.96	$13.81	$4.07	$0.00	$57.92
5	70.00	$25.93	$15.96	$13.87	$4.07	$0.00	$59.83
6	75.00	$27.78	$15.96	$13.92	$4.07	$0.00	$61.73
7	80.00	$29.63	$15.96	$13.98	$4.07	$0.00	$63.64
8	85.00	$31.48	$15.96	$14.03	$4.07	$0.00	$65.54

Apprentice to Journeyworker Ratio: 1:1

WAGON DRILL OPERATOR	6/1/2026	$41.91	$10.90	$9.75	$9.11	$0.00	$71.67
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.11	$0.00	$73.11
LABORERS - ZONE 2	6/1/2027	$44.80	$10.90	$9.75	$9.11	$0.00	$74.56
	12/1/2027	$46.25	$10.90	$9.75	$9.11	$0.00	$76.01
	6/1/2028	$47.75	$10.90	$9.75	$9.11	$0.00	$77.51
	12/1/2028	$49.25	$10.90	$9.75	$9.11	$0.00	$79.01
For apprentice rates see "Apprentice- LABORER"							
WAGON DRILL OPERATOR (HEAVY & HIGHWAY)	6/1/2026	$41.91	$10.90	$9.75	$9.21	$0.00	$71.77
LABORERS	12/1/2026	$43.35	$10.90	$9.75	$9.21	$0.00	$73.21
LABORERS - ZONE 2 (HEAVY & HIGHWAY)							
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
WASTE WATER PUMP OPERATOR	6/1/2026	$59.38	$17.05	$13.35	$3.25	$0.00	$93.03
OPERATING ENGINEERS LOCAL 4	12/1/2026	$60.83	$17.05	$13.35	$3.25	$0.00	$94.48
OPERATING ENGINEERS LOCAL 4							
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
WATER METER INSTALLER	3/1/2026	$55.90	$13.10	$9.71	$8.06	$0.00	$86.77
PLUMBERS LOCAL 4							
PLUMBERS LOCAL 4							
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"							

Marine Drilling

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
BLASTER MARINE DRILLING MARINE DRILLING	1/1/2018	$41.82	$7.63	$2.35	$1.25	$0.00	$53.05
BOAT CAPTAIN MARINE DRILLING MARINE DRILLING	1/1/2018	$33.87	$7.63	$2.35	$0.95	$0.00	$44.80
BOAT CAPTAIN / Over 1,000 hp MARINE DRILLING MARINE DRILLING	1/1/2018	$38.06	$7.63	$2.35	$1.25	$0.00	$49.29
CORE DRILLER MARINE DRILLING MARINE DRILLING	1/1/2018	$31.43	$7.63	$2.25	$0.65	$0.00	$41.96
CORE DRILLER HELPER MARINE DRILLING MARINE DRILLING	1/1/2018	$28.47	$7.63	$2.35	$0.65	$0.00	$39.10
DRILLER MARINE DRILLING MARINE DRILLING	1/1/2018	$39.70	$7.63	$2.35	$1.25	$0.00	$50.93
ENGINEER MARINE DRILLING MARINE DRILLING	1/1/2018	$39.69	$7.63	$2.25	$1.25	$0.00	$50.82
HELPER MARINE DRILLING MARINE DRILLING	1/1/2018	$34.24	$7.63	$2.35	$0.65	$0.00	$44.87
MACHINIST MARINE DRILLING MARINE DRILLING	1/1/2018	$38.88	$7.63	$2.35	$0.95	$0.00	$49.81
OILER - MARINE DRILLING MARINE DRILLING MARINE DRILLING	1/1/2018	$34.24	$7.63	$2.35	$0.65	$0.00	$44.87
TUG DECKHAND MARINE DRILLING MARINE DRILLING	1/1/2018	$27.61	$7.63	$2.35	$0.65	$0.00	$38.24
WELDER MARINE DRILLING MARINE DRILLING	1/1/2018	$38.88	$7.63	$2.35	$0.95	$0.00	$49.81

Op Eng Marine (Dredging Work)

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
BOAT OPERATOR OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$29.26	$7.63	$2.35	$0.95	$0.00	$40.19
CERTIFIED WELDER OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$31.09	$7.63	$2.35	$1.25	$0.00	$42.32
CHIEF WELDER/ CHIEF MATE OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$33.02	$7.63	$2.35	$1.25	$0.00	$44.25
DERRICK / SPIDER / SPILLBARGE OPERATOR OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$33.02	$7.63	$2.35	$1.25	$0.00	$44.25
DRAG BARGE OPERATOR / WELDER / MATE OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$30.24	$7.63	$2.35	$0.95	$0.00	$41.17
ENGINEER / ELECTRICIAN OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$33.02	$7.63	$2.35	$1.25	$0.00	$44.25
LICENSED BOAT OPERATOR OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$33.02	$7.63	$2.35	$1.25	$0.00	$44.25
LICENSED TUG OPERATOR OVER 1000HP OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$38.18	$7.63	$2.35	$1.25	$0.00	$49.41
MAINTENANCE ENGINEER OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$33.03	$7.63	$2.35	$1.25	$0.00	$44.26
OILER - MARINE DIVISION OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$24.30	$7.63	$2.35	$0.65	$0.00	$34.93
OPERATOR / LEVERMAN OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$38.18	$7.63	$2.35	$1.25	$0.00	$49.41
RODMAN / SCOWMAN OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$24.30	$7.63	$2.35	$0.65	$0.00	$34.93
SHOREMAN / DECKHAND OPERATING ENGINEERS LOCAL 4 OPERATING ENGINEERS - MARINE DIVISION	10/1/2017	$24.30	$7.63	$2.35	$0.65	$0.00	$34.93

Outside Electrical

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
CABLE TECHNICIAN (Power Zone)	8/30/2026	$38.13	$11.00	$1.14	$1.00	$0.00	$51.27
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	8/29/2027	$39.65	$11.25	$1.19	$1.00	$0.00	$53.09
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104							
For apprentice rates see "Apprentice- LINEMAN"							
CABLEMAN (Underground Ducts & Cables)	8/30/2026	$54.02	$11.00	$1.62	$11.14	$0.00	$77.78
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	8/29/2027	$56.17	$11.25	$1.69	$11.57	$0.00	$80.68
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104							
For apprentice rates see "Apprentice- LINEMAN"							
DRIVER / GROUNDMAN CDL	8/30/2026	$44.49	$11.00	$1.33	$10.80	$0.00	$67.62
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	8/29/2027	$46.26	$11.25	$1.39	$11.15	$0.00	$70.05
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104							
For apprentice rates see "Apprentice- LINEMAN"							
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs)	8/30/2026	$34.95	$11.00	$1.05	$1.00	$0.00	$48.00
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	8/29/2027	$36.64	$11.25	$1.09	$1.00	$0.00	$49.98
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104							
For apprentice rates see "Apprentice- LINEMAN"							
EQUIPMENT OPERATOR (Class A CDL)	8/30/2026	$54.02	$11.00	$1.62	$15.22	$0.00	$81.86
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	8/29/2027	$56.17	$11.25	$1.69	$15.65	$0.00	$84.76
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104							
For apprentice rates see "Apprentice- LINEMAN"							
EQUIPMENT OPERATOR (Class B CDL)	8/30/2026	$47.66	$11.00	$1.43	$11.65	$0.00	$71.74
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	8/29/2027	$49.56	$11.25	$1.49	$12.03	$0.00	$74.33
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104							
For apprentice rates see "Apprentice- LINEMAN"							
GROUNDMAN	8/30/2026	$34.95	$11.00	$1.05	$1.00	$0.00	$48.00
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	8/29/2027	$36.34	$11.25	$1.09	$1.00	$0.00	$49.68
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104							
For apprentice rates see "Apprentice- LINEMAN"							
GROUNDMAN -Inexperienced (<2000 Hrs.)	8/30/2026	$28.60	$11.00	$0.86	$1.00	$0.00	$41.46
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	8/29/2027	$29.74	$11.25	$0.89	$1.00	$0.00	$42.88
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104							
For apprentice rates see "Apprentice- LINEMAN"							
JOURNEYMAN LINEMAN	8/30/2026	$63.55	$11.00	$1.91	$18.50	$0.00	$94.96
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	8/29/2027	$66.08	$11.25	$1.98	$19.00	$0.00	$98.31
OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104							

Apprentice: JOURNEYMAN LINEMAN

Effective Date: 8/30/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	$38.13	$11.00	$1.14	$2.50	$0.00	$52.77
2	65.00	$41.31	$11.00	$1.24	$2.50	$0.00	$56.05
3	70.00	$44.49	$11.00	$1.33	$2.50	$0.00	$59.32
4	75.00	$47.66	$11.00	$1.43	$4.00	$0.00	$64.09

Outside Electrical

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Apprentice: JOURNEYMAN LINEMAN

Effective Date: 8/30/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
5	80.00	$50.84	$11.00	$1.53	$4.00	$0.00	$67.37
6	85.00	$54.02	$11.00	$1.62	$4.00	$0.00	$70.64
7	90.00	$57.20	$11.00	$1.72	$6.00	$0.00	$75.92

Apprentice: JOURNEYMAN LINEMAN

Effective Date: 8/29/2027

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	$39.65	$11.25	$1.19	$2.50	$0.00	$54.59
2	65.00	$42.95	$11.25	$1.29	$2.50	$0.00	$57.99
3	70.00	$46.26	$11.25	$1.39	$2.50	$0.00	$61.40
4	75.00	$49.56	$11.25	$1.49	$4.00	$0.00	$66.30
5	80.00	$52.86	$11.25	$1.59	$4.00	$0.00	$69.70
6	85.00	$56.17	$11.25	$1.69	$4.00	$0.00	$73.11
7	90.00	$59.47	$11.25	$1.79	$6.00	$0.00	$78.51

Apprentice to Journeyworker Ratio: 1:2

TELEDATA CABLE SPLICER OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	2/4/2019	$30.73	$4.70	$0.92	$2.25	$0.00	$38.60
TELEDATA LINEMAN/EQUIPMENT OPERATOR OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	2/4/2019	$28.93	$4.70	$0.89	$2.25	$0.00	$36.77
TELEDATA WIREMAN/INSTALLER/TECHNICIAN OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	2/4/2019	$28.93	$4.70	$0.89	$2.25	$0.00	$36.77

Additional Apprentice Information

All apprentices must be registered with the Division of Apprenticeship Training(DAS) in accordance with M.G.L.c. 23, §§ 11E-11L. Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the hourly prevailing wage rate established by the Commissioner under the provisions of M.G.L.c. 149, §§ 26-27D.

Apprentice ratios are established by DAS pursuant to M.G.L.c. 23, §§ 11E-11L. Ratios are expressed as the allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified. The ratios listed herein have been taken from relevant private collective bargaining agreements(CBAs) and are provided for illustrative purposes only. They have not been independently verified as being accurate or continuing to be accurate.

Parties having questions regarding what ratio to use should contact DAS.

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT 00870

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS
Revised August 19, 2026

1. As used in these specifications:

   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted:

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.

   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

   d. "Minority" includes:

      (i) Black (all persons having origins in any of the black African racial groups not of Hispanic origin);
      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. 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 the specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (41 CFR 60-4.5 and 23 CFR Part 230) 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 Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in Paragraphs 7a 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. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. 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.

6. 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.

7. 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 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 therefor, 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 woman 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 7b 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's 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 review of these items with on-site supervisory personnel such as Superintendents, General Foremen, 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 are in compliance with 41 CFR Part 60-3 and 23 CFR Part 230.

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 nonsegregated 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 supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a 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 7a 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 its 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.

9. 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 the Executive Order 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 underutilized).

10. The Contractor shall not use the goals and timetables of affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11 The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts.

12. 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 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.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of 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 and 23 CFR Part 230.

14. 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 many be required by the Government and 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.

15. Nothing herein provided shall be construed as a limitation upon the application of other 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).

APPENDIX A

The following goals and timetables for female utilization shall be included in all Federal and federally assisted construction contracts and subcontracts in excess of $ 10,000. The goals are applicable to the Contractor's aggregate on-site construction workforce whether or not part of that workforce is performing work on a Federal or federally-assisted construction contract or subcontract.

Area covered: Goal for Women apply nationwide

Goals and Timetables

Timetable	Goals (percent)
From Apr. 1, 1980 until further notice	6.9

APPENDIX B-80

Until further notice, the following goals for minority utilization in each construction craft and trade shall included in all Federal or federally assisted construction contracts and subcontracts in excess of $ 10,000 to be performed in the respective geographical areas. The goals are applicable to each nonexempt contractor's total on- site construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, federally assisted or nonfederally related project, contract or subcontract.

Construction contractors participating in an approved Hometown Plan (see 41 CFR 6-4.5) are required to comply with the goals of the Hometown Plan with regard to construction work they perform in the area covered by the Hometown Plan. With regard to all their other covered construction work, such contractors are required to comply with the applicable SMSA or EA goal contained in this Appendix B-80.

Economic Areas

STATE:	Goals (percent)
MASSACHUSETTS	
004 Boston MA: SMSA Counties: 1123 Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH	4.0
MA Essex, MA Middlesex, MA Norfolk, MA Plymouth, MA Suffolk, NH Rockingham.	
5403 Fall River- New Bedford MA, Bristol	1.6
9243 Worcester-Fitchburg-Leominster, MA	1.6
6323 Springfield-Chicopee-Holyoke MA-CT MA Hampden, MA Hampshire	4.8
Non-SMSA Counties: MA Barnstable, MA Dukes, MA Nantucket	3.6
Non-SMSA Counties: MA Franklin	5.9

APPENDIX C

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 Acts and Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin (including limited English proficiency), age, sex, disability, or low-income status 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 the 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 Subcontractors, including Procurements of Materials and Equipment:** In all solicitations, either by competitive 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 the Acts and the Regulations relative to nondiscrimination on the grounds of race, color, national origin (including limited English proficiency), age, sex, disability, or low-income status.

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 Massachusetts Department of Transportation (MassDOT) or FHWA 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 MassDOT or FHWA, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Nondiscrimination provisions of this contract, MassDOT will impose such contract sanctions as it or FHWA may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a control, 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 MassDOT or FHWA 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 MassDOT to enter into any litigation to protect the interests of MassDOT. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX D

During the performance of this contact, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor," which includes consultants) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

PERTINENT NON-DISCRIMINATION AUTHORITIES:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21

- 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 (29 U.S.C. § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability) and 49 CFR 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 (49 U.S.C. § 471, Section 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex)

- The Civil Rights Restoration Act of 1987 (PL 100-209) (broadened the scope, coverage, and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975, and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of Federal-Aid recipients, sub-recipients, and contractors, whether such programs or activities are Federally funded or not)

- Titles II and III of the Americans with Disabilities Act (42 U.S.C. §§ 12131-12189), as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38 (prohibits 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)

- 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 (ensures 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 People 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 IX of the Education Amendments Act of 1972, as amended (20 U.S.C. 1681 *et seq*.) (prohibits discrimination on the basis of sex in education programs or activities)

*** END OF DOCUMENT ***

DOCUMENT 00880

Revised January 12, 2022

DEPARTMENT OF LABOR

Employment Standards Administration

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONTRACTS

"General Decision Number: MA20260025 05/18/2026

State: Massachusetts

Construction Types: Highway

Counties: Massachusetts Counties of
Worcester

Modification Number	Publication Date
0	01/02/2026
1	05/18/2026

CARP0336-004 09/01/2025

	Rates	Fringes
CARPENTER (INCLUDES FORM WORK)	$ 50.10	31.45

ELEC0103-007 09/01/2025

	Rates	Fringes
ELECTRICIAN	$ 66.17	37.08

ENGI0004-030 06/01/2025

	Rates	Fringes
POWER EQUIPMENT OPERATOR GROUP 2 BULLDOZER; GRADER/BLADE; ROLLER FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, LABOR DAY, MEMORIAL DAY, INDEPENDENCE DAY, PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY, CHRISTMAS DAY	$ 57.18	33.70
POWER EQUIPMENT OPERATOR GROUP 1 BACKHOE/EXCAVATOR/TRACKHOE; BOBCAT/SKID STEER/SKID LOADER; BROOM/SWEEPER; GRADALL; LOADER; PAVER (ASPHALT, AGGREGATE, AND CONCRETE); POST DRIVER (GUARDRAIL/FENCES) FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, LABOR DAY, MEMORIAL DAY, INDEPENDENCE DAY, PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY, CHRISTMAS DAY	$ 57.83	33.70

ENGI0004-031 06/01/2025

Rates
Fringes
POWER EQUIPMENT OPERATOR: MILLING MACHINE
FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID
HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY,
LABOR DAY, MEMORIAL DAY, INDEPENDENCE DAY,
PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY,
THANKSGIVING DAY, CHRISTMAS DAY.....$ 57.83
33.70

IRON0007-028 09/16/2025

Rates
Fringes
IRONWORKER, STRUCTURAL.....$ 57.57
37.67

IRON0007-029 09/16/2025

Rates
Fringes
IRONWORKER: ORNAMENTAL.....$ 57.57
37.67

LABO0039-003 06/01/2018

Rates
Fringes
LABORER: COMMON OR GENERAL.....$ 33.25
22.92
LABORER: ASPHALT, INCLUDES RAKER, SHOVELER,
SPREADER AND DISTRIBUTOR.....$ 33.50
22.92
LABORER (GUARDRAIL INSTALLATION).....$ 33.50
22.92

PAIN0035-023 07/01/2024

Rates
Fringes
PAINTER: STEEL.....$ 56.76
36.00

SUMA2014-015 01/11/2017

Rates
Fringes
TRUCK DRIVER: FLATBED TRUCK.....$ 48.53
0.00
TRUCK DRIVER: DUMP TRUCK.....$ 30.38
7.20
TRUCK DRIVER: CONCRETE TRUCK.....$ 33.69
15.79
TRAFFIC CONTROL: LABORER-CONES/
BARRICADES/BARRELS - SETTER/MOVER/SWEEPER.....$ 44.49
12.41
TRAFFIC CONTROL: FLAGGER.....$ 23.00
20.44
PILEDRIVERMAN.....$ 45.65
23.33

PAINTER: SPRAY (LINESTRIPING).....$ 48.00
0.00
OPERATOR: PILEDRIVER.....$ 44.46
16.94
OPERATOR: MECHANIC.....$ 48.14
17.02
OPERATOR: FORKLIFT.....$ 64.67
0.00
OPERATOR: CRANE.....$ 52.14
21.08
LABORER: LANDSCAPE.....$ 40.39
17.68
LABORER: CONCRETE SAW (HAND HELD/WALK BEHIND).....$ 41.78
18.37
IRONWORKER, REINFORCING.....$ 56.48
20.62
CEMENT MASON/CONCRETE FINISHER.....$ 56.70
21.08

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.
==========
Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.65 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract from May 11, 2026, through December 31, 2026. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

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 clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than "SU", "UAVG", "SA", or "SC" denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The "SU" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union

prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

SU wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The SA identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the SA identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage

and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

==========

END OF GENERAL DECISION

"

"General Decision Number: MA20260002 05/18/2026

State: Massachusetts

Construction Types: Heavy

Counties: Massachusetts Counties of
Worcester

Heavy and Marine Construction Projects

Modification Number	Publication Date
0	01/02/2026
1	05/18/2026

ASBE0006-005 09/01/2024

	Rates	Fringes
INSULATOR/ASBESTOS WORKER (INCLUDES THE APPLICATION OF ALL INSULATING MATERIALS, PROTECTIVE COVERINGS, COATING, AND FINISHES ALL TYPES OF MECHANICAL SYSTEMS)	$ 49.10	36.63

BOIL0029-001 01/01/2025

	Rates	Fringes
BOILERMAKER	$ 50.62	28.82

BRMA0001-002 08/01/2023

	Rates	Fringes
BRICKLAYER, CEMENT MASON, PLASTERER & STONEMASON (SPRINGFIELD/PITTSFIELD CHAPTER WORCESTER (WARREN COUNTY))	$ 50.81	32.27

BRMA0001-014 08/01/2023

	Rates	Fringes
BRICKLAYER, CEMENT MASON, PLASTERER & STONEMASON (WORCESTER CHAPTER WORCESTER (AUBURN BARRE, BLACKSTONE, BERLIN, BOLTON, BOYLSTON, THE BROOKFIELDS, CHARLTON, CLINTON, DOUGLAS, DUDLEY, GRAFTON, HARDWICK, HOLDEN, LEICESTER, MENDON, MILLBURY, MILVILLE, NEW BRAINTREE, NORTHBORO, NORTHBRIDGE, OAKHAM, OXFORD, PAXTON, RUTLAND,		

SHREWBURY, SOUTHBRIDGE, SPENCER, STURBRIDGE,
SUTTON, UPTON, UXBRIDGE, WEBSTER, WESTBORO, WEST
BOYLSTON, WORCESTER))..............................$ 60.26
33.71

BRMA0001-015 08/01/2023

Rates
Fringes
BRICKLAYER, CEMENT MASON, PLASTERER &
STONEMASON (LOWELL CHAPTER WORCESTER (HOPEDALE,
MILFORD, SOUTHBORO))..............................$ 60.26
33.71

BRMA0001-023 08/01/2023

Rates
Fringes
BRICKLAYER, CEMENT MASON, PLASTERER &
STONEMASON (LOWELL CHAPTER   WORCESTER
(ASHBURHANM, ATHOL, FITCHBURG, GARDNER, HARVARD,
HUBBARDSTON, LANCASTER, LEOMINSTER, LUNENBURG,
PETERSHAM, PHILLIPSTON, PRINCETON, ROYALSTON,
STERLING, TEMPLETON, WESTMINSTER, WINCHENDON))......$ 60.26
33.71

BRMA0003-001 08/01/2024

Rates
Fringes
TERRAZZO FINISHER..................................$ 63.44
37.33
MARBLE, TILE & TERRAZZO WORKERS.....................$ 64.52
37.51
MARBLE & TILE FINISHER.............................$ 49.32
35.26

CARP0056-004 08/01/2024

Rates
Fringes
DIVER TENDER.......................................$ 61.70
35.47
DIVER..$ 78.11
35.47

CARP0056-008 08/01/2024

Rates
Fringes
PILEDRIVERMAN......................................$ 49.19
35.47

CARP0336-002 09/01/2025

Rates
Fringes
CARPENTER/LATHER (WORCESTER (EXCEPT GILBERTVILLE,
HARWICK, WARREN, WEST BROOKFIELD))..................$ 50.10
31.45

CARP0336-007 09/01/2025

	Rates	Fringes
CARPENTER/LATHER (WORCESTER (GILBERTVILLE, HARDWICK, WARREN, WEST BROOKFIELD))	$ 50.10	31.45

CARP1121-004 04/21/2025

	Rates	Fringes
MILLWRIGHT	$ 43.42	33.00

ELEC0096-002 09/07/2025

	Rates	Fringes
ELECTRICIAN (WORCESTER (WARREN))	$ 48.16	36.20

ELEC0104-001 09/01/2024

	Rates	Fringes
LINE CONSTRUCTION: LINEMAN A. PAID HOLIDAYS: NEW YEAR'S DAY; MEMORIAL DAY; INDEPENDENCE DAY; LABOR DAY; THANKSGIVING DAY; CHRISTMAS DAY AND COLUMBUS DAY, PROVIDED THE EMPLOYEE HAS BEEN EMPLOYED 5 WORKING DAYS PRIOR TO ANY ONE OF THE LISTED HOLIDAYS	$ 58.41	30.19
LINE CONSTRUCTION: GROUNDMAN A. PAID HOLIDAYS: NEW YEAR'S DAY; MEMORIAL DAY; INDEPENDENCE DAY; LABOR DAY; THANKSGIVING DAY; CHRISTMAS DAY AND COLUMBUS DAY, PROVIDED THE EMPLOYEE HAS BEEN EMPLOYED 5 WORKING DAYS PRIOR TO ANY ONE OF THE LISTED HOLIDAYS	$ 32.13	12.70
LINE CONSTRUCTION: EQUIPMENT OPERATOR A. PAID HOLIDAYS: NEW YEAR'S DAY; MEMORIAL DAY; INDEPENDENCE DAY; LABOR DAY; THANKSGIVING DAY; CHRISTMAS DAY AND COLUMBUS DAY, PROVIDED THE EMPLOYEE HAS BEEN EMPLOYED 5 WORKING DAYS PRIOR TO ANY ONE OF THE LISTED HOLIDAYS	$ 49.65	26.72
LINE CONSTRUCTION: CABLEMAN A. PAID HOLIDAYS: NEW YEAR'S DAY; MEMORIAL DAY; INDEPENDENCE DAY; LABOR DAY; THANKSGIVING DAY; CHRISTMAS DAY AND COLUMBUS DAY, PROVIDED THE EMPLOYEE HAS BEEN EMPLOYED 5 WORKING DAYS PRIOR TO ANY ONE OF THE LISTED HOLIDAYS	$ 58.41	30.19

ELEV0041-002 01/01/2025

	Rates	Fringes

ELEVATOR MECHANIC FOOTNOTE: A.VACATION:
6%/UNDER 5 YEARS BASED ON REGULAR HOURLY RATE FOR
ALL HOURS WORKED. 8%/OVER 5 YEARS BASED ON REGULAR
HOURLY RATE FOR ALL HOURS WORKED. B. PAID
HOLIDAYS: NEW YEAR'S DAY; MEMORIAL DAY;
INDEPENDENCE DAY; LABOR DAY; VETERANS' DAY;
THANKSGIVING DAY; THE FRIDAY AFTER THANKSGIVING
DAY; AND CHRISTMAS DAY.....$ 66.41
38.44

ENGI0004-003 06/01/2025

Rates
Fringes

POWER EQUIPMENT OPERATORS: GROUP 2 SONIC OR
VIBRATORY HAMMER; GRADER; SCRAPER; TANDEM SCRAPER;
BULLDOZER; TRACTOR; MECHANIC - MAINTENANCE; YORK
RAKE; MULCHING MACHINE; PAVING SCREED
MACHINE;STATIONARY STEAM BOILER; PAVING CONCRETE
FINISHING MACHINE; GROUT PUMP; PORTABLE STEAM
BOILER; PORTABLE STEAM GENERATOR; ROLLER; SPREADER;
ASPHALT PAVER; LOCOMOTIVES OR MACHINES USED IN
PLACE THEREOF; TAMPER (SELF PROPELLED OR
TRACTOR-DRAW); CAL TRACKS; BALLAST REGULATOR;RAIL
ANCHOR MACHINE; SWITCH TAMPER; TIRE TRUCK
(WORCESTER (EXCEPT ATHOL, BARRE, BROOKFIELD, EAST
BROOKFIELD, HARDWICK, NEW BRAINTREE, NORTH
BROOKFIELD, OAKHAM, PETERSHAM, PHILLIPSTON,
ROYALSTON, STRUTBRIDGE, TEMPLETON, WARREN, WEST
BROOKFIELD, WINCHENDON)) FOOTNOTE FOR POWER
EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW
YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY,
INDEPENDENCE DAY, LABOR DAY, PATRIOT'S DAY,
COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY,
CHRISTMAS DAY HOURLY PREMIUM FOR BOOM LENGTHS
(INCLUDING JIB): OVER 150 FT. +2.18 OVER
185 FT. +3.84 OVER 210 FT. +5.39 OVER 250
FT. +8.16 OVER 295 FT. +11.29 OVER 350 FT.
+13.14.....$ 57.18
33.70

POWER EQUIPMENT OPERATORS : GROUP 4 ASSITANT
ENGINEER (FIREMAN) (WORCESTER (EXCEPT ATHOL,
BARRE, BROOKFIELD, EAST BROOKFIELD, HARDWICK, NEW
BRAINTREE, NORTH BROOKFIELD, OAKHAM, PETERSHAM,
PHILLIPSTON, ROYALSTON, STRUTBRIDGE, TEMPLETON,
WARREN, WEST BROOKFIELD, WINCHENDON)) FOOTNOTE FOR
POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS:
NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL
DAY, INDEPENDENCE DAY, LABOR DAY, PATRIOT'S DAY,
COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY,
CHRISTMAS DAY HOURLY PREMIUM FOR BOOM LENGTHS
(INCLUDING JIB): OVER 150 FT. +2.18 OVER
185 FT. +3.84 OVER 210 FT. +5.39 OVER 250
FT. +8.16 OVER 295 FT. +11.29 OVER 350 FT.
+13.14.....$ 46.52
33.70

POWER EQUIPMENT OPERATORS (BUIDING, HEAVY &
MARINE): GROUP 1 POWER SHOVEL; CRANE; TRUCK CRANE;
DERRICK; PILE DRIVER; TRENCHING MACHINE; MECHANICAL
HOIST PAVEMENT BREAKER; CEMENT CONCRETE PAVER;

DRAGLINE; HOISTING ENGINE; THREE DRUM MACHINE; PUMPCRETE MACHINE; LOADERS; SHOVEL DOZER; FRONT END LOADER; MUCKING MACHINE; SHAFT HOIST; STEAM ENGINE; BACKHOE; GRADALL; CABLE WAY; FORK LIFT; CHERRY PICKER; BORING MACHINE; ROTARY DRILL; POST HOLE HAMMER; PORT HOLE DIGGER; ASPHALT PLANT ON JOB SITE; CONCRETE BATCHING AND/OR MIXING PLANT ON JOB SITE; CRUSHER PLANT ON JOB SITE; PAVING CONCRETE MIXER; TIMBER JACK (WORCESTER (EXCEPT ATHOL, BARRE, BROOKFIELD, EAST BROOKFIELD, HARDWICK, NEW BRAINTREE, NORTH BROOKFIELD, OAKHAM, PETERSHAM, PHILLIPSTON, ROYALSTON, STRUTBRIDGE, TEMPLETON, WARREN, WEST BROOKFIELD, WINCHENDON)) FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY, CHRISTMAS DAY HOURLY PREMIUM FOR BOOM LENGTHS (INCLUDING JIB): OVER 150 FT. +2.18 OVER 185 FT. +3.84 OVER 210 FT. +5.39 OVER 250 FT. +8.16 OVER 295 FT. +11.29 OVER 350 FT. +13.14 .....$ 57.83
33.70

POWER EQUIPMENT OPERATORS (BUIDING, HEAVY & MARINE): GROUP 6 OILER (ON TRUCK CRANES AND GRADALLS) (WORCESTER (EXCEPT ATHOL, BARRE, BROOKFIELD, EAST BROOKFIELD, HARDWICK, NEW BRAINTREE, NORTH BROOKFIELD, OAKHAM, PETERSHAM, PHILLIPSTON, ROYALSTON, STRUTBRIDGE, TEMPLETON, WARREN, WEST BROOKFIELD, WINCHENDON)) FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY, CHRISTMAS DAY HOURLY PREMIUM FOR BOOM LENGTHS (INCLUDING JIB): OVER 150 FT. +2.18 OVER 185 FT. +3.84 OVER 210 FT. +5.39 OVER 250 FT. +8.16 OVER 295 FT. +11.29 OVER 350 FT. +13.14.....$ 30.85
33.70

POWER EQUIPMENT OPERATORS (BUIDING, HEAVY & MARINE): GROUP 5 OILER (OTHER THAN TRUCK CRANES AND GRADALLS) (WORCESTER (EXCEPT ATHOL, BARRE, BROOKFIELD, EAST BROOKFIELD, HARDWICK, NEW BRAINTREE, NORTH BROOKFIELD, OAKHAM, PETERSHAM, PHILLIPSTON, ROYALSTON, STRUTBRIDGE, TEMPLETON, WARREN, WEST BROOKFIELD, WINCHENDON)) FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY, CHRISTMAS DAY HOURLY PREMIUM FOR BOOM LENGTHS (INCLUDING JIB): OVER 150 FT. +2.18 OVER 185 FT. +3.84 OVER 210 FT. +5.39 OVER 250 FT. +8.16 OVER 295 FT. +11.29 OVER 350 FT. +13.14.....$ 25.02
33.70

POWER EQUIPMENT OPERATORS (BUIDING, HEAVY & MARINE): GROUP 3 PUMPS (1-3 GROUPED); COMPRESSOR; WELDING MACHINES (1-3 GROUPED); GENERATOR;

SIGHTING PLANT; HEATERS (POWER DRIVEN, 1- 5);
SYPHON-PULSOMETER; CONCRETE MIXER; VALVES
CONTROLLING PERMANENT PLANT AIR STEAM, CONVEYOR,
WELLPOINT SYSTEM (OPERATING) (WORCESTER (EXCEPT
ATHOL, BARRE, BROOKFIELD, EAST BROOKFIELD,
HARDWICK, NEW BRAINTREE, NORTH BROOKFIELD, OAKHAM,
PETERSHAM, PHILLIPSTON, ROYALSTON, STRUTBRIDGE,
TEMPLETON, WARREN, WEST BROOKFIELD, WINCHENDON))
FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID
HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY,
MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY,
PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY,
THANKSGIVING DAY, CHRISTMAS DAY HOURLY PREMIUM FOR
BOOM LENGTHS (INCLUDING JIB): OVER 150 FT.
+2.18 OVER 185 FT. +3.84 OVER 210 FT.
+5.39 OVER 250 FT. +8.16 OVER 295 FT.
+11.29 OVER 350 FT. +13.14.....$ 37.02
33.70

ENGI0098-005 12/01/2024

Rates
Fringes
POWER EQUIPMENT OPERATORS: GROUP 15 BOOM LENGTHS
OVER 350 FEET INCLUDING JIB HAZARDOUS WASTE
PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT
OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY,
WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE
DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY,
THANKSGIVING DAY AND CHRISTMAS DAY.....$ 52.38
31.04
POWER EQUIPMENT OPERATORS: GROUP 14 BOOM LENGTHS
OVER 300 FEET INCLUDING JIB HAZARDOUS WASTE
PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT
OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY,
WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE
DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY,
THANKSGIVING DAY AND CHRISTMAS DAY.....$ 50.88
31.04
POWER EQUIPMENT OPERATORS: GROUP 13 BOOM LENGTHS
OVER 250 FEET INCLUDING JIB HAZARDOUS WASTE
PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT
OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY,
WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE
DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY,
THANKSGIVING DAY AND CHRISTMAS DAY.....$ 49.88
31.04
POWER EQUIPMENT OPERATORS: GROUP 12 BOOM LENGTHS
OVER 200 FEET INCLUDING JIB HAZARDOUS WASTE
PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT
OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY,
WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE
DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY,
THANKSGIVING DAY AND CHRISTMAS DAY.....$ 48.88
31.04
POWER EQUIPMENT OPERATORS: GROUP 11 BOOM LENGTHS
OVER 150 FEET INCLUDING JIB HAZARDOUS WASTE
PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT
OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY,
WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE

DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY,
THANKSGIVING DAY AND CHRISTMAS DAY.....$ 47.38
31.04
POWER EQUIPMENT OPERATORS: GROUP 10 MASTER MECHANIC
HAZARDOUS WASTE PREMIUM $2.00 FOOTNOTE FOR POWER
EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW
YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY,
INDEPENDENCE DAY, LABOR DAY, COLUMBUS DAY, VETERANS
DAY, THANKSGIVING DAY AND CHRISTMAS DAY.....$ 46.38
31.04
POWER EQUIPMENT OPERATORS: GROUP 9 OILER
HAZARDOUS WASTE PREMIUM $2.00 FOOTNOTE FOR POWER
EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW
YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY,
INDEPENDENCE DAY, LABOR DAY, COLUMBUS DAY, VETERANS
DAY, THANKSGIVING DAY AND CHRISTMAS DAY.....$ 44.37
31.04
POWER EQUIPMENT OPERATORS: GROUP 8 TRUCK CRANE
CREWS HAZARDOUS WASTE PREMIUM $2.00 FOOTNOTE FOR
POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS:
NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL
DAY, INDEPENDENCE DAY, LABOR DAY, COLUMBUS DAY,
VETERANS DAY, THANKSGIVING DAY AND CHRISTMAS DAY....$ 44.06
31.04
POWER EQUIPMENT OPERATORS: GROUP 7 COMPRESSORS UP
TO 315 CU FT; SMALL MIXERS WITH SKIP; PUMPS UP TO 4
INCHES; POWER HEATERS; OILER; A-FRAME TRUCKS;
FORKLIFTS-UP TO 7 FT. LIFT AND UP TO 3 TON
CAPACITY; HYDRO BROOM; STUD WELDER. HAZARDOUS
WASTE PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT
OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY,
WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE
DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY,
THANKSGIVING DAY AND CHRISTMAS DAY.....$ 54.38
31.04
POWER EQUIPMENT OPERATORS: GROUP 6 COMPRESSOR (ONE
OR TWO) 315 CU FT TO 900 CU FT; PUMPS 4 INCHES TO
16 INCHES (TOTAL DISCHARGE). HAZARDOUS WASTE
PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT
OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY,
WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE
DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY,
THANKSGIVING DAY AND CHRISTMAS DAY.....$ 36.06
31.04
POWER EQUIPMENT OPERATORS: GROUP 5 HOISTS;
CONVEYORS; POWER PAVEMENT BREAKERS; SELF-POWERED
CONCRETE PAVEMENT FINISHING MACHINES; TWO BAG
MIXERS WITH SKIP; MCCARTHY AND SIMILAR DRILLS;
BATCH PLANTS (NOT SELF LOADING); BULK CEMENT
PLANTS; SELF-PROPELLED MATERIAL SPREADERS; THREE
OR MORE 10 KW LIGHT PLANTS; 30 KW OR MORE
GENERATORS; POWER BROOM. HAZARDOUS WASTE PREMIUM
$2.00 FOOTNOTE FOR POWER EQUIPMENT OPERATORS:
A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S
BIRTHDAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR
DAY, COLUMBUS DAY, VETERANS DAY, THANKSGIVING DAY
AND CHRISTMAS DAY.....$ 38.00
31.04
POWER EQUIPMENT OPERATORS: GROUP 4 ASPHALT
ROLLERS; SELF-POWERED ROLLERS AND COMPACTORS;

TRACTOR WITHOUT BLADE DRAWING SHEEPSFOOT ROLLER; RUBBER TIRE ROLLER; VIBRATORY ROLLER OR OTHER TYPE OF COMPACTORS INCLUDING MACHINES FOR PULVERIZING AND AERATING SOIL; YORK RAKE. HAZARDOUS WASTE PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY, THANKSGIVING DAY AND CHRISTMAS DAY.....$ 39.12
31.04
POWER EQUIPMENT OPERATORS: GROUP 3 COMBINATION BACKHOE/LOADER UP TO 3/4 CU YD; SCRAPERS UP TO 21 CU YD (STRUCK LOAD, SELF PROPELLED OR TRACTOR DRAWN); TIREMAN; FRONT END LOADERS UP TO 4 YDS; WELL DRILLERS; ENGINEER OR FIREMAN ON HIGH PRESSURE BOILER; SELF-LOADING BATCH PLANT; WELL POINT OPERATORS ELECTRIC PUMPS USED IN WELL POINT SYSTEM; PUMPS, 16 INCHES AND OVER (TOTAL DISCHARGE); COMPRESSOR, ONE OR TWO 900 CU FT AND OVER; POWERED GREASE TRUCK; TUNNEL LOCOMOTIVES AND DINGYS; GROUT PUMPS; HYDRAULIC JACKS; BOOM TRUCK; HYDRAULIC CRANES- UP TO 10 TON. HAZARDOUS WASTE PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY, THANKSGIVING DAY AND CHRISTMAS DAY.....$ 42.35
31.04
POWER EQUIPMENT OPERATORS: GROUP 2 ROTARY DRILL WITH MOUNTED COMPRESSOR; COMPRESSOR HOUSE (3 TO 6 COMPRESSORS); ROCK AND EARTH BORING MACHINES (EXCLUDING MCCARTHY AND SIMILAR DRILLS); FRONT END LOADERS 4 CU YDS TO 5 1/2 CU YDS); FORKLIFTS-7 FT LIFT AND OVER 3 TON CAPACITY; SCRAPER 21 YDS AND OVER (STRUCK LOAD); SONIC HAMMER CONSOLE; RECLAIMERS ROAD PLANER/MILLING MACHINE; CAL TRACKS; BALLAST REGULATORS; RAIL ANCHOR MACHINES; SWITCH TAMPERS, ASPHALT PAVERS; MECHANIC; WELDER AND TRANSFER MACHINE. HAZARDOUS WASTE PREMIUM $2.00 FOOTNOTE FOR POWER EQUIPMENT OPERATORS: A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, COLUMBUS DAY, VETERANS DAY, THANKSGIVING DAY AND CHRISTMAS DAY.....$ 42.57
31.04
POWER EQUIPMENT OPERATORS: GROUP 1 SHOVELS; CRAWLERS AND TRUCK CRANES INCLUDING ALL TOWER; SELF-PROPELLED HYDRAULIC CRANES 10 TONS AND OVER; DRAGLINES; CLAM SHELLS; CABLEWAYS; SHAFT HOISTS; MUCKING MACHINES DERRICKS; BACKHOES; BULLDOZERS; GRADALLS; ELEVATING GRADERS; PILE DRIVERS; CONCRETE PAVERS; TRENCHING MACHINES; FRONT END LOADERS- 5 1/2 CU YDS AND OVER; DUAL DRUM PAVER; AUTOMATIC GRADER-EXCAVATOR(C.M.I. OR EQUAL); SCRAPERS TOWING PAN OR WAGON; TANDEM DOZERS OR PUSH CATS(2 UNITS IN TANDEM); SHOTCRETE MACHINE; TUNNEL BORING MACHINE; COMBINATION BACKHOE/LOADER 3/4 CU YD HOE OR OVER; JET ENGINE DRYER; TREE SHREDDER; POST HOLE DIGGER; POST HOLE HAMMER; POST EXTRACTOR; TRUCK MOUNTED CONCRETE PUMP WITH BOOM; ROTO-MILL; GRADER;

HORIZONTAL DRILLING MACHINE; JOHN HENRY ROCK DRILL
AND SIMILAR EQUIPMENT. HAZARDOUS WASTE PREMIUM
$2.00 FOOTNOTE FOR POWER EQUIPMENT OPERATORS:
A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S
BIRTHDAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR
DAY, COLUMBUS DAY, VETERANS DAY, THANKSGIVING DAY
AND CHRISTMAS DAY.....$ 42.88
31.04

IRON0007-012 09/16/2025

	Rates	Fringes
IRONWORKER	$ 57.57	37.67

LABO0022-001 12/02/2024

	Rates	Fringes
LABORERS:, HEAVY CONSTRUCTION: GROUP 6 ASBESTOS ABATEMENT; TOXIC AND HAZARDOUS WASTE LABORERS	$ 40.95	29.70
LABORERS:, HEAVY CONSTRUCTION: GROUP 5 FLAGGER	$ 39.70	29.70
LABORERS:, HEAVY CONSTRUCTION: GROUP 4 BLASTER; POWDERMAN	$ 39.95	29.70
LABORERS:, HEAVY CONSTRUCTION: GROUP 3 AIR TRACK OPERATOR; BLOCK PAVER; RAMMER; CURB SETTER, HYDRAULIC AND SIMILAR SELF POWERED DRILLS	$ 39.70	29.70
LABORERS:, HEAVY CONSTRUCTION: GROUP 2 ASPHALT RAKER; FENCE AND GUARD RAIL ERECTOR; LASER BEAM OPERATOR; MASON TENDER; PIPELAYER; PNEUMATIC DRILL OPERATOR; PNEUMATIC TOOL OPERATOR; WAGON DRILL OPERATOR, JACK HAMMER OPERATOR, PAVEMENT BREAKER, CARBIDE CORE DRILLING MACHINE, CHAIN SAW OPERATOR, BARCO TYPE JUMPING TAMPERS, CONCRETE PUMP, MOTORIZED MORTAR MIXER, RIDE-ON-MOTORIZED BUGGY	$ 39.20	29.70
LABORERS:, HEAVY CONSTRUCTION: GROUP 1 LABORERS; CARPENTER TENDERS; CEMENT FINISHER TENDERS, PLASTERER TENDERS	$ 38.95	29.70

LABO0022-013 12/01/2024

	Rates	Fringes
LABORERS:(TUNNELS, CAISSON & CYLINDER WORK IN COMPRESSED AIR), GROUP 6 HAZARDOUS WASTE WORK WITHIN THE ""HOT"" ZONE. (A PREMIUM OF TWO DOLLARS $2.00 PER HOUR OVER THE BASIC WAGE RATE. FOOTNOTE FOR LABORERS: A. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, PATRIOT'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY, AND CHRISTMAS DAY	$ 58.43	29.70
LABORERS: LABORERS; TOP MAN ((OPEN AIR CASSONS,		

UNDERPINNING AND TEST BORING INDUSTRIES):).....$ 41.18
29.70
LABORERS: LABORERS; TOP MAN ((OPEN AIR CASSONS,
UNDERPINNING AND TEST BORING INDUSTRIES):).....$ 46.20
29.70
LABORERS: LABORER ((OPEN AIR CASSONS, UNDERPINNING
AND TEST BORING INDUSTRIES):).....$ 41.18
29.70
LABORERS: LABORER ((OPEN AIR CASSONS, UNDERPINNING
AND TEST BORING INDUSTRIES):).....$ 46.20
29.70
LABORERS: GROUP 5 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR).....$ 47.48
29.70
LABORERS: GROUP 5 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR).....$ 52.50
29.70
LABORERS: GROUP 5 ((TUNNELS, CAISSON & CYLINDER
WORK IN COMPRESSED AIR)).....$ 53.41
29.70
LABORERS: GROUP 5 ((TUNNELS, CAISSON & CYLINDER
WORK IN COMPRESSED AIR)).....$ 58.43
29.70
LABORERS: GROUP 4 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR).....$ 45.48
29.70
LABORERS: GROUP 4 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR).....$ 50.50
29.70
LABORERS: GROUP 4 ((TUNNELS, CAISSON & CYLINDER
WORK IN COMPRESSED AIR)).....$ 53.41
29.70
LABORERS: GROUP 4 ((TUNNELS, CAISSON & CYLINDER
WORK IN COMPRESSED AIR)).....$ 58.43
29.70
LABORERS: GROUP 3 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR).....$ 45.48
29.70
LABORERS: GROUP 3 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR).....$ 50.50
29.70
LABORERS: GROUP 3 ((TUNNELS, CAISSON & CYLINDER
WORK IN COMPRESSED AIR)).....$ 53.41
29.70
LABORERS: GROUP 3 ((TUNNELS, CAISSON & CYLINDER
WORK IN COMPRESSED AIR)).....$ 58.43
29.70
LABORERS: GROUP 2 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR).....$ 45.48
29.70
LABORERS: GROUP 2 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR).....$ 50.50
29.70
LABORERS: GROUP 2 (CLEANING CONCRETE AND CAULKING
TUNNEL (Both New & Existing)).....$ 45.48
29.70
LABORERS: GROUP 2 (CLEANING CONCRETE AND CAULKING
TUNNEL (Both New & Existing)).....$ 50.50
29.70
LABORERS: GROUP 2 ((TUNNELS, CAISSON & CYLINDER

WORK IN COMPRESSED AIR))..........$ 53.41
29.70
LABORERS: GROUP 2 ((TUNNELS, CAISSON & CYLINDER
WORK IN COMPRESSED AIR))..........$ 58.43
29.70
LABORERS: GROUP 2 ((FREE AIR OPERATION): SHIELD
DRIVEN AND LINER PLATE IN FREE AIR))..........$ 50.50
29.70
LABORERS: GROUP 1 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR)..........$ 42.93
29.70
LABORERS: GROUP 1 (ROCK SHAFT, CONCRETE LINING OF
SAME AND TUNNEL IN FREE AIR)..........$ 47.95
29.70
LABORERS: GROUP 1 (CLEANING CONCRETE AND CAULKING
TUNNEL (Both New & Existing))..........$ 45.48
29.70
LABORERS: GROUP 1 (CLEANING CONCRETE AND CAULKING
TUNNEL (Both New & Existing))..........$ 50.50
29.70
LABORERS: GROUP 1 ((TUNNELS, CAISSON & CYLINDER
WORK IN COMPRESSED AIR))..........$ 42.93
29.70
LABORERS: GROUP 1 ((TUNNELS, CAISSON & CYLINDER
WORK IN COMPRESSED AIR))..........$ 47.95
29.70
LABORERS: GROUP 1 ((FREE AIR OPERATION): SHIELD
DRIVEN AND LINER PLATE IN FREE AIR))..........$ 50.50
29.70
LABORERS: DRILLER ((OPEN AIR CASSONS, UNDERPINNING
AND TEST BORING INDUSTRIES):)..........$ 42.58
29.70
LABORERS: DRILLER ((OPEN AIR CASSONS, UNDERPINNING
AND TEST BORING INDUSTRIES):)..........$ 50.20
29.70
LABORERS: BOTTOM MAN ((OPEN AIR CASSONS,
UNDERPINNING AND TEST BORING INDUSTRIES):).....$ 42.33
29.70
LABORERS: BOTTOM MAN ((OPEN AIR CASSONS,
UNDERPINNING AND TEST BORING INDUSTRIES):).....$ 47.35
29.70
((OPEN AIR CASSONS, UNDERPINNING AND TEST BORING
INDUSTRIES):).....$ 41.18
29.70
((OPEN AIR CASSONS, UNDERPINNING AND TEST BORING
INDUSTRIES):).....$ 42.33
29.70
((OPEN AIR CASSONS, UNDERPINNING AND TEST BORING
INDUSTRIES):).....$ 42.58
29.70

LABO1421-003 12/02/2024

Rates
Fringes
LABORERS:, WRECKING: GROUP 6 ASBESTOS, LEAD PAINT,
TOXIC AND HAZARDOUS WASTE..........$ 46.25
29.70
LABORERS:, WRECKING: GROUP 5 YARDMAN, BURNERS,

SAWYERS.....$ 45.35
29.70
LABORERS:, WRECKING: GROUP 4 YARDMAN (SALVAGE YARD
ONLY).....$ 42.25
29.70
LABORERS:, WRECKING: GROUP 3 SMALL BACKHOES,
LOADERS ON TRACKS, BOBCAT TYPE LOADERS, HYDRAULIC
""BROCK"" TYPE HAMMER OPERATORS, CONCRETE CUTTING
SAWS.....$ 47.25
29.70
LABORERS:, WRECKING: GROUP 2 BURNERS, JACKHAMMERS...$ 47.00
29.70
LABORERS:, WRECKING: GROUP 1 ADZEMAN, WRECKING
LABORER.....$ 46.25
29.70

PAIN0035-006 07/01/2024

Rates
Fringes
PAINTER: SPRAY, SANDBLAST (REPAINT).....$ 45.72
36.00
PAINTER: SPRAY, SANDBLAST (NEW CONSTRUCTION).....$ 47.66
36.00
PAINTER: BRUSH, TAPER (REPAINT).....$ 44.32
36.00
PAINTER: BRUSH, TAPER (NEW CONSTRUCTION).....$ 46.26
36.00
PAINTER: BRIDGE (REPAINT).....$ 44.32
36.00
PAINTER: BRIDGE (NEW CONSTRUCTION).....$ 56.76
36.00

PAIN0035-021 07/01/2024

Rates
Fringes
GLAZIER.....$ 46.26
36.00

PLUM0004-002 09/01/2025

Rates
Fringes
PLUMBERS AND PIPEFITTERS (WORCESTER (EXCEPT
HOPEDALE AND SOUTHBORO)).....$ 55.00
31.57

PLUM0012-002 03/02/2025

Rates
Fringes
PLUMBER (WORCESTER (HOPEDALE AND SOUTHBORO)).....$ 69.84
36.43

ROOF0033-001 08/01/2025

Rates
Fringes
ROOFERS: (ALL TEAR-OFF AND/OR REMOVAL OF ANY TYPES

OF ROOFING AND ALL SPUDDING, SWEEPING, VACUUMING
AND/OR CLEANUP OF ANY AND ALL AREAS OF ANY TYPE
WHERE A ROOF IS TO BE RELAID).....$ 53.53
35.69

SFMA0669-002 04/01/2025

Rates
Fringes
SPRINKLER FITTER.....$ 53.25
29.75

SHEE0017-004 04/01/2025

Rates
Fringes
SHEET METAL WORKER (WORCESTER (HARVARD, LANCASTER)).$ 60.00
48.78

SHEE0063-002 07/01/2025

Rates
Fringes
SHEET METAL WORKER (WORCESTER (EXCEPT HARVARD &
LANCASTER)).....$ 43.48
36.46

TEAM0379-003 06/01/2025

Rates
Fringes
TRUCK DRIVERS: GROUP 7 TRAILERS FOR EARTH MOVING
EQUIPMENT (DOUBLE HOOKUP) POWER TRUCKS $.25
DIFFERENTIAL BY AXLE TUNNEL WORK (UNDERGROUND ONLY)
$.40 DIFFERENTIAN BY AXLE HAZARDOUS MATERIALS (IN
HOT ZONE ONLY) $2.00 PREMIUM FOOTNOTES: A. PAID
HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY,
MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY,
PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY,
THANKSGIVING DAY, & CHRISTMAS DAY B. PAID
VACATION: EMPLOYEES WITH 4 MONTHS TO 1 YEAR OF
SERVICE RECEIVE 1/2 DAY'S PAY PER MONTH; 1 WEEK
VACATION FOR 1 - 5 YEARS OF SERVICE; 2 WEEKS
VACATION FOR 5 - 10 YEARS OF SERVICE; AND 3 WEEKS
VACATION FOR MORE THAN 10 YEARS OF SERVICE.....$ 41.82
37.35
TRUCK DRIVERS: GROUP 6 SPECIALIZED EARTH MOVING
EQUIPMENT OVER 35 TONS POWER TRUCKS $.25
DIFFERENTIAL BY AXLE TUNNEL WORK (UNDERGROUND ONLY)
$.40 DIFFERENTIAN BY AXLE HAZARDOUS MATERIALS (IN
HOT ZONE ONLY) $2.00 PREMIUM FOOTNOTES: A. PAID
HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY,
MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY,
PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY,
THANKSGIVING DAY, & CHRISTMAS DAY B. PAID
VACATION: EMPLOYEES WITH 4 MONTHS TO 1 YEAR OF
SERVICE RECEIVE 1/2 DAY'S PAY PER MONTH; 1 WEEK
VACATION FOR 1 - 5 YEARS OF SERVICE; 2 WEEKS
VACATION FOR 5 - 10 YEARS OF SERVICE; AND 3 WEEKS

VACATION FOR MORE THAN 10 YEARS OF SERVICE.....$ 41.53
37.35
TRUCK DRIVERS: GROUP 5 SPECIALIZED EARTH MOVING
EQUIPMENT UNDER 35 TONS OTHER THAN CONVENTIONAL
TYPE TRUCKS; LOW BED; VACHUAL; MECHANICS, PAVING
RESTORATION EQUIPMENT POWER TRUCKS $.25
DIFFERENTIAL BY AXLE TUNNEL WORK (UNDERGROUND ONLY)
$.40 DIFFERENTIAN BY AXLE HAZARDOUS MATERIALS (IN
HOT ZONE ONLY) $2.00 PREMIUM FOOTNOTES: A. PAID
HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY,
MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY,
PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY,
THANKSGIVING DAY, & CHRISTMAS DAY   B. PAID
VACATION: EMPLOYEES WITH 4 MONTHS TO 1 YEAR OF
SERVICE RECEIVE 1/2 DAY'S PAY PER MONTH; 1 WEEK
VACATION FOR 1 - 5 YEARS OF SERVICE; 2 WEEKS
VACATION FOR 5 - 10 YEARS OF SERVICE; AND 3 WEEKS
VACATION FOR MORE THAN 10 YEARS OF SERVICE.....$ 41.24
37.35
TRUCK DRIVERS: GROUP 4 FOUR AND FIVE AXLE EQUIPMENT
 POWER TRUCKS $.25 DIFFERENTIAL BY AXLE TUNNEL WORK
(UNDERGROUND ONLY) $.40 DIFFERENTIAN BY AXLE
HAZARDOUS MATERIALS (IN HOT ZONE ONLY) $2.00
PREMIUM FOOTNOTES: A. PAID HOLIDAYS: NEW YEAR'S
DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY,
INDEPENDENCE DAY, LABOR DAY, PATRIOT'S DAY,
COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY, &
CHRISTMAS DAY   B. PAID VACATION: EMPLOYEES
WITH 4 MONTHS TO 1 YEAR OF SERVICE RECEIVE 1/2
DAY'S PAY PER MONTH; 1 WEEK VACATION FOR 1 - 5
YEARS OF SERVICE; 2 WEEKS VACATION FOR 5 - 10 YEARS
OF SERVICE; AND 3 WEEKS VACATION FOR MORE THAN 10
YEARS OF SERVICE.....$ 41.14
37.35
TRUCK DRIVERS: GROUP 3 THREE AXLE EQUIPMENT AND
TIREMAN POWER TRUCKS $.25 DIFFERENTIAL BY AXLE
TUNNEL WORK (UNDERGROUND ONLY) $.40 DIFFERENTIAN BY
AXLE HAZARDOUS MATERIALS (IN HOT ZONE ONLY) $2.00
PREMIUM FOOTNOTES: A. PAID HOLIDAYS: NEW YEAR'S
DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY,
INDEPENDENCE DAY, LABOR DAY, PATRIOT'S DAY,
COLUMBUS DAY, VETERAN'S DAY, THANKSGIVING DAY, &
CHRISTMAS DAY   B. PAID VACATION: EMPLOYEES
WITH 4 MONTHS TO 1 YEAR OF SERVICE RECEIVE 1/2
DAY'S PAY PER MONTH; 1 WEEK VACATION FOR 1 - 5
YEARS OF SERVICE; 2 WEEKS VACATION FOR 5 - 10 YEARS
OF SERVICE; AND 3 WEEKS VACATION FOR MORE THAN 10
YEARS OF SERVICE.....$ 41.02
37.35
TRUCK DRIVERS: GROUP 2 TWO AXLE EQUIPMENT; &
FORKLIFT OPERATOR POWER TRUCKS $.25 DIFFERENTIAL
BY AXLE TUNNEL WORK (UNDERGROUND ONLY) $.40
DIFFERENTIAN BY AXLE HAZARDOUS MATERIALS (IN HOT
ZONE ONLY) $2.00 PREMIUM FOOTNOTES: A. PAID
HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY,
MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY,
PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY,
THANKSGIVING DAY, & CHRISTMAS DAY   B. PAID
VACATION: EMPLOYEES WITH 4 MONTHS TO 1 YEAR OF
SERVICE RECEIVE 1/2 DAY'S PAY PER MONTH; 1 WEEK

VACATION FOR 1 - 5 YEARS OF SERVICE; 2 WEEKS
VACATION FOR 5 - 10 YEARS OF SERVICE; AND 3 WEEKS
VACATION FOR MORE THAN 10 YEARS OF SERVICE.....$ 40.95
37.35
TRUCK DRIVERS: GROUP 1 STATION WAGONS; PANEL
TRUCKS; AND PICKUP TRUCKS POWER TRUCKS $.25
DIFFERENTIAL BY AXLE TUNNEL WORK (UNDERGROUND ONLY)
$.40 DIFFERENTIAN BY AXLE HAZARDOUS MATERIALS (IN
HOT ZONE ONLY) $2.00 PREMIUM FOOTNOTES: A. PAID
HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY,
MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY,
PATRIOT'S DAY, COLUMBUS DAY, VETERAN'S DAY,
THANKSGIVING DAY, & CHRISTMAS DAY   B. PAID
VACATION: EMPLOYEES WITH 4 MONTHS TO 1 YEAR OF
SERVICE RECEIVE 1/2 DAY'S PAY PER MONTH; 1 WEEK
VACATION FOR 1 - 5 YEARS OF SERVICE; 2 WEEKS
VACATION FOR 5 - 10 YEARS OF SERVICE; AND 3 WEEKS
VACATION FOR MORE THAN 10 YEARS OF SERVICE.....$ 40.78
37.35

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.
==========
Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO
is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject
to the Davis-Bacon Act that were awarded on or between January 1,
2015 and January 29, 2022, and that have not been renewed or
extended on or after January 30, 2022. Executive Order 13658 does
not apply to contracts subject only to the Davis-Bacon Related Acts
regardless of when they were awarded. If a contract is subject to
Executive Order 13658, the contractor must pay all covered workers
at least $13.65 per hour (or the applicable wage rate listed on this
wage determination, if it is higher) for all hours spent performing on
the contract from May 11, 2026, through December 31, 2026. The
applicable Executive Order minimum wage rate will be adjusted annually.
Additional information on contractor requirements and worker
protections under Executive Order 13658 is available at
www.dol.gov/whd/govcontracts.

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 clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than "SU", "UAVG", "SA", or "SC" denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The "SU" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union

prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

SU wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The SA identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the SA identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage

and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

==========

END OF GENERAL DECISION

"

"General Decision Number: MA20260006 05/18/2026

State: Massachusetts

Construction Types: Heavy

Counties: Massachusetts Counties of
Barnstable, Berkshire, Bristol, Dukes,
Essex, Franklin, Hampden, Hampshire,
Middlesex, Nantucket, Norfolk, Plymouth,
Suffolk and Worcester

Massachusetts All Dredging, except self-propelled hopper dredges, on the Atlantic Coast & tributary waters emptying into the Atlantic Ocean

Modification Number	Publication Date
1	01/30/2026
2	05/18/2026

ENGI0025-001 10/01/2025

Rates Fringes

DREDGING: CLASS D: OILER, DECKHAND, SHOREMAN, RODMAN, SCOWMAN, COOK, MESSMAN, PORTER/JANITOR.
INCENTIVE PAY: (ADD TO HOURLY RATE) OPERATOR (NCCCO LICENSE/CERTIFICATION) $1.80 LICENSED TUG OPERATOR OVER 1000 HP (ASSIGNED AS MASTER) (USCG LICENSED MASTER OF TOWING VESSELS (MOTV) $1.80; LICENSED BOAT OPERATOR (ASSIGNED AS LEAD BOAT CAPTAIN) USCG LICENSED BOAT OPERATOR $1.30; ENGINEER (QMED AND TANKERMAN ENDORSEMENT OR LICENSED ENGINEER (USCG) $1.80 OILER (QMED AND TANKERMAN ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS (TANKERMAN ENDORSEMENT ONLY) USCG $1.55; DECKHAND OR MATE (AB WITH LIFEBOATMAN ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS (LIFEBOATMAN ENDORSEMENT ONLY (USCG) $1.55; WELDER (ABS CERTIFICATION) $1.55 FOOTNOTES APPLICABLE TO ABOVE CRAFTS: A. PAID HOLIDAYS: NEW YEAR'S DAY, MARTIN LUTHER KING, JR.'S BIRTHDAY, MEMORIAL DAY, GOOD FRIDAY, INDEPENDENCE DAY, LABOR DAY, VETERANS' DAY, THANKSGIVING DAY AND CHRISTMAS DAY B. VACATION: EIGHT PERCENT (8%) OF THE STRAIGHT TIME RATE, MULTIPLIED BY THE TOTAL HOURS WORKED.....$ 30.86
14.15

DREDGING: CLASS C2: BOAT OPERATOR. INCENTIVE PAY: (ADD TO HOURLY RATE) OPERATOR (NCCCO LICENSE/CERTIFICATION) $1.80 LICENSED TUG OPERATOR OVER 1000 HP (ASSIGNED AS MASTER) (USCG LICENSED MASTER OF TOWING VESSELS (MOTV) $1.80; LICENSED BOAT OPERATOR (ASSIGNED AS LEAD BOAT CAPTAIN) USCG

LICENSED BOAT OPERATOR $1.30; ENGINEER (QMED AND TANKERMAN ENDORSEMENT OR LICENSED ENGINEER (USCG) $1.80 OILER (QMED AND TANKERMAN ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS (TANKERMAN ENDORSEMENT ONLY) USCG $1.55; DECKHAND OR MATE (AB WITH LIFEBOATMAN ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS (LIFEBOATMAN ENDORSEMENT ONLY (USCG) $1.55; WELDER (ABS CERTIFICATION) $1.55 FOOTNOTES APPLICABLE TO ABOVE CRAFTS: A. PAID HOLIDAYS: NEW YEAR'S DAY, MARTIN LUTHER KING, JR.'S BIRTHDAY, MEMORIAL DAY, GOOD FRIDAY, INDEPENDENCE DAY, LABOR DAY, VETERANS' DAY, THANKSGIVING DAY AND CHRISTMAS DAY B. VACATION: EIGHT PERCENT (8%) OF THE STRAIGHT TIME RATE, MULTIPLIED BY THE TOTAL HOURS WORKED.....$ 37.15
14.57
DREDGING: CLASS C1: MATE, DRAG BARGE OPERATOR, ASSISTANT FILL PLACER, WELDER, STEWARD.
INCENTIVE PAY: (ADD TO HOURLY RATE) OPERATOR (NCCCO LICENSE/CERTIFICATION) $1.80 LICENSED TUG OPERATOR OVER 1000 HP (ASSIGNED AS MASTER) (USCG LICENSED MASTER OF TOWING VESSELS (MOTV) $1.80; LICENSED BOAT OPERATOR (ASSIGNED AS LEAD BOAT CAPTAIN) USCG LICENSED BOAT OPERATOR $1.30; ENGINEER (QMED AND TANKERMAN ENDORSEMENT OR LICENSED ENGINEER (USCG) $1.80 OILER (QMED AND TANKERMAN ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS (TANKERMAN ENDORSEMENT ONLY) USCG $1.55; DECKHAND OR MATE (AB WITH LIFEBOATMAN ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS (LIFEBOATMAN ENDORSEMENT ONLY (USCG) $1.55; WELDER (ABS CERTIFICATION) $1.55 FOOTNOTES APPLICABLE TO ABOVE CRAFTS: A. PAID HOLIDAYS: NEW YEAR'S DAY, MARTIN LUTHER KING, JR.'S BIRTHDAY, MEMORIAL DAY, GOOD FRIDAY, INDEPENDENCE DAY, LABOR DAY, VETERANS' DAY, THANKSGIVING DAY AND CHRISTMAS DAY B. VACATION: EIGHT PERCENT (8%) OF THE STRAIGHT TIME RATE, MULTIPLIED BY THE TOTAL HOURS WORKED.....$ 38.38
14.66
DREDGING: CLASS B2: CERTIFIED WELDER. INCENTIVE PAY: (ADD TO HOURLY RATE) OPERATOR (NCCCO LICENSE/CERTIFICATION) $1.80 LICENSED TUG OPERATOR OVER 1000 HP (ASSIGNED AS MASTER) (USCG LICENSED MASTER OF TOWING VESSELS (MOTV) $1.80; LICENSED BOAT OPERATOR (ASSIGNED AS LEAD BOAT CAPTAIN) USCG LICENSED BOAT OPERATOR $1.30; ENGINEER (QMED AND TANKERMAN ENDORSEMENT OR LICENSED ENGINEER (USCG) $1.80 OILER (QMED AND TANKERMAN ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS (TANKERMAN ENDORSEMENT ONLY) USCG $1.55; DECKHAND OR MATE (AB WITH LIFEBOATMAN ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS (LIFEBOATMAN ENDORSEMENT ONLY (USCG) $1.55; WELDER (ABS CERTIFICATION) $1.55 FOOTNOTES APPLICABLE TO ABOVE CRAFTS: A. PAID HOLIDAYS: NEW YEAR'S DAY, MARTIN LUTHER KING, JR.'S BIRTHDAY, MEMORIAL DAY, GOOD FRIDAY, INDEPENDENCE DAY, LABOR DAY, VETERANS' DAY, THANKSGIVING DAY AND CHRISTMAS DAY B. VACATION: EIGHT PERCENT (8%) OF THE STRAIGHT TIME RATE,

MULTIPLIED BY THE TOTAL HOURS WORKED.....$ 39.46
14.73
DREDGING: CLASS B1: DERRICK OPERATOR (180 SWING),
SPIDER/SPILL BARGE OPERATOR, ENGINEER, ELECTRICIAN,
CHIEF WELDER, CHIEF MATE, FILL PLACER, OPERATOR II,
MAINTENANCE ENGINEER, LICENSED BOAT OPERATOR,
LICENSED CREW BOAT OPERATOR. INCENTIVE PAY: (ADD
TO HOURLY RATE) OPERATOR (NCCCO
LICENSE/CERTIFICATION) $1.80 LICENSED TUG OPERATOR
OVER 1000 HP (ASSIGNED AS MASTER) (USCG LICENSED
MASTER OF TOWING VESSELS (MOTV) $1.80; LICENSED
BOAT OPERATOR (ASSIGNED AS LEAD BOAT CAPTAIN) USCG
LICENSED BOAT OPERATOR $1.30; ENGINEER (QMED AND
TANKERMAN ENDORSEMENT OR LICENSED ENGINEER (USCG)
$1.80 OILER (QMED AND TANKERMAN ENDORSEMENT (USCG)
$1.80; ALL CLASSIFICATIONS (TANKERMAN ENDORSEMENT
ONLY) USCG $1.55; DECKHAND OR MATE (AB WITH
LIFEBOATMAN ENDORSEMENT (USCG) $1.80; ALL
CLASSIFICATIONS (LIFEBOATMAN ENDORSEMENT ONLY
(USCG) $1.55; WELDER (ABS CERTIFICATION) $1.55
FOOTNOTES APPLICABLE TO ABOVE CRAFTS: A. PAID
HOLIDAYS: NEW YEAR'S DAY, MARTIN LUTHER KING,
JR.'S BIRTHDAY, MEMORIAL DAY, GOOD FRIDAY,
INDEPENDENCE DAY, LABOR DAY, VETERANS' DAY,
THANKSGIVING DAY AND CHRISTMAS DAY B. VACATION:
EIGHT PERCENT (8%) OF THE STRAIGHT TIME RATE,
MULTIPLIED BY THE TOTAL HOURS WORKED.....$ 41.93
14.90
DREDGING: CLASS A2: CRANE OPERATOR (360 SWING)
INCENTIVE PAY: (ADD TO HOURLY RATE) OPERATOR
(NCCCO LICENSE/CERTIFICATION) $1.80 LICENSED TUG
OPERATOR OVER 1000 HP (ASSIGNED AS MASTER) (USCG
LICENSED MASTER OF TOWING VESSELS (MOTV) $1.80;
LICENSED BOAT OPERATOR (ASSIGNED AS LEAD BOAT
CAPTAIN) USCG LICENSED BOAT OPERATOR $1.30;
ENGINEER (QMED AND TANKERMAN ENDORSEMENT OR
LICENSED ENGINEER (USCG) $1.80 OILER (QMED AND
TANKERMAN ENDORSEMENT (USCG) $1.80; ALL
CLASSIFICATIONS (TANKERMAN ENDORSEMENT ONLY) USCG
$1.55; DECKHAND OR MATE (AB WITH LIFEBOATMAN
ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS
(LIFEBOATMAN ENDORSEMENT ONLY (USCG) $1.55; WELDER
(ABS CERTIFICATION) $1.55 FOOTNOTES APPLICABLE
TO ABOVE CRAFTS: A. PAID HOLIDAYS: NEW YEAR'S
DAY, MARTIN LUTHER KING, JR.'S BIRTHDAY, MEMORIAL
DAY, GOOD FRIDAY, INDEPENDENCE DAY, LABOR DAY,
VETERANS' DAY, THANKSGIVING DAY AND CHRISTMAS DAY
B. VACATION: EIGHT PERCENT (8%) OF THE STRAIGHT
TIME RATE, MULTIPLIED BY THE TOTAL HOURS WORKED.....$ 43.20
14.99
DREDGING: CLASS A1: DECK CAPTAIN; MECHANICAL
DREDGE OPERATOR, LEVERMAN, LICENSED TUG OPERATOR
OVER 1000 HP. INCENTIVE PAY: (ADD TO HOURLY
RATE) OPERATOR (NCCCO LICENSE/CERTIFICATION) $1.80
LICENSED TUG OPERATOR OVER 1000 HP (ASSIGNED AS
MASTER) (USCG LICENSED MASTER OF TOWING VESSELS
(MOTV) $1.80; LICENSED BOAT OPERATOR (ASSIGNED AS
LEAD BOAT CAPTAIN) USCG LICENSED BOAT OPERATOR
$1.30; ENGINEER (QMED AND TANKERMAN ENDORSEMENT OR
LICENSED ENGINEER (USCG) $1.80 OILER (QMED AND

TANKERMAN ENDORSEMENT (USCG) $1.80; ALL
CLASSIFICATIONS (TANKERMAN ENDORSEMENT ONLY) USCG
$1.55; DECKHAND OR MATE (AB WITH LIFEBOATMAN
ENDORSEMENT (USCG) $1.80; ALL CLASSIFICATIONS
(LIFEBOATMAN ENDORSEMENT ONLY (USCG) $1.55; WELDER
(ABS CERTIFICATION) $1.55 FOOTNOTES APPLICABLE
TO ABOVE CRAFTS: A. PAID HOLIDAYS: NEW YEAR'S
DAY, MARTIN LUTHER KING, JR.'S BIRTHDAY, MEMORIAL
DAY, GOOD FRIDAY, INDEPENDENCE DAY, LABOR DAY,
VETERANS' DAY, THANKSGIVING DAY AND CHRISTMAS DAY
B. VACATION: EIGHT PERCENT (8%) OF THE STRAIGHT
TIME RATE, MULTIPLIED BY THE TOTAL HOURS WORKED.....$ 48.48
15.34

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.
===
Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO
is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject
to the Davis-Bacon Act that were awarded on or between January 1,
2015 and January 29, 2022, and that have not been renewed or
extended on or after January 30, 2022. Executive Order 13658 does
not apply to contracts subject only to the Davis-Bacon Related Acts
regardless of when they were awarded. If a contract is subject to
Executive Order 13658, the contractor must pay all covered workers
at least $13.65 per hour (or the applicable wage rate listed on this
wage determination, if it is higher) for all hours spent performing on
the contract from May 11, 2026, through December 31, 2026. The
applicable Executive Order minimum wage rate will be adjusted annually.
Additional information on contractor requirements and worker
protections under Executive Order 13658 is available at
www.dol.gov/whd/govcontracts.

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 clauses
(29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications

and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than "SU", "UAVG", "SA", or "SC" denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The "SU" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date

for the classifications and rates under that identifier.

�SU� wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The �SA� identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the �SA� identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.

```
            Washington, DC 20210
The request should be accompanied by a full statement of the
interested party's position and any information (wage payment
data, project description, area practice material, etc.) that
the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an
interested party may appeal directly to the Administrative
Review Board (formerly the Wage Appeals Board).  Write to:
            Administrative Review Board
            U.S. Department of Labor
            200 Constitution Avenue, N.W.
            Washington, DC 20210.
================================================================
          END OF GENERAL DECISION
"
```

DOCUMENT A00801

SPECIAL PROVISIONS

SOUTHBRIDGE
Federal Aid Project No. STP(BR-OFF)-003S(948)X
Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

Labor participation goals for this Project shall be 15.3% for minorities and 6.9% for women for each job category. The goals are applicable to both Contractor's and Subcontractor's on-site construction workforce. Refer to Document 00820 for details.

SCOPE OF WORK

All work under this Contract shall be done in conformance with the *2026 Standard Specifications for Highways and Bridges, the Supplemental Specifications* contained in this book, the *Construction Standard Details* in effect as of July 2026, the *1990 Standard Drawings for Signs and Supports*, the 2015 *Overhead Signal Structure and Foundation Standard Drawings*, the *11th Edition of the Manual on Uniform Traffic Control Devices (MUTCD)* and the *January 2026 Massachusetts Amendments to the MUTCD*, *the 1968 Standard Drawings for Traffic Signals and Highway Lighting*, the latest edition of The *American Standard for Nursery Stock*, the Plans and these Special Provisions.

The work under this Contract consists of the superstructure replacement of the bridge carrying Mill Street over the Quinebaug River (S-21-003) and the reconstruction of the bridge carrying Mill Street over McKinstry Brook (S-21-009) and their approaches. The project limits are from the intersections of Mill Street and High Street to Mill Street and River Street.

Bridge (S-21-003) work over the Quinebaug River consists of deck and superstructure removal, modification of the existing abutment tops, and reconstruction of the superstructure.

Bridge (S-21-009) work over the McKinstry Brook consists of deck and superstructure removal, removal of the existing abutment tops, construction of new pile foundations through the remainder of the existing abutments, and construction of the superstructure.

The work on the approaches includes, but is not limited to: pavement milling and overlay; limited full depth pavement reconstruction; the construction of new cement concrete pedestrian curb ramps, sidewalks, sidewalks at driveways, hot mix asphalt driveways, granite curb, minor drainage and utility alterations, tree trimming, removal or protection of trees, traffic signal upgrades, pavement markings and signing; and other related work as noted in these Contract Documents.

For each bridge, temporary traffic control for vehicles will include complete closure (no through traffic). Traffic around the Quinebaug bridge (S-21-003) will detour via Main Street to Canal Street. Traffic around the McKinstry bridge (S-21-009) will detour via Canal Street or Pleasant Street to River Street. Abutters will have local vehicle access to their properties. The two bridges cannot be closed at the same time.

SCOPE OF WORK (Continued)

The Project includes permanent and temporary overhead utility work as well as permanent and temporary underground water, sewer, drain, and gas (by Others) utility work. The Contractor shall coordinate with Town to deactivate water lines. The water lines at each bridge shall not be deactivated at the same time.

Pedestrian traffic will be allowed during staged construction of both bridges. In general, pedestrians will be allowed on the west side of each bridge while the east side is constructed. Then pedestrian traffic will switch to the completed east side while the west side is under construction. No public vehicle traffic is allowed on the bridges during construction.

CONTRACTOR QUESTIONS AND ADDENDUM ACKNOWLEDGEMENTS

Prospective bidders are required to submit all questions to the Construction Contracts Engineer by 3:00 P.M. on the Tuesday of the previous week before the scheduled bid opening date. Any questions received after this time will not be considered for review by the Department.

Contractors should email questions and addendum acknowledgements to the following email address massdotspecifications@dot.state.ma.us The MassDOT proposal number and municipality is to be placed in the subject line.

WORK SCHEDULE

No lane closures on the existing roadways shall be done from 6:00AM to 9:00AM and from 3:00PM to 7:00PM, without prior approval by the Town and Engineer.

Without prior approval from the Town and Engineer, work on this project is restricted to a normal eight-hour day, five-day week, with the Contractor and all Subcontractors working on the same shift.

If work is needed after 7:00PM, the Contractor shall obtain Approval from the Town and the Engineer, a minimum of 48 hours in advance of commencing night work. The Contractor is responsible for coordination with the Town, including but not limited to Police, Fire, and public works departments.

SOIL STOCKPILING DIRECTIVE P-22-001

Any stockpiling of soil must be performed in compliance with Policy Directive P-22-001, Off-Site Stockpiling of Soil from MassDOT Construction Projects. This directive limits the allowable locations for off-site stockpiling of soil generated during MassDOT projects and includes various requirements that must be satisfied by the contractor prior to off-site stockpiling. The Contractor is responsible for identifying a suitable stockpile location.

NONCONFORMING COMPRESSIVE STRENGTH OF CEMENT CONCRETE

Concrete with compressive strength test results failing to attain the limits specified in Table 901.64-3 of 901.64.B: Acceptance Testing shall be evaluated for structural adequacy and serviceability at the Contractors' expense. The Department will review all production records, the concrete test records, petrographic analysis report, field notes, and the placement records for the concrete in question. If the Engineer determines the material is found to be adequate to remain in place, payment shall be adjusted in accordance with the following formula:

$$P = \frac{2(fc - f'c)(UP)(Q)}{f'c}$$

Where:

P = pay adjustment for substandard concrete
$f'c$ = specified minimum compressive strength at 28 days
fc = substandard concrete cylinder compressive strength at 56 days
Q = quantity of concrete represented by the acceptance cylinders tested
UP = unit contract price or the lump sum breakdown price per cubic yard for the class of concrete involved complete in place

HOLIDAY WORK RESTRICTIONS

(Supplementing Subsection 7.09)

The District Highway Director (DHD) may authorize work to continue during these specified time periods if it is determined by the District that the work will not negatively impact the traveling public. DHD may allow work in those areas on a case by case basis and where work is behind barrier and will not impact traffic

Below are the holiday work restrictions:

New Years Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day. No work on local roadways on the holiday without permission by the DHD and the local police chief.

Martin Luther King's Birthday (Federal Holiday)
No work restrictions due to traffic concerns, however work on local roadways requires permission by the DHD and local police chief.

President's Day (Federal Holiday)
No work restrictions due to traffic concerns, however work on local roadways requires permission by the DHD and local police chief.

Evacuation Day (Suffolk County State Holiday)
No work restrictions due to traffic concerns.

HOLIDAY WORK RESTRICTIONS (Continued)

Patriot's Day (State Holiday)
Work restrictions will be in place for Districts 3 and 6 along the entire Boston Marathon route and any other locations that the DHD in those districts determine are warranted so as not to impact the marathon. All other districts work restrictions will be as per DHD.

Mother's Day
No work on Western Turnpike and Metropolitan Highway System from 5:00 AM on the Friday before, until the normal start of business on the following day.

Memorial Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the Friday before, until the normal start of business on the following day.

Bunker Hill Day (Suffolk County State Holiday)
No work restrictions due to traffic concerns.

Juneteenth
No work restrictions due to traffic concerns, however work on local roadways requires permission by the DHD and local police chief.

Independence Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day. No work on local roadways on the holiday without permission by the DHD and the local police chief.

Labor Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the Friday before, until the normal start of business on the following day.

Columbus Day (Federal Holiday)
No work on major arterials from 5:00 AM on the Friday before, until the normal start of business on the following day

Veterans' Day (Federal Holiday)
No work restrictions due to traffic concerns.

Thanksgiving Day (Federal Holiday)
No work on major arterials from 5:00 AM two days before until the normal start of business on the following Monday.

Christmas Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day.

EMERALD ASH BORER ADVISORY

To the extent possible, all trees and brush shall be disposed on site, typically chipped and spread in place. When trees or brush must be removed, such as in urban, or otherwise populated areas, Contractor shall identify proposed location for disposal, and provide written notification to the Engineer for approval. Disposal shall be in city or town of project, or at minimum, within county, of construction operations.

SUBSECTION 8.02 SCHEDULE OF OPERATIONS

Replace this subsection with the following:

An integrated cost and schedule controls program shall be implemented by the Contractor to track and document the progress of the Work from Notice to Proceed (NTP) through the Contractor Field Completion (CFC) Milestone. The Contractor's schedules will be used by the Engineer to monitor project progress, plan the level-of-effort required by the Department's work force and consultants and as a critical decision-making tool. Accordingly, the Contractor shall ensure that it complies fully with the requirements specified herein and that its schedules are both accurate and updated as required by the specification throughout the life of the project. Detailed requirements are provided in Division II, Section 722 Construction Scheduling.

TRUCK SAFETY DEVICES

(Supplementing Subsection 7.04: Motor Vehicles)

All motor vehicles subject to Section 7 of Chapter 90 to be operated under this Contract shall be equipped with safety devices as provided therein and in 540 CMR 4.00.

The Contractor shall certify to the Registry of Motor Vehicles, in a manner prescribed by the Registrar, that all applicable vehicles are equipped with Lateral Protective Devices, Convex Mirrors, Cross Over Mirror(s) and Back Up Cameras in accordance with the requirements of 540 CMR 4.00.

The Contractor shall provide evidence satisfactory to the Department to demonstrate compliance with the above certification requirement for all applicable vehicles operated under this Contract by the Contractor and its subcontractors and vendors in a manner set forth by the Department. Thereafter, the Contractor shall have an affirmative obligation to continue to provide such evidence of compliance on an ongoing basis and no later than 7 days after certification with the Registry of Motor Vehicles of any additional vehicles operated under this Contract by the Contractor and its subcontractors and vendors.

Non-compliance with respect to a vehicle that is subject to 540 CMR 4.00 may subject the Contractor to statutory fines as established in M.G.L. c. 90, § 7 and/or contractual remedies up to and including termination of the Contract.

SUBSECTION 8.14 UTILITY COORDINATION, DOCUMENTATION, AND MONITORING RESPONSIBILITIES

A. GENERAL

In accordance with the provisions of Section 8.00 Prosecution and Progress, utility coordination is a critical aspect to this Contract. This section defines the responsibility of the Contractor and MassDOT, with regard to the initial utility relocation plan and changes that occur as the prosecution of the Work progresses. The Engineer, with assistance from the Contractor shall coordinate with Utility companies that are impacted by the Contractor's operations. To support this effort, the Contractor shall provide routine and accurate schedule updates, provide notification of delays, and provide documentation of the steps taken to resolve any conflicts for the temporary and/or permanent relocations of the impacted utilities. The Contractor shall provide copies to the Engineer of the Contractor communication with the Utility companies, including but not limited to:

- Providing advanced notice, for all utility-related meetings initiated by the Contractor.
- Providing meeting minutes for all utility-related meetings that the Contractor attends.
- Providing all test pit records.
- Request for Early Utility work requirements of this section (see below).
- Notification letters for any proposed changes to Utility start dates and/or sequencing.
- Written notification to the Engineer of all apparent utility delays within seven (7) Calendar Days after a recognized delay to actual work in the field – either caused by a Utility or the Contractor.
- Any communication, initiated by the Contractor, associated with additional Right-of-Way needs in support of utility work.
- Submission of completed Utility Completion Forms.

B. PROJECT UTILITY COORDINATION (PUC) FORM

The utility schedule and sequence information provided in the Project Utility Coordination Form (if applicable) is the best available information at the time of the bid and has been considered in setting the contract duration. The Contractor shall use all of this information in developing the bid price and the Baseline Schedule Submission, inclusive of the individual utility durations sequencing requirements, and any work that has been noted as potentially concurrent utility installations.

C. INITIATION OF UTILITY WORK

The Engineer will issue all initial notice-to-proceed dates to each Utility company based on either the:

1) Contractor's accepted Baseline Schedule
2) An approved Early Utility Request in the form of an Early Utility sub-net schedule (in accordance with the requirements of this Subsection)
3) An approved Proposal Schedule

C.1 - BASELINE SCHEDULE – UTILITY BASIS

The Contractor shall provide a Baseline Schedule submission in accordance with the requirements of Subsection 8.02 and inclusive of all of the information provided in the PUC Form that has been issued in the Contract documents. This is to include the utility durations, sequencing of work, allowable concurrent work, and all applicable considerations that have been depicted on the PUC Form.

SUBSECTION 8.14 (Continued)

C.2 – EARLY UTILITY REQUEST – (aka SUBNET SCHEDULE) PRIOR TO THE BASELINE

All early utility work is defined as any anticipated/required utility relocations that need to occur prior to the Baseline Schedule acceptance. In all cases of proposed early utility relocation, the Contractor shall present all known information at the pre-construction conference in the form of a 'sub-net' schedule showing when each early utility activity needs to be issued a notice-to-proceed. The Contractor shall provide advance notification of this intent to request early utility work in writing at or prior to the Pre-Construction meeting. Prior to officially requesting approval for early utility work, the Contractor shall also coordinate with MassDOT and all utility companies (private, state or municipal) which may be impacted by the Contract. If this request is acceptable to the Utilities and to MassDOT, the Engineer will issue a notice-to-proceed to the affected Utilities, based on these accepted dates.

C.3 – PROPOSAL SCHEDULE - CHANGES TO THE PUC FORM

If the Contractor intends to submit a schedule (in accordance with MassDOT Standard Specifications, Division I, Subsection 8.02) that contains durations or sequencing that vary from those provided in the Project Utility Coordination (PUC) Form, the Contactor must submit this as an intended change, in the form of a Proposal Schedule and in accordance with MassDOT Standard Specifications, Division I, Subsection 8.02. These proposed changes are subject to the approval of the Engineer and the impacted utilities, in the form of this Proposal Schedule and a proposed revision to the PUC form. The Contractor shall not proceed with any changes of this type without written authorization from the Engineer, that references the approved Proposal Schedule and PUC form changes. The submission of the Baseline Schedule should not include any of these types of proposed utility changes and should not delay the submission of the Baseline Schedule. As a prerequisite to the Proposal Schedule submission, and in advance of the utility notification(s) period, the Contractor shall coordinate the proposed utility changes with the Engineer and the utility companies, to develop a mutually agreed upon schedule, prior to the start of construction.

D. UTILITY DELAYS

The Contractor shall notify the Engineer upon becoming aware that a Utility owner is not advancing the work in accordance with the approved utility schedule. Such notice shall be provided to the Engineer no later than seven (7) calendar days after the occurrence of the event that the Contractor believes to be a utility delay. After such notice, the Engineer and the Contractor shall continue to diligently seek the Utility Owner's cooperation in performing their scope of Work.

In order to demonstrate that a critical path delay has been caused by a third-party Utility, the Contractor must demonstrate, through the requirements of the monthly Progress Schedule submissions and the supporting contract records associated with Subsection 8.02, 8.10 and 8.14, that the delays were beyond the control of the Contractor.

SUBSECTION 8.14 (Continued)

All documentation provided in this section is subject to the review and verification of the Engineer and, if required, the Utility Owner. In accordance with MassDOT Specifications, Division I, Subsection 8.10, a Time Extension will be granted for a delay caused by a Utility, only if the actual duration of the utility work is in excess of that shown on the Project Utility Coordination Form, and only if;

1) proper Notification of Delay was provided to MassDOT in accordance with the time requirements that are specified in this Section
2) the utility delay is a critical path impact to the Baseline Schedule (or most recently approved Progress Schedule)

E. LOCATION OF UTILITIES

The locations of existing utilities are shown on the Contract drawings as an approximation only. The Contractor shall perform a pre-construction utility survey, including any required test pits, to determine the location of all known utilities no later than thirty (30) calendar days before commencing physical site work in the affected area.

F. POST UTILITY SURVEY – NOTIFICATION

Following completion of a utility survey of existing locations, the Contractor will be responsible to notify the Engineer of any known conflicts associated with the actual location of utilities prior to the start of the work. The Engineer and the Contractor will coordinate with any utility whose assets are to be affected by the Work of this Contract. A partial list of utility contact information is provided in the Project Utility Coordination Form.

G. MEETINGS AND COOPERATION WITH UTILITY OWNERS

The Contractor shall notify the Engineer in advance of any meeting they initiate with a Utility Owner's representative to allow MassDOT to participate in the meeting if needed.

Prior to the Pre-Construction Meeting, the Contractor should meet with all Utility Owners who will be required to perform utility relocations within the first 6 months of the project, to update the affected utilities of the Project Utility Coordination Form and all other applicable Contract requirements that impact the Utilities. The Contractor shall copy the Engineer on any correspondence between the Utility Owner and the Contractor.

H. FORCE ACCOUNT / UTILITY MONITORING REQUIREMENTS

The Engineer will be responsible for recording daily Utility work force reports. The start, suspension, re-start, and completion dates of each of the Utilities, within each phase of the utility relocation work, will be monitored and agreed to by the Engineer and the Contractor as the work progresses.

I. ACCESS AND INSPECTION

The Contractor shall be responsible for allowing Utility owners access to their own utilities to perform the relocations and/or inspections. The Contractor shall schedule their work accordingly so as not to delay or prevent each utility from maintaining their relocation schedule.

BIDDERS LIST

Pursuant to the provisions of 49 CFR Part 26.11 all official bidders will be required to report the names, addresses and telephone numbers of all firms that submitted bids or quotes in connection with this project. Failure to comply with a written request for this information within 15 business days may result in a recommendation to the Prequalification Committee that prequalification status be suspended until the information is received.

The Department will survey all firms that have submitted bids or quotes during the previous year prior to setting the annual goal and shall request that each firm report its age and gross receipts for the year.

BUILD AMERICA BUY AMERICA PREFERENCE

On Federally-aid projects the Buy America (23.CFR § 635.410) and Build America, Buy America Act. requires the following,

(1) all iron and steel used in the project are produced in the United States--this means all manufacturing processes, from the initial melting stage through the application of coatings, must occur in the United States. Foreign steel and iron can be used if the cost of the materials does not exceed 0.1% of the total Contract cost or $2,500, whichever is greater. The action of applying a coating to a covered material (i.e., steel and iron) is deemed a manufacturing process subject to Buy America. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to requirements of Build America, Buy America. Steel used for temporary support of excavation, including H piles, soldier piles, and sheeting when the steel is required to be left in place is subject to requirements of Build America, Buy America. Temporary steel, shall remain in place when it falls within the influence zone of the soil supporting any structure or railroad tracks.

(2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States and

(3) all construction materials are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States. “Construction materials” includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is or consists primarily of:

- non-ferrous metals,
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables),
- glass (including optic glass),
- lumber; or
- drywall.

BUILD AMERICA BUY AMERICA PREFERENCE (Continued)

The Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of the structure or permanently affixed to the infrastructure project.

All articles, materials, and supplies should be classified as an iron or steel product, a manufactured product, or another product as specified by law or in 2 CFR part 184 (such other products specified by law or in 2 CFR part 184 include "excluded materials" and "construction materials"); an article, material, or supply must not be considered to fall into multiple categories.

COMPLIANCE WITH THE NATIONAL DEFENSE AUTHORIZATION ACT
(Supplementing Subsection 7.01)

On all projects, the "Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment" Regulation (2 CFR 200.216) prohibits the Contractor from using or furnishing the following telecommunications equipment or services:

- Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
- For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
- Telecommunications or video surveillance services provided by such entities or using such equipment.
- Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

This prohibition applies to all products manufactured by the aforementioned companies, including any individual components or parts.

By submitting a bid on a project, the Contractor certifies that all work will be in compliance with the terms of 2 CFR 200.216. The Contractor shall submit a COC indicating compliance with the above provisions for all telecommunications equipment or services included in the Contract.

Payment for the item in which the materials are incorporated may be withheld until these COCs are received. Any cost involved in furnishing the certificate(s) shall be borne by the Contractor.

NOTICE TO OWNERS OF UTILITIES

(Supplementing Subsection 7.13)

Written notice shall be given by the Contractor to all public service corporations or municipal and State officials owning or having charge of publicly or privately owned utilities at least one week in advance of the commencement of operations that will affect the utilities. The Contractor shall, at the same time, file a copy of such notice with the Town.

Before commencing work on service connections, the Contractor shall contact the Electric Company servicing the area to obtain construction requirements, standards, and to give adequate notice of commencement of work. The Contractor's attention is further directed to the requirements of Work in the Immediate Vicinity of Certain Underground Structures and Poles herein included in these Special Provisions.

The following are the names of owners and representatives of the principal utilities affected, but completeness of this list is not guaranteed by the Town:

Town Of Southbridge

Town of Southbridge
Department of Public Works
185 Guelphwood Road
Southbridge, MA 01550

Vernon Jackson
Phone: (508) 764-5403 x3
DPW Project Manager

Southbridge Fire Department
24 Elm Street
Southbridge, MA 01550

Chief Joseph Hulyk
Phone: (508) 764-5430

Southbridge Police Department
1 Mechanic Street
Southbridge, MA 01550

Chief Shane Woodson
Phone: (508) 764-5420

Water

Southbridge Water Department
185 Guelphwood Road
Southbridge, MA 01550

Steven Blanchard
Phone: (508) 764-3207

Sewer

Southbridge Wastewater Department
83 Dresser Hill Road
Southbridge, MA 01550

James Merchant
Phone: (508) 764-4927

Electric

National Grid
170 Data Drive
Waltham, MA 02451

Manuel Munoz
Phone: (401) 895-9726

NOTICE TO OWNERS OF UTILITIES (Continued)

Telephone

Verizon
385 Myles Standish Blvd.
Taunton, MA 02780

Karen Mealey
Phone: (774) 409-3160

Gas

Tennessee Gas Pipeline Company
8 Anngina Drive
Enfield, CT 06082

David Wood
Phone: (860) 763-6005

National Grid Gas
170 Data Drive
Waltham, MA 02451

Melissa Owens
Phone: (781) 907-2845

Cable

Charter Communications
301 Barber Avenue
Worcester, MA 01606

John Yurkevicius
Phone: (774) 243-9786

OTHER AFFECTED PARTIES ARE:

Westville Dam
United States Army Corps of Engineers
Phone: (978) 318-8405
Email: keith.w.beecher@usace.army.mil

Keith Beecher
Project Manager

WORK DONE BY OTHERS

Relocation and/or resetting to new grades of all private utilities, including utility poles, made necessary by the construction of this project, will be accomplished by the respective utility companies.

NATIONAL GRID EMERGENCY TELEPHONE NUMBERS

GAS:
Emergency: 1-800-233-5325
New Service: 1- 877-696-4743
Customer Support: 1-800-732-3400

ELECTRIC:
Outage/ Emergency: 1-800-465-1212
New Service: 1-800-375-7405
Customer Support: 1-800-322-3223

DRAINAGE STRUCTURES

Where new pipe is shown on the drawings to be connected into an existing drainage structure to remain, the existing structure shall be first cleaned to remove all mud, debris and other material. The existing structure wall shall be carefully and neatly cut to provide the minimum size opening required for the insertion of the new pipe. The proposed pipe end shall be set or cut off flush with the inside face of the existing structure wall and the remaining space around the pipe completely filled with cement grout for the full thickness of the structure wall.

Existing shaped inverts shall be reconstructed as necessary to provide a smooth and uniform flow channel from the new pipe through the existing structure.

No separate payment will be made for the cost of connecting new pipes into existing structures, necessary alterations of existing structures, but all costs in connection therewith shall be included in the unit prices bid for the various pipe items.

PROTECTION OF UTILITIES AND PROPERTY

(Supplementing Subsection 7.13)

The Contractor, in constructing or installing facilities alongside or near sewers, drains, water or gas pipes, electric or telephone conduits, poles, sidewalks, walls, vaults or other structures shall sustain them securely in place. The Contractor shall coordinate with the officers and agents of the various utility companies and municipal departments to assure that the services of these structures are maintained. The Contractor shall also be responsible for the repair or replacement, at no additional cost to the Owner (Town of Southbridge), of any damage to such structures caused by construction operations. The Contractor is responsible to leave them in the same condition as they existed prior to commencement of the work. In case of damage to utilities, the Contractor shall promptly notify the utility owner and shall, if requested by the Town, furnish labor and equipment to work temporarily under the utility owner's direction. Pipes or other structures damaged by the operation of the Contractor may be repaired by the Town or by the utility owner which suffers the loss. The cost of such repairs shall be borne by the Contractor, without compensation therefor.

If during construction there is an existing utility and/ or structure found to be in conflict with the proposed work under this Contract, the Contractor shall protect and maintain the services to the utilities and structures. The Town will, as soon as possible identify the utilities to be relocated or other such activities deemed suitable for resolution.

If live service connections are to be interrupted by excavations of any kind, the Contractor shall not break the service until new services are provided. Abandoned services shall be plugged off or otherwise made secure.

No separate payment will be made for protecting or repairing property as specified in this heading, but all costs in connection therewith shall be included in the Contract.

WORK IN THE IMMEDIATE VICINITY OF CERTAIN UNDERGROUND STRUCTURES AND UTILITY POLES

For overhead connections, the Electric Company servicing the area will make the connection from the top of the riser on the utility pole to the power source. The Contractor shall supply all labor, materials and equipment to install the service connection, complete in place and in accordance with the Electric Company procedures, from the controller to and including the riser with enough wire coiled above the riser to permit the Electric Company servicing the area to make the final connection.

For underground connections, the Electric Company servicing the area will perform the actual wiring of the service connections from its power source to the sweep at the local controllers, but all steel sweeps, ducts, entrance holes into manholes, patching and all other necessary labor, materials and equipment required to install the electric service, complete in place, shall be furnished by the Contractor.

The Contractor shall pay the Electric Company servicing the area for their services rendered for the connection of overhead and underground service connections. Before starting work at existing manholes, the Contractor shall test for gas and blow out the manholes.

The Contractor shall perform test pits as indicated on the plans and as directed by the Town, prior to start of the installation of utilities.

MATERIAL REMOVED AND STACKED

The Contractor shall carefully remove, transport and stack all material that, in the opinion of the Engineer, is salvageable. The material shall be stacked at the Town of Southbridge Department of Public Works at 185 Guelphwood Road, Southbridge, MA. The Contractor shall coordinate with the DPW to schedule drop-off time and location.

PIGEON WASTE

The Contractor shall remove and dispose of the pigeon waste and any other debris accumulated on the steel members and bridge seats in areas where work is being performed. Pigeon waste and debris material contaminants will require special handling and disposal in accordance with all Federal, state, and local requirements. No separate payment will be made for removal and disposal of pigeon waste. Cost shall be incidental to the contract pay items.

EQUIVALENT SINGLE AXLE LOADS (ESALS)

The estimated traffic level to be used for SUPERPAVE HMA mixture designs for this contract, expressed in Equivalent Single Axle Loads (ESALs) for the design travel lane over a 20-year period, is XX Million 18-kip (80-kn) ESALs.

CONTAMINATED SOIL

Soil to be removed from the project area shall not be assumed to be uncontaminated and must be evaluated prior to off-site management for potential contamination with hazardous materials. No soil may be disposed of off-site without proper assessment by the contractor and approval from the Resident Engineer (RE), District Environmental Engineer (DEE), or the project designee.

GENERAL REQUIREMENTS FOR DEMOLITION AND WORK INVOLVING PAINTED STEEL

(02/06/2020)

Demolition and work involving painted steel shall conform to the requirements of Subsection 961 of the Standard Specifications.

Work Involving Painted Steel

Hazardous materials shall be removed in the immediate area of any intended welding, heating, saw cutting or burning of steel. Hazardous material removal is required to allow the demolition of structural steel, railings, drainage systems, utility supports, steel lamp posts, etc.

The contractor shall assume that the coatings on the steel contain lead (Pb), unless otherwise determined by testing. The contractor shall certify in writing to the Engineer the results of all testing, and shall also certify that any lead (Pb) coated steel removed from the project was not reused or buried, but was sent to a scrap metal recycling facility.

Implement and maintain programs and procedures, which comply with the requirements of this specification and all applicable standards and regulations. Comply with all applicable regulations even if the regulation is not specifically referenced herein. If a state or local regulation is more restrictive than the regulation of this specification, follow the more restrictive requirements.

This requirement is intended only for the demolition and preparation prior to repair and does not include provisions for recoating of steel.

Environmental

All applicable portions of Subsections 961.65 “Worker Protection” and 961.66 “Environmental Protection and Monitoring” shall be followed when performing this work.

During chemical stripping a hand washing facility may be used in lieu of a decontamination/changing facility.

Hazardous material shall be collected during the disassembly and disposed of as outlined in Subsection 961.68 “Handling of Hazardous Waste and Reporting Release Programs”.

The applicable submittals shall be according to Subsection 961.69 “Submittals”.

GENERAL REQUIREMENTS FOR DEMOLITION AND WORK INVOLVING PAINTED STEEL (Continued)

Cleaning/Removal

Cutting Or Burning Of Steel

All surfaces to be welded, heated, saw cut or burned shall be cleaned so as to remove all contaminants and/or hazardous materials, which could be discharged to the environment as a function of the subsequent operations.

Lead paint shall be removed in its entirety in an area prescribed by a 6 inch (15 cm) minimum offset from the required work. The paint removal operation may be dry abrasive blasting, wet abrasive blasting or chemical stripping.

Proper level of containment shall be used when performing this work in accordance with Subsection 961.67 "Containment". Full containment is not required during chemical stripping operation however; the Contractor shall install proper shielding and/or tarpaulins under the chemical stripping operations in order to catch all debris generated during this procedure. A cleaned area must be inspected and approved before the demolition operations are started.

During cleaning operations the Contractor shall be required to furnish and erect temporary floodlights illuminating the steel surface at a minimum of 30-foot candles. This lighting shall be used in areas where there is insufficient lighting for proper cleaning operations and inspection. The Contractor shall supply electrical power.

The Contractor shall provide support for interim and final inspection of the bridge during cleaning operations. This support shall include the necessary traffic controls and safe access to the work.

Mechanical Disassembly Of Steel

All surfaces to be mechanically disassembled by shear cutting or removing bolts or rivets shall not require deleading. When shear cutting or removing bolts or rivets, the Contractor shall not use any method that will cause dust and/or particles to be emitted and/or dispersed into the environment to an extent that would expose the workers above the Action Levels of 30µg/m3.

For purposes of limiting the lead (Pb) dust, the Contractor will be required to dampen the lead paint work areas.

The contractor shall install a proper shielding and/or tarpaulins under all lead-paint-coated surfaces to be shear cut or bolts or rivets ordered removed in order to catch any loose lead paint chips, dust or particles.

VALUE ENGINEERING CHANGE PROPOSAL

This Subsection defines the conditions and requirements which apply to Value Engineering Change Proposals ("VECPs"). The purpose of this provision is to encourage the Contractor to propose changes in certain project requirements that will maintain the project's functional requirements at a savings in contract time, contract price, or both. The net savings obtained by using a VECP that meets the conditions and requirements set forth here will be shared by the Contractor and MassDOT.

VECP's under this provision are to be initiated, developed and submitted to MassDOT by the Contractor. The VECP must show the contemplated changes to the Drawings, Specifications and other requirements in the Contract. When a VECP submitted pursuant to this section is fully accepted by MassDOT, the VECP will be implemented by the Contractor and paid using the current cost and resource loaded schedule. Contractor shall demonstrate that the VECP is equal to, or better than, the original design or material; that there is an interest in public safety within the VECP; that there is a life-cycle cost benefit; and/or that end users will benefit from the shortened schedule. VECPs shall be consistent with the MassHighway/MassDOT Standard Specifications for Highways and Bridges and other applicable reference documents and directives. Any proposed deviation from these documents will need to be clearly identified in the VECP Proposal Documents, and must be approved by MassDOT's Chief Engineer before accepting this VECP.

A. In order to be considered for MassDOT review each VECP shall:

1. Be clearly labeled pursuant to this Subsection;

2. Yield a net savings at least two hundred and fifty thousand (250,000.00) Dollars and/or a net saving of contract completion duration of at least three (3) months;

3. The proposed changes to contract items must:

    a. maintain the specified items' required functions (service life, reliability);

    b. meet applicable safety regulations and codes;

    c. material substitutions must be in accordance with DOT prequalified/preapproved products and must be tested in accordance with standard material specs/testing methods (and considering all relevant environmental, load, and other relevant factors).

    d. show economy of operation, ease of maintenance, ease of construction, and necessary standardized features and appearance; and

4. Shall not require an extension of Contract Time or Contract Milestones, with the exception of cases when there are anticipated significant cost saving.

VALUE ENGINEERING CHANGE PROPOSAL (Continued)

The thresholds above are considered to be a general guideline. MassDOT will consider VECPs outside of these thresholds if a significant benefit is demonstrated. Additionally, notwithstanding this VECP process, MassDOT will consider minor revisions in the form of a Contract Modification.

Further, any VECP submitted shall be in sufficient detail to clearly define the proposed change. The Contractor's failure to provide information of the type, detail and in a format to facilitate the MassDOT's review, may be grounds for rejection of the VECP. Additionally, the Contractor will not be entitled to any equitable adjustment or increased Time, due to any aspect of any of the proposed VECP including permitting, right of way, utility coordination or delayed responses by MassDOT. If, after the progression of the work associated with the executed Contract Modification for the VECP, any additional costs are realized by the Contractor or any of the sub-consultants, sub-contractors, or suppliers, the Contractor shall be obligated to pay for any and all costs.

B. The following initial items shall be provided by the Contractor for MassDOT's review. *Items 1-6 need to be submitted prior to the start of MassDOT's review of the VECP and item 7 is an important consideration for the pricing of the VECP and the timeline of the proposed VECP schedule.*

1. ***VECP Description***: A description of the difference between the existing and the proposed Contract requirements, and the comparative advantages and disadvantages of each;

2. ***VECP Change Listing***: A listing of the Contract requirements that will need to be changed, modified, or reviewed as well as the proposed Contract document changes in the Instructions to Bidders, Contract, Standard Specifications, General Requirements and Special Provisions required by the VECP.

3. ***Construction Schedule Update*:** Any changes in the Contract Time(s) or Contract Milestone(s), that will result from acceptance of the VECP, shall be accompanied by a contemporaneous schedule analysis *(i.e., the Contractor's baseline schedule submission, all past/required monthly schedule updates, a detailed assessment of all past delays, and a resource loaded Critical Path Method schedule as specified in Section 8.0 / Subsection 8.02 of this Contract)* of the projected Work that remains including the proposed VECP related schedule changes *(inclusive of the timeline to review accept the VECP and the timeline for implementing the design changes)* in the remaining work. This shall be submitted in the form of a Proposal Schedule until the VECP has been formally accepted. Note: All of this information is to be updated, recertified, and formally accepted by MassDOT before final acceptance of this this VECP is issued.

VALUE ENGINEERING CHANGE PROPOSAL (Continued)

4. ***Date for MassDOT's Acceptance***: A statement that clearly justifies the date by which the VECP must be accepted to obtain the maximum price reduction, noting any effect upon the Contract Time(s) and/or Contract Milestone(s). This statement must include a narrative that demonstrates the most recent construction schedule has been utilized to justify that proposed acceptance date *(e.g. "in order to start to fabricate critical materials, authorization must be provided to work on the shop drawings by no later than [date]").* The Contractor should allow for at least sixty (60) to ninety (90) days for acceptance by MassDOT once all of the VECP documentation has been provided. Acceptance shall mean that MassDOT has received a finalized and executed contract modification. However, this is a proposed Contract change.

   The Contractor is fully obligated to progress the Work of the original Contract and MassDOT is not liable for any delays or costs that may occur in the review phase of any VECP proposal.

5. ***Cost and Savings Estimates***: A detailed estimate of the anticipated net savings, calculated as follows:

   a. ***Original Scope:*** Isolate the cost of performing the original contract construction activities, in accordance with the original Contract Documents, as originally bid by the Contractor, that are anticipated to be superseded by the VECP. *This cost is to include any original contract scope that is anticipated to be altered or eliminated by the VECP such as, shop drawing preparation, inspection work, testing, maintenance of traffic, or any other original contract costs, that have yet to have been performed at the time of this VECP submission.*

   b. ***New VECP Scope:*** Calculate the cost of performing the comparable construction activities associated with the VECP.

   c. ***Contractor's Engineer & Inspection***: Calculate the cost of engineering, inspection, and design work by the Contractor's Engineer/Designer. This should be a realistic estimate of the costs of any required engineering, design and review work by the Contractor's Engineer.

   d. ***MassDOT's Costs:*** MassDOT's estimate of costs to perform engineering/design reviews, cost estimate reviews, schedule reviews, and any other administrative costs to review and recommend implementation of the proposed VECP. *(including all anticipated increased costs to MassDOT on other Contracts and all anticipated follow-on increased costs to MassDOT, if any)* as provided by MassDOT. MassDOT's estimated costs must be included in the VECP calculation and will be provided by MassDOT in support of the VECP evaluation process.

   e. ***Other Costs:*** Estimated costs associated with any revisions to other project-related costs, such as Environmental Permits or Right of Way acquisitions, including other agency or municipality costs, as provided by MassDOT.

VALUE ENGINEERING CHANGE PROPOSAL (Continued)

Net Savings:
The net savings to be split between MassDOT and the Contractor shall be calculated using the items above as follows: a - (b+c+d+e) = net savings

6. *The Contractor shall also provide:*

   a. A proposed Change Order, which explains and justifies any required Equitable Adjustment in the Contract Price.

   b. The Contractor's actual costs expended for developing the VECP as of the date of the VECP submission;

***7. Design Changes and Drawings*:** The costs that are outlined above should be inclusive of the following design and engineering responsibilities.

   a. Design changes shall be prepared and stamped by the Contractor's professional designer and/or engineer. In addition, in the development of the VECP; the Contractor is responsible for anticipating and managing all aspects associated with any VECP design work that must be performed by a licensed Engineer.

   b. The Contractor's engineer must analyze and stamp all components of any aspect of the project that has been redesigned, changed, or altered as a result of this VECP.

   c. The Contractor's engineer shall provide all calculations and supporting design/engineering documentation that was utilized to develop the changes and stamped drawings. These will be used by MassDOT's Designer-of-Record to review the VECP changes. The Contractor is limited to selecting only those engineer's that have been pre-qualified by MassDOT's A&E Board.

   d. MassDOT's Designer-of-Record will review and respond to all completed design submissions related to this VECP within thirty (30) calendar days, unless determined to be a non-critical path item.

   e. MassDOT will be responsible for estimating and managing MassDOT's Designer-of-Record during the VECP review and implementation. Should any significant conflicts arise between the Contractor's Engineer and MassDOT's Designer-of-Record, the DOT and the Contractor will work expeditiously to resolve the conflict. Should this type of conflict continue for greater than five (5) days, the Contractor is to bear all financial and time related impacts of such delay and must seek to resolve the design conflict, in an acceptable manner to MassDOT. The resolution of this conflict will be funded at the Contractor's expense – exclusive of the net saving that was agreed to at the execution of the contract modification for this VECP.

   f. The Contractor's Engineer may also be required to inspect the construction work. The Contractor is to include such anticipated inspection costs in the initial VECP.

VALUE ENGINEERING CHANGE PROPOSAL (Continued)

g. MassDOT's Designer of Record will remain the Designer-of-Record for the entire Project. Any costs incurred in the use of MassDOT's Designer-of-Record by MassDOT or Contractor associated with the review of a VECP are to be included in the calculated net savings.

C. Approval of the VECP shall not occur until a Contract Modification, incorporating the VECP, is issued by MassDOT and properly executed by the Contractor. MassDOT may accept or reject part or all of any VECP at any time prior to an executed Contract Modification for the applicable VECP. The decision of MassDOT, concerning acceptance or rejection of any VECP, shall be final and shall not be subject to dispute resolution.

It is expected that several weeks may go by before the final VECP documentation has been executed with a Contract Modification. Therefore, MassDOT intends to make certain that the initial cost estimate information has not changed before entering into a Contract Modification. As the VECP evaluation process is finalized, and prior to the signed Contract Modification for the VECP, the Contractor and MassDOT must re-certify the current status of the originally proposed cost and/or schedule savings.

Until a contract modification is issued and schedule and cost/savings re-certification is complete and accepted by MassDOT, the Contractor shall remain obligated to perform the Work in accordance with the terms and conditions of the original Contract Documents.

Upon completion of the work associated with the VECP, MassDOT may require verification that the VECP savings has been achieved.

D. VECPs will be processed (distributed, reviewed, commented upon, accepted or rejected) expeditiously (pursuant to M.G.L. c. 30, § 39R); however, as this is an elective modification to the contract, MassDOT shall not be liable for any delay or cost in the review and acceptance of the VECP. During the review of the VECP, the Contractor remains obligated to progress the original Contract scope, and schedule, as planned; until a Contract Modification, accepting the Contractor re-certified VECP, has been executed by MassDOT.

The Contractor has the right to withdraw part, or all of any VECP, prior to acceptance by MassDOT. Such withdrawal shall be made in writing to the Engineer. The Contractor shall state the period of time, from the date of the initial VECP submittal, that the VECP shall remain valid and feasible. Revision of this validity and feasibility period shall be allowed only by mutual agreement of the Contractor and the Engineer in writing.

If the Contractor desires to withdraw the proposal prior to the expiration of this period for non-technical reason, MassDOT reserves the right to recover all actual costs that have been incurred to MassDOT.

VALUE ENGINEERING CHANGE PROPOSAL (Continued)

If the Contractor withdraws the VEC Proposal, MassDOT reserves the right to proceed with the VECP or any portion of the VECP as a normal change and the Contractor waives any right it may have had to share in net savings thereunder.

For purposes of this provision, expiration of the time established by the Contractor for approval shall be considered as withdrawal by the Contractor if MassDOT requests an extension of that time and the Contractor does not provide a written extension.

E. With regard to unknown conditions or sub-surface work, in general, the expectation is that the Contractor and MassDOT will strive to gain enough knowledge about the risks in order to provide a forward-priced Change Proposal. Therefore, any costs to fully evaluate the proposal, such as additional borings and/or test pits, must be considered in the cost evaluation of whether the VECP is worth pursuing. However, if it is impractical to gather conclusive exploratory information, before the VECP is executed, MassDOT may consider provisions in the VECP that clearly identifies the risk sharing (cost and time) related specifically to the unknown/sub-surface conditions. If these VECP provisions are acceptable to MassDOT they are to include supplemental language to provide a determination of the final savings/cost, and time impacts, no later than 45 days after the sub-surface work is completed. All other aspects of the VECP, unrelated to these Provisions, will be binding upon execution of the VECP.

ENVIRONMENTAL PERMITTING

The proposed work occurs in jurisdictional wetland resources subject to section 401 or section 404 of the Clean Water Act; therefore, a Water Quality Certification from the Massachusetts Department of Environmental Protection and/or authorization from the US Army Corps of Engineers has been obtained. The Contractor is advised that all terms and conditions within said permits shall be strictly adhered to. The proposed work qualifies for the bridge exemption authorized in the Transportation Bond Bill and is therefore not subject to the Massachusetts Wetlands Protection Act, the Massachusetts Public Waterfront Act (Chapter 91), or the Massachusetts Environmental Policy Act.

If field conditions and/or Contractor-proposed erection, demolition, staging, or other procedures require work to occur in or otherwise impact water or wetland resource areas, the Contractor is advised that no associated work can occur until all required environmental permits have been obtained allowing such work. The Contractor must notify the District 3 Highway Director and Resident Engineer in writing at least 60 days prior to desire commencement of the proposed activity. All environmental submittals, including any Contract with Local, State, or Federal environmental agencies, must be coordinated with the District 3 Environmental Engineer. The Contractor is expected to fully cooperate with requests for information and provide same in a timely manner. The Contractor is further advised that the Department will not entertain a delay claim due to the time required to obtain the environmental permits.

NORTHERN LONG-EARED BAT AND TRICOLORED BAT PROTECTION

The northern long-eared bat (*Myotis septentrionalis*; NLEB) and tricolored bat (*Perimyotis subflavus*; TCB) are listed as federally endangered or proposed endangered, respectfully, under the Endangered Species Act (ESA). The U.S. Fish and Wildlife Service (USFWS) developed this guidance to address ESA compliance and promote conservation of NLEB and TCB. This project has been consulted with the USFWS through the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Administration (FTA) Programmatic Biological Opinion/Conference Opinion for Transportation Projects in the Range of the Indiana bat, northern long-eared bat, and tricolored bat, dated December 13, 2024. and generated a May Affect, Not Likely to Adversely Affect (NLAA) determination (see **Document A00856**). Subsequently, the project has completed Section 7 consultation under the ESA.

In advance of the uplisting of the TCB to endangered under the ESA, the following Avoidance and Minimization Measures (AMMs) must be strictly adhered to in order to protect NLEB and TCB and to be in compliance with the ESA. Contact MassDOT Environmental Services - Wildlife Unit Supervisor for questions about project limits, restrictions, or conservation measures.

General AMM

- The Contractor shall ensure all personnel working in on the project site are aware of all environmental commitments related to NLEB and TCB, including all applicable AMMs. NLEB and TCB information (https://www.fws.gov/midwest/endangered/mammals/nleb/ and https://www.fws.gov/species/tricolored-bat-perimyotis-subflavus) shall be made available to all personnel.
- On August 5, 2022, MassDOT Highway Division Environmental Services conducted a northern long-eared bat summer presence/absence survey, in accordance with the 2022 survey guidelines. The survey did not confirm the presence of NLEB and/or TCB. If work is proposed by the Contractor past August 5, 2027, additional review is required by the MassDOT Highway Division's Environmental Services Section, and additional review and restrictions may be required by the USFWS.

Tree Removal AMMs

- *If additional cutting is proposed by the Contractor that is outside the scope of this contract, additional review is required by the MassDOT Highway Division's Environmental Services Section, and additional review and restrictions may be required by the USFWS.*

Bridge AMM

- On November 15, 2024, MassDOT Highway Division Environmental Services, conducted a northern long-eared bat bridge/structure bat assessment, in accordance with the USFWS guidelines. The assessment did not find presence of, or evidence of use by bats, and as stated within the guidelines, the assessment is valid for two years. If bridge work is not complete before November 15, 2026, assessment of the bridge for the presence of, or evidence of use by, bats shall be completed by the MassDOT Wildlife Unit prior to continuing bridge work. The Contractor shall notify the MassDOT Wildlife Unit no later than fourteen (14) days prior to November 15, 2026 to provide adequate time for inspection. If bats are found to be present, or, if there is evidence of bat usage, work at the bridge shall not commence until after the MassDOT Wildlife Unit has completed coordination with the US Fish and Wildlife Service to determine the appropriate follow up or mitigation actions.

ITEM 100.95 GEOTECHNICAL MONITORING AND INSTRUMENTION LUMP SUM

The work under this Item shall include all materials, equipment, labor, and services required to install, protect, replace, monitor, and report on geotechnical instrumentation specified herein.

The work under this Item includes the following:

1. Pre-construction site-walk with the Engineer at least two weeks prior to the start of construction to determine locations of ground, surface, and utility monitoring points.
2. Preparation and implementation of a geotechnical monitoring and instrumentation plan with the following requirements:
   a. Pre-construction and post-construction visual examination of adjacent structures which shall include photographs or narrated videos and written reports. Adjacent structures to be examined include but are not limited to the following:
      i. Existing building at 60-62 Mill Street, Southbridge, MA 01550
      ii. Lazo's Café, 7 Mill Street, Southbridge, MA 01550
      iii. Existing building at 76 Mill Street, Southbridge, MA 01550
      iv. Existing buildings at 103-115 Mill Street, Southbridge, MA 01550
   b. Vibration monitoring shall be performed continuously during all excavation, backfill, compaction, installation of driven piles and installation of temporary support of excavation. Two seismographs shall monitor vibrations at two separate locations per crew; one adjacent to the work and one adjacent to the nearest vibration sensitive private property. Vibration levels at the vibration sensitive private properties shall not exceed the criteria specified herein.
   c. Furnish, install, protect, replace, monitor and report on ground surface and building deformation monitoring points. The Engineer will assist the Contractor in determining the final locations.
   d. At locations where structure and/or monitoring points are required on private property, the Contractor shall obtain a right of entry to obtain access. A Right of Entry form shall be obtained from the property owner prior to conducting an internal building inspection.
   e. The Contractor shall retain the services of Geotechnical Monitoring Consultant and Surveyor to install, monitor, maintain and report on geotechnical instrumentation that includes but is not limited to ground surface, building deformation monitoring points, Utility Monitoring Points, crack gauges and vibrations.
   f. Replace instrumentation damaged or made inaccessible by the construction operations at no additional cost to the Department.

MATERIALS

Deformation Monitoring Points

Deformation monitoring points which include Building or Structure Monitoring Points (SMPs), and Ground Surface Monitoring Points (GMPs) shall consist of 3-inch long surveyor's "PK" nails, securely nailed in place, a #4 rebar 12 inches long driven flush into the ground surface or ½-inch diameter carriage bolts drilled 2 inches into the building surface and extending approximately 3 inches from the building face. Surface monitoring points may also consist of an observable point punch marked on the top horizontal surface of a manhole or catch basin rim.

ITEM 100.95 (Continued)

The steel surface within 3 inches of the point shall be cleaned by wire brush to permit easy identification of the exact point. The point shall be clearly identified using fluorescent spray paint adjacent to the point.

Vibration Monitoring

Construction vibrations shall be monitored as described in the Contract Specifications in terms of peak particle velocity using a seismograph with continuous recording capability. Capability to record vibrations at two locations simultaneously is required. The vibration sensors shall be capable of recording three orthogonal components of vibration.

Utility Monitoring Points

1. Provide 2-inch PVC casing, threaded and coupled, as needed.
2. Provide No. 4 rebar, threaded and coupled, as needed.
3. Installation borehole shall be backfilled with cement-bentonite grout.

Crack Gauges

Provide a calibrated direct read building crack monitor consisting of overlapping glass or acrylic plates. The crack monitor shall be waterproof and weather resistant and shall be capable of being read to a resolution of 0.02-inch with a maximum horizontal range of at least 0.75-inch and a vertical range of at least 0.375-inch, and shall be bolted or epoxied to the surface.

For uneven surfaces, such as stone, pairs of flat washers should be used, with the distance between the washers measured with a caliper.

CONSTRUCTION METHODS

Submittals

The contractor shall submit the following:

1. Qualifications of the Geotechnical Monitoring Consultant and Surveyor submitted at least three weeks prior to construction.
2. Geotechnical Monitoring Plan. Submit Plan at least three weeks prior to any work that could cause vibrations. No vibration-causing activities may occur until the Plan has been accepted by the Engineer and the accepted instrumentation is in place. Plan shall contain, at a minimum:
    a. Drawings that indicate the instrumentation locations, sizes and material types
    b. Manufacturers' data and specifications, installation procedures, and other data. Provide description of work and materials.

ITEM 100.95 (Continued)

c. A mitigation plan that shall detail the Contractor's course of action in the event threshold or limiting response values are met or exceeded. Such mitigation plan shall be revised as appropriate for each instance threshold and/or limiting values are reached.

3. The Geotechnical Monitoring Consultant shall submit initial baseline survey data on a plan indicating locations and elevations of all instrumentation monitoring points to the Engineer at least three days prior to beginning of the installation of the temporary support of excavation, excavation operations or driven pile operations. The Geotechnical Monitoring Consultant and Surveyor shall submit subsequent survey data on all instrumentation monitoring points to the Engineer prior to beginning of work the following day. A faster turnaround of data reporting may be required by the Engineer if threshold or limiting response values, as specified in this Section, are approached or exceeded. Data shall be tabulated and depicted graphically on plots and show incremental and cumulative movement since the start of excavation or driven pile operations.

Quality Control

1. The Contractor shall provide sufficient notice to the Engineer to allow the Engineer to be present to observe the Work. Cooperate with the Engineer in all respects to facilitate any testing or observations.
2. The Contractor may conduct additional testing or monitoring for its own information, at no additional cost to the Department.
3. The presence of the Engineer (including observations and review of test results) shall not relieve the Contractor of their sole responsibility to perform the work in accordance with the Contract Documents, nor shall they be construed to relieve the Contractor from full responsibility for the means and methods of construction and for safety on the construction site.
4. Work not in conformance with the specified requirements shall be improved, or removed and replaced, at no additional cost to the Department. All costs related to testing of nonconforming Work or materials shall be paid for by the Contractor, at no additional cost to the Department.
5. Measure and report all data on movements of all instrumentation monitoring points to the nearest 0.01 ft.
6. Retain the services of a Geotechnical Monitoring Consultant to monitor the geotechnical instrumentation specified herein, which includes and is not limited to vibration monitoring.
   a. The Geotechnical Monitoring Consultant shall be a Geotechnical Engineer registered in the Commonwealth of Massachusetts and shall have demonstrated at least five years' experience and at least three projects of similar type, size, and complexity including installation and monitoring of vibrations with seismographs.
   b. The Geotechnical Monitoring Consultant shall be approved by the Engineer and must be approved two weeks prior to mobilization and construction.
   c. The Geotechnical Monitoring Consultant shall adhere to all methods and standards described in this Specification.

ITEM 100.95 (Continued)

7. Retain the services of a Surveyor to monitor the geotechnical instrumentation specified herein which includes and is not limited to building, structure, utility, ground, and excavation support system monitoring points.

The Contractor's Surveyor shall be registered in the Commonwealth of Massachusetts and shall have demonstrated at least five years' experience and at least three projects

a. Of similar type, size, and complexity including installation and monitoring of surface vertical and horizontal displacement points
b. The Contractor's Surveyor shall be approved by the Engineer and must be approved two weeks prior to construction
c. The Contractor's Surveyor shall adhere to all methods and standards described in this Specification.

Execution

A. General

Do not install any instruments until the Engineer has been properly notified. Contractor shall coordinate with owner and gain access as needed and notify the Resident Engineer accordingly.

B. Pre-Construction Site Walk

The Contractor, Engineer, and Geotechnical Monitoring Consultant shall perform a detailed visual examination of the Site and surrounding properties and document by photograph or narrated video the condition of existing retaining walls, on- and off-site buildings and improvements, including but not limited to:

1. Exterior facades
2. Locations of cracks, missing plaster, and damaged masonry
3. Damaged roofing
4. Walls or other features that are not vertical or out of plumb
5. Damaged foundations
6. Other damage that could be misconstrued as damage caused by the Contractor.

The Contractor shall prepare a Geotechnical Monitoring Plan as described above based on the findings of the pre-construction site walk.

C. Installation

Building or Structure Monitoring (SMPs)

1. SMPs shall be installed at the locations and depths as determined by the Geotechnical Monitoring Consultant during site walks prior to construction.
2. All SMPs shall have the horizontal as-built location determined to an accuracy of 0.5-feet and the elevation to an accuracy of 0.01-feet.

ITEM 100.95 (Continued)

Utility Monitoring Points (UMPs)

1. UMPs shall be installed at the locations and depths as determined by the Geotechnical Monitoring Consultant during site walks prior to construction and as required by the utility owner.
2. Where necessary, the Contractor shall install the UMPs by the use of vacuum excavation exercising due diligence not to disturb or damage the utility being monitored and to minimize disruption and damage to adjacent areas
3. The location of the utility in plan shall be determined and the borehole advanced to within a maximum of 2-feet above the utility. The Contractor shall be responsible for any damage to the utility during installation of the utility monitoring points. Drill casing may be used during the installation.
4. After completion of the installation, the as-built location in horizontal position shall be determined to an accuracy of 1-foot and in elevation to an accuracy of 0.01-feet.

Ground Surface Monitoring Points (GMPs)

1. GMPs shall be installed at the locations and depths as determined by the Geotechnical Monitoring Consultant during site walks prior to construction.
2. All GMPs shall have the horizontal as-built location determined to an accuracy of 0.5-feet and the elevation to an accuracy of 0.01-feet.

Seismographs

1. One seismograph shall be installed within 25 feet of the work zone in the direction of the nearest structure located outside of the work zone. The second seismograph shall be installed adjacent to the existing above grade structure nearest to the work. If there are no existing structures within 50 feet, the second seismograph shall be installed on a firm surface, 50 to 75 feet from the work zone in the direction of the nearest structure located outside of the work zone. Vibration sensors shall be firmly mounted on the surface of concrete or asphalt, or firmly on undisturbed soil.
2. The daily report shall clearly describe the location of the seismograph relative to the work zone and the work performed on that date.

Crack Gauges

1. Locations of existing building cracks shall be identified prior to the construction. For bidding purposes, the Contractor shall assume a minimum of 15 existing and new cracks will need to be monitored as part of the work of this Section.

D. Monitoring

Monitoring frequency may be increased as required by the Engineer for some or all of the monitoring points if the threshold or limiting response values are approached or exceeded during the Work, at no additional cost to the Department.

1. Seismographs shall be set up to monitor vibrations continuously during all excavation, backfill, compaction, driven pile operations and installation of temporary earth support. Two seismographs shall monitor vibrations at locations as described in Section C. Installation, Seismographs. Vibration levels shall not exceed the criteria indicated herein.

ITEM 100.95 (Continued)

2. Ground surface, building deformation monitoring points, Utility Monitoring Points, and crack gauges shall be monitored twice a week for all points located within 100 feet from the edge of the excavations, during all excavation, backfill, compaction, driven pile operations and installation of temporary earth support unless otherwise directed by the Engineer or specified.

After each set of readings is obtained, the data shall be sent to the Engineer, where the data will be reviewed and interpreted. The Contractor shall make its own interpretations of the data. The Contractor shall monitor and interpret data from additional instrumentation that it deems necessary to ensure the safety of its work. The Engineer is not responsible for the safety of the work based on its review of the instrumentation data.

E. Post-Construction Site Walk

The Contractor shall retain and pay an experienced Professional Engineer registered in the Commonwealth of Massachusetts to perform a post-construction survey of the existing structures (item 2.a) listed above to document the existing condition of the structures prior to the completion of construction activities. The purpose of the post-construction survey is to document any changes in the structures condition that may have occurred during the construction period. This survey, as a minimum, shall locate, measure, photograph and otherwise document any visible checks, defects, distortions, settlement, and other signs of distress on the existing structures, including the post-construction condition of items noted during the pre-construction survey to the greatest extent possible. The product shall be an original written report stamped and signed by the Professional Engineer performing the survey and four (4) copies, including photographs, digital files, sketches, and attachments, which shall be submitted to the Engineer no later than two weeks after pavement and finishes are installed on the new roadway. A copy of the report shall be distributed to the MassDOT Engineer.

F. Reporting Data

1. A plan showing location and numbering system for monitoring points shall be submitted to the Engineer prior to start of excavation or other vibration-causing activities, along with results of two initial baseline surveys.
2. Tables of results of surveys shall be submitted prior to the beginning of work the following day. The table of survey results shall include the initial measurement, the current measurement, and the amount of movement since the start of excavation.
3. Survey data shall be depicted graphically on plots and submitted with the tabular results to show incremental and cumulative movement since the start of excavation.
4. Criteria for "threshold" and "limiting" vibration acceptance measured from seismographs during demolition, construction of temporary excavation support, excavation and backfilling and driving of piles shall be as follows:
   a. "Threshold" values in peak particle velocity (inches per second): for wood, steel and brick buildings shall be 0.6, and for historical stone structures 0.3 as measured from the ground surface within the limits of the work zone or adjacent areas where vibrations are monitored.

ITEM 100.95 (Continued)

b. "Limiting" values in peak particle velocity (inches per second): for wood, steel and brick buildings shall be 0.8, and for historical stone structures 0.5 as measured from the ground surface within the limits of the work zone or adjacent areas where vibrations are monitored.

5. Criteria for "threshold" and "limiting" settlement of GMPs located on the sidewalk or paved roadway areas adjacent to the temporary lateral support systems have been established as follows:
   a. "Threshold" Settlement: No greater than 0.25 inch.
   b. "Limiting" Settlement: No greater than 0.5 inch.
6. Criteria for "threshold" and "limiting" settlement of UMPs adjacent to the temporary lateral support systems have been established as follows:
   a. "Threshold" Settlement: No greater than 0.25 inch.
   b. "Limiting" Settlement: No greater than 0.5 inch.
7. Criteria for "threshold" and "limiting" angular distortion (measure of building rotation due to vertical settlement) of SMP on adjacent buildings have been established as follows:
   a. "Threshold" Angular Distortion: No greater than 1/1000 for wood, steel and brick buildings. No greater than 1/1200 for historical stone structures. Where the angular distortion is defined as the ratio of the differential elevation between any two building points over the horizontal distance between those points.
   b. "Limiting" Angular Distortion: No greater than 1/750 for wood, steel and brick buildings. No greater than 1/900 for historical stone structures. Where the angular distortion is defined as the ratio of the differential elevation between any two building points over the horizontal distance between those points.
8. The Contractor shall immediately notify the Engineer and shall take immediate steps to control further movement by revising construction procedures, providing supplemental bracing or other measures (working extended hours as approved or temporarily terminating work in the area of movement if necessary) as required if any of the following occur:
   a. Field measurements indicate that any of the "threshold" movement criteria are reached or exceeded.
   b. Field measurements or observations indicate that significant or sustained wall movements, beyond those reasonably expected, are occurring (total movement may be less than the "Limiting" movement criteria).
   c. Movements of adjacent structures, utilities or other facilities are detected.
9. If "Limiting" movements are being approached or reached, the Engineer and/or the Department may require the Contractor to temporarily suspend the work in the area where such movement is occurring and implement all necessary mitigation measures which are satisfactory to the Engineer, to arrest the movements, at no cost to the Department.
10. Installation of Work in the area where the Limiting Values had been reached shall not be permitted until the results of optical surveys indicate that no increase in lateral movement of the earth support system and adjacent surface and building settlement for the one-week period immediately prior to resuming construction.

ITEM 100.95 (Continued)

11. These criteria are intended to establish a minimum basis for the Contractor's design and procedures and do not relieve the Contractor of its responsibility for preventing detrimental movements and damage to adjacent structures, utilities or other work.
12. The Contractor shall pay a penalty $1,000 for each day the Contractor works in violation of any threshold or limiting values being reached or exceeded as determined by the Engineer.
13. In the event the Contractor does not comply with the approved mitigation plan or continues to work in violation of threshold or limiting values being reached or exceeded, the Contractor shall not be allowed to continue work until proper mitigation procedures and corrections have been made as required by the Engineer and the Department.
14. The Contractor shall be responsible for repairing all property damage caused by construction activities.

G. Protection of Instrumentation

Protect all instruments during the course of the Work. Any damage or loss of function caused by the Contractor's operations, or by any other cause, to new or existing instrumentation devices, shall be immediately repaired or the equipment replaced at no additional cost to the Department.

BASIS OF PAYMENT

Item 100.95 will be paid for at the Contract unit price Lump Sum, which price shall include all labor, materials, equipment, submittals, and all incidental costs required to complete the work.

ITEM 102. SELECTIVE CLEARING AND THINNING ACRE

The work under this item shall conform to the relevant provisions of Subsection 101 of the Standard Specifications and the following:

The work shall include clearing, cutting, removal and disposal of vegetation and debris as needed for the construction of the bridge and clearance to the temporary overhead wires. This work shall occur in two locations: Bridge S-21-003 on the east side and Bridge S-21-009 on the west side.

The stumps of trees that are removed shall also be removed.

Grubbing of the entire area identified on the plans is not required.

Tree trimming may be used instead of tree removal.

ITEM 102.3 HERBICIDE TREATMENT OF INVASIVE PLANTS HOUR

This work must be performed by persons who meet the qualifications below and are approved by the Landscape Design Section.

Work under this item consists of herbicide treatment of invasive plants currently existing within the project limits and as directed. An Invasive Plant Management Strategy (IPMS) shall be submitted to the Engineer for review and approval and the IPMS shall be implemented on-site. The IPMS shall be written and submitted per Item 102.33 Invasive Plant Management Strategy and shall be measured and paid for under that Item.

Work under this item shall be coordinated with work and schedule for Selective Clearing, Clearing and Grubbing, Mowing, Tree Removal, Planting, and Wetland Mitigation items.

Payment is per hour on-site and shall be compensation for a minimum crew of 2 licensed applicators, 2 back-pack sprayers and mist-blowers, a properly equipped spray truck with spray hoses, and a tank with sufficient capacity for a full day of work. If there is only one applicator, hourly payment shall be adjusted to 50 percent of the unit price.

Date and time stamped photos indicating start and stop time of work must be submitted if requested.

This item is not intended for manual removal of plants.

Management of plants determined to have been introduced to the site via imported loam, compost, mulch, plants, equipment, or other construction activities will be the Contractor's responsibility and at the Contractor's expense.

Herbicide shall be applied during daytime hours only.

Measures to prevent the introduction of invasive plant species to the site and to address introduction due to construction-related activities shall be covered under the Standard Specifications, Division I - Subsections 7.01(D) Plant Pest Control and 7.13 Protection and Restoration of Property as amended in these Special Provisions.

Plant species targeted for management under this item shall be as determined in the field per the site walk and as specified in the IPMS.

The definition of invasive plant species shall be as described by Massachusetts Invasive Plant Advisory Group (MIPAG): "non-native species that have spread into native or minimally managed

plant systems in Massachusetts, causing economic or environmental harm by developing self-sustaining populations and becoming dominant and/or disruptive to those systems."

ITEM 102.3 (Continued)

Control of invasive plants shall begin immediately with the initiation of construction activities and prior to any clearing or site disturbance. Treatment areas shall include stockpile locations and may, upon approval of the Engineer, extend outside the project limit. Treatment shall be done each consecutive year for the duration of the contract unless specified otherwise in the IMPS or unless directed otherwise by the MassDOT invasive species contact. Work shall be done during the growing season from May – October unless otherwise specified in the IPMS.

Areas identified for vegetation control measures shall be as shown on the plans and as determined in the field by the Engineer and a MassDOT Landscape Architect. Contact at MassDOT Landscape Design Section may be contacted at: Tara.Mitchell@dot.state.ma.us.

QUALIFICATIONS

The applicators shall submit and meet the qualifications outlined below. A list of contractors specializing in invasive management and approved by MassDOT Landscape Design Section is available on the following website: https://www.mass.gov/lists/landscape-design-and-roadside-maintenance under Invasive Plant Management.

Requirements

1. Company must provide proof of qualifications by providing the following:
    a. Narrative describing company, its expertise and experience with invasive plant control.
    b. Demonstrate experience with herbicide treatment as part of restorations and in sensitive areas.
    c. Describe company's technical qualifications and past performance.

2. Company must meet licensing requirements:
    a. All crew applicators must have a Massachusetts Commercial Applicator License (CORE).
    b. At least one or more applicator must have a ROW certification, if required for work.
    c. Company must provide name(s) of applicator(s) and Applicator License/Certification number for all contractor crew leaders working on the project.
    d. Company must provide documentation of any warnings, penalties or fines received in the last three (3) years.

3. Company must provide proof of experience with invasive plant control and include following:
    a. At least five (5) references from prior invasive plant control work completed in last five (5) years. Provide contact information including address, phone number and email.
    b. Provide a summary of each of these projects including nature of the problem, specific invasive vegetation treated, dates and period of treatment, methodologies used, and summary of success or not in terms of meeting performance objectives. Include summary of equipment used.
    c. Photo documentation of these projects.
    d. GPS coordinates of project locations, if available.

ITEM 102.3 (Continued)

4. Crew leader must have expertise with invasive plant control and provide the following:
   a. Have held Core license for at least five (5) years.
   b. Resume listing five (5) or more years of experience applying pesticides with the company or with another company specializing in vegetation management.

SUBMITTALS

No work shall begin without approval of the submittals.

Submittals include the following items:

Invasive Plant Management Strategy (IPMS)

At least thirty (30) days prior to proposed treatment the IPMS shall be submitted for approval by the Engineer and MassDOT Landscape Architect. All chemicals, methods and work done under this item shall be consistent with the IPMS. The IPMS shall be as described under Item 102.33.

Herbicide Use Report

Within two (2) weeks after each application, the Contractor shall provide to the Engineer and the MassDOT Landscape Architect a completed and signed MassDOT Herbicide Use Report.

Photo Documentation

Digital photos with date and time of herbicide application work, showing start time and completion time, are required and must be submitted for measurement of payment upon request.

MATERIALS

All proposed herbicides shall be as approved in the IPMS. Herbicides shall be labeled for the method of treatment and shall meet all federal, state and local regulation requirements. Application rates will depend on herbicide proposed and shall be per the manufacturer's label for specific application.

METHODS

All methods used shall be as approved in the IPMS which shall be determined during the Initial Site Walk as described under Item 102.33 Invasive Plant Management Strategy.

The Contractor shall be responsible for marking delineated areas and plants to be preserved, removed, or otherwise treated. Fencing or other materials needed for marking and delineating protected areas shall be incidental to this item.

The Contractor shall notify the Engineer a minimum of 3 days prior to date of expected herbicide application. Applicators shall notify the Engineer upon arriving on-site and upon leaving the site.

ITEM 102.3 (Continued)

Herbicide Applications

All herbicide application shall conform to Massachusetts Pesticide Laws and Regulations per the Massachusetts Department of Agricultural Resources (MDAR) Pesticide Bureau.

Mixing, applying and/or disposing of herbicides shall always be in accordance with instructions on their labels and all applicable federal, state, and local regulations. Mixing shall not occur within sensitive areas, wetlands, or buffer zones.

Contractor shall not spray 2 hours prior to precipitation, during rain, or during windy conditions. The Contractor shall be responsible for monitoring weather conditions and adjusting the work schedule as appropriate for the herbicide and application method to be used.

Targeted vegetation shall be identified and marked prior to treatment. Plants treated by foliar spray, injection or glove application or other methods that leave standing vegetation, as opposed to cut-stump application, shall remain clearly marked for identification through the contract period.

Desirable vegetation shall be protected from both spray and other physical damage.

Contractor is responsible for any damage to vegetation not designated for removal or treatment. Vegetation damaged shall be restored. Cost of replacement plants and/or restoration shall be borne by the Contractor.

Contractor shall ensure that the public does not enter a work area while herbicide application or spraying is underway.

Disposal Of Invasive Plant Material

All material to be cleared shall become the property of the Contractor. The satisfactory disposal of all cleared plant material (seeds, roots, woody vegetation, associated soils, etc.) shall be the Contractor's responsibility.

The Contractor shall take measures to prevent viable plant material from leading to further infestations (seeds, roots, woody material, etc.) while stockpiled, in transit, or at final disposal locations. All precautions shall be taken to avoid contamination of natural landscapes with invasive plants or invasive plant material.

Chipping, shredding, or on-site burning of plant material must be approved by the Engineer and included in the IMPS.

For plant material taken to an incinerating facility per the IPMS, a receipt from that facility shall be submitted to the Engineer as proof of disposal.

ITEM 102.3 (Continued)

Where feasible, it is preferable to dispose of plants on-site or to bury them on-site with on-going monitoring for re-sprouting. Disposal locations and methods must be approved and included in the IPMS. Site work such as grading and seeding to stabilize and restore disposal area shall be incidental to this item.

The Contractor shall be responsible for treating or otherwise managing areas of re-growth due to improper disposal. Treatment shall be at the Contractor's expense.

Follow-Up Treatment

Plants and areas shall be re-treated as necessary and as appropriate to the time of year. Treatment shall be for the duration of the contract and per the IPMS.

MEASURE OF SUCCESS

The expectation is a minimum of 85-95 percent control achieved after the first treatment, depending on plants targeted and extent of population, and based on the expectations laid out in the IPMS. The expectation for the contract duration is 95-100% eradication by the end of the treatment period, unless otherwise specified in the IPMS.

METHOD OF MEASUREMENT

Item 102.3 will be measured for payment by the Hour of verified crew time spent on the project doing herbicide application as and where specified herein and in the IPMS. A crew shall be defined as a minimum of two licensed applicators each equipped with (at minimum) back-pack sprayer and mist blower. The crew shall also have a properly equipped spray truck with hoses and a tank with sufficient capacity for a full day of work.

BASIS OF PAYMENT

Item 102.3 will be paid at the contract unit price per Hour, which price shall include all labor, materials, equipment, tools, and all incidentals required to complete the work.

Payment will be based upon verified time spent on the project doing herbicide application as and where specified in the IPMS and upon receipt and approval of submittals. Payment will not include travel time to and from the Contractor's place of business and nor time for investigative field trips.

If there is only one applicator, hourly payment shall be adjusted to 50 percent of the unit price.

The Invasive Plant Management Strategy will be paid for under Item 102.33.

ITEM 102.33 INVASIVE PLANT MANAGEMENT STRATEGY HOUR

This item consists of providing an Invasive Plant Management Strategy (IPMS) for the control of invasive plants currently existing on the project site and/or as directed and shall be coordinated with Item 102.3 Herbicide Treatment of Invasive Plants. Unless otherwise approved, the IPMS shall be submitted in the form of the MassDOT Invasive Plant Management Strategy Report Form.

The IPMS shall be submitted for review and approval by the MassDOT Landscape Design Section or their representative, and the IPMS shall be implemented on-site.

The Invasive Plant Management Strategy Report Form is available online at https://www.mass.gov/lists/landscape-design-and-roadside-maintenance under Invasive Plant Management.

Herbicide treatment for invasive plants shall be as described under Item 102.3 Herbicide Treatment of Invasive Plants and shall be compensated per that Item.

Work under this item shall be coordinated with work and schedule for Selective Clearing, Clearing and Grubbing, Mowing, Tree Removal, Planting, and Wetland Mitigation as relevant to the project.

Individual attending the site walk and determining the Invasive Plant Management Strategy must demonstrate expertise with vegetation management and invasive plant control and submit qualifications as described below.

QUALIFICATIONS

Individual shall be from the same company as that providing services for Item 102.3 Herbicide Treatment of Invasive Plants and shall submit the following, if not submitted under Item 102.3:

- Submit copy of current Core license.
- Submit a resume listing five (5) or more years of experience managing invasive plants with a company specializing in vegetation management.
- References shall be submitted if requested.

SUBMITTALS

Task Summary & Reports

For measurement of payment, the contractor shall submit the total sum and a breakdown of hours for the tasks performed. At a minimum, the tasks shall include the Initial Site Walk, submittal of an approved IPMS, and if requested to accommodate project or site changes, a Follow-up Site Inspection and accompanying IPMS Amendment.

ITEM 102.33 (Continued)

Interim Site Monitoring Reports and/or a Final Report shall be submitted if requested by the MassDOT Landscape Design contact. The MassDOT Landscape Design contact must be notified to attend the site inspection walk when an Interim or Final Report has been requested.

Invasive Plant Management Strategy (IPMS)

At least thirty (30) days prior to construction activities and/or any proposed treatment, the contractor shall submit the IPMS for approval by the Engineer and MassDOT Landscape Architect. All chemicals and methods proposed shall be consistent with applicable Massachusetts Wetlands Protection Act Order of Conditions.

The IPMS shall be completed in coordination with the Prime Contractor and the Engineer and shall include the following as appropriate and applicable to the project and to the IPMS Report Form questions and Guidance:

I. Project Information
- a. Company writing the IPMS and performing the herbicide application.
- b. Date of site walk
- c. Attendees at site walk
- d. Expected end date of contract and expected last treatment (month/season)

II. Brief Description of Conditions
- a. Provide a free-hand sketch on construction plans or aerial image showing species, location, and as relevant, show or note extent of population as relevant to Strategy (i.e., population extends off ROW preventing eradication, small population and eradication deemed feasible within contract schedule, etc.).

III. Coordination with Roadway Contractor regarding other work
- a. Tree Work: Note coordination to be implemented with tree removal, clearing, and clearing and grubbing as applicable to the project.
- b. Wetland Mitigation - Include management proposed for wetland mitigation areas in the IPMS, if and as required.
- c. Planting: If there will be planting in areas proposed for treatment, propose treatment and schedule to avoid herbicide damage to plants.
- d. Mowing: If coordination is required with state mowers, note need in IPMS.

IV. Soil Management
- a. Provide specifics on how soil with invasive plant roots (in particular) or seeds will be handled (i.e., separate stockpiles, plant material will be buried on-site, re-used on-site, disposed off-site and if so, where?).
- b. Show stockpile locations on plan and include treatment schedule.
- c. Note measures that will be implemented to avoid spread through equipment, including how and where equipment will be cleaned.

V. Invasive Plant Treatment & Management
- a. Proposed chemical and methods of treatment for each species or area.
- b. Time of treatment based on target plant species.

ITEM 102.33 (Continued)

c. Submit product label including application methods and rates (entire MSDS information need not be submitted if available online).
d. Proposed performance metrics or measure of treatment success if different from that specified under Item 102.3.
e. Method for disposing invasive plant material. This includes material that may result in spread (i.e., seeds, roots) and material that has been treated and/or is not viable (foliage, dead wood, etc.). Methods may include grinding in place, stockpiling and treating, and incinerating offsite.
f. Expected follow-up treatment for duration of contract.

VI. Monitoring Schedule if requested by MassDOT.

Note: The IPMS is critical for identifying pre-construction conditions as well as strategies for minimizing import or spread of invasive plants. Failure to provide an approved IPMS may jeopardize this item, in which case, the contractor will be responsible for management of invasive plants found on-site at no cost to the contract.

Photo Documentation

Digital photos of site conditions, typical species, and extent of infestation must be provided with the IPMS and with any follow-up monitoring or reporting. Photos of follow-up monitoring and reporting must be date and time stamped for acceptance.

METHODS

Initial Site Walk

Prior to any construction activities and soil disturbance, the Contractor shall walk the site with the Engineer and the MassDOT Landscape Architect to determine the IPMS. During the site walk the Contractor shall identify limits of work and, as necessary, mark locations of areas designated for treatment and individual plants targeted for treatment or removal. The Contractor shall be responsible for marking delineated areas and plants to be preserved, removed, or otherwise treated. Fencing or other materials needed for marking and delineating protected areas shall be incidental to this item.

IPMS Follow-up Amendment

The IPMS may be amended to address additional concerns or adjust to conditions if required by the MassDOT Landscape Architect. The amended IPMS shall be submitted to the Engineer and MassDOT Landscape Architect for approval at least fourteen (14) days prior to any proposed treatment.

Interim Site Monitoring Inspection Reports

If required by the MassDOT Landscape Architect and Engineer, Interim Site Monitoring and an accompanying report shall be conducted. Interim Reports must include time and date stamped photos showing treated locations and species.

ITEM 102.33 (Continued)

Final Inspection

A final inspection and report documenting the status of the invasive control may be required for regulatory purposes or for instances where control will be continued by others. The report shall include photo documentation of pre-construction (existing) and post-treatment conditions, notations on a plan or aerial image of area treated, summary of treatment performed, and control achieved. Final reports submittal must include time and date stamped photos.

METHOD OF MEASUREMENT

Item 102.33 will be measured for payment by the Hour. The basis for measurement shall be per the completion of tasks as approved under the Task Summary submittal and acceptance of submittals and photos described above.

BASIS OF PAYMENT

Item 102.33 will be paid at the contract unit price per Hour, which price shall include all labor, materials, equipment, tools, and all incidentals required to complete the work. Payment shall not include travel time to and from the Contractor's place of business.

ITEM 102.511 TREE PROTECTION – ARMORING AND PRUNING EACH

The work under this item shall conform to the relevant provisions of Sections 771 of the Standard Specifications and the following:

Tree protection – armoring and pruning shall be used for instances where construction activity (the use of heavy equipment), comes within proximity to potentially damage tree trunk(s) or limbs.

The work shall include the furnishing and installing of temporary tree trunk protection, minor limb pruning, or removal of lower tree limbs to prevent injury to the tree from construction equipment and activities; as shown on the Drawings; and/or as required by the Engineer.

REFERENCES

If requested, the Contractor shall provide to the Engineer one copy of the latest edition of the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance: Part 1-Pruning and Part 5-Construction Management Standard. Provision of reference shall be incidental to this item.

MATERIALS

Trunk armoring shall be such that it prevents damage to the trunk from construction equipment. Material used for trunk armoring or mounting shall be such that installation and removal shall not damage the trunk.

Acceptable trunk armoring materials shall include two by four (2x4) wood cladding, mounted with wire or metal strapping, or when duration of construction activities is less than three months, slotted corrugated plastic pipe, mounted with duct tape. Eight (8) once untreated burlap shall be used to wrap the tree trunk prior to installation of cladding.

Alternative armoring methods or materials may be acceptable if approved by the Engineer.

The height of tree trunk cladding shall be measured from the base of the tree (including root flare) to the bottom of the first branch, or to a height of eight (8) feet, or as may be required by the Engineer.

METHODS OF WORK

Prior to construction activities, the Engineer, Contractor, and the Arborist (if item is included in the contract), shall review trees noted on the Drawings to be protected. Final decision and selection of trees to be armored and/or pruned shall be per the Engineer.

Care shall be taken to avoid damage to the bark during installation and removal of armoring. Trunk armoring shall be maintained such that it is effective for as long as required or replaced when materials are found to be damaged or ineffective, as determined by the Engineer. Replacement, if required, shall be incidental to the work. Armoring shall be removed immediately upon completion of work activities adjacent to the protected tree(s).

ITEM 102.511 (Continued)

Pruning of limbs shall conform to the techniques and standards of the most recent ANSI A300 standards.

DAMAGES OR LOSS

If trees designated for protection under this item are damaged, including root damage from unapproved trespassing onto the root zone, the Contractor shall, at his own expense, secure the services of an Arborist, as described below. The Arborist shall be approved by MassDOT.

If, based on the recommendation of the Arborist, the Engineer determines that damages can be remedied by corrective measures, such as repairing trunk or limb injury; soil compaction remediation; pruning; soil injection fertilization; and/or watering; the damage shall be repaired as soon as possible, within the appropriate season for such work and according to industry standards.

If, based on the recommendation of the Arborist, the Engineer determines that damages are irreparable, or that the damages are such that the tree is sufficiently compromised to pose a future safety hazard, the tree shall be removed. Tree removal shall include cleanup of all wood, grinding of the stump to a depth sufficient to plant a replacement tree or plant, removal of all chips from the stump site, and filling the resulting hole with topsoil. Such tree removal(s), grinding, debris removal, and topsoil filling, shall be at the Contractor's expense.

Tree removal from improper or inadequate tree protection shall result in the Engineer assessing the Contractor monetary damages consistent with industry standards for assessed value and/or replacement.

ARBORIST

Arborist shall be an International Society of Arboriculture (ISA) Certified Arborist or a Massachusetts Certified Arborist. The Arborist shall have at least 10 years of experience in tree care, including tree protection during construction, and shall demonstrate a familiarity with the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance Part 1Pruning, Part 5 Construction Management Standards, and Part 9 Tree Risk Assessment.

The Arborist's general responsibilities include protecting high priority trees within and adjacent to the project limits, stating areas, and access routes; recommending removal of diseased, damaged or otherwise unhealthy trees that pose a potential safety hazard; evaluating effects of construction on future health of trees close to proposed work; and recommending and/or overseeing tree work amd care.

The Arborist for this item shall not be from the same company as the company responsible for selective clearing or tree removal work.

ITEM 102.511 (Continued)

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 102.511 will be measured and paid at the contract unit price per EACH tree to be armored and pruned. This will include full compensation for all labor, equipment, materials, and incidentals for the satisfactory completion of the work and the subsequent removal and satisfactory disposal of the protective materials upon completion of the contract or as required by the Engineer.

Payment for work under this item will be scheduled as follows:

- 40% of the value shall be paid upon installation of trunk armoring and completion of pruning work, if required.

- 60% of the value shall be paid at the end of construction operations that would potentially damage the tree and after protection materials have been removed and properly disposed of by the Contractor. In the event of repairable damages, payment shall be made after the completion of remediation measures.

No separate payment will be made for costs of remedial actions, including Arborist services, tree removal, but all costs in connection therewith shall be included in the Contract unit price bid.

Tree damages assessed, due to lack of or improper tree and plant protective measures being taken, shall be deducted from the contract price of the work.

ITEM 102.521 TREE AND PLANT PROTECTION FENCE FOOT

The work under this Item shall conform to the relevant provisions of Sections 644 and 771 of the Standard Specifications and the following:

Work under this item shall consist of furnishing, installing, and maintaining tree and plant protection fence(s) in a vertical and taut position; removing and resetting fencing as may be required; and final removal of protection fence(s) at the completion of construction activities, or as otherwise required by the Engineer.

The purpose of the fencing is to signify a construction work-free zone and physical barrier, thereby preventing damage to tree roots, tree trunks, soil, and all other vegetation within this delineated Tree and Plant Protection Zone (TPPZ), as shown on the Drawings, as required by the Engineer, and as described herein.

Protection shall be for the duration of the construction activities unless otherwise required by the Engineer.

MATERIALS

Tree and plant protection fence(s) shall provide a minimum forty-eight (48) inch tall barrier, that remains vertical and taut. The Fence shall be orange plastic safety fence (recommended where high visibility is necessary), or wooden snow fencing, or other approved material. Posts and anchoring materials shall be incidental to the work.

Per requirements of the Engineer, additional posts, deeper post depths, and/or additional attachments shall be used if the fabric or fence sags, leans or otherwise is not providing visible or physical protection to the TPPZ.

REFERENCES

If requested, the Contractor shall provide to the Engineer one copy of the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance Part 1, Pruning and Part 5, Construction Management Standard. Provision of reference shall be incidental to this item.

ESTABLISHMENT OF THE TPPZ

Fencing shall be used to delineate and establish the TPPZ, adjacent to construction areas, staging areas, stockpile areas, as shown on the Drawings, and/or as required by the Engineer.

Fencing shall be located as close to the work zone limit and as far from tree trunk(s) and plants as possible to maximize the area to be protected. Fence shall run parallel and adjacent to construction activity to create a barrier between the work zone and the root zone or designated limit of plants and soils to be protected.

ITEM 102.521 (Continued)

When construction activities surround (or have the potential to surround) trees or plants to be protected, a circular enclosure shall be used. In these instances, the TPPZ limit shall be the drip line of each tree or as close as possible to the drip line, and/or as shown on the Drawings. The drip line is defined as the outermost limit of tree canopy.

The Contractor shall not engage in any construction activity within the TPPZ without the approval of the Engineer. Activities may including operating, moving, or storing equipment, supplies, or materials; and locating temporary facilities, including trailers or portable toilets, Accessing or traversing the TPPZ shall not be permitted.

METHOD OF WORK

TPPZ fencing shall be installed prior to any construction work or staging activities. Fence(s) shall be repositioned where and as necessary for optimum tree and plant protection. Repositioning shall be incidental to this item. TPPZ fencing shall not be moved without prior approval by the Engineer.

The TPPZ shall be protected at all times from compaction of the soil; damage of any kind to trunks, bark, branches, leaves, and roots of all plants; and contamination of the soil with construction materials, debris, silt, fuels, oils, and any chemicals substance.

After construction activities are completed, or when required by the Engineer, fencing, stakes, and other anchoring materials, if any, shall be removed and disposed off-site by the Contractor.

REQUIRED WORK WITHIN THE TPPZ

In the event that grading, trenching, utility work, or storage is unavoidable within the TPPZ, the Engineer shall be notified. Measures may be required for tree protection and preservations, including air spading; the use of six (6) inch depth of wood chips or approved matting for root protection; pruning of branches; and/or trunk protection. These protection measures shall be paid under applicable contract items.

Landscaping work specified within the TPPZ shall be accomplished by hand tools. Where handwork is not feasible, with permission of the Engineer, work shall be conducted with the smallest mechanized equipment necessary.

TREE AND PLANT INJURY OR LOSS

If the TPPZ is encroached by construction activity without approval, at the discretion of the Engineer, the Contractor may be required to provide a more durable barrier (e.g., Jersey Barriers, chain link fence (if not already in use) to secure the area. Costs of furnishing and installing additional or more durable barrier(s) shall be borne by the Contractor.

ITEM 102.521 (Continued)

In such cases of encroachment, soils shall be considered compacted and tree root injury will be assumed. Action shall be taken as specified below.

In the event that trees designated for protection under this item are injured, including root injury from unapproved trespassing onto the root zone, the Contractor shall, at his own expense, secure the services of an Arborist, as described below. The Arborist shall be approved by MassDOT.

In the event of spills, compaction or injury, the Contractor shall take corrective action immediately using methods approved by the Engineer, in coordination with the Arborist.

If, based on the recommendations of the Arborist, the Engineer determines that injuries can be remedied by corrective measures, such as repairing trunk or limb injury, soil compaction remediation, pruning, and/or watering; the injury shall be repaired as soon as possible, within the appropriate season for such work, and according to industry standards.

If, based on the recommendations of the Arborist, the Engineer determines that injuries are irreparable, or that the injuries are such that the tree is sufficiently compromised to pose a future safety hazard, the tree shall be removed. Tree removal shall include cleanup of all wood, grinding of the stump to a depth sufficient to plant a replacement tree or plant, removal of all chips from the stump site, and filling the resulting hole with topsoil. Such tree removal(s), grinding, debris removal, and filling, shall be at the Contractor's expense.

Tree removal from improper or inadequate protection of the TPPZ shall result in the Engineer assessing the Contractor monetary damages consistent with industry standards for assessed value and/or replacement.

Shrubs removals from improper or inadequate protection of the TPPZ shall be replaced with plants of similar species and equal size or the largest size plants reasonably available. The Engineer shall approve the size, quality, and quantity of the replacement plant(s). Each replacement shall include a minimum of one year of watering and establishment care, specified under Section 771.

ARBORIST

Arborist shall be an International Society of Arboriculture (ISA) Certified Arborist or a Massachusetts Certified Arborist. The Arborist shall have at least 10 years of experience in tree care, including tree protection during construction, and shall demonstrate a familiarity with the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance Part 1Pruning, Part 5 Construction Management Standards, and Part 9 Tree Risk Assessment.

The Arborist's general responsibilities include protecting high priority trees within and adjacent to the project limits, stating areas, and access routes; recommending removal of diseased, damaged or otherwise unhealthy trees that pose a potential safety hazard; evaluating effects of construction on future health of trees close to proposed work; and recommending and/or overseeing tree work amd care.

ITEM 102.521 (Continued)

The Arborist for this item shall not be from the same company as the company responsible for selective clearing or tree removal work.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Tree and Plant Protection Fence will be measured by the FOOT, complete in place, by the length along the top of the fence.

Tree and plant protection fence will be paid for under the contract unit price per FOOT, complete in place and shall include all materials, labor, and equipment required to furnish, install, anchor, maintain, and remove the fence upon completion, as described herein. Posts, temporary footings, anchoring and removal upon completion, shall be incidental to this item.

No separate payment will be made for costs of remedial actions, including addition of more durable barriers, Arborist services, tree or plant removal, shrub replacement and establishment, but all costs in connection therewith shall be included in the Contract unit price bid.

Tree damages assessed, due to lack of or improper tree and plant protective measures being taken, shall be deducted from the contract price of the work.

Payment for work under this item will be scheduled as follows:

- Forty (40) percent of the value payment will be made upon installation of fencing.
- Sixty (60) percent of the value payment will be made when fencing materials have been maintained to function as specified, for the intended duration, and removed and disposed off-site at the completion of protection measure requirement.

ITEM 114.1 DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. S-21-003 LUMP SUM

The work under this Item shall conform to the relevant provisions of Subsection 112 of the Standard Specifications and the following:

The work under this Item consists of the removal and disposal of the superstructure of the existing Mill Street over Quinebaug River bridge. This includes but is not limited to the asphalt/concrete bridge deck and sidewalks, the 7 steel beams, the bridge railing, and existing utilities carried by the bridge as shown on the Plans.

The crane picks for superstructure demolition, shall be in conformance with the intent of Subsection 960.67A: Erection, of the Standard Specifications.

Refer to Item 100.95 Geotechnical Monitoring and Instrumentation for requirements for demolition near adjacent buildings and structures.

SUBMITTALS

The Contractor shall submit their proposed method of demolition including equipment, tools, devices, etc. to the Engineer for review and approval. The demolition procedure and any necessary calculations and drawings shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts and submitted for approval. Work under this Item may not commence until the Engineer has given written acceptance of the method of demolition.

During the prosecution of the work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the existing structure or any part thereof.

CONSTRUCTION METHODS

The Contractor shall protect pedestrian traffic from their construction operations. Materials shall be removed carefully so as to avoid damage to adjacent utilities. During the prosecution of this work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the remaining superstructure or any part thereof.

The Contractor shall locate and protect from damage all existing utilities. The Contractor shall contact utility companies to verify existing utilities and locations and coordinate proposed utility locations prior to demolition and construction.

The Contractor is solely responsible for maintaining the stability of the existing structures, at all times, during the demolition and construction operations. Any designs for temporary strengthening or bracing of portions of the existing structure to remain are the responsibility of the Contractor. Design of temporary strengthening or bracing of portions of the existing structure shall be included in the demolition plan and procedure package.

ITEM 114.1 (Continued)

The Contractor shall exhibit care not to drop any debris into the waterway below.

All materials removed shall become property of the Contractor.

BASIS OF PAYMENT

Item 114.1 will be paid for at the Contract unit price Lump Sum, which price shall include all labor, materials, equipment, submittals, and all incidental costs required to complete the work.

Payment of 50% of the Lump Sum price of this item will be made upon complete Stage I Demolition.

The remaining 50% of the Lump Sum price of this Item will be paid following complete Stage II Demolition.

Temporary protective shielding shall be paid for under Item 994.01.

ITEM 114.2 DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. S-21-009 LUMP SUM

The work under this Item shall conform to the relevant provisions of Subsection 112 of the Standard Specifications and the following:

The work to be done under this Item consists of the removal and disposal of the superstructure of the existing Mill Street over McKinstry Brook bridge. This includes but is not limited to the asphalt/concrete bridge deck and sidewalks, the prestressed beams, the bridge railing, and the existing utilities carried by the bridge as shown on the Plans.

The work under this Item, including but not limited to crane picks for superstructure demolition, shall be in conformance with the intent of Subsection 960.67A, Erection, of the Standard Specifications.

Refer to Item 100.95 Geotechnical Monitoring and Instrumentation for requirements for demolition near adjacent buildings and structures.

SUBMITTALS

The Contractor shall submit their proposed method of demolition including equipment, tools, devices, etc. to the Engineer for review. The demolition procedure and any necessary calculations and drawings shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts. Work under this Item may not commence until the Engineer has given written acceptance of the method of demolition.

During the prosecution of the work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the existing structure or any part thereof.

CONSTRUCTION METHODS

The Contractor shall protect pedestrian traffic from their construction operations. Materials shall be removed carefully so as to avoid damage to adjacent utilities. During the prosecution of this work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the remaining superstructure or any part thereof.

The Contractor shall locate and protect from damage all existing utilities. The Contractor shall contact utility companies to verify existing utilities and locations and coordinate proposed utility locations prior to demolition and construction.

The Contractor is solely responsible for maintaining the stability of the existing structures, at all times, during the demolition and construction operations. Any designs for temporary strengthening or bracing of portions of the existing structure to remain are the responsibility of the Contractor. Design of temporary strengthening or bracing of portions of the existing structure shall be included in the demolition plan and procedure package.

ITEM 114.2 (Continued)

The Contractor shall exhibit care not to drop any debris into the waterway below.

All materials removed shall become property of the Contractor.

BASIS OF PAYMENT

Item 114.2 will be paid for at the Contract unit price Lump Sum, which price shall include all labor, materials, equipment, submittals, and all incidental costs required to complete the work.

Payment of 50% of the Lump Sum price of this item will be made upon complete Stage I Demolition.

The remaining 50% of the Lump Sum price of this Item will be paid following complete Stage II Demolition.

Temporary protective shielding shall be paid for under Item 994.02. Control of Water shall be paid for under Item 991.2.

ITEM 123.5 CHANNEL BACKFILL CUBIC YARD

The work under this item shall conform to the relevant provisions of Sections 120., 140., 150., and 170. of the Standard Specifications and the following:

Thwwork under this Item shall consist of the backfill required for the pier removal and the construction of the wildlife crossing at McKinstry Brook. The appearance of the river bed surface will be restored under Item 755.55.

The backfill shall replicate the material in the existing channel environment. Any excavated channel material shall be stockpiled and reused for fill, provided the material is characteristic of the existing material upstream and downstream of the work area, or meets the criteria below. The elevations shown on the grading plans and conditions of the existing channel shall be maintained to the maximum extent practicable. The work shall be completed while the temporary water control has been installed for the bridge construction.

The work includes the proper stockpiling of earthen material, including cobbles, and boulders, removed from the channel and re-using suitable portions of as backfill in the channel after removal of the bridge pier, other structural elements, or surface grading material for the channel bed.

If suitable, dredged material and excavated muck may be re-used as channel backfill. If there is a lack of excavated material, the channel backfill may be supplemented with new, suitable material as described below. No new material shall be furnished until all available stockpiles of suitable excavated materials have been re-used.

Channel Backfill is required to comply with all environmental permits issued for the project.

SUBMITTALS

Contractor shall submit at least one upstream photo and at least one downstream photo of the channel:

1) prior to installation of the water controls and;
2) after installation of water controls but before work begins around the bridge foundation, photos shall show the material and nature of the channel bed without the river water.

MATERIALS

If the excavated material is not suitable or there is not enough material, the natural bedding material shall be comprised of a natural stone mix – gravel/cobble; < 6” cobbles. The natural substrate stone shall be native cobbles and gravel similar in size and shape to that in the adjacent work area.

ITEM 123.5 (Continued)

Natural streambed material less than 6 inches shall meet the following gradation:

Sieve Opening	Percent by Mass Passing Through
4”	95
2”	55-65
¾”	30-45
#4	0-5

Crushed stone will not be accepted for any component.

CONSTRUCTION METHODS

The Contractor shall reproduce the top two feet of channel subsurface and the channel surface similar to the adjacent existing channel surfaces. This may include setting by hand or by machine cobbles and boulders. The final surface shall be completed under Item 755.55 Streambed Restoration.

The Engineer shall approve the finish grade and surface treatment before the final removal of water controls for bridge construction.

The Contractor is responsible to dispose of excess material or unsuitable material properly.

METHOD OF MEASUREMENT

Item 123.5 will be measured for payment by the Cubic Yard of backfill, complete in place.

BASIS OF PAYMENT

Item 123.5 will be paid for at the Contract unit price per Cubic Yard, which price shall include all labor, materials, equipment, submittals, place and compact backfill, re-handle backfill to reproduce the channel surface elevation, and all incidental costs required to complete the work.

Pier removal will be paid for under Item 127.1 Reinforced Concrete Excavation.

The final stream surface will be completed under Item 755.55 Streambed Restoration.

Temporary water control for McKinstry Brook will be measured and paid for under Item 991.2 Control of Water – Structure No. S-21-009.

ITEM 127.1 REINFORCED CONCRETE EXCAVATION CUBIC YARD

The work under this item shall conform to the relevant provisions of Subsections 120 and 140 of the Standard Specifications and the following:

The work under this Item consists of the removal and disposal of the portion of concrete substructure of existing Bridge No. S-21-003 and S-21-009. This includes the concrete approach slabs and portions of the existing concrete substructure as shown on the Plans.

All materials removed under this item shall be removed from the job site and properly disposed of. The Contractor will not be paid for the removal of any concrete beyond the limits shown on the Plans.

CONSTRUCTION METHODS

The Contractor shall not damage any existing portions of the abutments to remain nor the adjacent buildings. Any existing substructure component to remain, including channel walls and fencing or portions of the adjacent buildings that are damaged or misaligned as a result of the Contractor's operations, shall be repaired or restored, to the satisfaction of the Engineer, at the Contractor's expense.

The outline of area to be demolished shall be cut to a depth of ¾" with an approved power-saw capable of making straight cuts. In the event that reinforcing steel is encountered within the outer ¾" depth during sawing operations, the depth of sawcut shall immediately be adjusted to a shallower depth so as not to damage the steel bars. If so directed by MassDOT, saw cutting shall again be carried down to the ¾" depth at other locations of demolition provided reinforcing steel is not again encountered. Where over-breakage occurs resulting in a featheredge, the featheredge shall be squared up to a vertical edge in an approved manner. Where sawing is impractical, the area shall be outlined by chisel or other approved means.

At the limits of concrete removal, the concrete shall be removed in a neat and workman like manner to produce straight and square joints. Care shall be taken during the removal of the designated portions of the slab to avoid damaging the portions that are to remain in place. Removal of concrete adjacent to areas that are to remain shall be performed by means of suitable power and hand tools to the accepted limits. Power tools that cause over-breakage of concrete will not be allowed. Any damage caused by the Contractor to existing sound concrete deck to remain in place shall be repaired or replaced by the Contractor or the limits of removal extended to remove damaged material to produce a straight and square joint. Any sound reinforcing steel damaged during the concrete removal operations shall be repaired or replaced at the Contractor's expense and as directed by the Enginer. New steel shall be attached beside existing steel with a minimum splice length as required by by the Engineer.

The Contractor shall exhibit care not to drop any debris into the waterway below.

Contractor should exhibit care when demolishing existing abutment around the existing sewer main.

ITEM 127.1 (Continued)

SUBMITTALS

The Contractor shall prepare and submit a Reinforced Concrete Excavation Plan and schedule to the Engineer for review describing the proposed sequence, method of concrete excavation and equipment to be used for the excavation, and disposal of all materials.

The Contractor shall not proceed with demolition until the Engineer has given written acceptance of the plan.

METHOD OF MEASUREMENT

Item 127.1 will be measured for payment by the Cubic Yard of reinforced concrete excavated.

BASIS OF PAYMENT

Item 127.1 will paid for at the Contract unit price per Cubic Yard, which price shall include all labor, materials, equipment, sawcutting, repairs to existing concrete substructure to remain, disposal all debris, cleaning of all rust, scale, laitance, and all incidental costs required to complete the work.

ITEM 127.12 REINFORCED CONCRETE EXCAVATION FOR REPAIRS CUBIC YARD

The work under this item shall conform to the relevant provisions of Subsections 120 and 140 of the Standard Specifications and the following:

The work under this Item consists of the removal and disposal of all deteriorated and spalled concrete as required to repair the existing reinforced concrete abutments and wingwalls to the general lines identified as agreed upon and directed by the Engineer.

During the prosecution of the Work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the structure or any part thereof. In no event shall any pneumatic or power-driven chipping hammers over the nominal 15 pounds be permitted to remove any concrete.

Minimum depth of excavation to sound concrete shall be as shown on the plans. The edges of the excavation area shall be squared off by sawcutting to a depth of ¾", and the excavation areas shall be made rectangular in shape, if possible, with horizontal and vertical edges and square corners.

The Contractor shall take all precautions necessary so as not to damage those portions of the Bridge including reinforcing steel that are to remain. This includes determining the concrete cover to the steel bars at the edge of each repair area prior to excavating concrete.

The Contractor shall carefully remove the concrete around the existing reinforcing steel designated to be reused in the proposed construction. Existing reinforcing steel rendered unsuitable for reuse during construction due to negligence on the part of the Contractor shall be replaced at the Contractor's expense. Any steel that is unsuitable for further use shall be replaced. All reinforcing steel that is loose shall be tied tightly together using wire ties.

The Contractor shall not remove any concrete beyond the specified limits unless ordered to do so by the Engineer. Any existing concrete designated to be retained during construction that is damaged by the Contractor's operation shall be replaced at the Contractor's expense.

Included under this Item are all costs in connection with the cleaning, cutting, and bending of the existing reinforcing steel designated to be retained in the proposed construction.

Immediately before preparation for placement of new concrete, the exposed area to be repaired shall be free of foreign materials. These materials shall be removed by grit blasting or wire brushing and by use of compressed air. No grease, dust, rust, or laitance will be allowed to remain on reinforcing steel and exposed concrete surfaces.

The Contractor shall take all measures necessary to protect pedestrian and vehicular traffic from his construction operations. The Contractor shall take the proper precautions to ensure the stability and safe performance of all concrete excavation and construction activities.

ITEM 127.12 (Continued)

No debris, tools or incidental equipment of any kind will be permitted to fall into the waterway. Any material that accidentally falls into the waterway below shall be removed immediately.

All materials removed under this item shall be removed from the job site and properly disposed of according to all state, federal, town, cities rules, regulations, requirements, restrictions and as required by the Engineer.

The Contractor is required to broom clean all work site areas after the removal of excavated debris regardless of preexisting conditions. This includes areas under the excavated repair area such as at revetment areas and bridge shielding areas. Removal of debris, site cleaning, and disposal of debris is incidental to the Contract and no additional payment will be made.

METHOD OF MEASUREMENT

Item 127.12 will be measured for payment by the Cubic Yard of reinforced concrete excavated.

BASIS OF PAYMENT

Item 127.12 will paid for at the Contract unit price per Cubic Yard, which price shall include all labor, materials, equipment, sawcutting, repairs to existing concrete substructure to remain, disposal all debris, cleaning of all rust, scale, laitance, and all incidental costs required to complete the work.

ITEM 160.3 CONTROLLED LOW-STRENGTH MATERIAL (>300 PSI) CUBIC YARD

The work under this item shall conform to the relevant provisions of Subsection 160 of the Standard Specifications and the following:

Controlled Low-Strength Material (CLSM) – Structural Non-Excavatable shall be placed around pre-cast highway guardrail transitions at bridges, other pre-cast bridge items, or in other locations as directed by the Engineer.

CONSTRUCTION METHODS

For footings, approach slabs and highway guardrail transitions, once these Precast Concrete Bridge Elements have been set to the correct horizontal and vertical alignment, the void between them and the supporting soil shall be filled with CLSM – Structural Non-Excavatable to the limits as shown on the plans. Add additional grout ports in the footings to facilitate the bedding process if required

ITEM 180.01 ENVIRONMENTAL HEALTH AND SAFETY PROGRAM LUMP SUM

The work shall consist of ensuring the health and safety of the Contractor's employees and subcontracting personnel, the Engineer, their representatives, the environment, and public welfare from any on-site chemical contamination present in air, soil, water and sediment.

The Contractor shall prepare and implement a site-specific Environmental Health and Safety Plan (EHASP) which has been approved and stamped by a Certified Industrial Hygienist (CIH) and includes the preparer's name and work experience. The EHASP shall include appropriate components required by OSHA Standard 29 CFR 1910.120(b) and the Massachusetts Contingency plan (MCP) 310 CMR 40.0018 and must comply with all applicable state and federal laws, regulations, standards and guidelines, and provide a degree of protection and training appropriate for implementation on the project. The EHASP shall be a dynamic document with provision for change to reflect new information, new practices or procedures, changing site environmental conditions or other situations which may affect site workers and the public. The EHASP shall be developed and implemented independently from the standard construction HASP required to work on all MassDOT construction projects.

Health and safety procedures provided by the Contractor shall comply with all the appropriate regulations that address employee working conditions, including but not limited to standards established by OSHA and National Institute for Occupational Safety and Health (NIOSH). Equipment used for the purpose of health and safety shall be approved by and meet pertinent standards and specifications of the appropriate regulatory agencies.

A copy of the most up-to-date version of the EHASP shall be maintained on-site at all times by the Contractor. The on-site copy shall contain the signature of the Engineer and each on-site employee of the MassDOT, Contractor, and Subcontractors involved with on-site activities. The employee's signature on the EHASP shall be deemed prima facie evidence that the employee has read and understands the plan. Updated copies of signature sheets shall be submitted to the Engineer.

The EHASP shall specify a Contractor Site Safety and Health Officer responsible for implementation of the EHASP and to oversee all construction activities, including handling, storage, sampling and transport, which require contact with or exposure to potentially hazardous materials.

The level of protection, required to ensure the health and safety of on-site personnel will be stipulated in the EHASP. The Site Safety and Health Officer shall implement the EHASP based on changing site and weather conditions, type of operation or activity, chemical compounds identified on-site, concentration of the chemicals, air monitoring data, physical state of the hazardous materials, potential duration of exposure to hazardous materials, dexterity required to perform work, decontamination procedures, necessary personnel and type of equipment to be utilized.

ITEM 180.01 (Continued)

During implementation of the EHASP, a daily log shall be kept by the Site Safety and Health Officer and a copy shall be provided weekly to the Engineer. This log shall be used to record a description of the weather conditions, levels of personal protection being employed, screening data and any other information relevant to on-site environmental safety conditions. The Site Safety and Health Officer shall sign and date the daily log.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Preparation and implementation of the Environmental Health and Safety Program, including the monitoring, protection and storage of all contaminated materials, as well as subsequent modifications to the EHASP, will be measured and paid for at the Lump Sum Bid Price.

Payment of 50% of the Environmental Health and Safety Program contract price will be made upon the initial acceptance of the EHASP by the Engineer. Payment of the remaining 50% of the Environmental Health and Safety Program contract price will be made upon completion of the work. The bid price shall include preparation and implementation of the EHASP as well as the cost for its enforcement by the Site Safety and Health Officer along with any necessary revisions and updates. The work of implementing the Environmental Health and Safety Program includes work involving, but not limited to, the monitoring, protection, and storage of all contaminated materials.

ITEM 180.02 PERSONAL PROTECTION LEVEL C UPGRADE HOUR

The work shall consist of providing appropriate personal protective equipment (PPE) for all personnel in an area either containing or suspected of containing a hazardous environment.

Contingencies for upgrading the level of protection for on-site workers will be identified in the EHASP and the Contractor shall have the capability to implement the personal protection upgrade in a timely manner. The protective equipment and its use shall be in compliance with the EHASP and all appropriate regulations and/or standards for employee working conditions.

Personal Protection Level C Upgrade will be measured and paid only upon upgrade to Level C and will be at the contract unit price, per hour, per worker, required in Level C personal protection. No payment will be made to the Contractor to provide Level D PPE.

ITEM 180.03 LICENSED SITE PROFESSIONAL SERVICES HOUR

Within limited areas of the project site, media (i.e. soils, sediments, surface water and/or groundwater) requiring evaluation and/or management under the Massachusetts Contingency Plan (MCP) may be encountered. A Licensed Site Professional (LSP) shall be required to provide the services necessary to comply with the requirements of the MCP. These services may include a site walk, field screening, sampling, analysis and characterization of potentially contaminated media, preparation and implementation of Immediate Response Action (IRA) Plans, Utility-Related Abatement Measure (URAM) and Release Abatement Measure (RAM) Plans, Imminent Hazard Evaluations, status reports, transmittal forms, release notification forms, risk assessments, completion statements, and related documents required pursuant to the MCP. LSP services shall also be necessary to temporarily move material generated on the project to an off-site storage location.

The name and qualifications of the LSP and all environmental technicians to be assigned to the project shall be submitted to the Engineer for approval at least four weeks prior to initial site activities. The LSP shall have a current, valid license issued by the Massachusetts Board of Registration of Hazardous Waste Site Cleanup Professionals. The LSP shall have significant experience in the oversight of MCP activities at active construction sites. Qualification packages for the LSP and each technician shall include a resume, all recent work assignments with responsibilities identified (previous 5 years), and applicable training and certifications. A list of all Notices of Noncompliance, Notice of Audit Findings and Enforcement Orders issued by the Massachusetts Department of Environmental Protection (DEP) shall be submitted for all work assignments listed for the LSP and environmental technicians. Upon approval of the LSP Qualifications, the LSP will be designated as the LSP of Record unless MassDOT designates in writing otherwise. The LSP of Record will serve as the primary point of contact for all hazardous material matters on the project.

The LSP shall evaluate soil and/or sediment with discoloration, odor, elevated field screening results, presence of petroleum liquid or sheen on the groundwater surface, or any abnormal gas or materials in the ground which are known or suspected to be oil or hazardous materials. Excavated soil and sediment which is suspected of petroleum contamination shall be field screened using the jar headspace procedures according to established DEP Guidance. All field screening equipment must be pre-approved by the Engineer. The LSP shall ensure proper on-site calibration of all field screening instrumentation.

The Engineer shall be contacted immediately when observations or any field screening results verify contamination requiring further analysis, and/or enhanced management of suspect media. Any enhanced management of contaminated soil to ensure proper stockpiling and storage is incidental to the LSP Services item. The LSP shall evaluate the need for confirmatory sampling prior to backfill in areas where contaminated material has been excavated and disposed off-site for compliance with applicable regulatory requirements. The Engineer shall approve the locations of the testing sites prior to the sampling.

Contaminated media shall be handled in accordance with all applicable state and federal statutes, regulations, and policies. The LSP shall adequately evaluate contaminated media for compliance with the requirements of the MCP and Department Policies.

ITEM 180.03 (Continued)

The Contractor and the LSP shall be aware of the reporting requirements for releases of oil and/or other hazardous material (OHM) as set forth in federal and state laws and regulations and both shall be held responsible for performing the work in accordance with all applicable Federal and State laws and regulations. The LSP shall maintain written records in a clear and concise tabular format which tracks the excavation, stockpiling, analysis and reuse/disposal of all known/suspect contaminated media. These records shall be up-to-date and submitted to the Engineer on a bi-weekly basis. The LSP shall review and summarize the laboratory data from any analyses performed on contaminated media in a tabular format and compare the results to applicable reporting thresholds. A report shall be delivered to the Engineer outlining the material sampling methods, laboratory analysis results, evaluation of applicable regulatory exemptions, reporting obligations, and proposed course of action. The laboratory report together with Chain of Custody forms for all analytical results shall be submitted to the Engineer within 14 days after completion of such analyses.

The LSP and Contractor shall be held responsible for the submission of all MCP-related documents to the Engineer at least 14 days in advance of any timeframe specified in the MCP and for the timely submission of data and tracking information as noted within this Item. All documents prepared under this Item must be reviewed and signed by the approved LSP. The Contractor and LSP shall be responsible for all fines, damages, and enforcement requirements imposed by applicable regulatory agencies for failure to meet regulatory and contract timeframes. No compensation will be provided for such fines, damages, and enforcement actions.

The Contractor and the LSP shall be aware of the reporting requirements for releases of oil and/or other hazardous material (OHM) as set forth in federal and state laws and regulations and shall both be held responsible for performing the work in accordance with all applicable Federal and State laws and regulations.

If the Contractor causes a release of OHM, the Contractor shall be responsible for assessing and remediating the release in accordance with all pertinent State and Federal regulations, including securing the services of a LSP, at his own expense.

The LSP shall coordinate all activities involving both MassDOT and the DEP through the Engineer. Any notification of release shall be approved by the Engineer before submittal to the DEP, except if an imminent hazard condition exists as defined in 309 CMR 4.03(4)(b).

LABORATORY TESTING IN SUPPORT OF LSP SERVICES

Laboratory testing provides for analytical testing in support of LSP services related to maintaining MCP compliance, such as delineating the extent and type of contamination present. Sampling and testing for disposal purposes are not included and are incidental to Items 181.11-181.14.

ITEM 180.03 (Continued)

In order to maintain compliance with the MCP and Department Policies or other regulatory requirements, the LSP shall request approval from the Engineer to obtain samples from various locations and depths within the project area and to perform laboratory analyses on those samples. No sampling shall be conducted without prior approval from the Engineer. The samples shall be delivered to a DEP-certified laboratory using proper chain-of-custody documentation for analyses which, depending upon site conditions and suspected and/or identified contaminants of concern, may include, but are not limited to, metals, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polycyclic aromatic hydrocarbons (PAHs), extractable petroleum hydrocarbons (EPHs) and volatile petroleum hydrocarbons (VPHs). Subsequent testing, depending upon initial results, may be required for Toxicity Characteristic Leaching Procedure (TCLP) analyses (EPA Method 1311) for metals.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

LSP Services for work under this item will be measured per person, per hour of service provided by LSP, Environmental Technicians and other approved personnel. Travel time shall not be included in the billable hours.

The quantity and type of laboratory tests must be approved by the Engineer beforehand. The Contractor will be reimbursed upon satisfactory written evidence of payment. The Contractor may be required to obtain cost estimates from three DEP certified laboratories for the Engineer to choose the service provider.

LSP Services will be paid at the Contractor bid price for each hour, or fraction thereof, spent to perform the work as described above. The bid price shall be a blended rate that includes the cost of the LSP, environmental technicians and other personnel, the performance of all work tasks and field screening, including required equipment, materials and instrumentation, and production of all documentation described above. All requests for payment must be accompanied by the following information: the names of the personnel associated with the work charged under LSP Services, dates and hours worked, work conducted, including, where appropriate, locations as identified on the construction plans, and a copy of the field diary for the dates submitted.

Laboratory testing will be reimbursed upon receipt of paid invoices for testing approved by the Engineer.

This item is for LSP work for compliance with the MCP and Department Policies. LSP hours and any laboratory testing related to off-site disposal of excess soil and sediment is incidental to Items 181.11-181.14 (including, but not limited to, disposal characterization, disposal package preparation, landfill acceptance, shipment paperwork preparation, field screening, and tracking). LSP hours for groundwater management (including characterization, obtaining off-site discharge permits, compliance testing, etc.) is incidental to Item 183.1.

ITEM 181.11	**DISPOSAL OF UNREGULATED SOIL**	**TON**
ITEM 181.12	**DISPOSAL OF REGULATED SOIL - IN-STATE FACILITY**	**TON**
ITEM 181.13	**DISPOSAL OF REGULATED SOIL - OUT-OF-STATE FACILITY**	**TON**
ITEM 181.14	**DISPOSAL OF HAZARDOUS WASTE**	**TON**

The work under these Items shall include the transportation and disposal of contaminated material excavated, or excavated and stockpiled. It shall also include the cost of any additional laboratory analyses required by a particular disposal facility beyond the standard disposal test set.

Excavation of existing subsurface materials may include the excavation of contaminated soils. The Contractor shall be responsible for the proper coordination of characterization, transport and disposal, recycling or reuse of contaminated soils. Disposal, recycling or reuse will be referred to as "disposal" for the purposes of this specification. However, regardless of the use of the term herein, there will be no compensation under these items for reuse within the project limits. The Contractor will be responsible for coordinating the activities necessary for characterization, transport and disposal of contaminated soils. Such coordination will include the Engineer and his/her designee overseeing management of contaminated materials. Contaminated soils must be disposed of in a manner appropriate for the soil classification as described below and in accordance with the applicable laws of local, state and federal authorities. The Contractor shall be responsible for identifying disposal facility (ies) licensed to accept the class of contaminated soils to be managed and assure that the facility can accept the anticipated volume of soil contemplated by the project. The Contractor shall be responsible for hiring a Licensed Site Professional (LSP) and all ancillary professional services including laboratories as needed for this work. The Contractor will be responsible for obtaining all permits, approvals, manifests, waste profiles, Bills of Lading, etc. subject to the approval of the Engineer prior to the removal of the contaminated soil from the site. The Contractor and LSP shall prepare and submit to the Engineer for approval all documents required under the Massachusetts Contingency Plan (MCP) and related laws and environmental regulations to conduct characterization, transport, and disposal of contaminated materials.

CLASSES OF CONTAMINATED SOILS

The Contractor and its LSP shall determine if soil excavated or soil to be excavated is unregulated soil or contaminated soil as defined in this section. Such materials shall be given a designation for purposes of reuse or disposal based on the criteria of the MCP. Soils and sediments which are not suitable for reuse will be given a designation for purposes of off-site disposal based on the characterization data and disposal facility license requirements. The Classes of Contaminated Soils are defined as follows:

ITEMS 181.11 through 181.14 (Continued)

UNREGULATED SOIL consists of soil, fill and dredged material with measured levels of oil and hazardous material (OHM) contamination at concentrations below the applicable Reportable Concentrations (RCs) presented in the MCP. Unregulated soil consists of material which may be reused (or otherwise disposed) as fill within the Commonwealth of Massachusetts subject to the non-degradation criteria of the MCP (310 CMR 40.0032(3), in a restricted manner, such that they are sent to a location with equal or higher concentrations of similar contaminants. Disposal areas include licensed disposal facilities, approved industrial settings in areas which will be capped or covered with pavement or loamed and seeded, and for purposes of this project should be reused as fill within the project site construction corridor whenever possible. The material cannot be placed in residential and/or environmentally sensitive (e.g. wetlands) areas. Under no circumstances shall contaminated soils be placed in an uncontaminated or less contaminated area (including the area above the groundwater table if this area shows no sign of contamination).

The Contractor shall submit to MassDOT the proposed disposal location for unregulated soils for approval. If such a disposal location is not a licensed disposal facility, the Contractor shall submit to the Engineer analytical data to characterize the disposal area sufficiently to verify that the unregulated material generated within the MassDOT construction project limits is equal to or less than the contaminant levels at the disposal site and meets the non-degradation requirements of the MCP. In addition, the Contractor shall provide written confirmation from the owner of the proposed disposal location that they have been provided with the analytical data for both the materials to be disposed as well as the disposal site characterization and that s/he agrees to accept this material. A Material Shipping Record or Bill of Lading, as appropriate, shall be used to track the off-site disposal of unregulated soil and a copy, signed by the disposal facility or property owner, shall be provided to the Engineer in order to document legal disposal of the unregulated material.

The cost of on-site disposal of unregulated soil within the project area will be considered incidental to the item of work to which it pertains.

ITEMS 181.11 through 181.14 (Continued)

REGULATED SOIL consists of materials containing measurable levels of OHM that are equal to or exceed the applicable Reportable Concentrations for the site as defined by the MCP, 310 CMR 40.0000. Regulated soil which meets the MCP reuse criteria of the applicable soil/groundwater category for this project area may be reused on site provided that it meets the appropriate geotechnical criteria established by the Engineer. Regulated Soil may be reused (as daily or intermediate cover or pre-cap contouring material) or disposed (as buried waste) at lined landfills within the Commonwealth of Massachusetts or at an unlined landfill that is approved by the Massachusetts Department of Environmental Protection (DEP) for accepting such material, in accordance with DEP Policy #COMM-97-001, or at a similar out-of-state facility. It should be noted that soils which exceed the levels and criteria for disposal at in-state landfills, as outlined in COMM-97-001, may be shipped to an in-state landfill, but require approval from the DEP Division of Solid Waste Management and receiving facility. An additional management alternative for this material is recycling into asphalt. Regulated Soils may also be recycled at a DEP approved recycling facility possessing a Class A recycling permit subject to acceptance by the facility and compliance with DEP Policy #BWSC-94-400. Regulated Soil removed from the site for disposal or treatment must be removed via an LSP approved Bill of Lading, Manifest or applicable material tracking form. This type of facility shall be approved/permitted by the State in which it operates to accept the class of contaminated soil in accordance with all applicable local, state and federal regulations.

HAZARDOUS WASTE consists of materials which must be disposed of at a facility permitted and operated in full compliance with Federal Regulation 40 CFR 260-265, Massachusetts Regulation 310 CMR 30.000, Toxic Substances Control Act (TSCA) regulations, or the equivalent regulations of other states, and all other applicable local, state, and federal regulations. All excavated materials classified as hazardous waste shall be disposed of at an out-of-state permitted facility. This facility shall be a RCRA hazardous waste or TSCA facility, or RCRA hazardous waste incinerator. This type of facility shall be approved/permitted by the State in which it operates to accept hazardous waste in accordance with all applicable local, state and federal regulations and shall be permitted to accept all contamination which may be present in the soil excavate. The Contractor shall ensure that, when needed, the facility can accept TSCA waste materials i.e. polychlorinated biphenyls (PCBs). Hazardous waste must be removed from the site for disposal or treatment via an LSP approved Manifest.

MONITORING/SAMPLING/TESTING REQUIREMENTS

The Contractor shall be responsible for monitoring, sampling and testing during and following excavation of contaminated soils to determine the specific class of contaminated material. Monitoring, sampling and testing frequency and techniques should be performed in accordance with Item 180.03 – LSP Services. Additional sampling and analysis may be necessary to meet the requirements of the disposal facility license. The cost of such additional sampling and analysis shall be included in the bid cost for the applicable disposal items. The Contractor shall obtain sufficient information to demonstrate that the contaminated soil meets the disposal criteria set by the receiving facility that will accept the material.

ITEMS 181.11 through 181.14 (Continued)

No excavated material will be permanently placed on-site or removed for off-site disposal until the results of chemical analyses have been received and the materials have been properly classified. The Contractor shall submit to the Engineer results of field and laboratory chemical analyses tests within seven days after their completion, accompanied by the classification of the material determined by the Contractor, and the intended disposition of the material. The Contractor shall submit to the Engineer for review all plans and documents relevant to LSP services, including but not limited to, all documents that must be submitted to the DEP.

WASTE TRACKING:

Copies of the fully executed Weight Slips/Bills of Lading/ Manifests/Material Shipping Records or other material tracking form received by the Contractor from each disposal facility and for each load disposed of at that facility, shall be submitted to Engineer and the Contractor's LSP within three days of receipt by the Contractor. The Contractor is responsible for preparing and submitting such documents for review and signature by the LSP or other appropriate person with signatory authority, three days in advance of transporting soil off-site. The Contractor shall furnish a form attached to each manifest or other material tracking form for all material removed off-site, certifying that the material was delivered to the site approved for the class of material. If the proposed disposition of the material is for reuse within the project construction corridor, the Contractor shall cooperate with MassDOT to obtain a suitable representative sample(s) of the material to establish its structural characteristics in order to meet the applicable structural requirements as fill for the project.

All material transported off-site shall be loaded by the Contractor into properly licensed and permitted vehicles and transported directly to the selected disposal or recycling facility and be accompanied by the applicable shipping paper. At a minimum, truck bodies must be structurally sound with sealed tail gates, and trucks shall be lined and loads covered with a liner, which shall be placed to form a continuous waterproof tarpaulin to protect the load from wind and rain.

DECONTAMINATION OF EQUIPMENT

Tools and equipment which are to be taken from and reused off site shall be decontaminated in accordance with applicable local, state and federal regulations. This requirement shall include, but not be limited to, all tools, heavy machinery and excavating and hauling equipment used during excavation, stockpiling and handling of contaminated material. Decontamination of equipment is considered incidental to the applicable excavation item.

ITEMS 181.11 through 181.14 (Continued)

REGULATORY REQUIREMENTS

The Contractor shall be responsible for adhering to regulations, specifications and recognized standard practices related to contaminated material handling during excavation and disposal activities. MassDOT shall not be responsible at any time for the Contractor's violation of pertinent State or Federal regulations or endangerment of laborers and others. The Contractor shall comply with all rules, regulations, laws, permits and ordinances of all authorities having jurisdiction including, but not limited to, Massachusetts DEP, the U.S. Environmental Protection Agency (EPA), Federal Department of Transportation (DOT), Massachusetts Water Resources Authority (MWRA), the Commonwealth of Massachusetts and other applicable local, state and federal agencies governing the disposal of contaminated soils.

All labor, materials, equipment and services necessary to make the work comply with such regulations shall be provided by the Contractor without additional cost to MassDOT. Whenever there is a conflict or overlap within the regulations, the most stringent provisions shall apply. The Contractor shall reimburse MassDOT for all costs it incurs, including damages and/or fines, as a result of the Contractor's failure to adhere to the regulations, specifications, recognized standard practices, etc., that relate to contaminated material handling, transportation and disposal.

SUBMITTALS

I. Summary of Sampling Results, Classification of Material and Proposed Disposal Option.

The following information, presented in tabular format, must be submitted to the Engineer for review and approval prior to any reuse on-site or disposal off-site. This requirement is on-going throughout the project duration. At least two weeks prior to the start of any excavation activity, the Contractor shall submit a tracking template to be used to present the information as stipulated below. Excavation will not begin until the format is acceptable to MassDOT.

Characterization Reports will be submitted for all soil, sediment, debris and groundwater characterized through the sampling and analysis program. Each report will include a site plan which identifies the sampling locations represented in the Report. The Construction Plan sheets may be used as a baseplan to record this information.

The Sampling Results will be presented in tabular format. Each sample will be identified by appropriate identification matching the sample identification shown on the Chain of Custody Record. The sample must also be identified by location (e.g. grid number or stockpile number). For each sample, the following information must be listed: the classification (unregulated, regulated, etc.), proposed disposal option for the stockpile or unit of material represented, and, all analytical results.

Each Characterization Report will include the laboratory analytical report and Chain of Custody Record for the samples included in the Report.

ITEMS 181.11 through 181.14 (Continued)

II. Stockpiling, Transport, and Disposal.

At least two weeks prior to the start of any excavation activity, the Contractor shall submit, in writing, the following for review and shall not begin excavation activity until the entire submittal is acceptable to MassDOT.

Excavation and Stockpiling Protocol:

Provide a written description of the management protocols for performing excavation and stockpiling and/or direct loading for transport, referencing the locations and methods of excavating and stockpiling excavated material.

Disposal and Recycling Facilities:

1. Provide the name, address, applicable licenses and approved waste profile for disposal and/or recycling location(s) where contaminated soil will be disposed. Present information substantiating the suitability of proposed sites to receive classifications of materials intended to be disposed there, including the ability of the facility to accept anticipated volumes of material.

2. Provide a summary of the history of compliance actions for each disposal/recycling facility proposed to be used by the Contractor. The compliance history shall include a comprehensive list of any state or federal citations, notices of non-compliance, consent decrees or violations relative to the management of waste (including remediation waste) at the facility. Material should not be sent to facilities which are actively considered by the DEP, USEPA or other responsible agency to be in violation of federal, state or local hazardous waste or hazardous material regulations. MassDOT reserves the right to reject any facility on the basis of poor compliance history.

Transportation:

The name, address, applicable license and insurance certificates of the licensed hauler(s) and equipment and handling methods to be used in excavation, segregation, transport, disposal or recycling.

III. Material Tracking and Analytical Documentation for Reuse/Disposal.

The following documents are required for all excavation, reuse and disposal operations and shall be in the format described. At least two weeks prior to the start of any excavation or demolition activity, the Contractor shall submit the tracking templates required to present the information as stipulated below. Excavation or demolition will not begin until the format is acceptable to MassDOT.

All soils, sediments and demolition debris must be tracked from the point of excavation to stockpiling to onsite treatment/processing operations to off-site disposal or onsite reuse as applicable.

ITEMS 181.11 through 181.14 (Continued)

Demolition Debris:

Demolition debris must be tracked if the debris is stockpiled at a location other than the point of origin or if treatment or material processing is conducted. Identification of locations will be based on the station-offset of the location. The tracking table will identify date and point of generation, any field screening such as PID or dust monitoring, visual observations/comments, quantity, and stockpile ID/processing operation location. For each unit of material tracked, the table will also track reuse of the material on-site, providing reuse date, location of reuse as defined by start and end station, width of reuse location by offset, the fill elevation range, quantity, and finish grade for said location. For demolition debris which is not reused on site, the table will also track disposal of the material as defined by disposal date, quantity and disposal facility. The table must provide a reference to any analytical data generated for the material.

Soil/Sediment:

Soil excavation will be identified based on the station-offset of the excavation location limits. The tracking table will identify date and point of generation, any field screening such as PID or dust monitoring, visual observations, quantity, and stockpile number/location. For each unit of material tracked, the table will also track reuse of the material on-site and disposal of the material off-site using the same categories identified for demolition debris above.

Method Of Measurement And Basis Of Payment

Disposal of contaminated soil shall be measured for payment by the Ton of actual and verified weight of contaminated materials removed and disposed of. The quantities will be determined only by weight slips issued by and signed by the disposal facility. The most cost-effective, legal disposal method shall be used. The work of the LSP for disposal under all of these items shall be incidental to the work with no additional compensation.

ITEM 181.11 Measurement for Disposal of Unregulated Soil shall be under the Contract Unit Price by the weight, in tons, of contaminated materials removed from the site and transported to and disposed of at an approved location or licensed facility, and includes any and all costs for approvals, permits, fees and taxes, additional testing/characterization required by the facility beyond the standard disposal test set, decontamination procedures, transportation and disposal.

ITEM 181.12 Measurement for Disposal of Regulated Soil – In-State Facility shall be under the Contract Unit Price by the weight in tons of contaminated materials removed from the site and transported to and disposed of at an approved in-state facility, and includes any and all costs for approvals, permits, fees and taxes, testing/characterization required by the facility beyond the standard disposal test set, decontamination procedures, transportation and disposal.

ITEMS 181.11 through 181.14 (Continued)

ITEM 181.13 Measurement for Disposal of Regulated Soil - Out-of-State Facility shall be under the Contract Unit Price by the weight in tons of contaminated materials removed from the site and transported to and disposed of at an approved out-of-state facility, and includes any and all costs for approvals, permits, fees and taxes, testing/characterization required by the facility beyond the standard disposal test set, decontamination procedures, transportation and disposal.

ITEM 181.14 Measurement for Disposal of Hazardous Waste shall be under the Contract Unit Price by the weight in tons of hazardous waste removed from the site and transported to and disposed of at the licensed hazardous waste facility, and includes any and all costs for approvals, permits, fees and taxes, testing/characterization required by the facility beyond the standard disposal test set, decontamination procedures, transportation and disposal.

ITEM 183.1 **TREATMENT OF CONTAMINATED GROUNDWATER** **GALLON**

This Item addresses the treatment and disposal of contaminated groundwater encountered during excavation operations. The work generally consists of furnishing the materials, equipment, labor, services, testing/sampling, waste characterization, transportation, disposal, permits and agreements necessary to perform the work required for the collection, treatment and disposal of contaminated groundwater.

The Contractor is advised that contaminated groundwater may be encountered during dewatering activities. The levels and nature of contamination may vary depending on location and/or depth. No data has been provided in this specification indicating the types of contaminants that may be found in groundwater encountered during this work. It will be the responsibility of the Contractor to ensure that water removed during dewatering operations is treated and disposed of in accordance with all applicable laws and regulations and in accordance with this specification.

The Contractor shall monitor the quantity of groundwater collected for treatment using an in-line totalizer flowmeter or an alternate method approved by MassDOT. The Contractor shall, at all times, minimize the quantity of groundwater removed from the excavations. All groundwater determined to be contaminated will be managed in accordance with all applicable local, state and federal regulations.

It is not the intent herein for the Department to design for or specify to the Contractor which particular treatment is to be used, if necessary. Rather, it is the Department's intent to provide guidance to the Contractor for informational and bidding purposes only. It is, therefore, the Contractor's responsibility to use a treatment method to allow him/her to meet any and all laws, regulations, policies, guidelines and permit requirements. Treatment of contaminated groundwater for dewatering operations is generally performed using a mobile treatment trailer equipped with one or more granular-activated carbon (GAC) canisters, although other techniques are also used.

It is likely that treatment of the contaminated groundwater using granular-activated carbon will be required to complete the work under this Contract. The Methods described under Item 183.1 provides for the identification, testing, management and treatment or disposal of contaminated groundwater and shall be implemented, at a minimum and as necessary by the Contractor via Methods under Item 183.1.

The overall handling and management of contaminated groundwater is regulated under the provisions of 310 CMR 40.0000, 314 CMR 3.00 and 5.00, NPDES and other applicable laws. The unpermitted discharge of contaminated dewatering effluent into the environment (storm drain, surface water body, onto the ground) is a violation of federal and state laws and regulations. Should dewatering of contaminated groundwater be necessary, approvals must be sought from the appropriate federal, state, or local regulatory jurisdiction. The USEPA will not specify a treatment system or method, but normally requires that the treated discharge meet Massachusetts Drinking Water Standards.

ITEM 183.1 (Continued)

The discharge standards are normally met by treating the dewatered groundwater through granular-activated carbon canisters, or similar techniques. Longer term discharges to surface waters or storm drains, and any discharges to the ground, require approval and/or issuance of a permit from the DEP Division of Water Pollution Control. The Contractor shall be responsible for applying for, paying all fees for and obtaining all permits required for treatment and/or disposal of contaminated groundwater. Additional requirements may be mandated by local/regional sewer authorities for discharge to sanitary sewer or Publicly Owner Treatment Works (POTW). Copies of permit applications and correspondence from federal and state agencies and sewer authorities shall be supplied to the Engineer prior to dewatering activities.

EPA regulations published in the Federal Register on September 9, 2005 (70 FR 53663) require a National Pollutant Discharge Elimination System (NPDES) Remediation & Miscellaneous Contaminated Sites General Permit (RGP) for all contaminated construction site dewatering activities in Massachusetts (MAG910000) that will involve the discharge of water to classes of receiving waters designated in the Massachusetts Water Quality Standards (314 CMR 4.00). The application requires that operators of proposed new discharges seeking coverage under this general permit submit a Notice of Intent (NOI) to EPA New England post-marked at least 14 days prior to commencement of discharge. The Contractor is solely responsible for applying for and obtaining coverage under the NPDES Remediation General Permit from EPA and, if applicable, DEP, including the costs associated with sampling and analysis of groundwater and any application fees. The Contractor is required to submit a completed copy of the NOI to the Engineer and the Director of Environmental Programs, Construction Division, 10 Park Plaza, Boston, prior to commencement of discharge.

Upon permanent cessation of the discharges authorized by the RGP, the Contractor shall be responsible for submitting a Notice of Termination (NOT) to EPA New England within 30 days of the permanent cessation. The Contractor is required to submit to MassDOT a completed copy of the NOT within 14 days of the permanent cessation of the discharges authorized by the RGP. All costs and fees associated with the submission of the NOT will be the responsibility of the Contractor.

The Contractor shall be responsible for adhering to regulations, specifications, and recognized standard practices related to contaminated groundwater handling during dewatering activities. MassDOT shall not be responsible at any time for the Contractor's violation of pertinent local, state or federal regulations or endangerment of laborers and others. The Contractor shall comply with all rules regulations, laws, permits and ordinances of all authorities having jurisdiction including, but not limited to, Massachusetts Department of Environmental Protection (DEP), the U.S. Environmental Protection Agency (EPA), Federal Department of Transportation (DOT), Massachusetts Water Resources Authority (MWRA), the Commonwealth of Massachusetts and other applicable local, state and federal agencies governing this work.

ITEM 183.1 (Continued)

The Contractor shall be responsible for determining compliance with the requirements of any permit and for any sampling, testing, and disposal required in connection with said permits. MassDOT and the City/Town reserve the right to collect additional samples of dewatered groundwater to determine the Contractor's compliance with the Permit's requirements. All laboratory testing is to be performed by a DEP certified laboratory for all parameters being tested. Copies of all field and laboratory testing results, reports, etc. required by the permits must be supplied to the Engineer. MassDOT, DEP, and the permit-granting agency, where applicable, reserve the right to collect additional samples of discharged groundwater to verify compliance with permit requirements.

For the purpose of these specifications and to establish a basis for the bid, it is anticipated that granular-activated carbon will be the treatment medium for dewatered contaminated groundwater. The bidder shall factor into the payment item all costs associated with the testing and analyses that may be required by the permitting agency. In addition, any laboratory testing of groundwater is to be performed by a DEP certified laboratory for the parameters being tested. Copies of all field and laboratory testing results will be supplied to the Engineer. Bid price shall also include full compensation for labor, materials, maintenance, mobilization, rental and other related costs. Item 183.2 will be used for disposal of used granular-activated carbon canisters.

SUBMITTALS:

Prior to initiating work, the Contractor shall submit an excavation dewatering plan to the MassDOT that includes a detailed description of the approach to dewatering, a description of methodology for sealing the excavation to minimize infiltration of groundwater, if deemed applicable to the work, anticipated treatment, discharge points, sampling frequency, required permits, transporters and waste facilities complete with license numbers, permit numbers, contact person, and address and telephone number that the Contractor plans to utilize for waste disposal. The plan shall be submitted for the record.

The Contractor shall submit to MassDOT for review, the proposed methods for dewatering and groundwater treatment and disposal for the various portions of the work to be done. The review shall be for methods only. The Contractor shall remain responsible for the maintenance, performance, structural integrity and safety of the systems installed for this work as well as regulatory compliance of the applicable local, state and federal discharge standards. The contractor shall provide all groundwater sampling and analyses, results and reports required by all applicable local, state and federal agencies. The Contractor shall submit to MassDOT for review all plans and documents that must be submitted to the EPA and DEP, including NOI, NOT, treatment system analytical reports and correspondence. Copies of all permits and approvals and lab analyses and test results associated with groundwater treatment and disposal must be submitted to MassDOT within 3 days of receipt by the Contractor.

ITEM 183.1 (Continued)

ESTABLISHMENT OF TREATMENT PROCEDURE:

Since concentrations of contaminants in groundwater cannot be easily assessed in the field, all groundwater extracted from the ground will be considered contaminated and will be initially pumped and stored into open settling tank(s) or a fractionation tank until it can be sampled and analyzed, unless otherwise directed by MassDOT. The Contractor will perform initial sampling and analyses of the groundwater to determine the need for a permit to dispose of contaminated groundwater. Based on the results of the initial sample analysis, which must be provided to the Engineer within twenty-four (24) hours of the time the samples are received by the laboratory, the Contractor will determine the necessity for treatment(s) and disposal procedures. Sampling must also be performed to meet applicable discharge criteria as set by the appropriate regulatory agencies for the permit obtained for disposal. All discharges must meet regulatory standards set forth in the permits required for discharge. For the purposes of the bidding process, it is anticipated that the treatment system will consist of sedimentation tanks, an oil water separator and liquid-phase granular activated carbon as the primary on-site treatment medium for dewatered contaminated groundwater. MassDOT may require additional treatment processes if such is determined necessary during the groundwater testing procedure. The Contractor shall integrate the additional treatment process into the treatment system, if necessary.

The Contractor shall provide all labor, equipment and appurtenances required to treat the groundwater, subject to the approval of MassDOT. Groundwater stored and tested but not requiring treatment or off-site disposal shall be discharged to a location subject to the approval of MassDOT without payment to the Contractor.

TREATMENT UNITS:

The Contractor shall furnish all labor and materials, and shall install and operate temporary groundwater treatment and disposal system(s) as necessary to treat contaminated groundwater pumped from excavations during construction activities under the Contract. Such systems shall be capable of treating groundwater to meet applicable discharge criteria as set by the appropriate regulatory agencies.

The Contractor or their Environmental Consultant shall operate, maintain and modify the selected treatment system, and conduct the necessary monitoring and reporting of influent, midpoint and effluent results, as required by the discharge permit for the disposal option selected.

ITEM 183.1 (Continued)

METHOD OF MEASUREMENT

Provide a treatment system that meets permit discharge requirements, mobilize it to the site, provide copies of laboratory analytical data indicating that the system is performing appropriately to meet permit requirements, and demobilize it from the site. This includes management and disposal of wastes generated during treatment prior to discharging such as activated carbon, etc. Work under Item 183.1 is based upon the number of gallons disposed or contaminated groundwater pumped through the granular-activated carbon (Item 183.2) as the medium for the treatment of contaminated groundwater that is found in pipe trenches, manhole excavations, catch basin excavations, that need to be dewatered.

BASIS OF PAYMENT

Payment shall be made at the unit price bid per gallon of groundwater pumped, stored, treated as needed and tested as required by discharge permits and regulatory requirements, which price shall be full compensation for all necessary labor and materials, mobilization, maintenance, demobilization of the appropriate unit(s), freight, rental costs, field and laboratory testing costs and permits. Costs associated with the disposal of granular-activated carbon shall be covered under Item 183.2.

ITEM 183.2 DISPOSAL OF GRANULAR-ACTIVATED CARBON POUND

Work under Item 183.2 is based upon the disposal of used granular-activated carbon as the treatment medium for contaminated groundwater (Item 183.1) that is found during excavations in which contaminated groundwater is encountered.

BASIS OF PAYMENT

Payment shall be made at the unit price bid per pound of carbon that is properly disposed and replaced, as necessary, to meet treated water discharge requirements during dewatering operations at the site. Payment for Disposal of Granular Activated Carbon shall include compensation for all labor, equipment, materials, permits, characterization, sampling and on-site or laboratory analysis as needed or required by permits, for replacement and disposal of liquid-phase activated carbon for the on-site contaminated groundwater pumping, collection, treatment and treated water discharge system during the time period required to complete the work. No payments shall be made for replacing carbon which is spent due to the Contractor's failure to remove floating petroleum product or excess sediments prior to the groundwater entering the carbon treatment units. All other costs associated with treatment of contaminated groundwater will be covered under Item 183.1- Treatment of Contaminated Groundwater.

ITEM 192.6 MONITORING WELL ADJUSTED EACH

The work under this Item shall consist of adjusting existing monitoring wells within the sidewalk area on Mill Street at Station 201+70 and 202+19 LT. The work includes removal of the existing gate box, extending the riser pipe, and resetting the gate box to the required grade. The cover within the pedestrian curb ramp must be sloped to match the adjacent ramp.

Care must be taken when removing the box to ensure not to damage or misalign the riser pipe in any way. The cap shall remain on the riser pipe at all times to keep soil and other debris from entering the well.

After the box is removed, all existing concrete shall be removed from the casing prior to reinstalling. The box shall be reset and a concrete collar placed around the pipe (4000 psi minimum strength). The box shall be raised or lowered to be flush with the final roadway grade.

To lower the elevation, the riser pipe shall be cut to an appropriate height. To extend the riser pipe, a 2 inch polyvinylchloride (PVC) coupling shall be installed with additional sections of 2 inch PVC pipe.

METHOD OF MEASUREMENT

Item 192.6 will be measured for payment by the Each monitoring well adjusted.

BASIS OF PAYMENT

Item 192.6 will be paid for at the Contract unit price per Each, which price shall include all labor, materials, equipment, concrete collar, PVC pipe and couplings, and all incidental costs required to complete the work.

ITEM 201. CATCH BASIN EACH

The work under this item shall conform to the relevant provisions of Subsection 201 of the Standard Specifications and the following:

All proposed catch basins shall be constructed with a minimum 4-foot sump. Eccentric cones may be required to install proposed catch basins and avoid utilities, or other objects to be retained.

METHOD OF MEASUREMENT

Item 20.1 will be measured for payment by the Each catch basin installed, complete in place, regardless of depth.

BASIS OF PAYMENT

Item 201. will be paid for at the Contract unit price per Each, which price shall include all labor, materials, equipment, and all incidental costs required to complete the work.

ITEM 220.8 SANITARY STRUCTURE REMODELED EACH

The work under this item shall conform to the relevant provisions of Subsection 220 of the Standard Specifications and the following:

The work shall consist of the remodeling of existing sewer manholes as shown on the plans to meet the proposed grades.

The precast cone sections and frames shall be removed. Additional precast concrete barrel sections shall be added as needed to increase the manhole height and the existing cone sections and frames shall be reset.

New watertight plastic seals shall be placed between precast sections prior to installation.

Debris, excess mortar or other material resulting from the work shall be removed from the manhole.

METHOD OF MEASUREMENT

Item 220.8 will be measured for payment by the Each a sanitary structure rebuilt, complete in place.

BASIS OF PAYMENT

Item 220.8 will be paid for at the Contract unit price per Each, which price shall include all labor, materials, equipment, plates, new masonry construction, backfilling, high early strength concrete collars, and re-excavation of the gravel, removal and resetting of the casting, and all incidental costs required to complete the work.

ITEM 222.3	**FRAME AND GRATE (OR COVER) MUNICIPAL STANDARD**	**EACH**
ITEM 223.1	**FRAME AND GRATE (OR COVER) REMOVED AND STACKED**	**EACH**

The work under these items shall conform to the relevant provisions of Subsections 201 and 220 of the Standard Specifications and the following:

MATERIALS

Municipal standard frames and grates shall be 24" and shall have an HS20 load rating and conform to AASHTO M306 and ASTM A48 "Standard Specification for Gray Iron Castings". The grates shall be bicycle compliant and the openings shall be 2.5" square.

Municipal standard frame and cover shall have a 26" diameter and shall have an HS20 load rating and conform to AASHTO M306 and ASTM A48. Letters shall be embossed on the covers to identify manhole types, "DRAIN" for drainage manhole and "SEWER" for sewer manholes.

Iron castings furnished by the Contractor shall be listed on the MassDOT Qualified Construction Material List (QCML).

CONSTRUCTION

Existing frames and grates or covers from existing structures shown on the drawings to be abandoned or removed, or changed in type, shall be removed and reset unless, in the judgment of the Engineer, they are unsuitable for re-use. Unsuitable frames, grates and covers shall become the property of the Contractor and shall be disposed of off the site.

Existing frame and grates that are arched or circular shall be replaced with new frame and grates and the existing frame and grate shall be stacked at the Town of Southbridge Department of Public Works at 185 Guelphwood Road, Southbridge, MA. The Contractor shall coordinate with the DPW to schedule drop-off time and location.

METHOD OF MEASUREMENT

Item 222.3 will be measured for payment by the Each frame and grate (or cover) municipal standard delivered to the site. Frame and Grate or Frame and Cover shall be considered as a one unit.

Item 223.1 awill be measured for payment by the Each frame and grate (or cover) municipal standard removed and stacked. Frame and Grate or Frame and Cover shall be considered as a one unit.

BASIS OF PAYMENT

Items 222.3 and 223.1 will be paid for at the respective Contract unit price per Each, which price shall include all labor, materials, equipment, and all incidental costs required to complete the work.

ITEM 238.161 16 INCH DUCTILE IRON SEWER PIPE FOOT
ITEM 373.161 16 INCH SEWER PIPE INSULATION FOOT

The work under these items shall conform to the relevant provisions of Subsection 230 of the Standard Specifications and the following:

The work under these items shall consist of furnishing and installation of sanitary sewer ductile iron pipe (mechanical joint) with insulation on Bridge S-21-003 and its approaches.

SUBMITTALS

The Contractor shall submit the names of the material suppliers, shop drawings and certificates of compliance to the Engineer for approval prior to ordering any materials. All materials shall be made in America.

MATERIALS

Pipe and Fittings

Pipe shall be ductile iron, Class 52, conforming to ANSI A21.50/AWWA C150 and ANSI A21.51/AWWA C151.

Fittings shall be ductile iron, Class 250 minimum, conforming to applicable ANSI, NEWWA, and AWWA specifications.

Pipe and fittings shall have a cement mortar lining and bituminous seal coat on the inside and a coal tar enamel coat on the outside in accordance with ANSI A21.4 (AWWA C104) and ANSI A21.6 (AWWA C106), as amended, except that the cement mortar lining shall be 1/8-inch in thickness for pipe 2 inches to 12 inches in diameter. Bituminous seal coat shall be a product acceptable to the National Sanitation Foundation (NSF) for use in potable water and shall be so listed in the most current NSF summary of approved products under ANSI/NSF Standards 61.

Pipe shall be standard restrained mechanical joint pipe. Rubber gaskets for mechanical joints shall conform to ANSI A21.11/AWWA C111.

Pipe shall be supplied in lengths not exceeding 20 feet. Each pipe and fitting shall markings casted into the metal in accordance with ANSI A21.10/AWWA C110, including manufacturer's identification, country material was made in, pressure rating, nominal diameter and degrees or fraction of circle (for bends).

Plugs and Caps

The wetted surfaces of all plugs, caps and blank flanges shall be cement-lined and asphalt seal coated as specified for ductile iron pipe hereinbefore.

ITEMS 238.161 and 373.161 (Continued)

Pipe Insulation and Jackets

1. Pipe insulation shall be installed in locations indicated on the plans and when water or sewer main cannot be installed with at least 5 feet of cover or 5 feet of separation from culvert structure. Pipe insulation and jackets shall be in conformation with MassDOT Material Specification M9.11.0 – M9.11.5.
2. Section lengths and thickness shall depend on the pipe size and the recommendations of the insulation manufacturers. When urethane insulating material is used the total thickness shall be not less than 2 in.; when any other type of insulating material is used the total thickness shall be not less than 3 in.

CONSTRUCTION METHODS

The sewer work shall not begin until the Temporary Sewer Bypass is operational. See Item 257. Temporary Sewer Bypass.

Separation of Water Mains from Sanitary Sewer Mains

Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main, The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10-foot separation, it is permissible to install the sewer main closer to a water. However, the sewer main must be laid in a separate trench or on an undisturbed earth shelf located on one side of the water at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer.

Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. It is preferred that the water main cross above the sewer. At crossing, one full length of water pipe shall be located so both joints will be as far from the sewer as possible, and the sewer materials shall be water works grade 150 psi pressure rated pipe meeting latest AWWA standards and shall be pressure tested to ensure water tightness.

If the water mains crossing sewers are not able to be laid at a minimum vertical distance of 18 inches, the sewer must be encased 10 feet on both sides of the crossing with 6 inches of 3,000 PSI concrete. If a sewer main or sewer service crosses above the water main, total encasement of both the water main and the sewer main or sewer service is required on both sides of the crossing, regardless of separation.

Pipe and Fittings Installation

The Contractor shall make all necessary arrangements with the Town for the necessary shutdowns of service.

The Town may establish the time of shutdown to be within the normal daily low demand period.

ITEMS 238.161 and 373.161 (Continued)

Care shall be taken in loading, transporting, and unloading to prevent injury to the pipes, fittings or coatings. Pipe and fittings shall not be dropped. All pipe or fittings shall be examined before laying and no piece shall be installed which is found to be defective. Any damage to the pipe coatings shall be repaired as directed by the Engineer. Any pipe found to be defective, before or after laying, shall be satisfactorily removed and replaced with sound pipe at no additional cost to the Owner.

All pipe and fittings shall be installed in conformance with AWWA Standard Specifications C600, except as otherwise provided herein. All pipe and fittings shall be sound and clean before laying and shall be laid on a shaped bedding providing uniform, firm support over the entire length of each section barrel. BLOCKING WILL NOT BE PERMITTED. The select bedding material shall be placed and tamped along the sides of the pipe to complete the bedding.

Pipe shall be laid with good alignment and at the depth shown on the Contract Drawings. Joint deflection shall not exceed 75% of that recommended by the manufacturer. Additional fittings shall be furnished and installed as required to cross existing utilities. Solid sleeves shall be used only where approved by the Engineer.

When pipe laying is stopped for any length of time, including short periods, the open ends of the pipe and fittings shall be closed with a watertight plug or cap as approved by the Engineer.

Necessary pipe cutting shall be accomplished by power saw and shall leave a smooth cut at right angles to the axis of the pipe. Cut ends of pipe to be used with a push-on bell shall be beveled to conform to the manufactured spigot end. Cement lining shall be undamaged.

Mechanical joints shall be installed in accordance with the "Notes of Method of Installation" of ANSI A21.11 and the instructions of the manufacturer. The Contractor shall thoroughly clean the joint surfaces and rubber gasket with soapy water before tightening the bolts. Bolts shall be tightened to the specified torques.

Extension wrenches or pipe over handle or ordinary ratchet wrench shall not be used to secure greater leverage.

Plugs and Caps

Plugs and/or caps shall be installed in locations shown on the Drawings or designated by the Engineer.

Furnish and maintain on the site, temporary water-tight plugs in the various sizes required for the water mains to be installed.

Pipe Insulation and Jackets

Pipe insulation shall be installed in accordance with Section 301.60 of the MassDOT Standard Specifications. Where pipe is exposed, install jackets over the insulation.

ITEMS 238.161 and 373.161 (Continued)

METHOD OF MEASUREMENT

Item 238.161 will be measured for payment by the Foot of 16 inch ductile iron sewer pipe installed, complete in place.

The pipe will be measured in placed along the axis of the pipe, excluding the length occupied by new fittings.

Item 373.161 will be measured for payment by the Foot of 16 inch sewer pipe insulation installed, complete in place.

BASIS OF PAYMENT

Item 238.161 and Item 373.161 will be paid for at the respective Contract unit prices per Foot, which price shall include all labor, materials, equipment, and all incidental costs required to complete the work.

No separate payment will be made for excavation, gravel borrow and crushed stone bedding and backfill, sampling, flushing, removal, transporting and stacking or disposal of the existing materials, for materials required to encase crossed water mains or sewer mains, but all costs in connection therewith shall be included in the respective unit price bid.

ITEM 257. TEMPORARY SEWER BYPASS LUMP SUM

The work under this item shall conform to the relevant provisions of Subsection 230 of the Standard Specifications and the following:

This work under this Item consist of design, furnishing of all materials, labor, equipment, power, maintenance, and installation a temporary sewer bypass pumping system for the purpose of diverting existing wastewater flows around the construction area. Work includes removing temporary connections, plugs, and bypasses, and transferring the flows to the new pipes. Also included is removing and resetting the temporary system or its components as many times as necessary to provide and maintain sewer service during construction. Temporary sewer bypass is anticipated for the bridge construction on Mill Street over the Quinebaug River.

The Temporary Sewer Bypass is expected to remain operational during the winter shutdown period as the construction schedule is anticipated to take at least two (2) construction seasons. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.

The Contractor may be required to use electrically powered pumps for any and all pumping required for work under this contract. If so required, the primary power supply needed to operate such pumps shall be obtained through temporary power services installed, maintained and operated in strict accordance with all power company rules and regulations. Operating on-site power generating facilities outside of normal working hours shall not be allowed unless authorized by the Town as an emergency backup in the event of a power failure to prevent shutdown of the diversion system. If the Town requires electrically powered pumps, all associated costs including but not limited to installation, operation, and maintenance of both the pumping systems and related power services shall be at no additional cost to the Town or MassDOT.

MATERIALS AND SYSTEM REQUIREMENTS

Equipment

All pumps used shall be centrifugal, end suction, fully automatic self-priming units that do not require the use of foot-valves, diaphragm pumps, isolation valves or vacuum pumps in the priming system. The pumps may be electric or diesel powered. All pumps used must be constructed to allow dry running for long periods to accommodate the cyclical nature of bypass flows. The pumps shall not be hydraulic submersible type.

The Contractor shall provide the necessary stop/start controls for each pump.

The Contractor shall include one stand-by pump system (including suction and discharge piping) of each size to be maintained on site.

Additional back-up pumps shall be on-line, isolated from the primary system by a valve.

ITEM 257. (Continued)

Discharge Piping - in order to prevent the accidental spillage of flows, all temporary discharge systems shall be constructed of rigid pipe with positive, restrained, watertight or fused joints. Under no circumstances will aluminum "Irrigation" type piping or glued PVC pipe be allowed. Discharge hoses will only be allowed in short sections and with the specific permission of the Engineer.

System Description

Design Requirements

1. Bypass pumping systems shall have sufficient capacity to pump at the following:
   - Mill Street, between sewer manholes, Sta 202+60 and Sta 204+07, shown on the plans.
     - Peak flow of approximately 350 GPD
2. The Contractor shall provide all pipeline, plugs, pumps of adequate size to handle peak flow, and discharge piping to ensure that the total flow can be safely diverted around the area of work. Bypass pumping system will be required to operate 24 hours per day.
3. The Contractor shall have adequate standby power and pumping equipment available and ready for immediate operation and use in the event of an emergency or breakdown. One standby pump for each size pump utilized shall be installed at the mainline flow bypassing locations, ready for use in the event of primary pump failure.
4. Bypass pumping system shall be capable of bypassing the flow around the work area and not releasing any amount of flow into the work area for satisfactory performance of work.
5. The temporary bypass pumping system shall include floats (or other acceptable level sensing devices) that will transmit a high and low water condition to an on-site cellular type auto dialer that shall send an alarm condition to the Contractor's Superintendent. The autodialed shall also alert a designated "on-call" employee of the Contractor, should the Superintendent fail to acknowledge the call. The auto dialer system shall be field programmable and capable of sending an alarm to a minimum of four telephone numbers.
6. Bypass pump set-ups shall have sorbent polypropylene mat and sorbent boom enclosures to prevent leakage of lubricants and/or fuel.
7. Entire bypass piping system shall be pressure tested before it is placed in operation and will be checked for leaks at least once every four hours during the first 24-hours of operation.

Performance Requirements

It is essential for the protection of the public safety and private property that there be no interruption in the flow throughout the duration of the project. To this end, the Contractor shall provide, maintain and operate all temporary facilities such as dams, plugs, pumping equipment (both primary and back- up units as required), conduits, all necessary power, and all other labor and equipment necessary to intercept the wastewater flow before it reaches the point where it would interfere with his work, carry it past his work and return it to the existing sewer collection system downstream of his work.

ITEM 257. (Continued)

The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.

The Contractor shall provide all necessary means to safely convey the wastewater flow past the work area. The Contractor will not be permitted to stop or impede the flows.

The Contractor shall protect water resources, wetlands and other natural resources.

The Contractor shall be responsible to meet noise requirements (73dbA @ 30'). All diesel driven primary and standby pumps shall be sound attenuated. The use of Critical Silenced Canopy Pumps or acoustical Whisper Pac enclosures for sound attenuation is required.

SUBMITTALS

1. The design, installation and operation of the temporary pumping system shall be the Contractor's responsibility. The Contractor shall employ the services of a vendor firm who can demonstrate to the Engineer that it has the required expertise in the design and operation of temporary bypass pumping systems. The vendor firm shall provide at least five references of projects similar in size and complexity to this project that have been performed by the firm within the past three years.

2. The Contractor shall submit a detailed description of the proposed pumping system stamped by a Professional Engineer in the State of Massachusetts and submit it and the vendor's references.

   The design of the temporary system shall describe, in detail, the means and methods to install and maintain flow in existing sewers, including individual house services, during construction. The temporary system shall include means and methods to prevent backing up of sewage.

   The Contractor shall submit to the Engineer detailed plans and descriptions outlining all provisions and precautions to be taken by the Contractor regarding the handling of existing wastewater flows. This plan must be specific and complete, including such items as schedules, locations, elevations, capacities of equipment, materials and all other incidental items necessary and/or required to ensure proper protection of the facilities, including protection of the access and bypass pumping locations from damage due to the discharge flows, and compliance with the requirements and permit conditions specified in these contract documents. No construction shall begin until all provisions and requirements have been reviewed by the Engineer.

   All procedures for maintaining flow must meet the approval of the Engineer. The Contractor shall be required to submit to the Engineer, for approval, a detailed written plan of all methods of flow maintenance ten (10) days in advance of any flow interruption.

ITEM 257. (Continued)

The Contractor shall be responsible for maintaining wastewater in all public and private pipes during new sewer construction including individual house service connections. All proposed noise prevention measures shall be outlined in detail in the submitted plan. No construction shall begin until all provisions and requirements have been reviewed and approved by the Engineer.

The bypass system shall be of sufficient capacity to handle existing flows plus additional flows that may occur during a rain event.

The plan shall include but not be limited to the following:

A. Staging areas for pumps;
B. Flow diversion method and types of materials;
C. Number, size, material, location and method of installation of suction piping;
D. Number, size, material, method of installation and location of discharge piping;
E. Bypass pump sizes, capacity, number of each size to be on site and the related power requirements;
F. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted);
G. Standby power generator size, location;
H. Downstream discharge plan;
I. Method of protecting suction and discharge areas from erosion and damage;
J. Thrust and restraint block sizes and locations;
K. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill;
L. Method of noise control for each pump and/or generator, with external dB valve.
M. Any temporary pipe supports and anchoring required;
N. Design plans and computation for access to bypass pumping locations indicated on the drawings;
O. Calculations for selection of bypass pumping pipe size;
P. Plan indicating proposed location of bypass pumping lines.
Q. Schedule for installation of and maintenance of bypass pumping lines. The Contractor shall submit to the Engineer a schedule to complete the work. The schedule shall include the sequencing and coordination of excavation and replacement of existing pipe; handling of wastewater flow during the replacement process; and re-connection of active service connections.
R. Describe emergency means and methods in the event of the primary and secondary bypass system failure. Include emergency phone numbers and contact information. Display emergency information on the front and back covers of the plan.

ITEM 257. (Continued)

CONSTRUCTION METHODS

Field Quality Control And Maintenance

The Contractor shall perform leakage and pressure tests of the bypass pumping discharge piping using clean water prior to actual operation. The Engineer shall be given 24 hours notice prior to testing.

Contractor shall inspect bypass pumping system every two hours to ensure that the system is working correctly.

The Contractor shall insure that the temporary pumping system is properly maintained and a responsible operator shall be on hand at all times when pumps are operating.

Spare parts for pumps and piping shall be kept on site as required.

Adequate hoisting equipment for each pump and accessories shall be maintained on the site.

Should at any time prior to or during the performance of said work, the Owner or Engineer determine that the noise prevention measures being used are not adequate, the Contractor shall at no additional cost to the Owner suspend all work until acceptable measures are incorporated.

Wastewater flows from existing sewers shall not be allowed to enter the new facilities until the new facilities have been cleaned and tested as required in the specifications.

The Contractor shall immediately remove and properly dispose of all offensive matter spilled during the bypass pumping at no additional cost to the Owner.

Precautions

Contractor is responsible for locating any existing utilities in the area the Contractor selects to locate the bypass pipelines. The Contractor shall locate his bypass pipelines to minimize any disturbance to existing utilities and shall obtain approval of the pipeline locations from the Owner and the Engineer. All costs associated with relocating utilities and obtaining all approvals shall be paid by the Contractor.

During all bypass pumping operation, the Contractor shall protect the work area and all local utilities from damage inflicted by any equipment. The Contractor shall be responsible for all physical damage to public and private property caused by human or mechanical failure.

Installation And Removal

The Contractor shall construct temporary bypass pumping structures only at the access locations indicated on the drawings and may be required to provide adequate suction conduit.

ITEM 257. (Continued)

Diverting or blocking of wastewater flows shall incorporate primary and secondary devices. When diversion or blocking is no longer needed for performance and acceptance or work, it is to be removed in a manner that permits the flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.

The Contractor shall exercise caution and comply with OSHA requirements when working in the presence of gases, combustible or oxygen-deficient atmospheres, and confined spaces.

The installation of the bypass pipelines is prohibited in wetland areas. The pipeline must be located off streets and sidewalks and on shoulders of the roads. When the bypass pipeline crosses local streets and private driveways, the Contractor must place the bypass pipelines in trenches and cover with temporary pavement. Upon completion of the bypass pumping operations, and after the receipt of written permission from the Engineer, the Contractor shall remove all the piping, restore all property to pre-construction condition and restore all pavement. The Contractor is responsible for obtaining any approvals from the Owner for placement of the temporary pipeline within public ways.

BASIS OF PAYMENT

Item 257. will be paid for at the Contract unit price Lump Sum, which price shall include all labor, materials, equipment, design, submittals, and all incidental costs required to complete the work.

Payment of 75% of the Lump Sum price of this item will be made upon complete installation.
The remaining 25% of the Lump Sum price of this Item will be paid following complete removal.

ITEM 303.06	**6 INCH DUCTILE IRON WATER PIPE (MECHANICAL JOINT)**	**FOOT**
ITEM 303.08	**8 INCH DUCTILE IRON WATER PIPE (MECHANICAL JOINT)**	**FOOT**
ITEM 303.10	**10 INCH DUCTILE IRON WATER PIPE (MECHANICAL JOINT)**	**FOOT**
ITEM 309.	**DUCTILE IRON FITTINGS FOR WATER PIPE**	**POUND**
ITEM 347.2	**2 INCH COPPER TUBING TYPE K**	**FOOT**
ITEM 350.08	**8 INCH GATE AND GATE BOX**	**EACH**
ITEM 350.10	**10 INCH GATE AND GATE BOX**	**EACH**
ITEM 363.2	**2 INCH CORPORATION COCK**	**EACH**
ITEM 371.10	**10 INCH COUPLING**	**EACH**
ITEM 373.08	**8 INCH WATER PIPE INSULATON**	**FOOT**
ITEM 373.10	**10 INCH WATER PIPE INSULATON**	**FOOT**
ITEM 376.2	**HYDRANT - REMOVED AND RESET**	**EACH**
ITEM 381.	**SERVICE BOX**	**EACH**
ITEM 384.	**CURB STOP**	**EACH**

The work under these items shall conform to the relevant provisions of Subsection 301 of the Standard Specifications, and the requirements in the Town of Southbridge Department of Public Works Southbridge Water Department Standard Specifications, dated February 26, 2009, and the following:

The work shall include the furnishing and installation of all materials required to remove and reset hydrants, replace waterline over the two bridges, and, if needed, to address conflicts with proposed utilities. Also included in the work is to furnish and install pipe insulation on water where there is insufficient frost-cover. The work also includes providing domestic water service (copper tubing type K, corporation cock, service box, curb stop) in the size and location noted on the Drawings.

The Town Water Department shall be notified prior to starting construction of any portion of the municipal water system.

The closing of valves necessary for making connections with existing municipal water system will be done by Town Water Department employees, assisted by the Contractor. Sufficient notice shall be given to the Town of planned connection. No allowance will be made for any delay in closing of valves. A 48-hour notice shall be given to residents or businesses affected by the shut-down, and shall be done by the Contractor under the direction of the Town Water Department.

SUBMITTALS

The Contractor shall submit the names of the material suppliers, shop drawings and certificates of compliance to the Engineer for approval prior to ordering any materials. Per the Town, all materials must be made in America.

ITEMS 303.06 through 381. and 384. (Continued)

MATERIALS

Pipe and Fittings

Pipe shall be ductile iron, Class 52, conforming to ANSI A21.50/AWWA C150 and ANSI A21.51/AWWA C151.

Fittings shall be ductile iron, Class 250 minimum, conforming to applicable ANSI, NEWWA, and AWWA specifications.

Pipe and fittings shall have a cement mortar lining and bituminous seal coat on the inside and a coal tar enamel coat on the outside in accordance with ANSI A21.4 (AWWA C104) and ANSI A21.6 (AWWA C106), as amended, except that the cement mortar lining shall be 1/8-inch in thickness for pipe 2 inches to 12 inches in diameter. Bituminous seal coat shall be a product acceptable to the National Sanitation Foundation (NSF) for use in potable water and shall be so listed in the most current NSF summary of approved products under ANSI/NSF Standards 61.

Pipe shall be standard restrained mechanical joint pipe. Rubber gaskets for mechanical joints shall conform to ANSI A21.11/AWWA C111.

Pipe shall be supplied in lengths not exceeding 20 feet. Each pipe and fitting shall markings casted into the metal in accordance with ANSI A21.10/AWWA C110, including manufacturer's identification, country material was made in, pressure rating, nominal diameter and degrees or fraction of circle (for bends).

Gate Boxes

Gate boxes shall be two-section, cast iron, heavy pattern adjustable type, with cast iron cover. The upper sections shall have a bottom flange of sufficient bearing area to prevent settling. The bottom section shall enclose the valve stuffing box and operating nut. Boxes shall be of lengths adapted to 5-foot pipe cover or more and have a minimum of 6 inches of overlap in the most extended position. Covers shall have the word "WATER" cast in the top and shall be held in place with bronze bolts.

Couplings

Couplings shall be used to (1) repair split pipe or replace sections of damaged pipe; (2) install or cut-in hydrants or valves into a water main; (3) couple different pipe types; and (4) correct misaligned pipe ends. Couplings shall have a pressure rating of 250 psi or greater. Materials shall be manufactured in accordance with the following:

(1) Center and end rings: ASTM-A536
(2) Gaskets: ASTM D2000
(3) Bolts & Hex Nuts: AWWA C111
(4) or approved equal

Couplings shall be epoxy-coated.

ITEMS 303.06 through 381. and 384. (Continued)

Plugs and Caps
The wetted surfaces of all plugs, caps and blank flanges shall be cement-lined and asphalt seal coated as specified for ductile iron pipe hereinbefore.

Copper Tubing
Copper tubing shall be Type K Copper. The copper tubing shall conform to the above-referenced standards for polyethylene with a pressure rating of 200 psi and a diameter as shown on the plans. Plastic Tube sizes shall be used to allow the use of compression fittings without special adapters.

Curb Stop and Corporation Cocks
The curb stop and cocks shall be provided and installed as noted in the Town Water Department Standards Specifications. Curb stops and cocks shall be (CTS) thread, open right with stop.

Hydrants
The hydrants shall comply with Town water standards.

Thrust Restraints
Concrete for thrust blocks shall have a minimum strength Class of 3,000 psi meeting the requirements for M4.02.0.

Mechanical restrained joint pipe and wedge-type mechanical joint restraints shall be rated for 350 psi.

Pipe Insulation and Jackets
Pipe insulation shall be installed in locations indicated on the plans and when water main cannot be installed with at least 5 feet of cover or 5 feet of separation from culvert structure. Pipe insulation and jackets shall be in conformation with MassDOT Material Specification M9.11.0 – M9.11.5.

Section lengths and thickness shall depend on the pipe size and the recommendations of the insulation manufacturers. When urethane insulating material is used the total thickness shall be not less than 2 in.; when any other type of insulating material is used the total thickness shall be not less than 3 in.

CONSTRUCTION METHODS

Separation of Water Mains from Sanitary Sewer Mains
Water mains shall be laid at least 10 feet horizontally from any existing or proposed gravity sanitary sewer, combined storm and sanitary sewer mains, septic tank, or subsoil treatment system. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10-foot separation, it is permissible to install a water main closer to a sewer. However, the water main must be laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer.

ITEMS 303.06 through 381. and 384. (Continued)

Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. It is preferred that the water main cross above the sewer. At crossing, one full length of water pipe shall be located so both joints will be as far from the sewer as possible, and the sewer materials shall be water works grade 150 psi pressure rated pipe meeting latest AWWA standards and shall be pressure tested to ensure water tightness.

If the water mains crossing sewers are not able to be laid at a minimum vertical distance of 18 inches, the sewer must be encased 10 feet on both sides of the crossing with 6 inches of 3,000 PSI concrete. If a sewer main or sewer service crosses above the water main, total encasement of both the water main and the sewer main or sewer service is required on both sides of the crossing, regardless of separation.

Pipe and Fittings Installation

The Contractor shall make all necessary arrangements with the Town for the necessary shutdowns of service.

The Town may establish the time of shutdown to be within the normal daily low demand period.

Care shall be taken in loading, transporting, and unloading to prevent injury to the pipes, fittings or coatings. Pipe and fittings shall not be dropped. All pipe or fittings shall be examined before laying and no piece shall be installed which is found to be defective. Any damage to the pipe coatings shall be repaired as directed by the Engineer. Any pipe found to be defective, before or after laying, shall be satisfactorily removed and replaced with sound pipe at no additional cost to the Owner.

All pipe and fittings shall be installed in conformance with AWWA Standard Specifications C600, except as otherwise provided herein. All pipe and fittings shall be sound and clean before laying and shall be laid on a shaped bedding providing uniform, firm support over the entire length of each section barrel. BLOCKING WILL NOT BE PERMITTED. The select bedding material shall be placed and tamped along the sides of the pipe to complete the bedding.

Pipe shall be laid with good alignment and at the depth shown on the Contract Drawings. Joint deflection shall not exceed 75% of that recommended by the manufacturer. Additional fittings shall be furnished and installed as required to cross existing utilities. Solid sleeves shall be used only where approved by the Engineer.

When pipe laying is stopped for any length of time, including short periods, the open ends of the pipe and fittings shall be closed with a watertight plug or cap as approved by the Engineer.

Necessary pipe cutting shall be accomplished by power saw and shall leave a smooth cut at right angles to the axis of the pipe. Cut ends of pipe to be used with a push-on bell shall be beveled to conform to the manufactured spigot end. Cement lining shall be undamaged.

ITEMS 303.06 through 381. and 384. (Continued)

Mechanical joints shall be installed in accordance with the "Notes of Method of Installation" of ANSI A21.11 and the instructions of the manufacturer. The Contractor shall thoroughly clean the joint surfaces and rubber gasket with soapy water before tightening the bolts. Bolts shall be tightened to the specified torques.

Extension wrenches or pipe over handle or ordinary ratchet wrench shall not be used to secure greater leverage.

Item 309. shall be used to construct the ductile iron sewer pipe.

Plugs and Caps
Plugs and/or caps shall be installed in locations shown on the Drawings or designated by the Engineer.

Furnish and maintain on the site, temporary water-tight plugs in the various sizes required for the water mains to be installed.

Gates and Gate Boxes
Comply with relevant provisions of Subsection 301.

Hydrant Installation
Hydrants shall be set at the locations shown on the drawings, or as directed by the Engineer, and bedded on a firm foundation. A drainage pit 2 feet 6 inches in diameter shall be back-filled with crushed stone in conformance to M2.01.1 and satisfactorily compacted. Additional stone shall be brought up and around 6 inches over the drain ports. Each hydrant shall be set in true vertical alignment and properly braced. A concrete thrust block shall be placed between the back of the hydrant inlet and undisturbed soil at the end of the trench. Felt roofing paper shall be placed around hydrant elbow before placing concrete. Care shall be taken to ensure that concrete does not plug the drain ports. Hydrant paint shall be touched up as required after installation.

Unless otherwise indicated or unless otherwise directed by the Town or by the Engineer, the nominal diameter for the lateral water pipe shall be 6 inches.

Thrust Restraints
Whenever water pipes can be placed against undisturbed earth, concrete thrust blocks may be installed. The back of thrust blocks shall be placed against undisturbed earth and the sides shall be formed. Felt roofing paper shall be placed to protect pipe joints. Concrete shall not be placed over bolts or nuts, or in a manner which prevents the removal of joints.

Whenever water pipes are installed within fill sections, the Contractor shall use mechanical restrained joint pipe and wedge-type mechanical joint restraints.

Pipe Insulation and Jackets
Pipe insulation shall be installed in accordance with Subsection 301.60 of the MassDOT Standard Specifications. Where pipe is exposed, install jackets over the insulation.

ITEMS 303.06 through 381. and 384. (Continued)

METHOD OF MEASUREMENT

Items 303.06, 303.08, 303.10, and 347.2 will be measured for payment by the Foot of respective pipe installed, complete in place.

The measurements will be taken along the axis of the pipe without deduction for the space occupied by valves or hydrants, excluding however, the length occupied by new fittings.

Items 350.08, 350.10, 363.2, 371.10, 376.2, 381., and 384. will be measured for payment by the Each respective unit installed, complete in place.

Item 373.08 and 373.10 will be measured by the Foot respective pipe insulated.

BASIS OF PAYMENT

Items 303.06, 303.08, 303.10, and 347.2 will be paid for at the respective contract unit price per Foot, which prices shall include all labor, material, equipment, and all incidental costs required to complete the work.

Item 350.08, 350.10, 363.2, 371.10, 381., and 384. will be paid for at the respective Contract unit price per Each, which price shall include all labor, material, transportation, equipment, disposal of existing gates/ boxes, and all incidental costs required to complete the work.

Item 376.2 will be paid for at the Contract unit price per Each, which price shall include all labor, material, backfill, concrete thrust block, transportation, equipment and incidental costs required to complete the work.

Item 373.08 8 and 373.10 10 will be paid at the contract unit price per foot, which price shall include all labor, material, jackets, equipment and incidental costs required to complete the work.

No separate payment will be made for excavation, concrete thrust blocks, gravel borrow and crushed stone bedding and backfill, insulation, sampling, flushing, testing and disinfection, but all costs in connection therewith shall be included in the unit prices bid for the respective items.

No separate payment will be made for the removal, transporting and stacking or disposal of the existing materials, but all costs in connection therewith shall be included in the unit prices bid for the respective items.

No separate payment will be made for materials required to encase crossed water mains or sewer mains, but all costs in connection therewith shall be included in the unit prices bid.

ITEM 345.66 TEMPORARY WATER SERVICE FOOT

The work under this item shall conform to the relevant provisions of Subsection 301 of the Standard Specifications, and the requirements in the Town of Southbridge Department of Public Works Southbridge Water Department Standard Specifications, dated February 26, 2009, and the following:

The Contractor shall furnish, install, and maintain a temporary water service for 62 Pleasant Street until the new water line is in place and operational. Once the new water line is operational, the Contractor shall remove the service. The temporary service shall be a 2" service and shall include everything need to provide uninterrupted water service to the property. Temporary water service pipe shall not be installed without prior approval of the Engineer and the Town of Southbridge Water Department. The Town will handle the direct coordination with the property owner.

The Contractor shall do all excavating for the connection of temporary service pipe to existing live water main and shall make all such connections.

In the absence of a recognized and/or approved industry standard for such hardware, the Town will be the final judge as to the acceptability of miscellaneous hardware used in the installation of water service.

References

The following standard forms a part of this specification, as referenced:
American Water Works Association (AWWA)
AWWA C651 Standard for Disinfecting Water Mains
Southbridge Water Department Specifications

Submittals

Shop drawings shall consist of manufacturer's scale drawings, cuts, or catalogs including descriptive literature. Shop drawings shall be submitted for the pipe, type of joint, fittings, couplings, and valves. A plan of the temporary bypass system, showing location and size of all pipelines shall be submitted to the Engineer for review prior to approval for installation.

Materials

The temporary service pipe, connections, and branches shall be of the highest quality and shall be fully adequate to withstand the pressures and all conditions of use. The temporary service shall be made of fused-joint HDPE, steel or PVC suitable for above and below ground use. The installation shall be watertight.

ITEM 345.66 (Continued)

CONSTRUCTION METHODS

Before starting any work that will affect service to customers, the Contractor shall notify the Owner at least 48 hours in advance to allow the time to notify the customers accordingly.

The Contractor shall be responsible for all repairs and maintenance required to the temporary service. The Contractor shall immediately repair and/or replace any leaking or faulty temporary service pipe as ordered by the Engineer or the Owner.

The work of providing suitable safety precautions to prevent any interruptions of water service during the temporary service period, including taking any steps necessary to prevent freezing, shall be the responsibility of the Contractor. If freezing does occur, the Contractor shall thaw the lines, make any necessary repairs, and promptly restore temporary service.

Before placing the temporary water pipe into service, a representative from the local Water Department shall inspect all connections. The Contractor shall make any adjustments to the layout of the temporary water piping requested by the local Water Department.

Temporary service pipe shall be mounted using a method approved by the Engineer and the Owner.

All service connections shall be valved at the temporary service pipe.

DISINFECTING AND FLUSHING:

The Contractor shall disinfect the temporary service pipe carrying temporary water. The Contractor shall notify the Owner and the engineer 48 hours in advance of the disinfecting and flushing operations. The Contractor shall furnish all equipment and materials necessary to do the work of disinfecting and shall perform the work in accordance with the procedure outlined in AWWA C651 and all amendments thereto.

The pipe section being disinfected shall be flushed to remove discolored water and sediment from the pipe. A 25 mg/l chlorine solution in approved dosages shall be inserted through a tap at one end while water is being withdrawn at the other end of the pipe section. The chlorine concentration in the water in the pipe shall be maintained at minimum 25 mg/l available chlorine during filling. To ensure that this concentration is maintained, the chlorine residual shall be measured at regular intervals in accordance with procedures described in Standard Methods and AWWA M12, Simplified Procedure for Water Examination, Section K.

During the application of the chlorine, valves shall be manipulated to prevent the treatment dosage from flowing back into the pipe supplying the water. Chlorine application shall not cease until the entire pipe section is filled with chlorine solution. The chlorinated water shall be retained in the pipe for at least a twenty-four-hour period. The treated water shall contain a chlorine residual throughout the length of the pipe section as indicated in AWWA C651. The Contractor shall take bacteria samples after 24 and 48 hours after chlorination.

ITEM 345.66 (Continued)

Following the chlorination period, all treated water shall be flushed from the pipe section by the Contractor and replaced with water from the distribution system by the Contractor. Prior to disposal of treated water, the Contractor shall check with local authorities to determine if the discharge will cause damage to the receiving body or sewer and, if required, the Contractor shall neutralize the chlorinated water in accordance with Appendix B, AWWA C650. Bacteriological sampling and analysis of the replacement water may then be made by the Contractor in full accordance with AWWA Specification C651. A minimum of three samples shall be taken by the Contractor at locations along the length of water pipe being chlorinated and sent to a State approved private laboratory for analysis. The Contractor shall re-chlorinate if the samples show presence of Coliform, and the pipe section shall not be placed in service until all of the repeat samples show no presence of Coliform.

Two copies of a Certificate of Disinfection Report will be furnished by the Contractor and given to the Engineer.

METHOD OF MEASUREMENT

Item 345.66 will be measured for payment by the Foot of temporary water service installed, complete in place.

BASIS OF PAYMENT

Item 345.66 will be paid for at the Contract unit price per Foot, which price shall include all labor, materials, equipment, submittals, temporary piping, valves, connections, fittings, excavations, mounting, backfilling, temporary surfacing, chlorination, disinfection, final removal, and all incidental costs required to complete the work.

ITEM 482.31 SAWING AND SEALING JOINTS IN ASPHALT PAVEMENT AT BRIDGES FOOT

The work to be done under this Item consists of making a sealed kerf across the full width of the finished asphalt pavement at bridge abutments as called for on the Plans. The shape, width, and depth of the kerf shall be as shown on the Plans.

Prior to the start of the asphalt pavement operation, the Contractor shall place a mark on each curb or barrier on either side of the paved roadway. These marks shall be aligned with the actual end of the bridge deck and shall be placed so that they will not be covered or otherwise obscured by the asphalt pavement.

After the completion of the paving operation, the Contractor shall snap a straight chalk line on the pavement between these two marks. The Contractor shall then saw cut the pavement along this line to the depth, width and shape as shown on the Plans. The equipment shall be approved by the Engineer prior to commencing work.

After completing the saw cutting, the Contractor shall clean the saw groove of any dust and debris with an oil free air blast. If the groove was wet sawn, the groove shall be cleaned with a water blast to remove any remaining slurry and debris, vacuumed with a Wet-or-Dry vacuum to remove any standing water, and then dried with an air blast from a Hot-Air-Lance.

Once the groove is clean and dry, the Contractor shall fill it completely with a hot-applied bituminous crack sealer meeting the requirements of M3.05.4 in accordance with the manufacturer's application instructions and restrictions regarding ambient and material temperatures. The crack sealer shall be thoroughly cured prior to opening the road to traffic. To reduce tackiness, only boiler slag aggregate (black beauty) shall be scattered over the sealer when required by the Engineer. Conventional sand shall not be used for this purpose.

METHOD OF MEASUREMENT

Item 482.31 will be measured for payment by the Foot, of the actual number of feet of kerf sawed and sealed in the asphalt pavement surface, complete in place.

BASIS OF PAYMENT

Item 482.31 will be paid for at the Contract unit price per Foot, which price shall include all labor, materials, equipment, and all incidental costs required to complete the work.

ITEM 627.19 TERMINAL END, TYPE G EACH
ITEM 628.245 TRANSITION TO BRIDGE RAIL – THRIE BEAM EACH

The work under these items shall conform to the relevant provisions of Subsection 601 of the Standard Specifications and the following:

The work shall consist of the construction of the guardrail transition and end piece for the northwest corner of bridge S-21-009. The distance between the edge of bridge and driveway is not long enough for a standard transition so a shortened guardrail transition and end piece shall be provided as shown in the construction details in the Contract plans.

METHOD OF MEASUREMENT

Item 627.19 will be measured for payment by the Each terminal end, Type G installed, complete in place. Terminal End, Type G shall be considered as one unit installed.

Item 628.245 will be measured for payment by the Each transition to bridge rail – thrie beam installed, complete in place. Transition to Bridge Rail – Thrie Beam will be measured as individual units 25 feet in length, measured from the terminal post at terminal end section to the end of the thrie beam terminal connector, as shown on the plans.

BASIS OF PAYMENT

Item 627.19 and Item 628.245 will be paid for at the respective Contract unit prices per Each, which price shall include all labor, materials, equipment, and all incidental costs required to complete the work.

ITEM 655.3 ADA COMPLIANT HANDRAIL FOOT

The work under this item shall conform to the relevant provisions of Subsection 660 of the Standard Specifications and the following:

The work under this item shall consist of providing all shop drawings, labor, equipment, materials, shop painting, and incidental work necessary to furnish and install the ADA compliant metal handrail.

REFERENCES

The work shall be accomplished in accordance with regulations of local, county, state and federal agencies or utility company standards as they apply.

ASTM:	American Society for Testing and Materials
A36/ A36M-00	Carbon Structural Steel
A48-94	Gray Iron Castings
A53/ A53M-99b	Pipe, Steel, Black and Hot-dipped, Zinc-coated
A108-99	Steel Bars, Carbon cold Finished, Standard Quantity
A123/ A123M-97a	Zinc (Hot-dip galvanized) Coatings on Iron and Steel Products
A153/ A153M-98	Zinc Coating (Hot-dip) on Iron and Steel Hardware
A193/ A193M-99a	Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service
A276-98b	Stainless Steel Bars and Shapes.
A307-97	Carbon Steel Bolts and Studs, 60000 PSI Tensile Strength
A312/ A312M-00	Seamless and Welded Austenitic Stainless Steel Pipes
A385-00	Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
A500-99	Cold-formed Welded and Seamless Carbon Steel Structural Tubing in Rounds & Shapes
A501-89	Hot-formed Welded and Seamless Carbon Steel Structural Tubing
A510-96	Wire rods and coarse Round Wire, Carbon Steel
A572-92	High Strength Low Alloy Columbium-Vanadium Steel
AISI:	American Iron and Steel Institute
AISI 304	Stainless Steel Alloy Designation
AISI 316	Stainless Steel Alloy Designation
AISI M1020	Merchant Quality Steel
AWS:	American Welding Society
D1.1-2000	Structural Welding Code – Steel
D1.6-99	Structural Welding Code – Stainless Steel

QUALITY ASSURANCE

Workmanship and finish shall be equal to the best practice of modern shops for each item of work. Metal fabrication shall be accomplished using the highest standards of workmanship. All work shall be executed by experienced metal workers and meet the following requirements.

ITEM 655.3 (Continued)

Engage the service of a galvanizer who has demonstrated a minimum of five (5) years' experience in the successful performance of the processes outlined in this specification and who will apply the galvanizing and coatings within the same facility as outlined herein. The Town's Representative has the right to inspect and approve or reject the galvanizer/ galvanizing facility.

The current issue of Standard Code of Arc and Gas Welding in Building Construction shall apply to this Section as though written out in full. Welding shall be in accordance with the Structural Welding Code of the American Welding Society.

Where structural joints are made by welding, the details of all joints, the techniques of welding employed, the appearance and quality of welds made, and the methods used to correct defective work shall conform to requirements of the AISC and AWS codes.

Welds shall be made only by welders who have previously been qualified by tests as prescribed in AWS "Standard Qualification Procedure" for the type of work required.

All dissimilar metals shall be insulated to prevent bimetallic interaction.

Individual metal pieces shall be saw cut and carefully fitted together.

Sections shall be well formed to shape and size with sharp lines and angles; curved work shall be sprung evenly to curves.

Exposed surfaces shall have a smooth finish and sharp, well defined lines and arises.
Grind all edges of bars and plates completely free from nicks and machine marks, prior to galvanizing or shop priming.

All surfaces and connections of metal items shall be without visible grinding marks, surface differentiation or variation.

All fabricated metal items shall be fine sanded throughout to produce a high standard of surface smoothness.

Welding shall be continuous and shall extend for the entire length of the joints. All exposed welds shall be ground smooth.

Weld with uncoated wire to prevent flux deposits. If coated wire is used, all flux residue shall be thoroughly removed and bare white metal exposed, prior to galvanization, if applicable. Where overlapping surfaces are welded, seal off contact area by welding all edges around contact area.

All welds shall be watertight.

Drilled and tapped holes shall be set 90 degrees from face surface and in alignment.

ITEM 655.3 (Continued)

All shop connections shall be full seam welded and ground flush and smooth. Draw up all threaded connections tightly, after buttering same with pipe joint compound, to exclude water. Deform threads to prevent loosening for all exposed connections subject to vandalism.

Where the work of this Section must be attached to other materials or where it must be assembled and installed in the field, Contractor shall cut, drill, punch and ream, countersink and tap, or otherwise provide the required holes in the shop, unless such connections are to be welded. The sizes and locations of all such holes shall be shown on the Shop drawings.

Metalwork to be built in with concrete or masonry shall be of the form required for anchorage or shall be provided with suitable anchors or expansion shields.

All materials and workmanship under this Section shall be subject to inspection in the mill, shop or field by qualified inspectors. However, such inspection, wherever conducted, shall not relieve Contractor of his responsibility to furnish materials and workmanship in accordance with Contract requirements.

Metal items that are fabricated and galvanized under this Section and require painted coatings shall be surface prepared and primed within 12 hours of galvanizing in a controlled environment meeting the requirements of the paint manufacturer's recommendations.

DELIVERY, STORAGE AND HANDLING

Deliver and store work to prevent damage to surface finishes of metal items, wracking or stress of components, and to prevent mechanical damage or damage by the elements. All stored materials and items shall be protected from weather, careless handling and vandalism.

Items which become rusted or damaged because of non-compliance with these conditions will be rejected and shall be replaced without additional cost to the Town.

Deliver work to the site in sufficient time to avoid delay in job progress and at such times as to permit proper coordination of the various parts. The Contractor shall be responsible for scheduling the delivery of all items so as to minimize on-site storage time prior to installation.

Protection of Coated Metal Items: All fully coated and cured assemblies shall be protected from handling and shipping damage with the prudent use of padded slings, dunnage, separators and tie downs. Loading procedures and sequences shall be designed to protect all coated surfaces.

Erection marks for field identification of members and weight marks shall be affixed in such a manner as to facilitate removal upon final assembly without damage to the coating system.

ITEM 655.3 (Continued)

CERTIFICATES

Provide certificates listing materials used in coating systems and certify compliance with standards designated.

Certificate of Compliance from Galvanizer: Submit notarized Certificate of Compliance with application for payment for galvanizing, signed by galvanizer, indicating compliance with requirements of specifications. Include scope of services provided, and quantity and itemized description of items processed. The notarized statement shall declare the day each piece was galvanized. The stamp shall indicate the ASTM Standard and the coating weight.

The Contractor shall submit in writing the names and addresses where all galvanizing, surface preparation, priming, intermediate coat application and finish coat application are to be performed. The Town Representative may arrange to visit the shop facility to inspect the surface condition of all specified miscellaneous metal items prior to shipment and delivery to the next place of work.

Visual Stamp: The galvanizer shall mark all lots of material with a clearly visible stamp or tag indicating the name of the galvanizer, the weight of the nickel-zinc coating, and the applicable ASTM Specification Numbers.

MATERIALS

Provide only new materials, free from defects impairing strength, durability or appearance and of the quality specified.

Furnish all supplemental parts necessary to complete each item whether or not such parts are shown or specified. Furnish all fastenings for securing the work required in this Section. Provide fastenings of the same material, color and finish as the metal to which applied unless otherwise indicated.

Metals

Structural steel:

1. Tubular shapes shall conform to ASTM A 500, grade B
2. Bars, plates and angles shall conform to ASTM A36
3. Pipes shall conform to ASTM A501 or ASTM A53, Types E or S, grade B
4. Steel bolts, washers, and nuts shall conform to ASTM 307.
5. Filler metal for welding: Welding electrodes for manual shielded metal arc welding shall conform to ASTM A233, E60 or E70 Series. Bare electrodes and granular flux used in the submerged-arc process shall conform to AISI Specifications.

Galvanizing

All steel components of the metal railing including hardware, attachments or other specified steel elements shall be galvanized and said galvanizing shall conform to the following specifications. Do not galvanize stainless steel components. Field priming of hot dip galvanizing will not be permitted.

ITEM 655.3 (Continued)

Prior to galvanizing, all specified metal items shall be cleaned (pickled) in accordance with SSPC-SP8. Cleaning shall remove all rust, scale, and coating surface must be clean, dry, undamaged and free of all loose rust, dirt, grease, or other contaminants including salt deposits. Specified metal items calling for galvanizing shall be hot-dipped galvanized after fabrication and chromated after galvanizing by dipping in a 0.15 percent chromic acid solution. Galvanizing bath shall contain 0.05 – 0.09 percent nickel. Galvanize all ferrous fasteners, clips, sleeves, anchors and accessories in contact with galvanized items.

Galvanizing shall comply with ASTM A123M-97A, A153/A153M-98, ASTM A385-00 as applicable.

All galvanized materials shall be inspected for compliance with these specifications and marked with a stamp indicating the name of the galvanizer, the ASTM Specification and the weight of the zinc coating in ounces per square foot.

Unless otherwise indicated, all items to be galvanized under this Section shall receive a 3 mil coating of zinc.

Items to be galvanized shall be galvanized after fabrication. Where size of assembly is too large for complete unit galvanizing, these assemblies shall be galvanized prior to fabrication, in as large sections as practical and then only with the written approval of the Town's Representative.

Touch-Up and Repair: For damaged and field welded zinc-coated surfaces, clean welds, bolted connections and abraded areas.

At galvanized surfaces, apply organic zinc repair paint complying with requirements of ASTM A780. Galvanizing repair paint shall have 65-percent zinc by weight and shall be from the same source manufacturer of the accepted paint coating system specified. Intermixing of materials within and between coating systems will not be permitted. Thickness of applied galvanizing repair paint shall be not less than coating thickness required by ASTM A123 or A153 as applicable. Touch-up of galvanized surfaces with aerosol spray, silver paint, bright paint, or aluminum paints is not acceptable.

Following galvanizing, each item shall receive surface grinding to remove lumps, sags or spikes resultant from the galvanizing process. The finished surface following grinding shall be hand smooth and without irregularities. Take care not to damage the galvanized surface coating.

Shop Applied Coatings

All steel components of the metal railing including hardware, attachments or other specified steel elements shall be shop painted and said shop painting shall conform to the following specifications. Do not shop paint stainless steel components.

All coatings shall be provided as a system from a single manufacturer.

Touch-up paint for field touch-up of galvanized surfaces:

ITEM 655.3 (Continued)

Touch up paint shall be a two-component, moisture-cured, zinc-rich inorganic or organic primer. Recommended Dry Film Thickness shall be as recommended by manufacturer and approved by Engineer. Acceptable products and their manufacturers shall include the following:

1. Ply-Tile Epoxy Organic Zinc Rich Primer
   Manufactured by M.A.B Industrial Coatings
   Broomall, PA 19008
2. Dimetcote 9
   Ameron International
   Alpharetta, GA 30004
3. Metalhide 97-673 Series, 1001 Inorganic Zinc Rich Coating
   PPG Architectural Finishes, Inc.
   One PPG Place
   Pittsburgh, PA 15272
4. Zinc Clad III HS, Organic Zinc-Rich Epoxy Primer
   Sherwin-Williams Company
   www.sherwin-williams.com
5. Or approved equal

Factory Applied Primer Over Hot-Dip Galvanizing:

Primer coating for shop painting of galvanized surfaces shall be factory-applied polyamide epoxy primer, 3.0 mils dry film thickness minimum. Acceptable products and their manufacturers shall include the following:

1. Ply-Tile 520-W-45 Epoxy Primer
   Manufactured by M.A.B Industrial Coatings
   Broomall, PA 19008
2. Amercoat 385
   Ameron International
   Alpharetta, GA 30004
3. Pitt-Guard 97-946 Series All Weather Direct-to-Rust Epoxy Coatings
   PPG Architectural Finishes, Inc.
   One PPG Place
   Pittsburgh, PA 15272
4. Macropoxy 646 Fast Cure Epoxy
   Sherwin-Williams Company
   www.sherwin-williams.com
5. Or approved equal

Factory Applied Architectural Finish Over Hot-Dip Galvanizing and Primer:

Provide factory-applied High-Build Aliphatic Acrylic Polyurethane color coating compatible with primer over primed galvanized steel as previously referenced. Apply coating at the galvanizer's plant, in a controlled environment meeting applicable environmental regulations.

ITEM 655.3 (Continued)

Surface Preparation: Coat over preceding epoxy or urethane coat within 24 hours Finish Coat color shall be Gloss Black, or other color as selected by the Town Representative from the manufacturer's standard color range.

All hardware shall be painted in corresponding color as adjacent members as noted on the Drawings.

Anchoring Systems
Epoxy grout as required for anchoring shall be a pourable, quick setting, non-metallic and non-shrinking.

If moveable metal railing posts are indicated in the Contract Drawings, ferrules for use in anchoring moveable metal railing posts shall be galvanized steel ferrules suitable for use in cast-in-place concrete conditions where ferrule is fully integrated with concrete steel reinforcement. Ferrules shall provide 240 MPa yield strength per bolt. Ferrules shall be 3/4 inch inside diameter size with threaded embedment no less than 3 inch depth below concrete surface.

Cast in place concrete for footings shall be 28-day compressive strength 4,000 psi, three-quarter inch maximum size aggregate, 610 concrete conforming to the requirements of Section 901 CEMENT CONCRETE MASONRY of the Standard Specifications.

EXECUTION

Metal Fabrication:
Take all measurements required at the work site. Check measurements, compare dimensions and other data with various trades installing adjoining work to assure proper coordination.

Arc welding procedures shall conform to the current standards of the AWS. All welds shall be as designated on the plans and shall be ground smooth and flush to a neat finish. All welds shall be watertight. Care shall be taken to minimize distortion due to heat. Metal shall not be primed or painted before welding.

Welding shall be continuous except where tack welding or stitch welding are specifically permitted. Tack or stitch welding will not be permitted on exposed surfaces. All exposed welds shall be ground smooth.

Weld with uncoated wire to prevent flux deposits. If coated wire is used, all flux residue shall be thoroughly removed and bare white metal exposed. Where overlapping surfaces are welded, seal off contact area by welding all edges around contact area.

Do not enlarge unfair holes by burning and forcing, but correct by reaming.

Do all shop drilling, tapping, shop fitting, shop cutting, shop welding, and bolting required to erect, install and fit metal work to adjoining work. Furnish all screws, bolts, anchors, etc., required to attach metal work securely to adjoining work.

ITEM 655.3 (Continued)

Install all supports and anchors for metal work except those to be cast into concrete as indicated.

Finish Schedule:

Color	ITEM	GALV.	Two-coat Paint System
Pure Black	Posts and Railings	Yes	Yes

Application of Paint and Finishes to Metal Surfaces
All metal shall be primed and painted as described in this Section. All coatings shall be applied in the shop except for field touch-up after installation. See requirements for field touch-up as described in this Section. All surface preparation and coating work, including field touch up work, shall be as specified under the work of this Section.

All galvanized steel surfaces shall receive the 2-coat shop applied paint system as specified in this Section except the following particular locations that shall be masked off and treated as follows.

Faying surfaces of slip-critical bolted connections shall receive only a single application of primer. The dry film thickness shall be no greater than the thickness tested on the coating manufacturer's Certified Test Report for slip coefficient.

Miscellaneous metal surfaces within 4 inches of field welds shall receive only a single coating of primer at 0.5 - 1.5 mils dry film thickness.

Galvanized steel surfaces to be in contact with concrete shall not be coated. For galvanized items to be set in cast or cored concrete walls, footings or foundations, ensure that 2 coat paint coatings extend below the horizontal surface of the concrete by no less than one inch or as shown on the Contract Documents.

Edges and shop welds of galvanized steel items shall be locally hand-striped with a brush in the longitudinal direction with an additional coat of the epoxy or urethane coating prior to application of the finish aliphatic urethane coating. The coating manufacturer shall be consulted to determine the appropriate epoxy or urethane coating to use for striping. The application of the striping materials shall be in accordance with the coatings manufacturer’s written instructions. The striping material shall be tinted to distinguish it from the intermediate coats.

Application Methods:
The coating system shall be applied by spray equipment of a type and size capable of applying each coat within the required thickness range. The applicator shall strictly adhere to the manufacturer's recommendations about application methods, cure times, temperature and humidity restrictions and recoat times for each individual coat of the specified system. Brushes shall be used in areas where spray application will not achieve acceptable results. Brushing technique shall be performed in a manner that will provide a uniform, blended finish. No coating material shall be thinned in any way except as directed by manufacturer.

ITEM 655.3 (Continued)

Conventional spray equipment with mechanical agitators shall be used for prime coat application on bare steel and for epoxy or urethane intermediate coat on galvanized surfaces.

All storage, mixing, thinning, application and curing efforts, techniques and methods shall be accomplished in strict accordance with the printed material data sheets and application instructions published by the respective coating material manufacturer.

Surfaces shall be painted with the specified prime coat material before the end of the same work shift that they were blast cleaned and before any visible rust back occurs.

Applied coatings shall not have runs, sags, pinholes or discontinuities.

The dry film thickness shall be within the range specified in the manufacturer's printed literature for the specified coating system. Dry film thickness shall be measured in accordance with SSPC-PA 2.

The intermediate coat shall be of a contrasting color to the prime and top coat colors.

There shall be no color variation in the topcoat as determined by comparison with Federal Standard 595B.

All storage, mixing, thinning, application and curing efforts, techniques and methods shall be accomplished in strict accordance with the written requirements and procedures published by the respective coating material manufacturer.

Additional coats: Provide additional coats necessary to eliminate show through and bleed through conditions.

Drying Time: Allow manufacturer’s recommended drying time between successive coats. And allow each coat to thoroughly dry prior to application of subsequent coat.

All compressed air sources shall be properly sized and designed with oil and moisture separators, attached and functional, to allow air at the nozzle, either for blast cleaning, blow-off, painting or breathing, to be oil-free and moisture-free. It shall be of sufficient pressure to accomplish the associated work efficiently and effectively.

Surfaces not in contact with other steel surfaces but inaccessible after assembly shall be coated prior to assembly.

Critical attention shall be given to edges and bolted connections. All bolts, nuts and washers shall be fully coated and no gaps left unfilled and un-coated. Stainless steel hardware shall not be painted.

Adhesion strength of the fully coated assemblies shall be within 80 percent of the values for Adhesion as described in the approved manufacturer’s literature measured per ASTM D4541 using apparatus under Annex A4.

ITEM 655.3 (Continued)

Strict attention must be directed to the re-coat times of all applied materials. Shop bolted connections shall also have all bolt heads and nuts striped in a circular brush motion with the same material.

All applied coating shall have no runs, sags, or discontinuities; the dry film thickness shall be within the range specified. There shall be no color variation in the topcoat as determined by Federal Standard 595B. Also, there shall be no gloss variation in the topcoat where tested in accordance with ASTM D523.

Installation
Install all metal handrail items in conformance to the Contract Documents and approved Shop Drawings. All posts shall be plumb. Contractor shall coordinate with other trades during installation of the metal handrails.

Anchor bolts shall be grouted into the cored holes with non-shrink grout flush with horizontal and vertical surfaces as required in approved Shop Drawings.

The Contractor shall touch up any minor blemishes in the handrail finish upon completion of installation.

METHOD OF MEASUREMENT

Item 655.3 will be measured for payment by the Foot of ADA compliant handrail installed, complete in place.

BASIS OF PAYMENT

Item 655.3 will be paid for at the Contract unit price per Foot, which price shall include all labor, materials, equipment, excavation, concrete for footings, drilling, epoxy grout, or touch up of any minor blemishes in the finish, and all incidental costs required to complete the work.

ITEM 657. TEMPORARY FENCE FOOT
ITEM 657.5 TEMPORARY FENCE REMOVED AND RESET FOOT

The work under these Items shall conform to the relevant provisions of Subsections 644 and 665 of the Standard Specifications and the following:

Thw work under Item 657. consists of furnishing, installing, mainteaning, and final removal of 6-foot high temporary fence and gates to separate construction activities from public access.

The work under Item 657.5 consists of removing and resetting temporary fence and gates as many times as needed to protect the work site and to protect pedestrians traveling through the worksite during construction.

Locks and chain or other suitable locking means shall be installed on temporary fence gates to prevent access to the work site by unauthorized personnel during non-working hours.

Protection shall be for the duration of the construction activities unless otherwise directed.

PRODUCTS

Unless otherwise indicated, type of temporary chain link fencing shall be Contractor's option. Following types are acceptable:

1. New materials or previously used salvaged chain link fencing in good condition – subject to inspection/approval by the Engineer.
2. Posts: Galvanized steel pipe of diameter to provide rigidity. Post shall be suitable for setting in concrete footings, driving into ground, anchoring with base plates, or inserting in precast concrete blocks.
3. Fabric: Woven galvanized steel wire mesh. Provide in continuous lengths to be wire tied to fence posts or prefabricated into modular pipe-framed fence panels.

Gates

Provide personnel and vehicle gates of the quantity and size indicated on the Drawings or required for functional access to site.

1. Fabricate of same material as used for fencing
2. Vehicle gates:
   a. Minimum width: 20 feet to allow access for emergency vehicles.
   b. Capable of manual operation by one person.

Fence fabric shall be fastened to posts by means of No. 6 gauge zinc coated wire clips. No post tops are required.

ITEMS 657. and 657.5 (Continued)

Gates shall be fabricated using welded construction or heavy pressed steel or malleable corner fitting securely riveted. Gates shall be properly braced and diagonally trussed to eliminate any possible sagging. Hinges shall be of sufficient strength and design to permit easy and trouble free operation. All single swing gates shall be equipped with two H.O. hinges and one yoke latch per gate. All double swing gates shall be equipped with a positive type latching device with padlock fitting.

Installation of temporary fencing shall not deter or hinder access to existing or proposed fire hydrants. Maintain 3 feet diameter clear space around fire hydrants. Where fire hydrant is blocked by fencing, provide access gate.

The contractor shall maintain temporary fence in good condition all the time. If damaged, shall be immediately repaired

The fence shall not be removed without prior approval of the Engineer.

METHOD OF MEASUREMENT

Item 657. will be measured for payment by the Foot of temporary fence including gates installed. complete in place.

Item 657.5 will be measured for payment by the Foot of temporary fence including gates removed and rest, complete in place.

BASIS OF PAYMENT

Item 657. and Item 657.1 will be paid for at the respective Contract unit prices per Foot, which price shall include all labor, materials, equipment, and all incidental costs required to complete the work.

No separate payment will be made for all posts including end, corner, and intermediate brace posts, all gates and gate posts, removing and resetting of temporary fence for the convenience of the Contractor, the replacement and/or restoration of fence damaged due to construction accidents, vandalism and/or any other manner, and final removal, but all costs in connection therewith shall be included in the Contract unit price bid.

Payment of 40 percent of value will be made upon installation of Temporary Fence. The remaining 60 percent will be made when protection materials have been removed and disposed off-site.

ITEM 697.1 **SILT SACK** **EACH**

Work under this item shall conform to the relevant provisions of Subsections 227 and 670 of the Standard Specifications and the following:

The work under this item includes the furnishing, installation, maintenance and removal of a reusable fabric sack to be installed in drainage structures for the protection of wetlands and other resource areas and the prevention of silt and sediment from the construction site from entering the storm water collection system. Devices shall be ACF Environmental (800)-448-3636; Reed & Graham, Inc. Geosynthetics (888)-381-0800; The BMP Store (800)-644-9223; or approved equal.

CONSTRUCTION

Silt sacks shall be installed in retained existing and proposed catch basins and drop inlets within the project limits and as required by the Resident Engineer.

The silt sack shall be as manufactured to fit the opening of the drainage structure under regular flow conditions, and shall be mounted under the grate. The insert shall be secured from the surface such that the grate can be removed without the insert discharging into the structure. The filter material shall be installed and maintained in accordance with the manufacturer's written literature and as directed by the Engineer.

Silt sacks shall remain in place until the placement of the pavement overlay or top course and the graded areas have become permanently stabilized by vegetative growth. All materials used for the filter fabric will become the property of the Contractor and shall be removed from the site.

The Contractor shall inspect the condition of silt sacks after each rainstorm and during major rain events. Silt sacks shall be cleaned periodically to remove and disposed of accumulated debris as required. Silt sacks, which become damaged during construction operations, shall be repaired or replaced immediately at no additional cost to the Department.

When emptying the silt sack, the contractor shall take all due care to prevent sediment from entering the structure. Any silt or other debris found in the drainage system at the end of construction shall be removed at the Contractors expense. The silt and sediment from the silt sack shall be legally disposed of offsite. Under no condition shall silt and sediment from the insert be deposited on site and used in construction.

All curb openings shall be blocked to prevent stormwater from bypassing the device.

All debris accumulated in silt sacks shall be handled and disposed of as specified in Section 227 of the Standard Specifications

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Silt sacks will be measured and paid at the Contract unit price per each, complete in place, which price shall include all labor, materials, equipment and incidental costs required to complete the work. No separate payment will be made for removal and disposal of the sediment from the insert, but all costs in connection therewith shall be included in the Contract unit price bid.

ITEM 697.2 FLOATING SILT FENCE FOOT

The work under this item shall conform to the relevant provisions of Subsection 670 of the Standard Specifications and the following:

The work under this Item shall consist of providing all labor, equipment, materials, incidental work, to provide, install, maintain, and final removal floating silt fences. Included in the

REFERENCES AND STANDARDS

The following standards shall apply to the work of this Section.

American Society for Testing and Materials (ASTM):

D 3786	Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics: Diaphragm Bursting Strength Tester Method
D 4356	Practice for Establishing Consistent Test Method Tolerances
D 4491	Test Method for Water Permeability of Geotextiles by Permittivity
D 4533	Test Method for Trapezoidal Tearing Strength of Geotextiles
D 4632	Test Method for Grab Breaking Load and Elongation of Geotextiles
D 4751	Test Method for Determining the Apparent Opening Size of a Geotextile
D 4833	Test Method for Index Puncture of Geotextiles, Geomembranes, and Related Products

SUBMITTALS

Proposed methods, materials to be employed, and schedule for effecting siltation control shall be submitted for approval.

PERMITS, CODES, AND REGULATIONS

Comply with all rules, regulations, laws and ordinances of the Town and State, and all other authorities having jurisdiction over the Project site. All labor, materials, equipment, and services necessary to make the work comply with such requirements shall be provided by the Contractor without additional cost to the Department.

Comply with the most stringent provisions of all applicable regulations of the Commonwealth of Massachusetts; Department of Environmental Protection (DEP); the Army Corps of Engineers (ACOE); and the United States Environmental Protection Agency (EPA).

All erosion control work will be in accordance with the Massachusetts Wetlands Protection Act 310 CMR-10.55.

SEDIMENTATION CONTROL PRINCIPLES

The Contractor shall provide suitable and adequate means of sedimentation control during construction. Control measures shall prevent siltation and sedimentation of waterways located in the construction area.

ITEM 697.2 (Continued)

Means of protection as noted on the Contract Documents indicate the minimum provisions necessary. Additional means of protection shall be provided by the Contractor as required for continued or unforeseen sedimentation problems, at no additional expense to the Owner. The Contractor shall be responsible to provide all materials and labor necessary to comply with the Order of Conditions issued by the Municipal Conservation Commission and provided to the Contractor by the Engineer or Town.

Regular weekly maintenance of all sediment control structures shall be provided to ensure intended purpose is accomplished. Sediment control measures shall be in working condition at the end of each day.

After significant rainfall or heavy flows, sediment control structures shall be inspected for integrity. Any and all damaged devices shall be repaired or replaced immediately.

Contractor shall retain all sediment on-site. No waterborn sediment shall leave the construction site. No waterborn sediment shall enter the adjacent waterways.

MATERIALS

Floating silt fence shall be manufactured of flexible impervious non-reinforced polyvinyl chloride (PVC) with a tensile strength of 300 pounds per inch, a fabric weight of 22 ounces per yard, and tear strength of 200 pounds. The curtain shall be buoyed with floating segments which provide a buoyancy of 5 times the weight of the curtain. The curtain shall be manufactured with a horizontal galvanized or stainless steel tension cable drawn tight during installation to reduce tensile stress on the curtain fabric. The curtain shall be weighted to prevent drift by a ballast chain located at the bottom of the curtain. Silt curtains shall be anchored or moored to prevent relocation of the curtain by wind or currents.

CONSTRUCTION METHODS

Floating Silt Fences shall be placed in locations where work activities could result in increased turbidity in the waterway. Adjust location of Floating Silt Fence components to correspond to all work activities.

Floating Silt Fences shall be deployed to contain sediment causing increased turbidity in water bodies in the construction area, to minimize the migration of the turbidity plume from the construction area and to decrease turbidity levels reaching intakes. Deploy Floating Silt Fences so that the ballast chain is fixed against the culvert wall or resting on the culvert bottom at the face of the culvert wall.

Deployment of Floating Silt Fence shall be executed in such a way that water traffic is not disrupted.

Floating Silt Fence shall encircle the area of Work unless the perimeter of the work area is partially bounded by walls or impermeable shore structures, in which case the Floating Silt Fence shall occupy the remainder of the perimeter that is not shore, wall or shore structures.

ITEM 697.2 (Continued)

The Contractor shall maintain Floating Silt Fences in good operating conditions, repairing as needed the curtain fabric, buoyancy equipment, tensile cable and ballast chain. Remove accumulated silt and debris by suction prior to moving the Floating Silt Fence.

Sediment deposits shall be disposed of off-site, in a location and manner that will not cause sediment nuisance elsewhere.

Debris behind the floating sedimentation fence shall be removed twice per month, at minimum.

Erosion protection material shall be kept securely anchored and in place until acceptance of the culvert.

METHOD OF MEASUREMENT

Item 697.2 will be measured for payment by the Foot of floating silt fence installed, complete in place.

BASIS FOR PAYMENT

Item 697.2 will be paid for at the Contract unit price per Foot, which price shall include all labor, materials, equipment, maintenance, repair, replacement, removal and resetting of erosion control devices, and all incidental costs required to complete the work.

ITEM 715.6 CLUSTER MAILBOX REMOVED AND RESET EACH

The work under this item shall conform to the relevant provisions of Subsections 715 and 840 of the Standard Specifications and the following:

The work of this item includes the careful removal and temporary stacking of a cluster mailbox, its post, and its salvageable fittings and resetting the cluster mailbox to a new concrete pad as shown in the Drawings.

During removal, the Contractor shall take photos of the existing installation of the mailbox. Show clearance above the existing ground to the bottom of the mailbox. Show post foundation, if any. Show post attachment and anchors, if any.

If anchors, fittings, or other appurtenances are not salvageable, the Contractor shall provide new components, matching the cluster mailbox manufacturer's specifications.

Carefully remove the box from the post and properly stack. Carefully excavate the post and properly stack. Backfill the empty post hole and foundation hole with suitable material and compact.

The cluster mailbox shall be reset according to the manufacturer's guidelines. If a concrete post foundation is required by the manufacturer, the Contractor shall coordinate construction of the pad with the foundation. If manufacturer installation guidelines are not available, comply with relevant provisions of Subsection 840.60.

Repair any finishes with paint or other surface treatment as recommended by the manufacturer. If manufacturer installation guidelines are not available, apply paint suitable for the type of material for the cluster mailbox and for the post.

METHOD OF MEASUREMENT

Item 7145.6 will be measured for payment by the Each cluster mailbox removed and reset.

BASIS OF PAYMENT

Item 715.6 will be paid for at the Contract unit price per Each, which price shall include all labor, materials, equipment, removal of the cluster mail box, excavation, backfill, temporary proper stacking, new cement concrete foundations, anchors and fittings, repair of finishes, and all incidental costs required to complete the work.

ITEM 740. ENGINEER'S FIELD OFFICE AND EQUIPMENT (TYPE A) MONTH

The work under this Item shall conform to the relevant provisions of Subsection 740 of the Standard Specifications and the following:

Two computer systems, a printer system and a digital camera meeting the requirements set forth below including installation, maintenance, power, paper, disks and other supplies shall be provided at the Resident Engineer's Office:

All equipment shall be UL approved and Energy Star compliant.

The Computer System shall meet the following minimum criteria or better:

Processor:	Intel, 3.5 GHz
System Memory (RAM):	12 GB
Hard Drive:	500 GB
Optical Drive:	DVD-RW/DVD+RW/CD-RW/CD+RW
Graphics Card:	8 GB
Network Adapter:	10/100 Mbit/s
USB Ports:	6 USB 3.0 ports
Keyboard:	Generic
Mouse:	Optical mouse with scroll, MS-Mouse compliant
Video/Audio	the computer system shall be capable of allow video calling and recording:
Video camera	shall be High Definition 1080p widescreen capable video calling and recording with built in microphone. The microphone system shall capture natural audio while filtering out background noise.
Audio	shall be stereo multimedia speaker system delivering premium sound.
OS:	Latest Windows Professional with all security updates
Web Browser:	Latest Internet Explorer with all security updates
Applications:	Latest MS Office Professional with all security updates Latest Adobe Acrobat Professional with all security updates Latest Autodesk AutoCAD LT Antivirus software with all current security updates maintained through the life of the contract.
Monitors:	Two 27" LED with Full HD resolution. Max. resolution 1920 x 1080
Flash drives:	2 (two) - 128GB USB 3.0
Internet access:	High Speed (min. 24 mbps) internet access with wireless router.

ITEM 740. (Continued)

The Multifunction Printer System shall meet the following minimum criteria or better:

Color laser printer, fax, scanner, email and copier all in one with the following minimum capabilities:

- Estimated volume 8,000 pages per month
- LCD touch panel display
- 50 page reversing automatic document feeder (RADF)
- Reduction/enlargement capability
- Ability to copy and print 11" x 17" paper size
- email and network pc connectivity
- Microsoft and Apple compatibility
- ability to overwrite latent images on hard drive
- 600 x 600 dpi capability
- 30 pages per minute print speed (color),
- 4 Paper Trays Standard (not including the bypass tray)
- Automatic duplexing
- Finisher with staple functions
- Standard Ethernet. Print Controller
- Scan documents to PDF, PC and USB
- ability to print with authenticated access protection

The Contractor shall supply a maintenance contract for next day service, and all supplies (toner, staples, paper) necessary to meet estimated monthly usage.

The Engineer's Field Office and the equipment included herein including the computer system, and printer shall remain the property of the Contractor at the completion of the project. Disks, flash drives, and card readers with cards shall become the property of the Department.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Compensation for this work will be made at the contract unit price per month which price includes full compensation for all services and equipment, and incidentals necessary to provide equipment, maintenance, insurance as specified and as directed by the Engineer.

ITEM 743. DUMPSTER REMOVED AND RESET LUMP SUM

The Contractor is responsible for hiring and paying the trash service company servicing #102-121 Mill Street to move, handle, or remove and reset an existing private dumpster as needed for construction of Bridge S-21-009.

The Contractor shall not handle the private dumpster but shall make arrangements with the trash service company to perform all movements of the private dumpster, as many times as needed so that it can always be accessed during the Project. The Contractor shall coordinate operations regarding the private dumpster with other construction activities. The dumpster must be relocated prior to beginning construction on Bridge S-21-009.

In the final condition, the dumpster will be relocated to a conc pad off River Street in the location shown on the plans.

BASIS OF PAYMENT

Item 743 will be paid for at the Contract unit price Lump Sum, which price shall include all labor, materials, equipment, and all incidental costs required to complete the work.

The concrete pad will be paid for under Item 701.2.

ITEM 751.765 COMPOST AND SEED OVER MODIFIED ROCK CUBIC YARD

The work under this Item shall conform to the relevant provisions of Subsection 751, 767, and 765 of the Standard Specifications and the following.

Work shall consist of furnishing and pneumatically applying compost in conjunction with the specified native seed on designated areas of modified rock and achieving satisfactory establishment of seeded species as specified herein.

QUALIFICATIONS

Compost application and seeding shall be done by a company having a minimum of five years of experience with native seed establishment. Prior to beginning work, the seeding Contractor shall furnish proof of qualifications to the Engineer for approval. Proof of qualifications shall include providing documentation (photos and contacts) to demonstrate knowledge and expertise with native seeding and establishment and proof of having completed successful native seeding projects.

MATERIAL AND SUBMITTALS

Compost

Compost shall meet the relevant provisions for Type 2 Compost, found in Section M1.06 of the Supplemental Standard Specifications.

The Engineer shall approve the Contractor's equipment for application.

Seed Mix

Seed Mixes and Submittals shall be per the item(s) for the permanent seed mix. Mix shall be:

Roadside Riverbank Mix, as specified under Item 765.442.

SEEDING SEASON

The season for seeding native mixes is April 1 - May 15 and October 1 - December 1 for dormant seeding. Written approval must be obtained for seeding outside the seeding season and, if approved, the permanent seed rate shall be increased by 50%

CONSTRUCTION METHODS

Method of application and equipment to be used shall be reviewed and approved by the Engineer prior to placement of material.

ITEM 751.765 (Continued)

Placement Of Compost

Compost shall be placed as shown on the Plans and in the Detail and as required by the Engineer. Material shall be placed so that settled material is at or slightly below the surface plane of the stone. The Contractor shall ensure that there will be adequate quantity, including adjustment for settlement.

For purposes of estimation, required compost quantities should be 300 cubic yards per acre to achieve the target depth.

Seeding

For areas smaller than half an acre, unless otherwise approved by the Engineer, seeding shall be done by broadcast method. Seeding shall be done in conjunction with or immediately following Compost application. Alternative seeding methods must be submitted and approved by the Engineer 14 days in advance of compost and seed application.

Hydroseeding

Hydroseeding may be used for sites over half an acre in size or when the rock slope does not permit safe application via a broadcasting method. Hydroseed shall be per the manufacturer's directions and as follows.

Tank and hoses shall be cleaned from all previous hydroseeding and hydromulching projects. Seed shall be mixed into the slurry immediately before application and slurry applied within 30 minutes after seeds have been placed in the tank. Once seed has been placed in the tank, tank shall be agitated only enough to mix the seeds and keep slurry from separating.

When Seeding Occurs After Application Of Compost Or After December 1

When seeding is done more than 3 days after Compost application or when Compost is applied after December 1, seeding rate shall be increased by 50%.

Over-Seeding

Large extents of bare area (greater than 5-6 feet and depending on modified rock slope conditions) shall be over-seeded with the specified mix during the appropriate season for seeding. Rates, methods, and submittals shall be as specified under the relevant Seed Mix Item and Materials above.

Over-seeding, mulch, watering, and all work for over-seeding shall be incidental.

Determining Satisfactory Establishment

A reasonably well-established stand of the specified seeded species as determined by the Engineer and the MassDOT Landscape Architect or designated Specialist will be required for Final Acceptance. The expectation is that an acceptable number and variety of the desired permanent seeded species will be visible. For seeding with compost over modified rock this shall generally be:

ITEM 751.765 (Continued)

- A minimum of 50% coverage by the specified permanent seeded species after one growing season (considered June-September 15). Of that percentage, generally, depending on the mix species:
  - At least 2 types of permanent seeded grass species shall be visible.
  - At least 2 species of wildflowers shall be visible.
- There will be no more than 25% coverage by weed species.
- There will be no invasive or aggressive species within the stand at the time of acceptance.
- There shall be no evidence of seed from non-native mixes (ex., clover) due to using an incorrect or modified mix or due to failure to clean the hydroseeding tank if a hydroseeder is used.

Invasive and aggressive weeds (such as mugwort, vetch, knapweed, and chicory) must be cut, pulled with roots removed, or treated with herbicide by a licensed and approved applicator prior to going to seed for Interim Acceptance. Weed removal shall be coordinated with MassDOT Landscape Architect. No herbicides shall be used without approval and coordination with MassDOT Landscape Design Section.

Acceptance Of Seeding And Establishment Work

Conditional Acceptance shall be based on approval of seed mix submittals and proper application of seed as specified herein.

Final Acceptance of Seed Establishment shall be given upon satisfactory Establishment as described above. If the seeded area fails to meet the requirements of Establishment by the end of the growing season, contractor shall propose and implement remediations and site shall be inspected during the following growing season after July 1st. Otherwise, Contractor shall forego the payment for Final Acceptance. All remediation shall be at the contractor's expense.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Compost and Seed for Modified Rock will be measured and paid for at the Contract unit price per Cubic Yard which price shall include all labor, materials, equipment, site preparation, and all incidental costs required to complete the work.

Schedule of payment shall be as follows:

60% upon approval of Compost application and Conditional Acceptance of seeding as specified above

40% upon Final Acceptance of Seed Establishment

Native Seed Mix shall be paid for under Item 765.442 Seeding – Roadside Riverbank Mix.

Modified Rockfill will be paid for under Item 986.

ITEM 755.55 STREAMBED RESTORATION SQUARE YARD

The purpose of this item is to restore temporarily disturbed areas of streambed, as directed by the plans, the engineer and/or wetland specialist. This work shall consist of minor grading and placement of natural streambed material where needed to restore the streambed to pre-construction conditions in areas temporarily disturbed by dewatering for control of water and ancillary work to support the excavation, removal, and backfill of the pier. The ultimate product will replicate the function and appearance of the existing stream to the most practicable extent. Any natural streambed material required to restore the temporarily disturbed areas will be provided under Item 123.5 Channel Backfill.

This item shall also include the installation of a narrow wildlife crossing shelf along the northern/eastern abutment to provide passage for small terrestrial animals. This approximately 2-foot shelf will extend along the top of bank to the upstream and downstream limits of the bridge abutment and will meet the horizontal profiles of the existing banks at those locations.

The Contractor shall coordinate with his/her subcontractors to ensure all required equipment is available on-site to complete the work in this manner. The streambed restoration is required to comply with environmental permits issued for the project. MassDOT Environmental Services will provide and pay for a Fluvial Geomorphologist (Geomorphologist) to provide a pre-construction meeting, on-site oversight during construction, and assistance during streambed restoration construction to ensure the restoration is constructed, as required by these Special Provisions and in accordance with permit requirements.

At least 30 days prior to the commencement of construction, the Contractor shall coordinate with David Paulson (MassDOT Wildlife Unit Supervisor, (508) 389-6366 / david.j.paulson@state.ma.us) to set up an initial (virtual or in person) meeting with MassDOT's Geomorphologist, Contractor, and Resident Engineer. At this meeting, the Geomorphologist will provide an overview of the restoration work. The Contractor should be prepared to discuss the anticipated means, methods, and schedule.

PROCESS APPROVAL

In lieu of a mockup, the Contractor shall schedule an onsite meeting to discuss the streambed restoration with the Geomorphologist and respective parties from MassDOT. The Geomorphologist shall be onsite during initial streambed restoration. The Contractor shall provide the Geomorphologist adequate access to observe, direct, and inspect the channel restoration work throughout the duration of the removal, stockpile, and reinstallation of the existing streambed material. If material is being brought to the site for streambed restoration, the Contractor shall provide the Geomorphologist with photographs to see the material.

MATERIAL

Any stone or material excavated from the existing streambed during bridge pier removal, culvert replacement, and apron installation shall be stockpiled and reused for natural streambed material, provided the excavated stone and material is characteristic of the existing stream material upstream and downstream of the work area, or meets the below criteria. The elevations and conditions of the existing streambed shall be maintained to the maximum extent practicable.

ITEM 755.55 (Continued)

The natural streambed material shall be locally sourced and match the composition of the native streambed. This streambed material shall be supplemented, as available, with the existing natural streambed material that is excavated within the project limits.

Natural streambed material shall be green/gray, brown/gray, dark gray, and/or dark brown shall be acceptable. White rock is not acceptable. All natural stream bed material shall be free from laminations, weak cleavages and will not disintegrate from the action of air, water and in handling and placing. Granular sedimentary stone will generally be unacceptable.

CONSTRUCTION

The work shall be completed while the temporary water control has been installed for the bridge construction.

The streambed material mix shall be spread over disturbed areas within the stream bed. In all areas, streambed mix shall be tamped down in order to fill / choke voids in the material. Fill voids by hand tamping with metal tamping rods, by shaking stone with the teeth of an excavator bucket, and/or by spraying water to settle fines between large stones. Plate compactors shall not be used. The purpose for filling the voids is to prevent subsurface flow where water disappears into the large voids in the stone fill below the channel bed surface.

After the bridge construction is completed and all material has been placed in the stream channel and approved by the Wetland Specialist, stream geomorphologist or Resident Engineer, the Contractor shall remove the dewatering materials in such a way to slowly wet the stream to minimize the initial sediment pulse. Every attempt shall be made to minimize the downstream movement of sediment.

The final streambed shall look like a natural river/stream, shall match nearby river/stream reaches, and there shall be minimal to no subsurface flow upon final inspection and acceptance by the Engineer, Wetland Specialist, and Geomorphologist.

METHOD OF MEASUREMENT

Item 755.55 will be measured for payment by the Square Yard of the streambed restoration.

BASIS OF PAYMENT

Item 55.55 will be paid for at the Contract unit price per Square yard, which price shall include all labor, materials, equipment, rehandling the streambed material within the same area, additional stream bed materials, and all incidental costs required to complete the work.

All backfill material required to re-establish the surface elevation at the pier removal shall be paid for under Item 123.5 Channel Backfill.

Temporary water control for McKinstry Brook shall be measured and paid for under Item 991.2 Control of Water – Structure No. S-21-009.

ITEM 756.1 CONSTRUCTION PERIOD POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL PLAN LUMP SUM

The work under this item shall consist of the preparation and implementation of a Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan (CP/PP) as required by a regulatory agency. This Item is applicable to projects that are not subject to the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) required by the National Pollutant Discharge Elimination System (NPDES) and applicable Construction General Permit (CGP) issued by the U.S. Environmental Protection Agency (EPA).

The work under this item shall also include the preparation, submission and implementation of a Flood Contingency Plan. The plan shall address the potential need for the temporary relocation of construction and auxiliary equipment situated within the 1% annual chance of flooding zone to designated upland locations above the Base Flood Elevation during flood events. The Flood Contingency Plan shall address any additional MassDEP-required information requirements, as applicable. The Flood Contingency Plan shall be submitted to the Engineer for review and approval at the same time as the CP/PP.

The CP/PP, at a minimum, shall include the following:

- Project & Site Description
- Project Site Contact Information
  - This shall include the phone number for the Contractor Site Superintendent, Project Manager and CP/PP Inspector(s).
- Qualifications of the CP/PP Inspector and documentation of qualifications
  - At a minimum, relevant personnel responsible for erosion and sedimentation control inspections shall have completed the EPA's construction inspection training course and obtained a certificate confirming completion of the training module, or have completed a third-party stormwater course which covers the minimum topics listed in Part 6.3.b of the CGP.
- Reference to and information to address permit Special Conditions relevant to the CP/PP contents
  - Section 401 Water Quality Certification
  - USACE Self Verification
- Construction Sequencing/Phasing
- Erosion Prevention, Sediment Control, and Best Management Practices (BMP s) to be implemented
- Maintenance measures and intended timeline to address maintenance and corrective actions for implemented Erosion Prevention Measures, Sediment Control Devices, and BMPs
- Anticipated inspection schedule and sample inspection report form
  - Use the EPA's Site Inspection Report Template found on the EPA's website.
- Site Plans
  - This shall depict, at minimum, the project limits, locations of construction phase erosion prevention measures, construction phase sedimentation control measures, limits of disturbance, staging and laydown areas, proposed dewatering locations and proposed stockpile locations. Depict existing jurisdictional wetland resource areas, drainage conveyances and stormwater treatment features.

ITEM 756.1 (Continued)

The Contractor shall prepare the CP/PP, and update/revise as needed upon changes in site conditions, relevant project personnel, construction phase controls, schedule changes, revised work, regulations, and construction methodologies. The Contractor shall submit the CP/PP to the Engineer for approval at least thirty (30) days prior to prior to commencement of any project related activity that disturbs land, including clearing and grubbing. Submission of the CP/PP to a regulatory agency for review and approval may also be required by a Special Condition associated with a permit issued under the Wetlands Protection Act, or Section 401of the Clean Water Act and their implementing Regulations. It is the responsibility of the Contractor to ensure the CP/PP is submitted to reviewers in a timely manner to support the construction schedule.

It is the responsibility of the Contractor to comply with the conditions of any state Wetlands Protection Act Order, Water Quality Certification, Army Corps of Engineers Section 404 Permit and other environmental permits applicable to the project, and to include in the CP/PP the methods and means necessary to comply with applicable conditions of said permits.

The inspections shall be performed by an individual that meets the qualifications specified in the permits and proof of the inspector's qualifications shall be included as an Appendix in the CP/PP. CP/PP inspection reports shall be completed and distributed to the Resident Engineer within 24-hours of each inspection. Special conditions associated with permits may also require submittal of reports to regulators at a certain frequency. Reports shall be maintained throughout the duration of the project. In addition, if the Engineer determines at any time that the inspector's performance is inadequate, the Contractor shall provide an alternate inspector.

The Contractor is responsible for preparation of the CP/PP, inspections, and associated reports. The Standard Specifications require adequate erosion and sedimentation control for the duration of the Contract. All control measures must be properly selected, installed, and maintained in accordance with manufacturer specifications, good engineering practices, and MassDOT standard specifications and special provisions. Contractor must maintain all control measures and other protective measures in effective operating conditions in accordance with the additional Special Provisions herein. If periodic inspections or other information indicates a control has been used inappropriately or is no longer adequate, it is the responsibility of the Contractor to replace or modify the control for site conditions at no additional cost to the Department.

BASIS OF PAYMENT

Item 756.1 will be paid for at the Contract unit price Lump Sum, which price shall include all labor, materials, equipment, submittals, CP/PP and Flood Contingency Plan preparation, required revisions, revisions/addenda during construction, inspection, reports, and all incidental costs required to complete the work.

Payment of 30% (thirty) of the Lump Sum price of this item will be made upon acceptance of the CP/PP and Flood Contingency Plan.

Payment of 40% (forty) of the Lump Sum price of this item will be made in equal installments over the expected duration of stormwater pollution prevention measures.

Payment of the final 30% (thirty) of the Lump Sum price of this item will be made when final stabilization has been achieved (minimum of 75% total cover of disturbed vegetated areas with perennial ground cover).

ITEM 765. 442 SEEDING – ROADSIDE RIVERBANK MIX SQUARE YARD

The work under this item shall conform to the relevant provisions of Subsection 765 of the Standard Specifications and the following:

The work shall consist of planting and establishing a stand of grass for the compost and seed over modified rockfill or as required by the Engineer.

For the purposes of these specifications, the term "grass" shall apply to all the forbs, grasses, sedges, and rushes included in the materials.

All seeding shall be done by a company having a minimum of five years of experience with native grass establishment. Prior to beginning work, the applicator shall furnish proof of qualifications to the Engineer for approval. Proof of qualifications includes providing documentation to demonstrate knowledge and expertise with native seeding and proof of having completed successful native seeding projects.

SEEDING SEASON

Seeding seasons shall be April 1- May 15 and October 1 – November 15 for dormant seeding. For seeding that occurs outside of this period, the seed rate shall be increased by 50%.

MATERIALS

Seed

Samples and Submittals

1. Certificate of Materials. Prior to ordering, the Contractor shall submit to the Engineer the manufacturer or supplier's notarized Certificate of Materials. This document shall not be used as proof of purchase, proof of material delivered, or proof of material seeded, but simply to verify supplier availability of seed listed on the date certified. The species listed should match those specified on the plans or herein, however, cultivars may vary due to availability. Substantial substitutions or changes in the mix from that specified on the plans or herein shall be approved by MassDOT Landscape Design Section.

2. Seed Tag Certification. All seed lots have a seed analysis tag as required by State and Federal law. The contractor shall submit seed tags for each bag of seed used on the project site or ensure that each tag is photo documented by the Engineer. Number of tags shall match number of bags sent by the supplier to meet rate of Pure Live Seed specified on the plans. Tag must include: kind and variety of seed; lot number; origin of seed; net weight; % purity; germination; dormant seed; germination test date; inert matter; weed, noxious and other crop seed; and name and address of company responsible for the analysis. Seeding may be considered unacceptable for payment if no tags are submitted.

ITEM 765.442 (Continued)

3. Certificate of Compliance. Prior to payment, contractor shall submit a signed, dated and notarized Certificate of Compliance from the Supplier that serves as proof of purchase or bill of lading. This document shall include kind and variety of seed, lot number, net weight shipped, date of shipment, and name and address of Supplier or Manufacturer. All information must be included on the notarized form, including lot number and net weight shipped for specified job. This information shall match Seed Tag Certification and quantity of seed applied on the job. Seeding may be considered unacceptable for payment if information is incomplete.

4. Seed Sample. Contractor may be asked, prior to seeding, to submit a seed sample for testing. Testing shall be incidental to this item.

Quantities specified are Pure Live Seed (PLS). Greater quantities of ordered seed may be required to achieve actual specified seeding rates. Pure Live Seed is defined as the fraction of pure seed species within the mix that, by standard seed testing practices, will germinate. This is determined by multiplying the percent of seed purity by the percent of seed germination.

Seed mix shall be a custom blend as shown on the plans or shall be as specified below. Seed cultivars should be those that are as regional to New England or the local ecotype as possible.

Seeding rate shall be 15 pounds per acre.

Botanical Name	Common Name	(PLS)
Grass		
Elymus virginicus	Virginia Wild Rye	27.0%
Schizachyrium scoparium 'Albany Pine'	Little Bluestem 'Albany Pine'	22.5%
Andropogon gerardii NY Eco	Big Bluestem NY Eco	14.0%
Elymus riparius	Riverbank Wild Rye	14.0%
Panicum virgatum	Switch Grass	5.0%
Dichanthelium clandestinum 'Tioga'	Deertongue grass 'Tioga'	5.0%
Carex vulpinoidea	Fox Sedge	2.5%
Agrostis perennans	Upland Bentgrass	1.5%
Poa palustris	Fowl Bluegrass	0.3%
Juncus effusus	Soft Rush	0.1%
Juncus tenuis	Path Rush	0.1%
		92.0%
Herb/Forb		
Chamaecrista fasciculata	Partridge Pea	3.0%
Penstemon digitalis	Beard-tongue	1.0%
Vernonia noveboracensis	New York Ironweed	0.6%
Helenium autumnale	Common Sneezeweed	0.5%
Verbena hastata	Blue Vervain	0.4%

ITEM 765.442 (Continued)

Aster puniceus	Aster - Swamp	0.4%
Aster cordifolius	Blue Wood Aster	0.3%
Asclepias incarnata	Swamp Milkweed	0.3%
Monarda fistulosa	Wild Bergamot	0.2%
Aster novae-angliae	New England Aster	0.2%
Solidago odora	Licorice Scented Goldenrod	0.2%
Desmodium canadense	Showy Tick Trefoil	0.2%
Eupatorium perfoliatum	Boneset	0.2%
Eupatorium maculatum	Spotted Joe Pye Weed	0.2%
Solidago juncea	Early Goldenrod	0.1%
Euthamia graminifolia	Grass-leaved Goldenrod	0.1%
Lobelia cardinalis	Cardinal Flower	0.1%
		8.0%

Oats may be added for cover crop for spring and summer seeding and winter rye or Secale cereale may be used for cover crop for fall seeding and should be added to the above mix at the rate recommended by the supplier.

Any species substitutions shall be with a species having similar characteristics and native to New England. Substantial changes in the mix shall be approved by MassDOT Landscape Design Section.

Fertilizer

No fertilizers shall be applied.

Water

Water, including hose and all other watering equipment required for the work, shall be furnished by the Contractor to the site at no additional cost. Water shall be suitable for irrigation and free from ingredients harmful to plant life. All plants injured or work damaged due to the lack of water or the use of too much water shall be the Contractor's responsibility to correct.

Mulch

Seed areas shall be separately mulched hydromulch or seeded as specified below with compost topsoil.

ITEM 765.442 (Continued)

Photo Documentation

Contractor shall submit photo documentation to the Engineer and Landscape Design Section. Each photo shall be date stamped. Photos shall be submitted after the following stages of construction:

· Soil preparation
· Seed and hydromulch/Compost topsoil and seed
· Germination
· Grass establishment after one full growing season (June-September)

CONSTRUCTION

Seeding Methods

Seeding In Combination With Compost Topsoil

Seeding shall be done as a second operation after placement of compost has been approved by the Engineer. Compost application for seeding shall be at a depth of ¼ - ½ inch, unless directed otherwise.

Compost topsoil shall be as specified under ITEM 751.765 Compost and Seed Over Modified Rock.

Contractor shall notify Engineer prior to seeding operation to obtain written approval of site preparation and compost topsoil application.

Irrigation

After seeding and mulching, water seeded areas to moisten soil to a depth of at least 2 inches.

Care During Seed Germination

Contractor shall care for seeded areas as required. Care shall include irrigation and weed removal as necessary for germination and healthy growth.

Over-Seeding

If there are numerous areas of bare ground greater than 10-12 inches, these areas shall be over-seeded. Areas where seed fails to germinate and that become invaded by weeds shall be mowed as low as possible and over-seeded. Soil that is compacted shall be raked or roughened prior to seeding to ensure seed to soil contact.

ITEM 765.442 (Continued)

Over-seeding application rates and methods shall be the same as those listed above. After seeding, areas shall be mulched with straw mulch or ¼ - ½ inch compost topsoil and watered with a fine mist to moisten soil to a depth of at least 2 inches.

Over-seeding shall be incidental and shall not be paid for separately.

Care During Grass Establishment

Following germination of seeded species, the contractor shall maintain the stand of grasses to ensure healthy growth.

Work shall include mowing or weed-whacking for weed control, irrigation if necessary, and monitoring for invasive plants. Watering shall provide uniform coverage without eroding soil or grassed surfaces. Treatment of invasive plants shall be per the requirements of the Engineer and the MassDOT Landscape Architect.

The Contractor shall provide all labor, equipment, materials, and water required for establishment. Contractor shall water all seeded areas as necessary to a depth of 2 inches or greater.

EXPECTATIONS OF ESTABLISHMENT

A well-established stand of grasses at the end of one full growing season (June-September), as determined by the Engineer and/or MassDOT Landscape Architect, will be required for acceptance. At least 90-95 percent of the grass established shall be the seeded species.

METHOD OF MEASUREMENT

Item 765.442 will be measured by the square yard at the end of one full growing season (June through September) in the presence of the MassDOT Landscape Architect.

BASIS OF PAYMENT

Item 765.442 will be paid for at the Contract unit price per Square Yard, complete in place, which price shall include fine grading, amendments, seeding, reseeding, irrigating, care during germination and establishment, labor, materials, equipment, photo documentation, and all incidental costs required to complete the work.

ITEM 767.121 SEDIMENT CONTROL BARRIER FOOT

The work under this item shall conform to the relevant provisions of Subsections 670, 751 and 767 of the Standard Specifications and shall include the furnishing and placement of a sediment control barrier. Sediment control barrier shall be installed prior to disturbing upslope soil.

The purpose of the sediment control barrier is to slow runoff velocity and filter suspended sediments from storm water flow. Sediment barrier may be used to contain stockpile sediments, to break slope length, and to slow or prevent upgradient water or water off road surfaces from flowing into a work zone. Contractor shall be responsible for ensuring that barriers fulfill the intent of adequately controlling siltation and runoff.

Twelve-inch diameter (after installation) compost filter tubes with biodegradable natural fabric (i.e., cotton, jute, burlap) are intended to be the primary sedimentation control barrier. Photo-biodegradable fabric shall not be used.

For small areas of disturbance with minimal slope and slope length, the Engineer may approve the following sediment control methods:

- 9-inch compost filter tubes
- Straw bales which shall be trenched

No straw wattles may be used. Additional compost filter tubes (adding depth or height) shall be used at specific locations of concentrated flow such as at gully points, steep slopes, or identified failure points in the sediment capture line.

When required by permits, additional sediment barrier shall be stored on-site for emergency use and replacement for the duration of the contract.

Where shown on the plans or when required by permits, sedimentation fence shall be used in addition to compost filter tubes and straw bales and shall be compensated under that item.

Sediment control barriers shall be installed in the approximate location as shown on the plans and as required so that no excavated or disturbed soil can enter mitigation areas or adjacent wetlands or waterways. If necessary to accommodate field conditions and to maximize effectiveness, barrier locations may be shifted with approval from the Engineer. Barriers shall be in place prior to excavation work. No work shall take place outside the barriers.

MATERIALS AND CONSTRUCTION

Prior to initial placement of barriers, the Contractor and the Engineer shall review locations specified on the plans and adjust placement to ensure that the placement will provide maximum effectiveness.

Barriers shall be staked, trenched, and/or wedged as specified herein and according to the Manufacturer's instructions. Barriers shall be securely in contact with existing soil such that there is no flow beneath the barrier.

ITEM 767.121 (Continued)

Compost Filter Tube

Compost material inside the filter tube shall meet M1.06.0, except for the following: no peat, manure or bio-solids shall be used; no kiln-dried wood or construction debris shall be allowed; material shall pass through a 2-inch sieve; and the C:N ratio shall be disregarded.

Outer tube fabric shall be made of 100% biodegradable materials (i.e., cotton, hemp or jute) and shall have a knitted mesh with openings that allow for sufficient water flow and effective sediment capture.

Tubes shall be tamped, but not trenched, to ensure good contact with soil. When reinforcement is necessary, tubes shall be stacked as shown on the detail plans.

Straw Bales

Straw bales shall be used if shown on the plans or when specified by Orders of Condition or other permit requirements.
Bales should be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another. All bales should be either wire-bound or string-tied. Straw bales should be installed so that bindings are oriented around the sides (rather than along the tops and bottoms) of the bales in order to prevent deterioration of the bindings.

The barrier should be entrenched and backfilled. A trench should be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. The trench must be deep enough to remove all grass and other material which might allow underflow. After the bales are staked and chinked (filled by wedging), the excavated soil should be backfilled against the barrier. Backfill soil should conform to the ground level on the downhill side and should be built up to 4 inches against the uphill side of the barrier.

Each bale should be securely anchored by at least 2 stakes or re-bars driven through the bale. The first stake in each bale should be driven toward the previously laid bale to force the bales together. Stakes or re-bars should be driven deep enough into the ground to securely anchor the bales. For safety reasons, stakes should not extend above the bales but should be driven in flush with the top of the bale.

The gaps between the bales should be chinked (filled by wedging) with straw to prevent water from escaping between the bales. Loose straw scattered over the area immediately uphill from a straw bale barrier tends to increase barrier efficiency. Wedging must be done carefully in order not to separate the bales.

When used in a swale, the barrier should be extended to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale to assure that sediment-laden runoff will flow either through or over the barrier but not around it.

ITEM 767.121 (Continued)

Sedimentation Fence

Materials and Installation shall be per Section 670.40 and 670.60 of the Standard Specifications and the following:

Sedimentation fence shall only be used if shown on the plans or when specified by Orders of Condition or other permit requirements.

When used with compost filter tubes, the tube shall be placed on a minimum of 8 inches of folded fabric on the upslope side of the fence. Fabric does not need to be trenched.

When used with straw bales, an 8-inch deep and 4-inch wide trench or V-trench shall be dug on the upslope side of the fence line. One foot of fabric shall be placed in the bottom of the trench followed by backfilling with compacted earth or gravel. Stakes shall be on the down slope side of the trench and shall be spaced such that the fence remains vertical and effective.

Width of fabric shall be sufficient to provide a 36-inch high barrier after fabric is folded or trenched. Sagging fabric will require additional staking or other anchoring.

MAINTENANCE

Maintenance of the sediment control barrier shall be per Section 670.60 of the Standard Specifications or per the Stormwater Pollution Prevention Plan (SWPPP), whichever is more restrictive.

The contractor shall inspect the sediment barrier in accordance with relevant permits. At a minimum, barriers shall be inspected at least once every 7 calendar days and after a rain event resulting in 0.25 inches or more of rainfall. Contractor shall be responsible for ensuring that an effective barrier is in place and working effectively for all phases of the Contract.

Barriers that decompose such that they no longer provide the function required shall be repaired or replaced as directed. If the resulting berm of compost within the fabric tube is sufficiently intact (despite fabric decay) and continues to provide effective water and sediment control, barrier does not necessarily require replacement.

DISMANTLING & REMOVING

Barriers shall be dismantled and/or removed, as required, when construction work is complete and upslope areas have been permanently stabilized and after receiving permission to do so from the Engineer.

Regardless of site context, nonbiodegradable material and components of the sediment barriers, including photo-biodegradable fabric, plastic netting, nylon twine, and sedimentation fence, shall be removed and disposed off-site by the Contractor.

ITEM 767.121 (Continued)

For naturalized areas, biodegradable, natural fabric and material may be left in place to decompose on-site. In urban, residential, or other locations where aesthetics is a concern, the following shall apply:

- Compost filter tube fabric shall be cut and removed, and compost shall be raked to blend evenly (as would be done with a soil amendment or mulch). No more than a 2-inch depth shall be left on soil substrate.
- Straw bales shall be removed and disposed off-site by the Contractor. Areas of trenching shall be raked smooth and disturbed soils stabilized with a seed mix matching adjacent seeding or existing grasses (i.e., lawn or native grass mix).
- Sedimentation fence, stakes, and other debris shall be removed and disposed off-site. Site shall be restored to a neat and clean condition.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 767.121 will be measured and paid for at the contract unit price per foot of sediment control barrier which price shall include all labor, equipment, materials, maintenance, dismantling, removal, restoration of soil, and all incidental costs required to complete the work.

Additional barrier, such as double or triple stacking of compost filter tubes, will be paid for per foot of tube installed.

Barriers that have been driven over or otherwise damage by construction activities shall be repaired or replaced as directed by the Engineer at the Contractors expense.

ITEM 778.164 BIRCH - RIVER HERITAGE 8-10 FOOT CLUMP EACH

The work under this Item shall conform to the relevant provisions of Subsection 771 of the Standard Specifications and the following:

Compacted materials that cannot be loosened, or are unsuitable for planting areas, shall be removed to a maximum depth of 6-inches (tamped down) below the root ball and replaced with loam.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 778.164 will be measured and paid per Subsections 771.80 and 771.81, respectively.

Additional loam required in areas of decompaction, as described above, will be paid for under Item 751. Loam For Roadsides.

ITEM 816.01 TRAFFIC SIGNAL RECONSTRUCTION LUMP SUM
LOCATION NO. 1

The work under this item shall conform to the relevant provisions of Subsection 815 of the Standard Specifications and the following:

The work shall include the furnishing and installation of the following items: new controller and malfunction management unit (MMU) in existing cabinet assembly; signal posts and foundations; pedestrian signals with countdown timers; accessible pedestrian pushbuttons (APS) with signs; bicycle signal heads with backplates; vehicle and bicycle detection system; all cable and wiring; equipment grounding and bonding; and all other equipment, materials and incidental costs necessary to provide complete, fully operational traffic signal system as specific herein and as shown on the plans. The location is as follows:

- Main Street at West Street/ Hamilton Street / Mill Street

A list of major items required is included on the plans.

Shop Drawings

Within 30 days following the Notice to Proceed, the Contractor shall submit shop drawings for signal supports, a list of equipment, and manufacturer's equipment specifications to the Engineer in accordance with the relevant provisions of Section 815.20.

No work under this item shall be commenced by the Contractor until approval of the shop drawings and manufacturer's data has been received in writing from the Engineer.

Approval of these drawings will be general in character and shall not relieve the Contractor from the responsibility of, or the necessity of, furnishing materials and workmanship conforming to the plans and specifications.

The Contractor shall deliver to the Engineer a certificate of compliance with the manufacturer for all materials purchased from the manufacturer.

Existing Installation

Some of the existing signal equipment and conduit shall be retained in accordance with the relevant provisions of Section 815.65.

Existing signal installation under this item shall be maintained in operation throughout the construction period. The Contractor may use temporary supports for signal heads as necessary to allow construction activities.

Any temporary installations shall be in conformance with the MUTCD at all times. If an existing signal is to be turned off temporarily to allow controller switch overs or rewiring, police detail shall be used to control traffic at the intersection.

ITEM 816.01 (Continued)

Once construction is completed and the new signal is in operation, unused items of the old signals shall be completely removed and stacked as directed by the Engineer in accordance with Section 815.65. Old cable shall be removed and disposed of by the Contractor.

Service Connection

Existing service connection shall be retained.

Flashing Operation

Changes from automatic flashing to stop-and-go operation and from stop-and-go to automatic flashing operation shall occur as set forth in the MUTCD.

Traffic Signal Equipment

The controller, malfunction management unit, and all other ancillary traffic signal control component included in the traffic control cabinet shall comply with the National Electrical Manufacturers Association (NEMA) Standard No. TS 2, 2-2016(v03.07), Traffic Controller Assemblies with National Transportation Communications for ITS Protocol (NTCIP) Requirements.

Modify Existing Cabinet Assembly

The Contractor shall modify the existing TS 1 cabinet assembly to accommodate the proposed changes shown on the plans. The existing Peek 3000E (TS 2 Type 2 configuration) controller, Peek Double Diamond MMU, and existing loop amplifiers are to be removed and stacked.

Traffic Signal Controller

The controller shall be shelf-mounted, solid state, menu driven, keyboard unit conforming to NEMA Standards Publication TS2-2021, "Traffic Controller Assemblies with NTCIP Requirements", Version 03.08 and the ATC 5201 v.06A.37 Advanced Transportation Controller (ATC) Standard. The controller shall be supplied with all necessary interfaces needed (MSA, MSB and MSC) to support TS 2 Type 2 (Mode 0) Configuration. The controller shall be supplied with an internal real-time clock/calendar capable of daily, weekly, and yearly events time programming. The controller shall be designed and supplied to provide the number of phases and sequencing as shown on the plans without any auxiliary equipment. The controller shall be supplied as follows:

- Contain ATC API operational software conforming to ATC 5401 Standard v02.
- Be supplied with the appropriate version of the Linux operating system, Board Support Package (BSP) and internal processing levels necessary to support connected vehicle (CV) as well as local and system operations.
- Shall include all licenses to support CV applications SPaT, NEMA Standards Publication TS2-2021, "Traffic Controller Assemblies with NTCIP Requirements, Version 03.08 , including all amendments.

ITEM 816.01 (Continued)

- Shall have connectors for all external input/output functions that are rigidly defined by the ATC, NTCIP and applicable national standards required to interface with the existing NEMA TS-1 traffic signal controller cabinets.
- Based on application, connectors for external input/output functions shall be identical in quantity, size, type, configuration, and pinout for all manufacturer's units used in the project.
- Shall be supplied with all necessary hardware and software elements needed to fully support Connected Autonomous Vehicle (CAV) operations utilizing dual mode DSRC/5G communications.
- Shall be supplied with all necessary ATC hardware, software elements and instruction procedures needed to facilitate the extraction and processing of the SPM data.
- Support Flashing Yellow Arrow (FYA) and Flashing Red Arrow (FRA) operation with the ability to provide a minimum of 6 flashing pairs.
- Contain the ability to alter the controller unit's internal database using a built-in front panel keyboard, using a computer connected to the controller unit with a USB cable or an Ethernet cable, and remotely using the central management system application.
- Be supplied and installed with the ability to collect, store, and report various measures of effectiveness (MOE's).
- Shall collect and process all 255 high resolution enumerations as defined in the report entitled "Indiana Traffic Signal Hi Resolution Data Enumerations", most current version. This data will be processed in the controller and available via download from the controller USB Ethernet port or, if available, via system communications. At a minimum, the controller shall be set up to provide the following performance reports:
  - Approach delay
  - Preemption events
  - Transit Priority Events
  - Split Monitor
  - Approach Volumes
  - Purdue Coordination Diagrams
  - Arrivals on Red
  - Arrivals on Green
  - Phase Termination
  - Pedestrian Delay
- Shall be able to backup and restore ATC programing data to a USB memory device connected to the front of the controller. No additional software shall be required to perform this function.
- Shall be able to upgrade the ATC firmware via USB memory device connected to the front of the controller. No additional software shall be required to perform this function.
- The ATC unit shall not utilize internal logic processing or script programming to directly control conditional timing or operation of vehicle or pedestrian field signal circuits.
- The Contractor at time of submission shall submit from the manufacturer the latest ATC firmware release notes as part of the shop drawing submission.
- The controller shall be supplied with the latest firmware. The use of older firmware shall not be allowed unless directed by the Engineer.

ITEM 816.01 (Continued)

- The controller supplied and installed as part of this project shall be provided with Transit Signal Priority (TSP) operation without the need for additional software, hardware, data key device or any recurring licensing fees. The TSP algorithm shall be fully programmable to extend a phase or reduce a vehicle phase depending on user defined settings. This function shall be available for operation during both coordinated and free operation, and shall include the following:
  - TSP shall support a minimum of six priority routines.
  - The TSP program shall be capable of extending the priority phase green time and truncating the non-priority phase(s) green when a priority call is received by the ATC unit.
  - TSP operation shall not cause the ATC unit to skip any phases that have active vehicle/pedestrian demand.
  - Rail and Emergency vehicle preemption (EVP) shall override TSP operation.
  - The TSP program shall have the ability to delay and/or extend priority calls.
  - The TSP program shall have the ability to support user defined time periods between servicing valid priority calls.
  - All TSP events shall be logged (time/date stamped) in the ATC unit.
  - The TSP algorithm shall allow for non-TSP phases to be conditionally truncated based on the absence of a concurrent pedestrian service of the non-TSP phase.
  - It shall be possible to user define in the traffic controller a minimum time between responses to priority calls.

TSP Coordinated Operation – Under coordinated operation, the controller shall modify existing signal operation to accommodate a priority call. This may include modification to per phase termination points established under normal coordinated control. During a priority event, per phase coordination modes shall remain in effect. Priority and non-priority phase duration shall be user programmable per coordination pattern.

TSP Non-Coordinated (Free operation) – Upon receipt of a valid priority call, the controller shall either extend the priority phase or reduce the non-priority(s). These settings for the adjusted green times shall be user defined, on a per phase basis, and adjustable on a time-of-day basis.

The controller unit shall be keyboard-entry menu-driven unit with internal time base coordination emergency preemption, and programmatic capability.

The traffic controller shall be on MassDOT's Qualified Traffic Control Equipment list.

Malfunction Management Unit

The malfunction management units (MMU) shall comply with Section 4 of the NEMA TS 2 standard. The MMU shall be capable of operating as either a Type 16 with 16 channels (8 vehicle, 4 pedestrian, 4 overlap) or a Type 12 with 12 channels (8 vehicle, 4 overlap). The MMU supplied shall be configured to operate as Type 16 unit.

ITEM 816.01 (Continued)

The MMU in either the Type 16 or Type 12 configuration shall be capable of operating in a NEMA TS 2 Type 1 cabinet, a NEMA TS 2 Type 2 cabinet, or a NEMA TS 1 cabinet without loss of functionality.

The MMU shall support the MUTCD's Flashing Yellow Arrow treatment.

Vehicle and Bicycle Digital Video Detection System

The Contractor shall provide and install a Digital Video Detection System (DVDS) as shown on the plans and these special provisions. The DVDS system shall include an IP addressable camera(s), video processor unit, detection algorithms, all cables, connections, mounting hardware, surge suppression, application software, and accessories required by the manufacturer for proper operation of the system, including but not limited to surge protection devices. The use of a video encoder for non-IP cameras shall not allowed. All IP cameras part of the DVDS shall be IP addressable per camera.

The DVDS system shall detect, collect traffic data and monitor vehicles on approach roadways utilizing advanced, omni-directional, vehicle tracking algorithms along with three-dimensional vehicle modeling to supply accurate and consistent stop line detection.

The DVDS system shall include all necessary software and hardware to allow the end user to program, setup, and/or modify detection zones within the video camera image.

The Contractor shall also supply any necessary cables, interface devices and software for monitoring video detection via laptop computers.

The camera(s) shall be mounted at the intersection, as shown on the plan or as directed by the Engineer

At a minimum, the DVDS shall meet the following requirements:

Camera

- Power: POE 48 VDC, single burial grade CAT 5e cable
- Operating Temp: -35C to +60C
- Humidity: Up to 100%
- The camera shall include an ultra-wide-angle lens.
- The camera shall include a heater to prevent the formation of ice and condensation.
- The camera, when properly installed and configured, shall be able to concurrently observe at least 5 lanes of traffic per approach.
- The camera shall be able to concurrently observe more than one approach.

ITEM 816.01 (Continued)

Video Processor Unit

- Power: 120-240 VAC, requiring 150 watts or less.
- Operating Temp: -34C to +74C
- Humidity: Up to 95% non-condensing
- Enclosure: Rack mount in traffic cabinet
- The video processor unit shall save configurations, and zone plans locally to maintain operation with or without monitoring equipment connected.
- The video processor unit shall be designed to function dependably in the adverse environment found in the typical roadside traffic cabinet.
- The video processor unit shall include at least 24 detector outputs.
- The video processor unit shall include an SDLC connection for TS2 type controllers
- The video processor unit shall include a USB on the front surface for simple data collection on non-networked systems.
- The video processor unit shall include both LAN and WAN RJ-45 interface ports on the front surface of the unit.

Application Software (Web-Based)

- The Application Software shall be web based. The use of client installed software shall not be allowed.
- The application software shall support the creation and modification of at least twenty-four (24) polygonal detection zones within the graphical user interface.
- The application software will show images of the detection zones superimposed on the video image of traffic.
- The application software shall support the assignment of a detector output(s) to each zone. These assignments can be modified at any time through the software.
- The application software shall support direction of travel assignment within detection zones. The vehicle detection zone shall not activate for objects traveling any direction other than the one specified for detection. Cross-street and wrong way traffic shall not cause detection.
- The application software shall change the color of the zone within the graphical user interface as vehicles enter or exit a detection zone, changing its occupancy status. This will be required for real-time or historical monitoring and may be turned on or off by the user at any time.
- The application software shall provide visual indication of the light state for each zone within the graphical user interface.
- The application software shall feature the ability to digitally pan, tilt, and zoom within the camera's field of view without movement of the camera.
- The application software shall maintain a database of current and historical traffic data, and allow for the user to run reports against this data to include traffic counts, turn movements, speed, and classification at a minimum, for future use.
- The application software shall feature the ability to mask objects that occlude the camera field of view and/or disrupt the camera automatic gain and exposure control.
- The application software shall feature an optional reporting interface offering point and click reporting for turning movement counts and vehicle classification.

ITEM 816.01 (Continued)

The Contractor shall create separate user accounts for the DVDS as directed by the Engineer.

The DVDS shall be equipped with a cellular connection to allow for remote access to the DVDS for configuration, monitoring and be configured to provide access to the connected traffic signal controller remote front panel via Ethernet connection. The remote front panel access to the traffic signal controller shall be HTTPS (Hypertext Transfer Protocol Secure).

The DVDS shall be configured to monitor the status of the traffic signal cabinet and provide email/SMS alerts for the following:

- Loss of Power
- Intersection in Flash
- Door open alarm

The DVDS shall be supplied with an unlimited data plan for remote communications access.

The DVDS shall be supplied and equipped and demonstrated to be able to provide volume, occupancy and turning movement count reports native to the DVDS. The use of a 3rd party software system shall not be allowed.

The DVDS shall be installed by factory certified installers and as recommended by the manufacturer and documented in installation materials provided by the manufacturer. Proof of the factory certification shall be provided. Installation includes connecting the DVDS to the traffic signal controller and power supply in the associated controller cabinet assembly.

When the setup is complete and the DVDS is ready for operation, the values of all parameters that were set during the process shall be delivered to the Engineer in printed and computer-readable form. All equipment, such as software, laptop computer, tools and cables, needed for setup work shall be provided by the Contractor.

The Contractor shall be responsible for the proper programming of the DVDS, orientation of the DVDS, and all other work necessary to provide a complete vehicle detection system. The Contractor may be required to field adjust the location of the DVDS in the presence of the Engineer to properly detect approaching vehicles.

Warranty: The supplier shall provide a five-year warranty on the DVDS following installation and warranty registration. The camera shall include an additional warranty to require no aiming or focusing for a period of five years. During the warranty period, technical support shall be available from the supplier via telephone within 4 hours of the time a call is made by a user, and this support shall be available from factory-certified personnel or factory-certified installers. During the warranty period, updates to DVDS software shall be available from the supplier without charge.

The cabinet documentation (box prints) shall show all wiring between the DVDS and the controller cabinet.

a. the supplier shall be on site within seventy-two (72) hours if required.

ITEM 816.01 (Continued)

Signal Heads

All traffic signal lenses shall be 8 inches in diameter. All signal heads shall be equipped with bicycle light emitting diode (LED) modules. Five (5) inch non-louvered backplates and tunnel visors shall be provided on all signal heads.

All backplates shall include 3-inch wide, yellow reflective micro-prismatic retroreflective sheeting conforming to ASTM D4956 Type VIII or better on the outside edge of the backplates.

Red, Yellow, and Green Vehicle Signal Modules

All signal and pedestrian displays shall be equipped with LED signal modules. All red, amber, green, and pedestrian signal housings with the exception of optically programmed and fiber optic housings and shall conform to the following where applicable:

- ITE's Vehicle Traffic Control Signal Heads – Light Emitting Diode (LED) Arrow Traffic Signal Supplement, Dated July 1, 2007
- ITE's Vehicle Traffic Control Signal Heads – Light Emitting Diode (LED) Circular Signal Supplement, Dated June 27, 2005.
- ITE's Pedestrian and Countdown Signal Modules Compliant to PTCSI - Part 2 Light Emitting Diode (LED), Dated, February 2011
- On the MassDOT Traffic Signal Approved Equipment List

For an LED module to installed on this project, the LED module shall have approval from the MassDOT Traffic Control Products Approved Equipment Committee and be included on the Traffic Control Products List prior to the date of this proposal.

To prevent the LED module warranty from being voided, the connecting leads on the module shall not be cut. The original LED module leads shall be connected to the signal head terminal block as continuous wire without splices.

The LED signal module will be replaced or repaired by the manufacturer if it exhibits one of the following:

- A failure due to workmanship or material defects within the first 60 months of field operation.
- A greater than 40 percent light output degradation or a fall below the minimum intensity levels (as defined by the latest ITE performance specifications) within the first 36 months of field operation

Pedestrian Heads with Countdown Timers

All pedestrian heads shall be 16 inch, single units, with countdown timers. Pedestrian head indications shall be illuminated L.E.D. type displaying graphical symbols of a walking person and/or upraised hand. The countdown module display shall only begin at the start of the flashing "DON'T WALK and shall exhibit the number of seconds remaining throughout the flashing "DON'T WALK" interval, and blank out during the steady "DON'T WALK" interval. The countdown module shall be automatically set by the intersection controller based upon the "DON'T WALK" signal intervals only.

ITEM 816.01 (Continued)

The countdown module shall continuously monitor the intersection controller for any changes to the pedestrian phase timing, and reprogram itself automatically.

The pedestrian signal housings shall be made of aluminum with cap visors.

Accessible Pedestrian Signal Pushbuttons

The Accessible Pedestrian Signal (APS) pushbuttons shall provide information in non-visual formats (such as audible tones, speech messages, and/or vibrating surfaces). The APS pushbuttons and shall be compliant with the MUTCD. At a minimum the APS pushbuttons shall be provide with the following features:

- Pushbutton locator tone
- A visible and audible indicator that the button press has occurred
- A vibro-tactile arrow
- A percussive tone walk message for the "WALKING PERSON" indication

The APS pushbuttons shall provide visually disabled pedestrians with a locator tone that will allow them to find the pushbutton to activate the walk signal. Once the pushbutton call has been placed, the signal will provide both an audible and tactile response during the related "WALK" portion of the cycle. A sunlight visible LED latches "ON" to confirm the button has been pushed. The audible response shall be a speech message, indicating the name of the street crossing, and when the phase is started.

Housing and Pushbutton Unit – Shall meet the following minimum requirements:

- Constructed of cast aluminum with a powder coated finish.
- Highly vandal resistant and pressure activated with essentially no moving parts.
- Pushbutton must be able to withstand an impact from a baseball bat or hammer.
- Operating temperature range -34 degrees Celsius to 65 degrees Celsius.
- Operating voltage range 12 to 36 VDC.
- Button cap must be made of solid 316 stainless steel.
- Pushbutton must activate with 5 lbs of force or less.
- Unit must have an LED display to give indication that of pushbutton being pushed.
- Pushbutton must fully operate immediately after being completely immersed in water for 5 minutes (electrical terminals isolated from water).
- Pushbutton must not allow ice to form such that it would impede function of pushbutton or pushbutton cap.
- All switch electronics must be sealed within the housing.
- All sounds shall emanate from the back of the of the APS pushbutton unit via a weatherproof speaker that is protected by a vandal resistant screen.

ITEM 816.01 (Continued)

Tactile Arrows and Locator Tones – Shall meet the following minimum requirements:

- APS pushbuttons shall incorporate a locator tone at the pushbutton the locator tone, measured at 3 feet from the APS pushbutton, shall be 2dB minimum and 5dB maximum above ambient noise level in standard operation and shall be responsive to ambient noise level changes. Tones shall consist of multiple frequencies with a dominant component of 880Hz. The duration of the locator tone shall be 0.15s and shall repeat at intervals of 0.15s.
- APS pushbuttons shall be a minimum of 2 inches across in diameter and shall contract visually with their housing and mounting.
- APS pushbuttons shall include a vibro-tactile arrow aligned parallel to the crosswalk direction. The arrow shall be raised 0.03 inches minimum and shall be 1.5 inches minimum in length. The arrow head shall be open at 45 degrees to the shaft and shall be 33 percent of the length of the shaft. Stroke width shall be 10 percent minimum and 15 percent maximum of arrow length. The arrow shall contrast with the background.
- The arrow shall vibrate during the "WALK" portion of the cycle.

Audible Walk Message – The audible walk message shall be audible from the beginning of the associated crosswalk. The audible walk message and associated APS pushbuttons shall be as follows:

CROSSWALK	AUDIBLE WALK MESSAGE
Item 816.01	
Mill Street	Percussive Tone

Mounting Requirements - A maximum mounting height of 42 inches above the finish sidewalk grade shall be used for APS pedestrian pushbuttons.

The Contractor is hereby notified that they are ultimately responsible for constructing all pedestrian push button elements (clear ground space, forward and side arm reaches) in strict compliance with the current AAB rules, regulations and standards.

All construction elements in this project associated with pedestrian push buttons are controlled by 521CMR – Rules and Regulations of the Architectural Access Board. Pushbutton Frame Extenders shall be used if approved or directed by the Engineer.

The Contractor shall establish clear ground space at all pedestrian push button locations and shall set arm reach lengths according to the AAB rules (or to the details shown on the plans).

The project has been designed to conform to all AAB rules, and the Engineer is not aware of any required variances for the work presented on the design plans. The Contractor shall notify the

Engineer of any project element related to the pedestrian push buttons that will not comply with 521 CMR prior to constructing said pedestrian push button elements.

ITEM 816.01 (Continued)

Installation - The APS pushbuttons shall be installed by Contractor and as recommended by the manufacturer and documented in installation materials provided by the manufacturer. The Contractor shall be responsible for the proper programming of the APS pushbuttons, orientation of the pushbuttons, and all other work necessary to provide a complete and operational APS pushbutton system. The Contractor may be required to adjust volume levels as directed by the Engineer. When the setup is complete and the APS pushbuttons are ready for operation, the values of all parameters that were set during the process shall be delivered to the Engineer in printed and computer-readable form.

Warranty - Each APS pushbutton shall be warranted free from defects in material and workmanship for a period of at least 2 years from the date of installation by the Contractor and acceptance from the owner.

During the warranty period, technical support shall be available from the supplier to the owner via telephone within 4 hours of the time a call is made by a user, and this support shall be available from factory-certified personnel without charge.

Posts and Bases

Signal posts and bases shall be steel shafts with cast iron transformer bases. Posts and bases shall be painted flat black.

Signal base foundations shall not obstruct a sidewalk or crosswalk so that passage by physically-challenged persons is impaired.

Equipment Finish and Color

Traffic signal equipment including but not limited to signal posts, bases, pedestrian signal heads, bicycle signal heads, visors, doors, pushbutton saddles, hardware, and rigid mounting brackets for signals and signs shall be colored **FLAT BLACK**.

Signal heads, doors, visors, mounting brackets, and hardware supplied direct from the manufacturer in the color stipulated above is acceptable.

BASIS OF PAYMENT

Item 816.01 will be paid for at the Contract unit price Lump sum, which price shall include all labor, materials, equipment, maintenance of existing signal, installation, removal, stacking, and transporting of existing traffic signal equipment, excavation, backfilling, compaction, concrete foundations, and all incidental costs required to complete the work.

Conduit will be paid for separately under Item 804.3, 3-Inch Electrical Conduit Type NM Plastic (UL).

Pull Boxes will be paid for separately under Item 811.31, Pull Box 12 x 12 Inch – SD2.031.

ITEM 852.11 TEMPORARY PEDESTRIAN BARRICADE FOOT
ITEM 852.12 TEMPORARY PEDESTRIAN CURB RAMP EACH

Work under these items consist of furnishing, deploying, maintaining in proper operating conditions, and removing temporary pedestrian barricades and temporary pedestrian ramps as part of a Temporary Pedestrian Access Route (TPAR) in order to guide pedestrians around a fully- or partially-closed sidewalk. These devices are intended to prevent pedestrians from entering the work area and to prevent pedestrians from inadvertently entering the vehicle travel lane by providing visual and physical separation between each space.

MATERIALS

The Temporary Pedestrian Barricade shall have a continuous bottom rail or edge no more than two (2) inches above the ground and eight (8) inches in height (minimum) to accommodate cane users, have a smooth and continuous hand railing along the top edge no less than 32 inches above the ground and not obstruct or project into the pedestrian path of travel. Barricade walls shall be nearly vertical and generally within the same plane.

If exposed to traffic, Temporary Pedestrian Barricades shall be crashworthy.

The Temporary Pedestrian Curb Ramp shall provide a 48 inch minimum width, with a firm, stable, and non-slip surface. Protective edging with a two (2) inch minimum height shall be installed when the curb ramp or landing platform has a vertical drop of six (6) inches or greater.

The Temporary Pedestrian Curb Ramp walkway and landing area surface shall be of a solid, continuous, contrasting color abutting up to the existing sidewalk.

If a Temporary Pedestrian Curb Ramp leads to a crosswalk, a detectable warning pad must be used at the base of the ramp; if it leads to a protected path that does not conflict with vehicular traffic then a detectable pad shall not be used.

CONSTRUCTION METHODS

The Temporary Pedestrian Barricade shall be placed in an area that will provide pedestrians with a TPAR on a smooth, continuous hard surface for its entirety. The geometry and alignment of the facility shall meet the applicable requirements of the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities" and the Massachusetts Architectural Access Board.

The recommended width of the TPAR is 60 inches, but if constraints exist a minimum clear width of 48 inches shall be provided along its entirety. If a 60 inch width cannot be accommodated in full, a 60 inch by 60 inch passing space shall be provided every 200 feet or less along the TPAR.

Turning areas shall be 60 inches by 60 inches minimum.

Lateral joints between any surfaces shall not exceed 0.5 inches. Lateral edges may be vertical up to 0.25 inches high and shall be beveled at 1V:2H between 0.25 inches and 0.5 inches.

ITEMS 852.11 and 852.12 (Continued)

The TPAR shall be kept clear of debris, snow, and ice and the Temporary Pedestrian Barricades and Temporary Pedestrian Curb Ramps shall not obstruct drainage.

Removal and/or resetting of Temporary Pedestrian Barricades and Temporary Pedestrian Curb Ramps shall be considered incidental.

MEASUREMENT AND PAYMENT

Payment for Temporary Pedestrian Barricades will be made at the contract price per foot installed in place, including all incidental items. This price shall include the cost of furnishing, installing, resetting, removal, and maintaining in good working condition.

Payment for Temporary Pedestrian Curb Ramps will be made at the contract price per each unit installed in place, including all incidental items. This price shall include the cost of furnishing, installing, resetting, removal, and maintaining in good working condition.

ITEM 853.8 TEMPORARY ILLUMINATION FOR WORK ZONE DAY

The work under this Item shall conform to the relevant provisions of Subsection 850 of the Standard Specification and the following:

The work under this Item shall include the deployment and maintaining in proper operating condition a LED balloon diffuser lighting system. These portable light towers shall be used throughout the project area for temporary work zone lighting. The use of unshielded high wattage flood lights shall not be permitted.

These towers shall be used, relocated and adjusted to meet the criteria in Section 850 of the Standard Specifications and the following:

The Contractor shall illuminate the following work zone areas:

- Change in direction (i.e., work zone entrances and exits, crossovers, etc.)
- Tapered areas
- Actual area where the construction is being performed

Light measurement shall be based on the illuminance method and the lighting levels shall be based on the classification of construction activity that is taking place. At no time shall the light level be below 5 fc and the uniformity shall not exceed 6:1. Task Classifications and recommended illumination levels is shown in Table 1.

TABLE 1 TASK CLASSIFICATIONS AND ILLUMINATION LEVELS

Task Classifications	Illumination Level	Average Minimum Maintained Illuminance
All work operations areas, setup of lane or road closures, lane closure tapers, and flagging stations, such as: Excavation (all types), Embankment Fill and Compaction, Reworking Shoulders, Asphalt Pavement Rolling, Subgrade, Stabilization and Construction, Base Course Rolling, Sweeping, Cleaning and Landscaping.	Level I	5 foot-candles
Areas on or around construction equipment; asphalt paving, milling, and concrete placement and/or removal, such as, Milling, Removal of Pavement, Asphalt Paving and Resurfacing, Concrete Pavement, Waterproofing and Sealing, Sidewalk Construction, Base Course Grading and Shaping, Surface Treatment, Bridge Decks, Drainage Structures and Drainage Piping, Other Concrete Structures, Barrier Wall and Traffic Separators, Guardrails and Fencing, Striping and Pavement Markings, Repair of Concrete Pavement, Highway Signs, Hole Filling and Repair of Guardrails and Fencing.	Level II	10 foot-candles
Pavement or structural crack/ pothole filling; joint repair, pavement patching and/or repairs, installation of signal/electrical/mechanical equipment, such as, Traffic Signals, Highway Lighting Systems and Crack Filling	Level III	20 foot-candles

ITEM 853.8 (Continued)

A detailed work zone lighting plan shall be submitted to MassDOT for approval before any work has commenced. Said plan shall include photometrics that detail the light levels that are to be provided. Photometrics shall include the following: calculated illuminance, uniformity, and glare avoidance verification throughout the work zone as well as the active travel lanes. The lighting plan shall be submitted with all supporting calculations, catalog cut sheets and supporting documentation.

Any potential glare from the lighting system should be considered from each direction and on all approaching roadways and opposing lanes of traffic. Glare from the illumination system should be minimized as much as possible for both workers and motorists in adjacent active travel lanes. If necessary, the Contractor shall provide supplemental hardware, such as, visors, louvers, shields, glare screen and barrier to reduce glare in adjacent active travel lanes.

The plan shall show the layout for each work area including the number, location, spacing of all fixed and/or mobile structures, description of illumination equipment that is proposed to be used

on this project, and mounting details for mobile lights attached to construction equipment. Plan shall be designed by a professional engineer that is registered and licensed by the Commonwealth of Massachusetts and shall be submitted to the Engineer for approval prior to any nighttime work operations within the State Highway Right of Way.

The Contractor shall allow MassDOT up to 30 calendar days for review and comment.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 853.8 will be measured and paid per Subsections 850.80 and 850.81, respectively.

ITEM 859.1 REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS DAY

The work under this Item shall conform the relevant provisions of Subsection 850 of the Standard Specifications and the following:

Work under this item consists of furnishing, installing, maintaining in proper operating conditions, and removing reflectorized drums, and any necessary ballast, equipped with sequential flashing warning lights.

MATERIALS

Reflectorized drums shall be listed on the MassDOT Qualified Traffic Control Equipment List. Reflective sheeting on drums shall meet or exceed ASTM D4956 Type VIII. All drums shall be maintained in a satisfactory manner including the removal of oils, dirt, and debris that may cause reduced retroreflectivity.

The Contractor shall use one of the following sequential flashing warning light systems unless otherwise approved by the Engineer:

1. Empco-Lite LWCSD.
2. pi-Lit® Sequential Barricade-Style Lamp; or
3. Unipart Dorman SynchroGUIDE.

Sequential flashing warning lights shall be secured to reflectorized drums per the light manufacturer's specifications.

CONSTRUCTION METHODS

The first ten (10) drums in any merging or shifting taper as designated in the Temporary Traffic Control Plan shall be equipped with sequential flashing warning lights. These lights shall be operating, at a minimum, between dusk and dawn when the taper is deployed.

The successive flashing of the sequential warning lights shall occur from the upstream end of the merging or shifting taper to the downstream end of the taper in order to identify the desired vehicle path. Each warning light in the sequence shall be flashed at a rate of not less than 55, nor more than 75 times per minute.

Warning lights shall be powered off when drums are not deployed in a taper.

METHOD OF MEASUREMENT

A group of ten (10) reflectorized drums with sequential flashing warning lights is considered one (1) unit and will be measured by the day. Each period of up to 24 hours during which this unit is in use will be measured as one day regardless of the number of times that the drums are positioned, repositioned, removed, or returned to service.

BASIS OF PAYMENT

Reflectorized Drums with Sequential Flashing Warning Lights will be paid for at the contract unit price per day, which shall include full compensation for furnishing, positioning, repositioning, and removing the group of ten (10) drums as directed by the Engineer.

ITEM 864.031 PAVEMENT LEGENDS REFLECTORIZED PREFORMED THERMOPLASTIC – BIKE LANE RIDER EACH

ITEM 864.032 PAVEMENT LEGENDS REFLECTORIZED PREFORMED THERMOPLASTIC – BIKE LANE ARROW EACH

The work under these Items shall conform to the relevant provisions of Subsection 860 of the Standard Specifications and the following:

The work shall consist of preparing pavement surfaces, along with furnishing and installing retroreflective preformed thermoplastic legends and symbols associated with bicycle pavement markings at locations shown on the plans or as required by the Engineer, and the following:

SHOP DRAWINGS

Within 30 days following Notice to Proceed, the Contractor shall submit shop drawings for the performed thermoplastic material, and the manufacturer's materials specifications to the Engineer in accordance with the relevant provisions of the Standards Section 815.20.

No work shall be commenced by the Contractor until approval of the shop drawings and manufacturer's data has been received in writing from the Engineer. Approval of these drawings will be general in character and shall not relieve the Contractor from the responsibility of, or the necessity of, furnishing materials and workmanship conforming to the plans and specifications.

The Contractor shall deliver to the Engineer a certificate of compliance with the manufacturer for all materials purchased from the manufacturer.

MATERIALS

All preformed markings shall be selected from the following suppliers or approved equivalent:

- Ennis-Flint (PreMARK) Bike Marking, with ViziGrip, as manufactured by Flint Trading, Inc., 115 Todd Court, Thomasville, NC 27360. www.ennisflintamericas.com
- Ingevity (formerly Ozark) 591 Glendale Ave, Greenville, AL 36037 www.ingevity.com
- SWARCO Industries, LLC 270 Rutherford Lane, TN 38402. www.swarco.com

The preformed markings shall have a minimum thickness of 90 mils.

The surface of the markings shall upon application provide a minimum skid resistance value of 45 BPN when tested according to ASTM:E 303.

The legends and symbols, along with the manufacturer’s item numbers, are as follows:

Legends & Symbols	Manufacturer’s Item No.		
	Ennis-Flint	SWARCO	Ozark*
Bicycle Rider	PM602006L	3789	OZ-BP1013-090
Bike Lane Straight Arrow	PM602005	3793	OZ-BP1025-090

Note: *OZARK has been acquired by Ingevity. Item numbers may be different.

ITEMS 864.031 and 864.032 (Continued)

APPLICATION

In advance of the preformed marking installations, the Contractor shall mark, on site, the preformed markings with any changes required by field conditions such as manholes. The marking layouts shall be inspected and approved by the Engineer before the markings are installed.

The Contractor shall provide certification, to the Engineer, from the manufacturer documenting the Contractor's qualifications to install the preformed markings in a manner acceptable to the manufacturer and documented in installation materials provided by the manufacturer.

Prior to installation the pavement shall dry and free of dirt, debris, deicing agents, chemicals, and significant oily substances.

The Contractor shall be responsible for controlling and minimizing airborne dust and similar debris generated by surface preparation and cleanup to prevent a hazard to motor vehicle operation, pedestrians, or nuisance to adjacent property.

OBSERVATIONS

The preformed markings shall be subject to a 180 day observation period under normal traffic conditions. The observation period shall begin with the completion and acceptance of the work by the Engineer.

The preformed markings shall show no signs of failure such as: blistering, excessive cracking, chipping, discoloration, poor adhesion to the pavement, loss of reflectivity or vehicle damage. MassDOT reserves the right to check the color and retroreflectivity any time prior to the end of the observation period.

The Contractor, at no additional cost to MassDOT, shall replace any preformed markings that do not perform satisfactorily under the 180 day observation period.

METHOD OF MEASUREMENT

Items 864.031 and 864.032 will be measured for payment by the Each respective pavement legend installed, complete in place.

BASIS OF PAYMENT

Items 864.031 and 864.032 will be paid for at the respective Contract unit prices per Each, which price shall include all labor, materials, equipment, submittals, and all incidental costs required to complete the work.

ITEM 866.124 24 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC) FOOT

The work under this item shall conform to the relevant provisions of Subsection 860 of the Standard Specifications and the following:

All pavement markings supplied under this item shall conform to the applicable MassDOT's standards for 12 Inch Reflectorized White Line (Thermoplastic).

The work shall consist of the furnishing and application of 24-inch crosswalk pavement markings on Mill Street.

METHOD OF MEASUREMENT

Item 866.124 will be measured for payment by the Foot of 24 inch reflectorized white line installed, complete in place.

BASIS OF PAYMENT

Item 866.124 will be paid for at the Contract unit price per Foot, which price shall include all labor, materials, equipment, and all incidental costs required to complete the work.

ITEM 874.1 STREET SIGN REMOVED AND RESET EACH
ITEM 874.2 TRAFFIC SIGN REMOVED AND RESET EACH

The work under these Iteme shall conform to the requirements of Subsections 828 and 840 of the Standard Specifications and the following:

The work shall include the careful removal, transporting, and resetting of street signs and traffic signs, attached hardware and supports from locations shown on the plans and as required by the Engineer.

Any signs and posts damaged or lost either directly or indirectly as a result of the Contractor's operations shall be replaced by the Contractor at his own expense. The Contractor shall coordinate the relocation of signs and posts with MassDOT by notifying MassDOT prior to and at the completion of the above work. Signs shall remain in place until proposed location is constructed.

The Contractor shall backfill with compacted gravel all holes resulting from the removal of the existing signs and their foundations and restore the area to match existing conditions of adjacent areas.

The existing signs shall not be removed and reset without permission of the Engineer.

Hardware and supports not in re-useable condition as determined by the Engineer shall be properly disposed of and replaced with new components.

METHOD OF MEASUREMENT

Items 874.1 and 874.2 will be measured for payment respectively by Each sign removed and reset including the post. Multiple signs on one post assembly, single or double, such as a route marker and cardinal direction marker or a sign requiring a second graphic sign, shall be considered as one unit.

BASIS OF PAYMENT

Items 874.1 and 874.2 will be paid for at the respective Contract unit price per Each, which price shall include all labor, materials, equipment, transportation, gravel backfill, area restoration, disposal of hardware and posts determined as unusable by the Engineer, and all incidental costs required to complete the work.

ITEM 874.4 TRAFFIC SIGN REMOVED AND STACKED EACH

The work shall include the removal, transporting and stacking of traffic signs, attached hardware and supports from locations shown on the plans and as required by the Engineer.

Work shall also include excavation of existing foundations to a depth of at least 6 inches below grade, the supplying and placing of compacted gravel, and the restoration to original condition of any natural features disturbed in any way or manner by the operation.

The Contractor is responsible for the removal, handling and stacking at a location determined by the owner. Any signs and posts damaged or lost either directly or indirectly as a result of the Contractor's operations shall be replaced by the Contractor at no additional cost to the Owner.

The Contractor shall coordinate the removal of signs and posts with the Town/MassDOT prior to and at the completion of the above work. The existing signs shall be stacked at the Town of Southbridge Department of Public Works at 185 Guelphwood Road, Southbridge, MA. The Contractor shall coordinate with the DPW to schedule drop-off time and location.

Existing signs shall remain in place until proposed new signs are in place.

METHOD OF MEASUREMENT

Item 874.4 will be measured for payment by Each, traffic sign removed and stacked.

BASIS OF PAYMENT

Item 874.4 will be paid for at the Contract unit price per Each, which price shall include all labor, materials, equipment, excavation, foundation removal and disposal, backfill and area restoration, dismantling, loading, transporting, storing, and all incidental costs required to complete the work.

ITEM 909.3 RAPID SET CONCRETE FOR OVERHEAD AND VERTICAL SURFACE REPAIR **CUBIC YARD**

The work under this Item shall conform to the relevant provisions of Subsection 901 of the Standard Specifications and the following:

The work shall consist of forming and placing a concrete repair material selected from the MassDOT Qualified Construction Materials List (QCML) that is pre-extended, polymer modified, and contains an integral corrosion inhibiting admixture. It shall be used for overhead and vertical surface repairs on the existing exterior beams, railings, and abutments as directed by the Engineer.

The Contractor shall be experienced in this type of work and present proof of such experience by providing written documentation listing several projects on which polymer modified concrete was satisfactorily placed on vertical and/or overhead surfaces under their supervision.

The rapid set concrete shall be applied by workmen who, in the judgment of the Engineer, are sufficiently experienced and skilled in this class of work.

MATERIAL

The repair concrete shall be approved by MassDOT Research and Materials Section and listed on the MassDOT QCML. The concrete shall consist of pre-blended components that shall only require the addition of a prescribed quantity of potable water prior to mixing and placement in the forms. The repair concrete shall provide the following physical properties:

PROPERTY	RESULTS	TEST METHODS
Fresh Wet Unit Weight	137 to 144 PCF	ASTM C138
1 Day Compressive strength (2” Cubes)	3000 PSI	ASTM C109
7 Day Compressive strength (2” Cubes)	4000 PSI	ASTM C109
28 Day Compressive strength (2” Cubes)	5000 PSI	ASTM C109
28 Day Compressive strength (3” x 6” Cylinders)	5000 PSI	ASTM C39
Slant Shear Bond Strength at 28 Days	1500 PSI	ASTM C882 (modified[1])
Splitting Tensile Strength at 28 Days	500 PSI	ASTM C496
Freeze/Thaw Resistance % RDM	95	ASTM C666
Rapid Chloride Permeability at 28 Days	Less Than 1000 Coulombs	ASTM C1202

The repair concrete shall conform to EPA/USPHS Standards for surface contact with potable water, shall not produce a vapor barrier, and shall be thermally compatible with concrete.

The Contractor shall furnish notarized certification that all materials conform to the above requirements.

ITEM 909.3 (Continued)

Mixing

Thorough mixing of the repair mortar is required. A forced-action mixer is essential. Mixing in a suitably sized container using an appropriate paddle with a slow speed (400-500 rpm) heavy-duty drill is acceptable. Free-fall mixers must not be used. Only full bags shall be mixed and used. It is essential that machine mixing capacity and the crew size is adequate to enable the placing operation to be carried out continuously. Mechanically mix in appropriate sized mortar mixer or with electric drill and paddle.

Temperature Restrictions

The mixing shall be carried out in accordance with the manufacturer's specifications. The repair mortar shall not be mixed and placed when air or substrate temperatures are below 45°F. Cold weather protection shall be provided in accordance with Subsection 901.64 C of the Standards. Hot weather protection shall be provided in accordance with Subsection 901.64 A of the Standards.

Preparation Of Substrate Surfaces

The edges of the areas to be repaired shall be saw cut to a minimum depth of 3/4" to avoid featheredging and to provide a squared edge. All deteriorated, scaling, loose or unsound concrete shall be removed by mechanical or hand chipping. The remaining surface shall be free of oil, grease, paint, corrosion deposits, dust, laitance or other surface contamination. No method of surface preparation shall be used that could damage sound concrete.

All reinforcing steel shall be abrasively blast cleaned in accordance with the ICRI Technical Guideline No. 03730 "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion"

The Contractor shall have the approval of the Engineer certifying that all spalled and deteriorated concrete has been removed prior to repairing the deteriorated areas and all reinforcing steel is satisfactorily cleaned.

Before placing new concrete, all surfaces that will be in contact with repair concrete must be cleaned with oil-free compressed air. After the surface preparation has been accepted, all existing concrete surfaces shall be made to thoroughly pre-wetted for 24 hours. This shall be accomplished by continuous wetting with soaker hoses or the use of saturated burlap covered be polyethylene in order to retain moisture. Surfaces must be wetted by a means acceptable to the Engineer using potable water.

The Contractor shall remove any puddles of free-standing water with oil-free compressed air, and protect the surfaces from drying, so the existing concrete remains in a clean, saturated surface dry condition until placement of the new concrete.

ITEM 909.3 (Continued)

Forming And Placement Of Repair Concrete/Mortar

1. All formwork shall be rigid and tight to prevent loss of material. All forming shall be designed by a Professional Engineer that is registered in Massachusetts. All elements of the formwork and anchorages shall be designed for a pressure of 12 PSI. All submittals shall be reviewed and approved by the District Bridge Engineer.
2. The forms shall be watertight with perimeters lined with foam gasket material.
3. Form ports for pumping the mortar shall be placed no greater than 4 feet on center. Venting ports shall be placed no more than 2 feet on center.
4. The formwork shall include drainage outlets for presoaking of the substrate.
5. Form detailing shall allow for a minimum of 1-1/2" cover over all steel.
6. A suitable form release agent shall be used to facilitate the removal of forms from the cast material.
7. The forms shall be filled with clean water 24 hours prior to the mortar placement.
8. Immediately before placing, the water shall be drained and the drainage outlets sealed, leaving the substrate saturated surface dry (SSD) with no ponded water remaining.
9. In jobsite circumstances where the formwork cannot be filled with water, spray the substrate with clean water to achieve a saturated surface dry (SSD) condition immediately before placing the mortar.
10. The pump shall be capable of continuous even flow of mortar into the repair cavity without having any line surge. Line surge will result in possible air voids and segregation.
11. Prior to pumping mortar, all hoses must be pre-wetted with clean water to ensure that initial flow properties are maintained.
12. The pumping distance must be kept to a minimum. The pumping hoses shall be a minimum diameter of 3 times the size of the largest aggregate and the minimum size permitted shall be 1" diameter.
13. The pump pressure shall be limited to the minimum necessary to completely fill the cavity with repair mortar.
14. Immediately after mixing, pump the repair mortar into the formed area.

Curing

1. Formwork shall remain in place until a minimum compressive strength of 2500 psi is reached, or 5 days, whichever is greater.
2. Once the forms are stripped, curing compound shall be applied to the repaired surfaces in accordance with the manufacturer's recommendations.

ITEM 909.3 (Continued)

Manufacturer's Field Representative

1. The Contractor shall arrange with the mortar manufacturer to have the services of a competent field representative at the work site prior to any mixing of components to instruct the work crews in the proper mixing and application procedures. The field representative shall remain at the job site after work commences to instruct until she/he and the Engineer are satisfied that the crew has mastered the technique of installing the system successfully. The representative shall make periodic visits to the project as the work progresses and shall confer on each visit with the Engineer.
2. The Manufacturer's Field Representative must be fully qualified to perform the work and shall be subject to the approval of the Engineer.
3. The Contractor shall be completely responsible for the expense of the services of the required field representative and the bid contract price shall be full compensation for all costs in connection therewith.

METHOD OF MEASUREMENT

Item 909.3 will be measured for payment by the Cubic Yard of rapid set concrete installed, complete in place.

BASIS OF PAYMENT

Item 909.3 will be paid for at the Contract unit price per Cubic Yard, which price shall include all labor, materials, equipment, tools, forms, manufacturer's field representative, and all incidental costs required to complete the work.

Excavation of deteriorated concrete shall be compensated for under Item 127.12, Reinforced Concrete Excavation for Repairs.

ITEM 945.1	**DRILLED MICROPILES**	**FOOT**
ITEM 945.12	**DRILL THROUGH EXISTING ABUTMENTS**	**FOOT**
ITEM 948.6	**MICROPILE VERIFICATION LOAD TEST**	**EACH**
ITEM 948.61	**MICROPILE PROOF LOAD TEST**	**EACH**

The work under these Items shall conform to the relevant provisions of Subsection 945 of the Standard Specifications and the following:

This work shall consist of constructing micropiles for Bridge S-21-009 as shown on the Plans, approved working drawings, and as specified herein. The Contractor is responsible for furnishing all materials, equipment, labor, services, and supervision; and for selecting means and methods for the installation and testing of micropiles for this project. Verification of location of existing utilities to not come in conflict with installation of micropiles shall be incidental to this Item.

Micropiles shall consist of permanent casing sections and fully reinforced grout sections bonded with bedrock. Permanent casings shall be included as part of the micropiles and shall remain in place after grouting is complete. Temporary casings shall be installed if necessary to facilitate micropile construction and shall be removed during or after grouting. The Contractor is responsible for drilling through obstructions encountered below existing abutments to remain during pile installation.

The micropiles will be advanced through the existing concrete abutments, fill, gravel, sand, silt, clay, glacial till, cobbles and boulders with varying densities and embedded to the depth shown on the Plans. The work under this Item shall consist of the removal of man-placed materials encountered at or below the surface.

The micropiles load capacities shall be confirmed by verification and proof load testing. Testing must meet the test acceptance criteria specified herein. The bond length of the micropile may be modified by the Engineer, pending results of load testing performed as an initial part of the work.

MATERIALS

The materials for micropiles shall meet the following requirements:

Permanent/Drill Steel Casing used as Reinforcement: Permanent steel casing/pipe used as reinforcement shall be new “Prime” steel meeting the requirements of any API 5L PSL1 pipe with a yield strength of 52 ksi with SR15 supplemental requirements. The grade of the prime steel casing shall conform to the properties shown on the Plans. For steel pipe that is to be welded, the Carbon Equivalency, as defined in AWS D1.1 Section XI.1, shall be less than or equal to 0.45, as demonstrated by mill certificates. The sulfur content shall not exceed 0.05%, as demonstrated by mill certificates.

Permanent steel casing shall consist of ERW (Electric Resistance Welded) and/or seamless steel casing and shall be designed to withstand the design loadings determined by the Engineer or shown on the Plans and the verification/proof test loading described in this specification. Joints shall develop the full vertical capacity, and at least 60% of the moment capacity of the casing. As installed, there shall be no joints within three feet or as shown on the plans from the bottom of the pile cap.

ITEMS 945.1 and 948.61 (Continued)

The steel casing shall have certified mill test reports and shall be submitted for record purposes as the materials are delivered. The steel shall be traceable back to the mill certifications, and be free from defects (dents, cracks, tears, etc.).

New "mill secondary" steel pipe/casing will not be accepted regardless if they are accompanied by coupon test results.

Permanent steel casing shall be installed a minimum of 12 inches into intact bedrock.

Reinforcing Bars: Central reinforcing steel shall be full-length, continuously threaded bars. The bars shall conform to AASHTO M 31 Grade 60. The grade and size of the central reinforcement shall conform to any minimum and/or maximum properties shown on the Plans.

Reinforcing Bar Couplings: Reinforcing bar couplers shall be in accordance with Subsection M8.01.9 but are not required to be listed on the Qualified Construction Materials List (QCML). Where reinforcing bars are not specified with corrosion protection, bar couplers shall not be required to be epoxy coated or galvanized.

Independent testing shall be performed by a nationally recognized testing laboratory, approved by the Engineer, which shall provide certified test results showing that the reinforcing bar coupler meets the requirements of Subsection M8.01.9. Acceptance of the couplers shall be approved by the Engineer.

Centralizers and Spacers: Centralizers and spacers shall be fabricated from schedule 40 PVC pipe or tube, or material non-detrimental to the reinforcing steel. Wood shall not be used.

They shall be securely attached to the reinforcement; sized to position the reinforcement to provide the grout cover specified in the table below; sized to allow grout tremie pipe insertion to the bottom of the drill hole; and sized to allow grout to freely flow up the drill hole and casing.

Table 1 - Minimum Grout Cover for Steel Reinforcement

Condition	Minimum Cover on Bar (in.)	Minimum Cover on Coupler (in.)
Micropiles in Soil	1	¼
Micropiles in Rock	½	¼
Coated or Encapsulated Bars	½	¼

Admixtures for Grout: Admixtures shall conform to the requirements of AASHTO M 194 and shall be selected from the QCML where applicable. Expansive admixtures shall only be added to the grout used for filling sealed encapsulations or micropile top connections. Accelerators are not permitted. Admixtures containing intentionally added chlorides are not permitted. Admixtures shall be from the same Manufacturer and shall be compatible with the grout and mixed in accordance with the Manufacturer's recommendations.

ITEMS 945.1 and 948.61 (Continued)

Admixtures that control bleed, improve flowability, reduce water content, and retard set may be used in the grout subject to review and acceptance by the Engineer.

Cement: All cement shall conform to AASHTO M 85 Type I, Type II, Type III, or Type V and shall be the product of one Manufacturer.

Grout: Neat cement mixture with a minimum 3-day compressive strength of 50 percent of the 28-day unconfined compressive strength as shown on the Plans. The grout shall be proportioned and mixed as to provide a fluid grout capable of maintaining the solids in suspension without appreciable bleed. Preparation and placement of grout shall be in accordance with the recommendations of "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete," ACI 304.

A minimum of 60 calendar days prior to the start of micropile construction the grout mix design shall be submitted to the Engineer and a trial batch shall be performed. The trial batch shall take place at a location approved by the Engineer and be performed in the presence of Department personnel. It shall be representative of the production grout placement and shall consist of the same materials, equipment, methods of mixing, and sample preparation and curing methods.

Trial batch samples will be tested to verify that the material meets all grout criteria specified in Table 2. The quantity of material batched shall be sufficient to perform all required tests specified.

Table 2 – Grout Material Acceptance Criteria for Trial Batch Testing

Quality Characteristic	Test Method	Engineering Limit
Minimum Compressive Strength:	AASHTO T 106 Or AASHTO T 22	
3 days		≥ 2500 psi
7 days		For information only
28 days		≥ 5000 psi
Consistency	API RP-13B-1	± 10% of the density specified in the mix design

Plates and Shapes: Structural steel plates and shapes for pile top attachments shall conform to M8.05.0, AASHTO M 270, and have minimum yield strength of 50 ksi.

Water: Water for mixing grout shall be potable, clean, and free from substances that may be injurious to cement and steel.

Fillers: Inert fillers such as sand (conforming to AASHTO M 45) may be used in the grout in special situations, such as presence of large voids in the ground or when grout take and travel are to be limited, with prior written approval by the Engineer.

ITEMS 945.1 and 948.61 (Continued)

CONSTRUCTION METHODS

Qualifications

The Micropile Contractor must be experienced in the construction and load testing of micropiles and have successfully constructed at least 5 projects in the last 5 years involving construction totaling at least 100 micropiles with similar capacity and requirements specified in these plans and specifications. The Micropile Contractor shall have previous micropile drilling and grouting experience in soil/rock similar to project conditions and shall have available and be thoroughly familiar with the specialized type of equipment needed to perform work of this type.

The on-site foremen and drill rig operators shall also have experience on at least 3 projects over the past 5 years installing micropiles of equal or greater capacity than required in these plans and specifications.

Prior to the Pre-construction Meeting, the Micropile Contractor shall submit the following information to verify the firm's experience and the qualifications of personnel scheduled to perform the micropile design (load test frame) and construction:

1. Submit a list of at least five micropile projects successfully completed in the last five years. Include construction details, structural details, load test reports, and client contact for each project listed.
2. Submit a list of the equipment and resources the Micropile Contractor plans to mobilize and utilize for the performance of the project.
3. Provide the names and detail the experience of the micropile designer, on-site supervisor, foremen, and drill rig operators for this project.
4. A signed statement that the Micropile Contractor has inspected both the project site and all the subsurface information including any soil or rock samples made available in the Contract Documents.

Work on any micropiles shall not be started, nor materials ordered until the qualifications and submittals have been accepted by the Engineer. The Engineer may suspend the micropile construction if the Micropile Contractor substitutes unapproved personnel during construction. Requests for substitution of field personnel shall be submitted to the Engineer for acceptance. Additional costs resulting from the suspension of work will be the Micropile Contractor's responsibility, and no extension in contract completion date resulting from the suspension of work will be allowed.

The Micropile Contractor shall have, on site during all micropile construction activity, a minimum of one Quality Control (QC) inspector. This person shall be responsible for quality control of the micropiles during all phases of construction and will monitor and document all QC inspection and testing activities required by the specifications and outlined in the accepted procedures and Working Drawings. The QC person shall be a certified NETTCP Concrete Technician.

ITEMS 945.1 and 948.61 (Continued)

Micropile Pre-Construction Submittals

The Contractor shall prepare and submit to the Engineer: shop drawings, a micropile installation plan, construction procedures, load testing procedures, and equipment calibrations for review and acceptance. The Contractor shall verify the limits of the micropile structure before preparing the detailed working drawings and allow the Engineer four (4) weeks to review the submittal after a complete set has been received. Work shall not begin, nor materials ordered until all submittals have been received, reviewed, and accepted in writing by the Engineer.

The micropile submittals shall include:

A. Plans
   1. A plan view of the micropile layout identifying the locations of micropiles, numbering system for records, and verification test and proof test micropile locations.
   2. An elevation view of the test micropile(s) showing:
      i. A typical detail of test micropiles defining the micropile length, reinforcement, inclination, and load test bonded and unbonded test lengths.
      ii. Permanent casing length and diameter, casing plunge length, and grout bond zone length.
      iii. Estimated soil/bedrock strata.
      iv. Instrumentation to be installed.
      v. Minimum drill hole diameter.
      vi. Splice type and locations.
      vii. Centralizers and spacers.
      viii. Corrosion protection details.
      ix. Grout design strength.
   3. Details for constructing micropile structures around utilities, as applicable.

B. Construction Procedures

1. Detailed step-by-step description of the proposed micropile construction procedure, including personnel, testing, and equipment to assure quality control. This step-by-step procedure shall be shown in sufficient detail to allow the Engineer to monitor the construction and quality of the micropiles. Include methods of drilling the holes, advancing the casing, drilling through or removing obstructions, flushing drilled holes, installing reinforcement, grout pressures, and filling the annular space between the micropile casing and core hole through the existing concrete abutments with sand borrow (M1.04.0).
2. If welding of casing is proposed, submit the welding procedure. All welding shall be done in accordance with the current AWS Structural Welding Code.
3. Information on space requirements for installation equipment that verify the proposed equipment can perform at the site.
4. Plan describing how surface water, drill flush, and excess waste grout will be controlled and disposed.
5. Certified mill test reports for the central reinforcing steel. The ultimate strength, yield strength, elongation, and material properties composition shall be included.

ITEMS 945.1 and 948.61 (Continued)

6. Certified mill test reports for the permanent casing. Certification that the permanent casing meets the supplemental requirements of SR15 shall be included.
7. Quality Control Plan. The QC Plan should sufficiently document the QC processes of all Contractor parties (i.e. Prime Contractor and Subcontractors) performing work required under this specification. It shall be submitted to the Engineer for review and approval a minimum of 30 days prior to the start of work.

   The QC Plan shall include complete descriptions, and details for the following:
   i. Micropile installation including drilling method and grouting procedure.
   ii. Grout mix design and type of materials to be used in the grout including certified test data and trial batch reports. The Micropile Contractor shall also provide specific gravity and density of the wet mix design.
   iii. Methods and equipment for accurately monitoring and recording the grout depth and grout volume as the grout is being placed.
   iv. Estimated curing time for grout to achieve specified strength. Previous test results for the proposed grout mix completed within one year of the start of grouting may be submitted for initial verification and acceptance, and start of production work. During production, grout shall be tested in accordance with the Grout Testing Requirement specified herein.
   v. Procedure and equipment for Micropile Contractor monitoring of grout quality. At a minimum, the Micropile Contractor shall verify the specific gravity of the mixed grout prior to placement of the grout into each drilled micropile.

C. Load Testing Procedures
   Detailed plans and procedures for the proposed micropile load testing method. This shall include all drawings, details, and structural design calculations necessary to clearly describe the proposed test method, reaction load system capacity and equipment setup, types and accuracy of apparatus to be used for applying and measuring the test loads and pile top movements in accordance with the Micropile Load Testing section of this specification.

D. Equipment Calibration
   Calibration reports and data for each test jack, pressure gauge, master pressure gauge, and electronic load cell to be used. The calibration tests shall have been performed by a certified testing laboratory, and tests shall have been performed within 90 calendar days of the date submitted. Testing shall not commence until the Engineer has reviewed and accepted the jack, pressure gauge, master pressure gauge, and electronic load cell calibration data.

Pre-Construction Meeting

A mandatory pre-construction meeting will be scheduled by the Engineer and held prior to the start of micropile construction. The Engineer and/or Resident Engineer, Prime Contractor, and Micropile Contractor, including QC personnel, shall attend the meeting. The preconstruction meeting will be conducted to clarify the construction and QC requirements for the work, to coordinate the construction schedule and activities, specifically those pertaining to excavation for micropile structures, installation of temporary sheeting, anticipated subsurface conditions, micropile installation and testing, micropile structure survey control, and site drainage control.

ITEMS 945.1 and 948.61 (Continued)

Site Drainage Control

The Contractor shall control and properly dispose of drill flush and construction related waste, including excess grout, in accordance with related specifications within the Contract Documents, and all applicable local codes and regulations. Provide positive control and discharge of all surface water that will affect construction of the micropile installation. Maintain all pipes or conduits used to control surface water during construction. Repair damage caused by surface water at no additional cost. Upon substantial completion of the work, remove surface water control pipes or conduits from the site.

Excavation

Coordinate the work and the excavation so the micropile structures are safely constructed and remain stable at all times. Perform the micropile construction and related excavation in accordance with the plans and accepted submittals. No excavation deeper than those specified herein or shown on the plans will be made above or below the micropile structure locations without written acceptance of the Engineer.

Micropile Installation

A. General

The Micropile Contractor shall select the drilling method, the grouting procedure, and the grout pressure used for installation of the micropiles. The construction method shall incorporate any special construction requirements specified on the plans. The production micropiles and its construction method shall be identical to the accepted verification test piles.

When the plans require uncased drilling of the micropile into bedrock, the permanent and/or temporary casing shall be drilled a minimum 12 inches into intact bedrock or to a depth within the bedrock so as to prevent subsidence of over burden into the uncased and/or bond zone portion of the drill hole (i.e. the rock socket).

Piles shall be installed only in the presence of the Engineer's Representative.

B. Location and Survey

Micropiles shall be located and marked using survey and a template by the Contractor who shall maintain and be responsible for all location and elevation stakes.

C. Drilling

The drilling equipment and methods shall be suitable for drilling through the conditions to be encountered, without causing damage to overlying or adjacent structures, buried structures, or utilities.

Temporary casing or other accepted method of pile drill hole support is required, when drilling within 10 feet of an existing foundation, or utility, and/or in caving or unstable ground, to permit the pile shaft to be formed to the minimum design drill hole diameter. The casing shall be of the type and thickness that can be installed without distortion. Casings that fail, fracture, or otherwise distort during drilling or after drilling shall, unless otherwise directed, be withdrawn or replaced at the Contractor's expense.

ITEMS 945.1 and 948.61 (Continued)

The drill hole must be open along its full length to at least the design minimum drill hole diameter prior to placing grout and reinforcement. The Contractor's proposed method(s) to provide drill hole support and to prevent detrimental ground movements shall be reviewed by the Engineer. Detrimental ground movement is defined as movement which requires remedial repair measures, in order to maintain site conditions as determined by the Engineer. Do not progress a new hole, pressure-grout, or post-grout, within a radius of 5 pile diameters or 5 feet, whichever is greater, of a micropile until the grout for that micropile has set 24 hours or longer. Do not allow vibration or excessive wheel loads to influence piles during installation and construction.

Use of drilling fluid containing bentonite or any other non-reverting drilling fluid is not permitted. Use of polymer slurry to remove cuttings from the cased hole shall be approved by the Engineer.

Piles shall be installed using equipment capable of penetrating boulders, cobbles, bedrock, dense till material, granite blocks, timber, concrete, or other man-placed materials that hinder the advance of the pile.

Use of drop-type impact hammers and blasting are not permitted. Prior to the use of down the hole air drilling methods the Contractor shall provide temporary fencing or barriers as necessary to prevent cuttings from leaving the work area and entering the adjacent traffic lanes.

Micropiles shall not be installed using auger cast methods.

Permanent casing must be installed in a manner which will not loosen the adjacent soils and will result in intimate contact between the casing and the soil. Driving of casing will not be allowed. Drilling shall be performed such that cuttings and/or wash fluid return through the inside of the casing. External flush will not be allowed. The method of drilling used shall prevent the loss of ground due to erosion, jetting, or blow-in at the bottom of the casing. No open-hole drilling will be allowed unless accepted by the Engineer.

D. Ground Heave or Subsidence

During construction, the Contractor shall observe the ground conditions in the vicinity of the micropile construction site on a daily basis for signs of ground heave or subsidence. Immediately notify the Engineer if signs of movements are observed. The Contractor shall immediately suspend or modify drilling or grouting operations if ground heave or subsidence is observed, if the micropile structure is adversely affected, or if adjacent structures are damaged from the drilling or grouting. If the Engineer determines that the movements require corrective action, the Contractor shall take corrective actions necessary to stop the movement or perform repairs. When due to the Contractor's methods or operations or failure to follow the specified/accepted construction sequence, as determined by the Engineer, the costs of providing corrective actions will be borne by the Contractor.

ITEMS 945.1 and 948.61 (Continued)

E. Pipe Casing and Reinforcing Bars Placement and Splicing

Reinforcement shall be placed prior to grouting the drill hole. Reinforcement surface shall be free of deleterious substances such as soil, mud, grease, or oil that might contaminate the grout or coat the reinforcement and impair bond. Reinforcement in the bond zone [i.e. rock socket] shall extend the minimum required length.

The Contractor shall install all micropiles to the planned elevations.

Centralizers and spacers shall be provided at a maximum spacing of 10 feet on center. The upper- and lower-most centralizers shall be located a maximum of 5 feet from the top and bottom of the micropile, respectively. Centralizers and spacers shall permit the free flow of grout without misalignment of the reinforcing bar(s) and permanent casing. The reinforcing steel shall be inserted into the drill hole to the desired depth without difficulty. Partially inserted reinforcing bars shall not be driven or forced into the hole. The Contractor shall re-drill and reinsert reinforcing steel when necessary to facilitate insertion.

Lengths of casing and reinforcing bars to be spliced shall be secured in proper alignment and in a manner to avoid eccentricity or angle between the axes of the two lengths to be spliced. Splices and threaded joints shall meet the requirements of the Material section. Threaded pipe casing joints shall be located at least two casing outside diameters (O.D.) from a splice in any reinforcing bar. When multiple bars are used, bar splices shall be staggered at least 1 foot.

F. Grouting

Micropiles shall be grouted the same day the load transfer bond length is drilled, or the bond length shall be flushed prior to grouting procedures commence. The grouting equipment shall produce a grout free of lumps and undispersed cement. Admixtures, if used, shall be mixed in accordance with Manufacturer's recommendations. The Contractor shall have means and methods of measuring the grout quantity and pumping pressures during the grouting operations. The grout pump shall be a positive displacement pump equipped with a pressure gauge to monitor grout pressure. A second pressure gauge shall be placed at the point of injection into the pile top. The pressure gauge shall be capable of measuring pressures of at least 145 psi or twice the actual grout pressure used, whichever is greater. The grout shall be kept in agitation prior to pumping. Grout shall be placed within one hour of mixing. The grouting equipment shall be sized to enable each pile to be grouted in one continuous operation. The grout volume being pumped shall be measured to an accuracy of 10 percent.

The hole shall be flushed with clean water immediately prior to grouting, to remove all contaminated water and cuttings. The hole shall be flushed through the grout pipe fully extended to the bottom of the hole with the temporary casing (if any) in place. The water shall be pumped at a high velocity until the wash water at the top of the casing is clear. After flushing, the depth of the hole shall be measured to confirm that the hole is clean and no sediment exists at the bottom of the drilled rock-socket/bond length. Installation of the steel reinforcing and grouting shall be done immediately after flushing. In case of delay, the hole shall be re-flushed and rechecked prior to grouting as directed by the Engineer.

ITEMS 945.1 and 948.61 (Continued)

The grout shall be injected from the lowest point of the drill hole, and injection shall continue until uncontaminated grout flows from the top of the pile. Temporary casing, if used, shall be extracted in stages ensuring that, after each length of casing is removed, the grout level is brought back up to the proposed level before the next length is removed. The use of compressed air to directly pressurize the fluid grout takes is not permissible. The tremie pipe or casing shall always extend below the level of the existing grout in the drill hole during grouting procedures. The grout takes shall be controlled to prevent excessive heave or fracturing of rock or soil formations. The entire micropile shall be grouted to the design cut-off level. Upon completion of grouting, the grout tube may remain in the hole, but must be filled with grout.

If the Contractor elects to use a post-grouting system, Working Drawings and relevant details including grouting pressure, volume, location and mix design, shall be submitted to the Engineer for review.

G. Construction Tolerance

Unless otherwise stated on the Plans, the following shall be the maximum construction tolerances for micropiles:

1. Centerline of piling shall not be more than 3 inches from indicated plan location.
2. Pile shall be plumb within 2 percent of total-length design plan alignment.
3. Battered piles inclined up to 1:6 shall be within 4 percent of design plan alignment.
4. Battered piles inclined greater than 1:6 shall be within 7 percent of design plan alignment.
5. Top elevation of pile shall be plus 1 inch or minus 2 inch maximum from vertical design elevation indicated.
6. Centerline of reinforcing steel shall not be more than 3/4 inches from indicated center of pile.
7. Minimum volume of grout placed shall be the 110% of the theoretical volume of the whole micropile length from bottom to top at time of grouting.

H. Micropile Installation Records

The Contractor shall prepare and submit to the Engineer full-length installation records for each micropile installed. The records shall be submitted within one work shift after that pile installation is completed. The data shall be recorded on a micropile installation log. A separate log shall be provided for each micropile. The log for each micropile shall contain the following minimum information:

1. Project name, structure name, micropile number, and contract number.
2. Date and time of drilling, grouting, and completion.
3. Bottom elevation of the proposed footing and final top elevation of the micropile, to the nearest 0.1 feet.
4. Plumbness and deviation from design location and batter.

ITEMS 945.1 and 948.61 (Continued)

5. Micropile as-built information such as pile inclination, casing diameter and wall thickness, reinforcement size and length, casing length below bottom of footing, taped measurement inside casing to check cleanout, plunge length (cased bond length), bond length below casing, total pile length below and above bottom of footing, All dimensions shall be provided to the nearest 0.1 feet.
6. Drilling method, drill bit type and size, and drill operator's name.
7. Table showing the descriptions and approximate top and bottom elevation of each soil or rock layer encountered during pile drilling.
8. Grout mix, density, and quantity used, for initial grout and post-grout (if any) including cement type and admixtures.
9. Maximum and average grout pressure used during installation.
10. Damage (if any) to pile, description of any deviations from the design location and batter or from the approved pile design and installation procedures, and description of any unusual occurrences during drilling (including obstructions), installation, and grouting.

The example micropile installation log in the "Micropile Design and Construction Guidelines Manual," Report No. FHWA-NHI-05-039 or FHWA-SA-97-070 can be used as a reference in developing the micropile installation log.

The Contractor shall also submit within 2 weeks after installation of all piles, an as-built plan, certified by a surveyor, showing the as-installed location of all piles to the nearest ½ inch.

CONSTRUCTION QUALITY ASSURANCE

Quality Control

The Contractor's QC personnel will perform Quality Control inspection, sampling, and testing to ensure that the processes are providing work conforming to the contract requirements. Inspection, sampling, and testing shall be documented on appropriate forms and provided to the Engineer. The Engineer will not sample or test for Quality Control or assist in controlling the Contractor's operations.

A. Testing
1. Grout consistency: As measured by grout density shall be determined by the Contractor per API RP-13B-1 at a frequency of at least one test per pile, conducted just prior to start of pile grouting. The Baroid Mud Balance used in accordance with API RP-13B-1 is an approved device for determining the grout density of neat cement grout. The measured grout density shall be within ±10% of the density specified in the grout mix design submittal.
2. Compressive Strength: Grout within the micropiles shall be tested by the Contractor's Quality Control Inspector to ensure that it attains the minimum required compressive strength.
3. Micropile grout shall be sampled and cured in accordance with AASHTO R 64 (for 2 inch by 2 inch cubes) or T 23 (for 3 inch by 6 inch cylinders) and tested for compressive strength in accordance with AASHTO T 106 (for cubes) or T 22 (for cylinders). Grout samples shall be taken directly from the grout plant (on-site mixer and pump).

ITEMS 945.1 and 948.61 (Continued)

The QC Technician will take the following sets of grout samples for QC testing:

i. Verification Test Piles – three (3) sets of three (3) cubes or cylinders for 3-, 7-, and 28-day strength testing.
ii. Proof Test Piles – three (3) sets of three (3) cubes or cylinders for 3-, 7-, and 28-day strength testing.
iii. Production Piles – one (1) set of three (3) cubes or cylinders for 28-day strength testing for every two (2) micropiles or one set from each grout plant on each day of operation; whichever occurs more frequently.

The Contractor shall provide grout cube compressive strength, grout density, can grout volume results to the Engineer within 24 hours of testing. All concrete testing shall be performed by a qualified third party testing facility.

Table 3 – Grout Material Acceptance Criteria

Quality Characteristic	Test Method	Engineering Limit
Minimum Compressive Strength:	AASHTO T 106 or AASHTO T 22	
3 days		≥ 2,500 psi
7 days		For information only
28 days		≥ 5,000 psi
Consistency	API RP-13B-1	± 10% of the density specified in the mix design
Volume		≥ Theoretical volume of hole

MassDOT Acceptance

The Engineer is responsible for performing all Acceptance activities and making the final Acceptance determination. The Engineer's Acceptance system will include monitoring the Contractor's QC activity, performing Acceptance inspection, and utilizing available sampling and testing data.

A. Inspection
The Engineer will perform Acceptance inspection of all work items to ensure that all materials and completed work are in conformance with the contract requirements.

B. Testing
MassDOT will determine whether it will test 2-inch cubes or 3-inch by 6-inch cylinders for its Acceptance testing. The Contractor will be required to provide to MassDOT a sufficient amount of approved 2-inch cube molds or 3-inch cylinders. If it is determined that MassDOT will test 3-inch cylinders then a correlation between the 2-inch cube results and the 3-inch cylinders shall be determined by MassDOT.

ITEMS 945.1 and 948.61 (Continued)

MassDOT will take the following sets of grout samples for Acceptance testing:

i. Verification Test Piles – 3 sets of cubes or cylinders for 3-, 7-, and 28-day strength testing.
ii. Proof Test Piles – three (3) sets of three (3) cubes or cylinders for 3-, 7-, and 28-day strength testing.
iii. Production Piles – one (1) set of three (3) cubes or cylinders for 28-day strength testing for every two (2) micropiles or one set from each grout plant on each day of operation; whichever occurs more frequently.

Pile verification or proof load testing shall not be performed until MassDOT has confirmed the grout has reached the minimum 3-day design strength specified in Table 4.

Table 4 – Grout Material Acceptance Criteria

Quality Characteristic	Test Method	Engineering Limit
Minimum Compressive Strength:	AASHTO T 106 or AASHTO T 22	
3 days		≥ 2,500 psi
7 days		For information only
28 days		≥ 5,000 psi

Micropile Load Testing

A. General

The Contractor shall perform pre-production verification pile load testing on one sacrificial pile per bond zone bearing stratum. The number and location of the verification test(s) shall be as specified on the Plans. In general, the location of the verification test(s) shall be within 10 feet of the footprint of a substructure unit, but at least 5 feet from any production pile as selected by the Contractor and accepted by the Engineer.

Pile proof load testing shall be performed on actual production micropiles and shall be performed on one pile per abutment, in conformance with the approved working drawings and testing procedures. The production proof test pile(s) shall be at a location selected by the Contractor and accepted by the Engineer.

The load tests shall conform to the requirements of ASTM D1143 (vertical compression load testing) or ASTM D3689 (vertical tension load testing) except as modified herein. The maximum test loads shall be 150% of the Factored Design Load (FDL) for the micropile verification test and 100% of the FDL for Micropile Proof Test.

The Factored Design Load is defined as the Factored Axial Design Load (compression and/or tension) as shown on the Plans. The maximum test loads shall be as specified above but not more than 80% of the structural capacity of the micropile elements, to include steel yield in tension, steel yield or buckling in compression, or grout crushing in compression. The structural elements of the verification test micropile may be modified for testing the FDL of the micropile as accepted by the Engineer. The Alignment Load (AL) should not be more than 0.04 FDL.

ITEMS 945.1 and 948.61 (Continued)

Before starting the work, the Contractor shall submit to the Engineer for acceptance, a pile load test plan including a written description of the equipment and methods which are intended to be used. The methods must be of an accepted type and shall be altered as necessary to meet the acceptance of the Engineer. The pile load test plan and description shall be prepared and stamped by a professional engineer registered in the Commonwealth of Massachusetts.

Grout within the micropile verification test pile shall attain the minimum required 3-day compressive strength prior to load testing. The top elevation of the test pile shall be determined immediately before the load testing. The head of each micropile shall be cut-off level or capped to produce a level horizontal bearing surface.

The Contractor shall provide all personnel and equipment needed to perform the test, measure loads and movements, and record test data. A representative of the Department or the Engineer may observe and witness the test and record data independently. No testing is to be performed unless all the agreed representatives are present.

Testing equipment shall include dial gauges, dial gauge support, jack and pressure gauge, electronic load cell, and a reaction frame. The Contractor shall provide a description of test setup and jack, pressure gauge and load cell calibration curves in accordance with the submittals Section.

Design the testing reaction frame to be sufficiently rigid and of adequate dimensions such that excessive deformation of the testing equipment does not occur. Provide a reaction frame capable of safely supporting 125 percent of the maximum test load. Align the jack, bearing plates and stressing anchorage such that unloading and repositioning of the equipment will not be required during the test.

Apply and measure the test load with a hydraulic jack and pressure gauge. The pressure gauge shall be graduated in 100 psi increments or less. The jack pressure gauge shall have a pressure range not exceeding twice the anticipated maximum test pressure. The jack shall be positioned at the beginning of the test such that unloading and repositioning during the test will not be required.

Calibrate the test load jacking system including the hydraulic jack couplings, gas pump, pressure gauge, and hydraulic load cell prior to the test so that the load applied is controlled to within 3 percent of the total applied load. Submit calibration reports prior to the start of the pile load test. Monitor the creep test load hold during verification tests with both the pressure gauge and the electronic load cell. Use the load cell to accurately maintain a constant load hold during the creep test load hold increment of the verification test.

Readings of settlement and rebound shall be referred to a fixed benchmark and shall be made using at least three dial gauges (micrometer dial extensometers) graduated to 0.001 inches and located 120 degree intervals around the micropile. The gauges shall be mounted on a reference beam supported at each end by reliable supports located at least 10 feet from the center of the test pile and independent from the jack, pile, or reaction frame.

ITEMS 945.1 and 948.61 (Continued)

The dial gauges shall have a travel sufficient to allow the test to be done without having to reset the gauges. Visually align the gauges to be parallel with the axis of the micropile. Readings shall be taken at intervals specified in the Verification Test and Proof Test section.

The Contractor shall establish a survey reference point on the test pile and another reference point at the center of the reference beam. The reference points shall consist of graduated scales machine-divided into 0.02 inch and attached securely to the pile and reference beam. The reference points shall be monitored using survey equipment during the pile load test.

Protect the settlement measuring system against rain, wind, frost, and any other disturbances that could affect the reliability of the settlement observations. Provide sun shading for the measuring system for the duration of the test and for a minimum of 1 hour prior to the start of the test.

B. Micropile Verification Test

The Contractor shall perform pre-production verification pile load testing on sacrificial piles at a location selected by the Contractor and accepted by the Engineer. The location of the verification tests shall be within 10 feet of footprint of a substructure unit but at least 5 feet away from any production pile. Testing shall be performed in compression or tension in accordance with ASTM D1143 or ASTM D3689, respectively, except as modified herein.

Verification load tests shall be performed to verify that the Contractor installed micropiles will meet the required FDL and load test acceptance criteria and to verify that the length of the micropile bond zone is adequate. The drilling-and-grouting method and casing outside diameter shall be identical to those specified for the production piles as indicated on the Plans.

Verification test piles shall be installed at the location accepted by the Engineer. The steel core may need to have a higher strength or a larger diameter than for the production piles to accommodate the test load.

Verification test piles shall include at least two, ¾-inch diameter PVC Schedule 40 pipes cast into the test pile to allow telltales to be installed for load testing. The pipes shall be securely fastened in straight alignment to prevent displacement during grouting. The pipes shall be sealed at the bottom with threaded steel caps and at the top with threaded PVC plugs. The pipes shall extend within one foot of the top and bottom of the bearing stratum (i.e. unbonded zone of the pile) at the test pile location. Strain gages may be substituted for telltales.

The micropile verification load test results must verify the micropile design and installation methods, and be reviewed and accepted by the Engineer prior to beginning installation of production micropiles. The verification test pile and reaction piles shall not be used as production piles.

Test verification pile to a maximum Test Load of 150% of the Factored Design Load (FDL) defined above, as indicated on the Plans. The verification pile load test shall be made by incrementally loading the micropile in accordance with the following cyclic load schedule:

ITEMS 945.1 and 948.61 (Continued)

Step	Loading	Applied Load	Hold Time (min.)
1	Cycle 1	AL	-
		0.075 FDL	4
		0.15 FDL	4
		0.225 FDL	4
		0.30 FDL	4
		0.375 FDL	4
2	Cycle 2	AL	1
		0.15 FDL	1
		0.30 FDL	1
		0.375 FDL	1
		0.45 FDL	4
		0.525 FDL	4
		0.60 FDL	4
		0.675 FDL	4
		0.75 FDL	4
3	Cycle 3	AL	1
		0.30 FDL	1
		0.60 FDL	1
		0.675 FDL	1
		0.75 FDL	1
		0.875 FDL	4
		0.90 FDL	4
		0.975 FDL	10 or 60 (Creep Test)
4	Cycle 4	AL	1
		0.30 FDL	1
		0.60 FDL	1
		0.90 FDL	1
		0.975 FDL	1
		1.05 FDL	4
		1.125 FDL	4
		1.20 FDL	4
		1.275 FDL	4
		1.35 FDL	4
		1.425 FDL	4
		1.50 FDL	4
		1.20 FDL	4
		0.90 FDL	4
		0.60 FDL	4
		0.30 FDL	4
		AL	15

ITEMS 945.1 and 948.61 (Continued)

Creep Test: Pile top movement shall be measured at each load increment. The load-hold period shall start as soon as each test load increment is applied. The verification test pile shall be monitored for creep at the 0.975 FDL. Depending on performance, either a 10 minute or 60 minute creep test shall be performed at the 0.975 FDL test load where movements shall be recorded at 1, 2, 3, 5, 6, and 10 minutes. When the pile top movement between 1 and 10 minutes exceeds 0.04 inches, the 0.975 FDL test load shall be maintained an additional 50 minutes. Movements shall be recorded at 20, 30, 50, and 60 minutes. Dial gauges shall be reset to zero after the initial AL is applied.

The Acceptance criteria for micropile verification load tests are:

1. If the pile is tested in compression, acceptance will be based on the Davisson criteria. For this criterion, the ultimate load is defined as the load at which settlement measured relative to the top of the pile prior to the start of testing exceeds the sum of:
   a. The theoretical elastic compression of the pile assuming the load applied at the top of the pile act over the full length of the pile, and
   b. 0.15 inches plus 1 percent of the pile tip diameter.
2. If the pile is tested in tension, the ultimate load is defined as the load that produces an upward movement under load of 0.5 inch at the pile tip. The movement at the pile tip is:
   a. Measured directly by tell-tale, or
   b. Computed by deducting the theoretical elastic elongation of the pile from the upward movement measured relative to the top of the pile prior to the start of testing.
3. At the end of the 0.975 FDL increment, the test pile shall have a creep rate not exceeding 0.04 inch/log cycle time (1 to 10 minutes) or 0.08 inch/log cycle time (6 to 60 minutes or the last log cycle if held longer). The creep rate shall be linear or decreasing throughout the creep load hold period.
4. Failure does not occur at any load increment up to and including the maximum test load, 1.50 FDL. Failure is defined as load where the slope of the load versus head settlement curve first exceeds 0.025 in/kip.

At the completion of verification testing, test piles shall be removed down to the elevation specified on the plans or by the Engineer.

For the verification load tests, reports must be written and submitted to the Engineer within 3 working days of the load test completion. This report will either confirm the micropiles' resistance and bond lengths specified on the plans or reject the piles based upon the test results. This report shall be reviewed and acceptance by the Engineer prior to beginning installation of production micropiles. The contents of the verification load test report shall include:

1. Brief project description.
2. Description of site and subsurface conditions including information on the ground conditions at the location of the load test and a comparison to actual conditions encountered.

ITEMS 945.1 and 948.61 (Continued)

3. Key personnel including the drill rig operator, the superintendent, the grout plant operator, and any other personnel involved in the installation and testing of the micropile.
4. Micropile installation data including information such as length of the micropile (cased and uncased), number of bags of cement used to construct the micropile, size and type of casing and reinforcement, geology encountered (e.g. soil material, rock material, and water levels) during drilling, grouting record and grout testing results.
5. Results of load test including load-movement curves/figures and filled-out data sheets.
6. Statement of load test requirements and acceptance criteria.
7. Comparison of load test requirements and acceptance criteria.
8. Summary statement on the load test results.

If a tested micropile fails to meet the Acceptance criteria, the Contractor shall modify the design, the construction procedure, or both. These modifications may include but not limited to modifying the installation methods, increasing the bond length, regrouting the pile via preplaced regrout tubes or changing the micropile type. Any modification that necessitates changes to the structure design shall be submitted as a revision to the Working Drawings and require the Engineer's review and acceptance. Additional load testing may be required until an acceptable pile load test meets the designated load test requirements.

C. Micropile Proof Test

Proof test piles to a maximum test load of 1.00 FDL as defined above. Proof tests shall be made by incrementally loading the micropile in accordance with the following cyclic load schedule:

Step	Loading	Applied Load	Hold Time (min.)
1	Cycle 1	AL	-
		0.10 FDL	4
		0.20 FDL	4
		0.30 FDL	4
		0.40 FDL	4
		0.50 FDL	4
		0.60 FDL	4
		0.70 FDL	4
		0.80FDL	4
		0.90 FDL	4
		1.00 FDL	10 or 60 (Creep Test)
		0.75 FDL	4
		0.50 FDL	4
		0.25 FDL	4
		AL	4

ITEMS 945.1 and 948.61 (Continued)

Creep Test: Pile top movement shall be measured at each load increment. The load-hold period shall start as soon as each test load increment is applied. The proof test pile shall be monitored for creep at the 1.00 FDL. Depending on performance, either a 10 minute or 60 minute creep test shall be performed at the 1.00 FDL test load where movements shall be recorded at 1, 2, 3, 5, 6, and 10 minutes. When the pile top movement between 1 and 10 minutes exceeds 0.04 inches, the 1.00 FDL test load shall be maintained an additional 50 minutes. Movements shall be recorded at 20, 30, 50, and 60 minutes. Dial gauges shall be reset to zero after the initial AL is applied.

The Acceptance criteria for Micropile Proof Load Test are the same as those for the Micropile Verification Load Test, except as modified below:

1. The creep test shall be held at the end of the 1.00 FDL increment.
2. Failure does not occur at any load increment up to and including the maximum test load, 1.00 FDL

Within 3 days of the completion of each proof load, the Contractor shall submit a report confirming the micropiles' capacities and bond lengths specified on the plans or reject the piles based upon the test results. The contents of the proof load test report shall be the same as those in the report for the Micropile Verification Load Test.

If a proof-tested micropile fails to meet the Acceptance criteria, the Contractor shall immediately proof test another micropile within that substructure. For failed piles and further construction of other piles, the Contractor shall modify the construction procedure. Failed micropiles shall be replaced at the Contractor's expense. Any modification that necessitates changes to the structure design shall require the Engineer's prior review and acceptance. Verification and proof tests will be re-performed if the micropile type is changed.

Non-Conforming Piles

Non-conforming piles include piles that are installed out of tolerance, are damaged, the volume of grout placed is less than the theoretical volume of the hole, or the grout tests do not indicate the specified strength has been achieved. The Contractor shall submit a written remedial action plan to the Engineer for approval. The remedial action plan shall indicate how to correct the problem and prevent its reoccurrence. To mitigate or remediate non-conforming piles, the Contractor may be required to provide additional piles or supplement piles to meet specified requirements at no additional cost to the Owner.

ITEMS 945.1 and 948.61 (Continued)

METHOD OF MEASUREMENT

Item 945.1 and Item 945.12 will be measured for payment by the Foot of respective drilled micropiles installed, complete in place

Item 948.6 and Item 948.61 will be measured for payment by the Each respective load test completed.

BASIS OF PAYMENT

Item 945.1 and Item 945.12 will be paid for at the respective Contract unit prices per Foot, which price shall include all labor, materials, equipment, proper disposal of drilling spoil, mobilization and demobilization, and all incidental costs required to complete the work.

Any difference in the required length of permanent casing and micropile installed and accepted by the Engineer from the estimated lengths shall be measured for payment and/or credit.
There will be no extra payment for grout overruns

The Contractor shall anticipate encountering obstructions as noted herein and shall utilize equipment and methods necessary to advance through or remove the obstructions. The presence of obstructions, any lost production, replacement piles, and the removal of obstructions, if necessary, shall not be measured or paid for separately. Any costs associated with the presence of obstructions shall be considered incidental to the Drilled Micropiles Item.

Drilling tools that are lost during the drilling shall not be considered obstructions and shall be promptly removed by the Contractor without compensation. If removal will degrade the hole, the hole shall be abandoned with a new hole located by the Engineer. All costs due to lost tool removal, drilling a new hole and filling the abandoned hole shall be borne by the Contractor.

Item 948.6 and Item 948.61 will be paid for at the respective Contract unit prices per Foot, which price shall include all labor, materials, equipment, load test report, cutting the pile to the elevation necessary to properly incorporate the pile in the structure, cutting the pile to the grade necessary to avoid its interference with the proposed construction, and all incidental costs required to complete the work.

Micropiles installed as test piles for Proof Load Tests, if incorporated in the final structures, the length of pile installed in place shall be paid for at contract unit price of Drilled Micropiles.

ITEM 950.11 TEMPORARY SHORING BRIDGE - NO. S-21-003 LUMP SUM
ITEM 950.12 TEMPORARY SHORING BRIDGE - NO.S-21-009 LUMP SUM

The work under these Item shall conform to the relevant provisions of Subsection 950 of the Standard Specifications and the following:

The work under these items include the design and installation of temporary support of excavation and protection systems as schematically shown on the Contract Drawings or as required to complete the work to the satisfaction of the Engineer. The Temporary Shoring is anticipated for, but not limited to, the following construction operations: support of excavation for partial demolition of existing substructures and removal of concrete pier at Bridge S-21-009. The Contractor shall NOT assume that all locations where excavation support and protection are needed are shown on the Contract Drawings. Also included in the work is the design and installation of any excavation support tie-back or bracing systems, as shown on the Contract Drawings, or otherwise required to complete the work.

Performance Requirements
Design, furnish, install, monitor, and maintain excavation support and protection systems capable of supporting excavation sidewalls and of resisting soil and hydrostatic pressure and superimposed rail and construction loads.

1. Provide professional engineering services needed to assume engineering responsibility, including preparation of Shop Drawings and a comprehensive engineering analysis, with the exception of locations where the sheeting sizes are specified on the plans; such locations can be assumed to be designed by the Engineer of Record as long as the proposed limits of excavation match those on the plans.
2. Prevent surface water from entering excavations by grading, dikes, or other means.
3. Install excavation support and protection systems without damaging existing buildings, pavements, and other improvements or facilities adjacent to excavation.
4. Provide vibration monitoring.
5. Prevent impacts to adjacent structures and utilities.

Design Criteria
The criteria set forth in this Article shall apply where the Contractor is responsible for the design of the excavation support.

Design the temporary shoring in accordance with the earth pressures, and other detailed criteria indicated. Excavation supports shall allow the safe and expeditious construction of the permanent structures without excessive movement or settlement of the ground, to prevent damage to, or movement or settlement of adjacent buildings, roadways, tracks, structures, or utilities, as shown on the Contract Drawings and as specified herein.

Design the excavation support systems to support: earth pressures, unrelieved hydrostatic pressures, and any adjacent structure surcharge loads, utility loads, equipment and construction loads.

ITEMS 950.11 and 950.12 (Continued)

Consult official records of existing utilities, both surface and subsurface, and their connections to be fully informed on all existing conditions and limitations as they apply to this work and its relation to other construction work. Proceed with caution in areas of utility facilities. Expose them by hand excavation or by other methods acceptable to the utility owner. Protect existing utilities to remain within and adjacent to the work area in accordance with the requirements of authorities having jurisdiction over same. The Contractor is responsible for any damage to utilities caused by the Contractor's operations and shall restore them to equal or better operation at no additional cost to the Owner.

Submittals

Shop Drawings and Design Submittals: Prepared by or under the supervision of a qualified professional engineer for excavation support and protection systems.

1. Include Shop Drawings and design calculations signed and sealed by a qualified professional engineer, registered in the Commonwealth of Massachusetts, responsible for their preparation.

Qualification Data: For Installer and professional engineer.

1. Work under this Section shall be performed by a qualified Contractor having a minimum of 5 years of experience with support of excavation design and construction. The Contractor must demonstrate that the Contractor’s key personnel or Subcontractor has installed, constructed, and completed work involving the installation of excavation support walls on a minimum of five projects; and has competently managed and supervised the manpower, materials, equipment, and tools necessary to complete such work as required by the size and complexity of this contract; and that the work was successfully completed within the time frame allotted; and that the work was done to the satisfaction of the owner.

2. Furnish a project list of satisfactorily completed wall installations. The project list shall include the name of the owner for whom the Work was performed, the scope and value of the wall installations, and the names of the Contractor’s or Subcontractor’s Project Superintendent(s) and Assistant Superintendent(s) and their experience with the installation of excavation support walls. The list shall also include at least three projects of similar height and size where the design and installation of temporary bracing was required.

Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by the absence of, the installation of, or the performance of excavation support and protection systems.

ITEMS 950.11 and 950.12 (Continued)

Project Conditions

Existing Utilities: Do not interrupt utilities serving facilities occupied by Department or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.

Project-Site Information: Geotechnical reports have been prepared for this Project and will be made available, for information only, to the successful bidder upon Award. The opinions expressed in the reports are those of the design geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by the design geotechnical engineer. The Department will not be responsible for interpretations or conclusions drawn from this data.

1. The Contractor shall make additional test borings and conduct other exploratory operations necessary for design and construction of any excavation support and protection.
2. Borings and site history indicate below ground obstructions may be encountered. Such obstructions may include, but are not necessarily limited to, boulders, granite blocks, concrete from past structures, concrete and masonry retaining walls, granite block walls, and various other demolition and construction debris.

The Contractor shall monitor adjacent structures and improvements for vertical and lateral movement using survey techniques, employing a qualified professional engineer or land surveyor; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations prior to start of construction.

1. During installation of excavation support and protection systems, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Engineer if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

Quality Control

The Contractor shall engage a licensed professional engineer, registered in the Commonwealth of Massachusetts, to design, approve and inspect all excavation support areas on a periodic basis.

Materials

General: Provide materials that are either new or in serviceable condition.

Structural Steel: ASTM A 36/A 36M, ASTM A 690/A 690M, or ASTM A 992/A 992M.

Steel Sheet Piling: ASTM A 328/A 328M, ASTM A 572/A 572M, or ASTM A 690/A 690M; with continuous interlocks.

Cast-in-Place Concrete: ACI 301, of compressive strength required for application.

Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

Grout: Suitable for service, minimum 4,000 psi.

ITEMS 950.11 and 950.12 (Continued)

Tiebacks (If Used)

Tieback tendons shall be fabricated from single or multiple elements of the following:

1. Steel bars conforming to ASTM Designation A 722, "Uncoated High Strength Steel Bars for Prestressed Concrete."
2. Seven wire strand conforming to ASTM Designation A416, "Uncoated Seven Wire Stress Relieved Strand for Prestressed Concrete."
3. Wires conforming to ASTM Designation A 421, "Uncoated Stress Relieved Wire for Prestressed Concrete."
4. Compact seven wire strands conforming to ASTM Designation A 799 80, "Uncoated Seven Wire Compacted, Stress Relieved Steel Strand for Prestressed Concrete."

Anchorages shall be capable of developing 125 percent of the guaranteed minimum ultimate tensile strength of the prestressing steel elements. All anchor head assemblies shall be restressable.

The bearing plates shall be fabricated from structural steel and shall be capable of developing 125 percent of the guaranteed minimum ultimate tensile strength of the tendon steel elements.

Centralizers shall be fabricated from any material, except wood, which is non detrimental to the prestressing steel elements. The centralizer shall position the tendon in the drill hole so a minimum of 0.5 inch of grout cover is provided around each anchor strand. Centralizers shall be spaced at maximum 10 ft. intervals in the stressing length and maximum 5 ft. intervals in the bonded length.

Cement Grout

1. Cement grout used for encapsulating tiebacks shall be a neat cement grout conforming to the shop drawing submittal for the tiebacks.
2. Non shrink grout made with TYPE I, II, or III Portland Cement conforming to ASTM C 150 specifications shall be used. Cement should be fresh and should not contain any lumps or other indications of hydration.
3. Appropriate measures shall be taken to preclude freezing of the grout prior to its reaching design strength.
4. Water for mixing grout shall be potable.
5. Cement grout utilized for tiebacks shall have sufficient strength to achieve an effective bond between grout and the anchor tendon.
6. Redesign of the cement grout mix shall be conducted by the Contractor if performance and/or proof tested tiebacks do not meet the specified criteria for acceptance as determined by the Engineer or Department.

Installation and Removal of Excavation Supports

Install and remove excavation support systems in accordance with the accepted working drawings. Install, maintain, and remove excavation support systems in such a manner as to prevent movement, settlement, or loss of ground, removal of fines from the adjacent ground, or damage to or movement of adjacent structures.

ITEMS 950.11 and 950.12 (Continued)

All permanent and temporary support of excavation that protrudes into the soil that supports any structure shall be left in place. Supporting soil shall be defined as soil directly below the footing contained within a series of planes that originate from the perimeter of the bottom of the footing and project down and away from the footing at an angle of 45 degrees from the horizontal.

Borings and site history indicate below ground obstructions may be encountered. Such obstructions may include, but are not necessarily limited to, boulders, granite blocks, and various other demolition and construction debris. The Contractor is responsible for removal of obstructions by pre-trenching / pre-excavation or other means and backfilling with a suitable material.

Protection of Existing Adjacent Structures

1. The Contractor shall repair all damage to adjacent properties and restore the surfaces and finishes to the original state.
2. If in the opinion of the Engineer the integrity of the adjacent buildings, structures, or roadways are jeopardized due to movement, the Contractor shall immediately discontinue further excavation in the affected area and implement a Plan of Action to mitigate further movement. Mitigating measures shall remain in effect until such time that the Engineer evaluates the impact on the structure and may direct the Contractor to perform any remedial work. The Contractor shall submit proposed remedial measures to the Geotechnical Engineer for review and approval. Submittals shall include methods and names of subcontractors. The Contractor shall proceed with remedial work upon acceptance by the Engineer. Mitigating measures shall be at no additional cost to the Department.

Preparation

Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.

Shore, support, and protect utilities encountered.

Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Engineer and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
2. All elements of the earth support system, including tiebacks, shall be installed within property owned or controlled by the Department, unless otherwise approved by the Department.

Locate excavation support and protection systems clear of permanent construction so that forming and finishing of concrete surfaces is not impeded.

ITEMS 950.11 and 950.12 (Continued)

Monitor excavation support for lateral and vertical movement and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage, or other evidence of movement to ensure that excavation support and protection systems remain stable.

Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems.

Soldier Beam and Lagging (If Used)
Install steel soldier beams before starting excavation. Space soldier beams at regular intervals not to exceed allowable flexural strength of wood lagging. Accurately align exposed faces of flanges to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment.

Install wales horizontally at spacings indicated on the approved shop drawings and secure to soldier beams.

Sheet Piling (If Used)
Before starting excavation, install one-piece sheet piling lengths and tightly interlock to form a continuous barrier. Limit vertical offset of adjacent sheet piling to 60 inches. Accurately align exposed faces of sheet piling to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment. Cut tops of sheet piling to uniform elevation at top of excavation.

Tiebacks (If Used)
Tiebacks shall be designed and installed by the Contractor in accordance with the current edition of the "Recommendations for Prestressed Rock and Soil Anchors", by the Post Tensioning Institute.

Excavation support walls, and other support system members incorporated in a system using tiebacks, shall be designed to resist the vertical components of the tieback loads without settlement during any stage of the excavation and construction.

Coordinate locations of all bracing and components thereof for temporary lateral excavation support with locations of permanent steel and foundation wall elements.

Install tiebacks in accordance with approved shop drawings as specified herein.

Tiebacks shall be installed through sleeves or holes provided in the earth support system. Prevent loss of ground and water seepage at the tieback locations. Implement remedial measures immediately if loss of ground or seepage occurs at these locations.

Tiebacks shall be installed by duplex drilling methods only, using internal flushing methods only which provide return of wash fluid and cuttings through the inside of the outer casing. Outer casing shall be extended for the entire tieback length. Methods of installation shall be used which prevent the loss of ground, e.g. collapsing hole.

ITEMS 950.11 and 950.12 (Continued)

Tiebacks shall be installed with pressure grouted anchor zones of the regroutable type. Regroutable type tiebacks shall have the capability, following initial low pressure grouting, for regrouting in successive stages, using higher grouting pressures to increase load capacity. Each tieback must be capable of being retensioned, if necessary.

Each tieback installed for support of earth excavations shall be tested to verify and establish the tieback capacity. All testing shall be performed in the presence of the Engineer or the Department. Performance tests shall be performed on a minimum of 10 percent of tiebacks for each design, as selected by the Engineer or the Department, to verify the tieback design. Tiebacks grouted into differing strata will be considered a different design. All other tiebacks shall be proof tested.

Performance Tests shall be conducted in accordance with procedures described in the current edition of the "Recommendations for Prestressed Rock and Soil Anchors", by the Post Tensioning Institute.

Proof Tests shall be conducted in accordance with procedures described in the current edition of the "Recommendations for Prestressed Rock and Soil Anchors", by the Post-Tensioning Institute.

Tiebacks shall be locked-off at a load equal to 75% of the tieback design load.

Acceptance of Performance tests and proof tests shall be determined by the Engineer in accordance with the current edition of the "Recommendations for Prestressed Rock and Soil Anchors", by the Post Tensioning Institute.

Any tieback which cannot meet the criteria for acceptance for its design capacity can only be incorporated in the bracing system using 67 percent of the load that can be maintained and meets the criteria for acceptance. Regroutable anchors will be accepted at full capacity after regrouting and acceptable proof testing.

Additional tests shall be performed when any changes are made in the tieback assembly or installation procedures at no additional cost to the Department.

Maintain tiebacks in place until permanent construction is able to withstand lateral earth and hydrostatic pressures.

Inspect tiebacks periodically to confirm anchors exhibit no movement.

Detension temporary tiebacks in accordance with the proposed construction sequence as accepted by the Department.

ITEMS 950.11 and 950.12 (Continued)

Bracing

Bracing: Locate bracing to clear columns, walls, canopies, roof structures, floor framing construction, and other permanent work. If necessary to move brace, install new bracing before removing original brace.

1. Do not place bracing where it will be cast into or included in permanent concrete work, unless otherwise approved by Engineer.
2. Install internal bracing, if required, to prevent spreading or distortion of braced frames.
3. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

Removal and Repairs

Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and support soil, surcharge and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.

1. Remove excavation support and protection systems to a minimum depth of 48 inches below overlying construction and abandon remainder.
2. Repair or replace, as approved by Engineer, adjacent work damaged or displaced by removing excavation support and protection systems.

Monitoring of Excavation

The Contractor shall monitor the performance of components of the excavation support systems, both for vertical and horizontal movements, at intervals specified below. If the Response Values as specified in Table 1 attached are reached at any time during the work, the Contractor shall immediately stop work and implement approved contingency plans.

Possible effects of the excavation on lateral support systems:

1. Deflection of the wall into the excavation due to soil, groundwater, and surcharge loads.
2. Settlement adjacent to the lateral support wall due to inward deflection of the wall.
3. Settlement adjacent to the lateral support wall due to ground loss into the excavation through gaps and voids in the wall.

TABLE 1 RESPONSE VALUES

Monitoring Type	**Value**
Lateral Deflection of Earth Support Wall	
Top of wall	1.5 inches
Mid-Point of wall	0.5 inch
Vertical Deflection of Earth Support Wall	
Top of wall	0.5 inches
Ground Surface Settlement	
Top of Rail	0.25 inch

ITEMS 950.11 and 950.12 (Continued)

BASIS OF PAYMENT

Item 950.11 and Item 950.12 will be paid for at the respective Contract unit prices Lump Sum, which price shall include all labor, materials, equipment, submittals, transportation, removal of obstructions, removing and/or cutting of earth support to remain in place, and all incidental costs required to complete the work.

Payment of 50% (fifty) of the Lump Sum price of this item will be made upon completion of Stage I Demolition and Construction as shown on the Plans.

The remaining 50% (fifty) of the Lump Sum price of this Item will be paid upon completion of Stage II Construction.

Monitoring of existing structures will be paid for under Item 100.95 Geotechnical Monitoring.

ITEM 991.2 CONTROL OF WATER – STRUCTURE NO. S-21-009 LUMP SUM

The work under this item includes furnishing all labor, materials, tools and equipment for dewatering to facilitate subsurface construction, as indicated on the Contract Drawings and specified herein.

The work under this Item consists of the dewatering required for the construction of Bridge No. S-21-009, including the foundations, and pier removal.

Westville dam is downstream from this location. The Contractor shall contact the Westville Dam Project Manager, Keith Beecher (keith.w.beecher@usace.army.mil or (978) 318-8405) prior to installing the Control of Water to notify him of potential flow changes during construction.

Coordinate work with that of all other trades or contracts affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

A control of water plan has been provided showing all work completed within the existing temporary easement and was included in the water quality certification application as well as the USACE self-verification notification. The contractor can provide alternate methods for control of water as long as they meet the requirements of the environmental permits and falls within the temporary easement.

Performance Requirements
The Contractor shall design, fabricate, and install a water control system capable of providing the necessary dry working conditions at the site. The Contractor shall submit detailed shop drawings and calculations depicting the chosen water control system and showing satisfaction of the Temporary Water Control Design Data requirements stated on the plans.

The Contractor is responsible to determine the need and extent of dewatering techniques and sedimentation controls needed to control water and sediment at the site. Prior to executing the excavation operations, the Contractor shall submit working drawings and the methods and materials proposed to be used for approval by the Engineer.

Approval of the working drawings does not relieve the Contractor of the responsibility of providing for the safe and successful completion of the work.

Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control groundwater flow into excavations and permit construction to proceed on dry, stable sub-grades.

1. Maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to sub-grades and permanent structures is prevented.
2. Prevent surface water from entering excavations by grading, dikes, or other means.
3. Accomplish dewatering without damaging existing utilities and existing buildings adjacent to excavation.
4. Remove dewatering system if no longer needed.
5. Provide for legal and suitable disposal of groundwater.
6. Evaluate existing soil conditions and propose equipment and techniques to dewater both non-cohesive and cohesive soils.

ITEM 991.2 (Continued)

Submittals

Shop Drawings for Information: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of headers and discharge lines; and means of discharge and disposal of water.

1. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
2. Include a written report outlining control procedures to be adopted if dewatering problems arise.
3. Include Shop Drawings signed and sealed by the qualified professional engineer responsible for their preparation.
   Qualification Data: For Installer and professional engineer.

Photographs or videotape, sufficiently detailed, of existing conditions of adjacent structures and site work that might be misconstrued as damage caused by dewatering operations.

Record drawings at Project closeout identifying and locating capped utilities and other subsurface structural, electrical, or mechanical conditions performed during dewatering.

1. Note locations and capping depth of wells and well points.

Field Test Reports: Before starting excavation, submit test results and computations demonstrating that dewatering system is capable of meeting performance requirements.

Adjacent Foundations Report and Analysis: Record subsurface foundation systems of adjacent structures and evaluate impacts of groundwater removal; i.e. wood foundations and similar items.

The Contractor shall dewater for the length of time necessary to complete the specified sub-surface improvements. Dewatering operations shall be stopped upon approval by the Engineer. Any requirements to remove portions of the dewatering system will be noted on the Drawings.

Quality Assurance

Regulatory Requirements: Comply with water disposal requirements of authorities having jurisdiction.

Professional Engineer: Engage a professional engineer to design and certify dewatering systems. Engineer shall have a minimum of 5 years of experience with type of dewatering systems similar to those proposed for use.

Project Conditions

Existing Utilities: Do not interrupt utilities serving facilities occupied by the Department or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.

ITEM 991.2 (Continued)

Project-Site Information: A geotechnical report has been prepared for this Project and will be made available, for information only, to the successful bidder upon Award. The opinions expressed in that report are those of the geotechnical engineer and represent interpretations of soil conditions, tests, and results of analyses conducted by the geotechnical engineer. The Department will not be responsible for interpretations or conclusions drawn from the data.
The Contractor shall make additional test borings and conduct other exploratory operations necessary for dewatering.

The Contractor shall employ a qualified professional engineer or land surveyor to survey adjacent structures and improvements, and establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

1. During dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent structures.

Preparation
Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.

1. Prevent surface water and groundwater from entering excavations, from ponding on prepared sub-grades, and from flooding site and surrounding area.
2. Protect sub-grades and foundation soils from softening and damage by rain or water accumulation.

Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the Department and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

Installation
Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.

Before excavating below ground-water level, place system into operation to lower water to specified levels. Operate system continuously until utilities and structures have been constructed and fill materials have been placed, or until dewatering is no longer required.

Provide an adequate system to lower and control groundwater to permit excavation, pier demolition, construction of structures, and placement of fill materials on dry sub-grades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, utilities, and other excavations.

ITEM 991.2 (Continued)

1. Do not permit open-sump pumping that leads to loss of fines, soil piping, sub-grade softening, and slope instability.

Reduce hydrostatic head in water-bearing strata below sub-grade elevations of foundations, utilities, and other excavations.

1. Maintain piezometric water level a minimum of 24 inches below surface of excavation.

Dispose of water removed by dewatering in a manner that avoids negative impacts on abutters, endangering public health, property, and portions of work under construction or completed. Dispose of water in a manner that avoids inconvenience to others. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to the Department.

1. Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches below overlying construction.

Damages: Promptly repair damages to adjacent facilities caused by dewatering operations.

Observation Wells

Provide, take measurements, and maintain at least the minimum number of observation wells or piezometers indicated and additional observation wells as may be required by authorities having jurisdiction.

Observe and record daily elevation of ground water and piezometric water levels in observation wells.

Repair or replace, within 24 hours, observation wells that become inactive, damaged, or destroyed. Suspend construction activities in areas where observation wells are not functioning properly until reliable observations can be made. Add or remove water from observation-well risers to demonstrate that observation wells are functioning properly.

1. Fill observation wells, remove piezometers, and fill holes when dewatering is completed.

BASIS OF PAYMENT

Item 991.2 will be paid for at the Contract unit price Lump Sum, which price shall include all labor, materials, equipment, submittals, adequate treatment of water managed under this item as applicable, meeting all local, state, and federal requirements, and all incidental costs required to complete the work.

ITEM 994.01 TEMPORARY PROTECTIVE SHIELDING LUMP SUM
BRIDGE NO. -21-003

ITEM 994.02 TEMPORARY PROTECTIVE SHIELDING LUMP SUM
BRIDGE NO. S-21-009

This work shall include designing, furnishing, installing, maintaining, removing and disposing a protective shielding system for the bridge. The shielding shall protect the waterway from falling debris or flying debris during the demolition of the existing superstructure, partial demolition of the substructure, and construction of the new bridge. Shielding shall be placed beneath the bridge and shall be removed in advance of anticipated storm events when the water is expected to rise above the bottom of the shielding. The Contractor shall submit calculations and detailed working drawings of the proposed shielding to the Engineer for approval and these calculations and drawings shall be stamped by a professional engineer registered in Massachusetts.

The shielding shall conform to the following:

1. Shielding shall be in place prior to the start of demolition to prevent any debris from falling into the waterway or ground surfaces below.
2. Shielding shall have all spaces along the perimeter and at the seams sealed to prevent dust and debris from escaping and falling onto the ground and water surfaces below the bridges.
3. Shielding shall be designed to safely withstand all anticipated loads. The allowable design stresses shall be in accordance with AASHTO Standard Specifications for Highway Bridges. and/or the AASHTO Guide Design for Temporary Works. The design shall also include a complete description of the equipment and construction methods proposed for the bridge. The shielding shall also be designed to withstand impact of the maximum size of excavated area should it fall during excavation or removal.
4. Shielding shall be installed or removed only upon approval of the Engineer.

If the Contractor's operations damage any existing portions of the bridges that have been designated to be retained in the proposed construction, such damage shall be repaired at the Contractor's expense.

All materials used in the shielding system shall become the property of the Contractor and shall be removed from the site at the completion of the project.

BASIS OF PAYMENT

Item 994.01 and Item 994.02 will be paid for at the respective Contract unit prices Lump Sum, which price shall include all labor, materials, equipment, engineering services, and all incidental costs required to complete the work.

ITEM 995.01 BRIDGE STRUCTURE, BRIDGE NO. S-21-003 LUMP SUM

The work under this Item shall conform to the relevant provisions of Subsection 995 of the Standard Specifications and the following:

The work under this Item shall include all materials, equipment and labor needed to replace the superstructure of the bridge along with modifications to the existing abutments. This work includes, but is not limited to, the construction and installation of the proposed steel beams & diaphragms, concrete deck, sidewalks, bridge rail, and abutment stem, backwall & wingwall modifications.

The work under this Item shall include all materials, equipment and labor needed to construct the following components:

- 5000 psi, 3/4 Inch, 685 HP Cement Concrete for Deck, Sidewalks, Backwalls, Wingwalls, Approach Slabs, and Abutment Stem
- Steel Reinforcement for Structures – Epoxy Coated for Deck, Sidewalks, Wingwalls, Approach Slabs, and Abutment Stem.
- Drilled and grouted dowels
- Spray-Applied Membrane Waterproofing for Bridge Decks
- S3-MTL4 Railing
- Steel Beams W36x231
- Structural steel for diaphragms and utility supports
- Steel casing for utility penetration
- Shear connectors
- Superpave Bridge Protective Course – 12.5 (SPC-B -12.5)
- Elastomeric Protective Coating
- Precast Highway Guardrail Transitions

Materials shown on the plans as being part of this bridge structure or incidental to its construction shall be included for payment in this Lump Sum and shall not be included for payment under another Item in this contract.

5000 PSI, 3/4 INCH, 685 HP CEMENT CONCRETE

5000 PSI, ¾ IN., 685 HP Cement Concrete shall be used to construct the Deck, Sidewalks, Backwalls, Wingwalls, Approach Slabs, and Abutment Stem. 5000 PSI, ¾ IN., 685 HP Cement Concrete shall conform to all material and placement, finishing, and curing requirements of the Standard Specifications.

Preparation of Existing Concrete Substructure

When bonding new concrete to existing concrete, the existing concrete and retained reinforcing steel surfaces shall be cleaned by abrasive blasting. Oil-free compressed air at a nominal pressure of 100 psi shall be used to remove all loose and unbonded particles and debris from existing concrete and reinforcing steel surfaces onto which new concrete is to be placed. No grease, dust, rust, or laitance will be allowed to remain on reinforcing steel and exposed concrete surfaces.

ITEM 995.01 (Continued)

After the surface preparation has been accepted, the existing concrete surfaces to accept concrete placements shall be thoroughly pre-soaked for 24 hours prior to the placement. This shall be accomplished by continuous wetting with soaker hoses or the use of burlap/burlene, etc. where moisture can be maintained. Surfaces must be wetted by a means acceptable to the Engineer using potable water. The Contractor shall remove any puddles of water with oil-free compressed air, and protect the concrete surfaces from drying, so the existing concrete remains in a clean, saturated surface dry condition until placement of the new concrete.

PROTECTIVE SEALING COMPOUND

The work under this heaading shall conform to the provisions of Section 901 and M4.13.0 of the Standard Specifications. Protective Sealing Compound shall be applied to face of existing concrete abutments and wingwalls to remain as shown on the Plans.

STEEL REINFORCEMENT FOR STRUCTURES – EPOXY COATED

Steel Reinforcement for Structures and Steel Reinforcement for Structures – Epoxy Coating shall conform to the relevant provisions of Section 901 and M8.01.7 of the Standard Specifications. Epoxy coated steel reinforcement shall be used for all concrete elements on the project.

DRILLED AND GROUTED DOWELS

The work under this heading shall consist of drilling and grouting holes in the existing abutments and wingwalls for steel reinforcing dowels to be used to connect the proposed abutment and wingwall caps to the existing abutments and wingwalls as shown on the Plans.

The dowel embedment must be adequate to fully develop 125% of the yield strength of the bar. The embedment length, the method and equipment used to drill the dowel holes, and the diameter of the drilled hole shall at a minimum conform to the recommendations of the manufacturer.

Submittal Requirements

The proposed grout specifications along with installation procedure shall be submitted to the Engineer for review and approval. The submittal shall include the method of drilling, the grout specifications, the spacing of the dowels, the edge distance of the dowel holes, the embedment depth, the curing time for the grout, the existing surface preparation, the grout preparation, and the pullout test procedure. The submittal shall include the pullout testing force to be applied to the test dowels, the testing equipment to be used, and the locations and details of the test dowels. The submittal shall include the information necessary to verify the required testing force, such as a table of the pressure to be shown on the pressure gage that corresponds to the required pullout testing force.

ITEM 995.01 (Continued)

Test Procedure

Two test dowel bars shall be installed in the existing concrete and tested by the Contractor for pullout. The pullout force shall correspond to 90% of the yield strength of the bar. If tested bars show signs of failure or if the surrounding concrete shows signs of cracking, the Contractor must resubmit the test procedure with an adjusted hole diameter, embedment length, and/or grouting material and perform new testing.

All testing of the drilled and grouted dowels shall be performed by the Contractor and shall be considered incidental to the work under this item. The method of applying the tension test load to the dowels shall conform to ASTM E488. Dowels shall not be ordered until the Engineer has approved the embedment lengths.

MATERIALS

Grouting materials shall be on the MassDOT approved products list of materials. The selected grouting material shall be field tested as specified below prior to being used on this project.

Reinforcing steel dowels shall meet requirements of AASHTO M31, Grade 60 (ASTM A615 Grade 60) and shall be epoxy coated.

CONSTRUCTION MATERIALS

All dowel holes shall be air drilled provided that the minimum edge distance as specified on the Plans is observed. Should, in the Engineer's opinion, air drilling be inappropriate due to questionable strength of the existing concrete or insufficient edge distance, the dowel holes shall be diamond core drilled. The inner surfaces of diamond core drilled dowel holes shall be scored to develop sufficient keying action. The method of scoring the dowel hole's inner surfaces shall be subject to the approval of the Engineer. The diameter of the drilled dowel holes shall be in accordance with the recommendations of the grout manufacturer. The holes shall be blown clear of any debris and shall have the approval of the Engineer prior to the placement of any grout material.

The drilling operation shall be performed without damage to any existing reinforcing or portion of the structure that is to remain in place. Any damage to any existing portion of the structure that is to remain in place shall be repaired to a condition equal to or better than that existing.

The Contractor shall strictly follow the recommendations of the manufacturer for mixing and placing the grout material prior to the placement of the dowels. The Contractor shall, at a minimum, adhere to the ACI code requirements regarding minimum and maximum temperatures while placing the grout. Any excessive grout around the hole after placement of the dowel shall be struck off smooth while the grout is still fresh.

ITEM 995.01 (Continued)

ELASTOMERIC BEARING PADS

The work under this heading shall conform to the relevant provisions of Section 922 and M9.14.5 of the Standard Specifications.

THERMAL SPRAYED COATING (METALIZING) FOOTSHOP APPLIED

PURPOSE

This section provides the requirements for shop performed surface preparation; the application of a thermal spray coating (TSC/metalizing); the application of a coating system; and includes field application of coatings and repairs and touch up of all coatings after site erection of the coated structure.

GENERAL INFORMATION

1. All fabrication shall be completed prior to the application of a thermal sprayed coating. (TSC)
2. All surfaces to be coated shall be cleaned in accordance with SSPC SP-5.
3. All TSC shall be sealed with an approved sealer, except for faying surfaces.
4. After site erection of the structure, perform field touch-up of any damaged coating.
5. All fasteners shall be galvanized and coated with the intermediate and topcoat if applicable.
6. The products of only one thermal spray wire manufacturer and one coating manufacturer shall be used on the entire project.
7. All field painting shall be in accordance with applicable sections of Item 961 of the MassDOT Standards and Specifications.

MATERIALS

Abrasives
Provide abrasives that are clean, dry, and sized properly to provide the specified surface profile. The profile shall be dense, uniform and of sufficient angularity to be acceptable for the application of TSC.
Abrasives shall conform to the following as applicable:

- SSPC-AB 1 for mineral slag abrasives
- SSPC-AB 2 for recycles ferrous metal abrasives
- SSPC-AB 3 for new steel abrasives

Thermal Spray Feedstock

The contractor shall provide material certificates from the supplier that includes the chemical composition and lot number of the wire. MassDOT will perform random sampling of wire from lots provided. Wire shall conform to ASTM A833. See table below for application and selection of wire type, thickness, and coating system.

ITEM 995.01 (Continued)

Environmental Zone **2** shall be used for this project.

ENVIRONMENTAL ZONE*	WIRE TYPE	THICKNESS (mils)**	COATING SYSTEM***
1	Zinc-Aluminum	6-9	Three Coat
	Zinc-Aluminum	6-9	Sealer Only
2	Zinc- Aluminum	8-11	Three Coat
	Zinc-Aluminum	9-12	Sealer Only
3	Zinc Aluminum	9-12	Three Coat
	Zinc Aluminum	12-15	Sealer Only

***Zone 1** – Bridges in rural environments, not over waterways, and not over high speed state or interstate highways with potential for salt spray and heavy salt use and de-icing chemical use.
***Zone 2** – Bridges in urban environments, near industrial and manufacturing plants, power plants, or warehouses, over heavy road traffic, or over waterways.
***Zone 3** – Bridges in marine environments, over or close to saltwater waterways, or over high speed state or interstate highways with potential for salt spray and heavy salt use and de-icing chemical use.
** Mil thickness on faying surfaces shall meet the requirements of the slip certificate.
*** Coating systems shall consist of a three coat paint system applied over the metalized surface or a clear sealer applied over the metalized surface.

SUBMITTALS

Submit the following information to the MassDOT - Highway for approval a minimum of thirty days prior to beginning any coating operations:

A. Manufacturer's recommendation and field history for the coating system proposed. Include data sheets for all selected coatings to be applied.
B. Procedures for shop surface preparation, the application of the TSC and application of coatings.
C. Procedures for coating of field connections.
D. Procedures for field touch-up surface preparation, application of TSC and application of coating.
E. Proposed abrasive for use in the shop.
F. Proposed thermal spray wire to be used and product data sheets. Provide certification of Class B slip coefficient.
G. A copy of SSPC-QP3/AISC (SPE) certification. This certification must be in effect at the time of bid and must remain in effect throughout the duration of the project.
H. Quality Systems Manual
I. Work schedule. Contractor must notify the Engineer a minimum of seven days prior to starting work.

ITEM 995.01 (Continued)

QUALITY CONTROL

A. The shop performing the application of TSC and coating shall be certified by the American Institute of Steel Construction (AISC) Sophisticated Paint Endorsement (SPE) quality program, or under the Society for Protective Coatings (SSPC) QP3 program, "Standard Procedure for Evaluating Qualification of Shop Painting Applicators" and shall maintain certification throughout the project.

1. The coating applicator shall have completed a minimum of three structural steel TSC projects that utilized the same coating system as that being specified on this project. Provide project locations, TSC/painting; name, e-mail address, and the telephone number of the owner or owner's representative.

B. Provide an on-site Quality Control Specialist (QCS) who shall function as a TSC inspector with a minimum of five years of each TSC and coating application experience; and possess SSPC BCI Level 1 or NACE Certified Level 3 or other related certification as accepted by the MassDOT - Highway. The QCS shall not be a foreman or a member of the Contractor's production staff. The QCS's sole purpose shall be quality control testing, inspection and reporting.

PRE-APPLICATION MEETING

A pre-application meeting will be held prior to any steel fabrication that includes the application of thermal spray applied coatings. This meeting is separate from the pre-construction meeting for the entire project.

The following parties are required to attend this meeting: TSC/applicator, QCS, and MassDOT – Highway Representatives. Other project personnel should attend as may be needed.

PERSONNEL QUALIFICATION

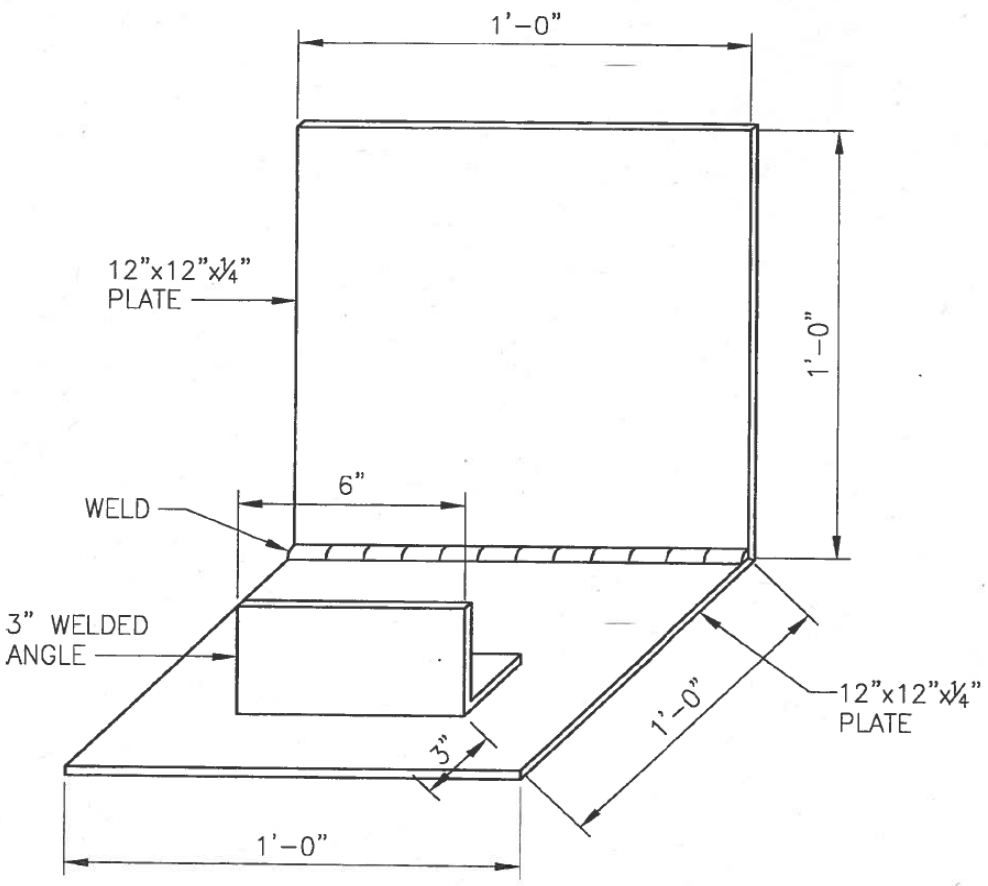
The applicators of the thermally applied material shall be individually qualified to apply the TSC as follows:

1. Each applicator must complete a practical test designed to demonstrate the ability to set up and operate the equipment to apply the material to the specified thicknesses to a minimum of 10 square feet of representative steel surfaces, and to successfully pass the surface preparation, bend, and cut tests specified herein. Administer the qualification testing, document the results in writing, and retain the bend test coupons for the duration of the project.
2. At the discretion of MassDOT - Highway, requalify the applicators at any time during the project to reconfirm the proficiency and the quality of the workmanship being provided. This may be required at any time due to unacceptable or failing results of the bend test, cut test, or poor workmanship.

ITEM 995.01 (Continued)

SHOP QUALIFICATIONS

Prior to proceeding with the production blast cleaning operations prepare a minimum of five Job Reference Standards (JRS) test plates. Blast clean all surfaces of each test plate using the same equipment and abrasive that will be used for the production work. After acceptance of the surface cleanliness and profile, apply the TSC to all surfaces of each test plate. After acceptance of the TSC apply the sealer to be used with the three coat system to three test plates excluding the bottom surface of all test plates. After curing apply a coat of epoxy to two of the three test plates excluding the bottom surface. After curing apply a coat of the polyurethane topcoat to one test plates on all surfaces excluding the bottom surface. Apply the clear sealer to the last remaining TSC plate. Bottom surfaces of the prepared plates shall be used for cut testing as specified. Surface preparation and application shall be witnessed by a MassDOT representative. See drawing below for dimensions and construction



Configuration of JRS Test Plates

ITEM 995.01 (Continued)

SURFACE PREPARATION

For cleaning that utilizes compressed air, utilize only clean, dry air. Conduct blotter test(s) in accordance with ASTM D4285 a minimum of one time each shift for each compressor system in use to verify that the air supply is free of moisture and oil contamination. Conduct the tests in the presence of the MassDOT – Highway Representative.

Weld Spatter, Sharp Edges, Flame-Cut Steel, Holes, Fins, and Silvers
Remove slag, flux deposits, fins, slivers, burrs, and weld spatter from the steel. Grind any sharp edges around holes. Break all flame-cut and sheared edges. If blast profile is degraded by grinding restore profile by abrasive blasting.

Solvent Cleaning
Where oil and grease are present on the bare steel, remove by solvent cleaning to SSPC-SP 1 prior to blast cleaning. If contamination remains after blast cleaning, reclean with solvent prior to application of the TSC.

Cleaning of galvanized bolts prior to the application of paint to bolted connections in the shop or in the field all galvanized fasteners shall be cleaned of all lubricating wax. Cleaning shall be in accordance with SSPC-SP-1, Solvent Cleaning, method 4.1.1. The contractor is responsible to identify the solvent and method needed to remove all lubricant. Cleanliness will be determined by the use of a white cloth wipe test. The test will be performed by the engineer using a clean white cloth and the same solvent used by the Contractor for cleaning. The cloth shall be wetted and rung to a damp condition, placed on selected fasteners and rubbed with a twisting motion around the entire exposed surface of the previously waxed surfaces of the fastener. A minimum of 3 alternating rotations shall be done. Acceptance of cleanliness is with no color transfer to the cloth. A minimum of 10% of the bolts at each bolted connection shall be tested for cleanliness.

Abrasive Blasting
Blast clean all steel to, SSPC-SP5 “White Metal Surface Cleanliness.” Determine the SP5 condition by use of SSPC-Vis 1. In the event of a conflict between the pictorial standard and the written definition the written definition shall prevail. Abrasive blast cleaned surfaces shall have a dense, uniform pattern of sharp, angular depressions and ridges, between 3.5-5.0 mils.

Surface preparation is defined as complete when all remedial repairs have been performed and the piece is accepted by both QC and MassDOT QA.

Verification of the profile height will be performed in accordance with ASTM D 4417 Method C.

Manual Blasting shall have a minimum of one profile depth measurement every 10 to 20 ft², of blasted surface.

ITEM 995.01 (Continued)

Automated Blasting shall have a minimum of two profile depth measurements every 100 ft². When acceptable results are obtained on three consecutive days in which testing is conducted, the test frequency may be reduced to two spot readings for every 1,000 ft² providing the preparation method remains unchanged. If unacceptable results are encountered during testing or the preparation method has changed in any way, testing will revert back to a frequency of two tests per every 100 ft², until acceptable results are once again achieved over a three day period.

Profile replica tape shall be filed with the project inspection records. The Engineer with the use of a surface profile comparator will randomly inspect angularity of the profile.

The use of steel shot is not permitted.

TSC AND COATING APPLICATION

Storage, Testing and Sampling
The Contractor shall provide protection from the elements and insure that the paint is not subjected to temperatures outside the manufacturer's recommended extremes.

Before the Contractor will be permitted to use any paint, the material provided for application shall have been sampled, tested and approved in accordance with Section M7. MassDOT's Research and Materials Laboratory needs a minimum of fourteen days after the receipt of samples to test and approve.

Mixing and Thinning
Before the paint is applied, each component shall be mechanically mixed to ensure the pigment is completely dispersed. Mixing of components shall be accomplished by mechanical mixing, boxing or hand mixing of components will not be allowed. Any special precautions or requirements for mixing by the manufacturer shall be followed. Paint shall be kept thoroughly mixed in spray pots or containers during application. The pot life shall not be exceeded or attempts made to extend pot life with the addition of solvent.

If it is necessary for any reason to thin paint it will be done in the presence of the Engineer, in accordance with the manufacturer's recommendations. Thinning must be performed using a measuring cup marked in ounces or milliliters. Other methods, such as eyeballing, are not acceptable. Thinner shall be supplied from and recommended by the same manufacturer as the paint system.

For multi component paints, the mixing of half or partial kits is not allowed. If the need for small quantities of paint is anticipated, the contractor should order materials accordingly.

Application
Prior to the application of any coating material, the Engineer's approval must be obtained. All surfaces painted prior to the Engineer's approval, shall require the complete removal of the coating applied.

ITEM 995.01 (Continued)

Thermal Sprayed Coating

Apply the TSC within six hours after the final abrasive blast cleaning is performed. If the steel is blast cleaned and remains unmetalized for longer than six hours, or if cleaned steel exhibits evidence of rustback, blast clean it again prior to metalizing. Remove abrasive residue and dust from the surface. Apply the metalizing only after the MassDOT – Highway Representative has accepted the prepared surface.

Bend Testing for Evaluation of the TSC

Conduct bend tests of applied TSC each day prior to production application. Unless otherwise directed by the MassDOT - Highway, each day that TSC will be applied, conduct bend testing before beginning the production work. For each TSC applicator, blast clean five carbon steel coupons measuring 0.05 inches in thickness, 2 inches width, and between 5 and 8 inches in length. Use the same equipment and abrasive used for the production work. Have each applicator apply the TSC to five coupons in accordance with the requirements of this Section to dry film thickness between 8 and 15 mils. Conduct 180o bend testing on all five coupons using the appropriate mandrel in accordance with the requirements and acceptance criteria of SSPC-CS 23. Minor cracks that cannot be lifted from the substrate with a knife blade are acceptable. If lifting on any of the coupons is possible, modify the surface preparation/TSC process until acceptable results are achieved before proceeding with the production work.

Apply the TSC in accordance with the requirements of the material supplier, this specification, approved procedures and SSPC-CS 23.

The completion of TSC is defined as after the spraying of TSC is complete and all remedial repairs have been performed and the piece is accepted by both QC and MassDOT QA.

Touch-up of bare steel and/or TSC damage shall be done with organic zinc rich primer. The total area subject to repair shall be no more than .50 % of the total square foot of the piece requiring repair. The dry film thickness of the applied coating shall be a minimum of 5 mils. Surface preparation for all repair areas shall be as specified in, “Surface Preparation and Abrasives” paragraph 3. The maximum individual repair shall be limited to 1 square foot. Areas larger than 1 square foot shall be re-blasted and the TSC applied in accordance with this document.

Sealer Coat

Apply the seal coat to the TSC after the MassDOT – Highway Representative has accepted the TSC. The seal coat shall be thin enough when applied to penetrate into the body of the TSC and seal the porosity. Added thickness to porous TSC should not be measurable. Typically the seal coat is applied at a spreading rate resulting in a theoretical 1.5 mils dry film thickness. Apply the seal coat in accordance with the manufacturer’s instructions as soon as possible after the application of the TSC but in no case greater than 6 hours. Verify that the TSC surface is clean and dry prior to the application of the sealer. If grease, oil, or similar contaminants become deposited on the TSC, remove them in accordance with SSPC-SP 1 prior to the application of the seal coat.

ITEM 995.01 (Continued)

Paint

Applied coatings shall not exhibit, runs, sags, holidays, wrinkling, pinholes, nap hair, topcoat gloss or color variations, or other film discontinuities.

Repair of unacceptable areas that involve removal of the coating system or part of it, shall require surface preparation and coating equal to that specified. Repair procedures used for any unacceptable coating shall be those supplied by the contractor and approved by the Engineer.

Application of full coats of paint shall be accomplished by spray equipment. Spray equipment shall meet the requirements of the coating manufacturer and be in proper working order.

Application by brush and roller will be allowed for limited access areas. Brushes and roller covers recommended by the coating manufacturer shall be used. Areas brushed and rolled will have a uniform thickness and be free of defects and excessive coating thickness.

All coating shall be applied according to the latest manufacturer's data sheet or approved recommendations. The maximum recoat times of the primer, intermediate and finish coats shall not be exceeded.

Application of coatings shall not be done when the relative humidity is above 85% or when the surface temperature of the steel is less than 5°F above the Dew Point. Paint shall not be applied when the surface temperature is below 50°F or when the surface temperature is above 110°F.

If requested by the Engineer the Contractor shall provide written instructions from the coating manufacturer indicating the length of time that each coat must be protected from cold or inclement weather (e.g., exposure to rain) during its curing or drying period.

Paint shall not be applied when, in the Engineer's judgment, conditions are or will become unsatisfactory for application and proper cure. All changes as to the application parameters other than specified must be the manufacturer's and presented in writing and approved by the Engineer. Ambient conditions should be closely monitored so that proper cure/drying is achieved prior to recoat. In no case shall a succeeding coat of paint be applied before the previous coat has cured/dried sufficiently for recoat as per manufactured data sheet.

If required, contaminated surfaces shall be cleaned in accordance with SSPC- SP 1 Solvent Cleaning method 4.1.1.

Measurement of the ambient conditions shall be done in accordance with ASTM, E 337 Test Method for "Measuring Humidity with a Psychrometer" (the Measurement of Wet and Dry bulb Temperatures).

When the primer has cured sufficiently for recoat, all bridge components to be painted shall receive a full intermediate coat.

ITEM 995.01 (Continued)

When the intermediate coat has cured sufficiently for recoat, all bridge components to be painted shall receive the finish coat.

Coating Thickness

Apply the shop and field coats to the dry film thicknesses as specified.

1. Determine the cumulative dry film thickness of each coat using a magnetic dry film thickness gage in accordance with SSPC-CS 23 and SSPC-PA 2 with the following exceptions:
   a. Take readings on each 100 square-foot increment of the surface.
   b. The minimum specified thickness of the TSC must be achieved at each individual spot measurement location (i.e., the 20 percent under run allowed by SSPC-PA 2 is not permitted for the metalizing).
2. If the thickness of any coat (TSC, seal coat, intermediate coat or top coat) is less than specified, apply additional material in accordance with the manufacturer's instructions and this Section before applying the next coat. Before applying additional TSC, visually confirm that there is no evidence of oxidation or contamination on the surface.
3. Thickness of applied TSC greater than the contract specified shall be reported to the MassDOT-Highway QA inspector in writing prior to the end of the shift. The thickness of the applied TSC shall not be more than 120% of the specified range for the zone specified.
4. Application of TSC to faying surfaces that require a slip rating shall not be more than the maximum thickness specified in the environmental zone chart for each zone included in the materials section of this specification.
5. The minimum adhesion value of the unsealed TSC shall be the average of 3 spot reading resulting in an average of 700psi for each 500 sq/ft.

Access for MassDOT - Highway Inspection

Provide safe access and sufficient time for MassDOT - Highway inspections for any and all phases of the work, including but not limited to surface preparation, the application of each coat (including field coat), and for an inspection of the completed system.

Quality Control Documentation

Copies of Quality Control daily inspection and testing documents will be provided to the MassDOT – Highway Representative within 24 hours.

SHEAR CONNECTORS

Stud shear connectors shall conform to Section 960 of the Standard Specifications and shall be located as shown on the Plans.

ITEM 995.01 (Continued)

PRECAST HIGHWAY GUARDRAIL TRANSITIONS

A. General.

The work under this Heading consists of fabricating, transporting and installing Precast Highway Guardrail Transitions and includes all necessary labor, materials, and equipment to complete the work as shown on the Plans. The Precast Concrete Bridge Elements shall meet the requirements of Section M4: Cement Concrete and Related Materials.

MATERIALS

A. Materials.

Materials shall conform to M4.09.1 and the following:

Non-Shrink Grout Products	M4.04.5
Controlled Low-Strength Material – Structural Non-Excavatable	M4.08.0
Welded Steel Wire Fabric	M8.01.2
Mechanical Reinforcing Bar Splicer	M8.01.9
Lifting Devices	PCI MNL-116
Corrugated Metal Pipe	AASHTO M 36

1. Vertical Adjustment Assembly.

Vertical Adjustment Assembly details and material requirements shall be as shown on the plans. Alternate devices may be used provided that they are adjustable and can support the anticipated loads. The design of the leveling devices, with necessary calculations, shall be submitted to the Engineer of Record for approval.

2. Threaded Inserts.

Threaded inserts are permissible to facilitate forming the keyway pours. Threaded inserts shall be hot dip galvanized or made of stainless steel. The number of threaded inserts shall be minimized, and the inserts shall not come in contact with the reinforcing steel.

3. Corrugated Metal Pipe.

Corrugated Metal Pipe to be used for forming voids as specified on the plans shall be fabricated from steel and shall have a protective metallic coating of zinc (galvanizing).

CONSTRUCTION METHODS – PLANT FABRICATION

A. Pre-Production Meeting.

The Contractor shall notify the MassDOT Research and Materials Section to determine if a pre-production meeting will be required to review the specification, shop drawings, curing plan, schedule, and discuss any specific requirements. The meeting shall be held prior to scheduling a MassDOT Inspector (refer to M4.09.4 *Department Acceptance*), and at least seven (7) days prior to the scheduled casting of any Precast Concrete Bridge Element or control section. The

Contractor shall schedule the meeting, which shall include representatives of the Fabricator and MassDOT.

ITEM 995.01 (Continued)

B. Reinforcement.

The reinforcing bars shall be installed in accordance with Subsection 901.35, including tolerances for cover and horizontal spacing of bars. Components of mechanical reinforcing bar splicers shall be set with the tolerances shown on the plans. The reinforcing bars and mechanical reinforcing bar splicers shall be assembled into a rigid cage that will maintain its shape in the form and which will not allow individual reinforcing bars to move during the placement of concrete. This cage shall be secured in the form so that the clearances to all faces of the concrete, as shown on the plans, shall be maintained.

Where reinforcing bars are to protrude from one Precast Concrete Bridge Element in order to mate with reinforcing bar splicers in a second precast concrete element, the fabricator shall set the reinforcing bars and the reinforcing bar splicers with a template in order to ensure proper fit up within the tolerances specified on the plans.

C. Tolerances.

Fabrication shall comply with tolerances specified on the plans. Tolerances for steel reinforcement placement shall be in accordance with Subsection 901.35. In the absence of specifications on the plans, tolerances shall comply with the latest version of the PCI MNL 135, Precast Tolerance Manual.

D. Forms.

Concrete shall be cast in rigidly constructed forms, which will maintain the Precast Concrete Bridge Elements within specified tolerances to the shapes, lines and dimensions shown on the approved fabrication drawings. Forms shall be constructed from flat, smooth, non-absorbent material and shall be sufficiently tight to prevent the leakage of the plastic concrete. When wood forms are used, all faces in contact with the concrete shall be laminated or coated with a non-absorbent material. All worn or damaged forms, which cause irregularities on the concrete surface or damage to the concrete during form removal, shall be repaired or replaced before being reused. If threaded inserts are cast into the elements for support of formwork, the inserts shall be recessed a minimum of 1 inch and shall be plugged after use with a grout of the same color as that of the precast cement concrete.

CONSTRUCTION METHODS – FIELD CONSTRUCTION

A. General.

All of the Contractor's field personnel involved in the erection and assembly of the Precast Concrete Bridge Elements shall have knowledge of and follow the approved Erection Procedure.

Prior to installation, the following documentation shall be reviewed and confirmed by the MassDOT Resident Engineer or designee:

(a) QC Compressive Strength Test Report Forms attaining Design Strength, f'c for the Precast Concrete Bridge Element's representative sublot.
(b) Certificate of Compliance generated by the Fabricator as described under the Fabricator Quality Control section.
(c) QC Inspection Reports signed by the Quality Control Manager.

ITEM 995.01 (Continued)

Field construction staff shall verify that the Resident Engineer has accepted all Precast Concrete Bridge Elements prior to installation.

B. Erection Procedure.

Prior to the erection, the Contractor shall submit an Erection Procedure for approval by the Engineer. This submittal shall include computations and drawings for the transport, hoisting, erection and handling of the Precast Concrete Bridge Elements. The Erection Procedure shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts with working knowledge of the Contractor's equipment, approved shop drawings, and materials to build the bridge. The Erection Procedure shall, at a minimum, include the following:

1. Erection Procedure

The Erection Procedure shall be prepared to conform to the requirements of 960.61, Design, Fabrication and Erection and the applicable sections in Chapter 8 of the PCI Design Handbook (eighth edition) for handling, erection, and bracing requirements. At a minimum, the Erection Procedure shall provide:

(a) Minimum concrete compressive strength for handling the Precast Concrete Bridge Elements.
(b) Concrete stresses during handling, transport, and erection.
(c) Crane capacities, pick radii, sling geometry, and lifting hardware.
(d) Verification that the equipment can handle all pick loads and weights with the required factor of safety.
(e) Evaluation of construction sequence and evaluation of any geometric conflicts in the lifting of the Precast Concrete Bridge Elements and setting them as shown on the plans.
(f) Design of crane supports including verification of subgrade for support.
(g) Location and design of all temporary bracing that will be required during erection.

Non-shrink grout and concrete materials, approved by the Engineer, shall be placed as shown on the plans. Fill joints, keyways, and voids, in strict accordance with the specifications and manufacturer's recommendations and instructions.

For footings, approach slabs and highway guardrail transitions, once these Precast Concrete Bridge Elements have been set to the correct horizontal and vertical alignment, the void between them and the supporting soil shall be filled with Controlled Low-Strength Material – Structural Non-Excavatable to the limits as shown on the plans. Add additional grout ports in the footings to facilitate the bedding process if required.

Except in approach slabs, joints shall be filled flush to the top with non-shrink grout, and any vertical misalignment between adjacent elements shall be feathered out on a slope of 1 to 12.

ITEM 995.01 (Continued)

Curing of grout or concrete shall be performed in strict accordance with the specifications and manufacturer's recommendations. Filling shall not be completed in cold weather when either the ambient temperature or the precast member's temperature is below the manufacturer's recommendation. No localized heating of either the precast members or of the air surrounding the element will be permitted in an attempt to reach application temperatures.

If the joints or voids are not filled within five days after the Precast Bridge Elements are erected, the Contractor shall cover and protect the openings from weather and debris until they are filled.

C. Survey and Layout.

Working points, working lines, and benchmark elevations shall be established prior to placement of all elements. The Contractor is responsible for field survey as necessary to complete the work. MassDOT reserves the right to perform additional independent survey. If discrepancies are found, the Contractor may be required to verify previous survey data.

D. Preparation of Closure Pours and Grouted Keyways.

Immediately prior to erecting the Precast Concrete Bridge Elements, the closure pours and grouted keyways shall be cleaned at the job site of all dust, dirt, carbonation, laitance, and other potentially detrimental materials which may interfere with the bonding of the closure pour concrete or grout and precast concrete using a high-pressure water blast. Any exposed reinforcing steel in the precast concrete shall be protected from damage during the cleaning of the keyways. Damaged epoxy coating of steel reinforcement shall be repaired, and the reinforcing steel shall be cleaned as directed by the Engineer. The surfaces of the closure pours and grouted keyways shall be wetted so that the surfaces shall have a Saturated Surface Dry (SSD) condition for at least 24 hours prior to the placement of the closure pour concrete.

E. Erection.

The elements shall be placed in the sequence and according to the methods outlined in the Erection Procedure. As the erection proceeds, the Contractor shall constantly monitor the assembly to ensure that the precast concrete bridge element is within proper horizontal and vertical location and tolerances prior to releasing it from the crane and setting the next unit. The Contractor may use shims to maintain proper setting tolerances.

The concrete elements shall be lifted only by the lifting devices, and the utmost care shall be taken to prevent distortion of the elements during handling, transportation or storage.

This approval will be contingent on the Contractor demonstrating by calculations, prepared by a Professional Engineer registered in Massachusetts, that the elements will not be damaged by the non-vertical lifting force and by documentation that the capacity of the lifting devices is adequate for the non-vertical lifting force.

After all Precast Concrete Bridge Elements have been placed, the actual overall dimensions of the structure both horizontal and vertical, as laid out shall not deviate from the nominal dimensions shown on the plans beyond a tolerance of +0 inches and -1 inches. Once the layout of Precast Concrete Bridge Elements has been accepted by the Engineer, the Contractor shall cut all lifting devices off below the surfaces of the elements.

ITEM 995.01 (Continued)

F. Filling of Blockouts for Lifting Devices and Threaded inserts.

If the blockouts in the Precast Concrete Bridge Elements where the lifting devices were located will be exposed and visible after assembly is complete, the Contractor shall fill these blockouts with Mortar (M4.04.5).

After the formwork has been removed, all threaded inserts that have been cast into the precast concrete bridge deck for support of the formwork shall be filled with a grout of the same color as that of the precast concrete.

SCHEDULE OF BASIS FOR PARTIAL PAYMENT

Within ten (10) days after the Notice to Proceed, the Contractor shall submit, in duplicate, for the approval of the Engineer, a schedule of unit prices for the major components of the bridge structure as listed below. The bridge structure Lump Sum breakdown quantities provided below are estimated and not guaranteed. The total of all partial payments to the Contractor shall equal the Lump Sum contract price regardless of the accuracy of the quantities furnished by the Engineer for the individual bridge components. The cost of labor and materials for any Item not listed but required to complete the work shall be considered incidental to Item 995.01 and no further compensation will be allowed.

The schedule applies only to Bridge Structure No. S-21-003. Payment for similar materials and construction at locations other than at this bridge structure shall not be included under this Item. Sub-Item numbering is presented for information only in coordination with MassDOT Standard Nomenclature.

995.01 Bridge No. S-21-003

Sub-Item	Description	QTY.	UNIT	PRICE	TOTAL
904.3	5000 PSI, 3/4 INCH, 685 HP CEMENT CONCRETE	270	CY		
904.31	PRECAST HIGHWAY GUARDRAIL TRANSITIONS	2	EA		
910.1	STEEL REINFORCEMENT FOR STRUCTURES - EPOXY COATED	53,600	LB		
911.1	SHEAR CONNECTORS	4,000	EA		
912.4	DRILLED AND GROUTED #4 DOWELS	166	EA		
912.7	DRILLED AND GROUTED #7 DOWELS	103	EA		
922.	LAMINATED ELASTOMERIC BEARING WITHOUT ANCHOR BOLTS	14	EA		
960.	STRUCTURAL STEEL	172,440	LB		
965.	MEMBRANE WATERPROOFING FOR BRIDGE DECKS	2,500	SF		
970	DAMP-PROOFING	1280	SF		
975.1	METAL BRIDGE RAILING (3 RAIL), STEEL (TYPE S3-TL4)	230	FT		

TOTAL LUMP SUM FOR ITEM 995.01 =

ITEM 995.02 BRIDGE STRUCTURE, BRIDGE NO. S-21-009 LUMP SUM

The work under this Item shall conform to the relevant provisions of Subsection 995 of the Standard Specifications and the following:

The work under this Item shall include all materials, equipment and labor needed to replace the superstructure of the bridge along with modifications to the existing abutments. This work includes, but is not limited to, the construction and installation of the proposed steel beams & diaphragms, concrete deck, sidewalks, bridge rail, and abutment stem, backwall & wingwall modifications.

Work under this Item shall include all materials, equipment and labor needed to construct the following components:

- 5000 psi, 3/4 Inch, 685 HP Cement Concrete for Pile Cap, Sidewalks, End Diaphragm, Wingwalls, and Approach Slabs.
- Steel Reinforcement for Structures – Epoxy Coated for Deck, Sidewalks, Wingwalls, Approach Slabs, and Abutment Stem.
- Spray-Applied Membrane Waterproofing for Bridge Decks
- Superpave Bridge Protective Course – 12.5 (SPC-B-12.5)
- S3-MTL4 Railing
- Prestressed Concrete Beams – NEXT 32D
- Structural Steel for Utility Supports
- Precast Highway Guardrail Transitions

Materials shown on the plans as being part of this bridge structure or incidental to its construction shall be included for payment in this Lump Sum and shall not be included for payment under another Item in this contract.

5000 PSI, 3/4 INCH, 685 HP CEMENT CONCRETE

5000 PSI, ¾ IN., 685 HP Cement Concrete shall be used to construct the Pile Cap, Sidewalks, End Diaphragm, Wingwalls, and Approach Slabs. 5000 PSI, ¾ IN., 685 HP Cement Concrete shall conform to all material and placement, finishing, and curing requirements of the Standard Specifications.

STEEL REINFORCEMENT FOR STRUCTURES – EPOXY COATED

Steel Reinforcement for Structures and Steel Reinforcement for Structures – Epoxy Coating shall conform to the relevant provisions of Section 901 and M8.01.7 of the Standard Specifications. Epoxy coated steel reinforcement shall be used for all concrete elements on the project.

ELASTOMERIC BEARING PADS

The work under this heading shall conform to the relevant provisions of Section 922 and M9.14.5 of the Standard Specifications.

ITEM 995.02 (Continued)

HOT DIP GALVANIZED COATING FOR NEW STRUCTURAL STEEL

A. GENERAL

Fabricated steel shall be galvanized as indicated on the plans. All fabrication shall be completed prior to surface preparation and the application of any coating.

The faying surfaces of all field bolted connections shall be coated based on the design of the connection. Class B connections shall be masked prior to galvanizing to allow for application of an approved class B slip coefficient primer. After galvanizing the masked surface will be cleaned in accordance with SSPC-SP11 and coated with the approved zinc rich primer. A galvanized connection will result in a faying surface meeting a class C slip coefficient.

When grinding, drilling or any other operation produces steel turnings, filings, shavings, etc. the contractor shall completely clean all areas of all accumulation prior to the end of the work shift.

Locations of field applied studs shall require masking or removal of galvanizing and paint prior to welding.

The Engineer shall provisionally accept the shop coated items before shipment to the jobsite but final acceptance of the coating system will occur after erection of the coated items, and after all required repairs and coating application has been completed.

The contractor shall be responsible for failure and damage of all applied coating. Failures include but are not limited to, visible corrosion, blistering, checking, cracking, or delamination (peeling) and loss of gloss and color of the coating system. Damage includes but is not limited to damage from installation or from external agents, such as scraping, vandalism, debris impacts, and collisions. The extent and method of repair must be approved by the Engineer.

B. GALVANIZING

The following shall be hot dipped galvanized in accordance with Section M7 of these Specifications: (Designer shall modify list as required)

1. Members identified on the contract documents.
2. Diaphragms, cross frames, utility supports and bottom lateral bracing elements that are composed of non-weathering steels or weathering steels designated to be coated.
3. All sole plates and masonry plates (except sole plates for sliding elastomeric bearings).

Galvanized members requiring shop fabrication and assembly shall be cut, welded, and/or drilled prior to galvanizing. Bearing members to be milled shall be galvanized prior to milling. A thin layer of a rust inhibitor shall be applied to the milled surface. Material to be painted shall not be quenched after galvanizing.

ITEM 995.02 (Continued)

Where material is required to be welded after galvanizing, the steel shall be masked 3 inches on each side of the weld center line. Prior to field welding the masked surface shall be cleaned in accordance with SSPC-SP11. After welding the area shall be repaired in accordance with ASTM A780 "Repair of Hot Dip Galvanizing" section 4.2.2, "Paints Containing Zinc Dust" and Annex 2. Repair paint shall meet M7.04.11 and application shall be in accordance with the manufacturer's recommendations.

Damaged galvanized surfaces shall be repaired in accordance with ASTM A780 "Repair of Hot Dip Galvanizing" section 4.2.2 Paints Containing Zinc Dust "High Zinc Dust Content". The paint shall be applied to achieve a minimum dry film thickness of 3 mils and not more than 5 mils. Repair paint shall meet M7.04.11 and application shall be in accordance with the manufacturer's recommendations.

The contractor shall provide protection of the adjacent coating in areas that will be field welded. After welding, the weld areas shall be prepared in accordance with SSPC-SP-11.

PRESTRESSED CONCRETE NEXT 32D BEAMS

General.
The work under this Heading consists of fabricating, transporting and installing Prestressed Concrete NEXT 32D Beams, and includes all necessary labor, materials, and equipment to complete the work as shown on the Plans. The Precast, Prestressed, and Prefabricated Concrete Elements shall meet the requirements of Section M4: Cement Concrete and Related Materials.

MATERIALS

Materials.
Materials shall conform to M4.09.1 and the following:

Non-Shrink Grout Products	M4.04.5
Prestressing Strands	AASHTO M 203
Welded Steel Wire Fabric	M8.01.2
Mechanical Reinforcing Bar Splicer	M8.01.9
Strand Chuck	M8.15.0
Lifting Devices	PCI MNL-116

1. Reinforcement and Prestressing Strands.
The size and grade of steel reinforcement and prestressing strands shall be as indicated on the plans. All reinforcing steel shall be epoxy coated, Grade 60. All prestressing strands shall be uncoated.

2. Threaded Inserts
Threaded inserts are permissible in Prestressed Concrete Beams for installing formwork, utility supports, or deck drains. Threaded inserts shall be hot dip galvanized or made of stainless steel and shall not come in contact with the reinforcing steel. The number of threaded inserts installed for the Contractor's convenience shall be kept to a minimum.

ITEM 995.02 (Continued)

CONSTRUCTION METHODS – PLANT FABRICATION

Pre-Production Meeting.

The Contractor shall notify the MassDOT Research and Materials Section to determine if a pre-production meeting will be required to review the specification, shop drawings, curing plan, schedule, and discuss any specific requirements. The meeting shall be held prior to scheduling a MassDOT Inspector (refer to M4.09.4 *Department Acceptance*), and at least seven (7) days prior to the scheduled casting of any Prestressed Concrete Beam or control section. The Contractor shall schedule the meeting, which shall include representatives of the Fabricator and MassDOT.

Reinforcement.

The reinforcing bars shall be installed in accordance with Subsection 901.35 of the Standard Specifications, including tolerances for cover and horizontal spacing of bars. Components of mechanical reinforcing bar splicers shall be set with the tolerances shown on the plans. The reinforcing bars and mechanical reinforcing bar splicers shall be assembled into a rigid cage that will maintain its shape in the form and which will not allow individual reinforcing bars to move during the placement of concrete. This cage shall be secured in the form so that the clearances to all faces of the concrete, as shown on the plans, shall be maintained.

Placing and Tensioning Strands.

Placing and tensioning strands shall be in accordance with PCI MNL-116. The location of all prestressing strands shall be as indicated on the plans.

Tolerances.

Fabrication shall comply with tolerances specified on the plans. Tolerances for steel reinforcement placement shall be in accordance with Subsection 901.35. In the absence of specifications on the plans, tolerances shall comply with the latest version of the PCI MNL 135, Precast Tolerance Manual.

Forms.

Concrete shall be cast in rigidly constructed forms, which will maintain the Prestressed Concrete Beams within specified tolerances to the shapes, lines and dimensions shown on the approved fabrication drawings. Forms shall be constructed from flat, smooth, non-absorbent material and shall be sufficiently tight to prevent the leakage of the plastic concrete. When wood forms are used, all faces in contact with the concrete shall be laminated or coated with a non-absorbent material. All worn or damaged forms, which cause irregularities on the concrete surface or damage to the concrete during form removal, shall be repaired or replaced before being reused. If threaded inserts are cast into the elements for support of formwork, the inserts shall be recessed a minimum of 1 inch and shall be plugged after use with a grout of the same color as that of the precast cement concrete.

ITEM 995.02 (Continued)

CONSTRUCTION METHODS – FIELD CONSTRUCTION

General.

All of the Contractor's field personnel involved in the erection and assembly of the Prestressed Concrete Beams shall have knowledge of and follow the approved Erection Procedure and Quality Control Plan for Prestressed Concrete Beam Assembly.

Prior to installation, the following documentation shall be reviewed and confirmed by the MassDOT Resident Engineer or designee:

(a) QC Compressive Strength Test Report Forms attaining Design Strength, f'_c for the Prestressed Concrete Beam's representative sublot.
(b) Certificate of Compliance generated by the Fabricator as described under the Fabricator Quality Control section.
(c) QC Inspection Reports signed by the Quality Control Manager.

Field construction staff shall verify that the Resident Engineer has accepted all Prestressed Concrete Beams prior to installation.

Erection Procedure and Quality Control Plan for Prestressed Concrete Beam Assembly.

Prior to the erection, the Contractor shall submit an Erection Procedure and a Quality Control Plan for Prestressed Concrete Beam Assembly for approval by the Engineer. This submittal shall include computations and drawings for the transport, hoisting, erection and handling of the Prestressed Concrete Beams. The Erection Procedure and Quality Control Plan for Prestressed Concrete Beam Assembly shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts with working knowledge of the Contractor's equipment, approved shop drawings, and materials to build the bridge. The Erection Procedure and Quality Control Plan for Prestressed Concrete Beam Assembly shall, at a minimum, include the following:

1. Erection Procedure

The Erection Procedure shall be prepared to conform to the requirements of 960.61, Design, Fabrication and Erection and the applicable sections in Chapter 8 of the PCI Design Handbook (eighth edition) for handling, erection, and bracing requirements. At a minimum, the Erection Procedure shall provide:

(a) Steel reinforcing details, and location and details of lifting devices
(b) Minimum concrete compressive strength for handling the Prestressed Concrete Beams.
(c) Concrete stresses during handling, transport, and erection.
(d) Crane capacities, pick radii, sling geometry, and lifting hardware.
(e) Verification that the equipment can handle all pick loads and weights with the required factor of safety.
(f) Evaluation of construction sequence and evaluation of any geometric conflicts in the lifting of the Prestressed Concrete Beams and setting them on the abutments and piers.
(g) Design of crane supports including verification of subgrade for support.
(h) Location and design of all temporary bracing that will be required during erection.

ITEM 995.02 (Continued)

2. Quality Control Plan for Prestressed Concrete Beam Assembly

The Quality Control Plan for Prestressed Concrete Beam Assembly is a document prepared and submitted by the Contractor prior to the start of work which requires the Contractor to identify and detail the sequence of construction in accordance with the project schedule and which clearly identifies all stages of field construction. The assembly procedures for the Prestressed Concrete Beams shall be submitted in PDF format on 24"x36" sheets. This document will be treated as a Construction Procedure and will be reviewed by both the Designer and the District Construction Office.

At a minimum, the Quality Control Plan for Prestressed Concrete Beam Assembly shall include the following:

(a) Listing of the equipment, materials, and personnel including their assigned responsibilities that will be used to erect and assemble the Prestressed Concrete Beams on site.
(b) Documentation of all preparatory work necessary for moving personnel, equipment, supplies, and incidentals to the project site before beginning work.
(c) Detailed schedule showing the sequence of operations that the Contractor will follow to complete the field construction from setting working points and working lines to the casting of closure pours and the curing of the closure pour concrete, as described below and as called for on the plans.
(d) Contractor's means for ensuring that the Prestressed Concrete Beam shall align to the roadway profile and cross slope and means for adjusting the final deck slab elevation.
(e) Timeline and descriptions of Quality Control activities to be followed throughout the field construction operations including methods and procedures for controlling tolerance limits both horizontally and vertically.

Survey and Layout.

Working points, working lines, and benchmark elevations shall be established prior to placement of all elements. The Contractor is responsible for field survey as necessary to complete the work. MassDOT reserves the right to perform additional independent survey. If discrepancies are found, the Contractor may be required to verify previous survey data.

Prestressed Concrete NEXT D Beams.

1. Beam Layout and Erection.

Prestressed concrete beams shall be installed to the line and grade shown on the plans in accordance with the Contractor's approved Erection Procedure and Assembly Plan.

Immediately prior to erecting the beams, the surfaces of the closure pours shall be cleaned at the job site of all dust, dirt, and carbonation using a high-pressure water blast. In addition, the surfaces of closure pours shall be wetted so that the surfaces shall have a Saturated Surface Dry (SSD) condition for at least 24 hours prior to the placement of the closure pour concrete.

As the beams are being erected, the Contractor shall monitor the width of the closure pours and the out-to-out width of the beams top flanges so that, after all beams are erected, the actual overall width of the bridge deck shall not deviate from the dimension shown on the plans beyond a tolerance of +0 inches and -1 inches. In order to achieve this, the Contractor may vary the width of the closure pours within the tolerances specified on the plans.

ITEM 995.02 (Continued)

2. Closure Pour Concrete Placement.

Prior to placing the closure pour concrete, the abutments and piers shall be prepared for the placement of the closure pour concrete as called for on the plans.

The surfaces of the closure pours shall be free of materials such as paint, oil, curing compound, bond breaker, dirt etc. that will inhibit bonding. The surfaces of the closure pours shall be hydro-blasted with equipment that can remove asphaltic material, oils, dirt, rubber, curing compounds, paint carbonation, laitance, and other potentially detrimental materials, which may interfere with the bonding of the closure pour concrete and precast concrete.

The exposed reinforcing steel shall be protected from damage during the cleaning of the surfaces of the closure pours . Damaged epoxy coating of steel reinforcement shall be repaired, and the reinforcing steel shall be cleaned as directed by the Engineer.

The Contractor shall cut the lifting devices off below the top of the beam, and the recesses shall be filled with mortar (M4.04.5). The Contractor shall also remove projections and fill all depressions in the tops of the beams with mortar (M4.04.5).

After the formwork has been removed, all threaded inserts that have been cast into the beams for support of the formwork shall be plugged with a grout of the same color as that of the precast concrete.

PRECAST HIGHWAY GUARDRAIL TRANSITIONS

A. General.

The work under this Heading consists of fabricating, transporting and installing Precast Highway Guardrail Transitions and includes all necessary labor, materials, and equipment to complete the work as shown on the Plans. The Precast Concrete Bridge Elements shall meet the requirements of Section M4: Cement Concrete and Related Materials.

MATERIALS

A. Materials.

Materials shall conform to M4.09.1 and the following:

Non-Shrink Grout Products	M4.04.5
Controlled Low-Strength Material – Structural Non-Excavatable	M4.08.0
Welded Steel Wire Fabric	M8.01.2
Mechanical Reinforcing Bar Splicer	M8.01.9
Lifting Devices	PCI MNL-116
Corrugated Metal Pipe	AASHTO M 36

1. Vertical Adjustment Assembly.

Vertical Adjustment Assembly details and material requirements shall be as shown on the plans. Alternate devices may be used provided that they are adjustable and can support the anticipated loads. The design of the leveling devices, with necessary calculations, shall be submitted to the Engineer of Record for approval.

ITEM 995.02 (Continued)

2. Threaded Inserts.

Threaded inserts are permissible to facilitate forming the keyway pours. Threaded inserts shall be hot dip galvanized or made of stainless steel. The number of threaded inserts shall be minimized, and the inserts shall not come in contact with the reinforcing steel.

3. Corrugated Metal Pipe.

Corrugated Metal Pipe to be used for forming voids as specified on the plans shall be fabricated from steel and shall have a protective metallic coating of zinc (galvanizing).

CONSTRUCTION METHODS – PLANT FABRICATION

A. Pre-Production Meeting.

The Contractor shall notify the MassDOT Research and Materials Section to determine if a pre-production meeting will be required to review the specification, shop drawings, curing plan, schedule, and discuss any specific requirements. The meeting shall be held prior to scheduling a MassDOT Inspector (refer to M4.09.4 *Department Acceptance*), and at least seven (7) days prior to the scheduled casting of any Precast Concrete Bridge Element or control section. The Contractor shall schedule the meeting, which shall include representatives of the Fabricator and MassDOT.

B. Reinforcement.

The reinforcing bars shall be installed in accordance with Subsection 901.35, including tolerances for cover and horizontal spacing of bars. Components of mechanical reinforcing bar splicers shall be set with the tolerances shown on the plans. The reinforcing bars and mechanical reinforcing bar splicers shall be assembled into a rigid cage that will maintain its shape in the form and which will not allow individual reinforcing bars to move during the placement of concrete. This cage shall be secured in the form so that the clearances to all faces of the concrete, as shown on the plans, shall be maintained.

Where reinforcing bars are to protrude from one Precast Concrete Bridge Element in order to mate with reinforcing bar splicers in a second precast concrete element, the fabricator shall set the reinforcing bars and the reinforcing bar splicers with a template in order to ensure proper fit up within the tolerances specified on the plans.

C. Tolerances.

Fabrication shall comply with tolerances specified on the plans. Tolerances for steel reinforcement placement shall be in accordance with Subsection 901.35. In the absence of specifications on the plans, tolerances shall comply with the latest version of the PCI MNL 135, Precast Tolerance Manual.

ITEM 995.02 (Continued)

D. Forms.

Concrete shall be cast in rigidly constructed forms, which will maintain the Precast Concrete Bridge Elements within specified tolerances to the shapes, lines and dimensions shown on the approved fabrication drawings. Forms shall be constructed from flat, smooth, non-absorbent material and shall be sufficiently tight to prevent the leakage of the plastic concrete. When wood forms are used, all faces in contact with the concrete shall be laminated or coated with a non-absorbent material. All worn or damaged forms, which cause irregularities on the concrete surface or damage to the concrete during form removal, shall be repaired or replaced before being reused. If threaded inserts are cast into the elements for support of formwork, the inserts shall be recessed a minimum of 1 inch and shall be plugged after use with a grout of the same color as that of the precast cement concrete.

CONSTRUCTION METHODS – FIELD CONSTRUCTION

A. General.

All of the Contractor's field personnel involved in the erection and assembly of the Precast Concrete Bridge Elements shall have knowledge of and follow the approved Erection Procedure.

Prior to installation, the following documentation shall be reviewed and confirmed by the MassDOT Resident Engineer or designee:

(a) QC Compressive Strength Test Report Forms attaining Design Strength, f'c for the Precast Concrete Bridge Element's representative sublot.
(b) Certificate of Compliance generated by the Fabricator as described under the Fabricator Quality Control section.
(c) QC Inspection Reports signed by the Quality Control Manager.

Field construction staff shall verify that the Resident Engineer has accepted all Precast Concrete Bridge Elements prior to installation.

B. Erection Procedure.

Prior to the erection, the Contractor shall submit an Erection Procedure for approval by the Engineer. This submittal shall include computations and drawings for the transport, hoisting, erection and handling of the Precast Concrete Bridge Elements. The Erection Procedure shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts with working knowledge of the Contractor's equipment, approved shop drawings, and materials to build the bridge. The Erection Procedure shall, at a minimum, include the following:

3. Erection Procedure

The Erection Procedure shall be prepared to conform to the requirements of 960.61, Design, Fabrication and Erection and the applicable sections in Chapter 8 of the PCI Design Handbook (eighth edition) for handling, erection, and bracing requirements. At a minimum, the Erection Procedure shall provide:

(a) Minimum concrete compressive strength for handling the Precast Concrete Bridge Elements.
(b) Concrete stresses during handling, transport, and erection.

ITEM 995.02 (Continued)

(c) Crane capacities, pick radii, sling geometry, and lifting hardware.
(d) Verification that the equipment can handle all pick loads and weights with the required factor of safety.
(e) Evaluation of construction sequence and evaluation of any geometric conflicts in the lifting of the Precast Concrete Bridge Elements and setting them as shown on the plans.
(f) Design of crane supports including verification of subgrade for support.
(g) Location and design of all temporary bracing that will be required during erection.

Non-shrink grout and concrete materials, approved by the Engineer, shall be placed as shown on the plans. Fill joints, keyways, and voids, in strict accordance with the specifications and manufacturer's recommendations and instructions.

For footings, approach slabs and highway guardrail transitions, once these Precast Concrete Bridge Elements have been set to the correct horizontal and vertical alignment, the void between them and the supporting soil shall be filled with Controlled Low-Strength Material – Structural Non-Excavatable to the limits as shown on the plans. Add additional grout ports in the footings to facilitate the bedding process if required.

Except in approach slabs, joints shall be filled flush to the top with non-shrink grout, and any vertical misalignment between adjacent elements shall be feathered out on a slope of 1 to 12.

Curing of grout or concrete shall be performed in strict accordance with the specifications and manufacturer's recommendations. Filling shall not be completed in cold weather when either the ambient temperature or the precast member's temperature is below the manufacturer's recommendation. No localized heating of either the precast members or of the air surrounding the element will be permitted in an attempt to reach application temperatures.

If the joints or voids are not filled within five days after the Precast Bridge Elements are erected, the Contractor shall cover and protect the openings from weather and debris until they are filled.

C. Survey and Layout.

Working points, working lines, and benchmark elevations shall be established prior to placement of all elements. The Contractor is responsible for field survey as necessary to complete the work. MassDOT reserves the right to perform additional independent survey. If discrepancies are found, the Contractor may be required to verify previous survey data.

D. Preparation of Closure Pours and Grouted Keyways.

Immediately prior to erecting the Precast Concrete Bridge Elements, the closure pours and grouted keyways shall be cleaned at the job site of all dust, dirt, carbonation, laitance, and other potentially detrimental materials which may interfere with the bonding of the closure pour concrete or grout and precast concrete using a high-pressure water blast. Any exposed reinforcing steel in the precast concrete shall be protected from damage during the cleaning of the keyways. Damaged epoxy coating of steel reinforcement shall be repaired, and the reinforcing steel shall be cleaned as directed by the Engineer. The surfaces of the closure pours and grouted keyways shall be wetted so that the surfaces shall have a Saturated Surface Dry (SSD) condition for at least 24 hours prior to the placement of the closure pour concrete.

ITEM 995.02 (Continued)

E. Erection.

The elements shall be placed in the sequence and according to the methods outlined in the Erection Procedure. As the erection proceeds, the Contractor shall constantly monitor the assembly to ensure that the precast concrete bridge element is within proper horizontal and vertical location and tolerances prior to releasing it from the crane and setting the next unit. The Contractor may use shims to maintain proper setting tolerances.

The concrete elements shall be lifted only by the lifting devices, and the utmost care shall be taken to prevent distortion of the elements during handling, transportation or storage.

This approval will be contingent on the Contractor demonstrating by calculations, prepared by a Professional Engineer registered in Massachusetts, that the elements will not be damaged by the non-vertical lifting force and by documentation that the capacity of the lifting devices is adequate for the non-vertical lifting force.

After all Precast Concrete Bridge Elements have been placed, the actual overall dimensions of the structure both horizontal and vertical, as laid out shall not deviate from the nominal dimensions shown on the plans beyond a tolerance of +0 inches and -1 inches. Once the layout of Precast Concrete Bridge Elements has been accepted by the Engineer, the Contractor shall cut all lifting devices off below the surfaces of the elements.

F. Filling of Blockouts for Lifting Devices and Threaded inserts.

If the blockouts in the Precast Concrete Bridge Elements where the lifting devices were located will be exposed and visible after assembly is complete, the Contractor shall fill these blockouts with Mortar (M4.04.5).

After the formwork has been removed, all threaded inserts that have been cast into the precast concrete bridge deck for support of the formwork shall be filled with a grout of the same color as that of the precast concrete.

SCHEDULE OF BASIS FOR PARTIAL PAYMENT

Within ten (10) days after the Notice to Proceed, the Contractor shall submit, in duplicate, for the approval of the Engineer, a schedule of unit prices for the major components of the bridge structure as listed below. The bridge structure Lump Sum breakdown quantities provided below are estimated and not guaranteed. The total of all partial payments to the Contractor shall equal the Lump Sum contract price regardless of the accuracy of the quantities furnished by the Engineer for the individual bridge components. The cost of labor and materials for any Item not listed but required to complete the work shall be considered incidental to Item 995.02 and no further compensation will be allowed.

The schedule applies only to Bridge Structure No. S-21-009. Payment for similar materials and construction at locations other than at this bridge structure shall not be included under this Item. Sub-Item numbering is presented for information only in coordination with MassDOT Standard Nomenclature.

ITEM 995.02 (Continued)

995.02 Bridge No. S-21-009

Sub-Item	Description	QTY.	UNIT	PRICE	TOTAL
904.3	5000 PSI, 3/4 INCH, 685 HP CEMENT CONCRETE	210	CY		
904.31	PRECAST HIGHWAY GUARDRAIL TRANSITIONS	2	EA		
910.1	STEEL REINFORCEMENT FOR STRUCTURES - EPOXY COATED	46,600	LB		
922.	LAMINATED ELASTOMERIC BEARING WITHOUT ANCHOR BOLTS	16	EA		
931.32	PRESTRESSED CONCRETE NEXT 32D	206	FT		
960.	STRUCTURAL STEEL	1,150	LB		
965.	MEMBRANE WATERPROOFING FOR BRIDGE DECKS	1,600	SF		
970	DAMP-PROOFING	1030	SF		
975.1	METAL BRIDGE RAILING (3 RAIL), STEEL (TYPE S3-TL4)	110	FT		

TOTAL LUMP SUM FOR ITEM 995.02 =

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT A00802

DETAIL SHEETS

THIS PAGE INTENTIONALLY LEFT BLANK

THE COMMONWEALTH OF MASSACHUSETTS
MassDOT - HIGHWAY DIVISION
TEN PARK PLAZA, BOSTON, MA

PRELIMINARY ESTIMATE OF QUANTITIES - DETAIL SHEETS

TOWN: Southbridge
STA.: 201+05 to 204+70
301+07 to 305+25
Type of Project: Bridge Construction

YEAR: 2026
ROAD: Mill Street
CLASS: Local
DATE: 1/22/2026

SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5)..... 100 TON
SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5)..... 170 TON
SUPERPAVE LEVELING COURSE - 9.5 (SLC - 9.5)..... 15 TON
SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) ..... 200 TON
SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B - 9.5 - P)..... 47 TON

PROPOSED FULL DEPTH PAVEMENT (MILL STREET) AREA = 632.6 SY

SURFACE:	1-1/2 " SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER
	ASPHALT EMULSION FOR TACK COAT OVER
INTERMEDIATE:	2-1/2 " SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC - 12.5) OVER
	ASPHALT EMULSION FOR TACK COAT OVER
BASE:	4-1/2 " SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5) OVER
SUBBASE:	4" DENSE GRADED CRUSHED STONE OVER
	8" GRAVEL BORROW TYPE b

PROPOSED FULL DEPTH PAVEMENT (LESS THAN 4.0 FEET WIDE) AREA = 4.6 SY

SURFACE:	1-1/2 " SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER
	ASPHALT EMULSION FOR TACK COAT OVER
BASE:	8” CEMENT CONCRETE BASE COURSE
SUBBASE:	10" GRAVEL BORROW TYPE b

PROPOSED MILL AND OVERLAY (MILL STREET) AREA = 1,116.9 SY

SURFACE:	1-1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER
	SUPERPAVE LEVELING COURSE 9.5 (SLC – 9.5)
	AS *REQUIRED TO MEET PROPOSED ELEVATIONS OVER
MILLING:	1-1/2" FINE MILLING DEPTH

*SUPERPAVE LEVELING COURSE – 9.5 (SLC – 9.5)
REQUIRED STA 201+85 TO 202+38 ONLY

PROPOSED CEMENT CONCRETE SIDEWALK **AREA = 311.4 SY**
PROPOSED CEMENT CONCRETE PEDESTRIAN CURB RAMP **AREA = 85.0 SY**

SURFACE: 4” CEMENT CONCRETE AIR ENTRAINED 4000 PSI, 3/4", 610

FOUNDATION: 8” GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE SIDEWALK AT DRIVEWAYS **AREA = 83.8 SY**

SURFACE: 6” CEMENT CONCRETE AIR ENTRAINED 4000 PSI, 3/4", 610
FOUNDATION: 8” GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT DRIVEWAY **AREA = 135.0 SY**

SURFACE: 1.5” SUPERPAVE SURFACE COURSE- 9.5 (SSC-9.5) OVER
2.5” SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)
FOUNDATION: 8” GRAVEL BORROW, TYPE b

PROPOSED BRIDGE PAVEMENT **AREA = 436.3 SY**

SURFACE: 1-1/2" SUPERPAVE BRIDGE SURFACE COURSE
9.5 POLYMER (SSC-B - 9.5 - P) OVER
PROTECTIVE COURSE:
1-1/2" SUPERPAVE BRIDGE PROTECTIVE COURSE
9.5 POLYMER (SPC-B - 9.5 - P) OVER
MEMBRANE WATERPROOFING FOR BRIDGE DECKS

ITEM 101. CLEARING AND GRUBBING

To limits of grading.

Station	Offset	Station	Offset
202+78	RT	203+03	RT
203+70	RT	204+03	RT
203+79	LT	204+05*	LT
301+61	LT	301+74	LT
302+22	LT	302+32	LT
302+98	RT	302+12	RT

*Includes 32” deciduous tree at 204+05 LT

ITEM 102.1 TREE TRIMMING

To provide clearance around overhead wires.

ITEM 102.511 TREE PROTECTION - ARMORING AND PRUNING

Contingency Item.

ITEM 102.521 TREE AND PLANT PROTECTION FENCE

At limits of clearing and grubbing, where shown on the Drawings, or where directed by the Engineer.

Start Station	OS	End Station	OS
202+78	RT	203+03	RT
203+70	RT	204+03	RT
203+79	LT	204+05*	LT
301+61	LT	301+74	LT
302+05	LT	302+22	LT

*Excludes 32” deciduous tree at 204+05 LT

ITEM 103. TREE REMOVED - DIAMETER UNDER 24 INCHES

Sta 303+01 RT
Sta 303+36 RT

ITEM 104. TREE REMOVED - DIAMETER 24 INCHES AND OVER

Sta 302+63 RT

ITEM 123.5 CHANNEL BACKFILL

In McKinstry Brook to reproduce the channel bed to match adjacent existing conditions after bridge (S-21-009) work in the channel. Or in other locations as directed by the Engineer.

ITEM 160.3 CONTROLLED LOW-STRENGTH MATERIAL (>300 PSI)

Used at bridges, for backfill around pre-cast highway guardrail transitions, other pre-cast bridge items, or in other locations as directed by the Engineer. See bridge plans and bridge special provisions.

ITEM 192.6 MONITORING WELL ADJUSTED

Station	Offset
201+89	16.5 LT
202+19	16.2 LT

ITEM 204. GUTTER INLET
ITEM 220.2 DRAINAGE STRUCTURE REBUILT
ITEM 220.8 SANITARY STRUCTURE REMODELED

For contingency.

ITEM 224.12 12 INCH HOOD

Install in proposed catch basins.

ITEM 238.10 10 INCH DUCTILE IRON PIPE

To be used where there is insufficient cover over the drainage pipe.

Structure No.	Structure No.
2	3
13 Existing CB Sta 204+25 LT	12
20	19 Existing CB Sta 301+62 LT
3	6 Existing CB Sta 302+18 RT

ITEM 238.161 16 INCH DUCTILE IRON SEWER PIPE

To be used as sanitary sewer pipe on Bridge S-21-003 and its approaches. Use mechanical joint type pipe.

ITEM 243.12 12 INCH REINFORCED CONCRETE PIPE CLASS IV

To be used where there is insufficient cover over the drainage pipe.

Riverway	Structure No.	Structure No.
Mill	12	11
Mill	22	11
Mill	23	12
McKinstry	4	3

ITEM 257. TEMPORARY SEWER BYPASS

Required to maintain sanitary flows during construction at the bridge over the Quinebaug River .

ITEM 347.2 2 INCH COPPER TUBING TYPE K
ITEM 363.2 2 INCH CORPORATION COCK
ITEM 381. SERVICE BOX
ITEM 384. CURB STOP

To replace water service:
Sta 301+43, Offset 18.5 LT

ITEM 350.08 8 INCH GATE AND GATE BOX

Sta 301+20 LT

ITEM 350.10 10 INCH GATE AND GATE BOX

Sta 202+45 RT

ITEM 376.2 HYDRANT REMOVED AND RESET

Sta 201+77 LT

ITEM 506. GRANITE CURB TYPE VB – STRAIGHT

Include curbs at back of walk, Sta 302+54 RT. See construction plans for other locations of granite curb type VB - straight.

ITEM 627.19 TERMINAL END, TYPE G
ITEM 628.245 TRANSITION TO BRIDGE RAIL - THRIE BEAM

At bridge over the McKinstry River, southwest quadrant

ITEM 628.304 TEMPORARY IMPACT ATTENUATOR, NON-REDIRECTIVE, TL-2
ITEM 628.4 TEMPORARY IMPACT ATTENUATOR, REMOVED AND RESET

For contingency.

ITEM 652.072 72 INCH CHAIN LINK FENCE END POST

300+97 LT to 301+52 LT, as needed.

ITEM 655.3 ADA COMPLIANT HANDRAIL

Start Station	Offset	End Station	Offset
201+86	38.5 RT	201+96	22.6 RT

`

ITEM 670. FENCE REMOVED AND RESET

Start Station	OS	End Station	OS
301+24	LT	301+52	LT
203+87	LT	204+00	LT

ITEM 671. FENCE GATE AND GATE POSTS REMOVED AND STACKED

Start Station	OS	End Station	OS
300+97	LT	301+24	LT

ITEM 701. CEMENT CONCRETE SIDEWALK

Include 4-inch thick cement concrete pad under relocated cluster mailbox at Sta 304+25 LT. See construction plans for other locations of cement concrete sidewalk.

ITEM 701.1 CEMENT CONCRETE SIDEWALK AT DRIVEWAYS

Include 6-inch thick cement concrete pad under relocated dumpster at Sta 304+25 LT. See construction plans for other locations of cement concrete sidewalk at driveway.

ITEM 711. BOUND REMOVED AND RESET

Station	Offset
204+03	24.5 RT

ITEM 715.6 CLUSTER MAIL BOX REMOVED AND RESET

Sta 304+25 LT

ITEM 743. DUMPSTER REMOVED AND RESET

Sta 304+25 LT

ITEM 751.765 COMPOST AND SEED OVER MODIFIED ROCK

Place over the modified rockfill in the regraded area in the channel, northeast quadrant of the bridge at McKinstry Brook.

ITEM 874.2 TRAFFIC SIGN REMOVED AND RESET

R3-2 / R3-1, Station 204+49, 19.5 RT.

ITEM 986. MODIFIED ROCKFILL

Place over the regraded area in the channel, northeast quadrant of the bridge and the wildlife crossing at McKinstry Brook

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT A00807

TOWN OF SOUTHBRIDGE

SOUTHBRIDGE WATER DEPARTMENT
STANDARD SPECIFICATIONS

THIS PAGE INTENTIONALLY LEFT BLANK

TOWN OF SOUTHBRIDGE

DEPARTMENT OF PUBLIC WORKS
SOUTHBRIDGE WATER DEPARTMENT
STANDARD SPECIFICATIONS

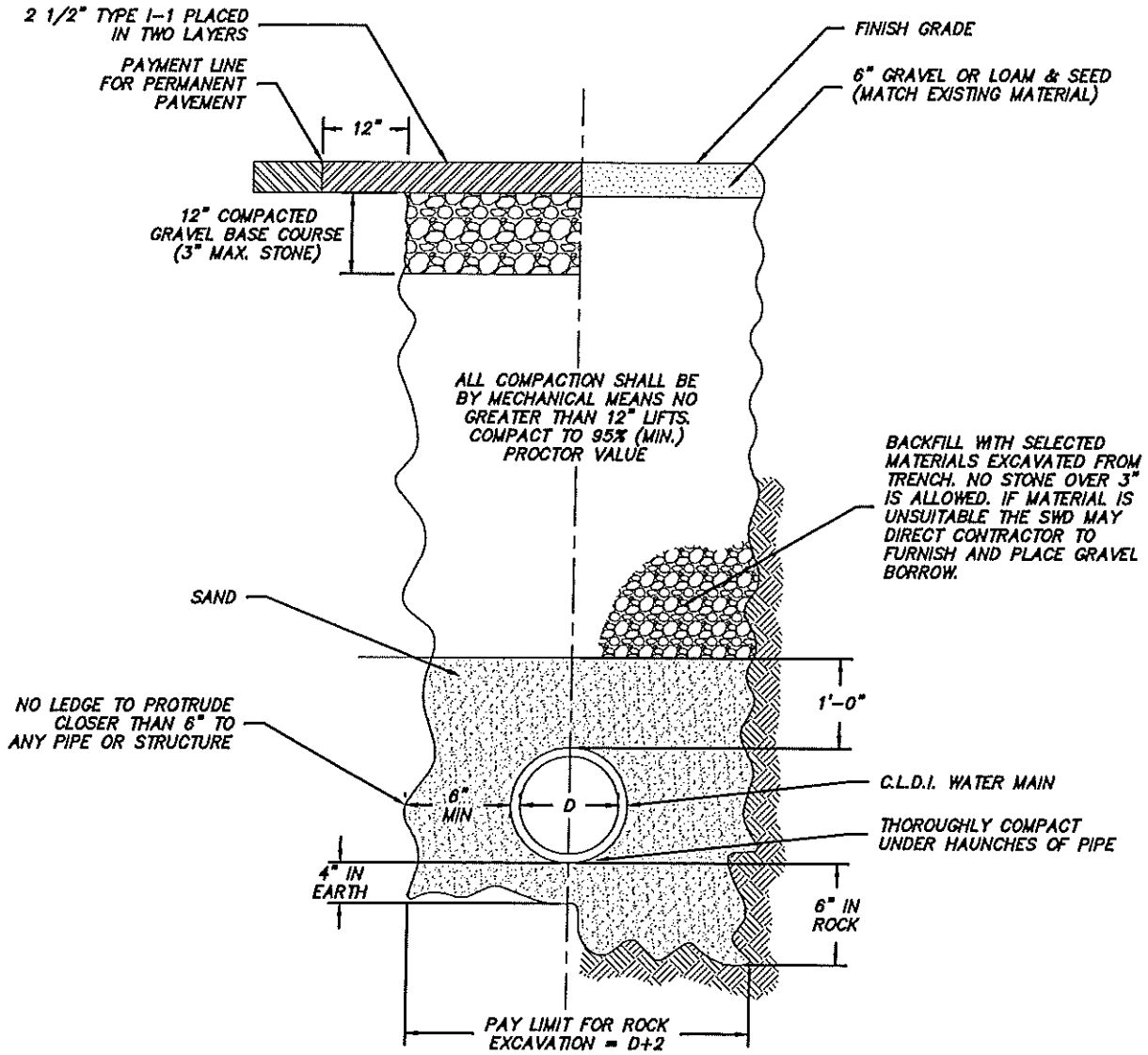
SYSTEM OPERATED BY:

WHITEWATER

A SUBSIDIARY OF RH WHITE COMPANIES, INC.

SOUTHBRIDGE DEPARTMENT OF PUBLIC WORKS
SOUTHBRIDGE, MASSACHUSETTS 01550
DPW TEL: (508) 764-5403
SWD TEL: (508) 764-3207

Revised: 04/10/2006 – T. Cutler
Revised: 2/26/2009 – McClure Engineering, LLC



PUBLIC WORKS · SOUTHBRIDGE, MASS · THE EYE OF THE COMMONWEALTH

GENERAL NOTES:

1) NO WATER PIPE DEPTH OF COVER SHALL EXCEED 5 FEET FROM FINISHED GRADE
2) CONTRACTOR RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO EXCAVATION (1-800-DIG-SAFE)
3) FLOWABLE FILL REQUIRED AT STATE & PRIMARY ROADS, AND AT THE DISCRETION OF THE SOUTHBRIDGE WATER DEPARTMENT (SWD) ON SECONDARY ROADS
4) IF SIGNIFICANT LEDGE IS ENCOUNTERED THE TOWN WILL BE INFORMED AND A PLAN FOR SOIL TEST OR BORINGS AS WELL AS EXPECTED METHODS AND SCHEDULE OF REMOVAL SHALL BE SUBMITTED TO THE TOWN FOR APPROVAL
5) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

DATE:	10/27/2008
DRAWN BY:	EJM
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

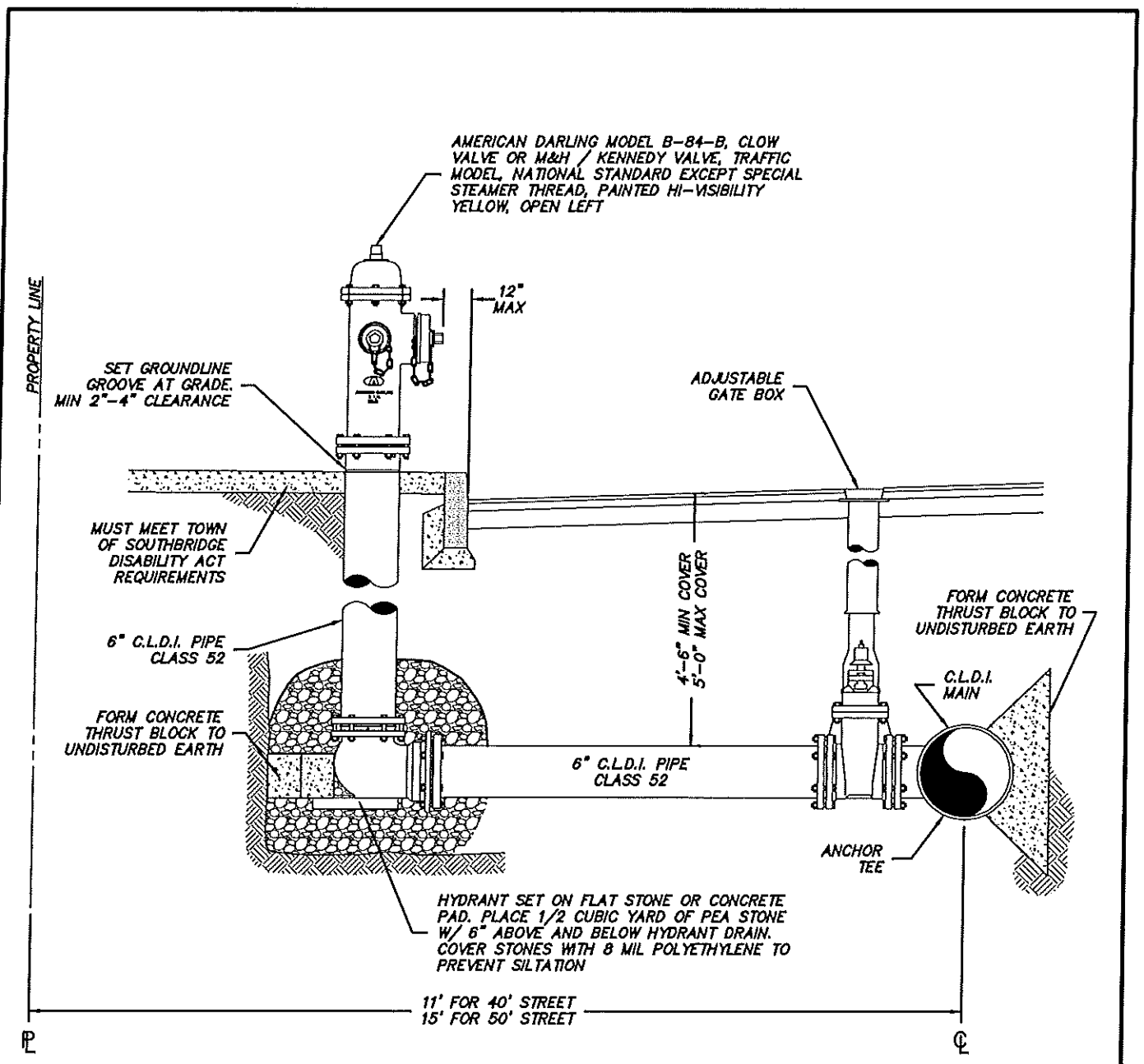
185 Guelphwood Road
Southbridge, MA 01550

DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

TYPICAL TRENCH DETAIL

PROJ. NO.	278-701
DWG.	Trench Detail

SWD 1



PUBLIC WORKS · SOUTHBRIDGE, MASS. · THE EYE OF THE COMMONWEALTH

GENERAL NOTES:

1) NO WATER PIPE DEPTH OF COVER SHALL EXCEED 5 FEET FROM FINISHED GRADE
2) CONTRACTOR RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO EXCAVATION
3) TRENCH SHALL NOT BE BACKFILLED UNTIL CONNECTION HAS BEEN INSPECTED AND APPROVED BY THE SOUTHBRIDGE WATER DEPARTMENT (SWD)
4) ALL COMPACTION SHALL BE BY MECHANICAL MEANS AT NO GREATER THAN 12 INCH LIFTS
5) WATER SHALL BE TURNED ON BY THE SWD ONLY AFTER APPROVAL
6) ONLY CONTRACTORS APPROVED BY THE SWD SHALL MAKE CONNECTION
7) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

DATE:	10/27/2008
DRAWN BY:	EJM
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

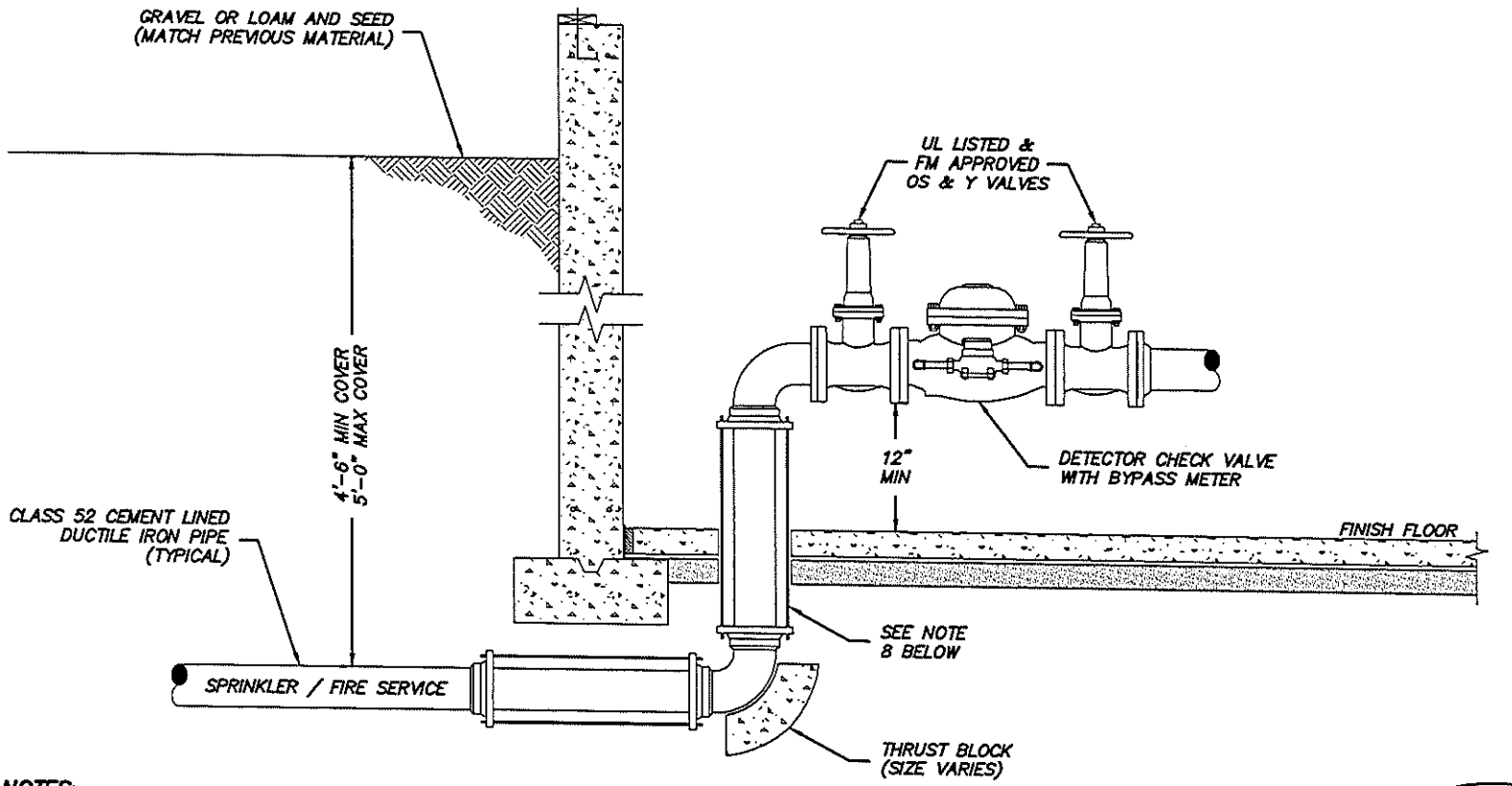
185 Guelphwood Road
Southbridge, MA 01550

DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

TYPICAL HYDRANT DETAIL

PROJ. NO.	278-701
DWG.	Hydrant Detail

SWD 2



GENERAL NOTES:

1) NO WATER PIPE DEPTH SHALL EXCEED 5 FEET FROM FINISHED GRADE
2) CONTRACTOR RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO EXCAVATION
3) SERVICE SHALL BE LAID PERPENDICULAR TO THE WATER MAIN UNTIL PROPERTY LINE
4) ALL FIRE AND DOMESTIC SERVICE LINES MUST BE SEPARATE
5) TRENCH SHALL NOT BE BACKFILLED UNTIL SERVICE HAS BEEN INSPECTED AND APPROVED BY THE SOUTHBRIDGE WATER DEPARTMENT (SWD)
6) ALL COMPACTION SHALL BE BY MECHANICAL MEANS AT NO GREATER THAN 12 INCH LIFTS
7) METERS MAY BE PURCHASED AT THE SWD OR MUST BE COMPATIBLE WITH SWD CURRENT METER
8) RESTRAINT AND RETAINER GLANDS AS REQUIRED BY SWD ON PIPING CHANGING DIRECTION
9) SERVICE SHALL BE FLUSHED BEFORE ACTIVATING TO AVOID METER CLOGGING
10) MUST MEET 310 CMR 22.22 CROSS CONNECTION DISTRIBUTION SYSTEM PROTECTION REGULATIONS
11) WATER SHALL BE TURNED ON BY THE SWD ONLY AFTER APPROVAL
12) PRESSURE TEST SERVICE AT 200 PSI FOR 5 MINUTES FOLLOWED BY 150 PSI FOR 2 HOURS
13) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

PUBLIC WORKS
SOUTHBRIDGE, MASS.
THE EYE OF THE COMMONWEALTH

DATE:	10/27/2008
DRAWN BY:	EJM
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

185 Guelphwood Road
Southbridge, MA 01550

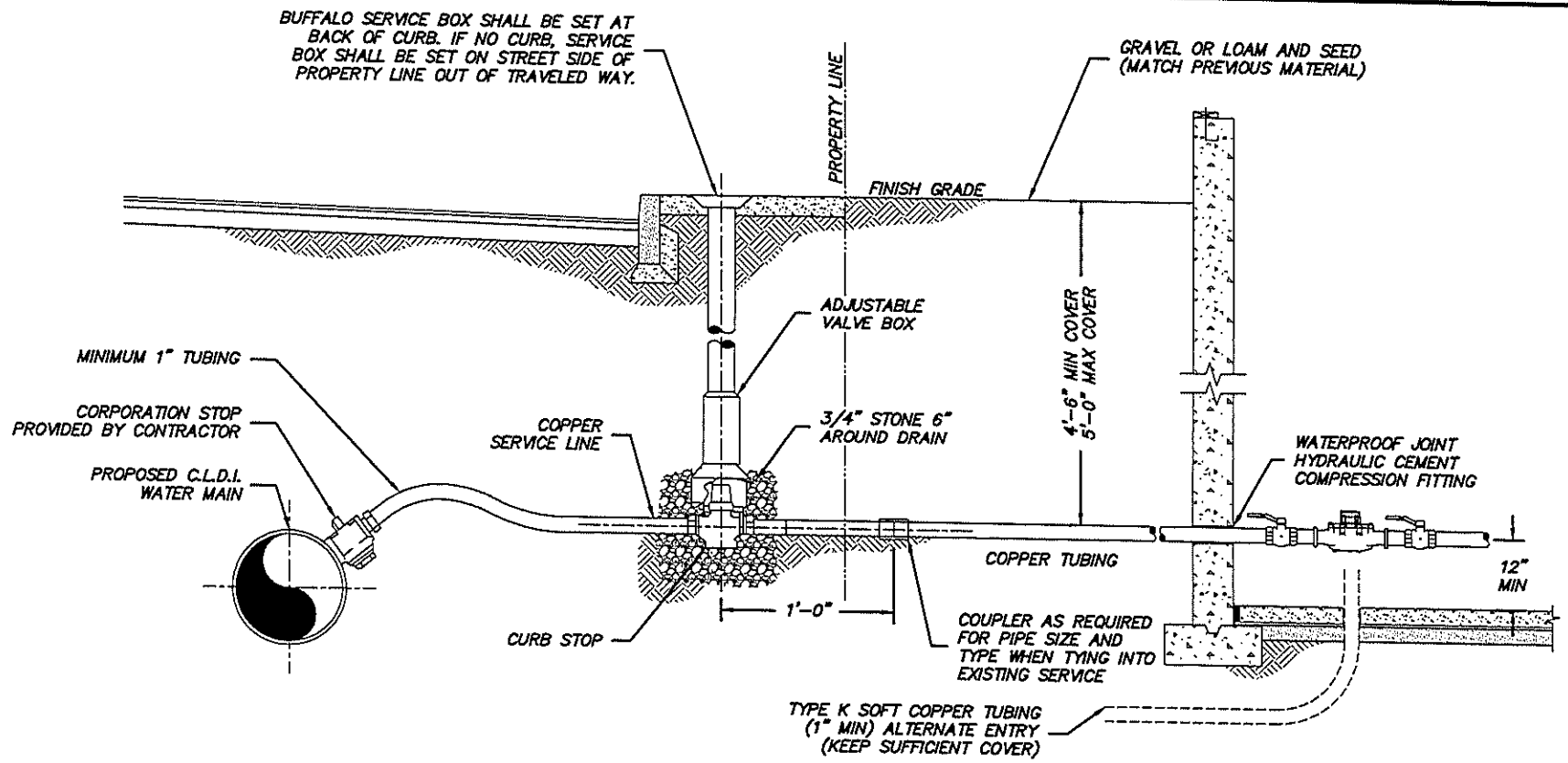
DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

TYPICAL SPRINKLER SERVICE DETAIL

PROJ. NO.	278-703
DWG.	Sprinkler Service

SWD 3

Proposal No. 608862-136646



GENERAL NOTES:

1) NO WATER PIPE DEPTH SHALL EXCEED 5 FEET FROM FINISHED GRADE
2) CONTRACTOR RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO EXCAVATION
3) TRENCH SHALL NOT BE BACKFILLED UNTIL SERVICE HAS BEEN INSPECTED AND APPROVED BY THE SOUTHBRIDGE WATER DEPARTMENT (SWD)
4) WATER SHALL BE TURNED ON BY THE SWD ONLY AFTER APPROVAL
5) ONLY CONTRACTORS APPROVED BY THE SWD SHALL MAKE TAP
6) WATER SERVICE LINES AND METER SHALL BE SIZED BY THE SWD
7) ALL COMPACTION SHALL BE BY MECHANICAL MEANS AT NO GREATER THAN 12 INCH LIFTS
8) NEW AND RENEWED SERVICES SHALL HAVE REMOTE READERS
9) SERVICE SHALL BE FLUSHED BEFORE ACTIVATING TO AVOID METER CLOGGING
10) THERE SHALL BE A HORIZONTAL SEPARATION OF 10 FEET FROM ANY OTHER UTILITY LINE
11) EXISTING CORPORATION SHALL BE CLEANED WHEN A SERVICE IS RENEWED
12) SERVICE SHALL BE LAID PERPENDICULAR TO THE WATER MAIN UNTIL PROPERTY LINE
13) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

PUBLIC WORKS · SOUTHBRIDGE, MASS. · THE EYE OF THE COMMONWEALTH

DATE:	10/27/2008
DRAWN BY:	EJM
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

185 Guelphwood Road
Southbridge, MA 01550

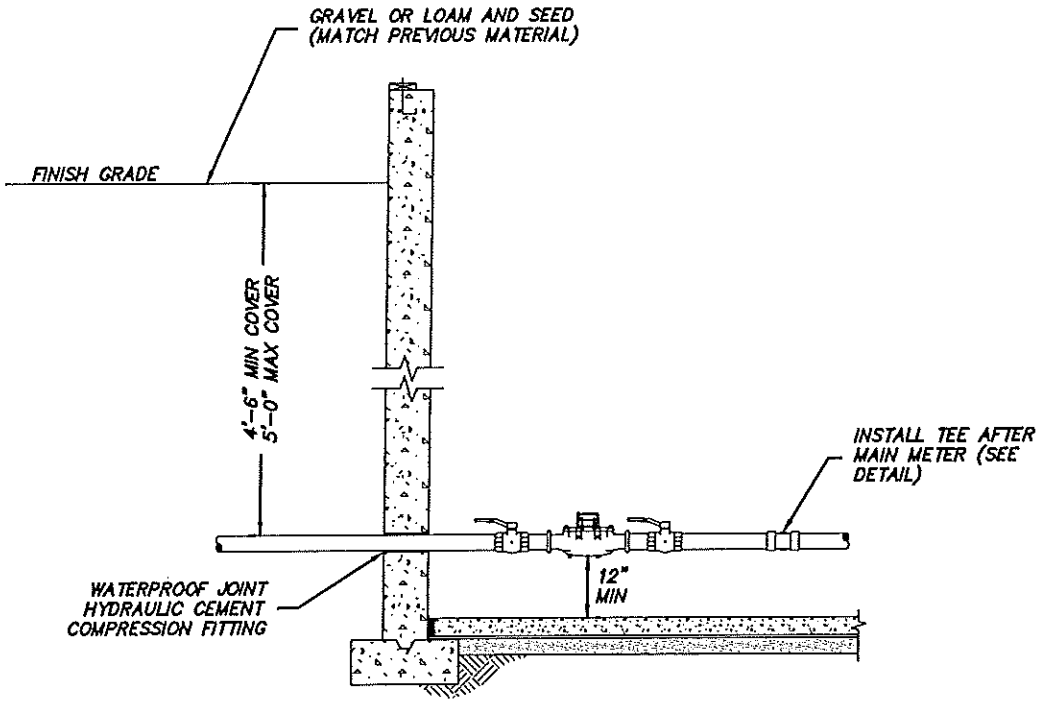
DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

TYPICAL DOMESTIC SERVICE CONNECTION UNDER TWO INCHES

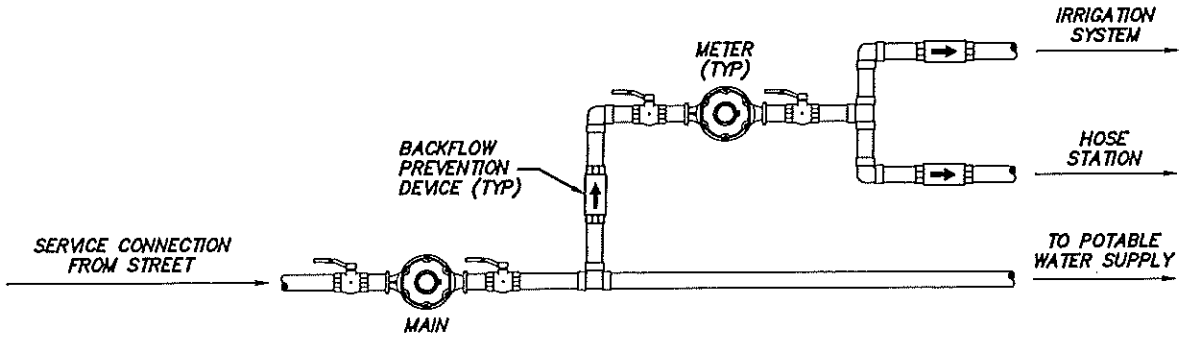
PROJ. NO.	278-701
DWG.	Dom Serv <2"

SWD 4

Proposal No. 608862-136646



ELEVATION VIEW
NOT TO SCALE



PLAN VIEW
NOT TO SCALE

GENERAL NOTES:

1) WATER SHALL BE TURNED ON BY THE SWD ONLY AFTER APPROVAL
2) WATER SERVICE LINES AND METER SHALL BE SIZED BY THE SWD
3) NEW AND RENEWED SERVICES SHALL HAVE REMOTE READERS
4) SERVICE SHALL BE FLUSHED BEFORE ACTIVATING TO AVOID METER CLOGGING
5) ALL BACKFLOW PREVENTION DEVICES MUST BE APPROVED FOR USE IN MASSACHUSETTS
6) IRRIGATION SYSTEM MST HAVE APPROPRIATE DEVICE.
   EX: ALL PVBS' MUST BE A MINIMUM OF 12" ABOVE THE HIGHEST SPRINKLER HEAD
7) HOSE STATIONS MUST HAVE BACKFLOW PREVENTION DEVICES INSTALLED
   EX: HOSE BIBB VACUUM BREAKERS OR BUILT IN ANTI-SIPHON MODEL(S).
8) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

PUBLIC WORKS · SOUTHBRIDGE, MASS. · THE EYE OF THE COMMONWEALTH

DATE:	10/27/2008
DRAWN BY:	EJM
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

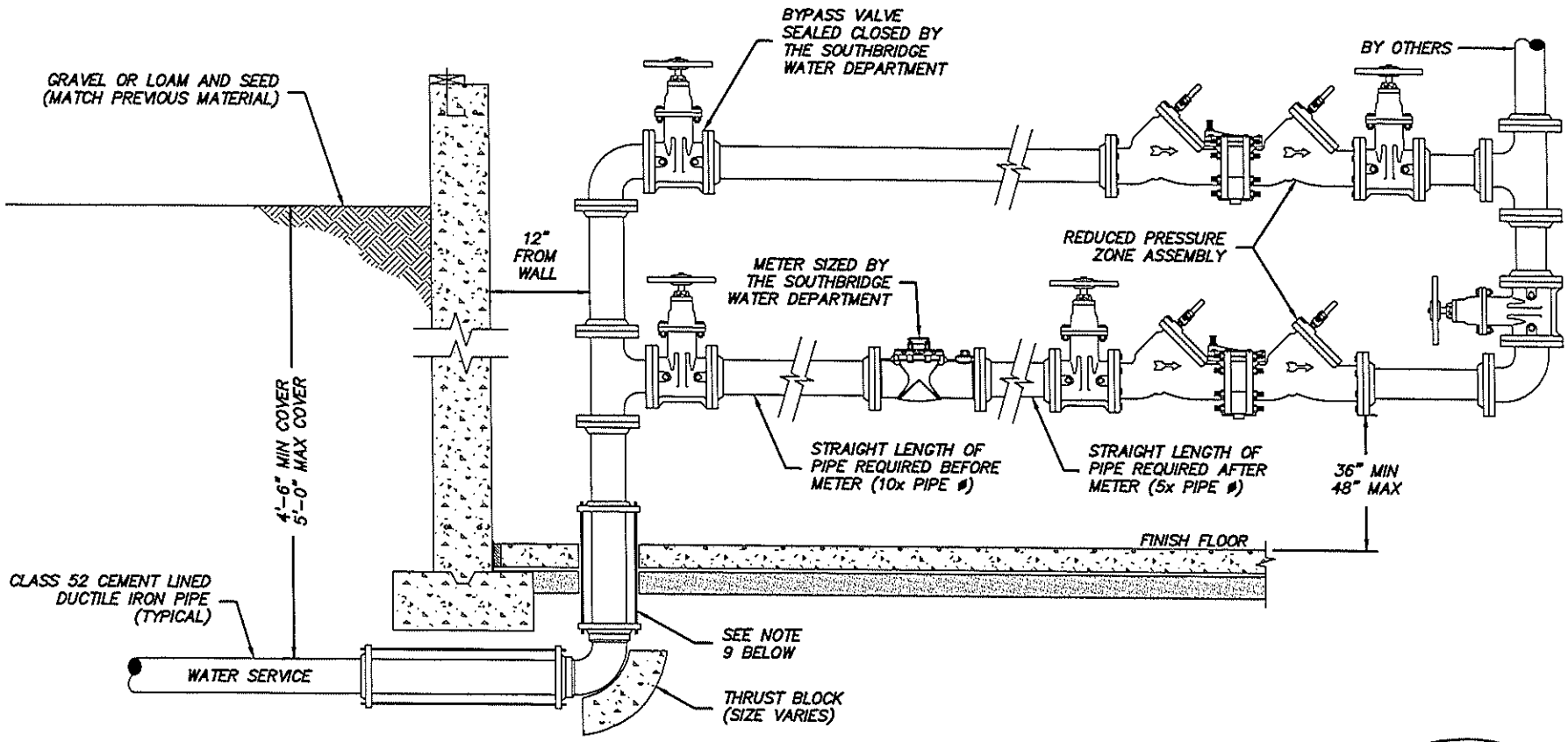
185 Guelphwood Road
Southbridge, MA 01550

DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

TYPICAL SEWER EXCEPTION METER DETAIL

PROJ. NO.	278-701
DWG.	Sewer Exc. Meter

SWD 5



GENERAL NOTES:

1) NO WATER PIPE DEPTH SHALL EXCEED 5 FEET FROM FINISHED GRADE
2) CONTRACTOR RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO EXCAVATION
3) SERVICE SHALL BE LAID PERPENDICULAR TO THE WATER MAIN UNTIL PROPERTY LINE
4) ALL FIRE AND DOMESTIC SERVICE LINES MUST BE SEPARATE
5) TRENCH SHALL NOT BE BACKFILLED UNTIL SERVICE HAS BEEN INSPECTED AND APPROVED BY THE SOUTHBRIDGE WATER DEPARTMENT (SWD)
6) ALL COMPACTION SHALL BE BY MECHANICAL MEANS AT NO GREATER THAN 12 INCH LIFTS
7) METERS LARGER THAN 2" IN SIZE ARE TO BE PURCHASED BY CONTRACTOR
8) METERS 3" AND LARGER WILL REQUIRE COMPOUND METER AT THE DISCRETION OF THE SWD
9) RESTRAINT AND RETAINER GLANDS AS REQUIRED ON PIPING CHANGING DIRECTION
10) SERVICE SHALL BE FLUSHED BEFORE ACTIVATING TO AVOID METER CLOGGING
11) MUST MEET 310 CMR 22.22 CROSS CONNECTION DISTRIBUTION SYSTEM PROTECTION REGULATIONS
12) WATER SHALL BE TURNED ON BY THE SWD ONLY AFTER APPROVAL
13) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

PUBLIC WORKS · SOUTHBRIDGE, MASS. · THE HEART OF THE COMMONWEALTH

DATE:	10/27/2008
DRAWN BY:	EJM
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

185 Guelphwood Road
Southbridge, MA 01550

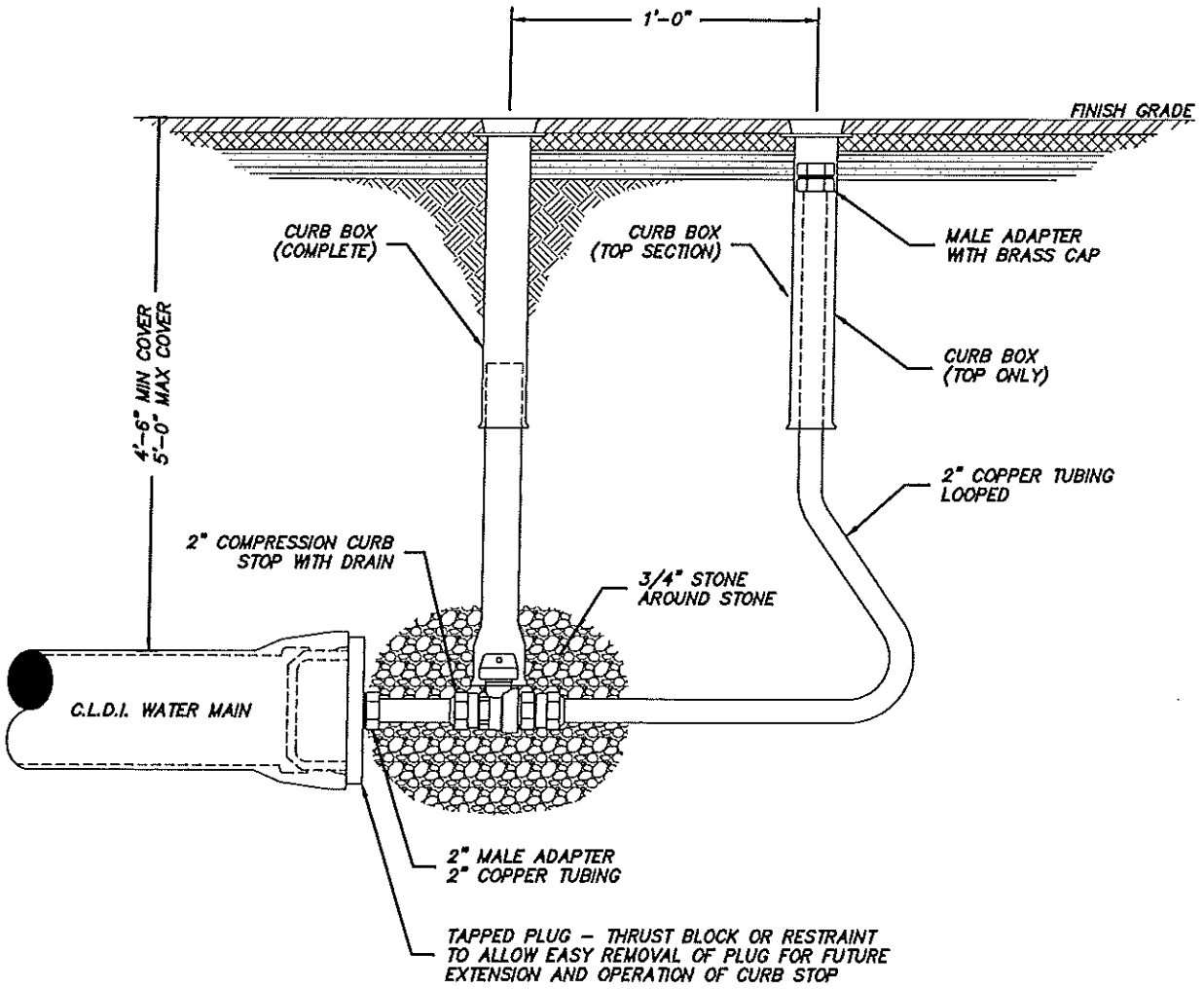
DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

TYPICAL DOMESTIC SERVICE CONNECTION TWO INCHES AND LARGER METERS WITH BYPASS

PROJ. NO.	278-701
DWG.	Dom Serv >2"

SWD 6

Proposal No. 608862-136646



PUBLIC WORKS
SOUTHBRIDGE, MASS.
THE EYE OF THE COMMONWEALTH

GENERAL NOTES:

1) NO WATER PIPE DEPTH SHALL EXCEED 5 FEET FROM FINISHED GRADE
2) CONTRACTOR RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO EXCAVATION
3) TRENCH SHALL NOT BE BACKFILLED UNTIL CONNECTION HAS BEEN INSPECTED AND APPROVED BY THE SOUTHBRIDGE WATER DEPARTMENT (SWD)
4) ALL COMPACTION SHALL BE BY MECHANICAL MEANS AT NO GREATER THAN 12 INCH LIFTS
5) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

DATE:	10/27/2008
DRAWN BY:	EJM
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

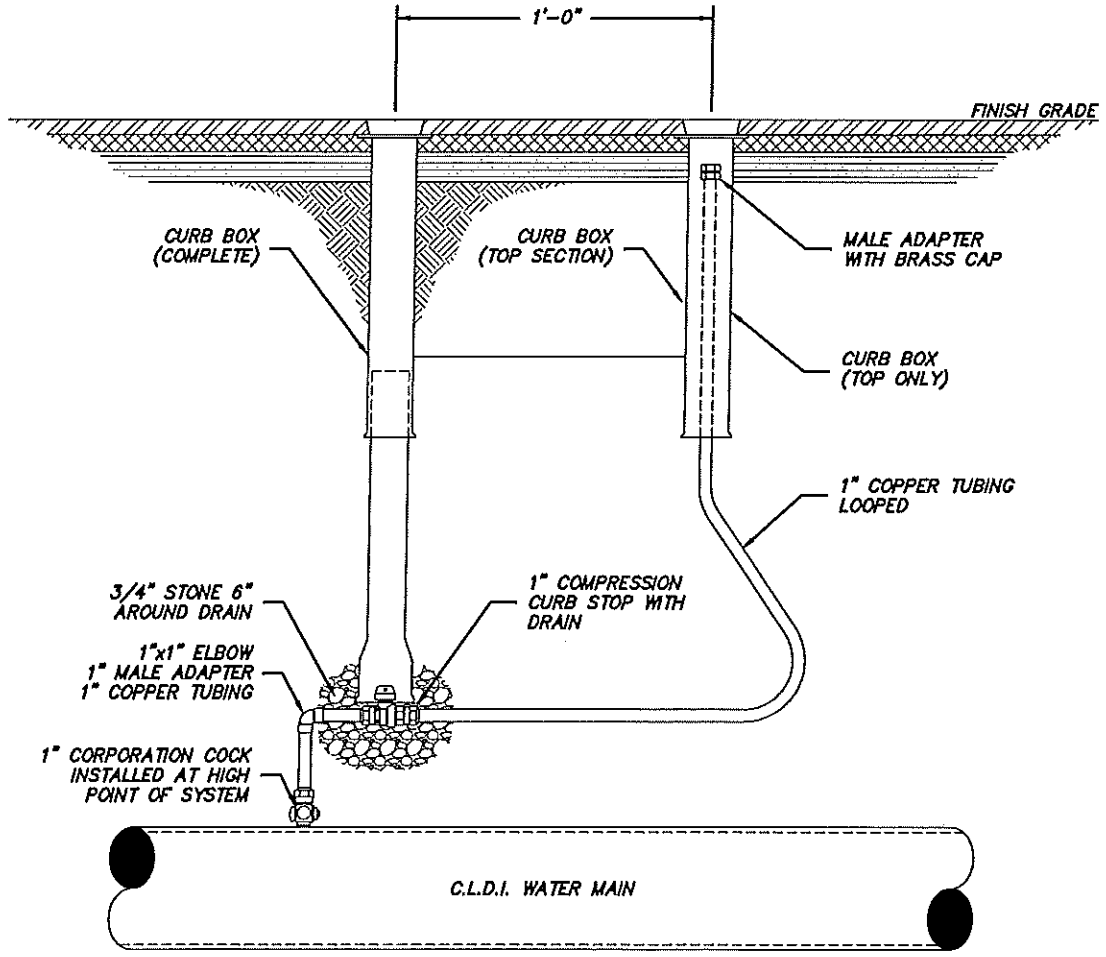
185 Guelphwood Road
Southbridge, MA 01550

DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

TYPICAL BLOWOFF DETAIL

PROJ. NO.	278-701
DWG.	Blowoff Detail

SWD 7



PUBLIC WORKS
SOUTHBRIDGE, MASS.
THE EYE OF THE COMMONWEALTH

GENERAL NOTES:

1) NO WATER PIPE DEPTH SHALL EXCEED 5 FEET FROM FINISHED GRADE
2) CONTRACTOR RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO EXCAVATION
3) TRENCH SHALL NOT BE BACKFILLED UNTIL CONNECTION HAS BEEN INSPECTED AND APPROVED BY THE SOUTHBRIDGE WATER DEPARTMENT (SWD)
4) ALL COMPACTION SHALL BE BY MECHANICAL MEANS AT NO GREATER THAN 12 INCH LIFTS
5) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

DATE:	10/27/2008
DRAWN BY:	EJM
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

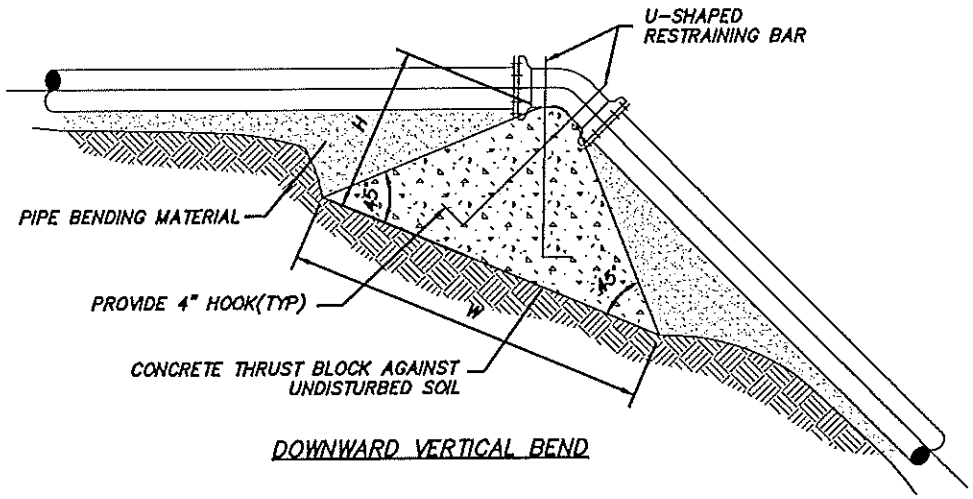
185 Guelphwood Road
Southbridge, MA 01550

DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

TYPICAL AIR OUTLET DETAIL

PROJ. NO.	278-701
DWG.	Air Outlet Detail

SWD 8

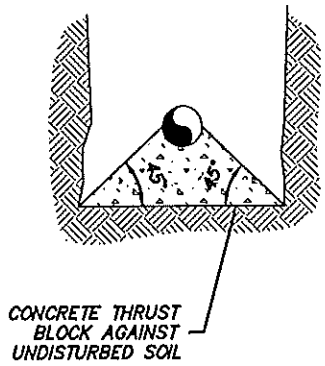


DOWNWARD VERTICAL BEND

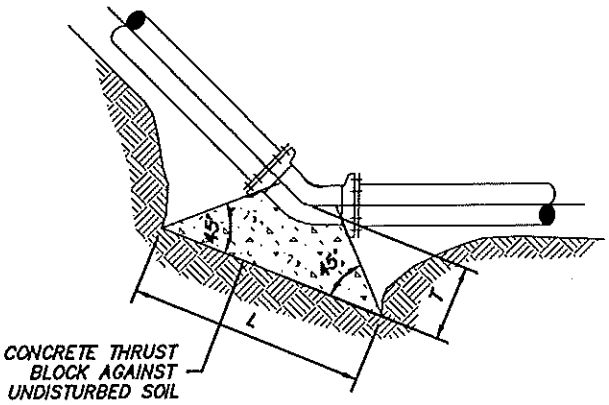
DOWNWARD 45° VERTICAL BENDS							
D	VOLUME (C.F.)	BEARING AREA (S.F.)	"H"	"W"	"L"*	RE-BAR SIZE	BAR EMBED. LENGTH
<8"	55	1.0	2.5'	5.0'	5.0'	#4	22"
12"	120	2.0'	3.5'	7.0'	5.0'	#6	18"
12"	205	3.0'	5.5'	11.0'	5.0'	#6	24"

UPWARD 45° VERTICAL BENDS				
D	BEARING AREA (S.F.)	"T"	"W"	"L"
<8"	3.0	1.0'	1.5'	2.5'
12"	6.5	1.0'	2.0'	3.5'
16"	11.0	1.5'	3.0'	4.0'

* "L" IS ASSUMED TO BE THE WIDTH OF THE TRENCH



SECTION



UPWARD VERTICAL BEND

GENERAL NOTES:

1) DIMENSIONS SHOWN CALCULATED PER 120 PSI INTERNAL PIPE PRESSURE FOR SOIL BEARING LOADS OF 3,000 PSF.
2) CONSTRUCT CONCRETE THRUST BLOCKS OF CONCRETE POURED AGAINST UNDISTURBED SOIL.
3) DIMENSIONS L, W, & H MAY BE ADJUSTED TO MEET FIELD CONDITIONS PROVIDED THE BEARING AREA REMAINS UNCHANGED.
4) RESTRAINING BARS SHALL BE ASTM A615 GRADE 60 REINFORCED STEEL.
5) COAT THE PORTION OF THE RESTRAINING BARS EXPOSED TO SOIL WITH TWO COATS OF BITUMASTIC MATERIAL.
6) PLACE POLYETHYLENE SHEETING OVER MJ FITTINGS TO PREVENTS DIRECT CONTACT BETWEEN CONCRETE AND THE FITTING.
7) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

PUBLIC WORKS · SOUTHBRIDGE, MASS. · THE EYE OF THE COMMONWEALTH

DATE:	10/27/2008
DRAWN BY:	E/M
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

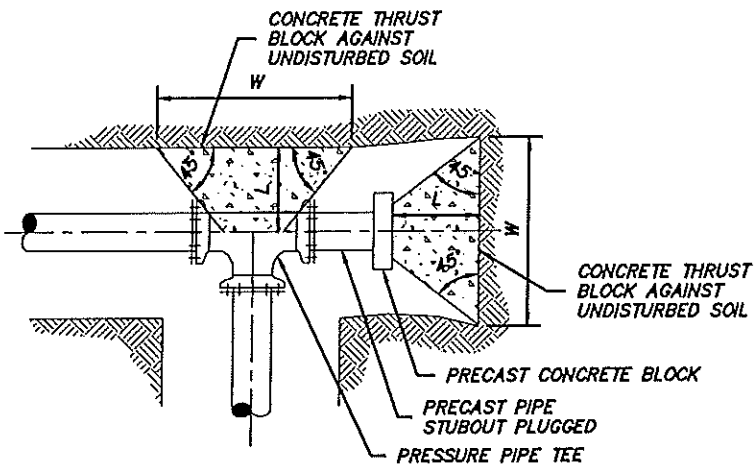
185 Guelphwood Road
Southbridge, MA 01550

DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

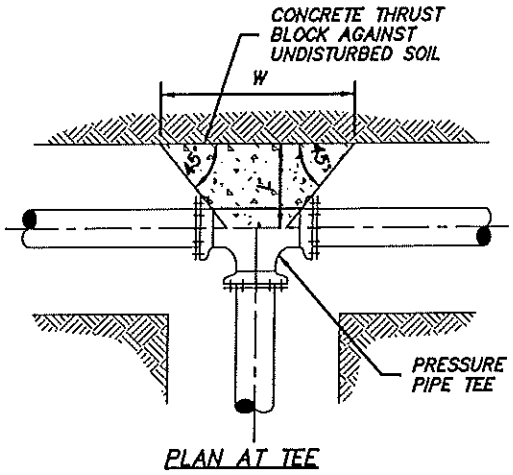
CONCRETE THRUST BLOCKS FOR VERTICAL BENDS

PROJ. NO. 278-701
DWG. Vert. Thrust Block

SWD 9

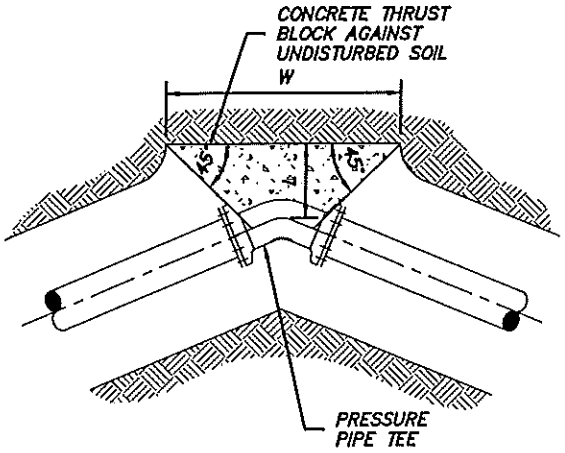


PLAN AT TEE W/STUBOUT FOR FUTURE

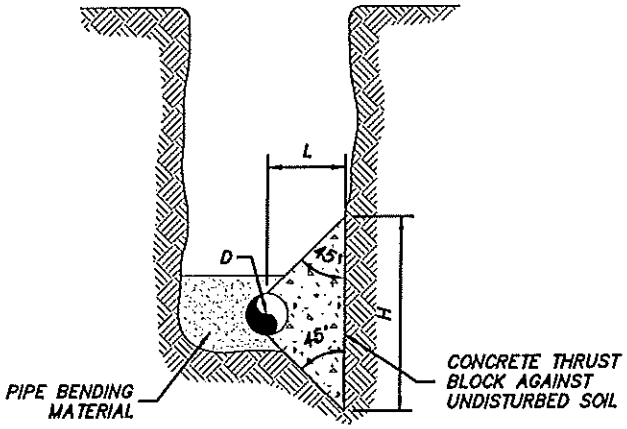


PLAN AT TEE

	CONCRETE THRUST BLOCK															
	22 1/2° BEND				45° BEND				90° BEND				TEE / CAP			
D	BEARING AREA (S.F.)	"L"	"H"	"W"	BEARING AREA (S.F.)	"L"	"H"	"W"	BEARING AREA (S.F.)	"L"	"H"	"W"	BEARING AREA (S.F.)	"L"	"H"	"W"
<8"	1.5	0.5'	1.0'	1.5'	3.0	1.0'	1.5'	2.5'	5.5	1.0'	2.0'	3.0'	3.9	1.0'	2.0'	2.5'
12"	3.5	1.0'	1.5'	2.5'	6.5	1.0'	2.0'	3.5'	12.0	1.5'	3.0'	4.5'	8.5	1.5'	2.5'	4.0'
16"	6.0	1.0'	2.0'	3.0'	11.0	1.5'	3.0'	4.0'	20.5	2.0'	4.0'	5.5'	14.5	2.0'	3.5'	5.0'



PLAN AT BEND



SECTION

GENERAL NOTES:

1) DIMENSIONS SHOWN CALCULATED PER 120 PSI INTERNAL PIPE PRESSURE FOR SOIL BEARING LOADS OF 3,000 PSF.
2) CONSTRUCT CONCRETE THRUST BLOCKS OF CONCRETE POURED AGAINST UNDISTURBED SOIL.
3) DIMENSIONS L, W, & H MAY BE ADJUSTED TO MEET FIELD CONDITIONS PROVIDED THE BEARING AREA REMAINS UNCHANGED.
4) THE HEIGHT OF THE BLOCK (H) SHALL BE LESS THAN OR EQUAL TO HALF THE TRENCH DEPTH.
5) PLACE POLYETHYLENE SHEETING OVER MJ FITTINGS TO PREVENTS DIRECT CONTACT BETWEEN CONCRETE AND THE FITTING.
6) THE SOUTHBRIDGE WATER DEPARTMENT RESERVES THE RIGHT TO MODIFY STANDARDS AT THEIR DISCRETION

PUBLIC WORKS · SOUTHBRIDGE, MASS. · THE EYE OF THE COMMONWEALTH

DATE:	10/27/2008
DRAWN BY:	EJM
APPROVED BY:	SBDGE D.P.W.
SCALE:	
HORZ:	N.T.S.
VERT:	
REVISED:	

SOUTHBRIDGE WATER DEPARTMENT

185 Guelphwood Road
Southbridge, MA 01550

DPW Tel: (508) 764-5403
SWD Tel: (508) 764-3207

CONCRETE THRUST BLOCKS FOR HORIZONTAL BENDS AND TEES

PROJ. NO.	278-701
DWG.	Hor. Thrust Block

SWD 10

Town of Southbridge, MA
Department of Public Works
Southbridge Water Department

Standard Specifications

TABLE OF CONTENTS

ABBREVIATIONS AND TERMS 2
ABBREVIATIONS: 2
TERMS: 2
STANDARD MATERIAL SPECIFICATIONS 3
CORPORATION STOPS: 3
CURB STOPS: 3
DUCTILE IRON FITTINGS (INCLUDING BENDS, REDUCERS, OFF-SETS, TEES AND SLEEVES): 3
DUCTILE IRON PIPE: 4
MECHANICAL JOINT RESTRAINTS: 4
COPPER TUBING: 4
HYDRANTS: 4
VALVES: 5
VALVE BOXES: 5
STAINLESS STEEL REPAIR CLAMPS: 6
TAPPING SLEEVES: 6
TYPICAL WATER SERVICE / METER INSTALLATION: 6
APPENDIX 7
SWD 1 – TYPICAL TRENCH DETAIL
SWD 2 – TYPICAL HYDRANT DETAIL
SWD 3 – TYPICAL SPRINKLER SERVICE DETAIL
SWD 4 – TYPICAL DOMESTIC SERVICE CONNECTION UNDER TWO INCHES
SWD 5 – TYPICAL SEWER EXCEPTION METER DETAIL
SWD 6 – TYPICAL DOMESTIC SERVICE CONNECTION TWO INCH AND LARGER METERS WITH BYPASS
SWD 7 – TYPICAL BLOWOFF DETAIL
SWD 8 – TYPICAL AIR OUTLET DETAIL
SWD 9 – CONCRETE THRUST BLOCKS FOR VERTICAL BENDS
SWD 10 – CONCRETE THRUST BLOCKS FOR HORIZONTAL BENDS AND TEES

NOTES:

- All installations shall follow manufacturer's recommended procedures unless otherwise noted or directed by Southbridge Water Department personnel.
- All materials, products and coating that contact drinking water shall be certified to meet NSF/ANSI Standard 61 – *latest revision*, Drinking Water System Components – Health Effects.
- All references made to the American Water Works Association (AWWA) or American Society for Testing Materials (ASTM) standards must meet the latest revision applicability.
- All water system materials furnished for installation by contractor shall be provided with clear manufacturer's markings and labeling indicating that the product furnished meets the materials standards requirements. All products shall be new, not previously used, and of current manufacture and supplied to the jobsite in unopened packaging. In addition to the labeling and packaging requirements, and upon the request of the Southbridge Water Department all pipe, pipe fittings, valves, pipe appurtenances, and service materials shall be provided with a written manufacturer's statement indicating conformance with the specified materials and manufacturing requirements.

Southbridge Water Department
Abbreviations and Terms

Whenever in these Standard Specifications the following abbreviations and terms are used, the intent and meaning shall be interpreted as follows:

Abbreviations:

AWWA	American Water Works Association
ASTM	American Society for Testing Materials
NSF	National Sanitation Foundation
SWD	Southbridge Water Department

Terms:

Backflow: The flow of water or other liquids, mixtures, gases, or substances into the distributing pipes of a potable water supply, from any source other than intended source.

Backflow Prevention Device: A device accepted and approved by Southbridge Water Department as meeting an applicable specification stated or cited in this Specification or as suitable for the proposed use and as approved and accepted by the Massachusetts Department of Environmental Protection.

Consumer: Any person, firm, or corporation using or receiving water from the public water system.

Contractor: The person, firm, or corporation entering into contract with the owner, developer, or the Town of Southbridge for the performance of work required under said contract and the Town of Southbridge's ordinances, rules, regulations, and specifications.

Service Line: All pipe, fittings, and appurtenances of the licensee for conveying water from Distribution Mains to the consumer.

Tap: Physical connection to a Distribution Main which, together with appropriate license, effects water service to individual consumers.

Water Main or Distribution Main: A 16-inch or smaller diameter pipe along public streets or appropriate rights-of-way used for distributing water to individual consumers.

Southbridge Water Department
Standard Material Specifications

Corporation Stops:

Corporation stops shall conform to AWWA C800.

Corporation stops shall consist of a ball type valve and shall be of straight-through/full port design. Inlet threads shall be AWWA standard threads. Outlet ends and coupling nuts shall be compression for connection with Type K copper.

Corporation stops shall be manufactured by A.Y. McDonald, Cambridge Brass, Ford Meter Box Co., Mueller Co., or approved equal.

Curb Stops:

Curb stops shall conform to AWWA C800.

Curb stops shall consist of a ball valve drain and waste stop and shall be of straight-through/full port design. The curb stop shall be furnished with compression connections at both ends.

Curb stops shall be manufactured by A.Y. McDonald, Cambridge Brass, Ford Meter Box Co., Mueller Co., or approved equal.

Ductile Iron Fittings (Including bends, reducers, off-sets, tees and sleeves):

Materials shall be ASTM A536 latest, minimum grade of 70-50-05, in accordance with AWWA C110 for fittings larger than 24" and C153 (latest revision) for fittings 3" – 24".

Fittings shall be cement lined AWWA C104 or fusion bonded epoxy coated with a 5 mil nominal thickness per AWWA C550 and C116.

Interior seal coated AWWA C104 with minimum of 4 mils dry film thickness.

Exterior bituminous coated, 4 mils minimum dry film thickness or fusion bonded epoxy coated with a 5 mil nominal thickness per AWWA C550 and C116.

Sleeves shall not be cement lined, but shall be bituminous coated inside to 4 mils dry film thickness. All sleeves shall be long body type.

Mechanical joint with accessories furnished: D.I. glands, gaskets, Cor-Ten T-bolts and nuts.

Pressure Ratings:
a) Class 350 pressure rating in accordance with AWWA C153 - 3" – 24" sizes.
b) Class 250 pressure rating in accordance with AWWA C110 - 24" – 48" sizes.

The "compact design" fittings must provide adequate space for the MJ joint and accessories to be installed without special tools (i.e. Lowell wrench can be used).

Ductile Iron Pipe:

Ductile iron pipe for water mains shall meet the requirements of AWWA Standard C151 and shall be cement lined and seal coated to meet AWWA Standard C104.

The exterior of the pipe shall be bituminous coated in accordance with AWWA Standard C151 (latest revision).

The minimum thickness Class of pipe shall be Class 52. Pipe shall be furnished in nominal 18 or 20 foot lengths.

Pipe joints for ductile iron pipe shall be "push-on" unless the additional pipe deflection allowed by mechanical joints is necessary or other considerations dictate the use of mechanical joints. The joints for ductile iron pipe shall conform to AWWA Standard C111.

Mechanical Joint Restraints:

Devices shall be of the wedge-action lug-type mechanical joint (MJ) Retainer Glands or the split, full-circle grip-ring type with High Strength Alloy (HSLA) threaded thrust rods and nuts and stainless steel clamping bolts and nuts. For use only with 4" – 16" Ductile Iron (DI) pipe. Restraint devices shall have a working pressure rating that equals or exceeds the pressure of the pipe, fittings, or valves on which they are used.

Mechanical Joint Restraints shall be manufactured by EBAA Iron Sales, Inc, Ford/Uni-Flange, Romac Industries, Inc., Star Pipe Products or approved equal.

Copper Tubing:

All copper water service tubing shall conform with AWWA Standards C800 and with ASTM B88, and shall be Type K soft temper seamless tubing for 1, ½, 2 inch.

Hydrants:

Fire hydrants shall conform to the requirements of AWWA C502 for Dry Barrel Fire Hydrants.

Fire hydrants shall be:

American Darling Model B-84-B, Traffic Model, Notional Standard Thread Except Special Streamer Thread (4 27/32" 6 thread), Open Left Painted Hi-Visibility Yellow.

M&H / Kennedy Valve Company Model 129, National Standard Thread Expect Special Steamer Thread (4 27/32" 6 thread), Open Left Painted Hi-Visibility Yellow.

Clow Valve Company Medallion Hydrant, National Standard Thread Except Special Steamer Thread (4 27/32" 6 thread), Open Left Painted Hi-Visibility Yellow.

Valves:

All valves shall meet or exceed the standard of AWWA C500, C504, and C509 and its latest revisions. Unless otherwise provided, all valves 2" – 12" shall be resilient seat gate valves in accordance with AWWA Standard C509.

Each valve shall be fitted with a standard 2-inch square operating nut and shall open clockwise. Valves other than resilient seat and butterfly shall be double disc. Each valve shall have mechanical joint ends complete with accessories. If ductile iron mechanical joint glands are furnished, the vendor shall be sure properly sized mechanical joint bolts are furnished to prevent "Bottoming Out" and leaving excessive thread exposed.

All resilient seat and butterfly valves shall be epoxy coated to cover all interior surfaces coming in contact with water. The epoxy coating shall be NSF-approved for contact with water for human consumption.

Butterfly valves shall have operators, which are capable of withstanding an overload input torque of 450 ft. lbs at full open or closed position.

Pressure reducing valves shall feature pressure reducing pilotry with pressure control ranges for correct valve operation where installed. Pilot material shall be bronze body only, brass and stainless steel rim. Tubing shall be copper. All pressure reducing valves shall be epoxy coated to cover all interior surfaces coming in contact with water. The epoxy coating shall be NSF-approved for contact with water for human consumption. Valves shall be ductile iron, globe body, minimum 150-pound flanged ends and bronze trim. Must be pre-approved by the Southbridge Water Department.

All valves shall be tested by the manufacturer for a working pressure of 200 PSI and a body pressure of 400 PSI to meet or exceed AWWA standards.

Pressure class rating shall be the same as the water pipe on which the valve is being installed.

All valves shall be manufactured by American Darling Valve Company, CLA-VAL, Watts Water Technologies, Inc. or approved equal.

Valve Boxes:

Valves box shall be 5 ¼" shaft Buffalo style, two piece slip type, adjustable cast iron valve boxes of the two piece type, consisting of top section with cover and bottom section. Base shall be proper type and size for the valve with which it is used. The word "water" shall be cast or embossed on the valve box cover in letters not less than 1 inch high. Roadway boxes shall be of the two (2) piece slip type. Screw type boxes will not be accepted.

Valve box shall be manufactured by Mueller Co., Bingham & Taylor, or approved equal.

Stainless Steel Repair Clamps:

The sleeve shall be of full circle design, either one piece or two piece. The body shall be 18-8 stainless steel shell.

The gasket shall be full length and diameter of the body size, form a multiple O-ring, or grid, sealing barrier for the entire length and circumference, and shall be virgin SBR rubber ASTM D2000 AA 415.

Repair clamps shall be stainless steel single bolt row with an outside diameter range sufficient to repair either cast iron, ductile iron or asbestos cement in a given size.

Tapping Sleeves:

Tapping sleeves shall be all stainless steel body and flange with a full circumferential gasket, or ductile iron body, mechanical joint designed to accommodate a minimum operating pressure of 150 psi and a test pressure of 300 psi. Stainless steel tapping sleeves shall be Ford Model FAST, Mueller Model H304 or Romac Model SST or approved equal. Sleeves shall be for use with gray cast iron or ductile iron pipe and shall be rated for 250 PSI working pressure and conforming to AWWA Standard C110 and ductile iron fittings rated for 350 PSI working pressure conforming to AWWA Standard C110. All accessories shall be provided with corrosion resistant steel bolts and nuts.

Typical Water Service / Meter Installation:

The following is a list of materials typically used at 5/8" meter installations. Other fittings may be required but each site will dictate the need.

1 – 1" Male Iron Pipe x Compression Coupling
1 – 1" Female Iron Pipe Ball Valve with Drain and Waste Stop
1 – 1" x ½" Brass Bushing
1 – ¾" x ½" Brass Bushing
1 – ¾" Female Iron Pipe Ball Valve with Drain and Waste Stop

The Southbridge Water Department will supply the meter and meter tailpieces to complete installation. Please refer to the Southbridge Water Department Standard Specifications drawing SWD-4 for an illustrated view of the installation.

****Please remember, sweat fittings are not allowed until after the outlet valve****

All tie-ins including residential to be performed by contractors approved by the Department of Public Works and/or Southbridge Water Department. Final as-builts will be required including all tie-ins to all valves and curb-stops. Requires minimum of 48 hours notice for inspection.

If you should have any questions or comments, please do not hesitate to contact the Southbridge Water Department at 508-764-3207.

Appendix

DOCUMENT A00808

PROJECT UTILITY COORDINATION FORM

THIS PAGE INTENTIONALLY LEFT BLANK

Project Utilities Coordination (PUC) Form

CONTACTS AND GENERAL UTILITY INFORMATION

Revision Date:

City/Town:	Project File #:	PUC Completed by:	Utility Pole Set:		
Southbridge	608862	C. Grygorcewicz	National Grid Electric		
Route/Street:	**Resident Engineer:**	**Mass DOT PM:**	**Scheduled Ad Date:**	**Total Poles Relocated:**	11/5/2025
Mill Street over Quinebaug River & McKinstry Brook	*TBD*	Alwin Ramirez	3/21/2026	8 + 2 Upgrades	PRINTED

Consultant:	Contact:	Office #	Cell #	Email
VHB	Gregory Russell	508-513-2716	617-817-8542	grussell@vhb.com

Utility Company	Contact	Office #	Cell #	Email	Scope, Budget, Duration Submitted		Reimbursement			Potential for District Initiated Early Relocation *		Utilities On Bridge/Structure		Utilities Underground (UG) /Aerial (OH)	
					Yes	No	Agreement	Non-Reimb'le	Notes	YES	NO	YES	NO	UG	OH
National Grid Electric	Manny Munoz		(401) 895-9726	manuel.munoz@nationalgrid.com	X		50%				X		X		X
Charter	John Yurkevicius		(508) 294-7527	john.yurkevicius@charter.com	X		50%				X		X		X
Verizon	Paul Styspeck	(413) 787-1845		paul.m.styspeck@verizon.com	X		50%				X		X		X
National Grid Gas	Mike Hilbrunner		(781) 227-0621	michael.hilbrunner@nationalgrid.com	X		50%				X	X		X	
Southbridge DPW	Vernon Jackson	(508) 764-5403 ext. 6		vjackson@southbridgemass.org		n/a	n/a		Water & Sewer items are included in contract.		X	X		X	

Utility Relocation Notes for MassDOT Contractor

Unless otherwise noted by Contract, the MassDOT Contractor is to provide the District Construction Office **with 7 Calendar Days advance** notification in order to validate the current progress and provide the required 30 Days advance notice-to-proceed for the first Utility - and each subsequent Utility. These advance notifications are to be identified in the Contractor's Schedules (Pre-Con preparation, Baseline, Subnets, and Updated/Monthly Schedules) as specified in Subsection 8.02. Note: The durations included below do not include these lead-times. See Additional 'Important Basis notes for Contractor' - on last PUC Form page.

Additional notes:

- The gas pipes on the two bridges are both crucial in supporting the gas system north and west of this Project's location. Gas work, as well as construction activity adjacent to NGrid gas's pipe that could damage the infrastructure, may be restricted to a single bridge at a time to minimize the potential impact. This will need further review and coordination before construction begins.
- Per Southbridge DPW, water can be shut off during construction season provided that both bridges are not constructed concurrently.
- Per Contract Documents, bridges may not be constructed concurrently.
- Opportunity for reduction in durations if temporary overhead utility work can be scheduled at same time for both bridges. Same for permanent relocations. Coordination is the responsibility of the Contractor.

Suggested Sequence of Relocation (Based on Consultant proposed construction staging)

The sequence as detailed on the following pages is based on the consultants proposed staging plan. This information was compiled through meetings that included all of the utilities listed below along with the designer and the Town of Southbridge. The information provided is the best available information prior to project advertisement.

Proposal No. 608862-136646

Is 'enabling' (prep) work, by the Contractor, necessary prior to the start of the first series of utility relocations:	Yes	No
	X	

Has any of the Utility work been identified to work concurrently	Yes	No
		X

11/5/2025
PRINTED

massDOT Massachusetts Department of Transportation Highway Division

	RESPONSIBLE PARTY		DESCRIPTION - Utility Relocation Phases, Tasks and Activities	Estimated Duration (Work Days) by Utilities (Lead time not included)	Concurrent / Exclusive Utility Work. Contractor note: In planning and executing the work, the information in these 4 columns is intended to supplement any related Access Restraints that are described in the Special Provisions.				Access Restraint & Limitations of Operations Notes. Should an AR be considered for the Contractor ?	
	C = Contractor	U = Utility Co.			Exclusive Utility on site: Utility working with no other Utilities in vicinity	Concurrent Utilities: Utility working with other Utilities on site	Contractor Off-Site: No Contractor physical construction operations on-site (while Utility is working)	Contractor Concurrent: Contractor and Utility are working on-site - but NOT in the same vicinity	Potential Access Restraint (Yes/No)	Reason/Note (optional)
Mill Street over Quinebaug River S-21-003	C		Enabling' work by the Contractor - Install traffic control detour as detailed on the plans. Perform tree trimming/removal/clearing & grubbing and grading as necessary for installation of utility poles & overhead wires. Install sewer bypass. Coordinate with Town before deactivating & removing existing 10" water line over bridge - water line **can not** be deactivated at the same time as water line on McKinstry Brook Bridge (S-21-009). Provide access and assist National Grid Gas with decommission and removal of existing 3" gas line underneath western sidewalk. Existing 10" gas line is to remain active until new 12" gas main is active, as shown on plans.							
			UTILITY OPERATIONS - STAGE 0 Temporary Overhead - Mill Street over Quinebaug River S-21-003							
Task: 1			***National Grid Electric***							
		U	Site Readiness: Dig-safe, prechecks, etc.	10	X		X		No	
		U	Poles / Anchors: Installing 5 poles, 4 anchors, and 4 guys	10	X		X		No	
		U	Primary conductor: 400' of primary wire	12	X		X		No	
		U	Secondary / Services: 1500' of secondary wire and 150' of service wire	10	X		X		No	
		U	Equipment: Install 1 transformer bank, transfer 1 transformer bank, install 1 guy, remove 1 guy	8	X		X		No	
			Sub-Total	**50**						
Task: 2			***Charter***							
		U	Construct strand and ground onto new temp pole line	1	X		X		No	
		U	Construct New Coax onto new strand	1	X		X		No	
		U	Cold Splice all new coax	2	X		X		No	
		U	Splice Coax and activate	2	X		X		No	
		U	Wreck out any old coax	1	X		X		No	
			Sub-Total	**7**						
Task: 3			***Verizon***							
		U	Before work can begin, Grants and Easements to be obtained MDOT for proposed poles, and anchor locations.	0	X		X		No	
		U	Verizon Line- Place new Pole & Anchors.	2	X		X		No	
		U	Verizon Line- Place Guywires & Cable Strand	2	X		X		No	
		U	Verizon Line - Transfer Aerial Fiber Cable, Readjust Slack Loop	1	X		X		No	
		U	Verizon Splice - Trimout CU Cable.	1	X		X		No	
		U	Verizon Splice - Remove CU Terminals & Dropwire.	1	X		X		No	
		U	Verizon Line - Remove CU Cable.	1	X		X		No	
		U	Verizon Line - Remove Guywires & Anchors.	2	X		X		No	
		U	Verizon Line - Remove Leftover Old Poles.	1	X		X		No	
			Sub-Total	**11**						
			UTILITY OPERATIONS - STAGE 0 Underground - Mill Street over Quinebaug River S-21-003							
Task: 4			***National Grid Gas***							
		U	Excavate & Shore		X		X		No	
		U	Stop/Tap/Purge/Cut/Cap approx 465 FT of 3-inch & 6-inch Low Pressure Bare Steel Gas Main	5	X		X		No	
		U	Backfill		X		X		No	
			Sub-Total	**5**						
Mill Street over Quinebaug River S-21-003	C		Enabling' work by the Contractor - Demolish & replace western portion of bridge as shown in plans. Install proposed 16" DI sewer main. Provide access and assist NGrid gas in the installation of the proposed 12" gas line. For National Grid Gas - MassDOT Contractor to install utility diaphragms & rollers (per NGrid Gas specifications) for gas main. NGrid Gas to install pipe with support of MassDOT Contractor. NGrid Gas gas to supply rollers, pipe & casing end seals. MassDOT contractor to provide & install 16" steel sleeve through abutment.							
			UTILITY OPERATIONS - STAGE 1 Underground - Mill Street over Quinebaug River S-21-003							
Task: 5			***National Grid Gas***							
		U	Excavate & Shore		X		X		No	
		U	Trench & Install approx. 215 FT of 12-inch Low Pressure Coated Steel and Plastic Main		X		X		No	
		U	Main Connections/Tie-ins	25	X		X		No	
		U	Stop/Tap/Purge/Cut/Cap approx 160 FT of 10-inch Low Pressure Bare Steel Gas Main		X		X		No	
		U	Backfill		X		X		No	
		U	Excavate & Shore		X		X		No	
		U	Trench & Install approx. 165 FT of 12-inch Low Pressure Coated Steel and Plastic Main		X		X		No	

	RESPONSIBLE PARTY		DESCRIPTION - Utility Relocation Phases, Tasks and Activities	Estimated Duration (Work Days) by Utilities (Lead time not included)	Concurrent / Exclusive Utility Work Contractor note: In planning and executing the work, the information in these 4 columns is intended to supplement any related Access Restraints that are described in the Special Provisions.				Access Restraint & Limitations of Operations Notes Should an AR be considered for the Contractor ?	
	C = Contractor	U = Utility Co.			Exclusive Utility on site: Utility working with no other Utilities in vicinity	Concurrent Utilities: Utility working with other Utilities on site	Contractor Off-Site: No Contractor physical construction operations on-site (while Utility is working)	Contractor Concurrent: Contractor and Utility are working on-site - but NOT in the same vicinity	Potential Access Restraint (Yes/No)	Reason/Note (optional)
		U	Main Connections/Tie-ins	10	X		X		No	
		U	Stop/Tap/Purge/Cut/Cap approx 165 FT of 10-inch Low Pressure Bare Steel Gas Main		X		X		No	
		U	Backfill		X		X		No	
			Sub-Total	**35**						
			UTILITY OPERATIONS - STAGE 2 Construction - Mill Street over Quinebaug River S-21-003							
Mill Street over Quinebaug River S-21-003	C		Enabling' work by the Contractor - Demolish & replace eastern portion of bridge as shown in plans. Install 10" water into easternmost utility bay.							
			UTILITY OPERATIONS - STAGE 3 Permanent Overhead - Mill Street over Quinebaug River S-21-003							
Task: 6			***National Grid Electric***							
		U	Site Readiness: Dig-safe, prechecks, etc.	10	X		X		No	
		U	Poles / Anchors: Install 2 poles, 2 anchors, and 2 guys. Remove 1 anchor and 1 guy	5	X		X		No	
		U	Primary conductor: 400' of primary wire	12	X		X		No	
		U	Secondary / Services: 700' of secondary wire and 175' of service wire	7	X		X		No	
			Sub-Total	**34**						
Task: 7			***Charter***							
		U	Relocate Feed to Building #7 Mill Street	1	X		X		No	
			Sub-Total	**1**						
Task: 8			***Verizon***							
		U	Before work can begin, Grants and Easements to be obtained MDOT for proposed poles, and anchor locations.	0	X		X		No	
		U	Verizon Line - Place Guywires & Cable Strand	1	X		X		No	
		U	Verizon Line - Transfer Aerial Fiber Cable, Readjust Slack Loop, Relash.	1	X		X		No	
		U	Verizon Line - Remove Guywires, Anchors & Cable Strand.	2	X		X		No	
		U	Verizon Line - Remove Leftover Old Poles.	1	X		X		No	
			Sub-Total	**5**						
Mill Street over McKinstry Brook S-21-009	C		Enabling' work by the Contractor - Install traffic control detour as detailed on the plans. Perform tree trimming/removal/clearing & grubbing and grading as necessary for installation of utility poles & overhead wires.							
			UTILITY OPERATIONS - STAGE 0 Temporary Overhead - Mill Street over McKinstry Brook S-21-009							
Task: 1			***National Grid Electric***							
		U	Site Readiness: Dig-safe, prechecks, etc.	10	X		X		No	
		U	Poles / Anchors: Installing 1 pole, 1 anchor and 1 guy	2	X		X		No	
		U	Primary conductor: 100' of primary wire	7	X		X		No	
		U	Secondary / Services: 700' of secondary wire and 250' of service wire	7	X		X		No	
		U	Equipment: Install 1 transformer, remove 1 transformer	6	X		X		No	
			Sub-Total	**32**						
Task: 2			***Charter***							
		U	Construct strand and ground onto new temp pole line	2	X		X		No	
		U	Construct New Coax onto new strand	1	X		X		No	
		U	Cold Splice all new coax	2	X		X		No	
		U	Splice Coax and activate	1	X		X		No	
		U	Relocate Feed to 113 Mill St apt building	1	X		X		No	
		U	Wreck out any old coax	1	X		X		No	
			Sub-Total	**8**						
Task: 3			***Verizon***							
		U	Verizon Line - Place Dropwire for #64/76 Mill St.	1	X		X		No	
		U	Verizon Splice - Splice & Modularize Pairs.	1	X		X		No	
		U	Verizon Splice - Splice & Test Aerial Dropwire	1	X		X		No	
		U	Verizon Splice Trimout CU Cable	1	X		X		No	
		U	Verizon Line Remove CU Cable.	2	X		X		No	
		U	Verizon Line Remove Leftover Old Poles	1	X		X		No	
			Sub-Total	**7**						

	RESPONSIBLE PARTY		DESCRIPTION - Utility Relocation Phases, Tasks and Activities	Estimated Duration (Work Days) by Utilities (Lead time not included)	Concurrent / Exclusive Utility Work Contractor note: In planning and executing the work, the information in these 4 columns is intended to supplement any related Access Restraints that are described in the Special Provisions.				Access Restraint & Limitations of Operations Notes Should an AR be considered for the Contractor ?	
	C = Contractor	U = Utility Co.			Exclusive Utility on site: Utility working with no other Utilities in vicinity	Concurrent Utilities: Utility working with other Utilities on site	Contractor Off-Site: No Contractor physical construction operations on-site (while Utility is working)	Contractor Concurrent: Contractor and Utility are working on-site - but NOT in the same vicinity	Potential Access Restraint (Yes/No)	Reason/Note (optional)
Mill Street over McKinstry Brook S-21-009	C		Enabling' work by the Contractor - Demolish & replace eastern portion of bridge as shown in plans. Provide access and assist National Grid Gas during installation of 6" gas main into easternmost bay of new bridge (beam #4). For National Grid Gas - MassDOT Contractor to install utility diaphragms & rollers (per NGrid Gas specifications) for gas main. NGrid Gas to install pipe with support of MassDOT Contractor. NGrid Gas to supply rollers, pipe & casing end seals. MassDOT contractor to provide & install 10" steel sleeve through abutment.							
			UTILITY OPERATIONS - STAGE 1 Underground - Mill Street over McKinstry Brook S-21-009							
Task: 4			***National Grid Gas***							
		U	Excavate & Shore	25	X		X		No	
		U	Trench & Install approx. 150 FT of 6-inch Low Pressure Coated Steel and Plastic Main		X		X		No	
		U	Main Connections/Tie-ins		X		X		No	
		U	Stop/Tap/Purge/Cut/Cap approx 150 FT of 6-inch Low Pressure Bare Steel and Plastic Gas Main		X		X		No	
		U	Backfill		X		X		No	
			Sub-Total	**25**						
			UTILITY OPERATIONS - STAGE 2 Construction - Mill Street over McKinstry Brook S-21-009							
Mill Street over Quinebaug River S-21-003	C		Enabling' work by the Contractor - Coordinate with Town before deactivating & removing existing 6" water line along west fascia of bridge- water line **can not** be deactivated at the same time as water line on Quinebaug River Bridge (S-21-003). Demolish & construct remaining, western portion of bridge as shown in the contract documents. Install proposed 8" water line in westernmost bay of bridge (beam #1).							
			UTILITY OPERATIONS - STAGE 3 Permanent Overhead - Mill Street over McKinstry Brook S-21-009							
Task: 5			***National Grid Electric***							
		U	Site Readiness: Dig-safe, prechecks, etc.	10	X		X		No	
		U	Poles / Anchors: Installing 1 pole, 1 anchor, and 1 guy. Remove 1 anchor & 1 guy	3	X		X		No	
		U	Establishing primary connections	5	X		X		No	
		U	Secondary / Services: 150' of secondary wireand 150' of service wire	7	X		X		No	
			Sub-Total	**25**						
Task: 6			***Charter***							
		U	Relocate Feed to 113 Mill St apt building	1	X		X		No	
			Sub-Total	**1**						

IMPORTANT BASIS NOTES - FOR CONTRACTOR

1	Unless otherwise specified in the MassDOT Construction Contract, or unless specifically noted within this PUC form, the Utility durations shown herein are to be planned (within the CTD and by the Contractor) as unimpeded access to the Utility company to perform Utility relocations.
2	"Concurrent Utilities" operations noted herein, are to signify those Utility Company operations that can be worked concurrently - MassDOT and the Contractor are to prepare NTPs to Utilities accordingly.
3	"Potential Access Restraints" noted within this PUC Form are for planning purposes. See MassDOT Contract for Contractual Access Restraints (refer to Subsections 8.02, 8.03, and/or 8.06 for Design Bid Build Contracts and Volume II Section 9 for Design Build Contracts).
4	Utility non-work periods - For planning purposes, the durations above contain some non work days (contingency) for New England conditions (precipitation, high temperatures, low temperatures, snow, ice). Gas line work however, typically has a seasonal restriction and can NOT be installed from 15-November to 15-March. Municipally Owned Electric and Gas Utilities are also restricted from proceeding from 15-November to 15-March. The Contractor shall (and the CTD plan) reflect this calendar restriction within the schedule (unless otherwise note).
5	Access - Unless otherwise noted in the Contract, and in addition to the 'enabling' notes above, the Contractor must provide safe and unimpeded access (for trucks, lifts, cranes, etc.) to the Utilities, to allow for the proposed relocation(s) - including but not limited to snow removal, clearing and grubbing, guard rail removal, barrier removal, tree removal, and grading.

	RESPONSIBLE PARTY	DESCRIPTION - Utility Relocation Phases, Tasks and Activities	Estimated Duration (Work Days) by Utilities (Lead time not included)	Concurrent / Exclusive Utility Work Contractor note: In planning and executing the work, the information in these 4 columns is intended to supplement any related Access Restraints that are described in the Special Provisions.				Access Restraint & Limitations of Operations Notes Should an AR be considered for the Contractor ?	
	C = Contractor U = Utility Co.			Exclusive Utility on site Utility working with no other Utilities in vicinity	Concurrent Utilities Utility working with other Utilities on site	Contractor Off-Site No Contractor physical construction operations on-site (while Utility is working)	Contractor Concurrent Contractor and Utility are working on-site - but NOT in the same vicinity	Potential Access Restraint (Yes/No)	Reason/Note (optional)
6		For all MassDOT construction contracts issued after January 2014, the new Utility Coordination/documentation specification is required. This is Section 8.14 in Design-Bid-Build Contracts (see Design-Build index reference for applicable section #).							
7		Prior to starting any and all enabling work for Utilities, the Contractor is to plan in advance with submittals and approved durations.							
8		* Potential District Initiated Early Utility Relocation - if noted herein, the District reserves the right to initiate early utility relocation in advance of the Contract NTP. In submitting a bid price and in the development/basis of the Baseline Schedule, the Contractor shall not plan the Work with the potential benefit of this early utility relocation. As a requirement of the Baseline submission, unless otherwise noted in this Specification, the earliest that the first Utility company is to receive the 30 days advance notification to mobilize to the site, will be 7 calendar days after the pre-construction meeting and never sooner than 7 days after the Contract NTP.							

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT A00810

MassDOT Herbicide Use Report

Proposal No. 608862-136646

MassDOT Herbicide Use Report

Date Submitted:

Use multiple sheets for multiple application techniques or sites as needed.

Contractor Performing Work:

Project or Contract No:

Town/s:

Associated Route:

Project Description:

MDAR ALERT*:

Treatment Description:

Area Treated (as applicable)

Acres: **Sq Yds:** **Miles:**

Weeds Targeted:

Gallons Formula Used:

Application Method:

Date/Time Began:

Date/Time End:

Product Used:

Name: _____	Name: _____	Name: _____
EPA Reg. No: _____	EPA Reg. No: _____	EPA Reg. No: _____
% Active Ingredient	% Active Ingredient	% Active Ingredient
Dry: _____	Dry: _____	Dry: _____
Liquid: _____	Liquid: _____	Liquid: _____
Formulation (dilution rate): _____	Formulation (dilution rate): _____	Formulation (dilution rate): _____

Additional products used (surfactants, etc.) or other information:

Applicators: **License Numbers:**

* Please note:
EDRR Species (MAM, Hogweed, Pepperweed, Kudzu, etc.)
Tree of Heaven 1) stands of >20 trees; 2) >5 trees near nursery, landscape company, or highway rest area where trucks stop

Upon completion, please submit form to MassDOT District Engineer and Landscape Design Section in Boston office.

07/18/2018

DOCUMENT A00811

WATERING LOG
for
MassDOT Plantings

Watering Log for MassDOT Plantings

Project Description:

Contract No:

Project No:

Plant Locations/s: (Attach planting plan/s as necessary)

Notes:

	Separate logs shall be kept to track areas or plants with different watering schedules. Trees shall receive a minimum of 10 gallons with each watering and shrubs a minimum of 5 gallons. Provide note that if watering is not performed as scheduled due to rain. Record date of rainfall and amount.												
Date Watered													
Landscape Contractor Initial													
Prime Contractor Initial													
Date Watered													
Landscape Contractor Initial													
Prime Contractor Initial													

Each week, following watering, Log shall be submitted to the MassDOT Engineer.
6/15/2018

DOCUMENT A00820

Massachusetts Department of Transportation
Conditions of Custody

REQUEST FOR RELEASE OF MASSDOT AUTOCAD FILES FORM
(Only to be used following award of contract)

City/Town: SOUTHBRIDGE Project File Number: 608862

Contract Number: 136646

Project Description: Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003,, Mill Street over the Quinebaug River

All AutoCAD files are provided solely as a courtesy to facilitate public access to information. MassDOT attempts to provide current and accurate information but cannot guarantee so. MassDOT provides such documents, files or other data "as is" without any warranty of any kind, either expressed or implied, including but not limited to, accuracy, reliability, omissions, completeness and currentness. The Commonwealth of Massachusetts and its Consultants shall not be liable for any claim for damages, including lost profits or other consequential, exemplary, incidental, indirect or special damages, relating in any way to the documents, files or other data accessible from this file, including, but not limited to, claims arising out of or related to electronic access or transmission of data or viruses. Because data stored on electronic media can deteriorate undetected or be modified without our knowledge, MassDOT cannot be held liable for its completeness or correctness. MassDOT makes no representation as to the compatibility of these files beyond the version of the stated CAD software.

By signing this form, I agree that it shall be my responsibility to reconcile this electronic data with the conformed contract documents, and that only the conformed contract documents shall be regarded as legal documents for this Project. I understand that this authorization does not give me the right to distribute the files. I agree to the terms above and wish to receive the AutoCAD files.

This signed form shall be emailed to the Highway Design Engineer at the MassDOT -Highway Division at the following email address:

DOTHighwayDesign@dot.state.ma.us
Attn: AutoCAD Files

Name of person requesting AutoCAD files: _____

Affiliation/Company: _____

Address: _____

_____

Telephone number: _____

Email address: _____

Signature/Date: _____

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT A00830

U.S. ARMY CORPS OF ENGINEERS

SELF-VERIFICATION NOTIFICATION

THIS PAGE IS INTENTIONALLY LEFT BLANK

SELF-VERIFICATION NOTIFICATION

Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street Over the Quinebaug River (MassDOT Project #608862)

Southbridge, MA

PREPARED FOR

Massachusetts Department of
Transportation Highway Division
10 Park Plaza, Room 7360
Boston, MA 02116

PREPARED BY

260 Arsenal Place #2
Watertown, MA 02471
617.924.1770

September 2025

Self Verification Notification Form

U.S. Army Corps of Engineers (USACE)

SELF-VERIFICATION NOTIFICATION (SVN)

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332.

Principal Purpose This information will be used in evaluating activities under Self-Verification procedures within Massachusetts.

Routine Uses Routine uses will include: (1) Documenting compliance with the terms and conditions of the General Permit (GP) for activities that may require authorization pursuant to one or more of USACE's Regulatory authorities. (2) Records may be referred to other Federal, State, and local agencies for evaluation and enforcement purposes.

Disclosure Failure to fully comply and abide by the GP terms and conditions prior to commencing work and after completion project may result in formal enforcement action, up to and including monetary penalties and/or legal action, pursuant to 33 CFR Part 326.

Instructions The permittee must complete ALL required sections of this document before commencing USACE-regulated activities. A copy of this completed SVN must be kept on site during construction and be made available for review by USACE and other Federal, State, & Local regulatory authorities at any time. Within 30 days of initiating project construction, the permittee shall submit the completed SVN to USACE. The SVN shall be submitted to USACE as **ONE signed document** that includes project plans and documentation that supports each field (e.g., emails, letters, description, phone calls, surveys). Electronic submissions to the following address are strongly preferred: cenae-r-ma-sv@usace.army.mil. The email subject line shall contain the following: GP #, SVN, City/Town, and date submitted.

(ITEMS 1 THRU 3 TO BE FILLED BY USACE)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED

APPLICANT AND AGENT INFORMATION

4. APPLICANT'S NAME	7. AGENT'S ADDRESS:
First - Courtney Middle - Last - Walker	First - Taylor Middle - N Last - Cannata
Company - Massachusetts Department of Transportation -Highway	Company - VHB
E-mail Address - Courtney.l.walker.dot.state.ma.us	E-mail Address - tdonovan@vhb.com
5. APPLICANT'S ADDRESS:	**8. AGENT'S ADDRESS:**
Address- 10 Park Plaza, Room 7360	Address- 260 Arsenal Place #2
City - Boston State - MA Zip - 02116 Country - USA	City - Watertown State - MA Zip - 0247 Country - U
6. APPLICANT'S PHONE NOs. w/AREA CODE	**9. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business 857-262-0757 c. Fax	a. Residence b. Business 617607631 c. Fax

NAME, LOCATION, AND DESCRIPTION OF PROJECT SITE

10. PROJECT NAME OR TITLE
Bridge Replacement, Mill Street Over McKinstry Brook & Mill Street Over the Quinebaug River (MassDOT Project #608862)

11. FILE NUMBER(S) OF PREVIOUS USACE ACTIONS ON THE SITE (if applicable)	12. NAME OF WATERBODY
N/A	McKinstry Brook and Quinebaug River
13. PROJECT COORDINATES (in decimal degrees)	**14. PROJECT STREET ADDRESS (if applicable)**
Latitude: ◦N 42.083140 Longitude: ◦W -72.043881	Address Mill Street Roadway Layout City - Southbridge State - MA Zip - 01550

ACTIVITY TYPE, PROJECT IMPACTS, AVOIDANCE & MINIMIZATION

15. GENERAL PERMIT ACTIVITIES (CHECK ALL THAT APPLY)

1 ☐	6 ☐	11 ☐	16 ☐	21 ☐
2 ☐	7 ☐	12 ☐	17 ☐	22 ☐
3 ☐	8 ☐	13 ☐	18 ☐	23 ☑
4 ☐	9 ☐	14 ☐	19 ☐	24 ☐
5 ☐	10 ☐	15 ☐	20 ☐	25 ☐

16. SUMMARY OF PROJECT IMPACTS (*see instructions*)

Area (square feet)	Length (linear feet)	Volume (cubic yards)	Duration
292 (WOTUS)			Temp
		19	Dredge
		57	Dredge
		76	Backfill

17. PROJECT PLANS (BY CHECKING THE BOXES BELOW, YOU CERTIFY THESE ITEMS ARE COMPLETE) (*see instructions*)

- [x] a. Plans shall at least contain the following: Vicinity Map, Plan View, and Typical Cross Section View of the proposed activity.
- [x] b. All direct, indirect and secondary impacts from USACE regulated activities are shown on the project plans.
- [x] c. The size of the impact area for each activity (acre, square feet, linear feet) are shown on the project plans.
- [x] d. For discharges of fill material (§404), the volume of fill material is identified on the project plans.
- [x] e. The duration of each impact, permanent or temporary (X days), is identified on the project plans.
- [ ] f. Do activities with permanent impacts result in the loss of waters? If so, this is identified on the project plans.
- [x] g. All aquatic resources in the vicinity of the USACE regulated activities are delineated on the project plans.

18. AVOIDANCE & MINIMIZATION (BY CHECKING THE BOXES BELOW, YOU CERTIFY THESE CRITERIA ARE MET) (*see instructions*)

- [x] a. The project has been designed to avoid and minimize impacts to aquatic resources.
- [x] b. The footprint of activities in waters of the U.S. has been reduced to only what is necessary to achieve the overall project purpose.
- [x] c. All practicable measures have been taken to avoid and minimize impacts to aquatic resources through construction techniques and site access (e.g., Best Management Practices, Time of Year Restrictions).
- [x] d. All temporary impacts from USACE regulated activities will be restored upon completion of construction and the project area will be returned to pre-construction contours and conditions.

COMPLIANCE WITH FEDERAL REGULATIONS & SUPPLEMENTAL INFORMATION

19. DUE DILIGENCE (*see instructions*)

Complete the entries below to document compliance with the following Federal requirements. Construction may NOT begin if a PCN is/may be required, and you must contact USACE to determine permitting requirements. Documentation that demonstrates how the activity complies with each field below shall be submitted to the USACE as noted in the instructions block. See each General Condition (GC) in the GP for how to comply with each requirement.

a. State Historic Preservation Officer	Per Appendix A, SHPO was notified and they did not respond with concerns within 30 days.
b. Massachusetts BUAR	Per Appendix A, BUAR was notified and they did not respond with concerns within 30 days.
c. Tribal Historic Preservation Officers	The Tribe(s) were notified and they didn't respond with concerns within 30 days.
d. Endangered Species Act - NOAA	The activity is not located within the ESA-listed Species Range.
e. Endangered Species Act - USFWS	NLAA determination reached through the Northeast Species D-Key (PCN Required).
f. Northern Long Eared Bat (ESA)	NLAA determination reached with the Rangewide D-Key. See Instructions below.*
g. Essential Fish Habitat	The project footprint does not contain EFH (see EFH definition in the MA GP).
h. Wild & Scenic Rivers	There are no WSR's within 0.25 miles of the project area.
i. 401 Water Quality Certification 401	The activity qualifies under the general 401 WQC for the 2023 MA GPs.
	401 WQC/OOC File Number: Pending OOC issued: 401 issued:
j. Section 408 Permission	Not Required per GC 15a-f, no Federal Projects are within the project vicinity.
k. Coastal Zone	The project is not located within the coastal zone.
l. Construction Mats	N/A, the activity does not require the installation of construction mats.
m.Time of Year Restrictions	N/A, the project is not located in a waterbody that has TOY restrictions.
n. Vernal Pools	Per GC 28, the project is not located in a vernal pool.
o. Sediment & Erosion Controls	Per GC 25, the activity uses BMPs to avoid/minimize sedimentation & erosion.
p. Stream/Wetland Crossings	The activity complies with all applicable terms in GC 31.

20. AQUACULTURE ACTIVITIES - GP 18 (*see instructions*)

- [ ] a. If required, an Aquaculture Certification from the Massachusetts Division of Marine Fisheries was obtained prior to commencing work.
- [ ] b. Coordination with the U.S. Coast Guard pursuant to Private Aids to Navigation has occurred prior to commencing work.
- [ ] c. If required, a MEPA Certificate was obtained from the Massachusetts Environmental Protection Agency prior to commencing work. Not Required
- [ ] d. The prospective permittee contacted local authorities (e.g. harbormaster, select board, shellfish constable) for authorization of their facility prior to commencing work.

21. ADDITIONAL INFORMATION/ATTACHMENTS (*see instructions*)

- [x] a. The project plans are enclosed in this SVN submittal (see block 17).
- [x] b. The activity IS funded through the Bipartisan Infrastructure Bill (also known as the Infrastructure Investment and Jobs Act).
- [x] c. All required state, local and federal approvals were acquired prior to starting construction in USACE jurisdiction.
- [x] d. After construction of the activity is completed, a complete Certificate of Compliance will be submitted to USACE.

22. IS THERE ANOTHER LEAD FEDERAL AGENCY:

[x] YES [ ] NO Federal Highway Administration (FHWA)

23. STATEMENT OF AUTHORIZATION *(see instructions)*

I certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Courtney Walker	10/1/2025	Taylor Donovan Digitally signed by Donovan, Taylor Date: 2025.09.24 12:43:54 -04'00'	
SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

24. SIGNATURES *(see instructions)*

I hereby certify that the information in this Self-Verification Notification is complete and accurate. As the applicant or their duly authorized agent, I certify the activity was completed in accordance with the terms and conditions of the GP. This includes all applicable terms, general conditions, and activity-specific GP criteria. I agree to allow the duly authorized representatives of the Corps of Engineers Regulatory Program and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as “no trespassing” this consent specifically supersedes and waives that prohibition and grants permission to enter the property despite such posting.

Courtney Walker	10/1/2025	Taylor Donovan Digitally signed by Donovan, Taylor Date: 2025.09.24 12:43:08 -04'00'	
SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Instructions for Preparing a
Department of the Army
General Permit (GP) Self-Verification

Blocks 1 through 3. To be completed by the Corps of Engineers.

Block 4. Applicant' Name. Enter the name and the e-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the self-verification, please attach a sheet of paper with the necessary information marked Block 4.

Block 5. Address of Applicant. Please provide the full address of the party or parties responsible for the self-verification. If more space is needed, attach an extra sheet of paper marked Block 5.

Block 6. Applicant Telephone Number(s). Please provide the telephone number where you can usually be reached during normal business hours.

Blocks 7 through 9. To be completed, if you choose to have an agent.

Block 7. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, consultant, or any other person or organization. Note: An agent is not required.

Blocks 8 and 9. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where they can be reached during normal business hours.

Block 10. Proposed General Permit Activity Name or Title. Please provide a name identifying the proposed GP activity, e.g., Windward Marina, Rolling Hills Subdivision, or Smith Commercial Center.

Block 11. File Number(s) of Previous USACE Actions on the Site Please provide any known USACE file number. If the activity does not have a known USACE file number, you may state N/A.

Block 12. Name of Waterbody. Please provide the name (if it has a name) of any stream, lake, marsh, or other waterway to be directly impacted by the GP activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 13. Proposed Activity Coordinates. Please enter the latitude and longitude of where the proposed GP activity is located. Indicate whether the project location provided is the center of the project or whether the project location is provided as the latitude and longitude for each of the "corners" of the project area. If there are multiple sites, please list the latitude and longitude of each site (center or corners) on a separate sheet of paper and mark as Block 13.

Block 14. Proposed Activity Street Address. If the proposed activity is located at a site having a street address (not a box number), enter it in Block 14.

Block 15. General Permit Activity Type. Please select all GP activity types that apply to the proposed activity. A list of GP activity types can be found in Section III of the GP.

Block 16. Summary of Project Impacts. Please provide ALL proposed impacts, both temporary and permanent in duration, that are located in Waters of the United States. The area of impact shall be provided in square feet (SF). When applicable, impacts that result in conversion of stream bank or shoreline must also be identified in linear feet (LF). Dredging or the discharge of dredged or fill material shall also include the volume, cubic yards (CY), of material removed from or placed into Waters of the U.S. If more entries are required, please attach a table matching the desired format in Block 16.

Block 17. Project Plans. Please verify that items a-g are included in the project plans. Three types of illustrations are necessary to properly depict the proposed work. These illustrations or drawings are identified as a Vicinity Map, a Plan View (Aerial view) and a Cross Section Map. For linear projects (e.g. roads, subsurface utility lines, etc.) gradient drawings (longitudinal profile) should also be included. Plans must accurately depict the existing conditions and all aspects of the proposed activity located in waters of the U.S. Please submit one copy of all drawings formatted to print on 8½ x 11 inch or 11 x 17 inch plain white paper. Use the fewest number of sheets necessary for your drawings or illustrations. Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross section). While illustrations need not be certified engineering sheets; they should be clear, accurate, contain all necessary information, and depict all proposed work. Each submission must also include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current wetland delineation manual and regional supplement published by USACE.

Block 18. Avoidance & Minimization. Please verify that items a-d have been implemented for the proposed activity.

Block 19. Due Diligence. Please complete all the fields and submit documentation to USACE to demonstrate compliance with the above requirements. This Documentation may include emails, letters, meeting notes, phone call log, project narrative, project plans, a species list from the NOAA Section 7 Mapper, a completed copy of the IPAC determination keys, etc. Documentation should be limited to what is necessary to demonstrate how the proposed activity meets each requirement. Refer to the MA GP, Appendix A, for specific guidance on the identification of previously identified historic properties and previously unidentified historic properties. Endangered Species: *The applicant must be designated as the non-federal representative for the purposes of Section 7 consultation to select the Rangewide D-Key options. Otherwise, the applicant shall select the following option when IPAC indicates the NLEB is present: "The activity IS located within the NLEB Species Range (PCN Required)."

Block 20. Aquaculture Activities. Please verify that items a-d have been obtained or completed prior to commencing work in waters of the U.S.

Block 21. Additional Information/Attachments. Please verify that items a-d have been completed prior to commencing work in waters of the U.S.

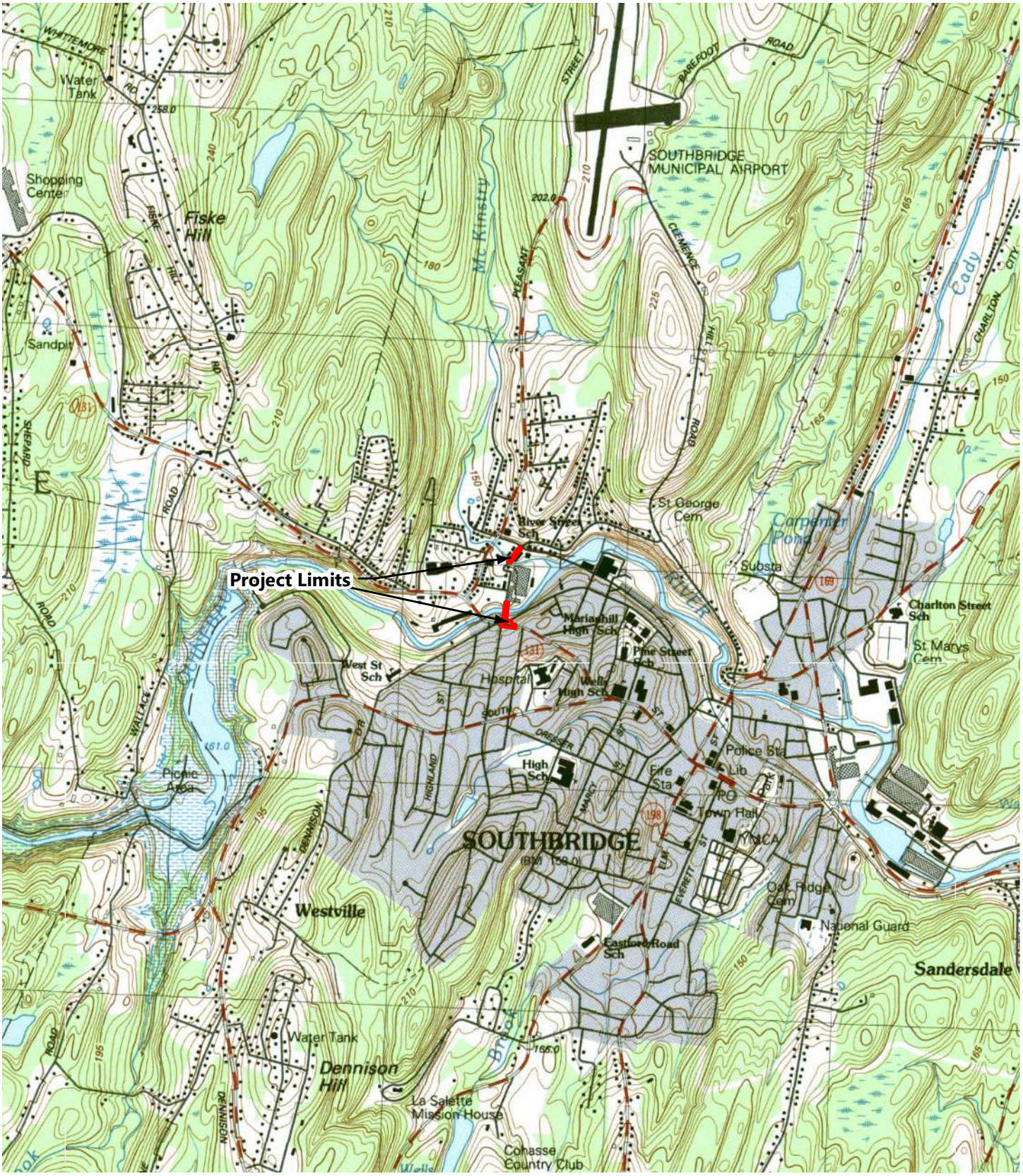
Block 22. Lead Federal Agency. Please identify if there is another lead federal agency involved with the proposed activity. Enter the lead federal agency name (e.g., the Federal Emergency Management Agency, FEMA) and the agency's designated person of contact for the activity.

Block 23. Statement of Authorization. The applicant shall sign this section for all activities. If an agent is to be employed, the agent shall sign this section.

Block 24. Signatures. The SVN must be signed by the person proposing to undertake the GP activity, and if applicable, the authorized party (agent) that prepared the SVN. The signature of the person proposing to undertake the GP activity shall be an affirmation that the party submitting the SVN possesses the requisite property rights to undertake the GP activity.

Self Verification Notification Figures

- Figure 1 – Site Location Map
- Figure 2 – Aerial Map
- Figure 3 – NHESP Map
- Figure 4 – FEMA FIRM Map



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

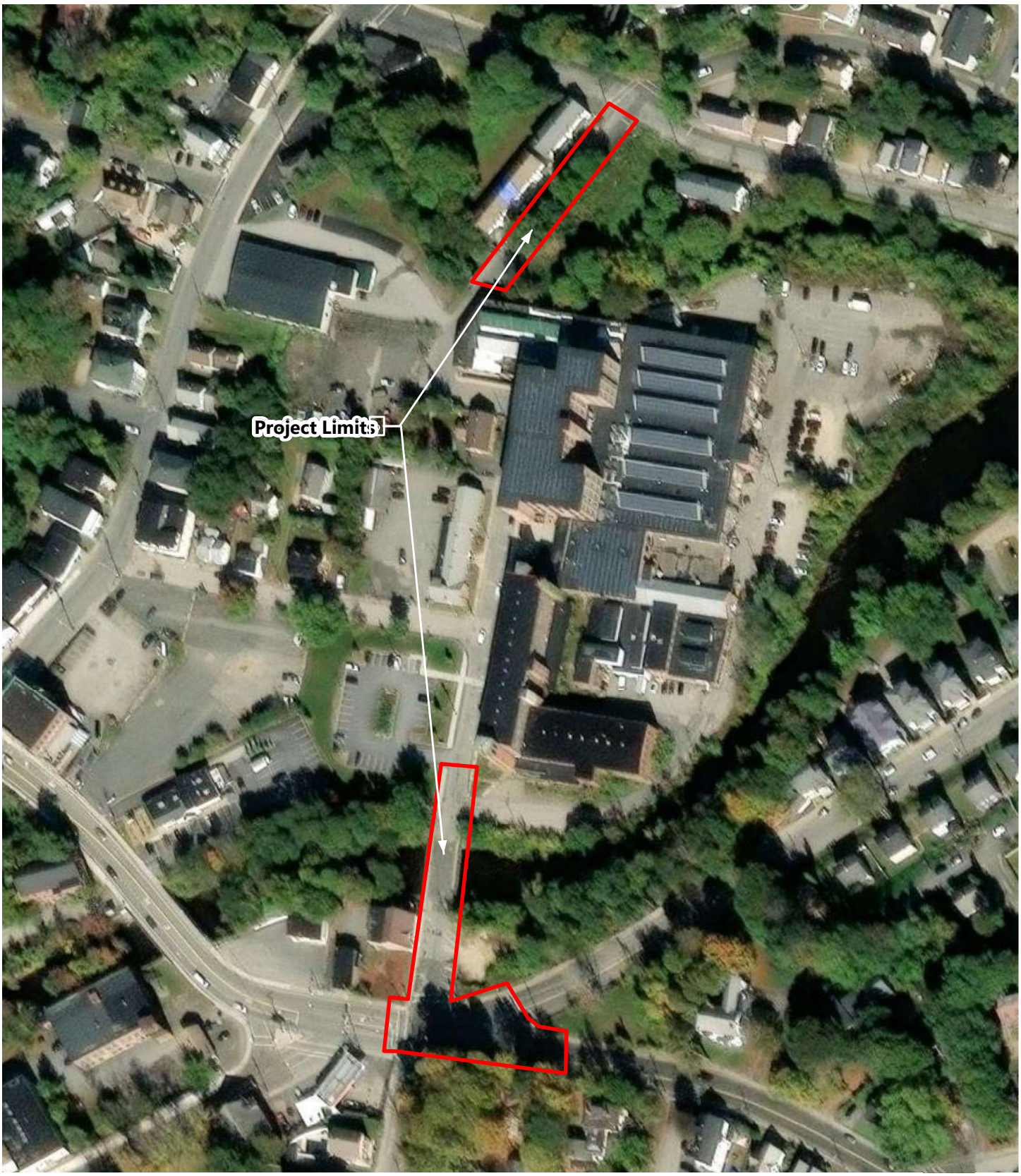
0 1000 2000 4000 Feet

Project Limits

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 1: USGS Locus
January 2025

Source: MassGIS



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

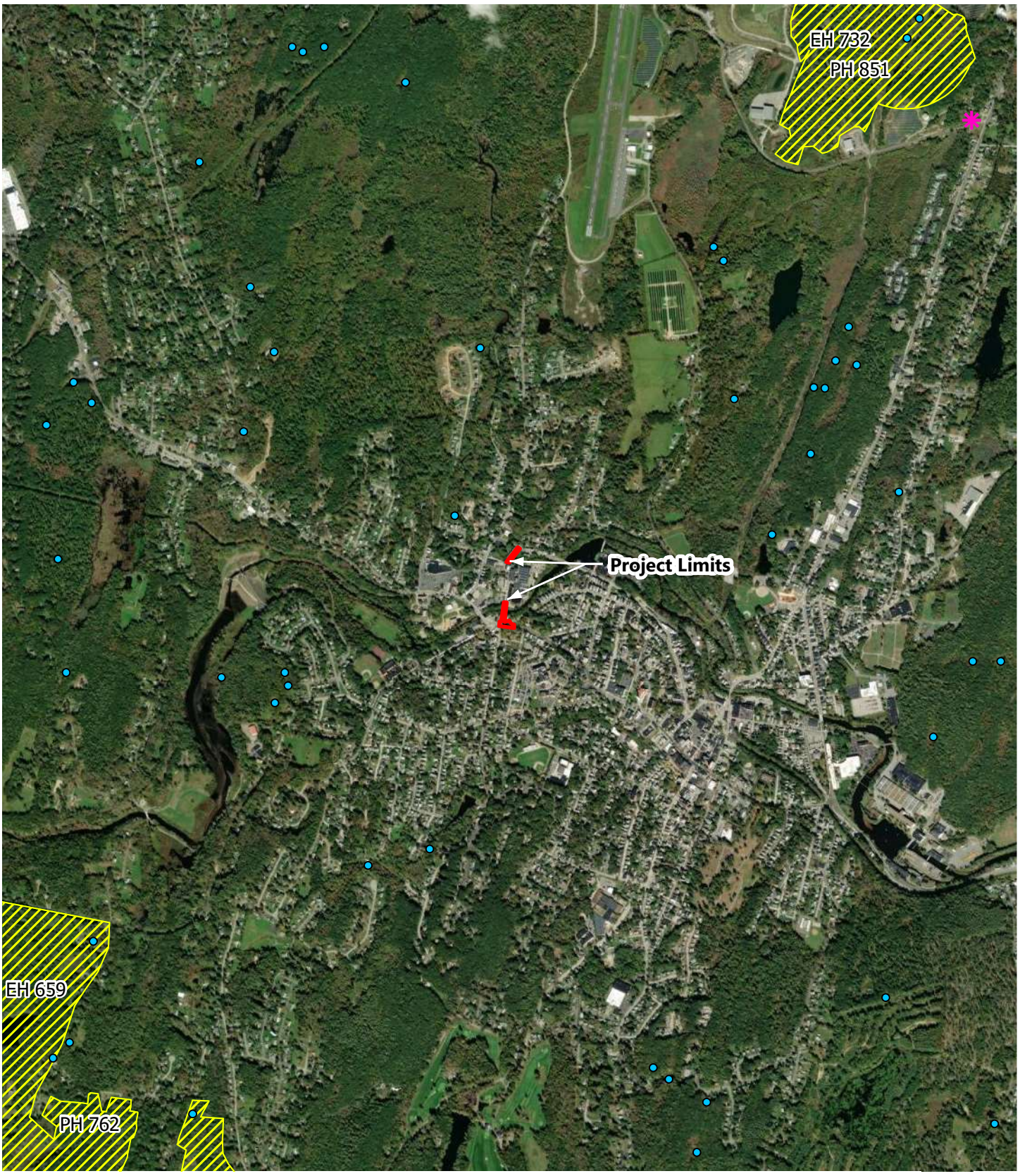
0 125 250 500 Feet

Project Limits

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 2: Aerial Locus
January 2025

Source: MassGIS



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

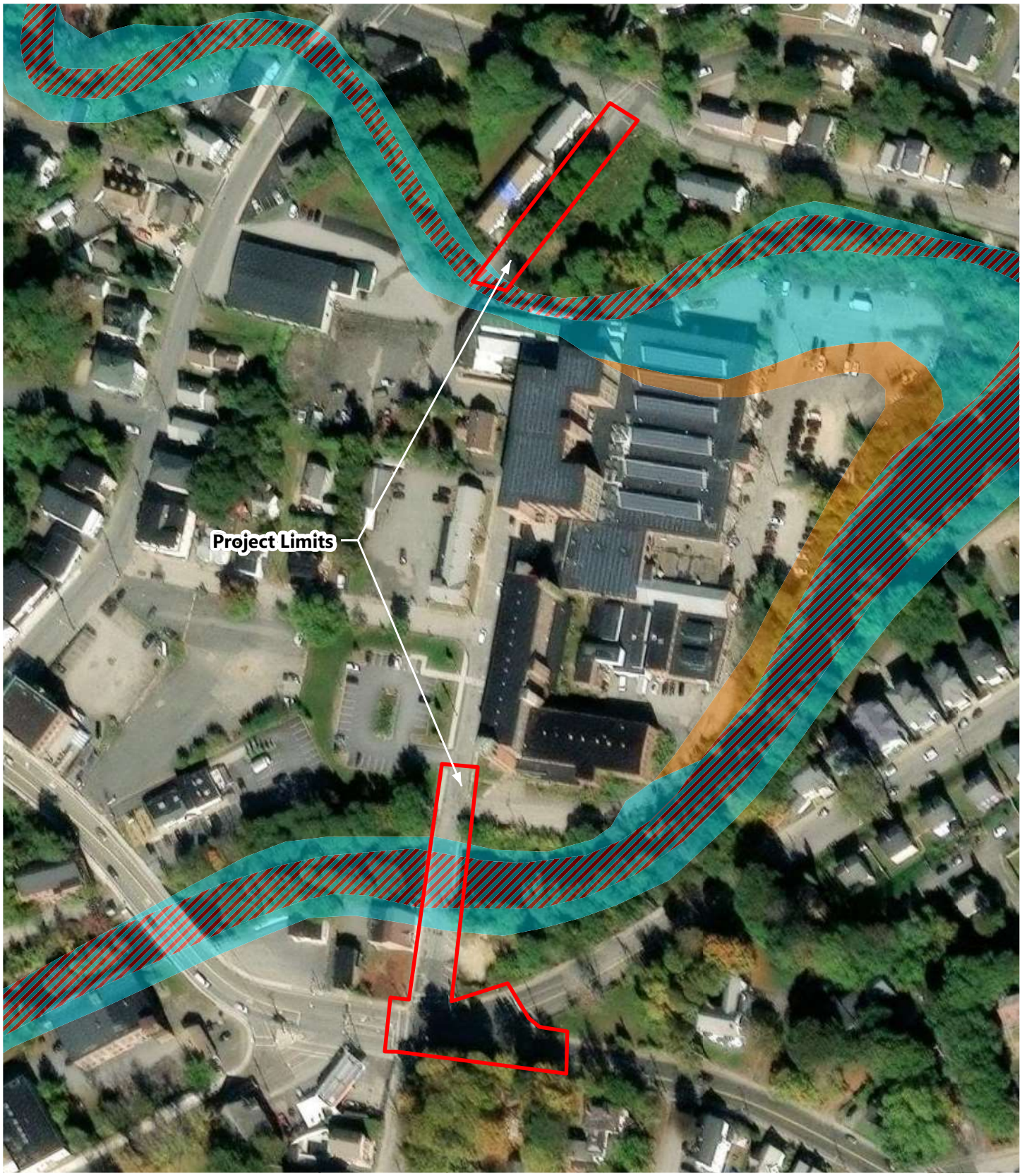
0 1500 3000 6000 Feet

Project Limits
Certified Vernal Pool
Potential Vernal Pool
Priority Habitat of Rare Species
Estimated Habitat of Rare Wildlife

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 3: NHESP Map
January 2025

Source: MassGIS



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

0 125 250 500 Feet

Project Limits

FEMA Flood Zone Designations

AE: 1% Annual Chance of Flooding, with BFE

AE: Regulatory Floodway

X: 0.2% Annual Chance of Flooding

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 4: FEMA FIRM
January 2025

Source: MassGIS

Attachment B
Section 7 Documentation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To: 12/19/2024 19:13:51 UTC
Project code: 2023-0091846
Project Name: 608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009 MILL ST OVER BROOK & S-21-003 MILL ST OVER RIVER

Subject: Concurrence verification letter for the '608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009 MILL ST OVER BROOK & S-21-003 MILL ST OVER RIVER' project under the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (NLEB).

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated December 19, 2024 to verify that the **608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009 MILL ST OVER BROOK & S-21-003 MILL ST OVER RIVER** (Proposed Action) may rely on the concurrence provided in the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures. **At least one of the qualification interview questions indicated an activity or portion of your project is consistent with a not likely to adversely affect determination therefore, the overall determination for your project is, may affect, and is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the endangered northern long-eared bat (*Myotis septentrionalis*)**. Consultation with the Service pursuant to section 7(a)(2) of ESA (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq*.) is required.

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed

Action under the terms of the NLAA concurrence provided in the PBO. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities: If your initial bridge/culvert or structure assessment documented signs of bat use or occupancy, or an assessment failed to detect Indiana bats and/or NLEBs, yet are later detected prior to, or during construction, please submit the Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form (User Guide Appendix E) to this Service Office within 2 working days of any potential take. In these instances, potential incidental take of Indiana bats and/or NLEBs is covered under the Incidental Take Statement in the 2018 FHWA, FRA, FTA PBO (provided that the take is reported to the Service).

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required.

For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities:
If your initial bridge/culvert or structure assessments failed to detect Indiana bats and/or NLEB use or occupancy, yet bats are later detected prior to, or during construction, please submit the Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form (User Guide Appendix E) to this Service Office within 2 working days of the incident. In these instances, potential incidental take of Indiana bats and/or NLEBs may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species, and/or any designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please contact this Service Office.

The following species may occur in your project area and **are not** covered by this determination:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

PROJECT DESCRIPTION

The following project name and description was collected in IPaC as part of the endangered species review process.

NAME

608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009 MILL ST OVER BROOK & S-21-003 MILL ST OVER RIVER

DESCRIPTION

608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009, MILL STREET OVER MCKINSTRY BROOK & S-21-003, MILL STREET OVER THE QUINEBAUG RIVER
Work is on bridges noted ONLY
Monarch Butterfly: Proposed Threatened Species only. The project action will not jeopardize the continued existence of the proposed species.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.08224625,-72.0440461,14z



DETERMINATION KEY RESULT

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect the endangered Indiana bat and/or the endangered northern long-eared bat, therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the concurrence provided in the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

QUALIFICATION INTERVIEW

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answered
   No

2. Is the project within the range of the northern long-eared bat[1]?

   [1] See northern long-eared bat species profile

   Automatically answered
   Yes

3. Which Federal Agency is the lead for the action?

   A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

   [1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

   No

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/rail surfaces[1]?

   [1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

   No

6. Does the project include *any* activities **within** 0.5 miles of a known Indiana bat and/or NLEB hibernaculum[1]?

   [1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

   No

7. Is the project located **within** a karst area?

   No

8. Is there *any* suitable[1] summer habitat for Indiana Bat or NLEB **within** the project action area[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   [2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the User's Guide for the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat.

   Yes

9. Will the project remove *any* suitable summer habitat[1] and/or remove/trim any existing trees **within** suitable summer habitat?

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   Yes

10. Will the project clear more than 20 acres of suitable habitat per 5-mile section of road/rail?

    No

11. Have presence/probable absence (P/A) summer surveys[1][2] been conducted[3][4] **within** the suitable habitat located within your project action area?

    [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

    [2] Presence/probable absence summer surveys conducted within the fall swarming/spring emergence home range of a documented Indiana bat hibernaculum (contact local Service Field Office for appropriate distance from hibernacula) that result in a negative finding requires additional consultation with the local Service Field Office to determine if clearing of forested habitat is appropriate and/or if seasonal clearing restrictions are needed to avoid and minimize potential adverse effects on fall swarming and spring emerging Indiana bats.

    [3] For projects within the range of either the Indiana bat or NLEB in which suitable habitat is present, and no bat surveys have been conducted, the transportation agency will assume presence of the appropriate species. This assumption of presence should be based upon the presence of suitable habitat and the capability of bats to occupy it because of their mobility.

    [4] Negative presence/probable absence survey results obtained using the summer survey guidance are valid for a minimum of two years from the completion of the survey unless new information (e.g., other nearby surveys) suggest otherwise.

    Yes

    SUBMITTED DOCUMENTS

    - *608862_Southbridge_Report_compiled.pdf https://ipac.ecosphere.fws.gov/project/S2E7G6CX4VEXZJVS4GQVTXDDUM/projectDocuments/127546472*

12. Did the presence/probable absence (P/A) summer surveys detect Indiana bats and/or NLEB[1]?

    [1] P/A summer surveys conducted within the fall swarming/spring emergence home range of a documented Indiana bat hibernaculum (contact local Service Field Office for appropriate home range) that result in a negative finding requires additional consultation with the local Service Field Office to determine if clearing of forested habitat is appropriate and/or if seasonal clearing restrictions are needed to avoid and minimize potential adverse effects on fall swarming and spring emerging Indiana bats.

    No

13. Were the P/A summer surveys conducted **within** the fall swarming/spring emergence range of a documented Indiana bat hibernaculum[1]?

    [1] Contact the local Service Field Office for appropriate distance from hibernacula.

    No

14. Does the project include activities **within documented NLEB habitat**[1][2]?

    [1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

    [2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

    No

15. Will the removal or trimming of habitat or trees occur **within** suitable but **undocumented NLEB** roosting/foraging habitat or travel corridors?

    Yes

16. What time of year will the removal or trimming of habitat or trees **within** suitable but **undocumented NLEB** roosting/foraging habitat or travel corridors occur?

    C) During both the active and inactive seasons

17. Will *any* tree trimming or removal occur **within** 100 feet of existing road/rail surfaces?

    Yes

18. Will *any* tree trimming or removal occur **between** 100-300 feet of existing road/rail surfaces?

    No

19. Are *all* trees that are being removed clearly demarcated?

    Yes

20. Will the removal of habitat or the removal/trimming of trees involve the use of **temporary** lighting?

    Yes

21. Will the removal of habitat or the removal/trimming of trees include installing new or replacing existing **permanent** lighting?

    No

22. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

    No

23. Does the project include slash pile burning?

    No

24. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

    Yes

25. Is there *any* suitable habitat[1] for Indiana bat or NLEB **within** 1,000 feet of the bridge? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

    [1] See the Service's current summer survey guidance for our current definitions of suitable habitat.

    Yes

26. Has a bridge assessment[1] been conducted **within** the last 24 months[2] to determine if the bridge is being used by bats?

    [1] See User Guide Appendix D for bridge/structure assessment guidance

    [2] Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Consultation, regardless of whether assessments have been conducted in the past. Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that bridge/structure in subsequent years.

    Yes

    SUBMITTED DOCUMENTS

    - *608862_Southbridge_Bridge_Assessment.pdf https://ipac.ecosphere.fws.gov/project/S2E7G6CX4VEXZJVS4GQVTXDDUM/projectDocuments/154496449*

27. Did the bridge assessment detect *any* signs of Indiana bats and/or NLEBs roosting in/under the bridge (bats, guano, etc.)[1]?

    [1] If bridge assessment detects signs of *any* species of bats, coordination with the local FWS office is needed to identify potential threatened or endangered bat species. Additional studies may be undertaken to try to identify which bat species may be utilizing the bridge prior to allowing *any* work to proceed.

    Note: There is a small chance bridge assessments for bat occupancy do not detect bats. Should a small number of bats be observed roosting on a bridge just prior to or during construction, such that take is likely to occur or does occur in the form of harassment, injury or death, the PBO requires the action agency to report the take. Report all unanticipated take within 2 working days of the incident to the USFWS. Construction activities may continue without delay provided the take is reported to the USFWS and is limited to 5 bats per project.

    No

28. Will the bridge removal, replacement, and/or maintenance activities include installing new or replacing existing **permanent** lighting?

    No

29. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

    No

30. Will the project involve the use of *any* **temporary** lighting in addition to the lighting already indicated for habitat removal (including the removal or trimming of trees), or bridge/structure removal, replacement or maintenance activities?

    Yes

31. Is there *any* suitable habitat **within** 1,000 feet of the location(s) where **temporary** lighting (other than the lighting already indicated for habitat removal (including the removal or trimming of trees) or bridge/structure removal, replacement or maintenance activities) will be used?

    Yes

32. Will the project install new or replace existing **permanent** lighting?

    No

33. Does the project include percussives or other activities (**not including tree removal/ trimming or bridge/structure work**) that will increase noise levels above existing traffic/ background levels?

    Yes

34. Will the activities that use percussives (**not including tree removal/trimming or bridge/ structure work**) and/or increase noise levels above existing traffic/background levels be conducted *during* the active season[1]?

    [1] Coordinate with the local Service Field Office for appropriate dates.

    Yes

35. Will *any* activities that use percussives (**not including tree removal/trimming or bridge/ structure work**) and/or increase noise levels above existing traffic/background levels be conducted *during* the inactive season[1]?

    [1] Coordinate with the local Service Field Office for appropriate dates.

    Yes

36. Are *all* project activities that are **not associated with** habitat removal, tree removal/ trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives, limited to actions that DO NOT cause any additional stressors to the bat species?

    Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

    Yes

37. Will the project raise the road profile **above the tree canopy**?

    No

38. Are the project activities that use percussives (not including tree removal/trimming or bridge/structure work) consistent with a Not Likely to Adversely Affect determination in this key?

    Automatically answered
    Yes, because the activities are within 300 feet of the existing road/rail surface, greater than 0.5 miles from a hibernacula, and conducted during the active season within undocumented habitat.

39. Are the project activities that use percussives (not including tree removal/trimming or bridge/structure work) and/or increase noise levels above existing traffic/background levels consistent with a No Effect determination in this key?

    Automatically answered
    Yes, because the activities are within 300 feet of the existing road/rail surface, greater than 0.5 miles from a hibernacula, and conducted during the inactive season

40. Is the location of this project consistent with a Not Likely to Adversely Affect determination in this key?

    Automatically answered
    Yes, because no bats were detected during presence/probable absence surveys conducted during the summer survey season and outside of the fall swarming/spring emergence periods. Additionally, all activities were at least 0.5 miles from any hibernaculum.

41. Is the bridge removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?

    Automatically answered
    Yes, because the bridge has been assessed using the criteria documented in the BA and no signs of bats were detected

42. **General AMM 1**
    Will the project ensure *all* operators, employees, and contractors working in areas of known or presumed bat habitat are aware of *all* FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

    Yes

PROJECT QUESTIONNAIRE

1. Please describe the proposed bridge work:

   Project work primarily includes superstructure demolition and replacement at both bridges and pier removal and construction of stub abutments at bridge S-21-009; geometric improvements; ADA improvements; traffic signal and signage upgrades; roadway resurfacing and restriping; installation of guardrail, granite curbing and sediment control barrier; minor drainage system upgrades at the abutments for S-21-009; relocation of utilities; grading

2. Please state the timing of all proposed bridge work:

   2026-2028

3. Please enter the date of the bridge assessment:

   Nov 15, 2024

4. Have you made a No Effect determination for *all* other species indicated on the FWS IPaC generated species list?

   N/A

5. Have you made a May Affect determination for *any* other species on the FWS IPaC generated species list?

   N/A

6. How many acres[1] of trees are proposed for removal between 0-100 feet of the existing road/rail surface?

   [1] If described as number of trees, multiply by 0.09 to convert to acreage and enter that number.

   .2

AVOIDANCE AND MINIMIZATION MEASURES (AMMS)

This determination key result includes the committment to implement the following Avoidance and Minimization Measures (AMMs):

GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

DETERMINATION KEY DESCRIPTION: FHWA, FRA, FTA PROGRAMMATIC CONSULTATION FOR TRANSPORTATION PROJECTS AFFECTING NLEB OR INDIANA BAT

This key was last updated in IPaC on November 04, 2024. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the endangered **northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

IPAC USER CONTACT INFORMATION

Agency: Massachusetts Department of Transportation
Name: Hana Isihara
Address: 10 Park Plaza
City: Boston
State: MA
Zip: 02116
Email hana.l.isihara@dot.state.ma.us
Phone: 6178964454

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

Attachment C
Section 106 Coordination Documentation

MassDOT - Cultural Resources Unit (Project #608862)

Section 106 Notification Checklist for USACOE Section 404 Permit - Project Notification Forms (PNF)

1. State Historic Preservation Office (SHPO)

- ☐ PNF submitted by certified mail (receipt attached)
- ☐ SHPO stamped PNF received (attached)
- ☐ No comments received within 30-day review period
- ☐ No PNF submitted in accordance with 2013 letter from USACOE, MassDOT in-house Section 106 clearance attached
- ☑ Section 106 No Adverse Effect or Adverse Effect documentation attached

2. Board of Underwater Archaeological Resources (BUAR)

- ☑ PNF submitted by e-mail with delivery receipt (attached)
- ☐ Comments received within 30-day review period (attached)
- ☑ No comments received within 30-day review period

3. Mashpee Wampanoag Tribe (MTHPO)

- ☑ PNF submitted by e-mail with delivery receipt (attached)
- ☐ Comments received within 30-day review period (attached)
- ☑ No comments received within 30-day review period

4. Wampanoag Tribe of Gay Head Aquinnah (ATHPO)

- ☑ PNF submitted by e-mail with delivery receipt (attached)
- ☐ Comments received within 30-day review period (attached)
- ☑ No comments received within 30-day review period

5. Stockbridge-Munsee Community (SMTHPO)

- ☐ PNF submitted by e-mail with delivery receipt (attached)
- ☐ Comments received within 30-day review period (attached)
- ☐ No comments received within 30-day review period
- ☑ N/A (Project not within tribe's area of interest)

6. Narragansett Indian Tribe (NTHPO)

- ☑ PNF submitted by e-mail with delivery receipt (attached)
- ☐ Comments received within 30-day review period (attached)
- ☑ No comments received within 30-day review period

75632

Maura Healey, Governor
Kimberley Driscoll, Lieutenant Governor
Monica Tibbits-Nutt, Secretary & CEO
Jonathan L. Gulliver, Highway Administrator

MassDOT
Massachusetts Department of Transportation
Highway Division

CONCURRENCE. Brona Simon
10/8/24
BRONA SIMON
STATE HISTORIC
PRESERVATION OFFICER
MASSACHUSETTS
HISTORICAL COMMISSION

RECEIVED
SEP 23 2024
MASS. HIST. COMM
RC.75632

September 18, 2024

Ms. Brona Simon
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

RE: Southbridge – Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River (MassDOT Project #608862)
Section 106 Review – No Adverse Effect
Section 4(f) – Fee Takings and Permanent Easements – *de minimis* impact
Section 4(f) – Temporary Occupancies – No 4(f) use

Dear Ms. Simon:

The Massachusetts Department of Transportation (MassDOT) is proposing to expend federal funds to replace two bridges in Southbridge: S-21-003, which was built in 1956 and carries Mill Street over the Quinebaug River, and S-21-009, which was originally built in 1940 and carries Mill Street over McKinstry Brook. Project limits encompass the bridges and their approaches, extending approximately 80 feet south of S-21-003 to the Mill/High/Main Street and Hamilton Way intersection and approximately 40 feet south of S-21-009 and 225 feet north of S-21-009 to the Mill Street and River Street intersection.

MassDOT has identified that the **Hamilton Woolen Company Historic District (SBD.W)** and the **Hamilton Millwright-Agent's House (SBD.236)**, which are listed in the National Register of Historic Places (NR), are within the proposed project area. MassDOT has reviewed the proposed project under the Massachusetts Statewide Programmatic Agreement for Section 106 of the National Historic Preservation Act of 1966, as amended [36 CFR 800], and has determined that the project will have **No Adverse Effect** on any districts or properties listed in or eligible for listing in the NR.

Project Description

Project work primarily includes superstructure demolition and replacement at both bridges and pier removal and construction of stub abutments at Bridge S-21-009; geometric improvements; ADA improvements, including sidewalk construction or reconstruction, new curb ramps, ADA compliant push buttons, and pedestrian crossings; traffic signal and signage upgrades; roadway resurfacing and restriping; installation of guardrail, granite curbing, and sediment control barrier; minor drainage system upgrades at the abutments for Bridge S-21-009; relocation of some utilities; grading; and spreading loam and seed. Please see the enclosed plans for specific locations. The project requires 11 fee takings, 6 permanent easements, and 37 temporary occupancies, affecting 20 properties adjacent to the project area.

Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
mass.gov/massdot

Hamilton Woolen Company Historic District (SBD.W)

The project work is within the **NR-listed Hamilton Woolen Company Historic District (SBD.W)**, which is part of the NR-listed Southbridge Multiple Resource Area (SBD.AC). Located at the southern end of Mill Street, the Hamilton Woolen Company Historic District consists of an industrial textile mill complex that drove the Globe Village/Southbridge economy from the early 19th century into the 20th century. One contributing property within the project area—the Hamilton Woolen Company Building #19 (SBD.325) on Mill Street—was demolished sometime between 2019–2021.

Project work within the district involves bridge, sidewalk, and driveway construction, water control, installing guardrails and sediment control barrier, grading, and spreading loam and seed. The project work will require two fee takings, two permanent easements, and several temporary occupancies, described below in the Section 4(f) discussion.

Hamilton Millwright-Agent's House (SBD.236)

The project work is within the **NR-listed Hamilton Millwright-Agent's House (SBD.236)**, which is part of the NR-listed Southbridge Multiple Resource Area (SBD.AC) and High and Sayles Streets Area (SBD.B), discussed below. Located at 757 Main Street, the Hamilton Millwright-Agent's House was built circa 1840 by the Hamilton Woolen Mill for the company's millwright, John Edwards Bacon. Overlooking the contemporary 1836 Hamilton Woolen Mill – Big Mill (SBD.102), the Federal-style house preserves much of its original setting, including a Greek Revival carriage house at the rear of the lot.

Project work within the property involves sidewalk construction and will require one temporary occupancy, described below in the Section 4(f) discussion.

Inventoried Areas

A review of MACRIS revealed two previously inventoried areas within the project area. The High and Sayles Streets Area (SBD.B), located south of the Mill Street and Main Street intersection, consists of a primarily residential area that organically developed between the 1830s and 1860s. The broader inventoried area lacks integrity as a whole and does not appear to be eligible for listing in the NR, except for the High – School Streets Historic District (SBD.Z). The High – School Streets Historic District is outside of the project area, partially overlaps the inventoried area, and was listed in the NR in 1989. The second previously inventoried area is the Hamilton Woolen Company Worker Housing (SBD.Q) at 103 Mill Street. The area consists of two vernacular worker row houses that date to the 1870s. Historically, additional row houses lined the east side of the street within the area boundary, but these have since been demolished. Due to the loss of this building stock and the lack of overall integrity, the area does not appear to be eligible for listing in the NR. A third inventoried area, Hamilton Woolen Company Worker Housing (SBD.G), overlaps with and contributes to the NR-listed Hamilton Woolen Company Historic District (SBD.W), discussed above.

Bridges S-21-003 & S-21-009

Both of the bridges involved in the proposed project were reviewed by Kurt Jergensen, Historic Bridge Specialist, and determined to be ineligible for listing in the NR. Bridge S-21-003, constructed in 1956, consists of a single span steel stringer superstructure supported by cast-in-

place reinforced concrete abutments. This bridge is an example of the most common structural type in Massachusetts, with a standard MDPW design that lacks significant engineering or architectural details. Bridge S-21-009, originally constructed in 1940, is a two-span concrete slab bridge. The majority of the structure, including the northerly cast-in-place reinforced concrete slab span and the reinforced concrete pier and abutments, dates to 1940. The southerly span of the bridge was replaced in 1985 with a single prestressed concrete slab span, which is supported by the original 1940 pier and south abutment. The bridge railings were also replaced with picketed three-rail aluminum AL-3 railings. This bridge is a substantially altered example of a common 20th-century structural type, also lacking significant engineering or architectural details.

Inventory photographs of the bridges are enclosed.

Archaeological Assessment

A review of the MHC's archaeological base maps in MACRIS revealed no recorded archaeological sites within the project's direct areas of potential effect (APE). Although undisturbed areas near the Quinebaug River and its tributaries may be sensitive for archaeological resources, it is the opinion of the MassDOT Archaeologist that low sensitivity can be ascribed to the project's direct APE based on the impacts of past roadway, bridge, sidewalk, and utility construction and roadside development. All proposed project work will be undertaken in disturbed areas within or immediately adjacent to the existing town layout.

Soil borings conducted in 2020–2022 by Nobis Group highlight the extent of disturbance in the APE. A review of the boring logs indicates that in the vicinity of Bridge No. S-21-003, soil stratigraphy generally consists of asphalt overlying 20–24 feet of medium dense to very loose fill, followed by glacial till. Soils encountered in the vicinity of Bridge No. S-21-009 typically consist of asphalt overlying approximately 10 feet of fill overlying alluvial sand, followed by glacial till and bedrock.

Section 4(f) Evaluation – Fee Takings and Permanent Easements – *de minimis* impact

This project requires two fee takings and two permanent easements from contributing properties to the NR-listed Hamilton Woolen Company Historic District (SBD.W). These takings and easements include a fee taking (E-6) and a permanent easement (GR-2) from the Hamilton Woolen Company – Big Mill (SBD.102) at 30 Mill Street, a fee taking (E-9) from the Hamilton Woolen Company Mill Building #9A and #11 (SBD.331) at 76 Mill Street, and a permanent easement (GR-3) from the parcel associated with the not-extant Hamilton Woolen Company Building #19 (SBD.325) on Mill Street. The fee takings are for sidewalk work and bridge components, respectively. The permanent easements are necessary to accommodate guardrail installation, grading, and loam and seed.

The fee takings are highlighted in pink and the permanent easements are highlighted in green on the enclosed right of way plans. Any taking or easement that results in the permanent incorporation of land from a public or private historic site into a transportation facility is regarded as a transportation use and must be evaluated and approved under Section 4(f) of the National Transportation Act of 1966, as amended [23 CFR Part 774].

It is MassDOT's expectation that the Federal Highway Administration (FHWA) will determine that the proposed fee takings and permanent easement meets the criteria for a Section 4(f) *de minimis* finding, pursuant to 23 CFR 774.3(b). This project, therefore, does not require an individual Section 4(f) evaluation. This letter is intended to inform the State Historic Preservation Officer (SHPO) that this project is expected to qualify for a *de minimis* finding under Section 4(f) based on the concurrence of your office with this Section 106 finding of No Adverse Effect, pursuant to 23 CFR 774.5(b)(1)(ii).

Section 4(f) Evaluation – Temporary Occupancies – No 4(f) use

This project also requires temporary occupancies, also known as temporary construction easements, on parcels within the NR-listed Hamilton Woolen Company Historic District (SBD.W) and the NR-listed Hamilton Millwright-Agent's House (SBD.236). The temporary occupancies, highlighted in yellow on the enclosed ROW plans, are necessary to accommodate bridge, sidewalk, and driveway construction, a temporary utility pole guy wire, water control, sediment control barrier, grading, and spreading loam and seed.

It is MassDOT's opinion that the temporary occupancies located within the NR-listed historic district and property will satisfy the five conditions required for a temporary occupancy not to constitute a "use" within the meaning of Section 4(f), pursuant to 23 CFR 774.13(d):

(1) Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;
(2) Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
(3) There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
(4) The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and
(5) There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.

The SHPO is the official with jurisdiction over a historic site for the purposes of Section 4(f), pursuant to 23 CFR 774.17. Your concurrence with this No Adverse Effect finding will signify that your office agrees with MassDOT's assessment that the proposed temporary occupancy does not constitute a "use" of the NR-listed or -eligible historic property under Section 4(f) and that the conditions listed above have been satisfied, pursuant to Condition 5.

Section 106 Consultation and No Adverse Effect Finding

An early coordination letter was forwarded to the local historical commission on February 10, 2023. A copy was forwarded to the MHC, No comments have been received to date. As the project requires a US Army Corps of Engineers Section 404 Permit, project notification forms were sent to the Board of Underwater Archaeological Resources and the THPOs for the Mashpee Wampanoag, the Wampanoag Tribe of Gay Head (Aquinnah), and the Narragansett.

MassDOT solicits your concurrence with our finding of **No Adverse Effect** for this project under Section 106 of the National Historic Preservation Act of 1966, as amended. The proposed project work is necessary to enhance safety for motorists, cyclists, and pedestrians, while trying to limit impacts to adjacent historic properties to the greatest extent feasible. Please feel free to contact me at megan.d.postemski@dot.state.ma.us if you have any questions.

Sincerely,

Megan D. Postemski

Megan Postemski
MassDOT Archaeologist
Environmental Services

ENC: Locus maps
Bridge inventory photos
Project plans
ROW plans

FOR FHWA USE

MassDOT Request for Federal Highway Administration (FHWA) Approval

MassDOT Highway Division requests final approval from FHWA that the proposed "use" of the above described Section 4(f) resources meets the criteria of a *de minimis* impact, as specified under 23 CFR 774.17.

_____ _____

Joi Singh, (or designee) Date
Division Administrator
Federal Highway Administration
Massachusetts Division

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A
MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name:	Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River (MassDOT Project #608862)
Location /Address:	Mill Street over McKinstry Brook & Quinebaug River
City/Town:	Southbridge

Project Proponent

Name:	Massachusetts Department of Transportation
Address:	10 Park Plaza
City/Town/Zip/Telephone:	Boston, MA 02116

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name	**Type of License or funding (specify)**
FHWA	Federal Funding (lead federal agency)
USACOE	Section 404 permit

Project Description (narrative):

The Massachusetts Department of Transportation (MassDOT) is proposing to expend federal funds to replace two bridges in Southbridge: S-21-003, which carries Mill Street over the Quinebaug River, and S-21-009, which carries Mill Street over McKinstry Brook. Proposed work will primarily include superstructure demolition and replacement at both bridges and pier removal and construction of stub abutments at S-21-009. Project limits encompass the bridges and their approaches, extending approximately 80 feet south of S-21-003 to the Mill/High/Main Street and Hamilton Way intersection and approximately 40 feet south of S-21-009 and 225 feet north of S-21-009 to the Mill Street and River Street intersection.

Bridge S-21-003, constructed in 1956, consists of an 85-foot-long single span steel stringer superstructure supported by cast-in-place reinforced concrete abutments. Due to structural deficiencies, the bridge was closed in July 2019 for repairs and reopened in 2020. Measuring approximately 41 feet wide, the bridge currently carries two northbound travel lanes with sidewalks on either side. While the bridge was originally two-way, it was recently re-striped for one-way traffic. The proposed bridge will remain one-way, carrying one 11-foot travel lane with buffered 5-foot bike lanes and 5.5-foot sidewalks on either side, with similar overall dimensions to the original.

Bridge S-21-009, originally constructed in 1940, is an approximately 50-foot-long two-span concrete slab bridge. The southerly span of the bridge was replaced in 1985 with a single prestressed concrete slab span. Measuring approximately 39 feet wide, the bridge currently carries two travel lanes (one in each direction) and sidewalks on either side. The proposed bridge will have similar overall dimensions and retain this structure, with two 10-foot travel lanes, 4-foot shoulders, and 5.5-foot sidewalks. On the west side, the

sidewalk will terminate just north of the bridge to avoid impacts to existing residential parking and at the driveway south of the bridge.

Other project work involves pavement milling and overlay, a small section of full depth reconstruction, geometric improvements, and ADA improvements, including sidewalk reconstruction, new curb ramps, ADA compliant push buttons, and pedestrian crossings. Minor drainage system upgrades are also proposed at the abutments for Bridge S-21-009.

Both bridges carry utilities, including sewer, water, and gas lines. Some utility poles and water and gas lines will be relocated, and Bridge S-21-003 will have a new utility bay installed.

All proposed project work will be undertaken in disturbed areas within or immediately adjacent to the existing town layout. Fee takings and permanent and temporary easements are required. Mill Street will be closed to reduce the duration of construction.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

Bridge S-21-003 and Bridge S-21-009

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

N/A

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

See plans

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

A review of MACRIS revealed that the Hamilton Woolen Company Historic District (SBD.W) and the Hamilton Millwright-Agent's House (SBD.236), which are listed in the National Register of Historic Places (NR) and part of the Southbridge Multiple Resource Area (SBD.AC), are within the proposed project area. MassDOT CRU has determined that the project will have no adverse effect on the Hamilton Woolen Company Historic District, the Hamilton Millwright-Agent's House, or any properties that contribute to the district.

The Hamilton Woolen Company Historic District consists of an industrial textile mill complex at the southern end of Mill Street that drove the Globe Village/Southbridge economy from the early 19th century into the 20th century. One contributing property within the project area—the Hamilton Woolen Company Building #19 (SBD.325) on Mill Street—was demolished sometime between 2019–2021. The Hamilton Woolen Company Worker Housing (SBD.G), an inventoried area, overlaps with and contributes to the NR-listed historic district.

Project work within the district involves bridge, sidewalk, and driveway construction, water control, installing guardrails and sediment control barrier, grading, and spreading loam and seed. The project work will require two fee takings and two permanent easements from contributing properties. These takings and easements include a fee taking and a permanent easement from the Hamilton Woolen Company – Big Mill

(SBD.102) at 30 Mill Street, a fee taking from the Hamilton Woolen Company Mill Building #9A and #11 (SBD.331) at 76 Mill Street, and a permanent easement from the parcel associated with the demolished Hamilton Woolen Company Building #19 (SBD.325) on Mill Street. Several temporary easements are also required from these three contributing properties.

The Hamilton Millwright-Agent's House at 757 Main Street was built circa 1840 by the Hamilton Woolen Mill for the company's millwright, John Edwards Bacon. Overlooking the contemporary 1836 Hamilton Woolen Mill – Big Mill (SBD.102), the Federal-style house preserves much of its original setting, including a Greek Revival carriage house at the rear of the lot. Project work within the property involves sidewalk construction and will require one temporary easement.

Additionally, the review of MACRIS revealed two previously inventoried areas within the project area. The High and Sayles Streets Area (SBD.B), located south of the Mill Street and Main Street intersection, consists of a primarily residential area that organically developed between the 1830s and 1860s. The broader inventoried area lacks integrity as a whole and does not appear to be eligible for listing in the NR, except for the High – School Streets Historic District (SBD.Z). The High – School Streets Historic District is outside of the project area, partially overlaps the inventoried area, and was listed in the NR in 1989. The second previously inventoried area is the Hamilton Woolen Company Worker Housing (SBD.Q) at 103 Mill Street. The area consists of two vernacular worker row houses that date to the 1870s. Historically, additional row houses lined the east side of the street within the area boundary, but these have since been demolished. Due to the loss of this building stock and the lack of overall integrity, the area does not appear to be eligible for listing in the NR. A third inventoried area, Hamilton Woolen Company Worker Housing (SBD.G), overlaps with and contributes to the NR-listed Hamilton Woolen Company Historic District (SBD.W), discussed above.

Both of the bridges involved in the proposed project—S-21-003 and S-21-009—were reviewed by Kurt Jergensen, Historic Bridge Specialist, and determined to be ineligible for listing in the NR. Bridge S-21-003, constructed in 1956, consists of a single span steel stringer superstructure supported by cast-in-place reinforced concrete abutments. This bridge is an example of the most common structural type in Massachusetts, with a standard MDPW design that lacks significant engineering or architectural details. Bridge S-21-009, originally constructed in 1940, is a two-span concrete slab bridge. The majority of the structure, including the northerly cast-in-place reinforced concrete slab span and the reinforced concrete pier and abutments, dates to 1940. The southerly span of the bridge was replaced in 1985 with a single prestressed concrete slab span, which is supported by the original 1940 pier and south abutment. The bridge railings were also replaced with picketed three-rail aluminum AL-3 railings. This bridge is a substantially altered example of a common 20th-century structural type, also lacking significant engineering or architectural details.

A review of the MHC's archaeological base maps in MACRIS revealed no recorded archaeological sites within the project's direct areas of potential effect (APE). Although undisturbed areas near the Quinebaug River and its tributaries may be sensitive for archaeological resources, it is the opinion of the MassDOT Archaeologist that low sensitivity can be ascribed to the project's direct APE based on the impacts of past roadway, bridge, sidewalk, and utility construction and roadside development. All proposed project work will be undertaken in disturbed areas within or immediately adjacent to the existing town layout.

Soil borings conducted in 2020–2022 by Nobis Group highlight the extent of disturbance in the APE. A review of the boring logs indicates that in the vicinity of Bridge No. S-21-003, soil stratigraphy generally consists of asphalt overlying 20–24 feet of medium dense to very loose fill, followed by glacial till. Soils encountered in the vicinity of Bridge No. S-21-009 typically consist of asphalt overlying approximately 10 feet of fill overlying alluvial sand, followed by glacial till and bedrock.

What is the total acreage of the project area?

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A (continued)

Woodland	_____	acres	Productive Resources:		
Wetland	_____	acres	Agriculture	_____	acres
Floodplain	_____	acres	Forestry	_____	acres
Open Space	_____	acres	Mining/Extraction	_____	acres
Developed	_____	acres	Total Project Acreage	_____	acres

What is the acreage of the proposed new construction? _____ acres

What is the present land use of the project area?

The project area consists of Mill Street, which is an industrial and commercial corridor.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of person submitting this form: Megan D. Postemski **Date:** 9/18/2024

Name: Megan Postemski

Address: 10 Park Plaza, Room 7130

City/Town/Zip: Boston, MA 02717

Telephone: Email: megan.d.postemski@dot.state.ma.us

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

CC:
BUAR
ATHPO
MTHPO
NTHPO

Postemski, Megan D. (DOT)

From: Postemski, Megan D. (DOT)
Sent: Wednesday, September 18, 2024 9:31 AM
To: Robinson, David S (EEA)
Subject: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003
Attachments: 20240918 Southbridge S-21-009 & S-21-003 PNF & Maps (608862).pdf; 20240918 Southbridge 25% Plans (608862).pdf

David,

MassDOT is submitting information for the above-referenced project to the BUAR to meet the Section 106 consultation requirements of FHWA (lead federal agency) and the US Army Corps of Engineers. Please submit any written comments or concerns regarding historic or archaeological properties that may be affected by this project to Carrie Lavallee, P.E., Chief Engineer, Massachusetts Department of Transportation, 10 Park Plaza, Boston, MA 02116-3973, Attn: Jameson Harwood.

You also may send comments, questions, or requests for more information by email to Jameson.Harwood@state.ma.us.

Thank you,
Megan

Megan Postemski, Archaeologist
Environmental Services Section
MassDOT – Highway Division
10 Park Plaza
Boston, MA 02116

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Postemski, Megan D. (DOT)

From: Microsoft Outlook
To: Robinson, David S (EEA)
Sent: Wednesday, September 18, 2024 9:31 AM
Subject: Delivered: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003

Your message has been delivered to the following recipients:

Robinson, David S (EEA) (David.S.Robinson@mass.gov)

Subject: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003



MassDOT Project
608862 - South...

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Postemski, Megan D. (DOT)

From: Postemski, Megan D. (DOT)
Sent: Wednesday, September 18, 2024 9:34 AM
To: thpo@wampanoagtribe-nsn.gov
Subject: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003
Attachments: 20240918 Southbridge S-21-009 & S-21-003 PNF & Maps (608862).pdf; 20240918 Southbridge 25% Plans (608862).pdf

Dear Ms. Washington,

MassDOT is submitting information for the above-referenced project to the Tribal Historic Preservation Officer to meet the Section 106 consultation requirements of FHWA (lead federal agency) and the US Army Corps of Engineers. Please submit any written comments or concerns regarding historic or archaeological properties that may be affected by this project to Carrie Lavallee, P.E., Chief Engineer, Massachusetts Department of Transportation, 10 Park Plaza, Boston, MA 02116-3973, Attn: Jameson Harwood.

You also may send comments, questions, or requests for more information by email to Jameson.Harwood@state.ma.us.

Thank you,
Megan

Megan Postemski, Archaeologist
Environmental Services Section
MassDOT – Highway Division
10 Park Plaza
Boston, MA 02116

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Postemski, Megan D. (DOT)

From: Microsoft Outlook
To: thpo@wampanoagtribe-nsn.gov
Sent: Wednesday, September 18, 2024 9:34 AM
Subject: Relayed: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

thpo@wampanoagtribe-nsn.gov (thpo@wampanoagtribe-nsn.gov)

Subject: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003



MassDOT Project
608862 - South...

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Postemski, Megan D. (DOT)

From: Postemski, Megan D. (DOT)
Sent: Wednesday, September 18, 2024 9:32 AM
To: David.weeden@mwtribe-nsn.gov
Cc: 106review@mwtribe-nsn.gov
Subject: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003
Attachments: 20240918 Southbridge S-21-009 & S-21-003 PNF & Maps (608862).pdf; 20240918 Southbridge 25% Plans (608862).pdf

Dear Mr. Weeden,

MassDOT is submitting information for the above-referenced project to the Tribal Historic Preservation Officer to meet the Section 106 consultation requirements of FHWA (lead federal agency) and the US Army Corps of Engineers. Please submit any written comments or concerns regarding historic or archaeological properties that may be affected by this project to Carrie Lavallee, P.E., Chief Engineer, Massachusetts Department of Transportation, 10 Park Plaza, Boston, MA 02116-3973, Attn: Jameson Harwood.

You also may send comments, questions, or requests for more information by email to Jameson.Harwood@state.ma.us.

Thank you,
Megan

Megan Postemski, Archaeologist
Environmental Services Section
MassDOT – Highway Division
10 Park Plaza
Boston, MA 02116

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Postemski, Megan D. (DOT)

From: Microsoft Outlook
To: David.weeden@mwtribe-nsn.gov; 106review@mwtribe-nsn.gov
Sent: Wednesday, September 18, 2024 9:32 AM
Subject: Relayed: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

David.weeden@mwtribe-nsn.gov (David.weeden@mwtribe-nsn.gov)

106review@mwtribe-nsn.gov (106review@mwtribe-nsn.gov)

Subject: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003



MassDOT Project
608862 - South...

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Postemski, Megan D. (DOT)

From: Postemski, Megan D. (DOT)
Sent: Wednesday, September 18, 2024 9:33 AM
To: tashtesook@aol.com
Cc: markandrews0563@outlook.com
Subject: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003
Attachments: 20240918 Southbridge S-21-009 & S-21-003 PNF & Maps (608862).pdf; 20240918 Southbridge 25% Plans (608862).pdf

Dear Mr. Brown,

MassDOT is submitting information for the above-referenced project to the Tribal Historic Preservation Officer to meet the Section 106 consultation requirements of FHWA (lead federal agency) and the US Army Corps of Engineers. Please submit any written comments or concerns regarding historic or archaeological properties that may be affected by this project to Carrie Lavallee, P.E., Chief Engineer, Massachusetts Department of Transportation, 10 Park Plaza, Boston, MA 02116-3973, Attn: Jameson Harwood.

You also may send comments, questions, or requests for more information by email to Jameson.Harwood@state.ma.us.

Thank you,
Megan

Megan Postemski, Archaeologist
Environmental Services Section
MassDOT – Highway Division
10 Park Plaza
Boston, MA 02116

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Postemski, Megan D. (DOT)

From: Microsoft Outlook
To: tashtesook@aol.com; markandrews0563@outlook.com
Sent: Wednesday, September 18, 2024 9:33 AM
Subject: Relayed: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

tashtesook@aol.com (tashtesook@aol.com)

markandrews0563@outlook.com (markandrews0563@outlook.com)

Subject: MassDOT Project 608862 - Southbridge Bridge Replacements - S-21-009 & S-21-003



MassDOT Project
608862 - South...

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

www.vhb.com

February 10, 2023

Southbridge Historical Commission
c/o Arthur Martin, Chair
Town Hall
41 Elm Street
Southbridge, MA 01550

Re: Southbridge- Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River
MassDOT Project number: 608862
Section 106 Review — Early Environmental Coordination

Dear Chairperson Martin and Commission Members:

The Town of Southbridge is proposing to replace the existing bridges that carries Mill Street over McKinstry Brook and the Quinebaug River in Southbridge, MA. The project limits along Mill Street for Bridge S-21-009 start approximately fifty feet (50') south of the bridge and extend approximately twenty-feet (20') south of the intersection with River Street. The Project limits along Mill Street for Bridge S-21-003 start approximately fifty feet (50') north of the bridge and through the intersection of Mill Street and Main Street. Please see attached for a full Project Description and Locus Map. This Project will be supported in part with federal funds dispersed through the Massachusetts Department of Transportation (MassDOT). The Project, therefore, will require review under Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800). The enclosed Project information is being provided to the Chelmsford Historical Commission to initiate consultation with appropriate representatives of local government in compliance with the regulations governing Section 106.

The Town of Southbridge and MassDOT request that the Historical Commission review the enclosed materials at their earliest convenience and solicits any comments regarding historic properties that may be within or adjacent to the Project area. Please submit written comments to: Patricia A. Leavenworth, P.E., Chief Engineer, Massachusetts Department of Transportation, Highway Division, 10 Park Plaza, Boston, MA 02116, Attn: Jeffrey Shrimpton, Room 7360. Comments also may be submitted by e-mail to jeffrey.shrimpton@state.ma.us. Please include the six-digit MassDOT Project number on all correspondence.

Please feel free to contact Jeffrey Shrimpton (857.368.8824) of MassDOT Highway Division's Environmental Services if you have any questions concerning this Project or the Section 106 review process.

Engineers | Scientists | Planners | Designers

120 Front Street
Suite 500
Worcester, Massachusetts 01608
P 508.752.1001
F 508.459.0877

Sincerely,

Dan Cannata
Environmental Scientist- VHB
617.607.1019
dcannata@vhb.com
Enclosures

Attachments: Project Description
Locus Map

cc: Brona Simon, Massachusetts Historical Commission, with attachments. (by mail)
Jeffrey Shrimpton, MassDOT Highway Division, with attachments. (by mail)

Attachment D
Photographic Log

MassDOT Project No: 608862	EEC Checklist Photographic Log

Project Title: Southbridge- Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

Photo No. 1

Date: 1/19/2022

Description:

View looking north of the existing Bridge #S-21-003 on Mill Street over the Quinebaug River.

Proposed Improvements:

The existing bridge structure will be replaced with a new bridge providing a single fifteen-foot (15') travel lane with four-foot (4') shoulders. The bridge will also include five-foot sidewalks on both sides.



MassDOT Project No: 608862	EEC Checklist Photographic Log

Project Title: Southbridge- Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

Photo No. 2

Date: 1/19/2022

Description:

View facing west of the Quinebaug River near the Project Limits.

Permitting Note:

Self-Verification Notification Form (SVNF) with the US Army Corps of Engineers (USACE) pursuant to Section 404 of the CWA and an Individual Water Quality Certification (WQC) with the Massachusetts Department of Environmental Protection (MassDEP) pursuant to Section 401 of the CWA.



massDOT Massachusetts Department of Transportation Highway Division	**MassDOT Project No:** 608862	**EEC Checklist Photographic Log**

Project Title: Southbridge- Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

Photo No. 3

Date: 12/15/2020

Description:

View facing northeast of the existing bridge over McKinstry Brook within the Project Limits.

Proposed Improvements:

The existing bridge structure will be replaced with a new bridge providing ten-foot (10') travel lanes along each side with four-foot (4') shoulders. The bridge will also include five-foot sidewalks on both sides.



massDOT Massachusetts Department of Transportation Highway Division	**MassDOT Project No:** 608862	**EEC Checklist Photographic Log**

Project Title: Southbridge- Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

Photo No. 4

Date: 12/15/2020

Description:

View of existing catch basin structure on Bridge # S-21-009.

Proposed Improvements:

Existing catch basins on the McKinstry Brook crossing will be removed and replaced with three new hooded deep sump catch basins. No changes to stormwater management on Bridge #S-21-003 are proposed.



Attachment E
Project Plans (Bound Separately)

Proposal No. 608862-126646

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	1	103
PROJECT FILE NO. 608862			

TITLE SHEET & INDEX
PDF SHEET 1 OF 30

PLAN AND PROFILE OF

MILL STREET
(BRIDGE NO. S-21-003)
(BRIDGE NO. S-21-009)

IN THE TOWN OF

SOUTHBRIDGE
WORCESTER COUNTY

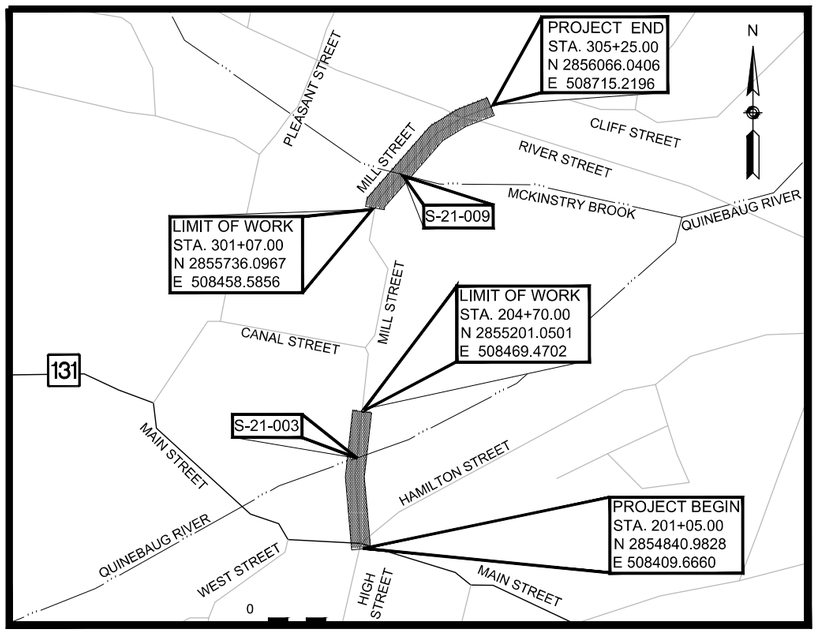
FEDERAL AID PROJECT NO.

SECTION 404 SVN SUBMITTAL

THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2025 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

INDEX

SHEET NO.	PDF SHEET NO.	DESCRIPTION
1	1	TITLE SHEET & INDEX
2-3	2-3	LEGEND & ABBREVIATIONS
4	4	KEY PLAN & BORING LOCATIONS
5-6	5-6	TYPICAL SECTIONS
	7-8	TYPICAL SECTIONS - RIVERWAYS
7-8	9-10	CONSTRUCTION PLANS
~~9~~		~~PROFILES~~ (NOT INCLUDED)
~~10-11~~		~~ALIGNMENT & GRADING PLAN~~ (NOT INCLUDED)
~~12-13~~		~~TRAFFIC PLANS~~ (NOT INCLUDED)
~~14~~		~~TRAFFIC SIGN SUMMARY~~ (NOT INCLUDED)
~~15-16~~		~~TRAFFIC SIGNAL PLANS~~ (NOT INCLUDED)
~~17-27~~		~~TEMPORARY TRAFFIC CONTROL PLANS~~ (NOT INCLUDED)
28-35	11-18	UTILITY PLANS
36-43	19-26	CONSTRUCTION DETAILS
~~44-96~~		~~BRIDGE PLANS~~ (NOT INCLUDED)
	27-28	BRIDGE PROFILE & LONGITUDINAL SECTION
E1-E2	29-30	ENVIRONMENTAL IMPACTS & MITIGATION
~~97-103~~		~~CROSS SECTIONS~~ (NOT INCLUDED)



LENGTH OF PROJECT = 783.00 FEET = 0.148 MILES

DESIGN DESIGNATION (MILL STREET - BRIDGE NO'S. S-21-003, S-21-009)

DESIGN SPEED	25 MPH
ADT (2021)	350 VPD
ADT (2031)	365 VPD
K	11.0%
D	100.0% NB
T (PEAK HOUR)	5.3%
T (AVERAGE DAY)	11.8%
DHV	40 VPH
DDHV	40 VPH
FUNCTIONAL CLASSIFICATION	LOCAL

DATE	DESCRIPTION	REV #
9/30/2025	REVISED PSE SUBMISSION	7
7/31/2025	PSE SUBMISSION	6
3/28/2025	100% SUBMISSION	5
9/26/2024	75% SUBMISSION	4
12/13/2023	REVISED 25% SUBMISSION	3
2/09/2023	25% SUBMISSION	2
5/27/2022	10% RE-SUBMISSION	1
4/24/2020	10% SUBMISSION	0

massDOT Massachusetts Department of Transportation Highway Division

APPROVED

CHIEF ENGINEER _____ DATE _____

vhb
120 FRONT STREET
SUITE 500
WORCESTER, MA 01608

608862_EV(COV) - SVN.DWG Plotted on 29-Sep-2025 5:27 PM

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
		TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)
		CURBING
99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		GUARD RAIL - DOUBLE FACE - STEEL POSTS
		GUARD RAIL - DOUBLE FACE - WOOD POSTS
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
		FLOATING SILT FENCE

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
Ø1	Ø1	CONTROLLER PHASE
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		QUADRUPOLE WIRE LOOP DETECTOR
		BICYCLE WIRE LOOP DETECTOR, TYPE B-2
		VIDEO DETECTION CAMERA
		PASSIVE DETECTION ZONE
		PEDESTRIAN PUSH BUTTON, SIGN AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD, WITH/WITHOUT BACKPLATE
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, WITH/WITHOUT BACKPLATE
		FLASHING BEACON, WITH/WITHOUT BACKPLATE
		PEDESTRIAN SIGNAL HEAD, DENOTED AS P#
75		SIGNAL POST AND BASE
		MAST ARM, SHAFT AND BASE
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		OVERHEAD SIGN
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE - SD2.022 (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
		BICYCLE LANE WORD, SYMBOL AND/OR ARROW - WHITE
SL	SL	STOP LINE -WHITE, 12" WIDTH UNLESS OTHERWISE NOTED
	CW	CROSSWALK-WHITE, 12" WIDTH UNLESS OTHERWISE NOTED
SWL	SWL	SOLID WHITE LINE, 6" WIDTH
SYL	SYL	SOLID YELLOW LINE, 6" WIDTH
DWLEx	DWLEx	DOTTED WHITE LINE, 2' LINE W/6' SPACING, 6" WIDTH
DYLEx	DYLEx	DOTTED YELLOW LINE, 2' LINE W/6' SPACING, 6" WIDTH
DBYL	DBYL	DOUBLE YELLOW LINE, 6" WIDTH
12" SWL	12" SWL	SOLID WHITE LINE, 12" WIDTH UNLESS OTHERWISE NOTED
12" SYL	12" SYL	SOLID YELLOW LINE, 12" WIDTH UNLESS OTHERWISE NOTED
		WRONG WAY ARROW, WHITE

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	2	103
PROJECT FILE NO. 608862			

LEGEND & ABBREVIATIONS
PDF SHEET 2 OF 30

Plotted on 29-Sep-2025 3:16 PM
608862_EV(COV)-WQC.DWG

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
APS	ACCESSIBLE PEDESTRIAN SYSTEM
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
L.O., LO	LAYOUT
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
QSA	MECHANICAL JOINT
MW	MONITORING WELL
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
PED	PEDESTRIAN
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT

ABBREVIATIONS (cont.)

GENERAL

PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVM'T	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TS	TRAFFIC SIGNAL
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WG, WGT	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
WSO	WATER SHUT OFF
X-SECT	CROSS SECTION

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
←FR–	FLASHING RED LEFT ARROW
–FR→	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
←FY–	FLASHING YELLOW LEFT ARROW
–FY→	FLASHING YELLOW RIGHT ARROW
G	STEADY CIRCULAR GREEN
←G–	STEADY GREEN LEFT ARROW
–G→	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
↑G	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
←R–	STEADY RED LEFT ARROW
–R→	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR YELLOW
←Y–	STEADY YELLOW LEFT ARROW
–Y→	STEADY YELLOW RIGHT ARROW

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	3	103
PROJECT FILE NO. 608862			

LEGEND & ABBREVIATIONS
PDF SHEET 3 OF 30

GENERAL NOTES:

1. TOPOGRAPHICAL INFORMATION FROM A SURVEY PERFORMED BY GREEN INTERNATIONAL AFFILIATES, INC. IN OCTOBER 2019 AND UPDATED IN MAY 2024. THE HORIZONTAL COORDINATE SYSTEM IS ON THE MASS GRID SYSTEM NAD83 AND THE VERTICAL COORDINATE SYSTEM IS NAVD 1988.

2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

3. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.

4. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING WATER, SEWER, AND DRAINAGE STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER, SEWER, AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK.

5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CATV AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.

6. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.

7. SAWCUT SURFACES ABUTTING THE PAVEMENT TOP COURSE SHALL BE COATED WITH HMA JOINT SEALANT.

8. LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.

9. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.

10. SILT SACKS SHALL BE INSTALLED IN ALL EXISTING CATCH BASINS PRIOR TO THE START OF CONSTRUCTION. SILT SACKS SHALL BE INSTALLED ON ALL NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION.

11. EXISTING STATE, COUNTY, CITY AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.

12. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET (R&R).

13. ALL EXISTING GRANITE CURB SUITABLE FOR REUSE SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONE OF A DIFFERENT RADIUS THAN PROPOSED CURB. RESET CURB SHALL BE PLACED AS DIRECTED BY THE ENGINEER AND MAY BE ANYWHERE WITHIN THE PROJECT LIMITS.

608862_EV(COV)-WQC.DWG Plotted on 29-Sep-2025 3:16 PM

NAD 83

N

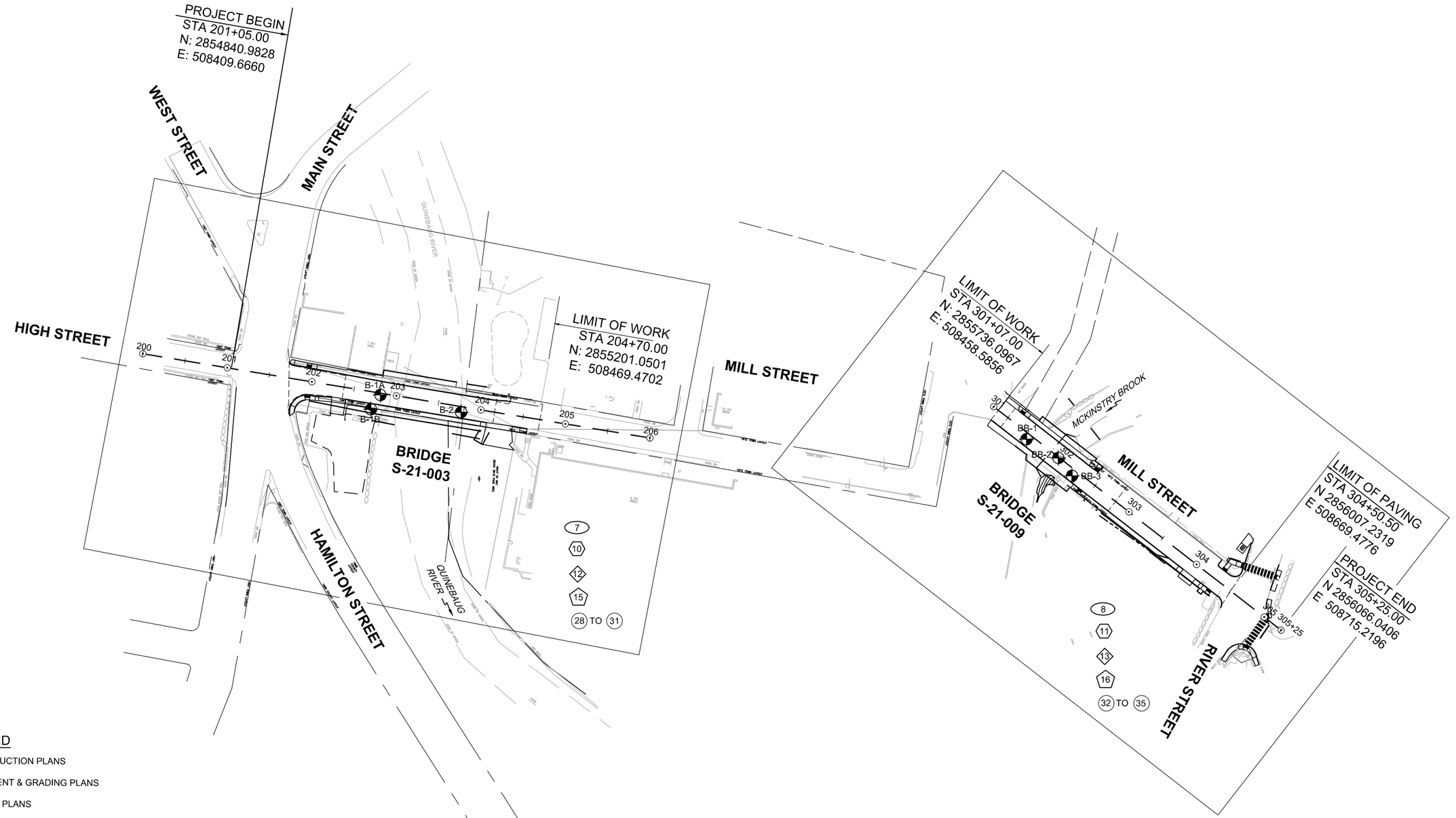
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	---	4	103
PROJECT FILE NO.	608862		

KEY PLAN & BORING LOCATIONS

PDF SHEET 4 OF 30

608862_EV(KEY).DWG Plotted on 29-Sep-2025 3:16 PM



LEGEND

- (#) CONSTRUCTION PLANS
- ⟨#⟩ ALIGNMENT & GRADING PLANS
- ⟨#⟩ TRAFFIC PLANS
- ⟨#⟩ TRAFFIC SIGNAL PLANS
- (#) UTILITY PLANS
- BORING LOCATIONS

0 60 100 200 300

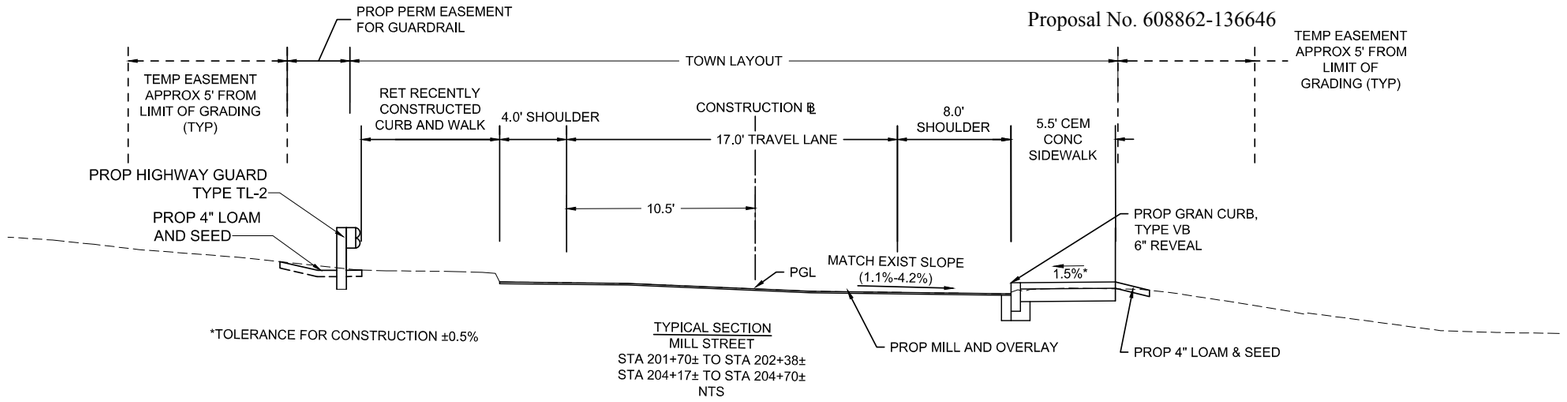
SCALE: 1" = 60'

SOUTHBRIDGE
MILL STREET

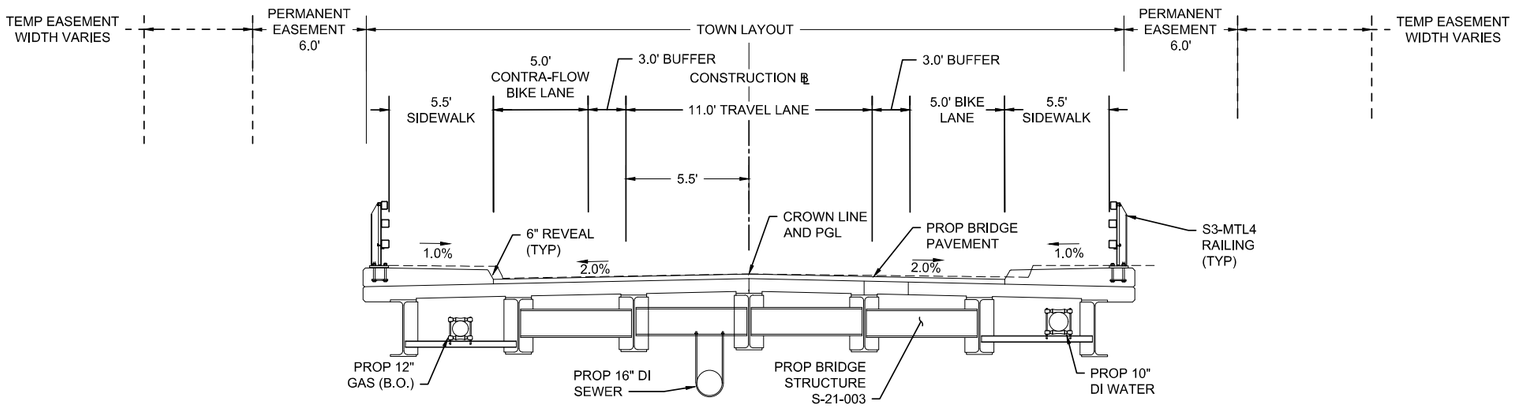
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	5	103
PROJECT FILE NO. 608862			

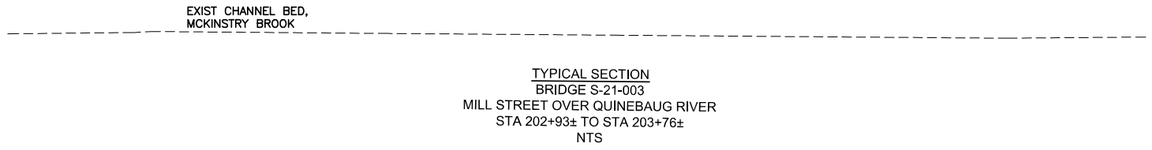
TYPICAL SECTIONS
PDF SHEET 5 OF 30

Plotted on 29-Sep-2025 3:17 PM
608862_EV(TYP).DWG

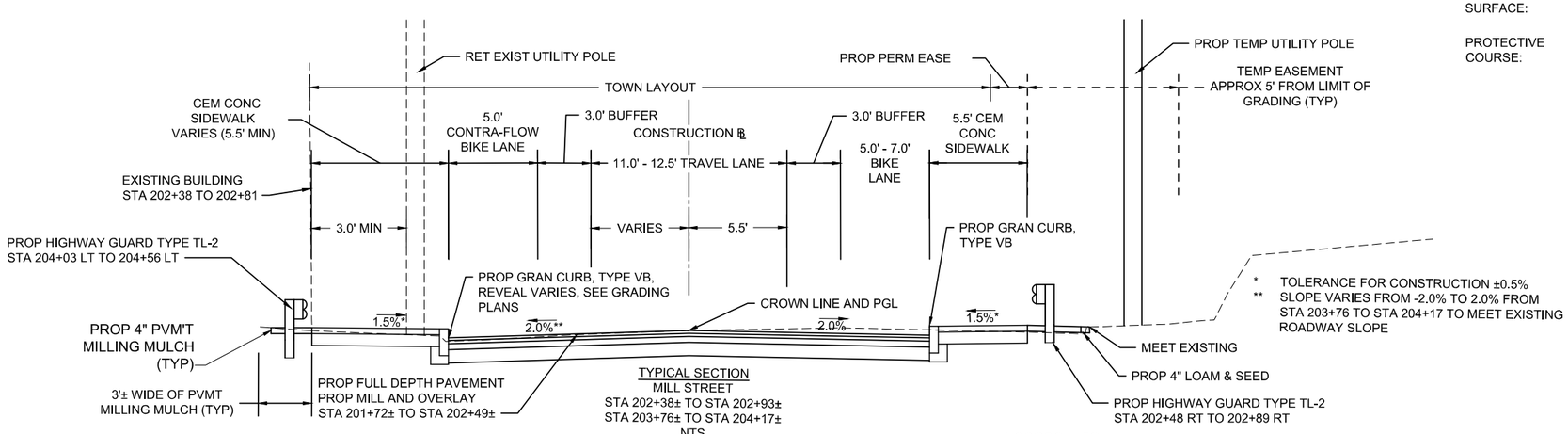


TYPICAL SECTION
MILL STREET
STA 201+70± TO STA 202+38±
STA 204+17± TO STA 204+70±
NTS





TYPICAL SECTION
BRIDGE S-21-003
MILL STREET OVER QUINEBAUG RIVER
STA 202+93± TO STA 203+76±
NTS



TYPICAL SECTION
MILL STREET
STA 202+38± TO STA 202+93±
STA 203+76± TO STA 204+17±
NTS

PAVEMENT NOTES

PROP FULL DEPTH PAVEMENT

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER ASPHALT EMULSION FOR TACK COAT OVER

INTERMEDIATE COURSE: 2 ½" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC - 12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER

BASE COURSE: 4 ½" SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL BORROW TYPE b

PROP MILL AND OVERLAY

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER ASPHALT EMULSION FOR TACK COAT OVER

SUPERPAVE LEVELING COURSE 9.5 (SLC - 9.5) AS REQUIRED* TO MEET PROPOSED ELEVATIONS OVER

MILLING: 1 ½" FINE MILLING DEPTH

*SUPERPAVE LEVELING COURSE - 9.5 (SLC - 9.5) REQUIRED STA 201+85 TO 202+46 ONLY

PROP CEMENT CONCRETE WALKS, PEDESTRIAN CURB RAMPS (PCR), 4-INCH CEMENT CONCRETE PAD

SURFACE: 4" CEMENT CONCRETE (4000 PSI, 3/4", 610 LB), AIR-ENTRAINED, OVER

BASE: 8" GRAVEL BORROW, TYPE b

PROP CEMENT CONCRETE SIDEWALK AT DRIVEWAYS, 6-INCH CEMENT CONCRETE PAD

SURFACE: 6" CEMENT CONCRETE (4000 PSI, 3/4", 610 LB), AIR-ENTRAINED, OVER

BASE: 8" GRAVEL BORROW, TYPE b

PROP HOT MIX ASPHALT DRIVEWAY

SURFACE: 1 ½" SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5) OVER

BASE: 2 ½" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5) OVER

SUBBASE: 8" GRAVEL BORROW, TYPE b

PROP BRIDGE PAVEMENT (S-21-003 OVER MILL RIVER)

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER ASPHALT EMULSION FOR TACK COAT OVER

PROTECTIVE COURSE: 1 ½" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B - 9.5 - P) OVER

MEMBRANE WATERPROOFING FOR BRIDGE DECKS

PROP BRIDGE PAVEMENT (S-21-009 OVER MCKINSTRY BROOK)

SURFACE: 1 ½" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) OVER ASPHALT EMULSION FOR TACK COAT OVER

PROTECTIVE COURSE: 1 ½" MINIMUM SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B - 9.5 - P) OVER

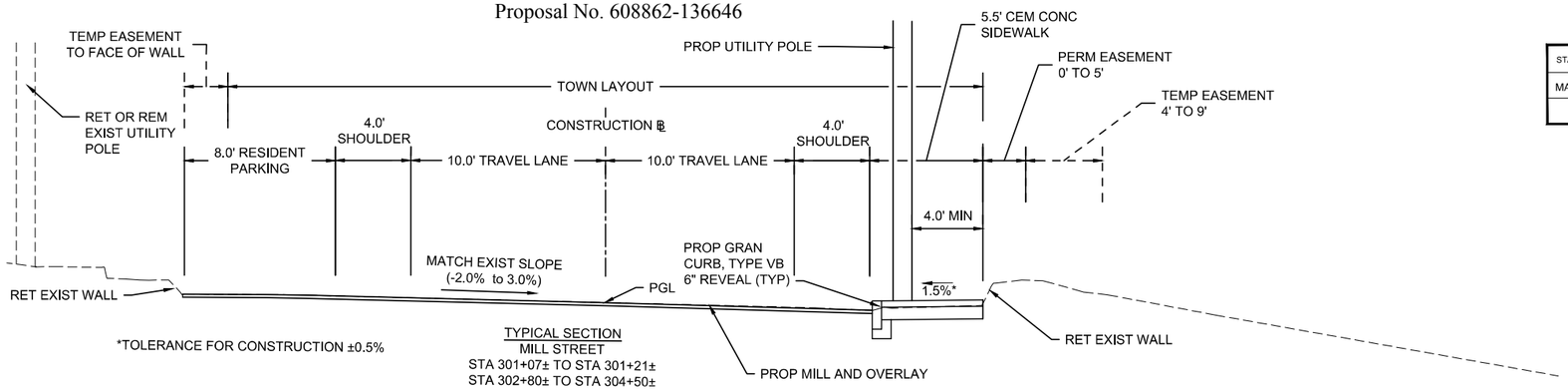
MEMBRANE WATERPROOFING FOR BRIDGE DECKS

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	6	103
PROJECT FILE NO. 608862			

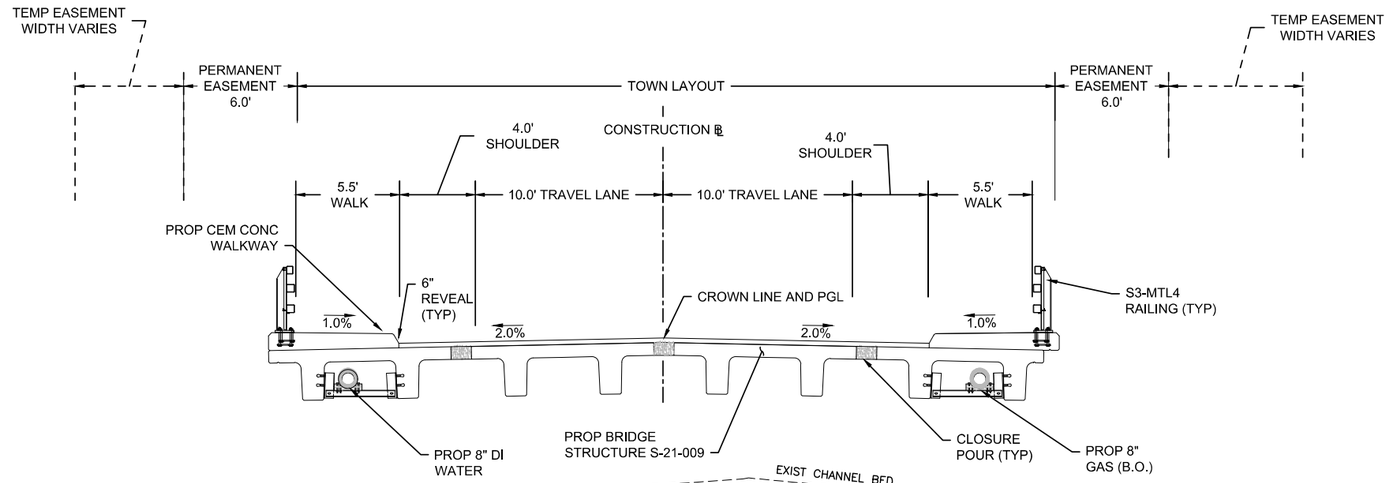
TYPICAL SECTIONS
PDF SHEET 6 OF 30

608862_EV(TYP).DWG Plotted on 29-Sep-2025 3:17 PM

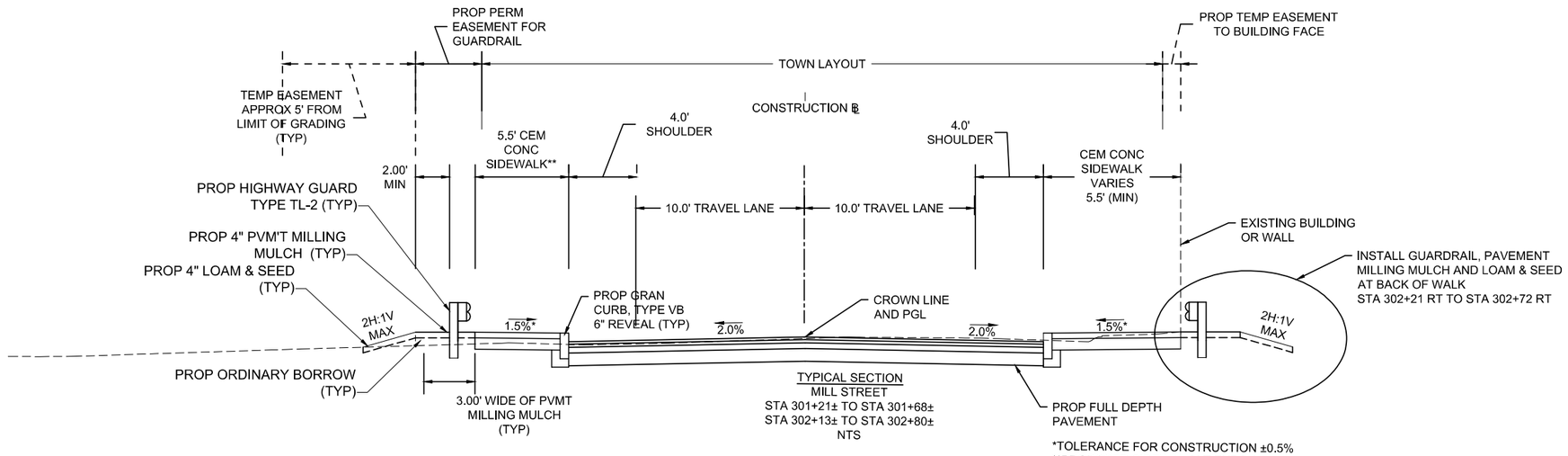


*TOLERANCE FOR CONSTRUCTION ±0.5%

TYPICAL SECTION
MILL STREET
STA 301+07± TO STA 301+21±
STA 302+80± TO STA 304+50±
NTS



TYPICAL SECTION
BRIDGE S-21-009
MILL STREET OVER MCKINSTRY BROOK
STA 301+68± TO STA 302+13±
NTS



TYPICAL SECTION
MILL STREET
STA 301+21± TO STA 301+68±
STA 302+13± TO STA 302+80±
NTS

*TOLERANCE FOR CONSTRUCTION ±0.5%
**PROPOSED SIDEWALK LT ENDS AT AT STA 302+43 LT

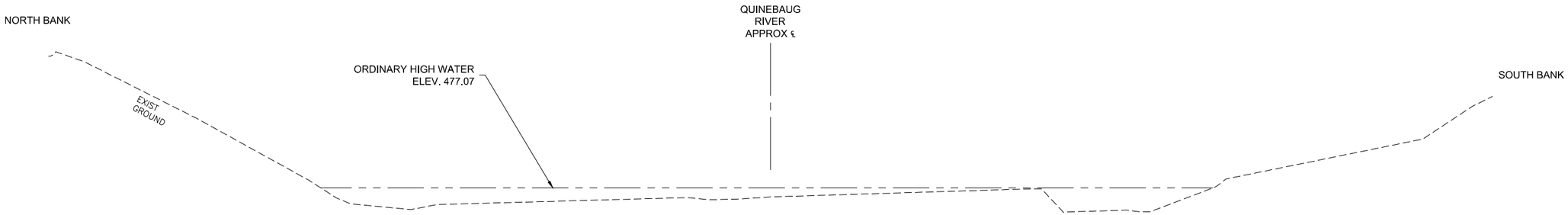
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	–	103
PROJECT FILE NO. 608862			

TYPICAL SECTIONS
QUINEBAUG RIVER
PDF SHEET 7 OF 30

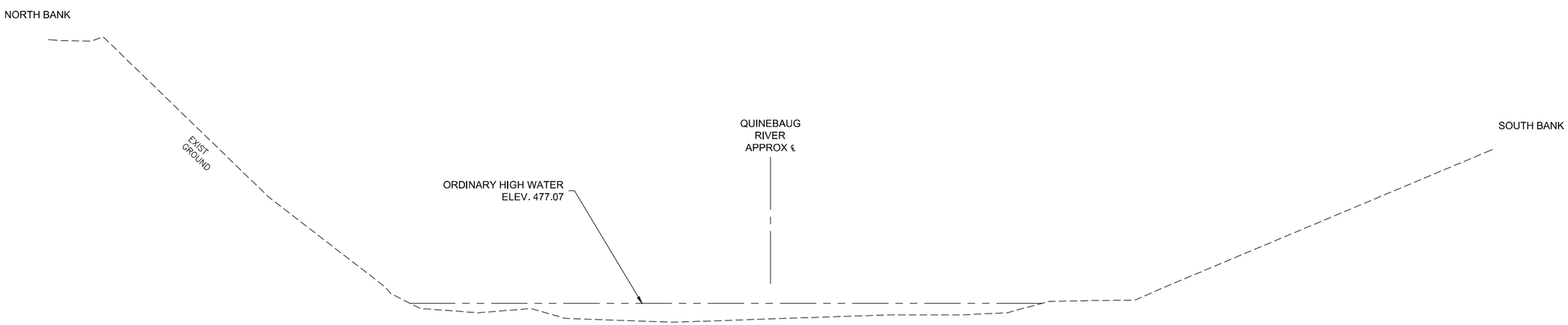
Plotted on 29-Sep-2025 3:19 PM
608862_EV(TYP CHANNEL).DWG

QUINEBAUG RIVER



TYPICAL SECTION
DOWNSTREAM OF BRIDGE S-21-003

SCALE: NONE



TYPICAL SECTION
UPSTREAM OF BRIDGE S-21-003

SCALE: NONE

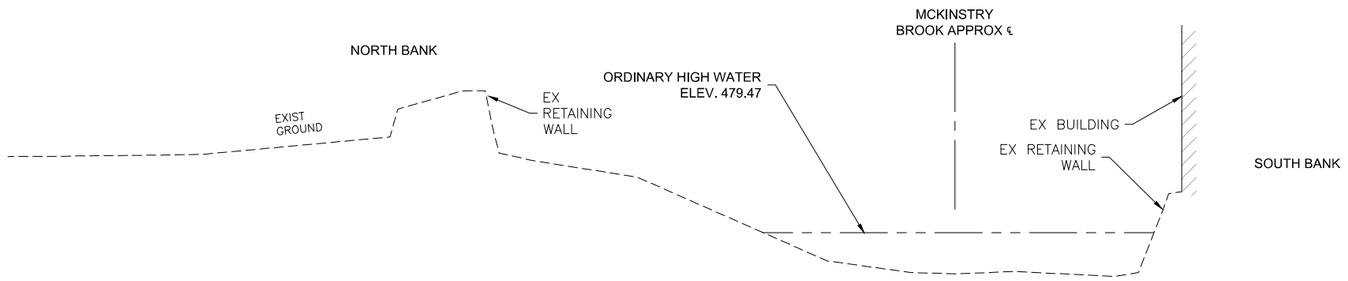
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	–	103
PROJECT FILE NO. 608862			

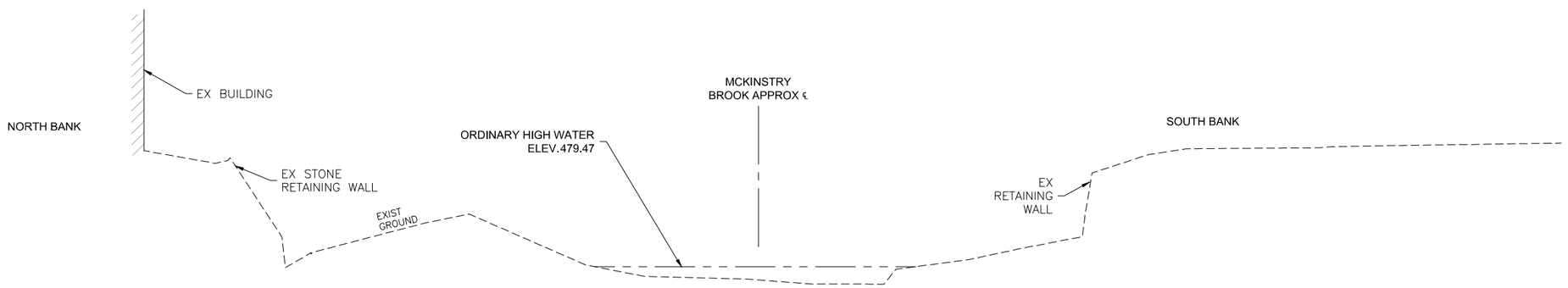
TYPICAL SECTIONS
MCKINSTRY BROOK
PDF SHEET 8 OF 30

608862_EV(TYP CHANNEL).DWG Plotted on 29-Sep-2025 3:19 PM

MCKINSTRY BROOK



TYPICAL SECTION
DOWNSTREAM OF BRIDGE S-21-009
SCALE: NONE



TYPICAL SECTION
UPSTREAM OF BRIDGE S-21-009
SCALE: NONE

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	7	103
PROJECT FILE NO. 608862			

CONSTRUCTION PLANS
PDF SHEET 9 OF 30

Plotted on 29-Sep-2025 3:20 PM 608862_EV(GEN).DWG

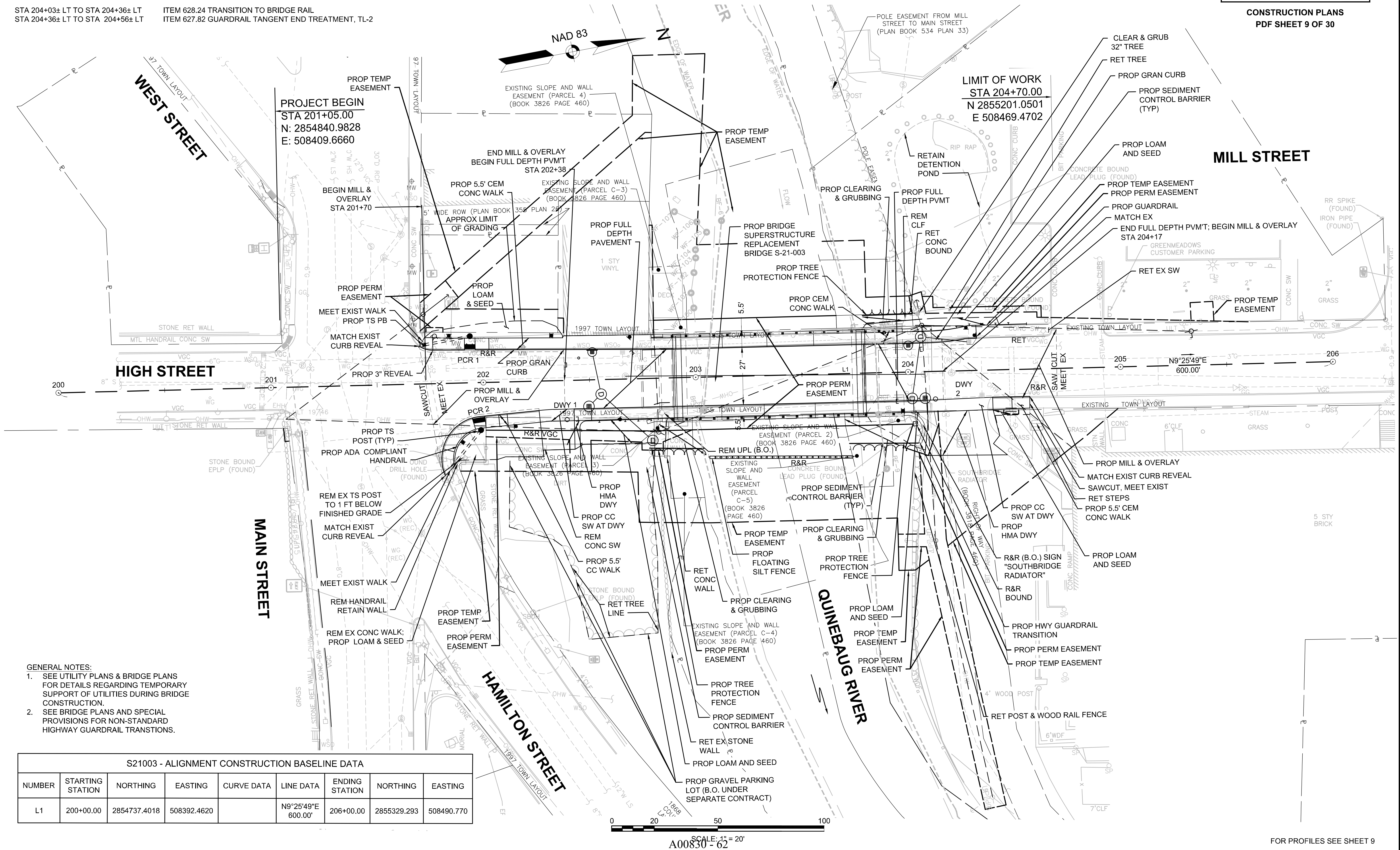
HIGHWAY GUARD DETAILS

STA 202+45± RT TO STA 202+45± RT	ITEM 627.1 TRAILING ANCHORAGE
STA 202+45± RT TO STA 202+45± RT	ITEM 620.31 GUARDRAIL, TL-2 (SINGLE FACED)
STA 202+45± RT TO STA 202+48± RT	ITEM 620.32 GUARDRAIL- CURVED, TL-2 (SINGLE FACED)
STA 202+48± RT TO STA 202+82± RT	ITEM 628.24 TRANSITION TO BRIDGE RAIL
STA 204+03± LT TO STA 204+36± LT	ITEM 628.24 TRANSITION TO BRIDGE RAIL
STA 204+36± LT TO STA 204+56± LT	ITEM 627.82 GUARDRAIL TANGENT END TREATMENT, TL-2

TRAFFIC SIGNAL CONDUIT
SEE SHEET 15

WATER SUPPLY ALTERATIONS
SEE SHEET 28 - 31

DRAINAGE DETAILS
SEE SHEET 31



GENERAL NOTES:

1. SEE UTILITY PLANS & BRIDGE PLANS FOR DETAILS REGARDING TEMPORARY SUPPORT OF UTILITIES DURING BRIDGE CONSTRUCTION.
2. SEE BRIDGE PLANS AND SPECIAL PROVISIONS FOR NON-STANDARD HIGHWAY GUARDRAIL TRANSTIONS.

S21003 - ALIGNMENT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	200+00.00	2854737.4018	508392.4620		N9°25'49"E 600.00'	206+00.00	2855329.293	508490.770

FOR PROFILES SEE SHEET 9

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	8	103
PROJECT FILE NO. 608862			

CONSTRUCTION PLANS
PDF SHEET 10 OF 30

HIGHWAY GUARD DETAILS

STA 301+31± LT TO STA 301+31± LT — ITEM 627.19 TERMINAL END, TYPE G
STA 301+31± LT TO STA 301+59± LT — ITEM 628.245 TRANSITION TO BRIDGE RAIL - THRIE BEAM

STA 302+21± RT TO STA 302+52± RT — ITEM 628.24 TRANSITION TO BRIDGE RAIL
STA 302+52± RT TO STA 302+72± RT — ITEM 627.82 GUARDRAIL TANGENT END TREATMENT, TL-2

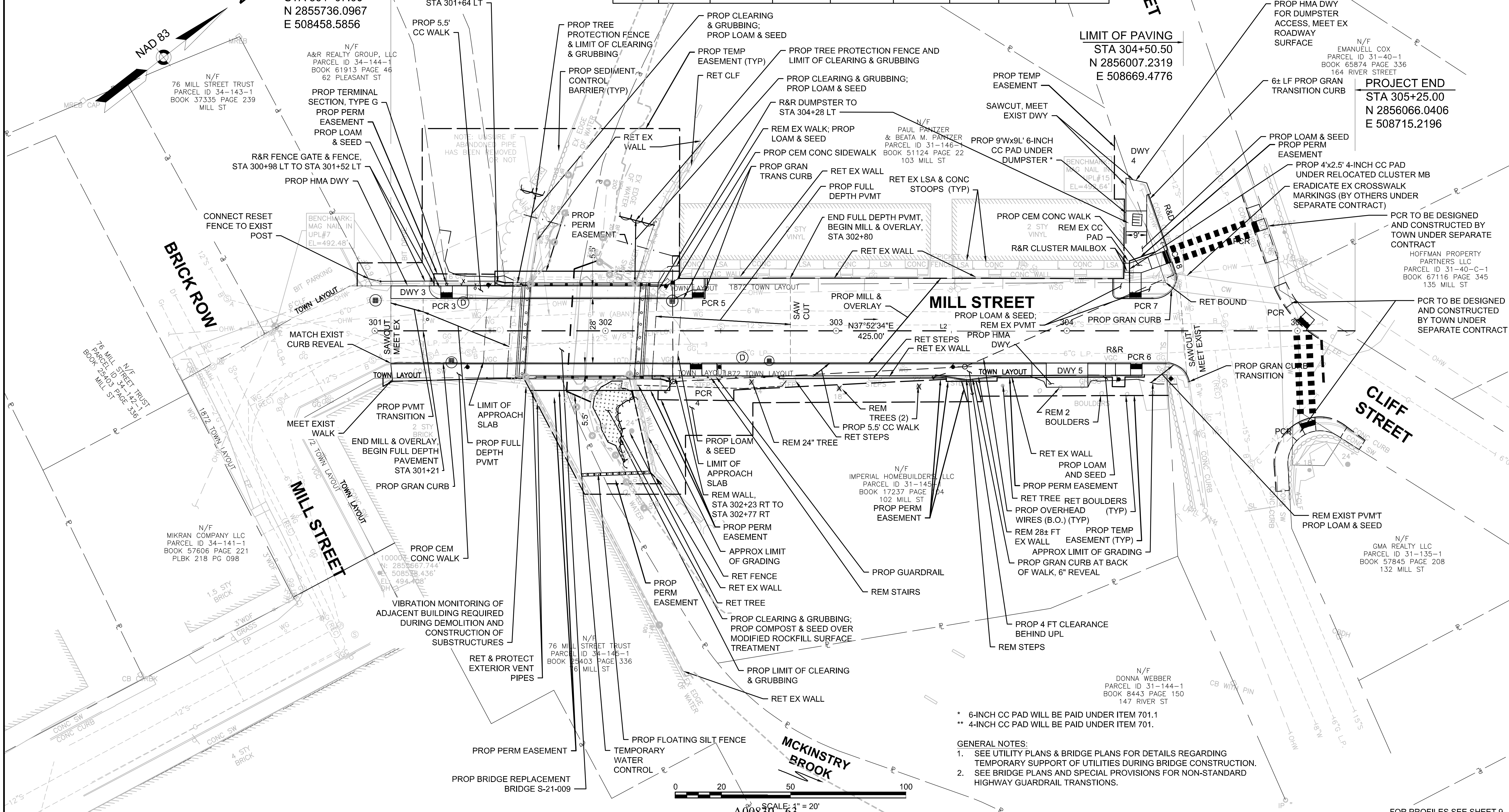
TRAFFIC SIGNAL CONDUIT
NONE

WATER SUPPLY ALTERATIONS
SEE SHEET 32 - 35

DRAINAGE DETAILS
SEE SHEET 35

S21009 - ALIGNMENT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L2	301+00.00	2855730.5713	508454.2879		N37°52'34"E 425.00'	305+25.00	2856066.041	508715.220



* 6-INCH CC PAD WILL BE PAID UNDER ITEM 701.1
** 4-INCH CC PAD WILL BE PAID UNDER ITEM 701.

GENERAL NOTES:
1. SEE UTILITY PLANS & BRIDGE PLANS FOR DETAILS REGARDING TEMPORARY SUPPORT OF UTILITIES DURING BRIDGE CONSTRUCTION.
2. SEE BRIDGE PLANS AND SPECIAL PROVISIONS FOR NON-STANDARD HIGHWAY GUARDRAIL TRANSTIONS.

FOR PROFILES SEE SHEET 9

Plotted on 29-Sep-2025 3:47 PM
608862_EV(GEN).DWG

Proposal No. 608862-136646

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	11	103
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-003 STAGE 0

Plotted on 29-Sep-2025 3:21 PM
608862_EV(UTIL).DWG

WEST STREET
MAIN STREET
HIGH STREET
MILL STREET
HAMILTON STREET
MAIN STREET
QUINEBAUG RIVER

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

NAD 83 N

PROP TEMP EASEMENT
TEMP STUB POLE & TEMP GUY (B.O.)
TEMP ARM (B.O.)
TEMP OHW (B.O.), NATIONAL GRID & CHARTER
PROP TEMP EASEMENT
APPROX. LOCATION 24"± RCP INV-OUT
REM EX GAS GATE (B.O.)
TEMP & PERM PT OF ATTACHMENT (B.O.), ALL SERVICES
TEMPORARILY REM EX OHW (B.O.)
REMOVE EX 15" CI SEWER PIPE
INSTALL & ACTIVATE TEMP SEWER BYPASS
PERMANENT CAP & CUT 3" GAS (B.O.)
PROP PERM EASEMENT
CUT & CAP 10" WATER LINE +70
REM 139± LF 10" WATER LINE
RET 10" EX GAS
REM ULT 1 (B.O.)
INSTALL PERM ULT, (45 FT TALL FIBERGLASS POLE, W/ 3 FT DIA. CRUSHED STONE FOUNDATION (BY NGRID), SUPPORT DURING HIGHWAY GUARDRAIL TRANSITION INSTALLATION
PROP FLOATING SILT FENCE
PROP BRIDGE REPLACEMENT BRIDGE S-21-003
PROP LIMIT OF CLEARING & GRUBBING (TYP)
REM EX 3" GAS (B.O.)
REM EX GAS GATE (B.O.)
CONFIRM W/ WATER DEPT BEFORE ABAN
PROP PERM EASEMENT
REM ULT 2 & GUY
CUT & CAP 10" WATER LINE +06
TEMPORARILY REM EX OHW, ALL SERVICES (B.O.)
TEMPORARILY REM OHW (B.O.)
UPGRADE POLE ULT 3 (B.O.)
PROP TEMP EASEMENT
INSTALL TEMP GUY (B.O.)
PERMANENT CAP & CUT 3" GAS (2) (B.O.)
PROP PERM EASEMENT
RET EX OHW
TEMP OHW (B.O.)
INSTALL TEMP UPL (B.O.)
PROVIDE TEMP OHW SERVICE (B.O.)
PROP TEMP EASEMENT
PROP PERM EASEMENT
RET 10" EX GAS
RET EX GAS
TEMPORARILY REM EX OHW (B.O.)
UPGRADE EX POLE UPL 7 AND GUY (B.O.)
PROP TEMP GUY (B.O.)
PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT
RET UPL 47
INSTALL PERMANENT POLE & GUY (B.O.) FOR TEMP SERVICE
RET OHW
TEMP OHW (B.O.), ALL SERVICES
RET UPL 19/46
TEMPORARILY REM EX OHW (B.O.)
TEMP OHW (B.O.), VERIZON
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP GRAVEL PARKING LOT (B.O. UNDER SEPARATE CONTRACT), TO BE COMPLETED PRIOR TO BRIDGE CONSTRUCTION.

GENERAL NOTES:
1. STAGE 0 CONSISTS OF WORK NEEDED TO BE COMPLETED BEFORE BRIDGE DEMOLITION.
2. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
3. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
4. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.

LEGEND
- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

A00830 - 64

Proposal No. 608862-136646

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	12	103
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-003 STAGE 1

608862_EV(UTIL).DWG Plotted on 29-Sep-2025 3:21 PM

WEST STREET
MAIN STREET
HIGH STREET
MILL STREET
HAMILTON STREET
MAIN STREET
QUINEBAUG RIVER

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

NAD 83 N

PROP TEMP EASEMENT
PROP PERM EASEMENT
APPROX. LOCATION 24"± RCP INV-OUT
MAINTAIN TEMP SEWER BYPASS
CONFIRM W/ WATER DEPT BEFORE ABAN
RET HYD
RET HYD (2)
PROP TEMP EASEMENT
EXISTING TOWN LAYOUT
1997 TOWN LAYOUT
1955 TOWN LAYOUT
1866 COUNTY LAYOUT
RET EXIST 10" GAS
PROP GRAVEL PARKING LOT (B.O. UNDER SEPARATE CONTRACT), TO BE COMPLETED PRIOR TO BRIDGE CONSTRUCTION.
DEMOLISH & BUILD BRIDGE DECK (WEST HALF AND PORTION OF EAST HALF)
PROP FLOATING SILT FENCE
PROP BRIDGE REPLACEMENT BRIDGE S-21-003
PROP LIMIT OF CLEARING & GRUBBING (TYP)

GENERAL NOTES:
1. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
2. RETAIN ALL EXISTING WATER SHUTOFF, GATES, AND HYDRANTS UNLESS OTHERWISE INDICATED.
3. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
4. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.
5. GAS AND SEWER LINES SHALL BE RELOCATED TO WESTERN BAY PRIOR TO DEMOLITION OF EASTERN BAY.

LEGEND
- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

Proposal No. 608862-136646

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	13	103
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-003 STAGE 2

608862_EV(UTIL).DWG Plotted on 29-Sep-2025 3:21 PM

WEST STREET
MAIN STREET
HIGH STREET
HAMILTON STREET
MILL STREET
QUINEBAUG RIVER

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

NAD 83 N

PROP TEMP EASEMENT
PROP PERM EASEMENT
APPROX. LOCATION 24"± RCP INV-OUT
PROP 141 LF 16" DI SEWER (MJ), INSULATED & JACKETED
CONFIRM W/ WATER DEPT BEFORE ABAN
RET HYD
RET HYD (2)
PROP TEMP EASEMENT
PROP 225± LF 12" GAS MAIN (B.O.)
PROP GAS GATE (B.O.)
CUT & CAP 10" GAS (B.O.)
REM 139± LF 10" GAS (B.O.)
DEMO & CONSTRUCT REMAINDER OF BRIDGE
PROP BRIDGE REPLACEMENT BRIDGE S-21-003
PROP LIMIT OF CLEARING & GRUBBING (TYP)
PROP FLOATING SILT FENCE
PROP GRAVEL PARKING LOT (B.O. UNDER SEPARATE CONTRACT), TO BE COMPLETED PRIOR TO BRIDGE CONSTRUCTION.

GENERAL NOTES:
1. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
2. RETAIN ALL EXISTING WATER SHUTOFF, GATES, AND HYDRANTS UNLESS OTHERWISE INDICATED.
3. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
4. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.

LEGEND
- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

Proposal No. 608862-136646

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	14	103
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-003 STAGE 3 (PERMANENT CONDITION)
PDF SHEET 14 OF 30

608862_EV\UTIL.DWG Plotted on 29-Sep-2025 3:21 PM

WEST STREET
MAIN STREET
HIGH STREET
MILL STREET
HAMILTON STREET
MAIN STREET
QUINEBAUG RIVER

PROJECT BEGIN
STA 201+05.00
N: 2854840.9828
E: 508409.6660

LIMIT OF WORK
STA 204+70.00
N: 2855201.0501
E: 508469.4702

NAD 83 N

PROP TEMP EASEMENT
ADJ GATE
ADJ SERVICE BOX
PROP TEMP EASEMENT
PROP PERM EASEMENT
RET UPL 47
ABAN GAS LINE (B.O.)
APPROX. LOCATION 24"± RCP INV–OUT
RET CONC BOUND
PROP DMH
REM EX CB & LATERALS
REM TEMP SERVICE WIRES, INSTALL PROP NGRID GUY WIRE (B.O.)
RET OHW
PROP 10'± OF 6" DI (MJ)
RET WSO
RET MW
R&R HYD
ADJ MW
REM EX CB; ABAN LATERAL
ADJ PROP CBCI
MAINTAIN 12" GAS
PROP OHW (BY VERIZON), CONFIRM W/ WATER DEPT BEFORE ABAN
3' - 12" RCP CL IV
PROP CBCI
19' - 10" DI
ADJ CB
PROP PERM EASEMENT
PROP ULT 2 & GUY (B.O.)
PROP PERM EASEMENT
PROP TEMP EASEMENT
UPGRADE POLE UPL 3 (B.O.)
RET HYD
PROP OHW (B.O.)
RET EX OHW
ADJ WG
ADJ SERVICE BOX
16' - 12" RCP
PROP PERM EASEMENT
MAINTAIN 16" SEWER
ADJ WG (2)
SAWCUT; MEET EXIST
ADJ GG (B.O.)
PROP CONDUIT
PROP TS POST (TYP)
4' - 12" RCP
PROP DMH
ADJ SMH
PROP VERT BEND (2)
25' - 12" RCP CL IV
RET 12" RCP
ADJ
ADJ GG
PROP CB
RET UPT 19/46
RET EX CONDUIT
29' - 12" RCP
DIRT
PROP CIT
PROP 174± LF 10" DI WATER (MJ), INSULATED & JACKETED
PROP VERT BEND (2)
2' - 12" RCP CL IV
PROP OHW (B.O.) ALL SERVICES
PROP TEMP EASEMENT
RET HYD (2)
PROP TEMP EASEMENT
PROP PERM EASEMENT
PROP OHW (B.O.)
PROP PERM EASEMENT
INSTALL SERVICE OHW (B.O.), ALL SERVICES
PROP TEMP EASEMENT
UPL 18/45/15
HOLD POLE OR TEMPORARILY GUY DURING INSTALLATION OF HIGHWAY GUARDRAIL TRANSITION
PROP GRAVEL PARKING LOT (B.O. UNDER SEPARATE CONTRACT), TO BE COMPLETED PRIOR TO BRIDGE CONSTRUCTION.
RET RPC PIPE & OUTLET
PROP PERM EASEMENT
PROP FLOATING SILT FENCE
PROP TEMP EASEMENT
PROP BRIDGE REPLACEMENT BRIDGE S-21-003
PROP LIMIT OF CLEARING & GRUBBING (TYP)
PROP TEMP EASEMENT
PROP PERM EASEMENT
UPGRADE EX POLE UPL 7 AND GUY (B.O.)
UPL 6
PROP TEMP EASEMENT
PROP PERM EASEMENT

LEGEND
- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

GENERAL NOTES:
1. DRAINAGE ELEVATIONS AND INVERTS ARE PROVIDED FOR DESIGN PURPOSES ONLY. ANY FIELD ADJUSTMENTS REQUIRED FOR POSITIVE DRAINAGE WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS AND INVERTS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED.
2. COVERS OF PROPOSED OR EXISTING UTILITY STRUCTURES WITHIN AN ADA ACCESSIBLE PATH SHALL BE CAREFULLY ADJUSTED TO BE FLUSH ON ALL SIDES WITH THE FINISHED SURFACE.
3. SEE BRIDGE PLANS FOR DETAILS REGARDING TEMPORARY SUPPORT OF UTILITIES DURING BRIDGE CONSTRUCTION.
4. UNLESS OTHERWISE NOTED, TRIM TREES AS NEEDED TO PROVIDE A MIMIMUM OF 10 FT CLEARANCE AROUND PERMANENT AND TEMPORARY OVERHEAD ELECTRIC POWER WIRES.
5. RETAIN ALL EXISTING WATER SHUTOFF, GATES, AND HYDRANTS UNLESS OTHERWISE INDICATED.
6. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
7. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.

SCALE: 1" = 20'

S-21-003 MILL STREET STRUCTURE TABLE

NO.	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS	TYPE
7	202+49.5 12.5' RT	494.48		I=490.00' (24)		PROP CB
8	202+79.1 29.2' RT	492.23	I=488.40' (24)	I=488.29 (EX)	EXIST DAYLIGHT= 488.09±	EX CB PROP CIT
11	204+01.7 12.4' RT	490.53	I=486.70' (22) I=486.68' (12)	I=486.56 (EX)		EX CB PROP CIT
12	204+06.3 -16.4' LT	491.62	I=487.10' (23) I=487.11' (13)	I=487.00' (11)		PROP DMH
21	202+51.6 -13.0' LT	494.26		I=489.62' (24)	ECCENTRIC, ROTATE BODY UNDER SW	PROP CBCI
22	204+07.8 12.5' RT	490.67		I=486.80' (11)		PROP CB
23	204+00.4 -12.5' LT	491.09		I=487.20' (12)		PROP CBCI
24	202+55.3 6.9' RT	494.29	I=489.90' (7) I=489.42' (21)	I=488.70' (8)		PROP DMH

A00830 - 67

Proposal No. 608862-136646

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	15	103
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-009 STAGE 0

Plotted on 29-Sep-2025 3:21 PM
608862_EV(UTIL).DWG

N
NAD 83

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

LIMIT OF PAVING
STA 304+50.50
N: 2856007.2319
E: 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

BRICK ROW
RIVER STREET
MILL STREET
CLIFF STREET
MCKINSTRY BROOK

TEMP NGRID OVHD POWER SERVICE (B.O.)
RET EX WATER MAIN - KEEP IN SERVICE
RET EX GAS MAIN - KEEP IN SERVICE
PROP PERM EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP LIMIT OF CLEARING & GRUBBING
PROP TREE & PLANT PROTECTION FENCE (TYP)
RET ULT 8-1
REM OHW (B.O.)
PROP LIMIT OF CLEARING & GRUBBING
PROP PERM EASEMENT
PROP PERM ARM FOR SERVICE OHW (B.O.)
TEMPORARILY REM EX SERVICE TO BLDG (B.O.)
REM ULT 8 (B.O.); R&S LUMINAIRE (B.O.)
REM OHW (B.O.)
REM ULT 9 & TRANSFORMER (B.O.); R&R LUMINAIRE (B.O.)
REM OHW (B.O.)
REM EX GUY (B.O.)
PROP TEMP EASEMENT
PROP PERM EASEMENT
CONSTRUCT DUMPSTER ACCESS DWY
RESET DUMPSTER (B.O)
PROP PERM GUY (B.O.)
RET ULT 15
RET UPL
RET OHW
RET OHW
RET ULT 7
RET OHW
REM OHW (B.O.)
LIMIT OF TREE TRIMMING (5± FT OFFSET)
SAWCUT MEET EX
PROP PERM OHW (B.O.) - CHARTER, VERIZON, NGRID
PROP PERM UPL & TRANSFORMER (B.O.); RESET LUMINAIRE HERE (B.O.)
NGRID POWER DEAD ENDS HERE FOR STAGES 0,1,2
TEMP GUY (B.O.)
PROP TEMP EASEMENT (TYP)
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROVIDE TEMP OHW CHARTER SERVICE (B.O.)
PROP PERM EASEMENT
PROP SEDIMENT CONTROL BARRIERS (TYP)
PROP BRIDGE REPLACEMENT BRIDGE S-21-009
PROP LIMIT OF CLEARING & GRUBBING
PROP PERM EASEMENT
PROP FLOATING SILT FENCE
RET & PROTECT EXTERIOR VENT PIPES
RET & PROTECT EX SEWER MAIN UNDER CHANNEL, KEEP IN SERVICE
CHARTER CABLE & VERIZON PERM OVHD SERVICE WIRES (B.O.), INSTALL BEFORE BRIDGE CONST
NOTE: UNSURE IF ABANDONED PIPE HAS BEEN REMOVED OR NOT

N/F
A&R REALTY GROUP, LLC
PARCEL ID 34-144-1
BOOK 61913 PAGE 46
62 PLEASANT ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-143-1
BOOK 37335 PAGE 239
MILL ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-145-1
BOOK 25403 PAGE 336
MILL ST

N/F
PAUL PANTZER
& BEATA M. PANTZER
PARCEL ID 31-146-1
BOOK 51124 PAGE 22
103 MILL ST

N/F
IMPERIAL HOMEBUILDERS, LLC
PARCEL ID 31-145-1
BOOK 17237 PAGE 104
102 MILL ST

N/F
EMANUELL COX
PARCEL ID 31-40-1
BOOK 65874 PAGE 336
164 RIVER STREET

N/F
HOFFMAN PROPERTY
PARTNERS LLC
PARCEL ID 31-40-C-1
BOOK 67116 PAGE 345
135 MILL ST

N/F
GMA REALTY LLC
PARCEL ID 31-135-1
BOOK 57845 PAGE 208
132 MILL ST

N/F
DONNA WEBBER
PARCEL ID 31-144-1
BOOK 8443 PAGE 150
147 RIVER ST

N/F
MIKRAN COMPANY LLC
PARCEL ID 34-141-1
BOOK 57606 PAGE 221
PLBK 218 PG 098

BENCHMARK:
MAG NAIL IN
UPL#7
EL=492.48'

BENCHMARK:
MAG NAIL IN
UPL#15
EL=492.64'

SMH
RIM=490.99
INV.(A)=482.36
INV.(B)=482.39

SMH
RIM=491.34
INV.(A)=480.58
INV.(B)=480.59
INV.(C)=481.47

SMH
RIM=491.64
INV.(A)=480.07
INV.(B)=480.29
INV.(C)=487.18

SMH
RIM=487.40
INACCESSIBLE
CAN'T OPEN

SMH
RIM=488.07
MIDDLE=481.79
INACCESSIBLE PIPES

SMH
RIM=488.38
INV.(A)=481.82
INV.(B)=481.86
INV.(C)=482.15

SMH
RIM=489.48
INV.(A)=482.32
INV.(B)=482.26

SMH
RIM=492.44
INV.(A)=482.47
INV.(B)=482.43

CB
RIM=485.47
T.O.W.=483.97
T.O.S.=482.47
NPV

CB
RIM=488.62
INV.(A)=485.02
INV.(B)=485.10

CB
RIM=490.45
INV.(A)=487.65
INV.(B)=NPV
INV.(C)=488.35

CB
RIM=487.11
INV.(A)=484.12
INV.(B)=485.93
INV.(C)=484.12

CB
RIM=485.88
T.O.S.=483.23
NPV

CB
RIM=486.41
INV.=481.74
SUMP=481.59

CB
RIM=487.14
INV.=486.37

100003
N: 2855667.744'
E: 508538.436'
EL: 494.408'
DH

TOWN OF SOUTHBRIDGE SEWER ACCESS EASEMENT (BOOK 61913 PAGE 46)

GENERAL NOTES:
1. STAGE 0 CONSISTS OF WORK NEEDED TO BE COMPLETED BEFORE BRIDGE DEMOLITION.
2. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
3. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
4. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.

LEGEND
- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

A00830 - 68

Proposal No. 608862-136646

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	16	103
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-009 STAGE 1

Plotted on 29-Sep-2025 3:21 PM
608862_EV(UTIL).DWG

NAD 83

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

LIMIT OF PAVING
STA 304+50.50
N: 2856007.2319
E: 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

RET EX WATER MAIN - KEEP IN SERVICE
RET EX GAS MAIN - KEEP IN SERVICE
TEMPORARY WATER CONTROL
PROP LIMIT OF CLEARING & GRUBBING
PROP TREE & PLANT PROTECTION FENCE (TYP)
PROP PERM EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP PERM EASEMENT
PROP TEMP EASEMENT
STAGE 1 - DEMOLISH AND BUILD EAST SIDE OF BRIDGE
LIMIT OF TREE TRIMMING (5± FT OFFSET)
PROP SEDIMENT CONTROL BARRIERS (TYP)
PROP BRIDGE REPLACEMENT BRIDGE S-21-009
PROP LIMIT OF CLEARING & GRUBBING
PROP PERM EASEMENT
PROP FLOATING SILT FENCE
PROP TEMP EASEMENT (TYP)
PROP PERM EASEMENT

BRICK ROW
MILL STREET
MCKINSTRY BROOK
RIVER STREET
CLIFF STREET
SAWCUT MEET EX

N/F A&R REALTY GROUP, LLC
PARCEL ID 34-144-1
BOOK 61913 PAGE 46
62 PLEASANT ST

N/F 76 MILL STREET TRUST
PARCEL ID 34-143-1
BOOK 37335 PAGE 239
MILL ST

N/F 76 MILL STREET TRUST
PARCEL ID 34-142-1
BOOK 25403 PAGE 336
MILL ST

N/F MIKRAN COMPANY LLC
PARCEL ID 34-141-1
BOOK 57606 PAGE 221
PLBK 218 PG 098

N/F PAUL PANTZER & BEATA M. PANTZER
PARCEL ID 31-146-1
BOOK 51124 PAGE 22
103 MILL ST

N/F IMPERIAL HOMEBUILDERS, LLC
PARCEL ID 31-145-1
BOOK 17237 PAGE 104
102 MILL ST

N/F EMANUELL COX
PARCEL ID 31-40-1
BOOK 65874 PAGE 336
164 RIVER STREET

N/F HOFFMAN PROPERTY PARTNERS LLC
PARCEL ID 31-40-C-1
BOOK 67116 PAGE 345
135 MILL ST

N/F GMA REALTY LLC
PARCEL ID 31-135-1
BOOK 57845 PAGE 208
132 MILL ST

N/F DONNA WEBBER
PARCEL ID 31-144-1
BOOK 8443 PAGE 150
147 RIVER ST

TOWN OF SOUTHBRIDGE SEWER ACCESS EASEMENT (BOOK 61913 PAGE 46)

CB RIM=485.47 T.O.W.=483.97 T.O.S.=482.47 NPV
CB RIM=488.62 INV.(A)=485.02 INV.(B)=485.10
CB RIM=490.45 INV.(A)=487.65 INV.(B)=NPV INV.(C)=488.35
CB RIM=487.11 INV.(A)=484.12 INV.(B)=485.93 INV.(C)=484.12
CB RIM=485.88 T.O.S.=483.23 NPV
CB RIM=486.41 INV.=481.74 SUMP=481.59
CB RIM=487.14 INV.=486.37

SMH RIM=490.99 INV.(A)=482.36 INV.(B)=482.39
SMH RIM=488.07 MIDDLE=481.79 INACCESSIBLE PIPES
SMH RIM=488.38 INV.(A)=481.82 INV.(B)=481.86 INV.(C)=482.15
SMH RIM=489.48 INV.(A)=482.32 INV.(B)=482.26
SMH RIM=492.44 INV.(A)=482.47 INV.(B)=482.43
SMH RIM=487.40 INACCESSIBLE CAN'T OPEN
SMH RIM=491.34 INV.(A)=480.58 INV.(B)=480.59 INV.(C)=481.47
SMH RIM=491.64 INV.(A)=480.07 INV.(B)=480.29 INV.(C)=487.18

NOTE: UNSURE IF ABANDONED PIPE HAS BEEN REMOVED OR NOT

BENCHMARK: MAG NAIL IN UPL#7 EL=492.48'
BENCHMARK: MAG NAIL IN UPL#15 EL=492.64'

100003 N: 2855667.744' E: 508538.436' EL: 494.408' DH

2 STY VINYL
2 STY BRICK
1.5 STY BRICK
4 STY BRICK

GENERAL NOTES:
1. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
2. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
3. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.

LEGEND
PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

A00830 - 69

Proposal No. 608862-136646

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	17	103
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-009 STAGE 2

Plotted on 29-Sep-2025 3:21 PM
608862_EV(UTIL).DWG

N
NAD 83

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

LIMIT OF PAVING
STA 304+50.50
N: 2856007.2319
E: 508669.4776

BRICK ROW
RIVER STREET
MILL STREET
MCKINSTRY BROOK
CLIFF STREET

N/F
A&R REALTY GROUP, LLC
PARCEL ID 34-144-1
BOOK 61913 PAGE 46
62 PLEASANT ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-143-1
BOOK 37335 PAGE 239
MILL ST

N/F
PAUL PANTZER
& BEATA M. PANTZER
PARCEL ID 31-146-1
BOOK 51124 PAGE 22
103 MILL ST

N/F
EMANUELL COX
PARCEL ID 31-40-1
BOOK 65874 PAGE 336
164 RIVER STREET

N/F
HOFFMAN PROPERTY
PARTNERS LLC
PARCEL ID 31-40-C-1
BOOK 67116 PAGE 345
135 MILL ST

N/F
IMPERIAL HOMEBUILDERS, LLC
PARCEL ID 31-145-1
BOOK 17237 PAGE 104
102 MILL ST

N/F
MIKRAN COMPANY LLC
PARCEL ID 34-141-1
BOOK 57606 PAGE 221
PLBK 218 PG 098

N/F
76 MILL STREET TRUST
PARCEL ID 34-145-1
BOOK 25403 PAGE 336
76 MILL ST

N/F
76 MILL STREET TRUST
PARCEL ID 34-142-1
BOOK 25403 PAGE 336
MILL ST

N/F
DONNA WEBBER
PARCEL ID 31-144-1
BOOK 8443 PAGE 150
147 RIVER ST

N/F
GMA REALTY LLC
PARCEL ID 31-135-1
BOOK 57845 PAGE 208
132 MILL ST

TOWN OF SOUTHBRIDGE SEWER ACCESS EASEMENT (BOOK 61913 PAGE 46)

REM 115± LF EX GAS, RELOCATE GAS TO EAST SIDE (B.O.)
DEMOLISH PIER
TEMPORARY WATER CONTROL
DE-ACTIVATE AND REM 96± LF EX WATER
PROP LIMIT OF CLEARING & GRUBBING
PROP TREE & PLANT PROTECTION FENCE (TYP)
PROP PERM EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP PERM EASEMENT
PROP TEMP EASEMENT
STAGE 2 - DEMOLISH AND BUILD WEST SIDE OF BRIDGE
NOTE: UNSURE IF ABANDONED PIPE HAS BEEN REMOVED OR NOT
BEGIN 8" GAS RELOCATION (B.O.)
LIMIT OF TREE TRIMMING (5± FT OFFSET)
END PROP 8" GAS RELOCATION (B.O.)
ABAN 49± GASLINE IN OVERLAY AREA (B.O.)
REM EX GG (B.O.)
ABAN EX GAS UNDER CHANNEL BED (B.O.)
RET & PROTECT EXTERIOR VENT PIPES
RET & PROTECT EX SEWER MAIN UNDER CHANNEL, KEEP IN SERVICE
PROP RELOCATED 8" GAS LINE (B.O.)
PROP SEDIMENT CONTROL BARRIERS (TYP)
PROP BRIDGE REPLACEMENT BRIDGE S-21-009
PROP LIMIT OF CLEARING & GRUBBING
PROP FLOATING SILT FENCE
PROP TEMP EASEMENT (TYP)
SAWCUT & MEET EX

CB RIM=485.47 T.O.W.=483.97 T.O.S.=482.47 NPV
CB RIM=488.62 INV.(A)=485.02 INV.(B)=485.10
CB RIM=490.45 INV.(A)=487.65 INV.(B)=NPV INV.(C)=488.35
CB RIM=487.11 INV.(A)=484.12 INV.(B)=485.93 INV.(C)=484.12
CB RIM=485.88 T.O.S.=483.23 NPV
CB RIM=486.41 INV.=481.74 SUMP=481.59
CB RIM=487.14 INV.=486.37
SMH RIM=490.99 INV.(A)=482.36 INV.(B)=482.39
SMH RIM=488.07 MIDDLE=481.79 INACCESSIBLE PIPES
SMH RIM=488.38 INV.(A)=481.82 INV.(B)=481.86 INV.(C)=482.15
SMH RIM=489.48 INV.(A)=482.32 INV.(B)=482.26
SMH RIM=492.44 INV.(A)=482.47 INV.(B)=482.43
SMH RIM=487.40 INACCESSIBLE CAN'T OPEN
SMH RIM=491.34 INV.(A)=480.58 INV.(B)=480.59 INV.(C)=481.47
SMH RIM=491.64 INV.(A)=480.07 INV.(B)=480.29 INV.(C)=487.18
BENCHMARK: MAG NAIL IN UPL#7 EL=492.48'
BENCHMARK: MAG NAIL IN UPL#15 EL=492.64'
100003 N: 2855667.744' E: 508538.436' EL: 494.408'

GENERAL NOTES:
1. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
2. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
3. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.

LEGEND
PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

0 20 50 100
SCALE: 1" = 20'

Project No. 608862-126646

S-21-009 MILL STREET STRUCTURE TABLE

NO.	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS	TYPE
2	302+29 -13.0' LT	487.38		I=483.83' (3)		PROP CB
3	302+59.3 11.6' RT	486.90	I=482.08' (2) I=482.08' (4)	I=482.08' ()		PROP DMH
4	302+71 13.0' RT	486.82		I=482.83' (3)		PROP CBCI
6	302+12.7 11.2' RT	479.22		MATCH EX INV		OUTLET THROUGH ABUTMENT

S-21-009 MILL STREET STRUCTURE TABLE

NO.	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS	TYPE
1	301+33.3 13.6' RT	488.13		I=483.83' (20)		PROP ECC CBCI
18	301+00.3 -13.2' LT	488.62		I=484.33' (20)		PROP CB
19	301+67.2 -13.0' LT	480.01		MATCH EX INV		OUTLET THROUGH ABUTMENT
20	301+38.3 -12.3' LT	487.99	I=482.25' (1) I=482.67' (18)	I=482.25' ()		PROP ECC DMH

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	18	103
PROJECT FILE NO. 608862			

UTILITY PLANS
S-21-009 STAGE 3 (PERMANENT CONDITION)
PDF SHEET 18 OF 30

608862_EV(UTIL).DWG Plotted on 29-Sep-2025 3:21 PM

NAD 83

LIMIT OF WORK
STA 301+07.00
N: 2855736.0967
E: 508458.5856

LIMIT OF PAVING
STA 304+50.50
N: 2856007.2319
E: 508669.4776

PROJECT END
STA 305+25.00
N 2856066.0406
E 508715.2196

BRICK ROW

MILL STREET

RIVER STREET

CLIFF STREET

MCKINSTRY BROOK

PROP 2" WATER SERVICE
REM EX WATER SERVICE
PROP DMH, USE ECCENTRIC CONE TO CLEAR CURB
PROP 8" WG W/ 8" TO 6" REDUCER
CONNECT TO EX WATER
RET EX UPL
RET EX OHW
RET ULT 7
RET EX OHW
RET EX OHW
PROP CB
TOWN L.O.
34' - 12" RCP
23' - 12" RCP
ADJ (B.O)
ADJ
TOWN L.O.
PROP CBCI
PROP 12" RCP DRAIN OUTLET THRU ABUTMENT WALL, MATCH EX INV
REM EX CB & PIPE
RET SEWER UNDER CHANNEL BED
RET & PROTECT EXTERIOR VENT PIPES
PROP PERM EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP LIMIT OF CLEARING & GRUBBING
PROP TREE & PLANT PROTECTION FENCE (TYP)
DEMOLISH REMAINDER OF PIER
RET ULT 8-1
NOTE: UNSURE IF ABANDONED PIPE HAS BEEN REMOVED OR NOT
27' - 12" RCP
REM WG
REM EX CB
REM EX CB (ABAN) 6" W
35' - 10" DI
8' - 12" RCP CL IV
45' - 12" RCP
TEMPORARY WATER CONTROL
PROP LIMIT OF CLEARING & GRUBBING
PROP PERM EASEMENT
PROP 125 LF 8"Ø DI WATER, INSULATED & JACKETED
REM EX CB; ABAN PIPE
PROP CB
PROP OHW, ALL SERVICES (B.O.)
PROP CBCI
PROP DMH
PROP TEMP EASEMENT
PROP UPL AND GUY (B.O.)
RESET STACKED LUMINAIRE HERE (B.O.)
PROP SEDIMENT CONTROL BARRIERS (TYP)
PROP 12" RCP DRAIN OUTLET THRU ABUTMENT WALL; MATCH EX INV
PROP BRIDGE REPLACEMENT BRIDGE S-21-009
PROP LIMIT OF CLEARING & GRUBBING
PROP PERM EASEMENT
PROP FLOATING SILT FENCE
PROP TEMP EASEMENT
PROP SIDEWALK GUY (B.O.)
PROP OHW (B.O.)
PROP PERM EASEMENT
PROP TEMP EASEMENT (TYP)
TRIM TREES TO CLEAR OVERHEAD WIRES (TYP)
PROP SIDEWALK GUY (B.O.)
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP PERM EASEMENT
RET ULT 15
LIMIT OF TREE TRIMMING (5± FT OFFSET)
SAWCUT MEET EX
TOWN LAYOUT
1872 TOWN LAYOUT
ADJ WG
ADJ (B.O)
ADJ WG(REC)
ADJ WG(REC) EX
ADJ WSO
6"G L.P.
12"S W/8"S OVERFLOW
BENCHMARK: MAG NAIL IN UPL#7 EL=492.48'
BENCHMARK: MAG NAIL IN UPL#15 EL=492.64'
100003 N: 2855667.744' E: 508538.436' EL: 494.408' DH
SMH RIM=490.99 INV.(A)=482.36 INV.(B)=482.39
SMH RIM=488.07 MIDDLE=481.79 INACCESSIBLE PIPES
SMH RIM=488.38 INV.(A)=481.82 INV.(B)=481.86 INV.(C)=482.15
SMH RIM=489.48 INV.(A)=482.32 INV.(B)=482.26
SMH RIM=492.44 INV.(A)=482.47 INV.(B)=482.43
SMH RIM=487.40 INACCESSIBLE CAN'T OPEN
SMH RIM=491.34 INV.(A)=480.58 INV.(B)=480.59 INV.(C)=481.47
SMH RIM=491.64 INV.(A)=480.07 INV.(B)=480.29 INV.(C)=487.18
CB RIM=485.47 T.O.W.=483.97 T.O.S.=482.47 NPV
CB RIM=488.62 INV.(A)=485.02 INV.(B)=485.10
CB RIM=490.45 INV.(A)=487.65 INV.(B)=NPV INV.(C)=488.35
CB RIM=487.11 INV.(A)=484.12 INV.(B)=485.93 INV.(C)=484.12
CB RIM=485.88 T.O.S.=483.23 NPV
CB RIM=487.14 INV.=486.37
CB RIM=488.41 INV.=481.74 SUMP=481.59
CB WITH PIN
CBDH
N/F A&R REALTY GROUP, LLC PARCEL ID 34-144-1 BOOK 61913 PAGE 46 62 PLEASANT ST
N/F 76 MILL STREET TRUST PARCEL ID 34-143-1 BOOK 37335 PAGE 239 MILL ST
N/F 76 MILL STREET TRUST PARCEL ID 34-145-1 BOOK 25403 PAGE 336 MILL ST
N/F MIKRAN COMPANY LLC PARCEL ID 34-141-1 BOOK 57606 PAGE 221 PLBK 218 PG 098
N/F PAUL PANTZER & BEATA M. PANTZER PARCEL ID 31-146-1 BOOK 51124 PAGE 22 103 MILL ST
N/F IMPERIAL HOMEBUILDERS, LLC PARCEL ID 31-145-1 BOOK 17237 PAGE 104 102 MILL ST
N/F EMANUELL COX PARCEL ID 31-40-1 BOOK 65874 PAGE 336 164 RIVER STREET
N/F HOFFMAN PROPERTY PARTNERS LLC PARCEL ID 31-40-C-1 BOOK 67116 PAGE 345 135 MILL ST
N/F GMA REALTY LLC PARCEL ID 31-135-1 BOOK 57845 PAGE 208 132 MILL ST
N/F DONNA WEBBER PARCEL ID 31-144-1 BOOK 8443 PAGE 150 147 RIVER ST
TOWN OF SOUTHBRIDGE SEWER ACCESS EASEMENT (BOOK 6191 PAGE 46)
MRRB
MRRB CAP
1.5 STY BRICK
4 STY BRICK
2 STY VINYL
3'WDF
CONC WALL
CONC CURB
BIT PARKING
GRASS
EP
EDGE OF WATER
GAS MARKER
BOULDERS
LSA
VGC
UBP
OHW
UPL
WG
SS
GG
DMH
CB
SMH
WF
WDF

LEGEND

- PERMANENT OVERHEAD WIRE (FIBER OPTIC OR CATV)
- TEMPORARY OVERHEAD WIRE (FIBER OPTIC OR CATV)
- PERMANENT OVERHEAD WIRE (ELECTRIC POWER)
- TEMPORARY OVERHEAD WIRE (ELECTRIC POWER)

GENERAL NOTES:

1. DRAINAGE ELEVATIONS AND INVERTS ARE PROVIDED FOR DESIGN PURPOSES ONLY. ANY FIELD ADJUSTMENTS REQUIRED FOR POSITIVE DRAINAGE WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS AND INVERTS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED.
2. COVERS OF PROPOSED OR EXISTING UTILITY STRUCTURES WITHIN AN ADA ACCESSIBLE PATH SHALL BE CAREFULLY ADJUSTED TO BE FLUSH ON ALL SIDES WITH THE FINISHED SURFACE.
3. SEE BRIDGE PLANS FOR CONSTRUCTION STAGING OF BRIDGE STRUCTURE.
4. PED GUY = PEDESTRIAN GUY. PROVIDE 8 FT MINIMUM VERTICAL CLEARANCE ABOVE WALKWAY TO OVERHEAD WIRE.
5. SEE TEMPORARY TRAFFIC CONTROL PLANS - SITE-SPECIFIC CLOSURE, FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION.
6. CONTRACTOR SHALL COORDINATE WITH TOWN TO DEACTIVATE WATER LINES; WATER LINES AT EACH BRIDGE CANNOT BE DEACTIVATED AT THE SAME TIME.

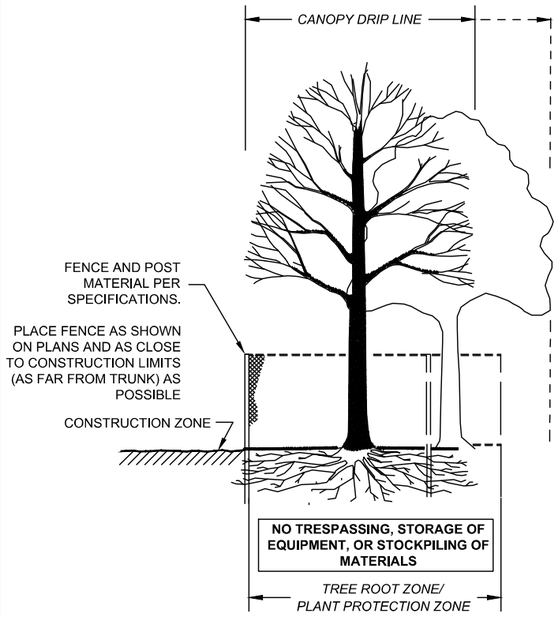
0 20 50 100
SCALE: 1" = 20'

SOUTHBRIDGE
MILL STREET

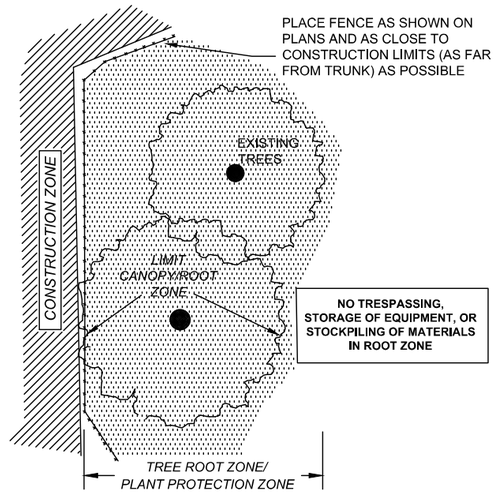
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	36	103
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS
PDF SHEET 19 OF 30

608862_EV(DET).DWG Plotted on 29-Sep-2025 3:23 PM



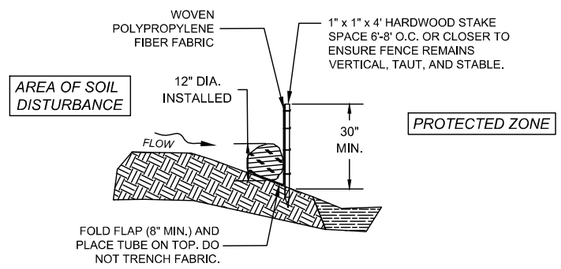
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE

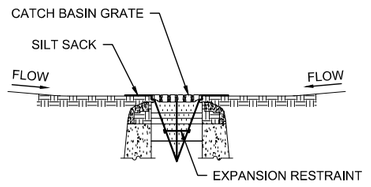
NOT TO SCALE



SECTION

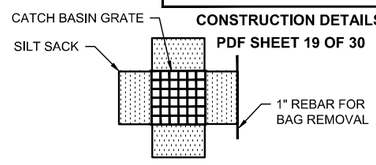
COMPOST FILTER TUBE & SILT FENCE

NOT TO SCALE



SECTION VIEW

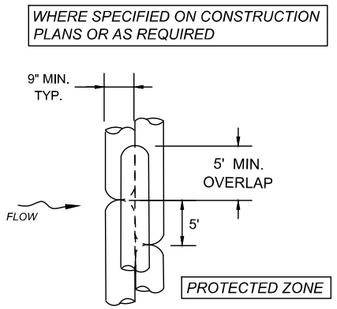
NOTES:
1. INSTALL SILT SACK IN EXISTING CATCH BASINS, BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED



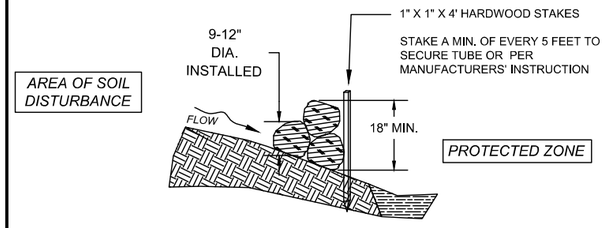
PLAN VIEW

INLET PROTECTION - SILT SACK IN CATCH BASIN

SCALE: N.T.S.



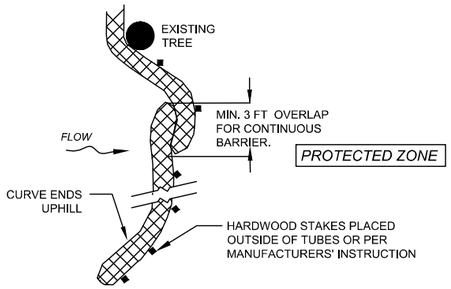
PLAN VIEW



SECTION

COMPOST FILTER TUBE STACKED

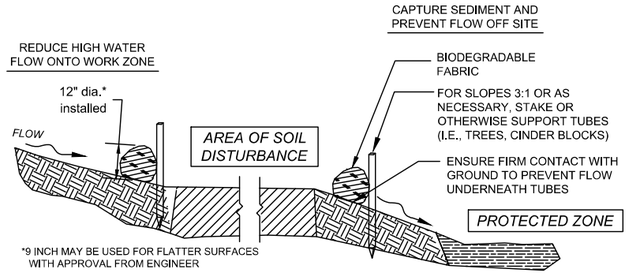
NOT TO SCALE



PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

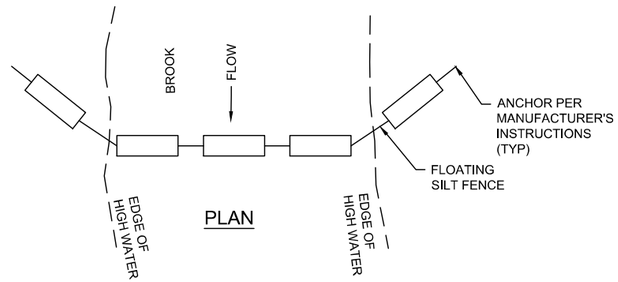
PLAN VIEW



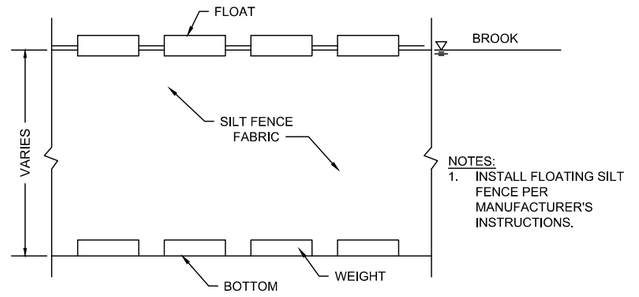
SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

NOT TO SCALE



PLAN



NOTES:
1. INSTALL FLOATING SILT FENCE PER MANUFACTURER'S INSTRUCTIONS.

PROFILE

FLOATING SILT FENCE DETAIL

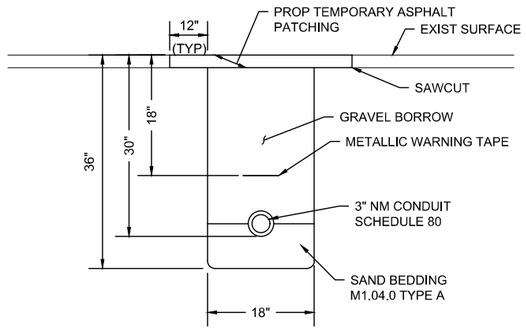
SCALE: N.T.S.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	103
PROJECT FILE NO.	608862		

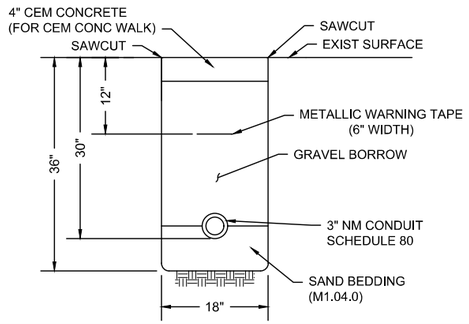
CONSTRUCTION DETAILS
PDF SHEET 20 OF 30

Plotted on 29-Sep-2025 3:23 PM
608862_EV(DET).DWG



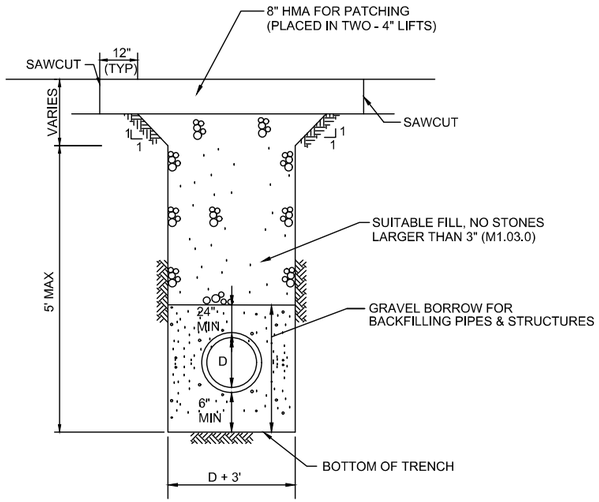
CONDUIT CROSSING ROADWAY/DRIVEWAY

SCALE: N.T.S. DWG: TRENCH-01 DATE: MARCH 2013



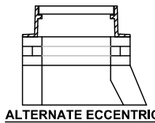
CONDUIT IN SIDEWALK

SCALE: N.T.S.

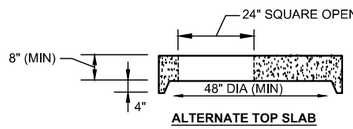


TRENCH DETAIL

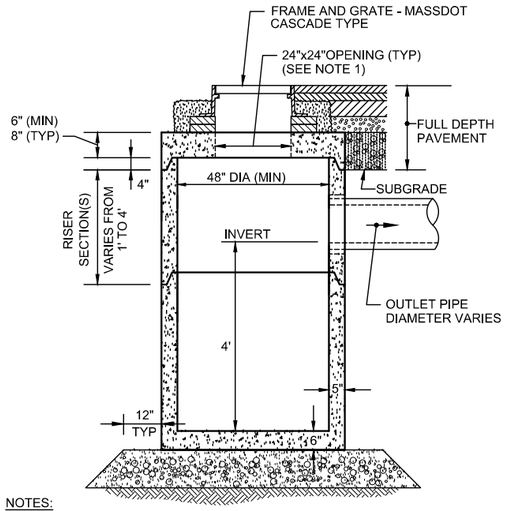
SCALE: N.T.S.



ALTERNATE ECCENTRIC CONE SECTION



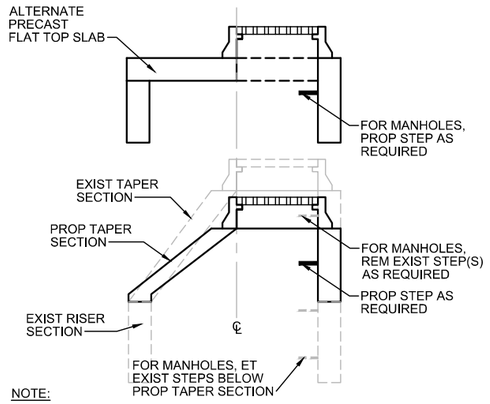
ALTERNATE TOP SLAB



NOTES:
1. TOP SLAB FOR CBCI SHALL HAVE 24"x 27" RECTANGULAR OPENING.
2. ALL SECTIONS SHALL BE RATED FOR HS-20 LOADING.
3. BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.

CATCH BASIN

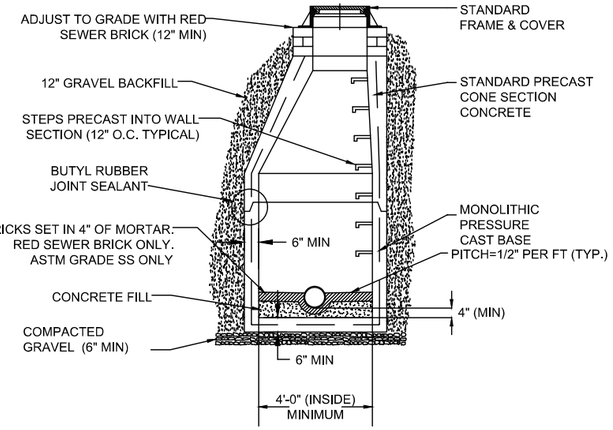
SCALE: NTS



NOTE:
BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.

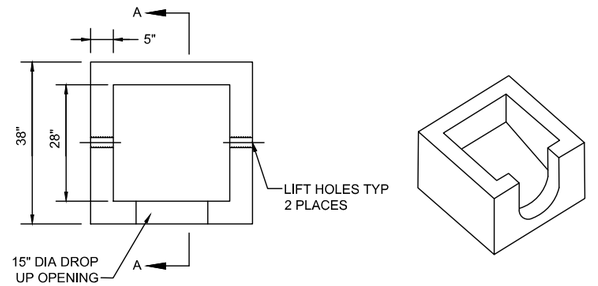
DRAINAGE STRUCTURE REBUILT

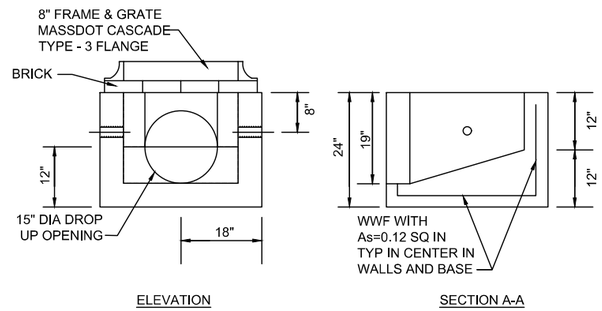
SCALE: NTS



MANHOLE

SCALE: NTS



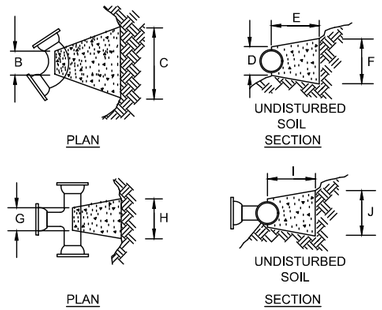


NOTES:
1. DESIGNED FOR AASHTO HS25-44 LOADING.
2. CONCRETE STRENGTH f'c=4000 PSI
3. REINFORCING STEEL: ASTM A185 (wwf) fy=60,000 PSI
4. CURB INLETS ARE REQUIRED WHEN INSTALLED AGAINST CURBING.

GUTTER INLET - SPECIAL

SCALE: NTS

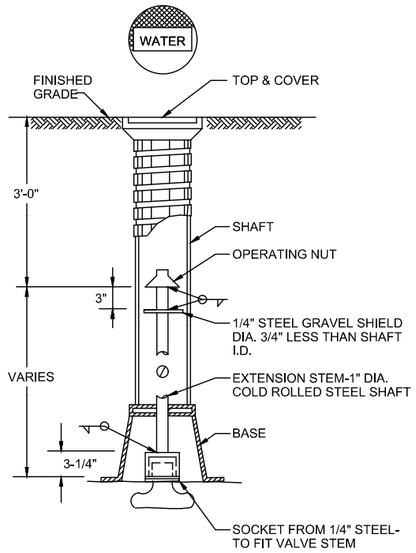
BENDS		B	C	D	E	F	BENDS		B	C	D	E	F
6"	11-1/4°	8"	15"	12"	24"	12"	6"	45°	8"	30"	12"	24"	14"
6"	22-1/2°	"	19"	"	"	13"	6"	90°	"	30"	"	"	27"
8"	11-1/4°	"	20"	"	"	12"	8"	45°	"	30"	"	"	24"
8"	22-1/2°	"	22"	"	"	17"	8"	90°	"	38"	"	"	36"
12"	11-1/4°	"	30"	"	"	15"	12"	45°	"	40"	"	"	40"
12"	22-1/2°	"	35"	"	"	25"	12"	90°	"	60"	"	"	52"
TEES		G	H	I	J		TEES		G	H	I	J	
6"x 6"x 6"		12"	24"	24"	18"		12"x12"x6"		12"	24"	24"	12"	
8"x 8"x 6"		"	"	"	"		12"x12"x8"		"	"	"	24"	
8"x 8"x 8"		"	"	"	24"		12"x12"x12"		"	36"	"	36"	



NOTES:
1. PROVIDE BLOCKS FOR TAPPING SLEEVES, DEAD ENDS, GATE VALVES AND VERTICAL BENDS, SAME SIZE AS REQUIRED FOR TEES.
2. PROVIDE ANCHOR RODS AT VERTICAL BENDS AND GATE VALVES
3. CONCRETE SHALL NOT BE PLACED AGAINST PIPE BEYOND FITTING.

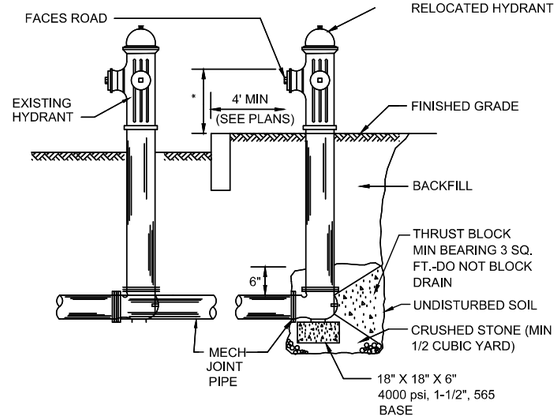
CONCRETE THRUST BLOCK

SCALE: N.T.S. DWG: WS-02 DATE: APRIL 2013



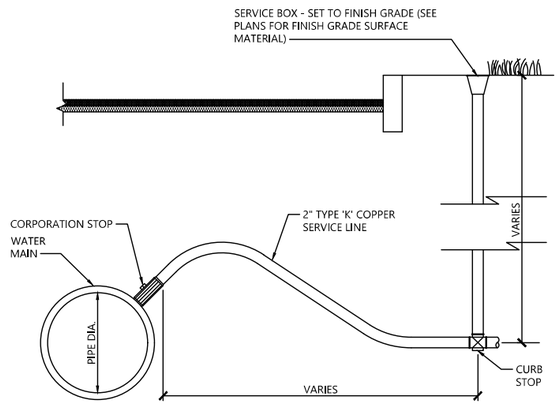
VALVE SHAFT EXTENSION

SCALE: N.T.S. DWG: WS-01 DATE: APRIL 2013



HYDRANT RELOCATION DETAIL

SCALE: N.T.S. DWG: WS-03 DATE: APRIL 2013

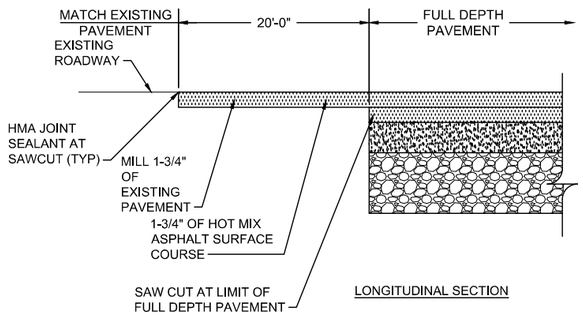


NOTES

1. INSTALLATIONS SHALL CONFORM WITH MUNICIPAL WATER WORKS SPECIFICATIONS AND STANDARDS.

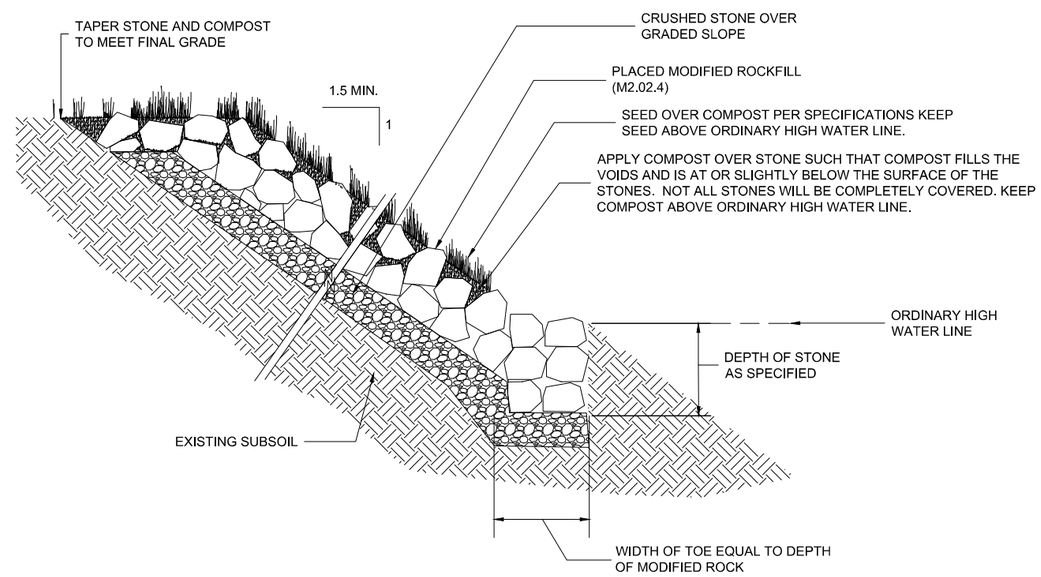
WATER SERVICE DETAIL

SCALE: N.T.S. DWG: WS-02 DATE: APRIL 2013



FULL DEPTH PAVEMENT TRANSITION

SCALE: N.T.S.



COMPOST AND SEED OVER MODIFIED ROCKFILL

SCALE: N.T.S.

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	38	103
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS
PDF SHEET 21 OF 30

608862_EV(DET).DWG Plotted on 29-Sep-2025 3:23 PM

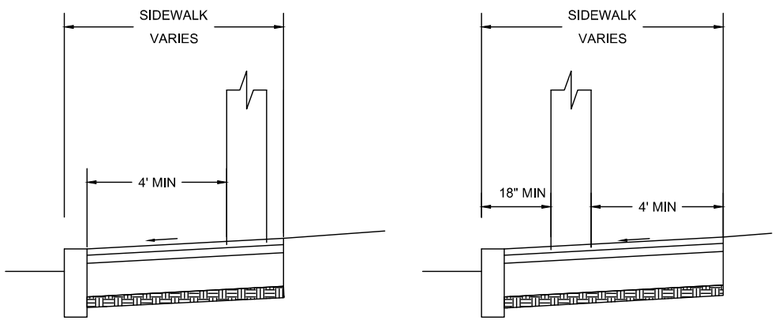
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	103
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS
PDF SHEET 22 OF 30

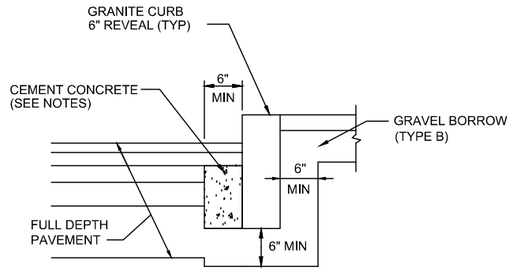
Plotted on 29-Sep-2025 3:23 PM
608862_EV(DET).DWG

NOTES:
1. MINIMUM CLEAR PATH ON ALL SIDEWALK SHALL BE 48" EXCLUDING THE CURB. THE CLEAR PATH SHALL BE MEASURED TO FIRST VERTICAL FACE ENCOUNTERED ON THE OBSTRUCTION (INCLUDING ALL PROTRUSIONS LESS THAN 6'-8" IN HEIGHT).
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, POLES, ETC.) TO BE SET WITHIN THE SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36". CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION THAT CANNOT MEET THE CLEARANCE REQUIREMENTS.



SIDEWALK CLEARANCE VERTICAL OBSTRUCTION

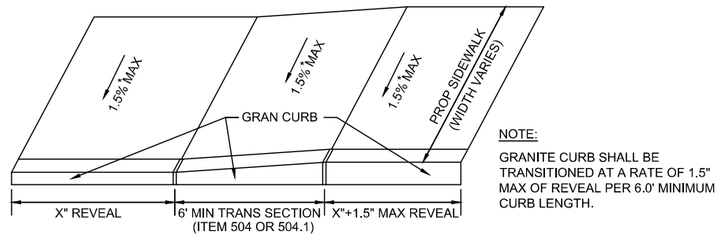
SCALE: N.T.S. DWG: WALK-04



NOTES:
1. TO BE PLACED IF CURB IS INSTALLED AFTER HOT MIX ASPHALT
2. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB
3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

GRANITE CURB IN FULL DEPTH PAVEMENT

SCALE: N.T.S. DWG: CURB-04 DATE: APRIL 2003

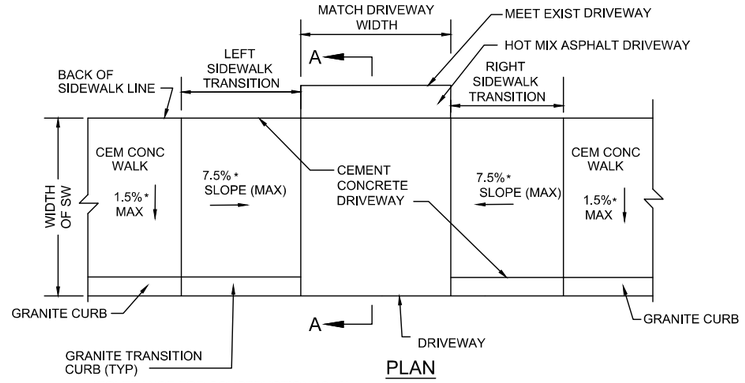


NOTE:
GRANITE CURB SHALL BE TRANSITIONED AT A RATE OF 1.5" MAX OF REVEAL PER 6.0' MINIMUM CURB LENGTH.

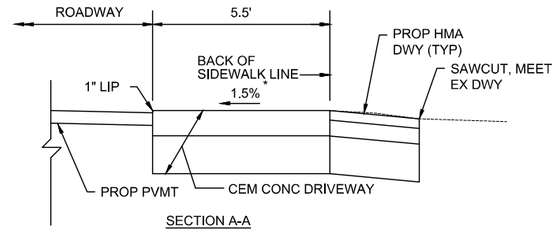
* TOLERANCE FOR CONSTRUCTION ±0.5%

TYPICAL GRANITE CURB REVEAL TRANSITION

SCALE: NTS



*TOLERANCE FOR CONSTRUCTION ±0.5%



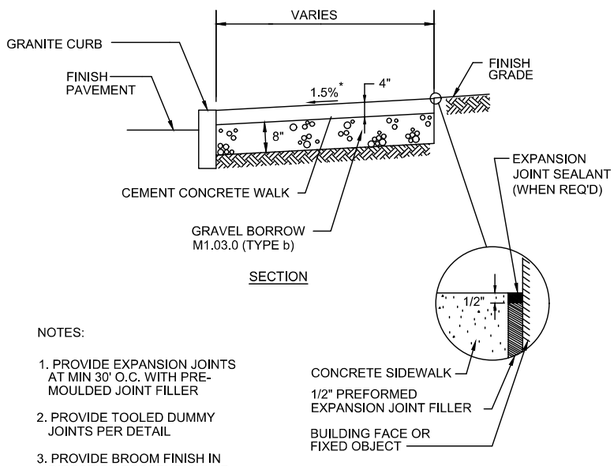
SECTION A-A

DRIVEWAYS 1, 2, 5

SCALE: N.T.S.

DRIVEWAY DATA									
NO.	LOCATION	SIDEWALK WIDTH	DWY SLOPE	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
					REVEAL	TRANS	REVEAL	TRANS	
MILL STREET									
1	202+38.39' 13.50 RT	5'-6"	1.50%	-7.16%	6"	15'-0"	6"	6'-6"	495.05
2	204+23.96' 13.50 RT	5'-6"	1.50%	1.69%	6"	9'-0"	6"	6'-6"	490.95
5	304+00.10' 13.50 RT	5'-6"	1.50%	3.46%	6"	6'-6"	6"	14'-0"	488.15

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

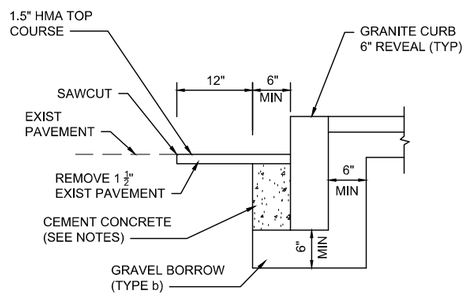


NOTES:
1. PROVIDE EXPANSION JOINTS AT MIN 30' O.C. WITH PRE-MOULDED JOINT FILLER
2. PROVIDE TOOLED DUMMY JOINTS PER DETAIL
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB

* 0.5% CONSTRUCTION TOLERANCE

CEMENT CONCRETE SIDEWALK

SCALE: N.T.S.



NOTES:
1. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB.
2. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

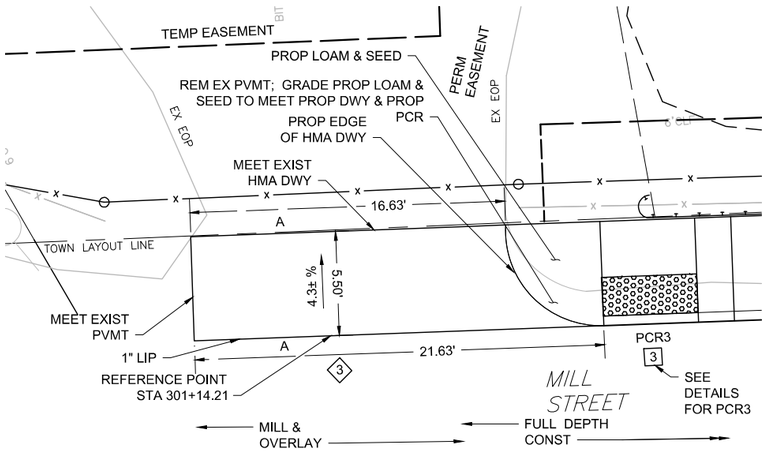
GRANITE CURB IN EXISTING PAVEMENT

SCALE: N.T.S.

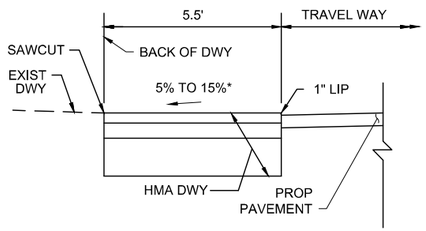
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
	-	40	103
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS
PDF SHEET 23 OF 30



PLAN



SECTION A-A

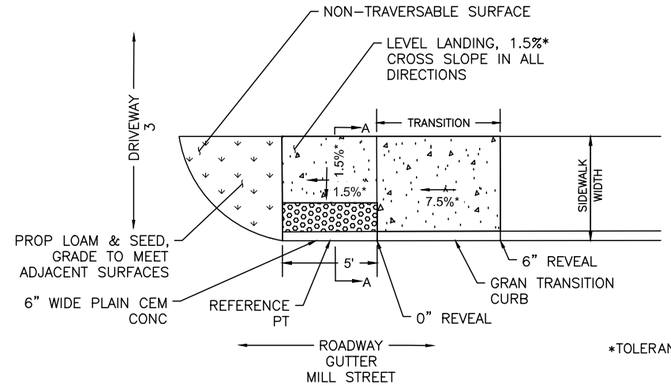
*TOLERANCE FOR CONSTRUCTION ±0.5%

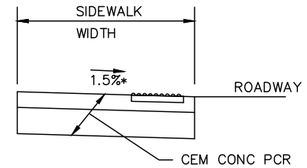
DRIVEWAY 3 DETAIL

SCALE: N.T.S.

DRIVEWAY DATA									
NO.	LOCATION	SIDEWALK WIDTH	DWY SLOPE	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
					REVEAL	TRANS	REVEAL	TRANS	
MILL STREET									
◇3	301+14.21' 14.00 LT	N/A	7.46%	-2.50%	N/A	N/A	N/A	N/A	488.70

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.





SECTION A-A

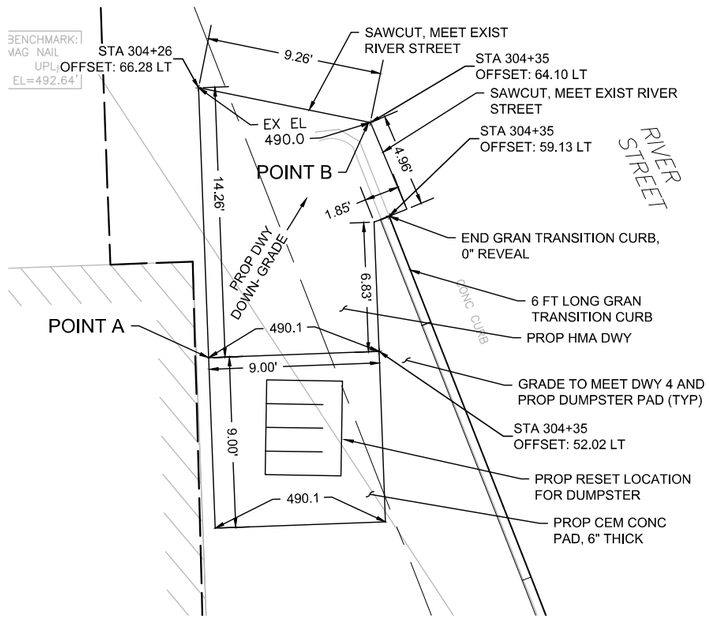
*TOLERANCE FOR CONSTRUCTION ±0.5%

PEDESTRIAN CURB RAMP - PCR3

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
MILL STREET								
3	301+24.93 15.65' LT	5.5'	0.68%	-	-	6"	6'-6"	488.09

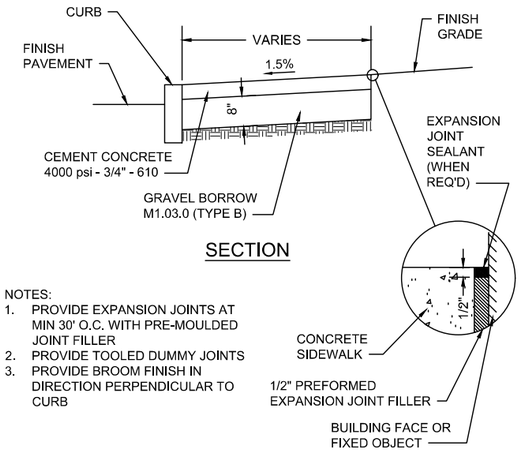
ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



DRIVEWAY 4 NOTES:
1. IN ALL CASES, PROVIDE POSITIVE DRAINAGE FROM POINT A TO POINT B.
2. SEE GENERAL CONSTRUCTION PLANS.

DRIVEWAY 4 DETAIL

SCALE: N.T.S.

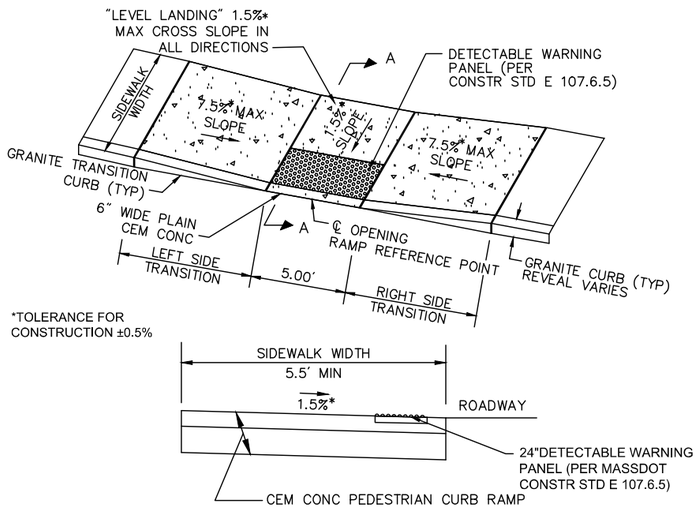


NOTES:
1. PROVIDE EXPANSION JOINTS AT MIN 30' O.C. WITH PRE-MOULDED JOINT FILLER
2. PROVIDE TOOLED DUMMY JOINTS
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB

CEMENT CONCRETE SIDEWALK

SCALE: N.T.S. DWG: WALK-01 DATE: MARCH 2013

608862_EV(DET).DWG Plotted on 29-Sep-2025 3:23 PM



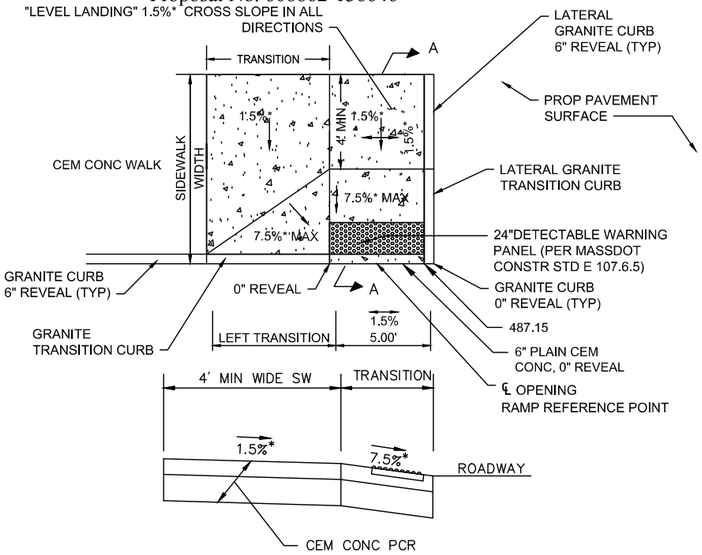
SECTION A–A

PEDESTRIAN CURB RAMP - WIDTH LESS THAN 6.5 FT

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
MILL STREET								
1	201+89.06 16.08' LT	5'-0"	-7.20%	3"	15'-0"	6"	6'-6"	498.12
4	302+39.27 14.50' RT	5'-5"	-0.80%	6"	6'-6"	6"	7'-8"	486.82

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



*TOLERANCE FOR CONSTRUCTION ±0.5%

SECTION A–A

PEDESTRIAN CURB RAMP - TRANSITIONS WITH INTERMEDIATE LEVEL LANDING

SCALE: N.T.S.

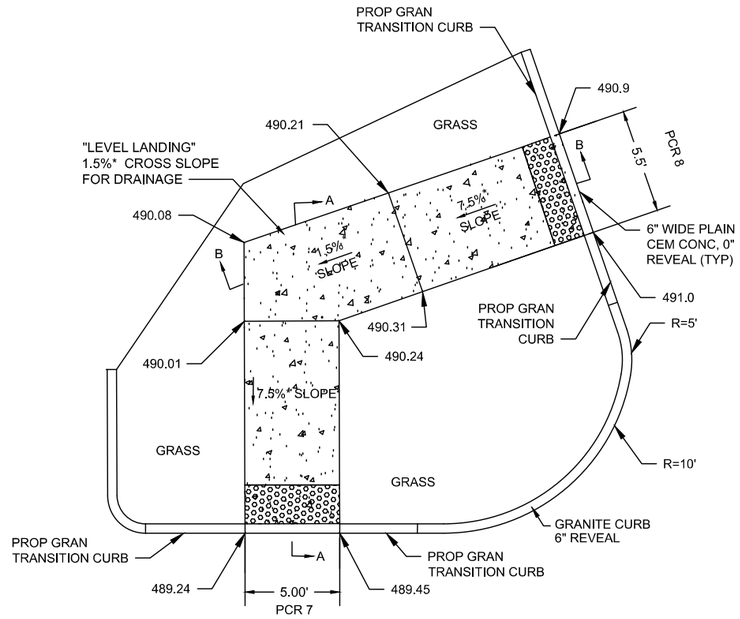
PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
MILL STREET								
5	302+40.16 14.00' LT	8' MAX.	-0.80%	6"	7'-8"	-	-	487.17

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

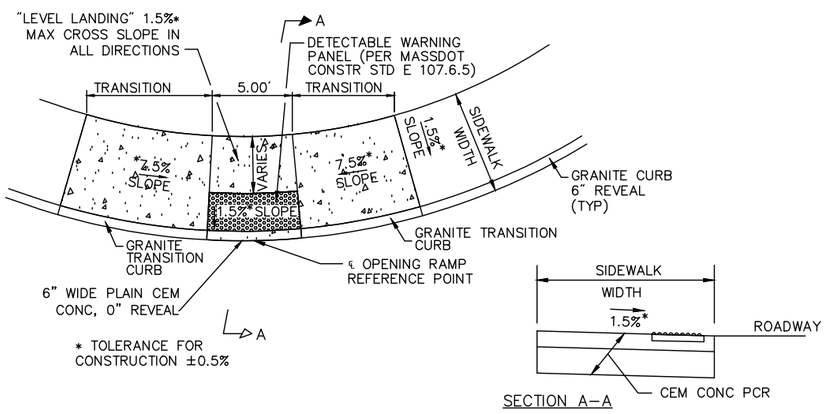
SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	41	103
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS
PDF SHEET 24 OF 30



*TOLERANCE FOR CONSTRUCTION ±0.5%



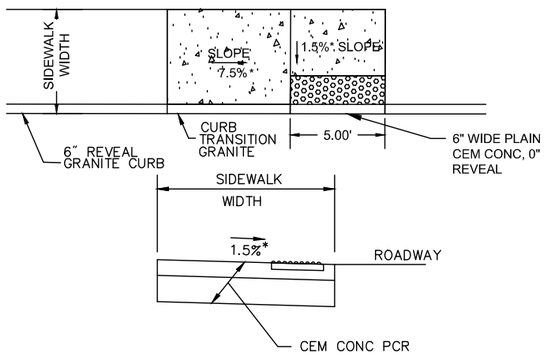
SECTION A–A

PEDESTRIAN CURB RAMP - TWO WINGS

SCALE: N.T.S.

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
MILL STREET								
2	201+97.96 16.05' RT	5'-6"	-6.80%	6"	6'-6"	6"	18'-3"	498.29



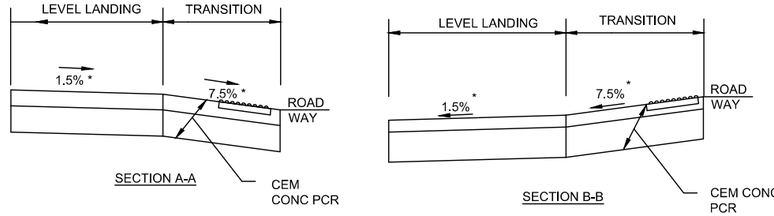
SECTION A–A

PEDESTRIAN CURB RAMP - ONE WING

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
6	304+30.11 14.00' RT	5'-5"	4.40%	-	-	6"	6'-6"	489.36

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



PEDESTRIAN CURB RAMPS 7 AND 8

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANSITION	℄ OPENING ELEVATION
MILL STREET						
7	304+29.76 14.50' LT	5'-0"	4.20%	6"	11'-2"	489.35
RIVER STREET						
8	304+44.71 32.48' LT	5'-6"	0.20%	6"	11'-2"	490.95

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

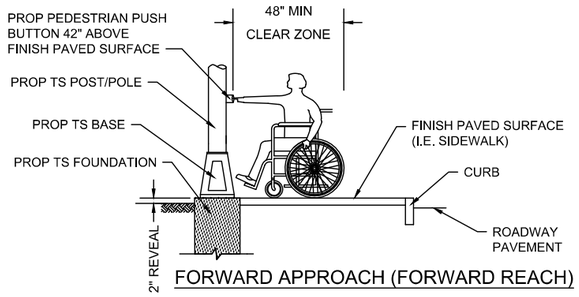
608862_EV(DET).DWG Plotted on 29-Sep-2025 3:23 PM

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	103
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS
PDF SHEET 25 OF 30

Plotted on 29-Sep-2025 3:23 PM
608862_EV(DET).DWG

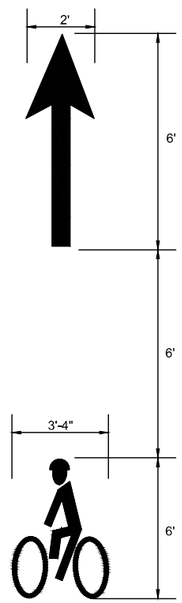


NOTE:
A CLEAR GROUND SPACE SHALL CONSIST OF A STABLE AND FIRM AREA, COMPLYING WITH 521 CMR 6.5 (FORWARD REACH) OR 521 CMR 6.6 (SIDE REACH) AND SHALL BE PROVIDED AT EACH OF THE PEDESTRIAN PUSH BUTTONS.

a) WHERE A FORWARD APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL ABUT AND BE CENTERED ON THE CLEAR GROUND SPACE.
b) WHERE A PARALLEL APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL BE WITHIN TEN INCHES (10") HORIZONTALLY OF AND CENTERED ON THE CLEAR GROUND SPACE.

PEDESTRIAN PUSH BUTTON CLEAR ZONE

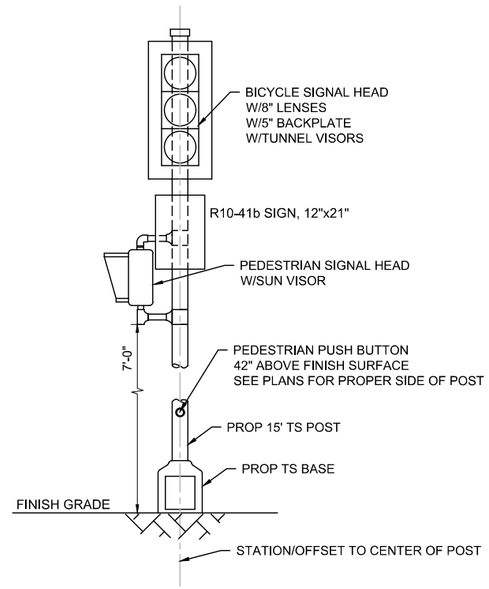
SCALE: N.T.S. DWG: PM-10



NOTES:
1. SEE 2009 MUTCD FIGURE 9C-6 FOR MORE INFORMATION.
2. BIKE LANE MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC.

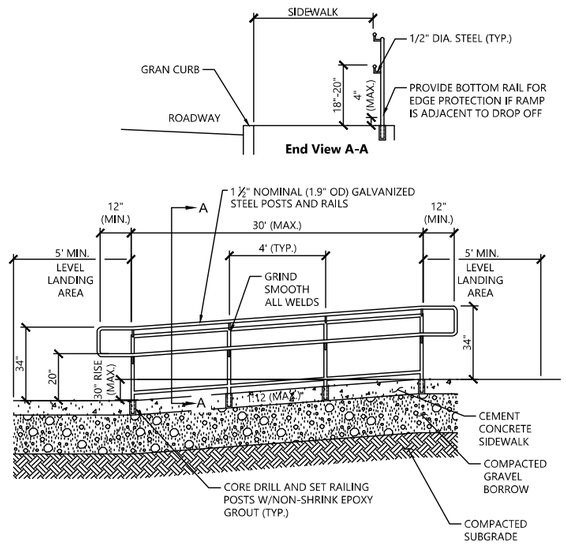
BIKE LANE PAVEMENT MARKINGS

SCALE: N.T.S. DWG: PM-11



BICYCLE SIGNAL HEAD W/R10-41b SIGN - POST MOUNTED

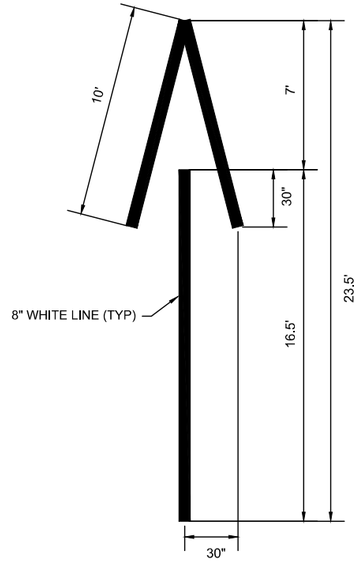
SCALE: N.T.S.



NOTES

1. FOR ADDITIONAL INFORMATION SEE 521 CMR 24.00 RAMPS.
2. REFER TO SIDEWALK DETAIL FOR SIDEWALK CONSTRUCTION.
3. CONTRACTOR TO TOUCH UP ANY MINOR BLEMISHES UPON COMPLETION OF INSTALLATION.

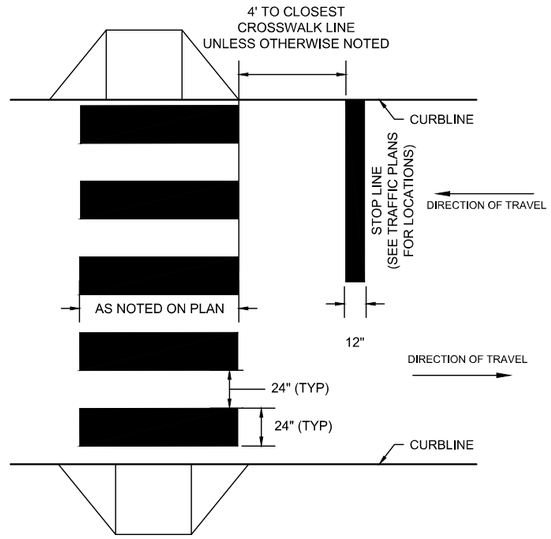
ADA COMPLIANT HANDRAIL



NOTES:
1. SEE MUTCD FIGURE 3B-21 FOR MORE INFORMATION.
2. ARROWS SHALL BE WHITE REFLECTORIZED THERMOPLASTIC.

WRONG-WAY PAVEMENT ARROW

SCALE: N.T.S. DWG: PM-38

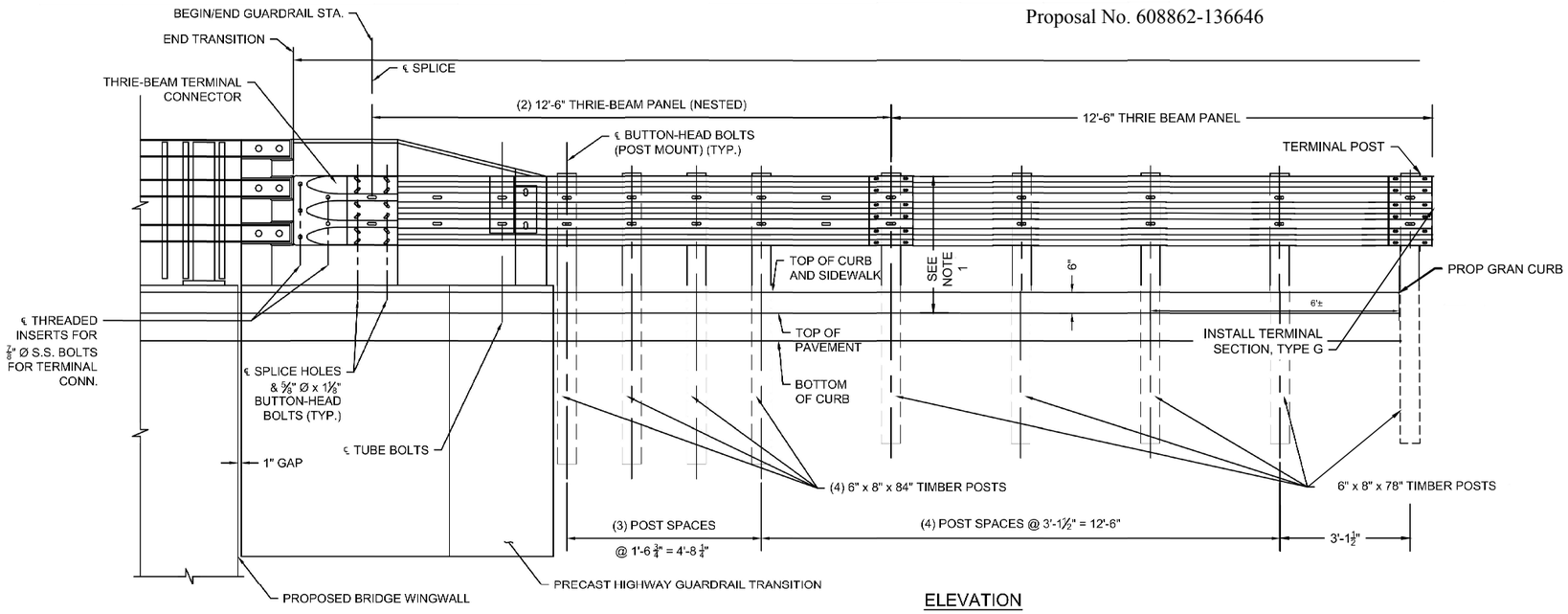


NOTES:

1. ALL 12" AND 24" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (e.g. TWO - 6" LINES OR TWO-12" LINES) WILL BE ACCEPTED.
2. CROSSWALK LINES SHALL BE IN THE DIRECTION OF TRAVEL AND LOCATED OUTSIDE OF TYPICAL VEHICLE WHEEL PATHS.
3. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO INSTALLATION.
4. ALL CROSSWALKS INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE CURRENT EDITION OF THE MASSACHUSETTS HIGHWAY DEPARTMENT "STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES", SECTION 860 FOR REFLECTORIZED THERMOPLASITIC PAVEMENT MARKINGS & MATERIAL, M7.01.03,LATEST REVISIONS.

CROSSWALK DETAIL -TOWN STANDARD

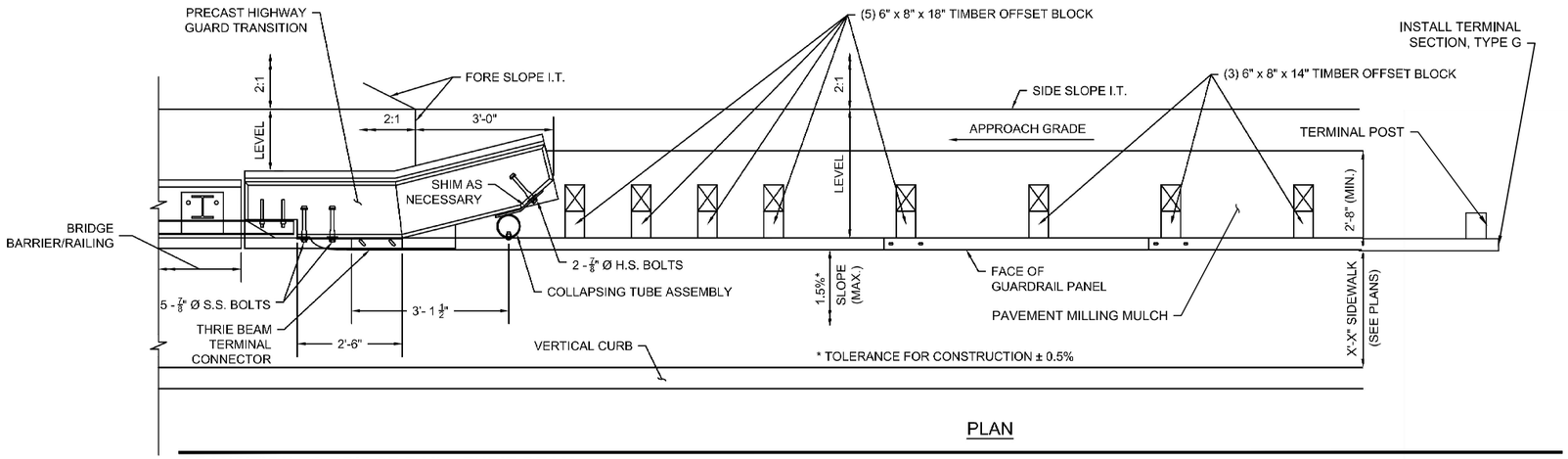
SCALE: N.T.S.



ELEVATION

NOTES:

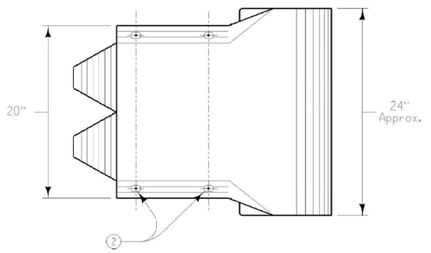
1. THE TOP OF THE PANEL SHALL BE 31" FROM THE TOP OF PAVEMENT.



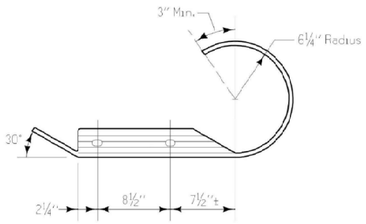
PLAN

TRANSITION TO BRIDGE RAIL - THRIE BEAM

SCALE: N.T.S.



FRONT VIEW
TYPE "G" TERMINAL SECTION
Rounded End



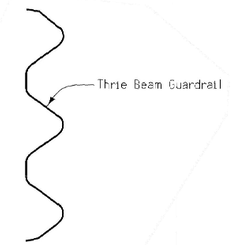
TOP VIEW

GENERAL NOTES:

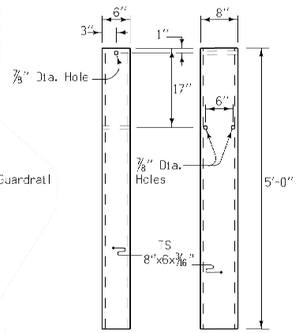
Materials and methods of construction shall be in accordance with current Standard and Supplemental Specifications.

Type "G" terminal shall not be less than U.S.S. 12 gage.

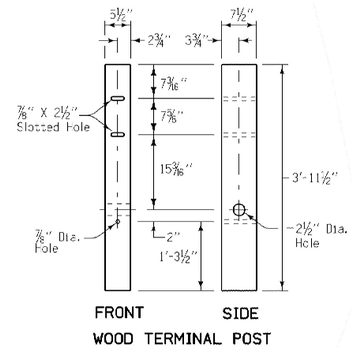
② Slotted holes 29/32" x 1-1/8" long.



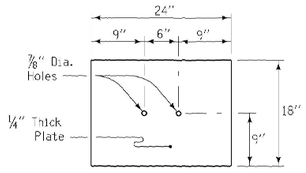
SECTION A-A



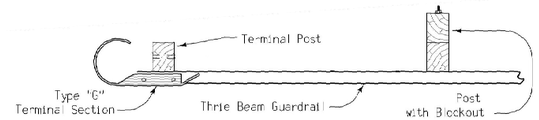
FRONT SIDE
STEEL ANCHOR TUBE



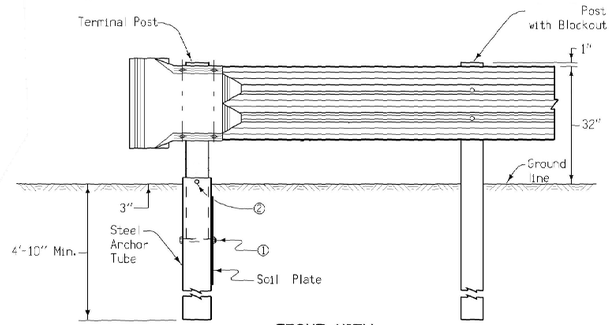
FRONT SIDE
WOOD TERMINAL POST



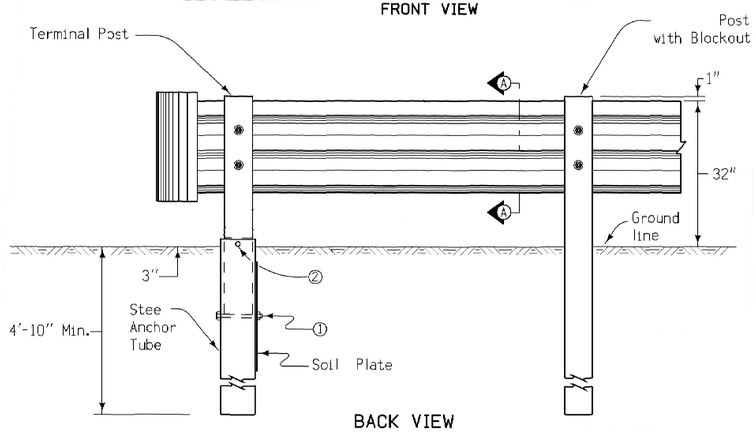
SOIL PLATE



PLAN VIEW



FRONT VIEW



BACK VIEW

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	43	103
PROJECT FILE NO.	608862		

CONSTRUCTION DETAILS
PDF SHEET 26 OF 30

① Two 7.5" long, ¾" hex bolt, nut and washers under head and nut.
② One 10" long, ¾" hex bolt, nut and washers under head and nut.

TERMINAL END, TYPE G

SCALE: N.T.S.

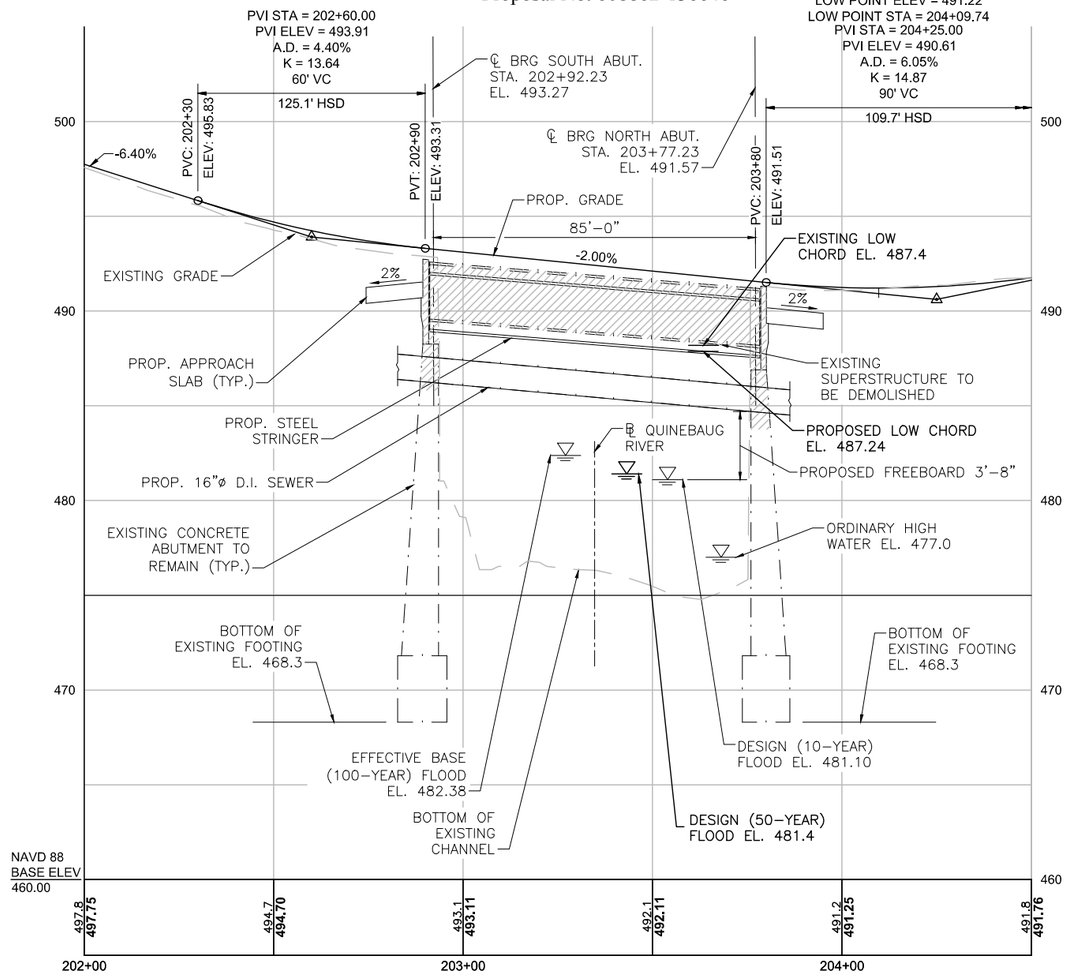
608862_EV(DET).DWG Plotted on 29-Sep-2025 3:24 PM

Proposal No. 608862-136646

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	–	103
PROJECT FILE NO. 608862			

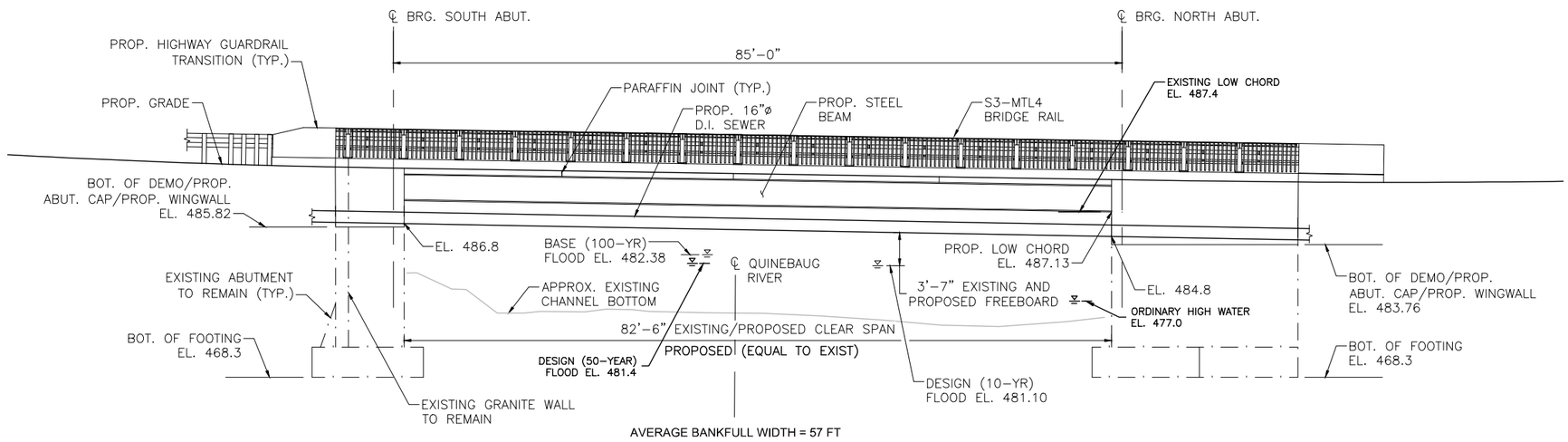
BRIDGE PROFILE & LONGITUDINAL SECTION
PDF SHEET 27 OF 30
S-21-003 OVER QUINEBAUG RIVER



PROFILE

HORIZ SCALE: 1" = 20'
VERT SCALE: 1" = 4'

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET



LONGITUDINAL SECTION (LOOKING EAST)

SCALE: 1" = 8'

HOR. SCALE IN FEET
8 0 8 16
8 0 8 16
VER. SCALE IN FEET

608862_EV(BRIDGE).DWG Plotted on 29-Sep-2025 3:25 PM

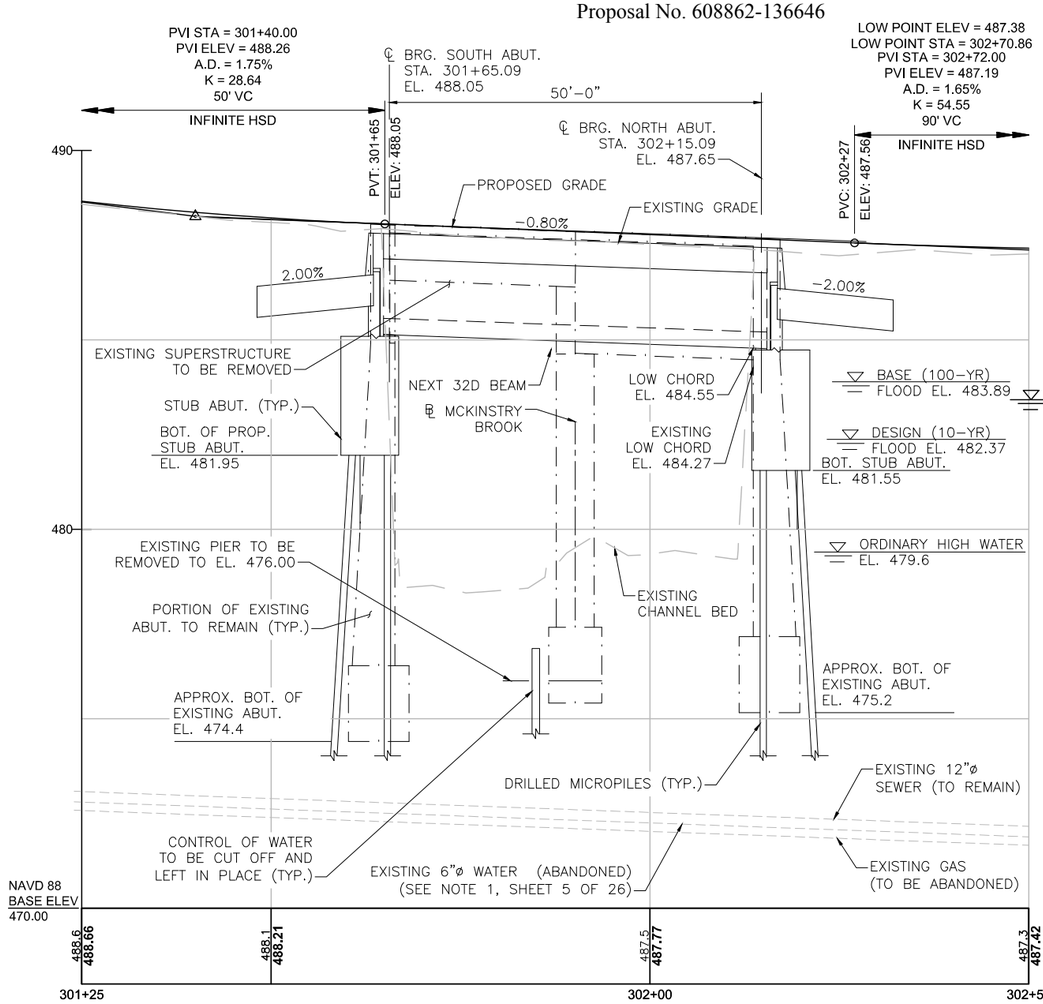
Proposal No. 608862-136646

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	–	103
PROJECT FILE NO. 608862			

BRIDGE PROFILE & LONGITUDINAL SECTION
PDF SHEET 28 OF 30
S-21-009 OVER MCKINSTRY BROOK

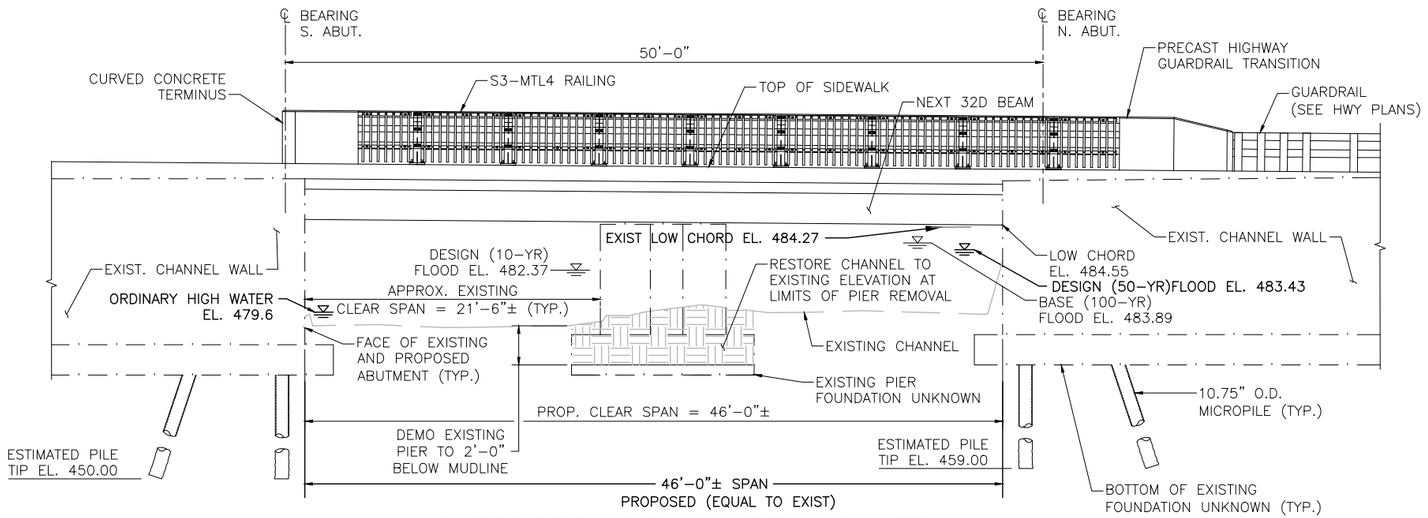
608862_EV(BRIDGE).DWG Plotted on 29-Sep-2025 3:25 PM



PROFILE

HORIZ SCALE: 1" = 10'
VERT SCALE: 1" = 2'

0 10 20 30 40
SCALE: 1" = 10'



LONGITUDINAL SECTION (LOOKING EAST)

SCALE: 1" = 5'

0 5 10 15 20
SCALE: 1" = 5'

AVERAGE BANKFULL WIDTH = 35.1 FT

Proposal No. 608862-136646

IMPACT SUMMARY	
TYPE OF IMPACT	AREA OF IMPACT (SF)
TEMPORARY IMPACT TO WATERS OF THE U.S.	68
PERMANENT IMPACT TO WATERS OF THE U.S.	0
DREDGE MATERIAL	0 CY

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	E1	103
PROJECT FILE NO. 608862			

ENVIRONMENTAL IMPACTS & MITIGATION
PDF SHEET 29 OF 30
404 SELF-VERIFICATION NOTIFICATION

Plotted on 29-Sep-2025 4:23 PM
608862_EV(IMPACTS).DWG

NAD 83 N

MAIN STREET

HIGH STREET

MILL STREET

MAIN STREET

HAMILTON STREET

QUINEBAUG RIVER

ORDINARY HIGH WATER LINE (TYP)

PROJECT BEGIN
STA 201+05
N2854840.9828
E508409.6660

LIMIT OF WORK
N2855201.0501
E508469.4702
STA 204+70
SAWCUT MEET EXIST

68 SF, TEMP IMPACT WOTUS (FLOATING SILT FENCE)

WATER LEVEL ELEVATIONS	
ORDINARY HIGH WATER (OHW)	477.07'

FEMA STILLWATER FLOOD ELEVATIONS	
100-YEAR FLOOD	482.38'

LEGEND & ABBREVIATIONS

- TEMPORARY IMPACT TO WATERS OF THE U.S. (LESS THAN DURATION OF CONSTRUCTION), 1 FT WIDE
- SEDIMENT CONTROL BARRIER
- FLOATING SILT FENCE
- ORDINARY HIGH WATER LINE (OHW)

WOTUS = WATERS OF THE US

SCALE: 1" = 20'

A00830 - 82

Proposal No. 608862-136646

IMPACT SUMMARY	
TYPE OF IMPACT	AREA OF IMPACT (SF)
TEMPORARY IMPACT TO WATERS OF THE U.S. FOR AREAS / LF x 1' WIDE	224
PERMANENT IMPACT TO WATERS OF THE U.S.	0
LAND UNDER WOTUS CREATED	238
DREDGE MATERIAL	
CEM CONC PIER (REMOVE TOP 2 FT)	19 CY
GROUND BETWEEN PIER & WATER CONTROLS	27 CY
EXCAVATION TO INSTALL WATER CONTROLS	30 CY
CHANNEL BACKFILL	76 CY

WATER LEVEL ELEVATIONS	
ORDINARY HIGH WATER (OHW)	479.47'

FEMA STILLWATER FLOOD ELEVATIONS	
100-YEAR FLOOD	483.79'

SOUTHBRIDGE
MILL STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	-	E2	103
PROJECT FILE NO. 608862			

ENVIRONMENTAL IMPACTS & MITIGATION
PDF SHEET 30 OF 30
404 SELF-VERIFICATION NOTIFICATION

608862_EV(IMPACTS).DWG Plotted on 29-Sep-2025 4:23 PM

MASSDOT MONUMENT (SEE PLAN AGE 46)
RET EX GAS DURING CONST OF EAST SIDE OF BRIDGE, THEN RELOCATE TO EAST SIDE (B.O.)
PROP SEDIMENT CTRL BARRIERS (TYP)
REMOVE TOP OF PIER TO 2 FT BELOW CHANNEL BED
76 SF TEMP IMPACT WOTUS (TEMP WATER CONTROL)
TEMP OHW SERVICE DURING CONST(B.O.)
PROP 8" DICL WATER, INSULATED
PROP TREE PROTECTION
RET EX UPL
PROP CLEARING & GRUBBING
REM EX CB
PROP PERM EASEMENT (TYP)
PROP CC SW
REM EX WATER SERVICE; INSTALL NEW PROP WATER SERVICE
PROP DMH
PROP HMA DWY
RET EX OHW
PROP DEWATERING BAG, R&R AS NEEDED
PROP 8" WG
RET EX UPL
PROP CB
REM OHW (B.O.)
RET EX UPL
LIMIT OF WORK
N2855736.0967
E508458.5856
STA 301+07
SAWCUT
MEET EXIST
ORDINARY HIGH WATER LINE (TYP)
PROP TEMP EASEMENT (TYP)
PROP TREE PROTECTION
REM EX OHW (B.O.)
PROP CLEARING & GRUBBING
PROP PERM ARM FOR SERVICE OHW (B.O.)
REM EX CB; ABAN PIPE
REM EX SERVICE OHW (B.O.)
REM UP (B.O.); R&S LUMINAIRE (B.O.)
PROP PERM SERVICE OHW (B.O.)
PROP CC SW
PROP CB
FULL DEPTH PVMNT
TEMP OHW (B.O.)
REM EX OHW (B.O.)
REM UP (B.O.); R&R LUMINAIRE (B.O.)
PROP SIDEWALK GUY (B.O.)
REM GUY (B.O.)
RET UPL
PROP CC SW
ADJ REM EX OHW (B.O.)
ADJ WG
ADJ (B.O)
PROP OHW (B.O.)
PROP CC SW
PERM OHW (B.O.)
PROP PERM EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP MILL & OVERLAY
PROP UPL, TRANSFORMER, & GUY (B.O.); RESET LUMINAIRE (B.O.)
END PROP GAS RELOCATION (B.O.)
REM TREES
PROP CBCI
REM 24" TREE
PROP DMH
REM EX GG (B.O.)
ABAN 49± LF GASLINE IN OVERLAY AREA GG (B.O.)
TEMP SUPPORT OF EXCAVATION (TYP)
PROP UPL & GUY (B.O.); RESET LUMINAIRE (B.O.)
REM EX CB
PROP 12" RCP DRAINAGE OUTLET THRU ABUTMENT WALL
PROP CLEARING & GRUBBING
LIMIT OF PROP CLEARING & GRUBBING
RET EXIST CHANNEL WALLS (TYP)
REM EX CB 2 STY BRICK
PROP 12" RCP DRAINAGE OUTLET THRU ABUTMENT WALL
RET & PROTECT SEWER UNDER CHANNEL BED
RET & PROTECT EXTERIOR VENT PIPES
PROP BRIDGE REPLACEMENT S-21-009, BUILD WEST SIDE FIRST
ABAN EX GAS UNDER CHANNEL (B.O.)
129 SF TEMP IMPACT WOTUS (GROUND EXCAVATION)
PROP PERM EASEMENT (TYP)
19 SF TEMP IMPACT WOTUS (FLOATING SILT FENCE)
PROP CLEAR & GRUB; PROP RE-GRADING; PROP MODIFIED ROCKFILL FOR SURFACE TREATMENT AREA = 279± SF
LIMIT OF MODIFIED ROCKFILL SURFACE TREATMENT
30 LF TEMP FLOATING SILT FENCE
PROP MILL & OVERLAY
PROP CBCI
PROP CC SW
PROP RELOCATED GAS LINE (B.O.)
CHARTER CABLE & VERIZON PERM OVHD SERVICE WIRES (B.O.), INSTALL BEFORE BRIDGE CONST
PROJECT END
STA 305+25
N2856066.0406
E508715.2196
LIMIT OF PAVING
N2856007.2319
E508669.4776
STA 304+50.50
SAWCUT
MEET EXIST
WORK BY OTHERS

MILL STREET
RIVER STREET
CLIFF STREET
BRICK ROW
MCKINSTRY BROOK
TOWN LAYOUT
1872 TOWN LAYOUT
ADJ
REM
301+00
302
303
304
305
305+25
FEMA 100 YR FLOOD LIMIT
NAD 83
MRCP CAP

N/F 76 MILL STREET TRUST PARCEL ID 34-143-1 BOOK 37335 PAGE 239 MILL ST
N/F REALTY GROUP, LLC PARCEL ID 34-144-1 BOOK 61913 PAGE 46 62 PLEASANT ST
N/F PAUL PANTZER & BEATA M. PANTZER PARCEL ID 31-146-1 BOOK 51124 PAGE 22 103 MILL ST
N/F EMANUELL COX PARCEL ID 31-40-1 BOOK 65874 PAGE 336 164 RIVER STREET
N/F HOFFMAN PROPERTY PARTNERS LLC PARCEL ID 31-40-C-1 BOOK 67116 PAGE 345 135 MILL ST
N/F IMPERIAL HOMEBUILDERS, LLC PARCEL ID 31-145-1 BOOK 17237 PAGE 104 102 MILL ST
N/F GMA REALTY LLC PARCEL ID 31-135-1 BOOK 57845 PAGE 208 132 MILL ST
N/F DONNA WEBBER PARCEL ID 31-144-1 BOOK 8443 PAGE 150 147 RIVER ST
N/F MIKRAN COMPANY LLC PARCEL ID 34-141-1 BOOK 57606 PAGE 221 PLBK 218 PG 098
N/F 76 MILL STREET TRUST PARCEL ID 34-142-1 BOOK 25403 PAGE 336 MILL ST
N/F 76 MILL STREET TRUST PARCEL ID 34-145-1 BOOK 25403 PAGE 336 76 MILL ST

0 20 50 479.50 100
SCALE: 1" = 20'

LEGEND & ABBREVIATIONS
TEMPORARY IMPACT TO WATERS OF THE U.S. (LESS THAN DURATION OF CONSTRUCTION)
BRIDGE DEMOLITION & DREDGE WITHIN WATERS OF THE U.S.
SEDIMENT CONTROL BARRIER / FLOATING SILT FENCE
ORDINARY HIGH WATER LINE
WOTUS = WATERS OF THE US

A00830 - 83

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT A00831

U.S. ARMY CORPS OF ENGINEERS

GENERAL PERMITS
FOR THE COMMONWEALTH OF MASSACHUSETTS

THIS PAGE INTENTIONALLY LEFT BLANK

General Permit No.: NAE-2022-02649 Final Effective Date: June 2, 2023
Applicant: General Public, Commonwealth of Massachusetts Expiration Date: June 1, 2028

Department of the Army
General Permits for the Commonwealth of Massachusetts

The New England District of the U.S. Army Corps of Engineers (USACE) hereby issues twenty-five (25) regional general permits (GPs) for activities subject to USACE jurisdiction in waters of the U.S., including wetlands, navigable waters within the Commonwealth of Massachusetts and adjacent ocean waters to the seaward limit of the outer continental shelf. The Massachusetts GPs (hereafter referred to as the MA GP or GP) are issued in accordance with USACE regulations at 33 CFR 320 – 332 [see 33 CFR 325.5(c)(1)]. These GPs establish criteria and contain permit conditions to ensure that the authorized activities have no more than minimal individual and cumulative adverse impacts to the environment.

This document contains the following sections:		Pages
SECTION I	Statutory Authorities & Regulated Activities	2
SECTION II	Review Categories & Application Procedures	3-7
SECTION III	Massachusetts General Permits	8-34
SECTION IV	General Conditions	35-51
SECTION V	Mitigation Standards	52-54
SECTION VI	Federal & State Agency Contact Information & Websites	55-56
SECTION VII	Definitions & Acronyms	57-66
APPENDIX A	Guidance for Section 106 NHPA Compliance in Massachusetts	67-71
APPENDIX B	Pre-Construction Notification	72-77
APPENDIX C	Self-Verification Notification	78-81
APPENDIX D	Pre-Construction Notification Application Checklist	82-88

In issuing these GPs, the Federal Government does not assume any liability for the following: (a) damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes; (b) damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest; (c) damages to persons, property or to other permitted or unpermitted activities or structures caused by the activity authorized by any of the GPs; (d) design or construction deficiencies associated with the permitted work; or (e) damage claims associated with any future modification, suspension or revocation of these permits.

Tammy R. Turley 02 June 2023

Tammy R. Turley Date
Chief, Regulatory Division

SECTION I. STATUTORY AUTHORITES & REGULATED ACTIVITIES

1. Work Requiring USACE Authorization

a. Section 10: Work and structures that are located in, over, under or that affect navigable waters of the United States (U.S.) (see 33 CFR 329). The USACE regulates these activities under section 10 of the Rivers and Harbors Act of 1899 (see 33 CFR 322).

b. Section 404: The discharge of dredged or fill material into waters of the U.S (see 33 CFR 328). The USACE regulates these activities under Section 404 of the Clean Water Act (CWA). The term "discharge of dredged or fill material" also includes certain discharges resulting from excavation. Applicants should contact USACE to determine if a particular excavation discharge occurring within waters of the U.S., is a regulated activity. See 33 CFR 323.4 of the CWA for exempted activities.

For additional information on the limits of USACE jurisdiction, please see: https://www.nae.usace.army.mil/Portals/74/docs/regulatory/JurisdictionalLimits/Jurisdictional_Limits_Brochure.pdf

2. Authority to Issue General Permits

a. In accordance with 33 CFR 322.2(f), 325.2(e)(2), and 325.5(c), USACE may issue regional general permits authorizing activities under Section 10 of the RHA.

b. In accordance with Section 404(e) of the CWA, 33 USC 1344(e), and 33 CFR 323.2(h), 325.2(e)(2), and 325.5(c), after notice and opportunity for public hearing, USACE may issue regional general permits for any category of activities involving discharges of dredged or fill material if the activities in such category are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will only have minimal cumulative adverse effect on the environment.

3. Related Laws

33 CFR 320.3 includes a list of related laws including, but not limited to, Section 408 of the Rivers and Harbors Act of 1899, Section 401 of the Clean Water Act, Section 402 of the Clean Water Act, Section 307(c) of the Coastal Zone Management Act of 1972, Section 106 of the National Historic Preservation Act of 1966, Section 7 of the Endangered Species Act, the Fish and Wildlife Coordination Act of 1956, the Magnuson-Stevens Fishery Conservation and Management Act, the Fish and Wildlife Coordination Act, Section 302 of the Marine Protection, Research and Sanctuaries Act of 1972, Section 7(a) of the Wild and Scenic Rivers Act, the Golden Eagle Protection Act, and the Migratory Bird Treaty Act.

SECTION II. REVIEW CATEGORIES & APPLICATION PROCEDURES

To qualify under these GPs, the design, construction, and maintenance associated with each proposed activity must meet the terms and eligibility criteria listed in Section III, all applicable general conditions (GCs) in Section IV, and any specific mitigation requirements in Section V. Applicants should first review the GPs to see if a project is eligible for authorization under one or more of the GPs within this document. Any activity not specifically listed may still be eligible for authorization under these GPs; applicants are advised to contact USACE for specific eligibility determination.

Please note that these GPs allow for Self-Verification (SV) contingent upon meeting all criteria and with full adherence to all GCs. Projects that do not qualify for SV, may meet criteria for Pre-Constriction Notification (PCN). Tables are provided under each activity, which outline criteria for SV and PCN. Activities that do not meet criteria for SV or PCN may require review as an Individual Permit (IP). Activities may require a PCN or IP as noted in Sections III and/or IV of this GP. Notwithstanding compliance with the terms of these GPs, USACE retains discretionary authority to require either PCN review or IP review on a case-by-case basis for any project based on concerns for the environment or for any of the other public interest factors found in 33 CFR 320.4(a). These GPs also do not replace or change those activities identified as exempt from USACE regulation (33 CFR 323.4).

1. Pre-Application Assistance

Prospective applicants may request a pre-application meeting to address any questions they may have. USACE may also request a pre-application meeting or additional information to facilitate review of the request. Pre-application meetings and/or site visits help streamline the authorization process by alerting the prospective applicant to potentially time-consuming factors that may arise during the evaluation of their project (e.g., avoidance, minimization and compensatory mitigation requirements, historic properties, endangered species, essential fish habitat, impacts to federal projects, and/or dredging of contaminated sediments).

To schedule a pre-application meeting, present questions, or if you need further assistance, please contact USACE at:

Email: cenae-r-ma@usace.army.mil (strongly preferred) Phone: (978) 318-8338

Mail: U.S. Army Corps of Engineers
New England District
Regulatory Division, Massachusetts Section
696 Virginia Road
Concord, MA 01742

2. Submitting a Request

Please follow the procedures outlined in Sections II.2-5 when requesting an SV or applying for PCN authorization for activities covered by these GPs. The GPs are provided in Section III below. For SV-eligible projects, the Self-Verification Notification (SVN) must be submitted within 30 days of commencing work. Otherwise, a Pre-Construction Notification (PCN) must be submitted for work that is not SV-eligible. Please include appropriate drawings and attachments and submit your request using the mailbox identified in Section II.4 or II.5 below. USACE will promptly confirm receipt of your request and notify you in the event additional information is required. Guidance on

how to submit electronic correspondence is located on the NAE Regulatory website here: https://www.nae.usace.army.mil/Missions/Regulatory/Submitting-Electronic-Correspondence.

3. Local, State & Federal Approvals

Applicants are responsible for applying for and obtaining any required local, state, and federal permits or approvals. These must be obtained prior to the commencement of work in waters. Such authorizations may include a Water Quality Certification, a Coastal Zone Management Act consistency determination, and other approvals as noted below. Authorization under these GPs does not obviate the need for the permittee to obtain other Federal, State, or local permits, approvals, or authorizations required by law.

I. Water Quality Certification under Section 401 of the Federal Clean Water Act (33 USC 1341).
Applicants are responsible for determining the appropriate 401 Water quality Certification (WQC) requirements and submitting this information to the USACE at the time of their PCN application or when completing their SVN. Applicants that are unsure of whether their activity has been certified should contact MassDEP, or EPA Region 1 when the activity is located on tribal lands, for a determination. The 401 WQC requirement must be satisfied by acquiring one of the following WQCs from MassDEP (see GC 8):

General 401 WQC: The MassDEP issued a WQC on April 21, 2023 conditionally certifies all activities in GPs 1 – 24 eligible for SV and PCN so long as the activity is described in 314 CMR 9.03, and is not an activity described in 314 CMR 9.04, and so long as the activity meets all other requirements, terms and conditions of this WQC. The MassDEP WQC also conditionally certifies activities described in GP 25 so long as the activity meets all other conditions of the WQC. Emergency projects described in GP 25 must obtain an emergency certification or otherwise be authorized pursuant to 310 CMR 10.06, qualify under a Severe Weather Emergency Declaration pursuant to 310 CMR 10.06(8) issued by the MassDEP, or meet the requirements of 9.12(2) or (3) in order to be certified under the WQC

Applicants should refer to the following link to determine if their activity is eligible: *https://www.nae.usace.army.mil/Missions/Regulatory/ State-General-Permits/ Massachusetts-General-Permit/*. If eligible, you must comply with all applicable WQC conditions. Activities listed in 314 CMR 9.03 that are not exempt from the Wetland Protection Act must have a valid Final Order of Conditions (OOC) or Final Restoration Order of Conditions pursuant to 310 CMR 10.00 to be eligible under the General 401 WQC.

Individual 401 WQC: In the event the proposed activity is not covered by the general WQC, applicants shall contact MassDEP and apply for an individual 401 WQC if their activity does not qualify for a General 401 WQC as outlined above. MassDEP may issue, waive, or deny the individual 401 WQC on a case-by-case basis. All activities listed in 314 CMR 9.04 must obtain an individual 401 WQC from MassDEP to be eligible under these GPs. When an Individual 401 WQC is required for *PCN activities*, the applicant shall submit their Individual 401 WQC application concurrently to MassDEP and the USACE to comply with 40 CFR 121.

Activities Proposed on Tribal Lands: When an activity is proposed on Tribal lands, the applicant shall refer to the general 401 WQCs granted by the Environmental Protection Agency (EPA), Region 1 on May 15, 2023. These 401 WQCs are located on the USACE Regulatory website: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.

II. Coastal Zone Management Act Federal Consistency Concurrence pursuant to Section 307 of the CZMA of 1972, as amended. Federal consistency concurrence is required for all activities located within the coastal zone, unless determined otherwise by the Massachusetts Office of Coastal Zone Management (MA CZM) (see GC 9). As applicable, this requirement must be satisfied by acquiring one of the following from the MA CZM:

General CZM Federal Consistency Concurrence (General Concurrence): MA CZM has granted General Concurrence for all SV and PCN activities for GPs 1-25 and this can be found at: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/. The applicant must obtain all applicable permits and approvals prior to the commencement of work in USACE jurisdiction (i.e., construction begins on site). For SVs, General Concurrence is automatically granted and no further action is required from the applicant. For PCNs, the USACE will coordinate with MA CZM to acquire General Concurrence as part of the PCN application review. During review of the PCN application, USACE may request additional information from the applicant to support CZM's evaluation of the activity.

Individual CZM Federal Consistency Concurrence (Individual Concurrence): In certain cases, MA CZM may elevate any GP activity 1-25 to require Individual Concurrence. The applicant must contact MA CZM and follow the procedures to obtain Individual Concurrence as determined appropriate by MA CZM.

The MA CZM program includes five regional offices that serve 78 coastal municipalities. The following map provides more information about these offices: https://www.mass.gov/service-details/czm-regions-coastal-communities-and-coastal-zone-boundary

III. Other Approvals: Approvals typically required in Massachusetts include, but are not limited to, a Chapter 91 Permit/License, Massachusetts Environmental Protection Act (MEPA) review, Wetlands Protection Act Order of Conditions, and/or Aquaculture Certification. *Applicants should also be aware that USACE may not be able to render a permit decision in the event the proposed activity is denied by another local, state and/or federal agency.*

4. Procedures for Self-Verification (SV) Eligible Projects

If the activity is eligible for an SV, the Self-Verification Notification (SVN) must be completed prior to the start of project construction and submitted to USACE within 30 days of commencing work. The purpose of the SVN is to provide applicants with a tool to assist them when determining if the activity as proposed is SV-eligible. The following GPs do not require submission of the SVN: GP 1 (SV #1), GP 3 (SV #2-3), GP 4 (SV #2), GP 11, GP 12 (note #2), GP 14 (see note), GP 15 (see note), and GP 24 (SV #3). **For the activities not listed above, the SVN must be completed prior to the start of work and be kept on site at all times during project construction.** The applicant shall not begin work for SV-eligible activities until they have completely verified the bulleted items below.

Digital submittals by email are **strongly encouraged** to facilitate the most efficient processing of the SVN submittal. Please communicate with USACE staff if you are unable to provide a digital copy. Addresses are cenae-r-ma-sv@usace.army.mil (email) or Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751 (mail).

Eligible SV Activities:

- Are subject to USACE jurisdiction (see GC 2); and
- Qualify for one or more of the GPs within this document (Section III); and
- Meet the GCs within this document (Section IV); and

- When required, are supported by a complete SVN (Appendix C); and
- Receive all other required local, State, and/or Federal approvals.

5. Procedures for Pre-Construction Notification (PCN) Eligible Projects

For activities that require a PCN, an application to and written authorization from USACE is required. *No work requiring a PCN may proceed until the applicant receives written authorization from USACE verifying that the activity is authorized.* The verification letter may include special conditions that the applicant must comply with. When possible, it is *highly* recommended that PCN application materials are submitted at least 90 days before the target start date to allow for USACE evaluation and any necessary agency consultations. PCN applications shall demonstrate in writing how the proposed activity complies with all GCs, as applicable to their activity.

Digital submittals by email are **strongly encouraged** to facilitate the most efficient processing of the PCN application. Please communicate with USACE staff if you are unable to provide a digital copy. Addresses are cenae-r-ma@usace.army.mil or Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751 (mail).

Eligible PCN Activities:

- Are subject to USACE jurisdiction (see GC 2); and
- Qualify for one or more of the GPs within this document (Section III); and
- Meet the GCs within this document (Section IV); and
- Comply with the Mitigation Standards within this document (Section V); and
- Are supported by a complete PCN document (Appendix B); and
- When required, are supported by the submittal of project information to the appropriate parties identified in Appendix A; and
- Receive all other required local, State, and/or Federal approvals.

6. Interagency Review Procedures

The USACE reserves the opportunity to coordinate PCN activities with Federal and State agencies to ensure that the proposed activity results in no more than a minimal impact to the aquatic environment. In some cases, USACE may require project modifications involving avoidance, minimization, and/or compensatory mitigation for unavoidable impacts to ensure the net effects of a project are minimal. The USACE determines, after review and coordination with the agencies and/or the applicant, if PCN applications:

a. Meet the terms and conditions of the GP as proposed;
b. Require additional information;
c. Require avoidance, minimization, compensatory mitigation, construction sequencing, project modification, or other special conditions to avoid or minimize adverse impacts to the aquatic environment;
d. Require individual permit review regardless of whether the terms and GCs of these GPs are met, based on concerns for the aquatic environment or any other factor of the public interest (see Section 9 below).

For activities requiring a PCN, the applicant must wait for written authorization from USACE before commencing activities in waters of the U.S. Beginning work for PCN required activities without a USACE written authorization is a violation of these GPs, and the terms and conditions of this document. The applicant may be subjected to an enforcement action by USACE and/or the Environmental Protection Agency (EPA).

7. Construction of Solid Fill Structures and Fills Along the Coastline or Baseline from Which the Territorial Sea is Measured.

Projects involving the construction of solid fill structures or discharge of fill that may extend beyond the coastline or the baseline from which the territorial sea is measured (i.e., mean low water) will require a PCN. The USACE will submit a description of the proposed work and a copy of the plans to the Solicitor, Department of the Interior, Washington, DC 20240, and request comments concerning the effects of the proposed work on the outer continental rights of the United States. These comments will be included in the administrative record of the application. After completion of permit review, the record will be forwarded to the Chief of Engineers. The decision on the application will be made by the Secretary of the Army after coordination with the Attorney General.

8. Emergency Activities

Per 33 CFR 325.2(e)(4), an emergency is limited to a situation that would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process an application under standard procedures. Emergency work shall be limited to that which is necessary to stabilize and secure the situation. Additional work needed for final repairs shall not be completed until approval is obtained through the appropriate, non-emergency process. Emergency work is subject to the same terms and conditions of these GPs as non-emergency work, and similarly, must qualify for authorization under these GPs; otherwise, an IP is required. *See GP 25 Emergency Situations for additional information.*

9. Individual Permit

Projects that do not meet the terms and conditions of this GP may require review as an IP (33 CFR 325.5 (b)). Proposed work in this category will require a separate Federal application for an individual permit from USACE (33 CFR 325.1). In addition, USACE retains discretionary authority on a case-by-case basis to elevate GP-eligible activities to an IP based on concerns for the environment or any other factor of the public interest (33 CFR 320.4 (a)). Applicants are required to submit the appropriate application materials directly to USACE as early as possible to expedite the permit review process. General information and application forms can be obtained at our website or by contacting our office at cenae-r-ma@usace.army.mil or (978) 318-8338. Individual 401 WQC and/or CZMA Federal consistency concurrence from the appropriate MA agencies are required before USACE can issue an individual permit. Applying for an IP does not relieve the applicant from their obligation to obtain all required Federal, State and/or local approvals.

10. Compliance

Applicants shall ensure compliance with all applicable GPs in Section III, GCs in Section IV, and any special conditions included in USACE verification letters. Noncompliance with these GPs, GCs, and special conditions may subject the applicant to criminal, civil, or administrative penalties, and/or an ordered restoration, and/or the permit may be modified, suspended or revoked by USACE. The USACE will consider any activity requiring USACE authorization to be noncompliant if that activity does not comply with all GP terms and conditions at all times, including while the project is under construction and when work is completed.

SECTION III. MASSACHUSETTS GENERAL PERMITS

Applicants are encouraged to review Sections I & II prior to submitting an application to confirm that the activity as proposed complies with all terms and conditions of the 2023 MA GPs. Applicants are also encouraged to review the definitions in Section VII, Definitions & Acronyms, of this document. Several terms are frequently used throughout the GPs, and it is important for the reader to understand these terms. If seeking verification for an activity previously verified under the 2018 MA GPs, please contact the USACE to discuss permitting needs in advance of submitting an application.

General Permits

1. Aids to Navigation and Temporary Recreational Structures
2. Maintenance
3. Moorings
4. Structures in Navigable Waters of the U.S.
5. Boat Ramps and Marine Railways
6. Utility Lines, Oil or Natural Gas Pipelines, Outfall Or Intake Structures, and Appurtenant Features
7. Dredging, Disposal of Dredged Material, Beach Nourishment, Rock Removal and Rock Relocation
8. U.S. Coast Guard Approved Bridges
9. Bank and Shoreline Stabilization
10. Aquatic Habitat Restoration, Enhancement, and Establishment Activities
11. Fish and Wildlife Harvesting and Attraction Devices and Activities
12. Response Operations, Oil and Hazardous Substances
13. Cleanup of Hazardous and Toxic Waste
14. Scientific Measurement Devices
15. Survey Activities
16. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects
17. Residential, Commercial and Institutional Developments, and Recreational Facilities
18. Aquaculture
19. Mining Activities
20. Living Shorelines
21. Agricultural Activities
22. Reshaping Existing Drainage Ditches, Construction of New Ditches, and Mosquito Management
23. Linear Transportation Projects and Wetland/Stream Crossings
24. Temporary Construction, Access, and Dewatering
25. Emergency Situations

GP 1. AIDS TO NAVIGATION AND TEMPORARY RECREATIONAL STRUCTURES (Authority: §10)	
(a) The placement of aids to navigation and regulatory markers that are approved by and installed in accordance with the requirements of the U.S. Coast Guard (USCG). See 33 CFR, Part 66; and (b) Temporary buoys, markers, and similar structures placed for recreational use during specific events such as water skiing competitions and boat races or seasonal use. See GC 16.	
Self-Verification Eligible	**Pre-Construction Notification Required**
1. Aids to navigation and regulatory markers approved by and installed in accordance with the requirements of the USCG. 2. Temporary buoys, markers and similar structures that are: (a) placed for recreational use during specific events and removed within 30 days after event; or (b) placed during winter events on ice and removed before spring thaw. These structures must be authorized by the local harbormaster, not located within an FNP or its buffer zone, and not located in saltmarsh or tidal vegetated shallows.	1. Impacts in saltmarsh or tidal vegetated shallows. 2. Activities that are not SV eligible.
Note: An SVN submittal to USACE is not required for work authorized under SV #1 above.	

GP 2. MAINTENANCE (Authorities: §10 and §404)

Repair, rehabilitation, or replacement of any previously authorized[1], currently serviceable structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3 (activities occurring before certain dates), provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction technique requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the activities above. Maintenance dredging and beach nourishment are not eligible under GP 2 (see GP 7). Stream crossing modifications (including sliplining), replacements or extensions are not eligible under GP 2 (see GPs 6, 17, 23). *See GP 25 Emergency Situations for expedited review of emergency activities.*

Not authorized under GP 2 (IP required): (a) Permanent impacts in >1 acre in non-tidal waters and/or wetlands; or (b) Permanent impacts >1/2 acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; or (c) Temporary impacts >1 acre in tidal waters; >5000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >1000 SF in vegetated shallows; (d) New stream channelization or stream relocation projects (e.g., those in response to storm or flood events).

Self-Verification Eligible

Maintenance activities that meet all of the following terms:

1. In non-tidal waters, the combined permanent and temporary impacts extending beyond the original footprint are ≤5,000 SF[2] and not located in vegetated shallows or riffle and pool complexes.

2. In tidal waters, the combined permanent and temporary impacts extending beyond the original footprint are ≤5,000 SF, ≤1,000 SF in mudflats and/or natural rocky habitat, and not located in saltmarsh and tidal vegetated shallows.

3. Minor deviations in the repair, rehabilitation, or replacement of previously authorized, currently serviceable structures or fills.

4. Bulkhead replacement in tidal and non-tidal waters via installation of new bulkhead within 18 inches of the existing bulkhead and associated backfill.

5. Drawdown of an impoundment for dam/levee repair provided it does not exceed 18 months and one growing season (April through September).

Pre-Construction Notification Required

1. Discharges associated with removal of accumulated sediments and debris in the vicinity of existing structures, including intake and outfall structures and associated canals.

2. The removal of sediment outside the immediate vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) that is ≥200 linear feet. This activity is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions existing when the structure was built.

3. Dam and flood control or levee repair, rehabilitation, or replacement involves:
   a. A change in the flood elevation or permanent water surface elevation of the impoundment; or
   b. Drawdown of impoundment for construction exceeding one growing season (see SV eligible #5);
   c. Any modification that changes the character, scope, or size of the original fill design; or
   d. Does not meet SV eligible 1-7.

4. Installation of steel piles, including steel sheet piles, that cannot be done in the dry and where NOAA-ESA listed species are mapped as present.

[1] Some maintenance activities may not be subject to regulation under Section 404 of the CWA in accordance with 33 CFR 323.4(a)(2). Per 33 CFR 330.3, Vested dates are: a) Work performed and structures installed before December 18, 1968 (Section 10); and b) Fill placed before July 25, 1975 (Section 404).
[2] This excludes dam projects that may require a temporary drawdown with impacts >5,000 SF in non-tidal waters. Instead, the drawdown shall comply with SV #5 to be eligible under Self-Verification.

6. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project or within the boundaries of the structure or fill. 7. Work to previously approved tide gates not affecting upstream tidal resource areas.	5. Activities located in the Connecticut River or Merrimack River, unless they are completed in the dry or when the tide is waterward of the work area. 6. Activities on USACE properties & USACE-controlled easements. 7. Activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible.
Notes: 1. This authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the CWA §404(f) exemption for maintenance. See 33 CFR 323.4(a)(2). Prior USACE permits may have included authorization to maintain the activity, in which case authorization under this GP is not necessary. 2. See GC 22 for information on temporary construction mats.	

GP 3. MOORINGS (Authority: §10)

New moorings and mooring fields; the relocation of previously authorized moorings; expansions, boundary reconfigurations or modifications of previously authorized mooring fields; and maintenance and replacement of moorings.

Not authorized under GP 3 (IP required): (a) Moorings or mooring fields converted to or associated with a new boating facility[1]; or (b) Moorings in a USACE Federal Navigation Anchorage or USACE Federal Navigation Channel, except municipal-operated mooring fields.

Self-Verification Eligible	Pre-Construction Notification Required
1. New or relocated moorings that meet all the following terms: a. Authorized by a local harbormaster/ municipality under MGL Chapter 91 §10A; and b. No interference with navigation; and c. Single boat, single-point and non-commercial; and d. Not associated with a boating facility, and e. Neither placed within nor impact tidal vegetated shallows (e.g., eelgrass); and f. Not located within a USACE Federal navigation project (FNP) or the FNP buffer zone. 2. Existing, authorized moorings are converted from traditional moorings to low impact mooring technology (see note below) and/or helical anchors. 3. Maintenance and replacement of moorings authorized by the USACE.	1. New mooring fields; or expansions, boundary reconfigurations or modifications of existing, authorized mooring fields. 2. Moorings located such that they, and/or vessels docked or moored at them, are within the buffer zone of the horizontal limits of a Federal Anchorage. The buffer zone is equal to 3 times the authorized depth of that channel (see GC 15). 3. New individual moorings located in saltmarsh, mudflats, natural rocky habitat, and tidal vegetated shallows. Locating moorings these areas should be avoided to the maximum extent practicable. If these areas cannot be avoided, plans should show conservation mooring or low-impact mooring systems that prevent mooring chains from resting or dragging on the bottom substrate at all tides, where practicable. USACE may require a survey in areas previously mapped as containing eelgrass or within 100 ft. of existing eelgrass beds to document presence or absence of eelgrass and to determine the appropriate type and amount of compensatory mitigation for impacts to eelgrass. 4. Replacement moorings located in tidal vegetated shallows. 5. Moorings that are not SV eligible and do not require an IP.

Notes:

1. Low impact mooring systems, including conservation moorings, are encouraged to minimize impacts of chain scouring from conventional moorings during the tidal cycle.
2. An SVN submittal to USACE is not required for work authorized under SV #2-3 above.

[1] Boating facilities are marinas, yacht clubs, boat clubs, boat yards, dockominiums, town facilities, land/homeowner's associations, etc. that provide for a fee, rent or sell mooring or docking space. Not classified as boating facilities are municipal moorings or municipal mooring fields that charge an equitable user fee based only on the actual costs incurred.

GP 4. STRUCTURES IN NAVIGABLE WATERS OF THE U.S. (Authority: §10 & §404)

New, expansions, reconfigurations or modifications of structures for navigational access in waters of the U.S. including but not limited to temporary/seasonal or permanent pile and pole-supported piers, floats, stairs, shore outhauls, and boat and float lifts.

Not authorized under GP 4 (IP required): (a) Structures associated with a new boating facility; (b) Structures in a USACE Federal anchorage or channel; or (c) Artificial reefs.

Self-Verification Eligible

1. Private, non-commercial piers, floats and lifts that meet all the following terms:

a. Piers and floats in: (i) Tidal waters total ≤600 SF combined; and (ii) Non-tidal navigable waters of the U.S. total ≤600 SF combined; and

b. Piers are ≤4 feet wide and ≥6 feet above the marsh substrate (the height is measured from the marsh substrate to the bottom of the lowest longitudinal support); and

c. Floats and lifts in tidal waters and non-tidal navigable waters of the U.S. are ≥24 inches above the substrate during all tidal cycles. Float stops are preferred when site conditions warrant them (i.e., low tide exposes substrate), and skids can only be used in areas where piles are not feasible and on sandy or hard bottom substrates; and

d. Piers, floats and lifts: (i) Are ≥25 feet from previously mapped or existing vegetated shallows, or riparian property line extensions; (ii) Extend ≤25% of the waterway width in non-tidal navigable waters of the U.S. or MHW in tidal navigable waters of the U.S.

e. Installation of ≤12-inch diameter timber piles. Installation of ≥12-inch diameter piles of any material type when installed in the dry.

2. Fenders and similar structures.

Pre-Construction Notification Required

1. Shore outhauls.
2. Expansions, modifications, or new reconfiguration zones at any authorized boating facility.
3. New, expansions, reconfigurations, reconfiguration zones, or modifications of structures that provide public, community or government recreational uses such as boating, fishing, swimming, access, etc.
4. Installation of steel piles, including steel sheet piles, that cannot be done in the dry and where NOAA-ESA listed species are mapped as present.
5. Located within the buffer zone of the horizontal limits of an FNP (GC 15).
6. Miscellaneous structures.
7. Impacts in tidal vegetated shallows.
8. Structures that are not SV eligible and do not require an IP.

Notes:

1. See GC 19 regarding pile driving and pile removal in navigable waters and
2. See GC 20 regarding time of year restrictions in tidal waters.
3. Boating facilities are facilities that provide for a fee, rent, or sell mooring space, such as marinas, yacht clubs, boat clubs, boat yards, town facilities, dockominiums, etc. Pile supported structures with no discharges of dredged or fill material are not regulated by USACE in non-navigable waters.
4. A SVN submittal to USACE is not required for SV #2 above.

GP 5. BOAT RAMPS AND MARINE RAILWAYS (Authorities: §10 and §404)

Activities required for the construction of boat ramps and marine railways, including excavation and fill.

Not authorized under GP 5 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S., >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows[1]; or (c) dredging in navigable waters of the U.S. (see GP 7).

Self-Verification Eligible	Pre-Construction Notification Required
1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows.	1. Boat ramps are located within 25 feet of property line extensions unless the properties are owned by the same owner. The USACE may require a letter of no objection from the abutter(s).
2. In tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) ≤1,000 SF in mudflats and/or natural rocky habitat, and (c), not located in saltmarsh and tidal vegetated shallows.	2. Activities that are not eligible for SV and do not require an IP.

GP 6. UTILITY LINES, OIL OR NATURAL GAS PIPELINES, OUTFALL OR INTAKE STRUCTURES, AND APPURTENANT FEATURES (Authorities: §10 & §404)

Activities required for: (a) The construction, maintenance, repair or removal of utility lines, oil or natural gas pipelines[1], outfall or intake structures[2], and appurtenant features including the associated excavation, backfill, or bedding for these structures. (b) The construction, maintenance, or expansion of substations and other appurtenant facilities associated with a utility line, oil or natural gas pipeline, and outfall or intake structure in non-tidal waters of the U.S.; and (c) The construction and maintenance of foundations for overhead utility line towers, poles, and anchors in tidal and non-tidal waters of the U.S., provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible. This GP authorizes the construction of access roads to facilitate construction of the above activities provided the activity, in combination with all other activities included in one single and complete project, does not exceed the thresholds identified below (IP required). Access roads used solely for construction of the utility line must be removed upon completion of the work. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the activities above.[3]

Not authorized under GP 6 (IP required): (a) Permanent impacts for any single and complete project that are >1 acre in non-tidal waters of the U.S.; >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows; (c) Stormwater treatment or detention systems, or subsurface sewage disposal systems in waters of the U.S.; or (d) New tide gates that do not meet SV criteria below.

Self-Verification Eligible	Pre-Construction Notification Required
1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows. 2. In tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) ≤1,000 SF in mudflats and/or natural rocky habitat, and (c), not located in saltmarsh and tidal vegetated shallows. 3. Intake structures that are dry hydrants used exclusively for firefighting activities with no stream impoundments. 4. New tide gates on outfall structures for pipes conveying stormwater and/or industrial NPDES-permitted discharges from waters that are not waters of the U.S.	1. New outfall and/or intake structures. 2. Unconfined work or silt producing activities in streams with diadromous fish. 3. Submarine cables, conduits, or pipelines that occur in, over or under navigable waters of the U.S. 4. Stream channelization, relocation, impoundment, or loss of streambed occurs. 5. The activity is placed within and runs parallel to or along a streambed within waters of the U.S. 6. There is a permanent change in preconstruction contours in waters of the U.S. 7. Installation of utility lines or gas/oil pipelines using trench excavation where material is temporarily sidecast into waters of the U.S. for >3 months. Applicants must demonstrate how the material would not be dispersed by currents or other forces. 8. Activities that are not SV eligible and do not require an IP.

[1] See the definitions of a “utility line” and “oil or natural gas pipeline” in Section VII.
[2] Outfall structures must be in compliance with regulations issued under the National Pollutant Discharge Elimination System Program (Section 402 of the Clean Water Act).
[3] Temporary impacts shall comply with all GCs, including GC 32 Utility Line Installation and Removal.

GP 7. DREDGING (Authority: §10), DISPOSAL OF DREDGED MATERIAL (Authorities: §10, §404), BEACH NOURISHMENT (Authorities: §10 & §404), ROCK REMOVAL (Authority: §10) AND ROCK RELOCATION (Authorities: §10 & §404)

New, improvement and maintenance dredging (see notes below) including: (a) Disposal of dredged material at a confined aquatic disposal cell, beach nourishment location, near shore site, or ocean disposal site selected under Section 404 of the Clean Water Act pursuant to the 404(b)(1) Guidelines, provided the dredged material meets the requirements for such disposal; (b) Beach nourishment not associated with dredging; and (c) Rock removal and relocation for navigation.

Not authorized under GP 7 (IP required): (a) Dredging where ocean disposal is required for the disposal of dredged material (Section 103); New dredging >½ acre; ≥10,000 CY; >1000 SF permanent impacts to intertidal areas, saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF permanent impacts to tidal vegetated shallows; (b) Maintenance or improvement dredging and/or disposal with >1 acre of impacts to intertidal areas, saltmarsh, mudflats, riffle and pool complexes, or non-tidal vegetated shallows; (c) New dredging where the primary purpose is sand mining for beach nourishment; (d) Beach scraping; (e) Boulder removal and relocation for navigation >½ acre; or (f) Blasting.

Self-Verification Eligible

1. Maintenance dredging of previously dredged areas, with upland disposal, that meet all of the following terms:
   a. Dredged area ≤1/2 acre; and
   b. Activities comply with GC 20, TOY Restrictions. The time-of-year restriction(s) stated in Appendix B of the MA Division of Marine Fisheries (DMF) Technical Report TR-47[1] can apply instead if the general TOY restriction if a TOY is provided for a specific waterbody and is less restrictive. This is to protect endangered species, EFH, and other species; and
   c. The dredge footprint is located >25' from salt marsh or >100' from vegetated shallows; and
   d. Combined permanent and temporary impacts that are (i) ≤1,000 SF in mudflats or natural rocky habitat, or (ii) ≤5,000 SF within intertidal habitat and areas containing shellfish (an area contains shellfish unless: it is verified that minimal shellfish are present per the local shellfish constable or a shellfish survey; or it is not mapped as a MassGIS shellfish suitability area).
   e. No return water from upland disposal areas.

2. Boulder relocation with ≤1,000 SF of impacts, relocated to a similar depth and substrate.

Pre-Construction Notification Required

1. Maintenance dredging where the primary purpose is sand mining for beach nourishment.

2. New dredging and associated disposal ≤1/2 acre or <10,000 cubic yards.

3. Improvement dredging.

4. Beach nourishment in waters of the U.S. not associated with dredging.

5. Activities that are located in saltmarsh and tidal vegetated shallows.

6. Dredging in a Federal Navigation Project or within the buffer zone (see GC 15).

7. Activities that are not eligible for SV and do not require an IP.

Notes:

1. See Section VII for definitions of improvement and maintenance dredging.
2. For PCN activities, the USACE may waive or adjust the time of year requirement on a case-by-case basis after consultation with resource agencies.
3. Disposal site of any dredged material must be identified prior to obtaining USACE authorization.
4. Contact the USACE if a ten-year authorization to maintain an area is desired.

[1] The MA DMF Technical Report TR-47: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/

GP 8. U.S. COAST GUARD APPROVED BRIDGES (Authorities: §404)

Discharges of dredged or fill material incidental to the construction and modification of bridges across navigable waters of the U.S., including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided that the USCG authorizes the construction of the bridge structure under Section 9 of the Rivers and Harbors Act of 1899 or other applicable laws. A USCG Authorization Act Exemption or a Surface Transportation and Uniform Relocation Assistance Act (STURRA) (144h) exemption do not constitute USCG authorization.

Not authorized under GP 8 (IP Required): Causeways and approach fills (see GP 23).

Self-Verification Eligible	**Pre-Construction Notification Required**
1. Discharges of dredged or fill material that are incidental to the construction of bridges across navigable waters and meet all of the following: a. Combined permanent and temporary impacts that are ≤5,000 SF. b. Combined permanent and temporary impacts that are ≤1,000 SF in mudflats and natural rocky habitat. c. Not located in saltmarsh and tidal vegetated shallows.	1. Activities on USACE properties & USACE controlled easements.2. Installation of steel piles, including steel sheet piles, that cannot be done in the dry and where NOAA-ESA listed species are mapped as present. 3. Activities that are not eligible for SV and do not require an IP.

Notes:

1. GP 8 is not applicable to bridges over inland waters or wetlands that are not tidally influenced or regulated as navigable under Section 10.
2. See eligibility criteria for GPs 2 & 23 for projects that are not subject to USCG regulations.

GP 9. BANK AND SHORELINE STABILIZATION (Authorities: §10 & §404)

Bank stabilization activities necessary for erosion protection along the banks of lakes, ponds, streams, estuarine and ocean waters, and any other open waters. Includes bulkheads, seawalls, riprap, revetments, living seawalls, or slope protection & similar structures, specifically for the purpose of shoreline protection. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the activities above.

Activities must meet the following criteria: (a) No material is placed in excess of the minimum needed for erosion protection; (b) No material is of a type, or is placed in any location, or in any manner, that will impair surface water flow into or out of any waters of the U.S.; (c) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored native trees and treetops may be used in low energy areas); (d) Native plants appropriate for current site conditions, including salinity, must be used for bioengineering or vegetative bank stabilization; (e) The activity is not a stream channelization activity; and (f) The activity must be properly maintained, which may require repairing it after severe storms or erosion events. This GP authorizes those maintenance and repair activities if they require authorization. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the bank stabilization activity. See GP 20 for living shoreline stabilization structures or fills.

Not authorized under GP 9 (IP required): (a) New bank stabilization >500 feet in total length (>1,000 linear feet in total length when necessary to protect transportation infrastructure) or permanent loss of saltmarsh >1,000 SF, unless the District Engineer waives this criterion by making a written determination concluding that the discharge of dredged or fill material will result in no more than minimal adverse environmental effects (an exception is for bulkheads – the district engineer cannot issue a waiver for a new bulkhead that is >1,000 feet in length along the bank); (b) Stream channelization or relocation activities; or (c) Breakwaters, groins or jetties.

Self-Verification Eligible

1. Activities in tidal and non-tidal waters that are:
   a. <200 feet in length.
   b. <400 feet in length when necessary to protect transportation infrastructure.
   c. ≤1 cubic yard of fill per linear foot average along the bank waterward of the plane of OHW or HTL.
   d. Not located in non-tidal wetlands, saltmarsh, vegetated shallows.

Pre-Construction Notification Required

1. Activities in tidal and non-tidal waters that are:
   a. ≥200 feet to ≤500 feet in total length. Activities >500 feet in total length must have a written waiver from USACE.
   b. ≥400 feet to ≤1,000 feet in total length when necessary to protect transportation infrastructure. Activities >1,000 feet in total length must have a written waiver from USACE.
   c. >1 cubic yard of fill per linear foot average along the bank waterward of the plane of OHW or HTL.
   d. Located in non-tidal wetlands, saltmarsh, vegetated shallows.
2. Activities with permanent loss of tidal or non-tidal waters that is (a) ≥5,000 SF or (b) ≥1,000 SF in mudflats and natural rocky habitat.
3. Activities that are (a) located in the Connecticut River or Merrimack River and/or (b) require installation of steel piles/steel sheet piles that cannot be done in the dry where NOAA ESA-listed species are mapped as present.
4. Activities on USACE properties & USACE-controlled easements.
5. Activities that require grouted riprap and/or poured/unformed concrete.
6. Activities that are not eligible for SV and do not require an IP.

Note: The applicant shall comply with GC 24. This includes utilization of bioengineering techniques in lieu of hard armoring to the maximum extent practicable as site conditions allow.

GP 10. AQUATIC HABITAT RESTORATION, ENHANCEMENT, AND ESTABLISHMENT ACTIVITIES (Authorities: §10 and §404)

Activities for the restoration, enhancement and establishment of non-tidal and tidal wetlands and riparian areas, including invasive, non-native or nuisance species control; the restoration and enhancement of non-tidal streams and other non-tidal open waters; the relocation of non-tidal waters, including non-tidal streams & associated wetlands for reestablishment of a natural stream morphology and reconnection of the floodplain; the restoration and enhancement of shellfish, finfish and wildlife; and the rehabilitation or enhancement of tidal streams, tidal wetlands and tidal open waters; provided those activities result in net increases in aquatic resource functions and services. See GP 9 for bank and shoreline stabilization. See GP 20 for living shorelines.

Not authorized under GP 10 (IP required): Stream channelization activities and artificial reefs.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. In tidal and non-tidal waters excluding tidal vegetated shallows, the combined permanent and temporary impacts are ≤5,000 SF. 2. Eelgrass (vegetated shallows) planting and transplanting ≤100 SF in tidal waters.	1. In tidal and non-tidal waters excluding tidal vegetated shallows, the combined permanent and temporary impacts are >5,000 SF. 2. Eelgrass (vegetated shallows) planting and transplanting >100 SF in tidal waters. 3. Permanent water impoundments, dam removal, fish ladders, or tide gates. 4. Stream relocation, impoundment, or loss of streambed occurs. 5. Runneling projects with the purpose of restoring saltmarsh by removing excess water that ponds on the saltmarsh surface. 6. The conversion of: (a) a stream or natural wetlands to another aquatic habitat type (e.g., stream to wetland or vice versa, wetland to pond, etc.) or uplands, (b) one wetland type to another (e.g., forested wetland to an emergent wetland). 7. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving permanent or temporary impacts unless they are performed <5 feet waterward from OHW or HTL and in the dry. This is to protect endangered species. 8. Activities on USACE properties & USACE-controlled easements. 9. Activities that are not eligible for SV and do not require an IP.

Notes:

1. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type.
2. See RGL 18-01 for guidance on removal of obsolete dams and other structures from rivers and streams. https://www.usace.army.mil/missions/civil-works/regulatory-program-and-permits/guidance-letters/
3. An ecological reference site may be used for a design basis of the restoration activity. The reference site should possess characteristics of an intact aquatic habitat or riparian area that exists in the region. The reference site shall represent the target habitat type of the proposed activity. A reference site may be required at the discretion of USACE.

GP 11. FISH AND WILDLIFE HARVESTING AND ATTRACTION DEVICES AND ACTIVITIES (Authorities: §10 and §404)

Fish and wildlife harvesting and attraction devices and activities in waters of the U.S. such as pound nets, crab traps, crab and shellfish dredging, eel pots, lobster traps, duck blinds, clam and oyster digging, fish aggregating devices, and small fish attraction devices such as open-water fish concentrators (sea kites, etc.).

Not authorized under GP 11 (IP required): Artificial reefs; or new, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area >½ acre.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤1/2 acre, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows. 2. Fish and wildlife harvesting and attraction devices and activities that do not require a PCN or IP.	1. Pound nets, impoundments or semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area ≤½ acre, fish aggregating devices, or small fish attraction devices. 2. Devices and activities that are located in tidal vegetated shallows, mud flats, or saltmarsh. 3. Devices and activities that do not require an IP.

Note: An SVN submittal to USACE is not required for work authorized under GP 11.

GP 12. RESPONSE OPERATIONS, OIL AND HAZARDOUS SUBSTANCES (Authorities: §10 & §404)

(a) Activities conducted in response to a discharge or release of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) including containment, cleanup, and mitigation efforts, provided that the activities are done under either: (i) The Spill Prevention, Control and Countermeasure Plan required by 40 CFR 112.3; (ii) The direction or oversight of the Federal on-scene coordinator designated by 40 CFR 300; or (iii) Any approved existing State, regional or local contingency plan provided that the Regional Response Team concurs with the proposed response efforts or does not object to the response effort; (b) Activities required for the cleanup of oil releases in waters of the U.S. from electrical equipment that are governed by EPA's polychlorinated biphenyl (PCB) spill response regulations at 40 CFR 761; (c) Booms placed in navigable waters of the U.S. for oil and hazardous substance containment, absorption and prevention; and (d) The use of structures and fills for spill response training exercises. Wetlands, vegetated shallows, mudflats, and riffle and pool complexes should be restored in place at the same elevation.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. Activities are conducted in accordance with (a) or (b) above that are not planned or scheduled, but an emergency response (see Note 1). 2. Booms placed in navigable waters of the U.S. for oil and hazardous substance containment, absorption and prevention. 3. Temporary impacts for spill response training exercises ≤5000 SF in non-tidal waters and ≤1000 SF in tidal waters with no impacts to wetlands, saltmarsh, mudflats, or vegetated shallows. 4. Temporary structures in tidal waters with no impacts to wetlands, saltmarsh, mudflats, vegetated shallows, or riffle and pool complexes and in place ≤30 days.	1. Activities (a) or (b) above are planned or scheduled, not an emergency response; or 2. Activities that are not eligible for SV and do not require an IP.

Notes:

1. For emergency response activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, Merrimack River from the Essex Dam to the mouth, and remaining tidal waters that are not rivers, the permittee must contact the USACE at (978) 318-8338 before or as soon as possible after the work authorized under GP 12(a) - (c) commences for the USACE to address effects under the Endangered Species Act.
2. An SVN submittal to USACE is not required for booms used for spill prevention, or properly contained and cleaned de minimus oil or hazardous substance discharges into navigable waters of the U.S.

GP 13. CLEANUP OF HAZARDOUS AND TOXIC WASTE (Authorities: §10 and §404)

Specific activities required to affect the containment, stabilization, or removal of hazardous or toxic waste materials, including court ordered remedial action plans or related settlements, which are performed, ordered or sponsored by a government agency with established legal or regulatory authority.

Not authorized under GP 13: (a) Establishment of new disposal sites; or (b) Expansion of existing sites used for the disposal of hazardous or toxic waste.

Self-Verification Eligible	Pre-Construction Notification Required
1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in vegetated shallows and riffle and pool complexes.	1. In non-tidal waters, the combined permanent and temporary impacts are (a) >5,000 SF, and (b) located in vegetated shallows and riffle and pool complexes. 2. Permanent and temporary impacts in tidal waters or navigable waters of the U.S. 3. Stream channelization, relocation, impoundment, or loss of streambed occurs. 4. Activities that are not eligible for SV and do not require an IP.

Notes:

1. Wetlands, vegetated shallows, mudflats, and riffle and pool complexes should be restored in place at the same elevation to the maximum extent practicable.
2. Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA, are not required to obtain permits under Section 404 of the CWA or Section 10 of the Rivers and Harbors Act.

GP 14. SCIENTIFIC MEASUREMENT DEVICES (Authorities: §10 and §404)

Scientific measurement devices for measuring and recording scientific data, such as staff gauges, tide and current gauges, meteorological stations, water recording and biological observation devices, water quality testing and improvement devices, and similar structures. Also eligible are small weirs and flumes constructed primarily to record water elevation, flow and/or velocity. Upon completion of the use of the device to measure and record scientific data, the measuring device and any other structures or fills associated with that device (e.g., foundations, anchors, buoys, lines, etc.) must be removed to the maximum extent practicable and the site restored to preconstruction elevations.

Not authorized under GP 14 (IP required): (a) Permanent impacts that are >5,000 SF in tidal and non-tidal waters of the U.S.; >1000 SF in tidal saltmarsh, mud flats, riffle and pool complexes; or >100 SF in tidal vegetated shallows; or (b) Temporary impacts in tidal waters that are >1 acre, unless the District Engineer waives this criterion by making a written determination concluding that the discharge of dredged or fill material will result in no more than minimal adverse environmental effects; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows.

Self-Verification Eligible

1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) not located in riffle and pool complexes and non-tidal vegetated shallows.

2. In tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) ≤1,000 SF in mudflats and/or natural rocky habitat, (c) not located in saltmarsh and tidal vegetated shallows.

3. Temporary, non-biological sampling devices in waters that do not restrict or concentrate movement of aquatic organisms and will not adversely affect the course, condition, or capacity of a waterway for navigation.

4. Scientific measurement devices, and small weirs and flumes constructed primarily to record water quantity and velocity provided the discharge of fill is limited to 25 cubic yards. These cannot obstruct or restrict the waterway course, condition, capacity, and location.

5. Temporary measuring devices and associated structures (e.g., anchors, buoys, etc.) in tidal and non-tidal waters that do not require a PCN or IP.

Pre-Construction Notification Required

1. Biological sampling devices, weirs or flumes, or the activity restricts or concentrates movement of aquatic organisms.

2. Permanent towers located in navigable waters that record and measure scientific data.

3. Devices that are not eligible for SV and do not require an IP.

Note: An SVN submittal to USACE is not required for temporary measuring devices with a footprint of <10 SF, with a profile of <3 feet high measured from the substrate and located in water deeper than -10 feet MLW.

GP 15. SURVEY ACTIVITIES (Authorities: §10 and §404)

Survey activities such as soil borings, core sampling, seismic exploratory operations, plugging of seismic shot holes and other exploratory-type bore holes, exploratory trenching, soil surveys, sampling, sample plots or transects for wetland delineations, and historic resources surveys.

Not authorized under GP 15 (IP required): (a) Permanent impacts that are >1 acre in tidal and non-tidal waters; >1000 SF in tidal saltmarsh, mud flats, or riffle and pool complexes; or >100 SF in tidal vegetated shallows; or (b) Temporary impacts in tidal waters that are >1 acre, unless the District Engineer waives this criterion by making a written determination concluding that the discharge of dredged or fill material will result in no more than minimal adverse environmental effects; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) not located in riffle and pool complexes and non-tidal vegetated shallows. 2. In tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) ≤1,000 SF in mudflats and/or natural rocky habitat, (c) not located in saltmarsh and tidal vegetated shallows.	1. Exploratory trenching (see Note 2) occurs in waterways (e.g., streams, tidal waters). 2. Activities associated with the recovery of historic resources, and the drilling and discharge of excavated material from test wells for oil and gas exploration. 3. Seismic exploratory operations occur in tidal waters, the Connecticut River from the Turners Falls Dam to the MA/CT border, or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species. 4. Activities that are not eligible for SV and do not require an IP.

Notes:

1. An SVN submittal is not required for wetland delineations, and core sampling conducted for preliminary evaluation of dredge project analysis.
2. For the purposes of GP 15, the term “exploratory trenching” means mechanical land or underwater clearing of the upper soil profile to expose bedrock or substrate for the purpose of mapping or sampling the exposed material.
3. The discharge of drilling mud and cuttings may require a permit under §402 of the CWA.

GP 16. LAND AND WATER-BASED RENEWABLE ENERGY GENERATION FACILITIES (Authorities: §10 and §404), AND HYDROPOWER PROJECTS (Authority: §10 and §404)

Structures and work in tidal waters and discharges of dredged or fill material into tidal and non-tidal waters for the construction, expansion, modification or removal of: (a) Land-based renewable energy production facilities (e.g., solar, wind, biomass, geothermal) and their attendant features; (b) Water-based wind or hydrokinetic renewable energy generation projects and their attendant features; and (c) Discharges of dredged or fill material associated with hydropower projects. Attendant features may include, but are not limited to, land-based collection and distribution facilities, control facilities, and parking lots. For each single and complete project in (b) above, no more than 10 generation units (e.g., wind turbines or hydrokinetic devices) are authorized in navigable waters of the U.S. Upon completion of the pilot project (see note 2), the generation units, transmission lines, and other structures or fills associated with the pilot project must be removed to the maximum extent practicable.

Not authorized under GP 16 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters, >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in vegetated shallows; or (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows.

Self-Verification Eligible	**Pre-Construction Notification Required**
In non-tidal waters, the combined permanent and temporary impacts for land-based activities are (a) ≤5,000 SF, (b) not located in riffle and pool complexes and non-tidal vegetated shallows.	1. In non-tidal waters, the combined permanent and temporary impacts for land-based activities are (a) >5000 SF, or (b) located in vegetated shallows or riffle and pool complexes. 2. Permanent and temporary impacts in tidal waters. 3. Water-based wind or hydrokinetic renewable energy generation projects, and hydropower projects. 4. For all activities eligible for authorization under GP 16: a. The activity occurs in tidal waters or in, over or under navigable waters. b. Stream channelization, relocation, impoundment, or loss of streambed occurs. 5. Activities that are not eligible for SV and do not require an IP.

Notes:

1. Utility lines constructed to transfer the energy from the land-based renewable generation or collection facility to a distribution system, regional grid, or other facility may be authorized by GP 6.
2. For the purposes of this GP, the term “pilot project” means an experimental project where the renewable energy generation units will be monitored to collect information on their performance and environmental effects at the project site.

GP 17. RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS AND RECREATIONAL FACILITIES (AUTHORITIES: §404)

Discharges of dredged or fill material into non-tidal waters for the construction or expansion of: (a) Residences and residential subdivisions; (b) Residential, commercial and institutional building foundations and building pads; and (c) Recreational facilities such as playgrounds, playing fields, bikeways, trails, etc. This GP also authorizes attendant features that include, but are not limited to, roads, parking lots, garages, yards, and utility lines, and stormwater management facilities. This GP authorizes attendant features if they are necessary for the use of the project purpose.

Not authorized under GP 17 (IP required): (a) Permanent impacts that result in loss of non-tidal waters >1/2 acre; >1000 SF in riffle and pool complexes or vegetated shallows; or (b) Subsurface sewerage disposal systems in non-tidal waters.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. In non-tidal waters, the combined permanent and temporary impacts are (a) <5,000 SF, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows. 2. Stream channelization or relocation resulting in loss of streambed that is <200 LF.	1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≥5,000 SF, or (b) located in riffle and pool complexes or non-tidal vegetated shallows. 2. Stream and wetland crossings that require a PCN per GCs 20 TOY Restrictions and GC 31 Stream Work and Crossings & Wetland Crossings. 3. Stream channelization or relocation resulting in loss of streambed that is ≥200 LF. Stream impoundment activities of any kind. 4. Activities on USACE properties & USACE-controlled easements. 5. Activities that are not SV eligible and do not require an IP.

Notes:

1. Stream and wetland crossings (permanent and temporary), including those built with construction mats; and modifications (including sliplining), replacements or extensions to existing crossings.
2. See GC 22 for information on temporary construction mats.
3. Subdivisions: For residential subdivisions, the aggregate total loss of waters of United States authorized by this GP cannot exceed 1/2-acre. This includes any loss of waters of the United States associated with development of individual subdivision lots.

GP 18. AQUACULTURE (Authorities: §10 and §404)

(a) The installation of buoys, floats, racks, trays, nets, lines, tubes, containers, and other structures into navigable waters of the U.S.; (b) Discharges of dredged or fill material into tidal and non-tidal waters necessary for shellfish seeding, rearing, cultivating, transplanting, and harvesting activities; and (c) Shellfish seeding or brushing the flats projects. Any fill material imported to the project from offsite (this is limited to mineral growth medium used in culture trays) shall be clean and of comparable grain size to the native substrate. Activities authorized under this GP must have (a) their MA DMF Aquaculture Certificate letter for licensed shellfish aquaculture sites, (b) documentation that the applicant has coordinated with the U.S. Coast Guard regarding USCG Private Aids to Navigation standards, (c) their MEPA Certificate (if required), and (d) documentation that the applicant has contacted their local authorities (ex. harbormaster, select board, shellfish constable) for authorization of their facility.

Not authorized under GP 18 (IP required): (a) New, or expansions of, impoundments and semi-impoundments of tidal and non-tidal waters for the culture or holding of motile species such as lobster with an impounded area >½ acre; (b) Cultivation of a nonindigenous species (see Note 1) unless that species has been previously cultivated in the waterbody; (c) Cultivation of an aquatic nuisance species (see Note 1); (d) Attendant features such as docks, piers, boat ramps (see GP 4); (e) stockpiles, staging areas, or the deposition of shell material back into tidal and non-tidal waters as waste.

Self-Verification Eligible

1. In tidal waters, a new lease site area is (a) ≤2-acre, (b) not located in salt marsh, natural rocky habitat, or tidal vegetated shallows.

2. In tidal waters, *expansions* of existing lease sites not to exceed 2 acres for the entire site (e.g. 1 acre lease site increasing to a 2 acre lease site may qualify as SV). A PCN is required for expansions in salt marsh, natural rocky habitat, and tidal vegetated shallows.

3. Cages, racks that are elevated ≥2 feet above the ocean floor with legs within a lease site with ≤4 buoys marking the corners.

4. Floating cage strings with a single connecting line, ≤2 anchors and ≤2 end marker buoys per string within a lease site with ≤4 buoys marking the corners.

5. No activities located within 25 feet of tidal vegetated shallows.

6. Culture only indigenous species.

7. Not located in FNP or within a distance of three times the authorized depth of an FNP (see GC 15).

8. Not located in or impinge upon the value of any National Lands or Federal Properties.

9. Floating upweller docks that total ≤600 SF in area.

Pre-Construction Notification Required

1. Discharges of fill material associated with aquaculture >5,000 SF.

2. Research, educational, commercial-viability or experimental aquaculture gear activities >1,000 SF.

3. Kelp or finfish aquaculture.

4. Land-based hatchery intakes >3 inches in diameter.

5. Activities in water depths >10 feet mean low lower water (MLLW).

6. Activities with in-water lines, ropes or chains that are not SV eligible (see #3-4).

7. Activities occur in the Connecticut River from the Turners Falls Dam to the MA/CT border or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species.

8. New, or expansions of, impoundments and semi-impoundments for the culture or holding of motile species such as lobster with an impounded area ≤1/2 acre.

9. Activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible.

Note: The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 defines: (a) nonindigenous species as “any species or other viable biological material that enters an ecosystem beyond its historic range, including any such organism transferred from one country into another”; and (b) aquatic nuisance species as “a nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural, or recreational activities dependent on such waters.”

GP 19. MINING ACTIVITIES (Authorities: §10 and §404)

Discharges of dredged or fill material into non-tidal waters for mining activities, except for coal mining and metallic mineral mining activities.

Not authorized under GP 19 (IP required): (a) Permanent impacts >1 acre in non-tidal waters; or (b) Activities in tidal waters.

Self-Verification Eligible	Pre-Construction Notification Required
In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in riffle and pool complexes, non-tidal vegetated shallows, and streams.	1. In non-tidal waters, the combined permanent and temporary impacts are (a) >5,000 SF, or (b) located in riffle and pool complexes, non-tidal vegetated shallows, and streams. 2. The activity occurs in non-tidal navigable waters of the U.S. 3. Stream channelization, relocation, impoundment, loss of streambed, or discharge of tailings into streams occurs. 4. Work on USACE properties & USACE-controlled easements. 5. Activities that are not eligible for SV and do not require an IP.

GP 20. LIVING SHORELINES[1] (Authorities: §10 and §404)

Construction and maintenance of living shorelines to stabilize banks and shores in tidal waters. In non-tidal waters that are not subject to the ebb and flow of the tide, nature-based bank stabilization techniques such as bioengineering and vegetative stabilization may be authorized by GP 9. This GP authorizes those maintenance and repair activities in-kind that are necessary to address changing environmental conditions.

The following terms must be met for both SVs and PCNs as applicable: (a) Coir logs, coir mats, stone, native oyster shell, native wood debris, and other structural materials must be adequately anchored, of sufficient weight, or installed in a manner that prevents relocation in most wave action or water flow conditions, except for extremely severe storms; (b) For living shorelines consisting of tidal fringe wetlands, native plants appropriate for current site conditions, including salinity and elevation, must be used if the site is planted by the permittee; (c) Discharges of dredged or fill material into waters of the U.S., and oyster or mussel reef structures in navigable waters, must be the minimum necessary for the establishment and maintenance of the living shoreline; (d) If sills or other structural materials per PCN #4 must be constructed to protect fringe wetlands for the living shoreline, those structures must be the minimum size necessary to protect those fringe wetlands; (e) The activity must be designed, constructed, and maintained so that it has no more than minimal adverse effects on water and sediment movement between the waterbody and the shore and the movement of aquatic organisms between the waterbody and the shore; and (f) The living shoreline must be properly maintained and monitored, which may require periodic repair of sills, bioengineered components, or replacing sand fills after severe storms or erosion events. Vegetation may be replanted to maintain the living shoreline.

Not authorized under GP 20 (IP required): (a) The activity is ≥1000 feet in length along the bank (≥2000 LF both banks) unless waived by the District Engineer; or (b) The activity is >30 feet channel ward of mean low water in tidal waters; or (c) Upland reclamation activities; or (d) Stream channelization or relocation activities; or (e) Breakwaters, groins, jetties, or artificial reefs; or (f) Permanent impacts >1,000 SF in existing saltmarsh; >100 SF in existing tidal vegetated shallows.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. Tidal and non-tidal living shorelines ≤100 LF for each bank (≤200 LF for both banks). 2. Combined permanent and temporary impacts ≤5,000 SF in tidal waters, excluding existing salt marsh, tidal vegetated shallows, natural rocky habitat, and mudflats.	1. Tidal and non-tidal living shorelines >100 LF to <1000 LF (>200 LF to <2000 LF for both banks). 2. Permanent and temporary impacts in existing salt marsh, tidal vegetated shallows, or mudflats. 3. Work on USACE properties & USACE-controlled easements. 4. Use of stone sills, native oyster shell, native wood debris, or other structural materials.

Notes:

1. PCNs require monitoring for a minimum of 5 years in accordance with an approved restoration plan, unless otherwise determined by the USACE. The first year of monitoring will be the first year that the site has been through a full growing period after completion of construction and planting.
2. Applicants are encouraged to obtain a MEPA certificate prior to submitting a USACE permit application.

[1] A living shoreline has a footprint that is made up mostly of native material. It incorporates vegetation or other living, natural “soft” elements alone or in combination with some type of harder shoreline structure (e.g., oyster or mussel reefs or rock sills) for added protection and stability. Living shorelines should maintain the natural continuity of the land-water interface and retain or enhance shoreline ecological processes. Living shorelines must have a substantial biological component, either tidal or lacustrine fringe wetlands or oyster or mussel reef structures.

GP 21. AGRICULTURAL ACTIVITIES (Authority: §404)

Discharges of dredged or fill material in non-tidal waters for agricultural activities, including the construction of building pads for farm buildings. Authorized activities include: (a) installation, placement, or construction of drainage tiles, ditches, or levees; mechanized land clearing; land leveling; the relocation of existing serviceable drainage ditches; and similar activities; (b) construction of farm ponds, excluding perennial streams, provided the farm pond is used solely for agricultural purposes; and (c) discharges of dredged or fill material to relocate existing serviceable drainage ditches constructed in non-tidal streams.

Not authorized under GP 21 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters; or >1000 SF in riffle and pool complexes, or non-tidal vegetated shallows; (b) Work in tidal waters; or (c) Construction of farm ponds in perennial streams.

Self-Verification Eligible	**Pre-Construction Notification Required**
In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows.	1. In non-tidal waters, the combined permanent and temporary impacts are (a) >5,000 SF, or (b) located in riffle and pool complexes and non-tidal vegetated shallows. 2. Activities occur in non-tidal navigable waters of the U.S. 3. Stream channelization, relocation, impoundment, loss of streambed, or farm ponds in non-perennial streams occurs. 4. Activities that are not eligible for SV and do not require an IP.

Note: Some discharges for agricultural activities may qualify for an exemption under Section 404(f) of the CWA (see 33 CFR 323.4). This GP authorizes the construction of farm ponds that do not qualify for the CWA §404(f)(1)(C) exemption because of the recapture provision at §404(f)(2).

GP 22. RESHAPING EXISTING DRAINAGE DITCHES, CONSTRUCTION OF NEW DITCHES, AND MOSQUITO MANAGEMENT (Authorities: §10 and §404)

Discharges to modify the cross-sectional configuration of currently serviceable drainage ditches constructed in tidal and non-tidal waters, for the purpose of improving water quality by regrading the drainage ditch with gentler slopes, which can reduce erosion, increase growth of vegetation, and increase uptake of nutrients and other substances by vegetation. Also authorized are mosquito reduction activities.

Not authorized under GP 22 (IP required): Stream channelization, relocation, impoundments, or loss of streambed.

Self-Verification Eligible	**Pre-Construction Notification Required**
≤500 linear feet of drainage ditch will be reshaped provided excavated material is deposited in an upland area.	1. >500 linear feet of drainage ditch will be reshaped, excavated material is deposited in a water of the U.S., or the reshaping of the ditch increases the drainage capacity beyond the original as-built capacity or expands the area drained by the ditch as originally constructed (i.e., the capacity of the ditch is not the same as originally constructed or drains additional wetlands or other waters of the U.S.). 2. Permanent and temporary impacts in tidal vegetated shallows. 3. New ditches or relocation of drainage ditches constructed in waters of the U.S. (i.e., the location of the centerline of the reshaped drainage ditch is not approximately the same as the location of the centerline of the original drainage ditch). 4. Activities that are not eligible for SV and do not require an IP.

Note: Some ditch activities are exempt under Section 404(f) of the CWA (see 33 CFR 323.4).

GP 23. LINEAR TRANSPORTATION PROJECTS AND WETLAND/STREAM CROSSINGS (Authorities: §10 & §404)

Activities[1] required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., driveways, roads, highways, railways, trails, airport runways, and taxiways) and attendant features. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats (see Note 1), necessary to construct the linear transportation project.

Not authorized under GP 23 (IP required): (a) Permanent impacts for any single and complete project that are >1 acre in non-tidal waters; >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows; (c) Non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars (see GP 17); or (d) New tide gates.

Self-Verification Eligible

1. In non-tidal waters, the combined permanent and temporary impacts are a) ≤5,000 SF; b) not located in riffle and pool complexes and non-tidal vegetated shallows; and c) meet the Massachusetts River and Stream Crossing Standards

2. Existing crossings (e.g., culverts, elliptical or arch pipes, etc.) are not modified by (a) decreasing the diameter of the crossing or (b) changing the friction coefficient, such as through slip lining (retrofitting an existing culvert by inserting a smaller diameter pipe), culvert relining or invert lining.

3. Stream channelization or relocation resulting in loss of streambed that is <200 LF.

Pre-Construction Notification Required

1. In non-tidal waters, the combined permanent and temporary impacts are a) >5,000 SF; b) located in vegetated shallows or riffle and pool complexes; or c) do not meet the Massachusetts River and Stream Crossing Standards (see note 4).

2. The activity occurs in tidal waters, salt marsh, or in, over or under navigable waters of the U.S.

3. Stream and wetland crossings that require a PCN per GC 20 TOY Restrictions and GC 31 Stream Work and Crossings & Wetland Crossings.

4. Stream channelization or relocation resulting in loss of streambed that is ≥200 LF. Stream impoundment activities of any kind.

5. Work on USACE properties & USACE-controlled easements.

6. Activities that are not eligible for SV and do not require an IP.

Notes:

1. See GC 22 for information on temporary construction mats.
2. Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the U.S. may be authorized under GP 8.
3. Loss of streambed does not require a PCN when bridge piers or similar supports are used.
4. In their PCN application submission to the USACE, applicants must explain why they are unable to meet the Massachusetts River and Stream Crossing Standards.
5. For tidal crossings, modeling is encouraged as a method to verify the proposed crossing would not be undersized and resilient to the effects of sea level rise.

[1] Stream crossings must conform with the MA Stream Crossing Guidelines when practicable and comply with all applicable GCs of this document (Section IV).

GP 24. TEMPORARY CONSTRUCTION, ACCESS, AND DEWATERING (Authorities: §10 and §404)

Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites that are not authorized under another GP activity.

Not authorized under GP 24 (IP required): (a) Permanent structures or impacts; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows; (c) Use of cofferdams to dewater wetlands or other aquatic areas to change their use; (d) Temporary stream crossings (see GPs 6, 17, 23); (e) Structures or fill left in place after construction is completed.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. In non-tidal waters, temporary impacts are a) ≤5,000 SF; b) not located in riffle and pool complexes and non-tidal vegetated shallows. 2. In tidal waters, temporary impacts are a) ≤5,000 SF, b) ≤1,000 SF in mudflats and/or natural rocky habitat, and c) not located in saltmarsh and tidal vegetated shallows. 3. Structures in navigable waters of the U.S. provided impacts do not require a PCN and they are left in place ≤30 days.	1. In non-tidal waters, temporary impacts are a) >5,000 SF; b) located in riffle and pool complexes or non-tidal vegetated shallows. 2. In tidal waters, temporary impacts are a) >5,000 SF; b) >1,000 SF in mudflats and/or natural rocky habitat, or (c) located in saltmarsh and tidal vegetated shallows. 3. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving temporary impacts unless they are performed <5 feet waterward from OHW or HTL and in the dry. This is to protect endangered species; or 4. Activities not eligible for SV and do not require an IP.

Notes:

1. Turbidity or sediment resuspension is generally not considered to occur when properly using management techniques to work in dry conditions. See GC 25.
2. Total impact areas under SV Eligible 1-2 exclude use of temporary construction mats. See GC 22 for information on temporary construction mats.
3. An SVN submittal to USACE is not required for SV #3 above.

GP 25. EMERGENCY SITUATIONS (Authorities: §10 and §404)

Structures or work in or affecting navigable waters of the U.S. and the discharge of dredged or fill material into waters of the U.S., including wetlands, necessary for repair or protection measures associated with an emergency situation[1], MassDEP Emergency Declaration/Certification, or FEMA Declared Disaster. The activity shall be the minimum necessary to alleviate the immediate emergency unless that additional work would result in no more than minimal effects to aquatic environment and is necessary to reduce the potential for future failure or loss of the structure or site. Typical activities authorized under this GP include, but are not limited to, restoration of damaged areas; bank stabilization; temporary fills for staging, access, and dewatering; and, repair, replacement, or rehabilitation of existing structures and/or fills (i.e., roads, bridges, utility pipelines and flood control structures, including attendant features, and other existing structures located in waters of the U.S.).

For the restoration of areas damaged by storms floods, or other discrete events: (a) The restored area must not extend waterward of the ordinary high-water mark or high tide line that existed prior to the damage. (b) The slope of the restored area below the ordinary high-water mark or high tide line must not exceed the slope that existed prior to the damage. (c) The bottom elevation of the restored area must not exceed the bottom elevation that existed prior to the damage (i.e., the restored area must not result in a reduction in the depth of the waterbody that existed prior to the damage). (d) Except in cases of FEMA reimbursement, the activity must be initiated, under contract to commence, or funds shall be allocated for the activity within 30 days of authorization under GP 25.

Not authorized under GP 25 (IP required): (a) Permanent impacts for a single and complete project >1/2 acre in tidal waters, unless the district engineer waives this criterion by making a written determination concluding that the activity will result in no more than minimal adverse environmental effects; >1,000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >5,000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1,000 SF in vegetated shallows; (c) New structures or fills that did not previously exist before the storm event or other discrete event (see other GPs).

Self-Verification Eligible	**Pre-Construction Notification Required**
1. Activities that qualify under a Severe Weather Emergency Declaration pursuant to 310 CMR 10.06(8) and/or receive an Emergency Certification pursuant to 310 CMR 10.06 and/or meet the requirements of 314 CMR 9.12(2) or (3); and 2. Activities eligible under a FEMA Declared Disaster that also comply with #1 above.	1. Activities that are eligible under a FEMA Declared Disaster and do not qualify under SV #1. 2. Minor deviations in the structure or fill area, including those to existing structures or fills are authorized due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to alleviate the emergency. 3. Activities that are not eligible for SV and do not require an IP.

Notes:

1. Review the GCs (Section IV) to confirm if a PCN is not required elsewhere in this document.
2. If the activity is not a MassDEP Emergency Declaration/Certification, does not meet the requirements of 314 CMR 9.12(2) or (3), or is not a FEMA Declared Disaster, applicants must explain in writing why their activity qualifies as an emergency (see footnote) to be eligible under GP 25.
3. SV eligible activities qualify under the general 401 WQC MassDEP issued for the 2023 MA GPs (GC 9).

[1] An emergency, as determined by this office and 33 CFR 325.2(e)(4), is one which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a Department of the Army permit is not undertaken within a time period less than the normal time to process the request under standard processing procedures.

SECTION IV. GENERAL CONDITIONS:

To qualify for GP authorization, the applicant must comply with the following general conditions, as applicable, in addition to authorization-specific conditions imposed by the division or district engineer.

1. Other Permits
2. Federal Jurisdictional Boundaries
3. Single and Complete Projects
4. Use of Multiple General Permits
5. Suitable Material
6. Tribal Rights & Burial Sites
7. Avoidance, Minimization, and Compensatory Mitigation
8. Water Quality & Stormwater Management
9. Coastal Zone Management
10. Federal Threatened and Endangered Species
11. Essential Fish Habitat
12. National Lands
13. Wild and Scenic Rivers
14. Historic Properties
15. USACE Property and Federal Projects (§408)
16. Navigation
17. Permit/Authorization Letter On-Site
18. Storage of Seasonal Structures
19. Pile Driving and Pile Removal in Navigable Waters
20. Time of Year Restrictions
21. Heavy Equipment in Wetlands
22. Temporary Fill & Construction Mats
23. Restoration of Wetland Areas
24. Bank Stabilization
25. Soil Erosion and Sediment Controls
26. Aquatic Life Movements and Management of Water Flows
27. Spawning, Breeding, and Migratory Areas
28. Vernal Pools
29. Invasive Species
30. Fills Within 100-Year Floodplains
31. Stream Work and Crossings & Wetland Crossings
32. Utility Line Installation and Removal
33. Water Supply Intakes
34. Coral Reefs
35. Blasting
36. Inspections
37. Maintenance
38. Property Rights
39. Transfer of GP Verifications
40. Modification, Suspension, and Revocation
41. Special Conditions
42. False or Incomplete Information
43. Abandonment
44. Enforcement Cases
45. Previously Authorized Activities
46. Duration of Authorization

1. Other Permits. Authorization under these GPs does not obviate the need for the permittee to obtain other Federal, State, or local permits, approvals, or authorizations required by law. Permittees are responsible for obtaining all required permits, approvals, or authorizations. Activities that are not regulated by the State, but subject to USACE jurisdiction, may still be eligible for these GPs.

2. Federal Jurisdictional Boundaries.
a. Applicability of these GPs shall be evaluated with reference to Federal jurisdictional boundaries. Activities shall be evaluated with reference to "waters of the U.S." under the CWA (33 CFR 328) and "navigable waters of the U.S." under §10 of the Rivers and Harbors Act of 1899 (33 CFR 329). Permittees are responsible for ensuring that the boundaries used satisfy the Federal criteria defined at 33 CFR 328-329. These sections prescribe the policy, practice, and procedures to be used in determining the extent of the USACE jurisdiction. Note: Waters of the U.S. includes all waters pursuant to 33 CFR 328.3(a), and adjacent wetlands as the term is defined in 33 CFR 328.3(c).
b. Wetlands shall be delineated in accordance with the USACE Wetlands Delineation Manual and the most recent Northcentral/Northeast Regional Supplement. Wetland delineation and jurisdiction information is located at: www.nae.usace.army.mil/missions/regulatory/jurisdiction-and-wetlands and maps are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.
c. Vegetated shallows shall be delineated when present on the project site. Vegetated shallow survey guidance and maps are located at: www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.
d. Natural rocky habitats shall be delineated when present on the project site. The definition of natural rocky habitats is in Section VII of the MA GP. Natural rocky habitat survey guidance and maps are located at: www.nae.usace.army.mil/ missions/regulatory/state-general-permits/massachusetts-general-permit.

3. Single and Complete Projects. The MA GP shall not be used for piecemeal work and shall be applied to single and complete projects. The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers.
a. For non-linear projects, a single and complete project must have independent utility. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed, even if the other phases were not built, can be considered as separate single and complete projects with independent utility.
b. Unless USACE determines the activity has independent utility, all components of a single project and/or all planned phases of a multi-phased project (e.g., subdivisions should include all work such as roads, utilities, and lot development) shall be evaluated as one single and complete project.
c. For linear projects such as power lines or pipelines with multiple crossings, a "single and complete project" is all crossings of a single water of the U.S. (i.e., single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately. If any crossing requires a PCN review or an individual permit review, then the entire linear project shall be reviewed as one project under PCN or the individual permit procedures.

4. Use of Multiple General Permits. The use of more than one GP for a single and complete project is prohibited, except when the acreage loss of waters of the U.S. authorized by the GPs does not exceed the acreage limit of the GPs with the highest specified acreage limit. For example, if a road crossing over waters is constructed under GP 23, with an associated utility line

crossing authorized by GP 6, if the maximum acreage loss of waters of the U.S. for the total project is ≥1 acre it shall be evaluated as an IP.

5. Suitable Material & Discharge of Pollutants. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). All activities involving any discharge into waters of the U.S. authorized under these GPs shall be consistent with applicable water quality standards, effluent limitations, standards of performance, prohibitions, and pretreatment standards and management practices established pursuant to the CWA (33 U.S.C. 1251), and applicable state and local laws. If applicable water quality standards, limitations, etc., are revised or modified during the term of this GP, the authorized work shall be modified to conform with these standards within six months from the effective date of such revision or modification, or within a longer period of time deemed reasonable by the District Engineer in consultation with the Regional Administrator of the EPA. Unless monitoring data indicates otherwise, applicants may presume that their activity complies with state water quality standards provided they are in compliance with the Section 401 WQC (Applicable only to the Section 404 activity).

6. Tribal Rights & Burial Sites

a. For all SV and PCN applications, prospective permittees shall follow the guidance set forth in Appendix A, Guidance for NHPA Section 106 Compliance in Massachusetts.

b. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

c. Many tribal resources are not listed on the National Register of Historic Places (NRHP) and may require identification and evaluation in collaboration with the identifying tribe and by qualified professionals. The Tribal Historic Preservation Officer (THPO) and State Historic Preservation Officer (SHPO) may be able to assist with locating information on:

i. Previously identified tribal resources; and

ii. Areas with potential for the presence of tribal resources.

d. Discovery of Previously Unknown Remains and Artifacts: If any previously unidentified human remains, cultural deposits, or artifacts are discovered while accomplishing the activity authorized by this permit, you must immediately notify the USACE of what you have found, and to the maximum extent practicable, cease work and avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The USACE will initiate the appropriate the Federal, Tribal, and state coordination required to determine if the items or remains are eligible for listing in the NRHP and warrant a recovery effort or can be avoided.

e. Burial Sites: Burial sites, marked or unmarked, are subject to state law (Massachusetts Unmarked Burial Law). Native American burial sites on federal or tribal land are subject to the provisions of Native American Graves Protection and Repatriation Act (NAGPRA). Regulated activities may not result in disturbance or removal of human remains until disposition of the remains has been determined by the appropriate authority under these laws, and the work is authorized by the USACE. Regulated activities which result in an inadvertent discovery of human remains must stop immediately, and the USACE, as well as the appropriate state and tribal authority, must be notified. Regulated work at inadvertent discovery sites requires compliance with state law or NAGPRA, as appropriate, prior to re-starting work.

7. Avoidance, Minimization, and Compensatory Mitigation. To qualify under the MA GP, activities must comply with Section V Mitigation Standards and the following as applicable:

a. Avoid and Minimize: Activities must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the U.S. to the maximum extent practicable at the project site. Avoidance and minimization are required to the extent necessary to ensure that the adverse effects to the aquatic environment (both area and function) are no more than minimal.

b. Compensatory mitigation for unavoidable impacts to waters of the U.S., including direct, indirect, secondary, and temporal loss, will generally be required for permanent impacts that exceed the thresholds identified in Section V, and may be required for temporary impacts, to offset unavoidable impacts which remain after all appropriate and practicable avoidance and minimization has been achieved and to ensure that the adverse effects to the aquatic environment are no more than minimal. Proactive restoration projects or temporary impact work with no secondary effects may generally be excluded from this requirement.
c. Mitigation proposals shall follow the guidelines found in the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule April 10, 2008; 33 CFR 332. Prospective permittees may purchase mitigation credits in-lieu of permittee-responsible mitigation as compensation for unavoidable impacts to waters of the U.S. in the Commonwealth of Massachusetts.

8. Water Quality & Stormwater Management. The 401 WQC requirement applies to all activities listed under GPs 1-25, unless determined otherwise by MassDEP. Permittees shall also satisfy stormwater management requirements in Massachusetts.

a. General 401 WQC: MassDEP issued a WQC on April 21, 2023 which conditionally certifies all activities in GPs 1 – 24 eligible for SV and PCN so long as the activity is described in 314 CMR 9.03, and is not an activity described in 314 CMR 9.04, and so long as the activity meets all other requirements, terms and conditions of the WQC. The MassDEP WQC also conditionally certifies activities described in GP 25 so long as the activity meets all other conditions of the WQC. Emergency projects described in GP 25 must obtain an emergency certification or otherwise be authorized pursuant to 310 CMR 10.06, qualify under a Severe Weather Emergency Declaration pursuant to 310 CMR 10.06(8) issued by the MassDEP, or meet the requirements of 9.12(2) or (3) in order to be certified under the WQC. Prospective permittees may refer to the following link to determine if their activity is eligible: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/ Massachusetts-General-Permit/. The General 401 WQC is located here, and it provides detailed information regarding what activities are certified and the conditions for certification. Activities listed in 314 CMR 9.03 that are not exempt from the Wetland Protection Act must have a valid Final Order of Conditions (OOC) or Final Restoration Order of Conditions pursuant to 310 CMR 10.00 to be eligible under the General 401 WQC.
b. Individual 401 WQC: Prospective permittees shall contact MassDEP and apply for an individual 401 WQC if their activity does not qualify for a General 401 WQC as outlined above. MassDEP may issue, waive, or deny the individual 401 WQC on a case-by-case basis. All activities listed in 314 CMR 9.04 must obtain an individual 401 WQC from MassDEP to be eligible under these GPs. When an Individual 401 WQC is required for *PCN activities*, the prospective permittee shall submit their Individual 401 WQC application concurrently to MassDEP and USACE to comply with 40 CFR 121.
c. The prospective permittee is responsible for determining the appropriate 401 WQC requirement and submitting this information to the USACE at the time of their PCN application or when completing their SVN. Prospective permittees that are unsure of whether their activity has been certified should contact MassDEP for a determination.
d. As applicable, all activities shall be compliant with the Massachusetts Stormwater Handbook. The Stormwater Handbook can be accessed on the NAE Regulatory website here: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.
e. No work requiring authorization under Section 404 of the CWA may be performed unless (1) the prospective permittee qualifies for coverage under the April 21, 2023 General 401 WQC, (2) the prospective permittee receives an individual Section 401 WQC from the MassDEP, or (3) the MassDEP waives individual Section 401 WQC.

9. Coastal Zone Management. The permittee must obtain CZM consistency concurrence when an activity is located in the coastal zone in order to be eligible under the MA GP. This requirement

shall be satisfied by acquiring one of the following from the Massachusetts Office of Coastal Zone Management (MA CZM):

a. General CZM Federal Consistency Concurrence (General Concurrence): MA CZM has granted General Concurrence for all SV and PCN activities for GPs 1-25. The prospective permittee must obtain all applicable permits and approvals before construction of the authorized activity begins (e.g., before work begins on site). For SVs, General Concurrence is automatically granted and no further action is required from the prospective permittee. For PCNs, the USACE will coordinate with MA CZM to acquire General Concurrence as part of the PCN application review.
b. Individual CZM Federal Consistency Concurrence (Individual Concurrence): In certain cases, MA CZM may elevate any GP activity 1-25 and require Individual Concurrence. The prospective permittee must contact MA CZM and follow the procedures to obtain Individual Concurrence as determined appropriate by MA CZM.
c. Permittees must obtain CZM consistency concurrence as outlined above before commencing work authorized under these GPs.

10. Federal Threatened and Endangered Species

a. No activity is authorized under any GP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any GP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of "effects of the action" for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding "activities that are reasonably certain to occur" and "consequences caused by the proposed action."
b. Other Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If a PCN is required for the proposed activity, the Federal permittee must provide USACE with the appropriate documentation to demonstrate compliance with those requirements. The USACE will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.
c. USFWS ESA-Listed Species: Non-federal applicants shall use the USFWS website, Information for Planning and Consultation (IPAC), to determine if their activity is located within the ESA-listed species range. The IPAC website can be accessed on the NAE Regulatory website: https://www. nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/. Applicants shall ensure they have an updated, valid species list before construction begins. This may require applicants to update their species list in IPAC before the start of construction. Note: Applicants should refer to the NAE Regulatory Website at the link above to determine if they have been designated as a non-federal representative. Applicants shall complete Section 7 consultation according to the guidance document located on the NAE Regulatory Website. After completing the Rangewide Determination Key and reaching the outcome "may affect, not likely to adversely affect", you may be required to wait up to 15 days before that outcome is final and compliance under Section 7 of the ESA is fulfilled.

i. *Self-Verification Criteria*: The activity is SV-eligible if:
   1) The activity is not located within the ESA-listed species range;
   2) Another (lead) Federal agency has completed Section 7 consultation; or
   3) The activity is located within the ESA-listed species range ***and*** USACE has designated the applicant as a non-federal representative under 50 CFR 402.08 of the ESA for all

species within the project's action area. As the non-federal representative, the applicant shall complete consultation through IPAC and reach the outcome of "no effect" or "not likely to adversely affect".

ii. *Pre-Construction Notification Criteria*: The activity requires a PCN if:

1) The activity is located within the ESA-listed species range ***and*** USACE has NOT designated the applicant as a non-federal representative under 50 CFR 402.08 of the ESA for all species within the project's action area;

2) The activity is located in designated or proposed critical habitat; or

3) The activity is located within the ESA-listed species range and completion of the IPAC determination key has resulted in the outcome of "may affect" or "may affect, likely to adversely affect"; or

4) A PCN is required elsewhere in this document.

d. NOAA-Listed Species: Non-federal applicants shall refer to the Section 7 Mapper for federally listed species to determine if any species are mapped as present. When NOAA-listed species are present, the applicant shall generate a species report through the mapper and submit this document as part of their PCN or SVN submission. The NOAA Fisheries' Section 7 Mapper can be accessed here on the NAE Regulatory website here: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.

e. Authorization of an activity by an GP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

11. Essential Fish Habitat (EFH).

a. SV eligible activities have been determined to result in no more than minimal adverse effects, provided the permittee complies with all terms and conditions of the MA GP as appliable to the activity. NMFS has granted General Concurrence [50 CFR 600.920(g)] for all SV eligible activities. These activities do not require project specific EFH consultation.

b. For PCN required activities, the applicant is required to describe and identify potential adverse effects to EFH and should refer to NOAA Fisheries' EFH Mapper (http://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper) and Omnibus Essential Fish Habitat Amendment 2 Volume 2: EFH and HAPC Designation Alternatives and Environmental Impacts (https://www.habitat.noaa.gov/application/efhmapper/oa2_efh_hapc.pdf). If an activity is located within EFH, the PCN application must contain:

1. A description of the action located in EFH.
2. An analysis of the potential adverse effects of the action on EFH and the managed Species.
3. Conclusions regarding the effects of the action on EFH.
4. Proposed mitigation, if applicable (refer to the mitigation thresholds located in Section V).

c. Federal agencies shall follow their own procedures for complying with the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act. For activities requiring a PCN, the applicant is responsible for furnishing documentation that demonstrates consultation for EFH has been completed.

d. For PCN activities, no work may commence until EFH consultation as required by the Magnuson-Stevens Act has been completed.

12. National Lands. Activities that impinge upon the value of any National Wildlife Refuge, National Forest, National Marine Sanctuary, National Historic Landmarks or any other area administered by the National Park Service, U. S. Fish and Wildlife Service (USFWS) or U.S. Forest Service (USFS) require a PCN or Individual Permit. Federal land managers seeking authorization for activities located in the above listed National Lands may proceed under SV, unless a PCN is required elsewhere in this document.

13. Wild and Scenic Rivers. The following activities in designated river or study river segments in the National Wild and Scenic River (WSR) System require a PCN unless the Federal agency with direct management responsibility for such river, in Massachusetts this is generally the National Park Service, has determined in writing to the proponent that the proposed work will not adversely affect the WSR designation or study status:

a. Activities that occur in WSR segments, in and 0.25 miles up or downstream of WSR segments, or in tributaries within 0.25 miles of WSR segments;
b. Activities that occur in wetlands within 0.25 miles of WSR segments;
c. Activities that have the potential to alter free-flowing characteristics in WSR segments.

No GP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

As of May 10, 2023, affected rivers in Massachusetts include: the Taunton River (40 miles), Sudbury River (16.6 miles), Assabet River (4.4 miles), Concord River (8 miles), Nashua River (27 miles), Squannacook River (16.3 miles), Nissitissit River (4.7 miles), and the Westfield River, including West Branch, Middle Branch, Gendale Brook, East Branch, Drowned Land Brook, Center Brook, Windsor Jambs Brook, Shaker Mill Brook, Depot Brook, Savery Brook, Watson Brook, Center Pond Brook (78.1 miles). The most up to date list of designated and study rivers and their descriptions may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

14. Historic Properties

a. For all SV and PCN applications, permittees shall follow the guidance set forth in Appendix A, Guidance for NHPA Section 106 Compliance in Massachusetts.

b. No undertaking authorized by these GPs shall cause effects[1] (defined in 36 CFR Part 800 and 33 CFR Part 325, Appendix C, and its Interim Guidance) on properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places (NRHP)[2], including previously unknown historic properties within the permit area, unless the USACE or another Federal action agency has satisfied the consultation requirements of Section 106 of the National Historic Preservation Act (Section 106). If another Federal agency is determined the lead federal agency for compliance with Section 106, applicant must obtain the appropriate documentation and provide this information to the USACE to demonstrate compliance with Section 106. The applicant shall not begin the activity until the USACE notifies them in writing that the documentation provided satisfies Section 106 requirements.

[1] Effect means the alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register of Historic Properties.
[2] See the NAE Regulatory website, National Register of Historic Places link here: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.

c. Many historic properties are not listed on the NRHP and may require identification and evaluation by qualified historic preservation and/or archaeological consultants. The State Historic Preservation Officer (SHPO), Massachusetts Board of Underwater Archaeological Resources (BUAR), local historical societies, certified local governments, general public, and NRHP may also be able to assist with locating information on:

i. Previously identified historic properties; and
ii. Areas with potential for the presence of historic properties.

d. Discovery of Previously Unknown Remains and Artifacts: If any previously unidentified human remains, cultural deposits, or artifacts are discovered while accomplishing the activity authorized by this permit, you must immediately notify the USACE of what you have found, and to the maximum extent practicable, cease work and avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The USACE will initiate the Federal, State and tribal coordination required to determine if the items or remains warrant a recovery effort and/or if the site is eligible for listing in the National Register of Historic Places.

e. Section 110k: Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. § 306113) prevents the USACE from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106, has intentionally significantly adversely effected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the USACE, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the USACE is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties effected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or effects historic properties on tribal lands or effects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

f. Underwater Archaeological Resources: Under Massachusetts General Law Ch. 6, s.'s 179-180, and Ch. 91, s. 63, the BUAR has statutory jurisdiction within state waters and is the sole trustee of the Commonwealth's underwater heritage, charged with the responsibility of encouraging the discovery and reporting, as well as the preservation and protection, of underwater archaeological resources. Underwater archaeological resources located within the waters of the Commonwealth of Massachusetts are property of the Commonwealth, which holds title to these resources and retains regulatory authority over their use. Under Massachusetts General Law, no person, organization or corporation may "remove, displace, damage, or destroy" any underwater archaeological resources located within the Commonwealth's submerged lands except through consultation with the BUAR and in conformity with the permits it issues. https://www.mass.gov/orgs/board-of-underwater-archaeological-resources.

15. USACE Property and Federal Projects. (33 USC §408)

a. USACE projects and property can be found at: https://www.nae.usace.army.mil/Missions/Civil-Works/.

b. In addition to any authorization under these GPs, prospective permittee shall contact the USACE Real Estate Division (https://www.nae.usace.army.mil/Missions/Real-Estate-Division/) at (978) 318-8585 for work occurring on or potentially affecting USACE properties and/or USACE-controlled easements. Work may not commence on USACE properties and/or USACE-controlled easements until they have received any required USACE real estate documents evidencing site-specific permission to work.

c. Any proposed temporary or permanent occupation or alteration of a Federal project (including, but not limited to, a levee, dike, floodwall, channel, anchorage, breakwater, seawall, bulkhead, jetty, wharf, pier, or other work built or maintained but not necessarily owned by the United States),

is not eligible for SV and requires a PCN. This includes all proposed structures and work in, over, or under a USACE federal navigation project (FNP) or in the FNP's buffer zone. The buffer zone is an area that extends from the horizontal limits of the FNP to a distance of three times the FNP's authorized depth. The activity also requires review and approval by the USACE pursuant to 33 USC 408 (Section 408 Permission). The prospective permittee may reach out to the POCs located here: https://www.nae.usace.army.mil/ Missions/Section-408/.
d. Any structure or work constructed in a FNP or its buffer zone shall be subject to removal at the owner's expense prior to any future USACE dredging or the performance of periodic hydrographic surveys.
e. Where a Section 408 permission is required, written verification for the PCN will not be issued prior to the decision on the Section 408 permission request.

16. Navigation
a. No activity may cause more than a minimal adverse effect on navigation.
b. Any safety lights and signals prescribed by the U.S. Coast Guard, must be installed, and maintained at the permittee's expense on authorized facilities in navigable waters of the U.S.
c. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein.
d. The permittee understands and agrees that if future U.S. operations require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from USACE, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

17. Permit/Authorization Letter On-Site. For PCNs, the permittee shall ensure that a copy of these GPs and the accompanying authorization letter are at the work site (and the project office) whenever work is being performed, and that all personnel with operational control of the site ensure that all appropriate personnel performing work are fully aware of its terms and conditions. The entire permit authorization shall be made a part of any and all contracts and sub-contracts for work that affects areas of USACE jurisdiction at the site of the work authorized by these GPs. This shall be achieved by including the entire permit authorization in the specifications for work. The term "entire permit authorization" means these GPs, including GCs and the authorization letter (including its drawings, plans, appendices, special conditions, and other attachments), and any permit modifications. If the authorization letter is issued after the construction specifications, but before receipt of bids or quotes, the entire permit authorization shall be included as an addendum to the specifications. If the authorization letter is issued after receipt of bids or quotes, the entire permit authorization shall be included in the contract or sub-contract as a change order. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire authorization letter, and no contract or sub-contract shall require or allow unauthorized work in areas of USACE jurisdiction. For SVs, the permittee shall ensure that a complete and signed copy of the SVN is present on site during construction and is made available for review at any time by USACE and other Federal, State, & Local regulatory agencies. A complete and signed copy of the SVN must be submitted to USACE Regulatory within 30 days of initiating construction of the authorized activity, unless stated otherwise in the applicable GP.

18. Storage of Seasonal Structures. Coastal structures such as pier sections, floats, etc., that

are removed from the waterway for a portion of the year (often referred to as seasonal structures) shall be stored in an upland location, located above MHW and not in tidal wetlands. These seasonal structures may be stored on the fixed, pile-supported portion of the structure that is seaward of MHW. This is intended to prevent structures from being stored on the marsh substrate and the substrate seaward of MHW.

19. Pile Driving and Pile Removal in Navigable Waters.
a. Derelict, degraded or abandoned piles and sheet piles in navigable waters of the U.S., except for those inside existing work footprints for piers, must be completely removed, cut and/or driven to 3 feet below the substrate to prevent interference with navigation, and existing creosote piles that are affected by project activities shall be completely removed if practicable. In areas of fine-grained substrates, piles must be removed by the direct, vibratory or clamshell pull method[1] to minimize sedimentation and turbidity impacts and prevent interference with navigation from cut piles. Removed piles shall be disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands or mudflats.
b. A PCN is required for the installation or removal of structures with jetting techniques.
c. A PCN is required for the installation of >12 inch-diameter piles of any material type or steel piles of any size in tidal waters, unless they are installed in the dry. If piles are not installed in the dry:
i. Impact pile driving shall commence with an initial set of three strikes by the hammer at 40% energy, followed by a one-minute wait period, then two subsequent 3-strike sets at 40% energy, with one minute waiting periods, before initiating continuous impact driving.
ii. Vibratory pile driving shall be initiated for 15 seconds at reduced energy followed by a one-minute waiting period. This sequence of 15 seconds of reduced energy driving, one-minute waiting period shall be repeated two more times, followed immediately by pile-driving at full rate and energy.
iii. In addition to using a soft start at the beginning of the workday for pile driving as described in 19c(i-ii), a soft start must also be used at any time following a cessation of pile driving for a period of 30 minutes or longer.
d. Bubble curtains may be used to reduce sound pressure levels during vibratory or impact hammer pile driving.

20. Time-of-Year (TOY) Restrictions. Activities that include in-water work must comply with the TOY Restrictions below to be SV eligible, otherwise a PCN is required. PCN submittals shall contain written justification for deviation from the TOY Restrictions. The term “in-water work” does not include conditions where the work site is “in-the-dry” (e.g., intertidal areas exposed at low tide). The term “in-the-dry” includes work contained within a cofferdam so long as the cofferdam is installed and subsequently removed outside the TOY Restriction. The TOY restrictions stated in Appendix B of the MA DMF Technical Report TR-47[2] can apply instead for activities in tidal waters if (1) TOYs are provided for a specific waterbody where the activity is proposed and (2) the TOYs are less restrictive than below. The activity must also not require a PCN elsewhere in this document to be SV eligible.

[1] Direct Pull: Each piling is wrapped with a choker cable or chain that is attached at the top to a crane. The crane then pulls the piling directly upward, removing the piling from the sediment. Vibratory Pull: The vibratory hammer is a large mechanical device (5-16 tons) that is suspended from a crane by a cable. The vibrating hammer loosens the piling while the crane pulls up. Clamshell Pull: This can remove intact, broken or damaged pilings. The clamshell bucket is a hinged steel apparatus that operates like a set of steel jaws. The bucket is lowered from a crane and the jaws grasp the piling stub as the crane pulls up. The size of the clamshell bucket is minimized to reduce turbidity during piling removal.
[2] The MA DMF Technical Report TR-47: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/

	TOY Restriction (No work)
Non-tidal Waters	Defer to TR-47
Tidal Waters	January 15 – November 15

Alternate work windows proposed under a PCN will generally be coordinated with the USFWS and NMFS. Resulting written verifications may include species-specific work allowed windows.

21. Heavy Equipment in Wetlands. Operating heavy equipment (drill rigs, fixed cranes, etc.) within wetlands shall be minimized, and such equipment shall not be stored, maintained, or repaired in wetlands, to the maximum extent practicable. Where construction requires heavy equipment operation in wetlands, the equipment shall:

i. Have low ground pressure (typically ≤3 psi);

ii. Be placed on swamp/construction/timber mats (herein referred to as "construction mats" or "mats") that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation. See GC 22 for information on the placement of construction mats; or

iii. Be operated on adequately dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath the equipment and upheaval of adjacent wetlands. Construction mats are to be placed in the wetland from the upland or from equipment positioned on mats if working within a wetland. Dragging construction mats into position is prohibited. Other support structures that are capable of safely supporting equipment may be used with written USACE authorization.

22. Temporary Fill, Work & Construction Mats.

a. *Construction mats in non-tidal waters*: Temporary construction mats shall be in place ≤1 year *and* for one growing season or less to be SV eligible. A PCN is required if construction mats are in place >1 year *or* for more than one growing season. Construction mats can be placed in an area of any size in non-tidal waters. The activity may occur in segments to ensure the requirements for SV above are met, otherwise a PCN is required.

b. *Construction mats in tidal waters*: Temporary construction mats placed in an area <5,000 SF in tidal waters are SV eligible, provided those mats are in place ≤6 months. Temporary construction mats placed in an area ≥5,000 SF or in place >6 months in tidal waters require a PCN.

c. *Management of construction mats:* At a minimum, construction mats shall be managed in accordance with the following construction mat best management practices (BMPs):

1. Mats shall be in good condition to ensure proper installation, use, and removal.
2. As feasible, mats shall be placed in a location that will minimize the amount of mats needed for the wetland crossing(s).
3. Inspect mats prior to their re-use and remove any plant debris. Mats are to be thoroughly cleaned before re-use to prevent the spread of invasive plant species.
4. Impacts to wetland areas shall be minimized during installation, use, and removal of the mats.
5. Adequate erosion & sediment controls shall be installed at approaches to mats to promote a smooth transition to, and minimize sediment tracking onto, the mats.
6. In most cases, mats should be placed along the travel area so that the individual boards are resting perpendicular to the direction of traffic. No gaps should exist between mats. Place mats far enough on either side of the resource area to rest on firm ground.

d. A PCN is required for temporary fills in place >2 years. All temporary fills and disturbed soils shall be stabilized to prevent the material from eroding into waters of the U.S. where it is not authorized. Work shall include phased or staged development to ensure only areas under active development are exposed and to allow for stabilization practices as soon as practicable. Temporary fill must be placed in a manner that will prevent it from being eroded by expected high flows.

e. Activities that require unconfined temporary fill and are authorized for discharge into waters of the U.S. shall consist of material that minimizes effects to water quality.
f. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Materials shall be placed in a location and manner that does not adversely impact surface or subsurface water flow into or out of the wetland. Temporary fill authorized for discharge into wetlands shall be placed on geotextile fabric or other appropriate material laid on the pre-construction wetland grade where practicable to minimize impacts and to facilitate restoration to the original grade. Construction mats are excluded from this requirement.
g. Construction debris and deteriorated materials shall not be located in waters of the U.S.
h. Temporary fills, construction mats, and corduroy roads shall be entirely removed as soon as they are no longer needed to construct the authorized activity and the disturbed areas be restored to pre-construction contours and conditions.
i. Construction equipment, such as temporary barges in tidal waters, shall provide clearance above the substrate to avoid grounding onto the substrate during all tides.

23. Restoration of Wetland Areas.
a. Upon completion of construction, all disturbed wetland areas shall be stabilized with a wetland seed mix or plant plugs containing only plant species native to New England, and be appropriate for site conditions, including salinity and frequency of inundation, and shall not contain any species listed in the “Invasive and Other Unacceptable Plant Species” Appendix K of the New England District “Compensatory Mitigation Standard Operating Procedures” found at https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation.aspx.
b. The introduction or spread of invasive plant species in disturbed areas shall be prevented and controlled. Equipment shall be thoroughly cleaned before and after project construction to prevent the spread of invasive species. This includes, but is not limited to, tire treads and construction mats.
c. In areas of authorized temporary disturbance, if trees are cut in USACE jurisdiction, they shall be cut at or above ground level and not uprooted in order to prevent disruption of any kind to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.
d. Wetland areas where permanent disturbance is not authorized shall be restored to their original condition and elevation, which under no circumstances shall be higher than the pre-construction elevation. Original condition means careful protection and/or removal of existing soil and vegetation, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized.

24. Bank Stabilization.
a. Projects involving construction or reconstruction/maintenance of bank stabilization within USACE jurisdiction shall be designed to minimize environmental effects, effects to neighboring properties, scour, conversion of natural shoreline to hard armoring, etc. to the maximum extent practicable.
b. Projects involving the construction of new bank stabilization within USACE jurisdiction shall use bioengineering techniques and natural materials in the project design to the maximum extent practicable. Use of hard structures shall be eliminated or minimized unless the prospective permittee can demonstrate that use of bioengineering techniques is not practicable due to site conditions.
c. Where possible, bank stabilization projects shall optimize the natural function of the shoreline, including self-sustaining stability to attenuate flood flows, fishery, wildlife habitat and water quality protection, while protecting upland infrastructure from storm events that can cause erosion as well as impacts to public and private property.
d. No material shall be placed in excess of the minimum needed for erosion protection.
e. No material shall be placed in a manner that will be eroded by normal or expected high flows (properly anchored native trees and treetops may be used in low energy areas).

f. Native plants appropriate for current site conditions, including salinity, must be used for bioengineering or vegetative bank stabilization.
g. The activity must be properly maintained, which may require repairing it after severe storms or erosion events.

25. Soil Erosion and Sediment Controls.
a. Appropriate soil erosion and sediment controls[1] (hereinafter referred to as "controls") must installed prior to earth disturbance and maintained in effective operating condition during construction. Biodegradable wildlife friendly erosion controls should be used whenever practicable to minimize effects to water quality.
b. Activities in streams (rivers, streams, brooks, etc.) and tidal waters that are capable of producing sedimentation or turbidity should be done during periods of low-flow or no-flow, when the stream or tide is waterward of the work area. Controls may also be used to obtain dry work conditions (e.g., coffer dam, turbidity curtain). The prospective permittee must demonstrate in the project plans where the controls are proposed and how these controls would avoid and/or minimize turbidity or sedimentation.
c. A PCN is required for controls that encroach: i) >25% of the stream width measured from OHW in non-tidal diadromous streams from March 15 to June 30; or ii) >25% of the waterway width measured from MHW in tidal waters from Feb. 1 to June 30, or >50% of the waterway width measured from MHW in tidal waters from July 1 to Jan. 14. This is to protect upstream fish passage. Proponents must also maintain downstream fish passage throughout the project.
d. No dewatering shall occur with direct discharge to waters or wetlands. Excess water in isolated work areas shall be pumped or directed to a sedimentation basin, tank or other dewatering structures in an upland area adequately separated from waters or wetlands. Suspended solids shall be removed prior to discharge back into waters or wetlands from these dewatering structures. All discharge points back into waters and wetlands shall use appropriate energy dissipaters and erosion and sedimentation control BMPs.
e. Temporary controls shall be removed upon completion of work, but not until all exposed soil and other fills, as well as any work waterward of OHW or the HTL, are permanently stabilized at the earliest practicable date. Sediment and debris collected by these devices shall be removed and placed at an upland location in a manner that will prevent its later erosion into a waterway or wetland. Controls may be left in place if they are biodegradable and flows and aquatic life movements are not disrupted.

26. Aquatic Life Movements and Management of Water Flows.
a. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies and wetlands shall be:

i. Suitably spanned, bridged, culverted, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species; and
ii. Properly aligned and constructed to prevent bank erosion or streambed scour both adjacent to and inside the crossing.

[1] Appropriate soil erosion, sediment and turbidity controls include cofferdams, bypass pumping around barriers immediately up and downstream of the work footprint (i.e., dam and pump), installation of sediment control barriers (i.e., silt fence, vegetated filter strips, geotextile silt fences, filter tubes, erosion control mixes, hay bales or other devices) downhill of all exposed areas, stream fords, retention of existing vegetated buffers, application of temporary mulching during construction, phased construction, and permanent seeding and stabilization, etc.

b. To avoid adverse impacts on aquatic organisms, the low flow channel/thalweg shall remain unobstructed during periods of low flow, except when necessary to perform the authorized work.
c. For work in tidal waters, in-stream controls (e.g., cofferdams) should be installed in such a way as to not obstruct fish passage.
d. Riprap and other stream bed materials shall be installed in a manner that avoids organism entrapment in rock voids or water displaced to subterranean flow with crushed stone and riprap.
e. To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity shall not restrict or impede the passage of normal or high flows unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

27. Spawning, Breeding, and Migratory Areas.
a. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized under these GPs.
b. Activities in waters of the U.S. that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
c. The applicant is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The applicant should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.
d. Information on spawning habitat for species managed under the Magnuson-Stevens Fishery Conservation and Management Act (i.e., EFH for spawning adults) can be obtained from NAE Regulatory website, Essential Fish Habitat section, at: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.
e. Information regarding diadromous fish habitat can be obtained from the following DMF website at: https://www.mass.gov/info-details/massgis-data-diadromous-fish.

28. Vernal Pools.
a. A PCN is required if a discharge of dredged or fill material is proposed within a vernal pool depression that is also a water of the U.S.
b. Vernal pools must be identified on the plans that show aquatic resource delineations.
c. Adverse impacts to vernal pools shall be avoided & minimized to the maximum extent practicable.

29. Invasive Species.
a. The introduction, spread or the increased risk of invasion of invasive plant or animal species on the project site, into new or disturbed areas, or areas adjacent to the project site caused by the site work shall be avoided. Construction mats shall be thoroughly cleaned before reuse to avoid spread of invasive species.
b. Unless otherwise directed by USACE, all applications for PCN non-tidal projects proposing fill in USACE jurisdiction shall include an Invasive Species Control Plan. Additional information can be found at: https://www.nae.usace.army.mil/Missions/Regulatory/Invasive-Species/, https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation/.

30. Fills Within 100-Year Floodplains. The activity shall comply with applicable Federal Emergency Management Agency (FEMA) approved, Massachusetts Emergency Management

Agency (MEMA) approved and/or local floodplain management requirements. Applicants should contact FEMA and/or MEMA regarding floodplain management requirements.

31. Stream Work and Crossings & Wetland Crossings.
a. When feasible, all temporary and permanent crossings of waterbodies and wetlands (hereinafter referred to as "crossings") shall conform to the "Massachusetts River and Stream Crossing Standards" located at: https://www.mass.gov/doc/massachusetts-river-and-stream-crossing-standards/download or https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/. Projects that do not conform to these guidelines shall be reviewed under PCN or IP procedures.
b. Crossings shall be suitably culverted, bridged, or otherwise designed to withstand and to prevent the restriction of high flows, to maintain existing low flows, maintain water quality, and not obstruct the movement of aquatic life indigenous to the waterbody beyond the duration of construction.
c. Crossings shall be installed in such a manner as to preserve hydraulic capacity and flow, sediment transport, and organism passage at its present level, between the wetlands on either side of the road. The applicant shall take necessary measures to correct any wetland damage resulting from deficiencies in hydraulic capacity, sediment transport and organism passage.
d. Stream crossings shall utilize a natural mixed grain-size streambed material composition that matches upstream and downstream substrates to create a stable streambed. Substrate should function appropriately during normal and high flows without washing out. If natural streambed material is not utilized, a PCN is required.
e. Activities involving open trench excavation in flowing waters require a PCN. Work should not occur in flowing waters (requires using management techniques such as temporary flume pipes, culverts, cofferdams, etc.). Normal flows should be maintained within the stream boundary's confines when practicable. Projects utilizing these management techniques must meet all applicable terms and conditions of the GP, including the GCs in Section IV.

32. Utility Line Installation and Removal
a. Subsurface utility lines must be installed at a sufficient depth to avoid damage from anchors, dredging, etc., and to prevent exposure from erosion and stream adjustment.
b. When utility lines are installed via horizontal directional drilling, a frac-out contingency plan shall be present on site for the duration of construction. As necessary, the applicant shall immediately contain, control, recover, and remove drilling fluids released into the environment.
c. Abandoned or inactive utility lines must be removed and faulty lines (e.g., leaking hazardous substances, petroleum products, etc.) must be removed or repaired. A written verification from the USACE is required if they are to remain in place, e.g., to protect sensitive areas or ensure safety.
d. Utility lines shall not adversely alter existing hydrology, and trenches cannot be constructed or backfilled in such a manner as to drain waters of the U.S. (e.g., backfilling with extensive gravel layers, creating a French drain effect). In wetland areas, structures such as ditch plugs, cut-off walls, clay blocks, bentonite, or other suitable material shall be used within utility trenches to ensure that the trench through which the utility line is installed does not drain waters of the U.S. including wetlands.
e. Stockpiling of tree debris, to the extent where it has the effect of fill material, shall not occur in waters of the U.S. Tree debris shall be removed from waters of the U.S. and placed in uplands without causing additional disturbance to aquatic resources. Failure to meet this condition could change the bottom elevation of the wetland and be considered a discharge of fill material, and depending on the area of alteration, may require a PCN or IP.

33. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

34. Coral Reefs. Impacts to coral reefs are not authorized under these GPs. Coral reefs consist of the skeletal deposit, usually of calcareous or silicaceous materials, produced by the vital activities of anthozoan polyps or other invertebrate organisms present in growing portions of the reef.

35. Blasting. Blasting in waters of the U.S. associated with work such as dredging, trenching, pile installation, etc. is not authorized under these GPs.

36. Inspections. The permittee shall allow USACE to make periodic inspections at any time deemed necessary to ensure that the work is being or has been performed in accordance with the terms and conditions of this permit. To facilitate these inspections, for activities requiring a PCN, the permittee shall complete and return the Certificate of Compliance when it is provided with a PCN verification letter. For SV-eligible activities, the permittee shall complete and submit the SVN to USACE within 30 days of initiating project construction, at which point, USACE may opt to inspect the activity to verify compliance with the terms and conditions of the GP. Post-construction engineering drawings may be required by USACE for completed work. This includes post-dredging survey drawings for any dredging work.

37. Maintenance. The permittee shall maintain the activity authorized by these GPs in good condition and in conformance with the terms and conditions of this permit. Some maintenance activities may not be subject to federal regulation under Section 404 in accordance with 33 CFR 323.4(a)(2). This condition is not applicable to maintenance of dredging projects. Prospective permittees should contact USACE to inquire about maintenance of dredging projects, and its eligibility under these GPs. Maintenance dredging is subject to the review thresholds in GP #7 as well as any conditions included in a written USACE authorization. Maintenance dredging includes only those areas and depths previously authorized and dredged.

38. Property Rights. Per 33 CFR 320.4(g)(6), these GPs do not convey any property rights, either in real estate or material, or any exclusive privileges, nor do they authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations.

39. Transfer of GP Verifications. When the work authorized by these GPs is still in existence at the time the property is transferred, the terms and conditions of these GPs, including any special conditions, will continue to be binding on the entity or individual who received the GP authorizations, as well as the new owner(s) of the property. If the permittee sells the property associated with a GP authorization, the applicant may transfer the GP authorization to the new owner by submitting a letter to USACE to validate the transfer. A copy of the GP authorization letter must be attached to the letter, and the letter must include the following statement: “The terms and conditions of these general permits, including any special conditions, will continue to be binding on the new owner(s) of the property.” This letter shall be signed by both the seller and new property owner(s).

40. Modification, Suspension, and Revocation. These GPs and any individual authorization issued thereof may be either modified, suspended, or revoked in whole or in part pursuant to the policies and procedures of 33 CFR 325.7; and any such action shall not be the basis for any claim for damages against the U.S.

41. Special Conditions. The USACE may impose other special conditions on a project authorized pursuant to these GPs that are determined necessary to minimize adverse navigational and/or environmental effects or based on any other factor of the public interest. Failure to comply with all conditions of the authorization, including special conditions, constitutes a permit violation and may subject the applicant to criminal, civil, or administrative penalties or restoration.

42. False or Incomplete Information. If USACE makes a determination regarding the eligibility of a project under these GPs, and subsequently discovers that it has relied on false, incomplete, or inaccurate information provided by the applicant, the authorization will not be valid, and the U.S. Government may institute appropriate legal proceedings.

43. Abandonment. If the permittee decides to abandon the activity authorized under these GPs, unless such abandonment is merely the transfer of property to a third party, he/she/they may be required to restore the area to the satisfaction of USACE.

44. Enforcement cases. These GPs do not apply to any existing or proposed activity in USACE jurisdiction associated with an on-going USACE or EPA enforcement action, until such time as the enforcement action is resolved or USACE or EPA determines that the activity may proceed independently without compromising the enforcement action.

45. Previously Authorized Activities.

a. Completed projects that received prior authorization from USACE (SV or PCN), shall remain authorized in accordance with the original terms and conditions of those authorizations, including their terms, GCs, and any special conditions provided in a written verification.

b. Activities authorized pursuant to 33 CFR 330.3 (activities occurring before certain dates) are not affected by these GPs.

46. Duration of Authorization.

These GPs expire on June 1, 2028. Activities authorized under these GPs will remain authorized until the GPs expire, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 325.2(e)(2). Activities authorized under GPs 1-25 that have either commenced (i.e., are under construction) or are under contract to commence in reliance upon this authorization will have until June 1, 2029 to complete the work. If requested by USACE, the permittee shall furnish documentation that demonstrates the project was under construction or under contract to commence by June 1, 2028. If work is not completed before June 1, 2029, the permittee must contact USACE. The USACE may issue a new authorization provided the project meets the terms and conditions of the MA GPs in effect at the time. Activities completed under the SV or PCN authorizations of these GPs will continue to be authorized after their expiration date.

SECTION V: MITIGATION STANDARDS

1. Mitigation Types

For all activities, applicants must (a) demonstrate how the project has been designed to avoid or minimize impacts to aquatic resources; and (b) describe measures taken to avoid or minimize impacts to aquatic resources through construction techniques and/or site access. Please see https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation/ for assistance with preparing mitigation in accordance with the 2008 Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (33 CFR 332.3), hereafter referred to as "2008 Mitigation Rule."

Avoidance - Avoidance of impacts (direct and indirect) to aquatic resources means that project activities would not result in the placement of fill material or installation of a structure that could impact the resource area. Avoidance can include, but is not limited to, designing the project to avoid impacts to all or a portion of the aquatic resource areas.

Minimization - Minimization of impacts (direct and indirect) to aquatic resources means that measures are taken to ensure the amount and duration of impacts are limited to the maximum extent practicable. There are many minimization measures that could be implemented, prior to, during, or after the proposed activity, to ensure impacts are minimized. Examples include, but are not limited to:

- Permanent preservation of avoided aquatic features and buffer zone, in perpetuity. In these cases, the preserved area would be under a conservation easement and managed by conservation oriented third-party manager.
- Utilization of best management practices (BMPs) to ensure impacts are limited, and do not result in adverse impacts to the integrity and long-term functions of preserved/avoided features.

Compensatory Mitigation - Compensatory mitigation is generally required for PCN activities in which the impacts to the aquatic resources have been avoided and minimized to the maximum extent practicable but would still result in unavoidable adverse effects to the environment that are considered more than minimal or are contrary to the public interest. *Whatever the case may be, compensatory mitigation is no substitute for avoidance and minimization.*

2. Thresholds for Compensatory Mitigation

The basic objective of compensatory mitigation in the USACE Regulatory Program is to offset environmental losses resulting from unavoidable impacts to waters of the U.S. authorized by Department of the Army permits. **The following compensatory mitigation thresholds apply to all PCN activities that result in loss[1] of the resource area types listed below. Activities[2] in waters of the U.S. associated with the restoration, enhancement, and establishment of tidal and non-tidal aquatic resources are not considered loss and are not subject to the thresholds below.** Thresholds for different resource areas may not be combined to exceed 5,000 SF of total loss of all waters. The USACE will continue to evaluate projects on a case-by-case basis, and may in some cases require compensatory mitigation below these thresholds (e.g. minor impacts that add to a cumulative loss).

[1] See definition of loss in Section VII.
[2] These activities must result in net increases in aquatic resource functions and services to be exempted from the thresholds above.

Compensatory Mitigation Thresholds in Massachusetts		
Resource Area	**Non-Tidal Threshold**	**Tidal Threshold**
Stream	200 LF	200 LF
Bank Stabilization	500 LF	500 LF
Open Water	Project Dependent	Project Dependent
Wetland	5,000 SF	500 SF
Vernal Pool	All	N/A
SAV	Project dependent	25 SF
Mudflat	N/A	1,000 SF
Intertidal	N/A	1,000 SF

These thresholds can be utilized to determine at what point compensatory mitigation is required but are not used to determine how much mitigation may be needed to offset impacts to resources. Per the 2008 Mitigation Rule (33 CFR 332.3(f)(1)) "the amount of required compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions. In cases where appropriate functional or condition assessment methods or other suitable metrics are available, these methods should be used where practicable to determine how much compensatory mitigation is required. If a functional or condition assessment or other suitable metric is not used, a minimum one-to-one acreage or linear foot compensation ratios must be used."

3. Compensatory Mitigation Hierarchy

Compensatory mitigation should follow the hierarchy as outlined in 33 CFR 332.3(b)(2-6) or current regulation. This hierarchy in order of preference includes: (1) Mitigation Bank credits, (2) In-Lieu Fee program credits, (3) permittee-responsible mitigation under a watershed approach, (4) permittee-responsible mitigation through on-site and in-kind mitigation, and (5) permittee-responsible mitigation through off-site and/or out-of-kind mitigation. If the proposed mitigation deviates from this mitigation hierarchy, the applicant **must** justify in writing why the proposed mitigation is environmentally preferable to the preferred method of compensatory mitigation (See 2008 Mitigation Rule). **In order for your application to be considered complete, you must provide a statement that discusses how your project will compensate for the loss or impact to aquatic resources.** If you are proposing permittee responsible mitigation, the 12 components of a mitigation plan (33 CFR 332.4(c)(2-14) must be addressed for your application to be considered complete. Prospective applicants are encouraged to contact USACE with questions at any time. Addressing the 12 components of a mitigation plan is commensurate with the amount of compensatory mitigation required, and USACE can assist prospective applicants with the level of information needed to satisfy each component.

For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee.

4. In-Lieu Fee (ILF)

The purchase of credits from the Massachusetts In-Lieu Fee Program (MA ILFP) is the ***preferred*** method of compensatory mitigation in Massachusetts since, as of the issuance date of this GP, there are no mitigation banks available in Massachusetts. The applicant shall develop a mitigation plan that addresses the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

The MA ILFP is administered by the Massachusetts Department of Fish & Game (DFG) in accordance with the 2008 Mitigation Rule at 33 CFR 332. The Mitigation Rule governs in-lieu fee compensatory mitigation associated with USACE permits under §404 of the Clean Water Act and/or §9 or §10 of the Rivers and Harbors Act of 1899.

MA ILFP Website: https://www.mass.gov/in-lieu-fee-program

Acceptance of an ILF payment into the ILFP established by the 2014 MA ILFP Instrument (link below) is an acknowledgement by DFG that it assumes all legal responsibility for satisfying the mitigation requirements of the USACE (i.e., the implementation, performance, and long-term management and monitoring of the compensatory mitigation project(s) approved under this Instrument and subsequent Compensatory Mitigation Plans). This transfer of legal responsibility is established by: 1) the approval of this In-Lieu Fee Instrument; 2) receipt by the district engineer of a Notice of Credit Sale and Transfer of Legal Responsibility to DFG that is signed by the DFG and the permittee and dated; and 3) the transfer of fees from the permittee to DFG.

MA ILFP Fact Sheet: https://www.mass.gov/files/documents/2017/01/sj/ilfp-fact-sheet-ma-ilfp-fees.pdf

MA ILFP Instrument: https://www.mass.gov/files/documents/2016/08/nd/ilfp-final-instrument-dfg.pdf

5. Permittee-Responsible

The USACE may determine that the proposed permittee-responsible compensatory mitigation is appropriate on a case-by-case basis. As described in the Compensatory Mitigation Hierarchy section above, applicants must justify in writing why the proposed mitigation is environmentally preferable to the purchase of ILF credits. Applicants are encouraged to contact the USACE prior to submission of a permit application to seek further guidance regarding USACE mitigation requirements.

Applicants will demonstrate their proposed compensatory mitigation in writing by addressing the 12 components of a mitigation plan (33 CFR 332.4(c)(2-14). *Please note that all elements must be addressed, or the permit application will be deemed incomplete.* In certain circumstances, the district engineer may determine that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). Guidance on how to address these components can be found on the New England District Mitigation webpage: https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation/

Performance standards will be used to measure the successfulness of the mitigation project. A successful mitigation project is one that is self-sustaining. For a mitigation project that will restore, enhance, or create wetlands, proper performance standards must address hydrology, hydric soils, and hydrophytic vegetation. The mitigation proposal must include an explanation of quantitative methods used to measure the success of performance standards (i.e., percent cover may be measured using vegetation plots, hydrology may be measured using data loggers, soil cores may be taken and evaluated for hydric soil indicators).

Monitoring methods should include quantitative sampling methods following established, scientific protocols. Sampling documentation, as part of monitoring reports, should include maps and coordinates (also shapefiles, if available) showing locations of sampling points, transects, quadrats, etc. In addition, permanent photo stations should be established coincident with sampling locations.

SECTION VI: FEDERAL & STATE AGENCY CONTACT INFORMATION & ORGANIZATIONAL WEBSITES

Federal Agencies

U.S. Army Corps of Engineers
Regulatory Division
696 Virginia Road
Concord, Massachusetts 01742-2751
(978) 318-8338 (phone); (978) 318-8303 (fax)
www.nae.usace.army.mil/missions/regulatory

U.S. Army Corps of Engineers
Navigation Division – Section 408
696 Virginia Road
Concord, Massachusetts 01742-2751
See link below for contact information:
https://www.nae.usace.army.mil/Missions/Section-408/

National Marine Fisheries Service
55 Great Republic Drive
Gloucester, Massachusetts 01930
(978) 281-9300 (phone)
(*Federal endangered species & EFH)*

U.S. Fish & Wildlife Service
70 Commercial Street, Suite 300
Concord, New Hampshire 03301
(603) 223-2541 (phone)
(Federal endangered species)

National Park Service
15 State Street
Boston, Massachusetts 02109
(617) 223-5191 (phone)
(*Wild and Scenic Rivers*)

Bureau of Ocean and Energy Management
1849 C Street, NW
Washington D.C. 20240
202-208-6474 (phone)
(*Offshore Wind Facilities)*

Chief, Risk Analysis Branch
FEMA Region 1
99 High Street, 6th Floor
U.S. Department of Homeland Security
Boston, Massachusetts 02110
(617) 956-7576 (phone)

Commander (dpb)
First Coast Guard District
Battery Building
One South Street
New York, New York 10004-1466
(212) 514-4331 (phone); (212) 514-4337 (fax)
(*Bridge permits*)

U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP06–3)
Boston, Massachusetts 02109-3912
(617) 918-1692 (phone)

State Agencies in Massachusetts

Massachusetts Department of Environmental Protection (MassDEP)	
DEP Division of Wetlands & Waterways	100 Cambridge Street, Suite 900 Boston, Massachusetts 02114 (617) 292-5695
Northeast Region	150 Presidential Way, Suite 300 Woburn, Massachusetts 01801 (978) 694-3200
Southeast Region	20 Riverside Drive, Route 105 Lakeville, Massachusetts 02347 (508) 946-2800
Central Region	8 New Bond Street Worcester, Massachusetts 01606 (508) 792-7650
Western Region	436 Dwight Street Springfield, Massachusetts 01103 (413) 784-1100

Massachusetts Office of Coastal Zone Management (CZM) Emails may be sent to: czm@mass.gov	
MA Office of Coastal Zone Management	100 Cambridge Street, Suite 900 Boston, Massachusetts 02114 (617) 626-1200
North Shore Region	2 State Fish Pier Gloucester, Massachusetts 01930 (978) 281-3972
South Shore Region	175 Edward Foster Road Scituate, Massachusetts 02066
Cape Cod and Islands Region	3195 Main Street, P.O. Box 220 Barnstable, MA 02630
South Coastal Region	81-B County Road, Suite E Mattapoisett, MA 02739

Massachusetts Historical Commission (MHC)	
Office Location:	220 Morrisey Boulevard Boston, Massachusetts 02125 (617) 727-8470

Massachusetts Board of Underwater Archaeological Resources (BUAR) Emails may be sent to: david.s.robinson@mass.gov	
Office Location:	100 Cambridge Street, Suite 900 Boston, Massachusetts 02114 (617) 626-1014

SECTION VII: Definitions & Acronyms

Artificial or Living Reef: A structure which is constructed or placed in waters for the purpose of enhancing fishery resources and commercial and recreational fishing opportunities.
Attendant Features: Occurring with or as a result of; accompanying.
Biodegradable: A material that decomposes into elements found in nature within a reasonably short period of time and will not leave a residue of plastic or a petroleum derivative in the environment after degradation. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Examples of biodegradable materials include jute, sisal, cotton, straw, burlap, coconut husk fiber (coir) or excelsior. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Photodegradable, UV degradable or Oxo-(bio)degradable plastics are not considered biodegradable under this GP.
Boating facilities: These provide, rent or sell mooring space, such as marinas, yacht clubs, boat yards, dockominiums, municipal facilities, land/home owners, etc. Not classified as boating facilities are piers shared between two abutting properties or municipal mooring fields that charge an equitable user fee based on the actual costs incurred.
Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved. Must comply with the applicable provisions of 33 CFR 332. See also the New England District Compensatory Mitigation Guidance at http://www.nae.usace.army.mil/Missions/Regulatory/Mitigation.aspx.
Construction mats: Constructions, swamp and timber mats (herein referred to as “construction mats”) are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be construction mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like construction mats, they are considered as fill whether they are installed temporarily or permanently.
Cumulative Impacts: The impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.1). Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems. See 40 CFR 230.11(g).
Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.
Dredging:
Improvement Dredging: For the purposes of these GPs, this is dredging deeper than previously authorized by the USACE and dredged under that authorization.
Maintenance Dredging: For the purposes of these GPs, this is dredging from an area previously authorized by the USACE and dredged under that authorization. The USACE may require proof of authorization and dredging. Maintenance dredging typically refers to the routine removal of accumulated sediment to maintain the design depths of serviceable navigation channels, harbors, marinas, boat launches and port facilities. Maintenance dredging is conducted for navigational purposes and does not include any expansion of the previously dredged area. The USACE may

review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS, shellfish, etc.

New Dredging: For the purposes of these GPs, this is a) first time the USACE authorizes dredging of a particular location or b) dredging has not occurred for an extended period of time, and this has allowed for aquatic resources (i.e., eelgrass, shellfish, etc.) to redevelop in the area.

Dredged material & discharge of dredged material: These are defined at 33 CFR 323.2(c) and (d). The term dredged material means material that is excavated or dredged from waters of the U.S.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s) but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: A stream with flowing water only during, and for a short duration, after precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Erosion Controls: Appropriate soil erosion, sediment and turbidity controls include cofferdams, bypass pumping around barriers immediately up and downstream of the work footprint (i.e., dam and pump), installation of sediment control barriers (i.e., silt fence, vegetated filter strips, geotextile silt fences, filter tubes, erosion control mixes, hay bales or other devices) downhill of all exposed areas, stream fords, retention of existing vegetated buffers, application of temporary mulching during construction, phased construction, and permanent seeding and stabilization, etc.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area (33 CFR 332.2).

Expansions: Work that increases the footprint of fill, structures, depth of basin or drainage features, or floats, or slip capacity.

Essential Fish Habitat (EFH): The Federal Magnuson-Stevens Fishery Management and Conservation Act broadly defines EFH to include those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. See www.greateratlantic.fisheries.noaa.gov/habitat for more information.

Fill material & discharge of fill material: Material placed in waters of the U.S. where the material has the effect of either replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water of the U.S. Fill material does not include any pollutant discharged into the water primarily to dispose of waste. These are defined at 33 CFR 323.2 (e) & (f).

Federal navigation projects (FNPs): These areas are maintained by the USACE; authorized, constructed and maintained on the premise that they will be accessible and available to all on equal terms; and comprised of USACE Federal anchorages, Federal channels and Federal turning basins. The buffer zone is equal to three times the authorized depth of a FNP. The following are FNPs in MA and more information, including the limits, is provided at www.nae.usace.army.mil/missions/navigation >> Navigation Projects:

- Andrews River, Harwich, MA
- Aunt Lydia's Cove
- Beverly Harbor
- Boston Harbor
- Buttermilk Bay Channel
- Canapitsit Channel
- Cape Cod Canal
- Chatham Harbor
- Cohasset Harbor
- Cross Rip Shoals, Nantucket Sound
- Cuttyhunk Harbor
- Dorchester Bay and Neponset River
- Duxbury Harbor
- Edgartown Harbor
- Essex River
- Fall River Harbor
- Falmouth Harbor
- Gloucester Harbor and Annisquam River
- Green Harbor
- Hingham Harbor
- Hyannis Harbor
- Ipswich River
- Island End River (Chelsea, MA)
- Kingston Harbor
- Lagoon Pond
- Little Harbor Woods Hole

Lynn Harbor
Malden River
Menemsha Creek
Merrimack River
Mystic River
Nantucket Harbor of Refuge
New Bedford and Fairhaven Harbor
Newburyport Harbor
Oak Bluffs Harbor
Pigeon Cove Harbor
Plymouth Harbor
Pollock Rip Shoals, Nantucket Sound
Provincetown Harbor
Red Brook Harbor
Rockport Harbor
Salem Harbor
Sandy Bay Harbor of Refuge
Saugus River
Scituate Harbor
Sesuit Harbor
Taunton River
Vineyard Haven Harbor
Wareham Harbor
Wellfleet Harbor
Westport River and Harbor
Weymouth Back River
Weymouth Fore and Town Rivers
Winthrop Harbor
Woods Hole Channel

Flume: An open artificial water channel, in the form of a gravity chute, which leads water from a diversion dam or weir alongside a natural flow. A flume can be used to measure the rate of flow.
FNP buffer zone: The buffer zone of a USACE Federal Navigation Project (FNP) is equal to three times the authorized depth of the FNP.
Frac out: During horizontal directional drilling (HDD) operations, drilling fluid travels up the borehole into a pit. When the borehole becomes obstructed or the pressure becomes too great inside the borehole, the ground fractures and fluid escapes to the surface and may affect surface waters.
Ground disturbance: Any activity that compacts, relocates, overturns, removes, mixes, or otherwise disturbs the ground, including under water. Ground disturbance can be caused by the use of hand tools (shovels, pick axe, posthole digger, etc.), heavy equipment (excavators, backhoes, bulldozers, dredgers, trenching and earthmoving equipment, etc.), and heavy trucks (large four wheel drive trucks, dump trucks and tractor trailers, etc.). Trenching, bulldozing, dredging, excavating, scraping, and plowing are typical examples of ground disturbance activities.
Height:width ratio: The height of structures shall at all points be equal to or exceed the width of the deck. For the purpose of this definition, height shall be measured from the marsh substrate to the bottom of the longitudinal support beam.
High Tide Line (HTL): The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides 58 that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds. (33 CFR 328). Refer to the highest predicted tide for the current year at the nearest NOAA tide gage. https://tidesandcurrents.noaa.gov/map/index.html
Historic Property: Any prehistoric or historic site (including archaeological sites), district, building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).
Impacts:
Direct Impacts: Effects that are caused by the activity and occur at the same time and place (40 CFR 1508.7).
Indirect impacts: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.
Secondary impacts: Effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.

Information about secondary effects on aquatic ecosystems shall be considered prior to the time final section 404 action is taken by permitting authorities. Some examples of secondary effects on an aquatic ecosystem are: aquatic areas drained, flooded, fragmented; fluctuating water levels in an impoundment and downstream associated with the operation of a dam; septic tank leaching and surface runoff from residential or commercial developments on fill; and leachate and runoff from a sanitary landfill located in waters of the U.S. See 40 CFR 230.11(h).

Incidental Fallback: Incidental fallback is the redeposit of small volumes of dredged material that is incidental to excavation activity in waters of the U.S. when such material falls back to substantially the same place as the initial removal (33 CFR 323.2(d)(2)(iii)).

In the dry: Work that is done under dry conditions, e.g., work behind cofferdams or when the stream or tide is waterward of the work.

Independent utility: A test to determine what constitutes a single and complete non-linear project in the USACE Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Individual permit: A Department of the Army authorization that is issued following a case-by-case evaluation of a specific structure or work in accordance with the procedures of 33 CFR 322, or a specific project involving the proposed discharge(s) in accordance with the procedures of 33 CFR 323, and in accordance with the procedures of 33 CFR 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR 320.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Intertidal: The area in between mean low water and the high tide line.

Living reef: See the definition of “artificial or living reef.”

Living shoreline: A term used to describe a low-impact approach with a substantial biological component to shoreline protection and restoration along coastal shores, riparian zones, lacustrine fringe wetlands, or oyster or mussel reef structures. This approach integrates natural features to restore, enhance, maintain, or create habitat, functions, and processes while also functioning to mitigate flooding or shoreline erosion. Living shorelines may stabilize banks and shores with small fetch and gentle slopes that are subject to low-to mid-energy waves. A living shoreline has a footprint that is made up mostly of native material. It incorporates vegetation or other living, natural “soft” elements alone or in combination with some type of harder shoreline structure (e.g., oyster or mussel reefs or rock sills) for added protection and stability. Living shorelines should maintain the natural continuity of the land-water interface and retain or enhance shoreline ecological processes.

Loss of waters of the United States: Waters of the U.S. that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the U.S. is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for a GP; it is not a net threshold that is calculated after considering compensatory mitigation that maybe used to offset losses of aquatic functions and services. Waters of the U.S. temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the U.S. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the U.S.

Maintenance: The repair, rehabilitation, or in-kind replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3 – "Activities occurring before certain dates," provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Maintenance includes minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards that are necessary to make repair, rehabilitation, or replacement are authorized. Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.
Maintenance Exemption: In accordance with 33 CFR 323.4(a)(2), any discharge of dredged or fill material that may result from any of the following activities is not prohibited by or otherwise subject to regulation under Section 404 of the CWA: "Maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures. Maintenance does not include any modification that changes the character, scope, or size of the original fill design."
Mean high water: Line on the shore reached by the plane of the average high water. Where precise determination of the actual location of the line becomes necessary, it must be established by survey with reference to the available tidal datum, preferably averaged over a period of 18.6 years. Less precise methods, such as observation of the "apparent shoreline" which is determined by reference to physical markings, lines of vegetation, or changes in type of vegetation, may be used only where an estimate is needed of the line reached by the mean high water.
Mechanized land clearing: Land clearing activities using mechanized equipment such as backhoes or bulldozers with sheer blades, rakes or discs constitute point source discharges and are subject to section 404 jurisdiction when they take place in wetlands or waters of the U.S (Regulatory Guidance Letter 90-05).
Metallic mineral: Any ore or material to be excavated from the natural deposits on or in the earth for its metallic mineral content to be used for commercial or industrial purposes. "Metallic mineral" does not include thorium or uranium.
Minor deviations: Deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards, which are necessary to make repair, rehabilitation, or replacement are permitted, provided the adverse environmental effects resulting from such repair, rehabilitation, or replacement are minimal.
Natural Rocky Habitats: Intertidal and subtidal substrates of pebble-gravel, cobble, boulder, or rock ledge and outcrops. Manufactured stone (e.g., cur or engineered riprap) is not considered a natural rocky habitat. Natural rocky habitats are either found as pavement (consolidated pebble-gravel, cobble, or boulder areas) or as a mixture with fines (i.e., clay and sand) and other substrates. Rocky habitats as EFH are defined as follows: (1) All pebble-gravel, cobble, or boulder pavements; (2) Pebble-gravel mixed with fines: mixed substrate of pebble-gravel and fines where pebble-gravel is an evident component of the substrate (either through visual observation or within sediment samples). Sediment samples with a content of 10% or more of pebble-gravel in the top layer (6-12 inches) should be delineated; (3) Scattered cobble, scattered boulder, scattered cobble/boulder: mixed substate of cobble and/or boulder and other substrates. The aerial extent of cobbles and/or boulders should be delineated; and (4) All rock ledge outcrops: area should be delineated along the edge of the ledge/outcrop (as defined by NMFS Habitat and Ecosystems Services Branch, Gloucester, MA).
Navigable waters or Navigable waters of the U.S.: These waters are subject to section 10 of the Rivers and Harbors Act of 1899 and are defined as those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce (33 CFR Part 329). Work or structures in navigable

waters require permits pursuant to §9 and §10 of the Rivers and Harbors Act of 1899. Also see the definition of “waters of the U.S.” below.
Note: Currently the following non-tidal waters have been determined to be navigable waters of the U.S. subject to permit jurisdiction in Massachusetts: Merrimack River, Connecticut River, and Charles River to the Watertown Dam.
Nearshore disposal: This is defined in the USACE Coastal Engineering Manual as “(1) In beach terminology an indefinite zone extending seaward from the shoreline well beyond the breaker zone. (2) The zone which extends from the swash zone to the position marking the start of the offshore zone, typically at water depths of the order of 20m.” A nearshore berm is an artificial berm built in shallow water using dredged material. Often, the berm is intended to renourish the adjacent and downdrift shore over time under the influence of waves and currents.
Non-regulated activity: Only structures or fills that were previously authorized and are in compliance with the terms and condition of the original authorization can be maintained as a non-regulated activity under 33 CFR 323.4(a)(2). Minor deviations from the previously authorized footprint do not qualify as a non-regulated activity and require new authorization from the USACE. The state’s maintenance provisions may differ from the USACE and a project may require reporting and written authorization from the state.
Non-tidal wetlands: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the HTL (*i.e.,* spring HTL). Also see the definition of “Waters of the U.S.” below.
Oil or natural gas pipeline: Any pipe or pipeline for the transportation of any form of oil or natural gas, including products derived from oil or natural gas, such as gasoline, jet fuel, diesel fuel. heating oil, petrochemical feedstocks, waxes, lubricating oils, and asphalt.
Ordinary High Water Mark (OHWM): A line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas. See 33 CFR 328.3(e).
Overall project: The overall project, for purposes of these GPs, includes all regulated activities that are reasonably related and necessary to accomplish the project purpose. Also see the definition of “single and complete linear project.”
Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.
Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.
Permanent impacts: Permanent impacts means waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody.
Preconstruction notification (PCN): A request submitted by the applicant to the USACE for confirmation that a particular activity is authorized by these GPs. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Preconstruction notification may be required by the terms and conditions of these GPs. A PCN may be voluntarily submitted in cases where PCN is not required and the applicant wants confirmation that the activity is authorized under these GPs.
Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions (33 CFR 332.2).
Real estate subdivision: Includes circumstances where a landowner or developer divides a tract of land into smaller parcels for the purpose of selling, conveying, transferring, leasing, or

developing said parcels. This would include the entire area of a residential, commercial or other real estate subdivision, including all parcels and parts thereof

Reconfiguration zone: A USACE authorized area in which permittees may rearrange pile-supported structures and floats without additional authorizations. A reconfiguration zone does not grant exclusive privileges to an area or an increase in structure or float area.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/ historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in again in aquatic resource area and functions (33 CFR 332.2).

Reference Site: Reference sites - Compensatory restoration, rehabilitation, and creation mitigation projects should seek to duplicate the features of reference aquatic resources or enhance connectivity with adjacent natural upland and aquatic resource landscape elements. Performance standards related to reference sites are encouraged. Mitigation project sites must be selected based on their ability to be, and continue to be, resistant to disturbance from the surrounding landscape, by locating them adjacent to refuges, buffers, green spaces, and other preserved natural elements of the landscape. In general, aquatic resource mitigation projects must be designed to be self-sustaining, natural systems within the landscape and climate in which they are located, with little or no ongoing maintenance and/or hydrologic manipulation.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area (33 CFR 332.2).

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation (33 CFR 332.2).

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Sedimentation: Sedimentation is defined as the process of deposition of a solid material from a state of suspension. Deposited sediments may accumulate and have temporal impacts to aquatic resource areas. See secondary effects definition above. For the purposes of this document, “greater than minimal sedimentation” is generally not considered to occur when using proper erosion controls (GC 25) or when sedimentation is considered “de minimis” 33 CFR 323.2(d)(5).

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/ developer or partnership or other association of owners/developers that includes all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for the purposes of these GPs. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete

non-linear project must have independent utility (see the definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in a GP authorization.
Special aquatic sites (SAS): These include inland and saltmarsh wetlands, mud flats, vegetated shallows, sanctuaries and refuges, coral reefs, and riffle and pool complexes. These are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E.
Streambed: The stream substrate between the OHW marks on each side. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the streambed, but outside of the OHW marks, are not considered part of the streambed.
Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the U.S.
Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.
Temporal loss: The time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site(s) (33 CFR 332.2).
Temporary impacts: Temporary impacts include, but are not limited to, jurisdictional waters that are temporarily filled, flooded, excavated, or drained because of the regulated activity. Impacts are considered temporary when they are removed immediately upon completion of the activity. Note: An impact is considered temporary when the aquatic resource is restored to pre-project conditions, but effects to archaeological and/or cultural resources may be permanent in duration.
Tidal wetlands: A wetland that is subject to the ebb and flow of the tide. See the definition of “Waters of the U.S.” below.
Tide gates: Structures such as duckbills, flap gates, manual and self-regulating tide gates, etc. that regulate or prevent upstream tidal flows.
Turbidity: A measure of the level of particles such as sediment, plankton, or organic by-products, in a body of water. As the turbidity of water increases, it becomes denser and less clear due to a higher concentration of these light-blocking particles. Suspended solids are more likely to carry toxic chemicals, and can also negatively affect aquatic organisms, water temperature, and dissolved oxygen levels.
Utility line: Any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose that is not oil, natural gas, or petrochemicals. A utility line also includes any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term ‘utility line’ does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.
Vegetated shallows: Permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as eelgrass *(Zostera marina)* and widgeon grass (*Rupia maritima*) in marine systems (does not include salt marsh) as well as a number of freshwater species in rivers and lakes. These are a type of SAS defined at 40 CFR 230.43. Vegetated shallows are commonly referred to as submerged aquatic vegetation or SAV. Vegetated shallow survey guidance is located at www.nae.usace.army.mil/missions/regulatory /jurisdiction-and-wetlands. Maps of vegetated shallows in Massachusetts are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.
Vernal pools: For the purposes of these GPs, vernal pools are depressional wetland basins that typically dry up in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). In

most years, vernal pools support one or more of the following obligate indicator species: wood frog, spotted salamander, blue-spotted salamander, marbled salamander, Jefferson's salamander and fairy shrimp. However, they should preclude sustainable populations of predatory fish.

Water diversions: Water diversions are activities such as bypass pumping (e.g., "dam and pump") or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions.

Waters of the United States (U.S.) These waterbodies are the waters where permits are required for the discharge of dredged or fill material pursuant to §404 of the CWA. These waters include but are not limited to navigable waters of the U.S. and tidal wetlands and include many non-tidal wetlands and other waterbodies. See definitions for navigable waters of the U.S., tidal wetlands, waterbody, and non-tidal wetlands. (33 CFR 328)

Waterbody: Examples of "waterbodies" include oceans, coastal waters, rivers, streams, ditches, lakes, ponds, and wetlands. If a wetland is adjacent to a waterbody determined to be a water of the U.S., that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

Weir: A barrier across a river designed to alter the flow characteristics. In most cases, weirs take the form of a barrier, smaller than most conventional dams, across a river that causes water to pool behind the structure and allows water to flow over the top. Weirs are commonly used to alter the flow regime of a river, prevent flooding, measure discharge and help render a river navigable.

Wetland: Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. The Corps of Engineers Wetlands Delineation Manual in conjunction with the associated regional supplement should be used to determine if a wetland is present and delineate wetland boundaries.

Acronyms

BMPs	Best Management Practices
BUAR	Massachusetts Board of Underwater Archaeological Resources
CWA	Clean Water Act
CZM	Coastal Zone Management
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
EFH	Essential Fish Habitat
FNP	Federal Navigation Project
GC	General Condition
GP	General Permit
HTL	High Tide Line
IP	Individual Permit
LID	Low impact development
MassDEP	Massachusetts Department of Environmental Protection
MA DMF	Massachusetts Division of Marine Fisheries
MHC	Massachusetts Historical Commission
MHW	Mean High Water
MLLW	Mean Lower Low Water
MLW	Mean Low Water
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
OHW	Ordinary High Water Mark
PCN	Preconstruction Notification
SAS	Special Aquatic Sites
SF	Square Feet
SV	Self-Verification
SHPO	State Historic Preservation Officer
THPO	Tribal Historic Preservation Officer
USFWS	U.S. Fish and Wildlife Service
USCG	U.S. Coast Guard
USFS	U.S. Forest Service
USGS	U.S. Geological Service
WQC	Water Quality Certification

Appendix A: Guidance for NHPA Section 106 Compliance in Massachusetts

1. Purpose & Applicability

Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA) (54 U.S.C § 306108), requires Federal agencies to take into account the effects of their undertakings on Historic Properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. Therefore, in order for an activity to be eligible for authorization under the 2023 Massachusetts General Permit, the USACE must consider the effect the activity may have on historic properties. Historic properties may include, but are not limited to, historic districts, archaeological districts, sites, buildings, structures, objects, sacred sites, traditional cultural places, and traditional cultural landscapes that are included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

This guidance applies to projects that require authorization under Section 404 of the Clean Water Act (33 U.S.C. § 1344) and/or Section 10 of the Rivers and Harbors Act (33 U.S.C. §403) and will assist applicants when evaluating and documenting the presence of historic properties within or near their project site(s). The prospective applicant will evaluate their proposed project using the criteria below to determine if their project has the potential to affect historic properties and if so, whether or not historic properties are present or are likely to be present. All activities authorized under these GPs shall follow the terms outlined in General Condition 14: Historic Properties and General Condition 6: Tribal Rights & Burial Sites. Prospective applicants shall complete their due diligence according to the procedures below for their application to be deemed complete.

2. No Potential to Affect Historic Properties

Certain activities do not have the potential to cause effects on historic properties, assuming such historic properties were present, based on the nature of the activity and site-specific conditions. Therefore, these activities **do not** require historic property identification efforts or notification of the SHPO, THPOs, and/or BUAR under Section 106. The USACE has determined the following activities within the stated parameters have no potential to affect historic properties:

General Permit	Activity Parameters
1	Temporary buoys, markers and similar structures that are placed during winter events on ice and removed before spring thaw.
2	Repair or rehabilitation of structures that are less than 45 years in age. Any temporary structures or fills or work necessary to complete repairs or rehabilitation must not result in any ground disturbance.
3	Maintenance and replacement of moorings that are less than 45 years in age.
6	Maintenance, repair, replacement, or removal of utility lines, oil or natural gas pipelines, outfall or intake structures, and/or appurtenant features that are less than 45 years in age when all access, staging, and ground disturbance is strictly limited to previously disturbed areas (including any previous ground disturbance). Replacement must be in kind or smaller in size. Installation of tide gates on outfall structures that are less than 45 years in age.
7	Maintenance dredging of previously dredged areas where dredging does not extend beyond the original bottom elevations.

	Disposal of dredged material at an existing established and USACE-approved confined aquatic disposal cell. Beach nourishment in ongoing existing nourishment areas.
11	Fish and wildlife harvesting and attraction devices and activities.
13	Cleanup of hazardous and toxic waste materials, including contaminated sediments, that are less than 45 years in age.
16	Removal of land-based and water-based renewable energy generation facilities and hydropower projects that are less than 45 years in age.
18	Installation of buoys, floats, racks, trays, nets, lines, tubes, containers, and other structures for previously authorized by the USACE and ongoing aquaculture activities. Discharges of dredged or fill material into tidal or non-tidal waters necessary for shellfish seeding, rearing, cultivating, transplanting, and harvesting activities for previously authorized and ongoing aquaculture activities.
20	Maintenance activities for existing living shorelines excluding maintenance activities that require new ground disturbance such as excavation or re-sloping of the bank/shoreline.
22	Reshaping or maintenance of existing drainage ditches less than 45 years in age excluding ditch enlargement.
23	Placement of temporary and removable linear transportation and wetland/stream crossings that have no ground disturbance prior to placement, during placement, and during removal (i.e., placed on the surface and subsequently removed within one year of placement).
24	Placement of temporary and removable crossings and cofferdams that have no ground disturbance prior to placement, during placement, and during removal (i.e., placed on the surface and subsequently removed within one year of placement).
25	Emergency repair of existing structures and/or fills less than 45 years in age.

3. Historic Property Identification

If the activity does not fit under the criteria above, the following historic property identification efforts must be completed to demonstrate compliance with Section 106 of the NHPA. This includes documenting previously identified and unidentified historic properties in the project area.

a. Previously Identified Historic Properties: The prospective applicant shall document if previously identified historic properties are present on or adjacent to the project site by notifying the Massachusetts Historical Commission (MHC) and the Massachusetts Board of Underwater Archaeological Resources (BUAR), as appropriate, of the proposed project. The MHC and BUAR will check their records for the presence of any previously identified historic properties. The following outlines how prospective applicants should notify the MHC and BUAR.

i. The prospective applicant will notify the SHPO and BUAR to identify any previously recorded cultural resources. Applicants shall mail a completed Project Notification Form[18], project narrative, location (coordinates), plans, soil maps, and information on known cultural resources to the MHC. The MHC does not accept submissions via email. Applicants shall email or mail this information to the BUAR when the activity is located in lakes, ponds, rivers, and/or navigable waters in MA. Emailed file attachments should be <10MB. Any files >10MB shall be delivered via a file exchange system or the hard copy documents shall be mailed. Preferred contact information is listed below.

ii. **When sending this information, applicants must also document proof of receipt OR proof the information was delivered.** Proof of receipt constitutes a certified mail receipt, read email receipt, or other mail/email/online tracking services that document the information has reached the intended recipient(s). Proof the information was delivered constitutes a certificate of mailing, email delivery receipt, or other mail/email/online services that document the information was sent at a particular time. When using proof of delivery such (e.g., certificate of mailing), applicants should add 5 days to the 30-day notification period so the mail has time to reach its intended recipient. When using proof of receipt, the applicant may begin the 30-day notification period from the date received by the intended recipient.

iii. When mailing or emailing the application materials, applicants should include the following statement: “Please send responses to this notification directly to the USACE via email: cenae-r-ma@usace.army.mil or address regular mail responses to: Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, Massachusetts 01742-2751.” Email responses to the USACE are strongly preferred. The SHPO and BUAR will contact the USACE and cc the applicant(s) within 30 days of receiving the notification if their records indicate that historic properties are located in the project vicinity, and if additional review and/or surveys are recommended to ensure NHPA compliance. If the SHPO and/or BUAR do not respond within 30 days of receiving the notification, is it presumed that no known historic properties are present.

b. Previously Unidentified Historic Properties: The prospective applicant shall evaluate the project site and determine the sensitivity for the presence of historic properties if the project site has not been previously surveyed for cultural resources within the last 10 years. If the sensitivity is determined to be moderate to high, an intensive archaeological and/or architectural survey is required to investigate the potential presence of historic properties. The individual conducting this survey must meet the Secretary of the Interior’s Standards for Professional Qualifications (48 FR 44738-44739) in the discipline relevant to a particular resource type. For example, archeologists should not document and evaluate buildings or structures and architectural historians should not document and evaluate archaeological sites. The identification and qualifications for those participating in any survey and evaluation of resources should be included with the survey results. The criteria listed below are indicators of low sensitivity for the presence of historic properties for consideration when determining if an archaeological or architectural survey is needed.

Low sensitivity indicators:

- Previous archaeological and/or architectural survey within the last 10 years with negative results.
- In a location created in modern times (i.e., built on fill placed within the last 45 years or within an area excavated within the last 45 years).
- USACE has reviewed the project description and determined that a survey is not warranted based on the proposed activity and its location.

State survey guidance and standards are provided in the September 1995 Historic Properties Survey Manual Guidelines for the Identification of Historical and Archaeological Resources in Massachusetts available. State survey guidance and standards for underwater surveys are provided

[18] https://www.sec.state.ma.us/mhc/mhcform/formidx.htm

in the Board of Underwater Archaeological Resources' 2022 Policy Guidance on Archaeological Investigations and Related Survey Standards for the Discovery of Underwater Archaeological Resources. This guidance is available on the NAE Regulatory website: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.

Please note, a negative result from MHC and/or BUAR does not necessarily mean no historic properties are present. Often proposed project sites have not been previously subject to a survey, so historic properties which may be present have not been previously recorded.

4. Tribal Coordination

Prospective applicants shall mail the Project Notification Form, project narrative, location (coordinates), plans with locus map, soil maps, and information on cultural resources to the Wampanoag Tribe of Gay Head (Aquinnah), Mashpee Wampanoag Tribe, Narragansett Indian Tribe, and/or Stockbridge-Munsee Community Band of Mohican Indians with interests in the project location. Preferred tribal contact information, including their respective areas of interest, can be found below. Applicants shall follow the same procedures as identified in Section 3(a)i-iii above when notifying Tribes of the proposed activity. Applicants shall provide the USACE with any responses received from the tribe(s) with their PCN application. If a tribe does not respond within 30 days of receiving the notification, the applicant shall provide USACE with all documentation of tribal outreach with their SV or PCN submission (e.g., emails, letters, phone call log, etc.). If the tribe indicates the presence of a previously unrecorded cultural resource, including a traditional cultural property (TCP) or traditional cultural landscape (TCL), a PCN is required.

5. Effect Determination

The project may have the potential to affect historic properties and/or tribal resources if 1) notification recipients respond within 30 calendar days of notification with concerns, 2) historic properties eligible for listing, or potentially eligible for listing in the NRHP, are present or 3) tribal resources are known to be present. The USACE may need to further review the project to confirm potential effects to historic properties and/or tribal resources. A PCN is required for any activity that may affect a historic property.

The USACE may determine the project will have 'no effect' on historic properties (i.e., no historic properties affected) when procedures outlined in Section 3 above are followed and no cultural resources are identified. Similarly, if historic properties are identified and will be completely avoided, the USACE may determine 'no effect.'

6. Contact Information:

Massachusetts Historical Commission

The Massachusetts Archives Building
220 Morrissey Boulevard
Boston, Massachusetts 02125

No email. Applicants or their representatives must send project information via certified mail and submit the certified mail receipt to the USACE or send via regular mail and submit proof of delivery.

Area of concern: All of Massachusetts.

Massachusetts Board of Underwater Archaeological Resources (BUAR)

100 Cambridge Street, Suite 900
Boston, Massachusetts 02114
Email: david.s.robinson@mass.gov

Applicants or their representatives must send project information via email (***strongly preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: All waterbodies in Massachusetts.

Wampanoag Tribe of Gay Head (Aquinnah)

Bettina Washington
Tribal Historic Preservation Officer (THPO)
20 Black Brook Road
Aquinnah, Massachusetts 02535
Email: thpo@wampanoagtribe-nsn.gov

Applicants or their representative must send project information via email (***preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: All of Massachusetts.

Mashpee Wampanoag Tribe

ATTN: David Weeden
Tribal Historic Preservation Officer (THPO)
483 Great Neck Road South
Mashpee, Massachusetts 02649
Email: 106review@mwtribe-nsn.gov
Cc: David.weeden@mwtribe-nsn.gov

Applicants or their representative must send project information via email (***preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: All of Massachusetts.

Narragansett Indian Tribe

ATTN: John Brown
Tribal Historic Preservation Officer (THPO)
Narragansett Indian Longhouse
4425 South County Trail
Charlestown, Rhode Island 02813
Email: tashtesook@aol.com

Applicants or their representative must send project information via email (***preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: Massachusetts east of the Connecticut River.

Stockbridge-Munsee Community Band of Mohican Indians

ATTN: Jeff Bendremer
Tribal Historic Preservation Manager
Stockbridge-Munsee Community
Tribal Historic Preservation Extension office
86 Spring Street
Williamstown, Massachusetts 01267
Email: thpo@mohican-nsn.gov

Applicants or their representative must send project information via email (***preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: West of the Connecticut River and Northfield, Montague, Miller's Falls, Turner's Falls, Sunderland, Amherst, Hadley, South Hadley, Chicopee, Springfield and Longmeadow.

APPENDIX B PRE-CONSTRUCTION NOTIFICATION

U.S. Army Corps of Engineers (USACE), New England District (NAE)

PRE-CONSTRUCTION NOTIFICATION (PCN)

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332.

Principal Purpose The information provided will be used in evaluating activities under Pre-Construction Notification procedures within New England.

Routine Uses This information may be shared with other federal, state, and local government agencies during the application review process. Submission

Disclosure of requested information is voluntary. However, if information is not provided the PCN application cannot be fully evaluated nor can USACE render a permit decision.

Instructions The applicant must complete ALL required sections of this document before their submission to USACE. The PCN submission to USACE shall include one set of drawings which show the location and character of the proposed activity, statements that address each required field below, and documentation that supports each field (e.g., emails, letters, description/narrative, phone calls, surveys, reports, etc.). Electronic submissions to the following address are strongly preferred: cenae-r-ma@usace.army.mil. The email subject line shall contain the following: General Permit #, PCN, City/Town, and date submitted. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY USACE)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (*agent is not required*)
First - Middle - Last -	First - Middle - Last -
Company -	Company -
E-mail Address -	E-mail Address -
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:
Address-	Address-
City - State - Zip - Country -	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. with AREA CODE	10. AGENT'S PHONE NOs. with AREA CODE
a. Residence b. Business c. Fax d. Mobile	a. Residence b. Business c. Fax d. Mobile

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act on my behalf as my agent in the processing of this general permit PCN application and to furnish, upon request, supplemental information in support of this general permit PCN application.

_____ _____

SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME or TITLE (*see instructions*)

13. NAME OF WATERBODY, IF KNOWN (*if applicable*)	14. PROPOSED ACTIVITY STREET ADDRESS (*if applicable*)
15. LOCATION OF PROPOSED ACTIVITY (*see instructions*)	City: State: Zip:
Latitude: °N Longitude: °W	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (*see instructions*)

State Tax Parcel ID: Municipality:

Section: Township: Range:

17. DIRECTIONS TO THE SITE.

18. IDENTIFY THE SPECIFIC GENERAL PERMIT(S) YOU PROPOSE TO USE:

19. DESCRIPTION OF PROPOSED GENERAL PERMIT ACTIVITY (*see instructions*)

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (*see instructions*)

21. PURPOSE OF GENERAL PERMIT ACTIVITY (*Describe the reason or purpose of the project, see instructions*)

22. Quantity of Wetlands, Streams, or Other Types of Waters Directly Affected by Proposed General Permit Activity (*see instructions*)

Area (square feet)	Length (linear feet)	Volume (cubic yards)	Duration	Purpose

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site.

23. List any other GP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project on any related activity (*see instructions*)

24. If the proposed activity will result in the loss of aquatic resources that exceed those identified in the New England District Compensatory Mitigation Thresholds, explain how the compensatory mitigation requirement will be satisfied. (*see instructions*)

25. Is Any Portion of the General Permit Activity Already Complete? ☐ Yes ☐ No If Yes, describe the completed work:

26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed GP activity or utilize the designated critical habitat that might be affected by the proposed GP activity. (*see instructions*)

27. List any historic properties that have the potential to be affected by the proposed GP activity or include a vicinity map indicating the location of the historic property or properties. Attach relevant project information, along with any responses received from project notifications to this submittal. (*see instructions*)

28. For a proposed GP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":

29. If the proposed GP activity also requires permission from the USACE pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the USACE district having jurisdiction over that project? ☐ Yes ☐ No

If "yes", please provide the date your request was submitted to the USACE District:

30. Does the activity require a 401 Water Quality Certification (WQC)? If so, specify the type of 401 WQC that is required (general or individual). In cases where an individual 401 WQC is required, provide the date the 401 WQC certification request was submitted to the certifying authority and their contact information.

31. If the terms of the GP(s) you want to use require additional information to be included in the PCN (i.e. sampling and analysis plan), please include that information in this space or provide it on an additional sheet of paper marked Block 30. (*see instructions*)

32. I certify that the information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

The Pre-Construction Notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in block 11 has been filled out and signed, the authorized agent.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Instructions for Preparing a

Department of the Army

General Permit (GP) Pre-Construction Notification (PCN)

Blocks 1 through 4. To be completed by the U.S. Army Corps of Engineers.

Block 5. Applicant' Name. Enter the name and the e-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the PCN, please attach a sheet of paper with the necessary information marked Block 5.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the PCN. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant Telephone Number(s). Please provide the telephone number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed, if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, consultant, or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where they can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by the applicant, if an agent is to be employed.

Block 12. Proposed General Permit Activity Name or Title. Please provide a name identifying the proposed GP activity, e.g., Windward Marina, Rolling Hills Subdivision, or Smith Commercial Center.

Block 13. Name of Waterbody. Please provide the name (if it has a name) of any stream, lake, marsh, or other waterway to be directly impacted by the GP activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Activity Street Address. If the proposed GP activity is located at a site having a street address (not a box number), enter it in Block 14.

Block 15. Location of Proposed Activity. Enter the latitude and longitude of where the proposed GP activity is located. Indicate whether the project location provided is the center of the project or whether the project location is provided as the latitude and longitude for each of the "corners" of the project area requiring evaluation. If there are multiple sites, please list the latitude and longitude of each site (center or corners) on a separate sheet of paper and mark as Block 15.

Block 16. Other Location Descriptions. If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality where the site is located.

Block 17. Directions to the Site. Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide a description of the location of the proposed GP activity, such as lot numbers, tract numbers, or you may choose to locate the proposed GP activity site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed GP activity site if known. If there are multiple locations, please indicate directions to each location on a separate sheet of paper and mark as Block 17.

Block 18. Identify the Specific General Permit(s) You Propose to Use. List the number(s) of the General Permit(s) you want to use to authorize the proposed activity (e.g., GP 4).

Block 19. Description of the Proposed General Permit Activity. Describe the proposed GP activity, including the direct and indirect adverse environmental effects of the proposed activity. The description of the proposed activity should be sufficiently detailed for USACE to determine that the adverse environmental effects of the activity will be no more than minimal. Identify the materials to be used in construction, as well as the methods by which the work is to be done.

Provide drawings to show that the proposed GP activity complies with the terms of the applicable GP(s). Drawings should contain sufficient detail to provide an illustrative description of the proposed GP activity, but do not need to be detailed engineering plans. The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 19.

Block 20: Description of Proposed Mitigation Measures. Describe any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed GP activity. The description of any proposed mitigation measures should be sufficiently detailed for USACE to determine how the measures would avoid and minimize adverse environmental effects. If adverse effects exceed the New England District compensatory mitigation thresholds, you must document how compensatory mitigation would be satisfied in Block 24.

Block 21. Purpose of General Permit Activity. Describe the purpose and need for the proposed GP activity. What will it be used for and why? Also include a brief description of any related activities associated with the proposed project. Provide the approximate dates you plan to begin and complete all work.

Block 22. Quantity of Wetlands, Streams, or Other Types of Waters Directly Affected by the Proposed General Permit Activity. For discharges of dredged or fill material into Waters of the U.S., provide the amount of wetlands, streams, or other types of waters filled, flooded, excavated, or drained by the proposed GP activity. For structures or work in Navigable Waters of the U.S. subject to Section 10 of the Rivers and Harbors Act of 1899, provide the amount of navigable waters filled, dredged, occupied by one or more structures (e.g., aids to navigation, mooring buoys) by the proposed GP activity. The area of impact includes the structures or fills with direct or indirect effects to waters of the U.S. The length of impact includes the length of a stream, including is banks, that are directly affected by the structures or fills. The duration of impact should be identified as temporary (xx days) or permanent. The impact purpose should briefly describe what structure or fill is responsible for the impact.

Block 23. Identify Any Other General Permit(s), Regional General Permit(s), or Individual Permit(s) Used to Authorize Any Part of Proposed Activity or Any Related Activity. List any other GP(s) or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. For linear projects, list other separate and distant crossings of waters and wetlands authorized by these GPs that do not require PCNs. If more space is needed, attach an extra sheet of paper marked Block 23.

Block 24. Compensatory Mitigation Statement for Losses Greater Than the New England District Compensatory Mitigation Thresholds. New England District requires compensatory mitigation at a minimum one for one replacement ratio or greater for all aquatic resource losses that require a PCN and exceed the New England District Compensatory Mitigation Thresholds, unless USACE determines in writing that either some other form of mitigation is more environmentally appropriate or the adverse environmental effects of the proposed GP activity are no more than minimal without compensatory mitigation, and provides an activity specific waiver of this requirement. Describe the proposed compensatory mitigation for wetland losses greater than the New England District Compensatory Mitigation Thresholds or provide an explanation of why USACE should not require wetland compensatory mitigation for the proposed GP activity. If more space is needed, attach an extra sheet of paper marked Block 24.

Block 25. Is Any Portion of the General Permit Activity Already Complete? Describe any work that has already been completed for the GP activity.

Block 26. List the Name(s) of Any Species Listed As Endangered or Threatened under the Endangered Species Act that Might be Affected by the General Permit Activity. If you are not a federal agency, and if any listed species or designated critical habitat might be affected or is in the vicinity of the proposed GP activity, or if the proposed GP activity is located in designated critical habitat, list the name(s) of those endangered or threatened species that might be affected by the proposed GP activity or utilize the designated critical habitat that might be affected by the proposed GP activity. If you are a Federal agency, and the proposed GP activity requires a PCN, you must provide documentation demonstrating compliance with Section 7 of the Endangered Species Act.

Block 27. List Any Historic Properties that Have the Potential to be Affected by the General Permit Activity. If you are not a federal agency, and if any historic properties have the potential to be affected by the proposed GP activity, list the name(s) of those historic properties that have the potential to be affected by the proposed GP activity. Provide all relevant documentation about these historic properties in the PCN submittal. If you are a Federal agency, and the proposed GP activity requires a PCN, you must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

Block 28. List the Wild and Scenic River or Congressionally Designated Study River if the General Permit Activity Would Occur in such a River. If the proposed GP activity will occur in a river in the National Wild and Scenic River System or in a river officially designated by Congress as a "study river" under the Wild and Scenic Rivers Act, provide the name of the river. For a list of Wild and Scenic Rivers and study rivers, please visit http://www.rivers.gov/

Block 29. General Permit Activities that also Require Permission from the USACE Under 33 U.S.C. 408. If the proposed GP activity also requires permission from the USACE under 33 U.S.C. 408 because it will temporarily or permanently alter, occupy, or use a USACE federal authorized civil works project, indicate whether you have submitted a written request for section 408 permission from the USACE district having jurisdiction over that project.

Block 30. 401 Water Quality Certification. As described above, specify if the activity requires a 401 WQC from the certifying authority.

Block 31. Other Information Required For General Permit Pre Construction Notifications. The terms of some of the General Permits include additional information requirements for preconstruction notifications:

* Maintenance – information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals.
* Temporary Construction, Access, and Dewatering – a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions.
* Repair of Uplands Damaged by Discrete Events – documentation, such as a recent topographic survey or photographs, to justify the extent of the proposed restoration.
* Commercial Shellfish Aquaculture Activities – (1) a map showing the boundaries of the project area, with latitude and longitude coordinates for each corner of the project area; (2) the name(s) of the species that will be cultivated during the period this GP is in effect; (3) whether canopy predator nets will be used; (4) whether suspended cultivation techniques will be used; and (5) general water depths in the project area (a detailed survey is not required).Dredging – (1) a proposed sampling and analysis plan shall be provided to USACE for approval prior to its execution. Pre-application meetings are encouraged.
* Beach Nourishment – sediment grain size should be determined for the length of the beach where nourishment is proposed. The frequency and locations of sediment sampling shall be sufficient to identify the sediment composition of the beach profile. This data shall be consolidated to generate a sediment gradation curve for each sampled transect. Each sampled transect should also be identified on the project plans (drawings).

If more space is needed, attach an extra sheet of paper marked Box 31.

Block 32. Signature of Applicant or Agent. The PCN must be signed by the person proposing to undertake the GP activity, and if applicable, the authorized party (agent) that prepared the PCN. The signature of the person proposing to undertake the GP activity shall be an affirmation that the party submitting the PCN possesses the requisite property rights to undertake the GP activity (including compliance with special conditions, mitigation, etc.).

DELINEATION OF WETLANDS, OTHER SPECIAL AQUATIC SITES, AND OTHER WATERS

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current wetland delineation manual and regional supplement published by the USACE. The permittee may ask the USACE to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the USACE does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. The 60-day PCN review period will not start until a delineation has been completed.

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross Section Map. Identify each illustration with a figure or attachment number. For linear projects (e.g. roads, subsurface utility lines, etc.) gradient drawings should also be included. Please submit one copy of all drawings on 8½ x 11 inch plain white paper (electronic submissions preferred). Use the fewest number of sheets necessary for your drawings or illustrations. Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross section). While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.

ADDITIONAL INFORMATION AND REQUIREMENTS

For proposed GP activities that involve discharges into waters of the United States, water quality certification from the State, Tribe, or EPA must be obtained or waived. Some States, Tribes, or EPA have issued water quality certification for one or more GPs. Please check the New England District website to see if water quality certification has already been issued for the GP(s) you wish to use. For proposed GP activities in coastal states, state Coastal Zone Management Act consistency concurrence must be obtained, or a presumption of concurrence must occur. Some States have issued Coastal Zone Management Act consistency concurrences for one or more GPs. Please check the New England District website to see if Coastal Zone Management Act consistency concurrence has already been issued for the GP(s) you wish to use.

APPENDIX C SELF-VERIFICATION NOTIFICATION

U.S. Army Corps of Engineers (USACE)

SELF-VERIFICATION NOTIFICATION (SVN)

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332.

Principal Purpose This information will be used in evaluating activities under Self-Verification procedures within Massachusetts.

Routine Uses Routine uses will include: (1) Documenting compliance with the terms and conditions of the General Permit (GP) for activities that may require authorization pursuant to one or more of USACE's Regulatory authorities. (2) Records may be referred to other Federal, State, and local agencies for evaluation and enforcement purposes.

Disclosure Failure to fully comply and abide by the GP terms and conditions prior to commencing work and after completion project may result in formal enforcement action, up to and including monetary penalties and/or legal action, pursuant to 33 CFR Part 326.

Instructions The permittee must complete ALL required sections of this document before commencing USACE-regulated activities. A copy of this completed SVN must be kept on site during construction and be made available for review by USACE and other Federal, State, & Local regulatory authorities at any time. Within 30 days of initiating project construction, the permittee shall submit the completed SVN to USACE. The SVN shall be submitted to USACE as **ONE signed document** that includes project plans and documentation that supports each field (e.g., emails, letters, description, phone calls, surveys). Electronic submissions to the following address are strongly preferred: cenae-r-ma-sv@usace.army.mil. The email subject line shall contain the following: GP #, SVN, City/Town, and date submitted.

(ITEMS 1 THRU 3 TO BE FILLED BY USACE)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED

APPLICANT AND AGENT INFORMATION

4. APPLICANT'S NAME	7. AGENT'S ADDRESS:
First - Middle - Last -	First - Middle - Last -
Company -	Company -
E-mail Address -	E-mail Address -
5. APPLICANT'S ADDRESS:	8. AGENT'S ADDRESS:
Address-	Address-
City - State - Zip - Country -	City - State - Zip - Country -
6. APPLICANT'S PHONE NOs. w/AREA CODE	9. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business c. Fax	a. Residence b. Business c. Fax

NAME, LOCATION, AND DESCRIPTION OF PROJECT SITE

10. PROJECT NAME OR TITLE

11. FILE NUMBER(S) OF PREVIOUS USACE ACTIONS ON THE SITE (if applicable)	12. NAME OF WATERBODY
13. PROJECT COORDINATES (in decimal degrees)	14. PROJECT STREET ADDRESS (if applicable)
Latitude: ◦N Longitude: ◦W	Address
	City - State - Zip -

ACTIVITY TYPE, PROJECT IMPACTS, AVOIDANCE & MINIMIZATION

15. GENERAL PERMIT ACTIVITIES (CHECK ALL THAT APPLY)

1 ☐	6 ☐	11 ☐	16 ☐	21 ☐
2 ☐	7 ☐	12 ☐	17 ☐	22 ☐
3 ☐	8 ☐	13 ☐	18 ☐	23 ☐
4 ☐	9 ☐	14 ☐	19 ☐	24 ☐
5 ☐	10 ☐	15 ☐	20 ☐	25 ☐

16. SUMMARY OF PROJECT IMPACTS (*see instructions*)

Area (square feet)	Length (linear feet)	Volume (cubic yards)	Duration

17. PROJECT PLANS (BY CHECKING THE BOXES BELOW, YOU CERTIFY THESE ITEMS ARE COMPLETE) (*see instructions*)

- ☐ a. Plans shall at least contain the following: Vicinity Map, Plan View, and Typical Cross Section View of the proposed activity.
- ☐ b. All direct, indirect and secondary impacts from USACE regulated activities are shown on the project plans.
- ☐ c. The size of the impact area for each activity (acre, square feet, linear feet) are shown on the project plans.
- ☐ d. For discharges of fill material (§404), the volume of fill material is identified on the project plans.
- ☐ e. The duration of each impact, permanent or temporary (X days), is identified on the project plans.
- ☐ f. Do activities with permanent impacts result in the loss of waters? If so, this is identified on the project plans.
- ☐ g. All aquatic resources in the vicinity of the USACE regulated activities are delineated on the project plans.

18. AVOIDANCE & MINIMIZATION (BY CHECKING THE BOXES BELOW, YOU CERTIFY THESE CRITERIA ARE MET) (*see instructions*)

- ☐ a. The project has been designed to avoid and minimize impacts to aquatic resources.
- ☐ b. The footprint of activities in waters of the U.S. has been reduced to only what is necessary to achieve the overall project purpose.
- ☐ c. All practicable measures have been taken to avoid and minimize impacts to aquatic resources through construction techniques and site access (e.g., Best Management Practices, Time of Year Restrictions).
- ☐ d. All temporary impacts from USACE regulated activities will be restored upon completion of construction and the project area will be returned to pre-construction contours and conditions.

COMPLIANCE WITH FEDERAL REGULATIONS & SUPPLEMENTAL INFORMATION

19. DUE DILIGENCE (*see instructions*)

Complete the entries below to document compliance with the following Federal requirements. Construction may NOT begin if a PCN is/may be required, and you must contact USACE to determine permitting requirements. Documentation that demonstrates how the activity complies with each field below shall be submitted to the USACE as noted in the instructions block. See each General Condition (GC) in the GP for how to comply with each requirement.

a. State Historic Preservation Officer	Select Option		
b. Massachusetts BUAR	Select Option		
c. Tribal Historic Preservation Officers	Select Option		
d. Endangered Species Act - NOAA	Select Option		
e. Endangered Species Act - USFWS	Select Option		
f. Northern Long Eared Bat (ESA)	Select Option		
g. Essential Fish Habitat	Select Option		
h. Wild & Scenic Rivers	Select Option		
i. 401 Water Quality Certification 401	Select Option		
	401 WQC/OOC File Number:	OOC issued:	401 issued:
j. Section 408 Permission	Select Option		
k. Coastal Zone	Select Option		
l. Construction Mats	Select Option		
m.Time of Year Restrictions	Select Option		
n. Vernal Pools	Select Option		
o. Sediment & Erosion Controls	Select Option		
p. Stream/Wetland Crossings	Select Option		

20. AQUACULTURE ACTIVITIES - GP 18 (*see instructions*)

- ☐ a. If required, an Aquaculture Certification from the Massachusetts Division of Marine Fisheries was obtained prior to commencing work.
- ☐ b. Coordination with the U.S. Coast Guard pursuant to Private Aids to Navigation has occurred prior to commencing work.
- ☐ c. If required, a MEPA Certificate was obtained from the Massachusetts Environmental Protection Agency prior to commencing work. Select Option
- ☐ d. The prospective permittee contacted local authorities (e.g. harbormaster, select board, shellfish constable) for authorization of their facility prior to commencing work.

21. ADDITIONAL INFORMATION/ATTACHMENTS (*see instructions*)

- ☐ a. The project plans are enclosed in this SVN submittal (see block 17).
- ☐ b. The activity Select Option funded through the Bipartisan Infrastructure Bill (also known as the Infrastructure Investment and Jobs Act).
- ☐ c. All required state, local and federal approvals were acquired prior to starting construction in USACE jurisdiction.
- ☐ d. After construction of the activity is completed, a complete Certificate of Compliance will be submitted to USACE.

22. IS THERE ANOTHER LEAD FEDERAL AGENCY:

☐ YES ☐ NO

23. STATEMENT OF AUTHORIZATION *(see instructions)*

I certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

24. SIGNATURES *(see instructions)*

I hereby certify that the information in this Self-Verification Notification is complete and accurate. As the applicant or their duly authorized agent, I certify the activity was completed in accordance with the terms and conditions of the GP. This includes all applicable terms, general conditions, and activity-specific GP criteria. I agree to allow the duly authorized representatives of the Corps of Engineers Regulatory Program and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as “no trespassing” this consent specifically supersedes and waives that prohibition and grants permission to enter the property despite such posting.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Instructions for Preparing a
Department of the Army
General Permit (GP) Self-Verification

Blocks 1 through 3. To be completed by the Corps of Engineers.

Block 4. Applicant' Name. Enter the name and the e-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the self-verification, please attach a sheet of paper with the necessary information marked Block 4.

Block 5. Address of Applicant. Please provide the full address of the party or parties responsible for the self-verification. If more space is needed, attach an extra sheet of paper marked Block 5.

Block 6. Applicant Telephone Number(s). Please provide the telephone number where you can usually be reached during normal business hours.

Blocks 7 through 9. To be completed, if you choose to have an agent.

Block 7. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, consultant, or any other person or organization. Note: An agent is not required.

Blocks 8 and 9. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where they can be reached during normal business hours.

Block 10. Proposed General Permit Activity Name or Title. Please provide a name identifying the proposed GP activity, e.g., Windward Marina, Rolling Hills Subdivision, or Smith Commercial Center.

Block 11. File Number(s) of Previous USACE Actions on the Site Please provide any known USACE file number. If the activity does not have a known USACE file number, you may state N/A.

Block 12. Name of Waterbody. Please provide the name (if it has a name) of any stream, lake, marsh, or other waterway to be directly impacted by the GP activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 13. Proposed Activity Coordinates. Please enter the latitude and longitude of where the proposed GP activity is located. Indicate whether the project location provided is the center of the project or whether the project location is provided as the latitude and longitude for each of the "corners" of the project area. If there are multiple sites, please list the latitude and longitude of each site (center or corners) on a separate sheet of paper and mark as Block 13.

Block 14. Proposed Activity Street Address. If the proposed activity is located at a site having a street address (not a box number), enter it in Block 14.

Block 15. General Permit Activity Type. Please select all GP activity types that apply to the proposed activity. A list of GP activity types can be found in Section III of the GP.

Block 16. Summary of Project Impacts. Please provide ALL proposed impacts, both temporary and permanent in duration, that are located in Waters of the United States. The area of impact shall be provided in square feet (SF). When applicable, impacts that result in conversion of stream bank or shoreline must also be identified in linear feet (LF). Dredging or the discharge of dredged or fill material shall also include the volume, cubic yards (CY), of material removed from or placed into Waters of the U.S. If more entries are required, please attach a table matching the desired format in Block 16.

Block 17. Project Plans. Please verify that items a-g are included in the project plans. Three types of illustrations are necessary to properly depict the proposed work. These illustrations or drawings are identified as a Vicinity Map, a Plan View (Aerial view) and a Cross Section Map. For linear projects (e.g. roads, subsurface utility lines, etc.) gradient drawings (longitudinal profile) should also be included. Plans must accurately depict the existing conditions and all aspects of the proposed activity located in waters of the U.S. Please submit one copy of all drawings formatted to print on 8½ x 11 inch or 11 x 17 inch plain white paper. Use the fewest number of sheets necessary for your drawings or illustrations. Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross section). While illustrations need not be certified engineering sheets; they should be clear, accurate, contain all necessary information, and depict all proposed work. Each submission must also include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current wetland delineation manual and regional supplement published by USACE.

Block 18. Avoidance & Minimization. Please verify that items a-d have been implemented for the proposed activity.

Block 19. Due Diligence. Please complete all the fields and submit documentation to USACE to demonstrate compliance with the above requirements. This Documentation may include emails, letters, meeting notes, phone call log, project narrative, project plans, a species list from the NOAA Section 7 Mapper, a completed copy of the IPAC determination keys, etc. Documentation should be limited to what is necessary to demonstrate how the proposed activity meets each requirement. Refer to the MA GP, Appendix A, for specific guidance on the identification of previously identified historic properties and previously unidentified historic properties. Endangered Species: *The applicant must be designated as the non-federal representative for the purposes of Section 7 consultation to select the Rangewide D-Key options. Otherwise, the applicant shall select the following option when IPAC indicates the NLEB is present: "The activity IS located within the NLEB Species Range (PCN Required)."

Block 20. Aquaculture Activities. Please verify that items a-d have been obtained or completed prior to commencing work in waters of the U.S.

Block 21. Additional Information/Attachments. Please verify that items a-d have been completed prior to commencing work in waters of the U.S.

Block 22. Lead Federal Agency. Please identify if there is another lead federal agency involved with the proposed activity. Enter the lead federal agency name (e.g., the Federal Emergency Management Agency, FEMA) and the agency's designated person of contact for the activity.

Block 23. Statement of Authorization. The applicant shall sign this section for all activities. If an agent is to be employed, the agent shall sign this section.

Block 24. Signatures. The SVN must be signed by the person proposing to undertake the GP activity, and if applicable, the authorized party (agent) that prepared the SVN. The signature of the person proposing to undertake the GP activity shall be an affirmation that the party submitting the SVN possesses the requisite property rights to undertake the GP activity.

US Army Corps of Engineers®
New England District

APPENDIX D: PCN APPLICATION CHECKLIST

The following information shall be submitted for all PCNs for USACE to properly evaluate your application. Some applications may require more information and this checklist is offered as a tool to assist applicants with submitting a complete application.

SECTION 1: GENERAL APPLICATION INFORMATION

1. ☐ Complete the Pre-Construction Notification document (Appendix B).
2. ☐ Specify which local/state/federal authorizations are required for the project and if any have been obtained or applied for at the time of USACE application submittal.
3. ☐ Identify all funding sources the project will receive or has received to date. Provide any relevant information in the application submission.
4. ☐ Is this part of a larger project that is being implemented in phases? If so, describe the project schedule and how each phase will be implemented.
5. ☐ Describe the existing conditions on the site and the general land use in the vicinity of the project at the time application submittal.
6. ☐ Provide any historic information available that you may have of project area, e.g., existing USACE permit numbers, the names under which the permits were obtained if the permit numbers are unknown, construction dates and proof of prior existence (aerials, photos, town hall records, affidavits, state or local permits, etc.) to verify that the project predates regulation and is "vested".[19]
7. ☐ The anticipated start and end dates for construction.

SECTION 2: WETLAND DELINEATION

8. ☐ Data used to support aquatic resource boundary determinations (delineation forms, delineation map(s) that show the locations of each aquatic resource in the project area, aerial and ground photographs, LIDAR imagery, national wetland inventory maps, soil maps, national hydrography dataset maps, floodplain maps, historical imagery, etc.).
9. ☐ Photographs of the wetland(s) and/or waterway(s) where impacts are proposed. Photos at low tide are preferred for work in tidal waters.
10. ☐ Indicate the relationship of the project area to waters of the U.S., i.e., adjacent wetlands, tidal influence or hydraulic connectivity through culverts, or other conveyances, etc.
11. ☐ At minimum the delineation map/figure should include the following:
    a. Contour lines showing topography.
    b. North arrow.
    c. Bar and text scale.
    d. Legend.
    e. Drawn project boundary.
    f. High tide line, mean high water, mean low water, ordinary high water mark, and/or wetland boundaries.
    g. Captions with a unique name for each aquatic resource and the area or length of the aquatic resource within the project area.

[19] Vested is exempt (someone or something) from a new law or regulation.

h. Appropriate landmarks and features (e.g., culverts, special aquatic sites, etc.).
i. Points showing the paired upland and wetland delineation locations for tidal and non-tidal wetlands only.

SECTION 3: AVOIDANCE & MINIMIZATION

12. ☐ Describe specific measures taken to avoid impacts to aquatic resources or describe why aquatic resources could not be avoided while achieving the project purpose and need.
13. ☐ For impacts to aquatic resources that could not be avoided, describe specific considerations/ measures taken to minimize the area of proposed impacts to aquatic resources in designing the project.
14. ☐ Describe specific measures taken to avoid and minimize the proposed direct, indirect, and secondary impacts to aquatic resources and their functions through construction techniques and timing.
15. ☐ If applicable, provide a restoration plan that describes how all temporary fills and structures will be removed and the area restored to pre-impact conditions (see GC 22).
16. ☐ If applicable, provide an Invasive Species Control Plan (see GC 29). For sample control plans, see www.nae.usace.army.mil/missions/regulatory/invasive-species.
17. ☐ If applicable, describe how the proposed wetland/waterbody crossing is compliant with GC 31, Stream Work and Crossings, and Wetland Crossings.

SECTION 4A: PROJECT IMPACTS

18. ☐ Describe the overall project and the activities located in Waters of the U.S. (WOTUS) that you are seeking authorization for.
19. ☐ Identify the following for project impacts in WOTUS:
    a. ☐ Direct, indirect, secondary impacts[20] within WOTUS.
    b. ☐ The size of each impact (square feet or acres, or linear feet).
    c. ☐ For discharges of fill material (§404), specify the volume of fill material to be discharged (cubic yards).
    d. ☐ The impact duration from each activity, permanent or temporary (X days).

SECTION 4B: PROJECT PLANS

20. ☐ Submit project plans that depict all impacts in WOTUS. On the project plans, applicants shall provide:

General Information

    a. ☐ Plan view and typical cross-section view sheets that show the existing and proposed conditions. These illustrations should each be identified with a figure number, date of the map, the project title, the name of the applicant and the type of illustration (vicinity map, plan view, or cross section).
    b. ☐ Drawings, sketches, or plans that are legible, reproducible (color is encouraged, but features must be distinguishable in black and white), drawn to scale, and no larger than 11”x17” and 10 MB when submitted in digital format. Numeric and graphic/bar scales must agree, and plan details must be measurable using a standard engineer’s scale on printed plans. Reduced plans are not acceptable.
    c. ☐ The north arrow and remove miscellaneous non-wetland or water project related features such as conduits, utility poles, guardrails, etc.

[20] See definitions section for the definitions of direct, indirect, secondary impacts.

d. ☐ Clearly draw the overall limits of work, staging areas, disposal sites, access routes, and any permittee responsible mitigation sites. These areas may include both aquatic resources and upland areas.
e. ☐ Names or numbers of all roads in the site's vicinity and ownership and numbers of abutting parcels.
f. ☐ Datum in plan and elevation views. The horizontal datum shall be in the NAD 83 Massachusetts State Plane Coordinate System (INSERT) in U.S. survey feet. The vertical data in coastal projects shall be referenced to either MLLW or the North American Vertical Datum of 1988 (NAVD 88). Both the distance and depth units shall be U.S. survey feet and specified on the project plans.

Aquatic Resources & Project Impacts

g. ☐ Delineation of all aquatic resource types on site including salt marsh; other special aquatic sites (vegetated shallows, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges); other waters, such as lakes, ponds, vernal pools, natural rocky habitat (tidal only), and perennial, intermittent, and ephemeral streams.
h. ☐ Identify the substrate type (cobble/gravel, organic detritus, sand/shell, silt, mud) and the approximate percentage of each substrate type on site. Grain sizes shall be based on Wentworth grain size classification scale for granules, pebbles, cobbles, and boulders. Sediment samples with a content of 10% or more of pebble-gravel-cobble and/or boulder in the top layer (6-12 inches) should be delineated and material with epifauna/macroalgae should be differentiated from bare pebble-gravel-cobble and boulder.
i. ☐ The direction of ebb and flood in tidal waters and direction of flow in non-tidal waters.
j. ☐ In tidal waters, the project boundary distance from special aquatic sites identified in 20g above if within 25 feet from that resource.
k. ☐ USACE jurisdictional boundaries including ordinary high-water mark (OHWM), high tide line (HTL), mean high water (MHW). Other boundaries include mean low water (MLW), mean lower low water (MLLW), as applicable.
   - Non-tidal: OHWM and/or wetland boundaries.
   - Tidal (structures/work only): MHW, MLW.
   - Tidal (Fill and Structures/work): HTL, MHW, MLW.
   - Tidal (Dredging/Beach Nourishment): HTL, MHW, MLW, MLLW.
l. ☐ Identification of each aquatic resource with a unique name (ex. Wetland 1, Wetland 2, Tributary 1, Beaver Brook, Atlantic Ocean) and the size of each aquatic resource within the project area (square feet or acres).
m. ☐ Impacts to each aquatic resource with captions denoting the size of each impact (square feet, acres, or linear feet) and the duration of the impact (ex. Permanent, Temporary (X days).

SECTION 4C: PROJECT PLANS - SPECIFIC PROJECT INFORMATION

21. ☐ For projects involving Navigation, Structures, Dredging, and/or Beach Nourishment, the applicant shall also address the following:

Navigation

a. ☐ Identify the locations of adjacent Federal navigation project (FNP) and/or state/local navigation projects on the project plans.
b. ☐ Specify the distance between the FNP and proposed project boundary, the authorized depths of the FNP, and state plane coordinates of seaward end(s) of project structures near an FNP.

Structures

a. ☐ Identification of the piling type (steel, timber, concrete) and diameter to be removed and/or installed.
b. ☐ Specify the minimal height of the structures' frame over saltmarsh. To meet the SV threshold, piers must be ≤4 feet in width and this minimal height must achieve a 1.5:1 ratio (i.e., a 4-foot-wide pier is 6 feet above a saltmarsh).
c. ☐ For floats, the methods of securing them (piles, bottom anchors) and for keeping them off substrate (skids, stops) at low water. To meet the SV threshold, a minimum depth of 18-inches of water should be maintained below a floating dock/structure at lower tide levels.

Dredging

a. ☐ The area (SF, acre) and volume (CY) of material to be dredged waterward of MHW for each dredge location.
b. ☐ Dredge boundaries.
c. ☐ Bathymetry for existing, proposed, and historical (include dates and USACE permits) dredge depths.
d. ☐ The likely final angle of repose of the side cuts based on the physical characterization of the material to be dredged and based upon the high/ medium/low, wave or current energy of the location.
e. ☐ Label area whether the dredging is new, maintenance, improvement, or a combination.
f. ☐ Location of the disposal site (include location sheet). NOTE: For projects proposing open water, nearshore disposal, or beach nourishment, contact USACE as early as possible for sampling and testing protocols. Sediment testing, including physical (e.g., grain-size analysis), chemical and biological testing may be required. Sampling/testing of sediments without such contact should not occur and if done, will be at the applicant's risk.
g. ☐ The methods and areas used to retain or prevent dredged material from running back into the wetland or waterway. Provide the capacity of the storage area and points of runback, including the overflow route, into the aquatic system.
h. ☐ For open-water disposal, explain why inland or beneficial reuse sites are not practicable.
i. ☐ Show the finished top elevation of the disposal site.

Beach Nourishment

a. ☐ For beach nourishment, identify the disposal footprint, existing and proposed nourishment profiles (multiple profiles are appropriate if the site is more than 150 feet long or non-contiguous), total fill area (SF) and volume (CY), fill area and volume waterward of the HTL, and delineation of dunes, banks, existing beach vegetation, and contours.
b. ☐ For beach nourishment identify the substrate type (fine sand, sand, cobble, boulder) and/or grain-size of existing material.

SECTION 5: STRUCTURES

22. ☐ For projects with the removal of existing pilings identify the number, type (steel, timber, concrete) and diameter of pilings to be removed and the methodology for removal (cut off at mud line, pulling, vibratory, etc.).
23. ☐ For projects with the installation of new pilings identify the number, type (steel, timber, concrete) and diameter of pilings to be installed and the methodology for installation (vibratory hammer, impact hammer etc.).
24. ☐ Identify any existing structures and moorings in waters adjacent to the proposed activity, their dimensions, and the distance to the limits and coordinates of any proposed mooring field or reconfiguration zone. For reconfiguration zone and mooring fields, provide the coordinates for all

corners based on the Massachusetts State Plane Coordinate System. Specify the maximum number of slips and/or moorings within proposed reconfiguration zones or anchorage areas.

25. ☐ The dimensions of the structure or work and extent of encroachment waterward of MHW and from affixed point on the shoreline or upland.
26. ☐ Shoreline of adjacent properties and property boundary offset for structures. In narrow waterbodies, the distance to opposite shoreline, waterway width, and structures across from proposed work.
27. ☐ For new commercial boating facilities, anchorage areas or reconfiguration zones, provide a description of the type of vessels that would use the facility, and any plans for sewage pump-out facilities, fueling facilities and contingency plans for oil spills.
28. ☐ See Sections 4A-C above.

SECTION 6: AQUACULTURE

29. ☐ Identify the coordinates for lease area corners and gear configuration area on the project plans.
30. ☐ Identify the proposed aquaculture gear type (buoys, floats, racks, trays, nets, lines, tubes, cages, containers, and other structures). Provide the impacts for each aquaculture gear type (see Section 4A 19a-d).
31. ☐ For a GP 18 to be valid, applicants must have (a) their MA DMF Aquaculture Certification letter for licensed shellfish aquaculture sites, (b) documentation that the applicant has coordinated with the U.S. Coast Guard regarding USCG Private Aids to Navigation standards, (c) their MEPA Certificate (if required), and (d) documentation that the applicant has contacted their local authorities (ex. harbormaster, select board, shellfish constable) for authorization of their facility.
32. Provide information on site the operation, maintenance, and access. Will the site be accessed via boat, kayak, etc.? Will cages be removed in the winter? How often will gear be checked on? Is there an operations plan for the proposed aquaculture area?
33. ☐ See Sections 4A-C above.

SECTION 7: DREDGING

34. ☐ Sampling plan requests for new, improvement or maintenance dredging must submit completed **Dredged Material Evaluation checklist found at Dredged Material Evaluation Checklist, Sampling and Analysis Plan Requirements from Applicant (army.mil)** and identify the method of handling/transporting the dredged material.
35. ☐ Identify grain-size of material to be dredged (e.g., silty sand) and provide any existing sediment grain size and bulk sediment chemistry data from the proposed project or nearby projects. Include information on any recent spills of oil and/or other hazardous materials and/or nearby outfalls. Document the information source, e.g., EPA database, the harbormaster or fire chief. If there are none, state “none”.
36. ☐ See Section 4A, 4B and 4C, Dredging 21(a-i) above.

SECTION 8: WETLAND/WATERBODY CROSSINGS

37. ☐ For the stream crossing, identify the crossing methodology on the project plan (e.g., dam and pump, dry, wet, etc.). Submit a waterway crossing sequencing plan with the application.
38. ☐ If the project includes a permanent crossing of a tidal waterway, your project design should be modified to match the velocity, depth, cross-sectional area, and substrate of the existing waterbody adjacent to the crossing and provide documentation (hydraulic analysis including low lying property analysis) that the size of the crossing will not restrict tidal flow over the full natural tide range and will not adversely affect abutting infrastructure.

39. ☐ If the work includes a permanent crossing of a non-tidal stream, your project design should be modified to match the culvert gradient of the existing stream channel profile, provide clearance for ≥1.2 times bank full width and conveyance should be embedded ≥1-2 feet for box culverts and pipe arches or ≥1-2 feet and at least 25 percent for rounded pipes/culverts in accordance with the Massachusetts Stream Crossing Standards. Provide the basis for any variation to this requirement.
40. ☐ If the work includes a permanent crossing of a non-tidal stream, the structure should be designed to include a natural bottom substrate within the conveyance that matches the characteristics of the substrate in the natural stream channel and the character of the banks (mobility, slope, stability, confinement, grain and rock size). The conveyance should be designed with a minimum openness ratio ≥0.82-feet (0.25-meters). For how to calculate openness ratio and stream simulation ecological approach for road and stream crossings, see https://www.nae.usace.army.mil/Missions/Regulatory/Stream-and-River-Continuity/.

SECTION 9: COMPENSATORY MITIGATION

41. ☐ Does the project require Compensatory Mitigation[21] for impacts to Waters of the U.S.? (See Section V in the 2023 Massachusetts General Permit)
42. ☐ If the project requires mitigation, does the selected compensatory mitigation option (i.e., In-Lieu Fee, permittee-responsible mitigation) deviate from the order of the options presented in §332.3(b)(2)-(6)? If so, please explain why. https://www.ecfr.gov/current/title-33/chapter-II/part-332/section-332.3
43. ☐ For any compensatory mitigation that involves preservation, the applicant must use a site protection instrument to preserve the parcel in perpetuity. (Conservation Easement, Deed Restriction, etc.) https://www.mass.gov/service-details/conservation-restriction-review-program.

SECTION 10: HISTORIC PROPERTIES & NOTIFICATIONS TO SHPO, THPOs, BUAR

44. ☐ Notify the SHPO, Massachusetts Historical Commission, of the Project via Certified Mail and include proof of delivery or receipt in the application package (See Appendix A).
45. ☐ As applicable, notify the THPOs, Narragansett Indian Tribe, Wampanoag Tribe of Gay Head (Aquinnah), and Mashpee Wampanoag Tribe, of the Project via email OR mail and include proof of delivery or receipt in the application package (See Appendix A).
46. ☐ As applicable, notify the BUAR via email (*strongly preferred*) OR mail and include proof of delivery or receipt in the application package (See Appendix A).
47. ☐ Include responses to this notification in the permit application.
48. ☐ As applicable, information on historic properties (Tribal and Archaeological) within the project area should be provided in the permit application.

SECTION 11: ENDANGERED SPECIES & ESSENTIAL FISH HABITAT

49. ☐ Provide a USFWS Information for Planning and Consultation (IPaC) Official Species List from https://ecos.fws.gov/ipac and the email of the individual who generated the list (see GC 10 of the 2023 Massachusetts General Permit for more information).
50. ☐ Provide a species list from the NMFS Section 7 Endangered Species Act mapper at https://noaa.maps.arcgis.com/apps/webappviewer/index.html.
51. ☐ Provide a species list from the NMFS Essential Fish Habitat Mapper at https://www.habitat.noaa.gov/apps/efhmapper/?page=page_3.

[21] Your mitigation proposal must be consistent with the December 29, 2020 Compensatory Mitigation Standard Operating Procedures at https://www.nae.usace.army.mil/Portals/74/docs/regulatory/Mitigation/Compensatory-Mitigation-SOP-2020.pdf and 2008 Mitigation Rule.

52. ☐ If the project will generate turbidity, describe the extent of turbidity and if erosion controls will be used to contain turbidity. If turbidity controls are not operationally feasible, explain the basis for your conclusion and identify any other measures that you will implement to minimize resuspension of sediment.
53. ☐ Identify the substrate type and any aquatic resources that will be affected by the proposed action. (SAV, salt marsh, sand, silt/clay, rocky/hard bottom)
54. ☐ For projects which will include the installation of pilings/sheet-piles, identify the substrate at the project site (sand, cobble, silt/mud/clay), the installation method (vibratory hammer, impact hammer, combination) and indicate whether the following “soft start” procedures at beginning of the workday and after a 30-minute period of rest will be deployed:
    a. ☐ Vibratory Pile Installation: pile driving will be initiated for 15 seconds at reduced energy followed by a one-minute waiting period. This sequence of 15 seconds of reduced energy driving, one-minute waiting period will be repeated two additional times, followed immediately by pile-driving at full rate and energy.
    b. ☐ Impact Pile Installation: pile driving will commence with an initial set of three strikes by the hammer at 40% energy, followed by a one-minute wait period, then two subsequent 3-strike sets at 40% energy, with one-minute waiting periods, before initiating continuous impact driving.
55. ☐ If the project involves dredging, describe any dredge history, number of dredge events to be covered by the permit, erosion/sediment controls, dredge type, intake structures (mesh screen size), dredged material disposal site.
56. ☐ For project activities associated with structures, identify the number, type (drill barge, work boat, tugboat, etc.), and size of any temporary vessels that will be used. Specify measures that will be implemented to ensure vessels are not berthed in shallow water or will “ground out” at low tide.
57. ☐ For aquaculture projects identify whether any component of the gear is seasonal (will be removed annually) or will be in place year-round. If gear will be present year-round and will be variably managed (e.g., floating in summer, bottom in winter) identify month/date for such configurations.
58. ☐ For aquaculture projects identify whether the project will involve use of an existing vessel or new vessel. Identify the length for all work vessels and identify the distance round trip from vessel berthing location and aquaculture area.
59. ☐ For project activities associated with docking structures (either commercial, industrial, or recreational) identify the number, type (motorized/non-motorized, jet-ski, sailboat, kayak, canoe, other that will be berthed there and the sizes of each.
60. ☐ Information required for Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act:
    a. Results of an eelgrass survey completed per the INSERT.
    b. Essential Fish Habitat Assessment to determine project-related impacts to essential fish habitat, using guidance developed by the National Marine Fisheries Service.
61. ☐ A document containing the following information (requirements of 50 CFR §600.920(e)(3)):
    a. Description of proposed action.
    b. Analysis of potential adverse effects on essential fish habitat.
    c. Conclusions regarding the effects of the action on essential fish habitat.
    d. If applicable, proposed mitigation.
    e. Analysis of alternatives to the proposed action.
    f. Other:

THIS PAGE IS INTENTIONALLY LEFT BLANK

DOCUMENT A00840

MASSACHUSETTS
Department of Environmental Protection

Water Quality Certification Application

THIS PAGE IS INTENTIONALLY LEFT BLANK

Section 401 Water Quality Certificate

Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street Over the Quinebaug River (MassDOT Project #608862)

Southbridge, Massachusetts

PREPARED FOR

Massachusetts Department of Transportation
Highway Division
10 Park Plaza, Room 7360
Boston, MA 02116

PREPARED BY

260 Arsenal Place #2
Watertown, MA 02472
617-924-1770

September 2025

Maura Healey, Governor
Kimberley Driscoll, Lieutenant Governor
Monica Tibbits-Nutt, Secretary and CEO
Jonathan L. Gulliver, Highway Administrator

MassDOT
Massachusetts Department of Transportation
Highway Division

September 30, 2025

Ms. Heidi Davis
Massachusetts Department of Environmental Protection
Wetlands and Waterways
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street Over the Quinebaug River (MassDOT Project #608862) Southbridge, MA
MassDEP Water Quality Certification Application

Dear Ms. Davis:

The Massachusetts Department of Transportation (MassDOT) respectfully submits the enclosed application for MassDEP Water Quality Certification (WQC) for the proposed replacement of two existing bridges on Mill Street in Southbridge, MA (the Project). The Project will replace the Mill Street bridges over McKinstry Brook (Bridge #S-21-009) and over the Quinebaug River (S-21-003). The bridges serve as an important transportation connection within Southbridge and are currently experiencing structural deterioration and lack suitable Americans with Disabilities Act (ADA) compliant features. The Project is being filed under the MassDOT bridge exemption as specified in the 2014 Transportation Bond Bill. The bridge replacement designs are substantially the functional equivalent of, and in similar alignment to, the existing bridges.

Wetland resource areas subject to protection under the Clean Water Act (CWA) are present within and adjacent to the Project Site. The Project will require work within Waters of the U.S. (WOTUS) and is subject to regulation under Section 401 and Section 404 of the CWA. The Project will result in 292 square feet (sf) of temporary and 0 sf of permanent impacts to WOTUS jurisdictional under the CWA. The Project will also create 238 sf of new WOTUS as a result of removing and restoring the land beneath an existing bridge pier. Areas of disturbance have been minimized to the extent practicable and will be restored in place and stabilized to prevent future erosion and degradation. A pre-filing meeting with MassDEP and the Army Corps of Engineers was held on Aprill 22, 2025 to review the project and wetland resource areas.

Wetland resource areas will be protected from impacts during construction through the implementation of an erosion and sedimentation control program. This program includes provisions to minimize areas of disturbance through phasing and sequencing, limit erosion through stabilization, and prevent sediment from leaving the Project by installing structural controls. The Project has been designed in compliance with Sections 401 and 404 of the CWA. A Self-Verification Notification under General Permit 23 will be submitted to the Army Corps of Engineers as required under Section 404 of the CWA. The Project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief.

The Project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time. Should you have any questions concerning this submittal, or require additional information, please contact me at 857-262-0757 or courtney.l.walker@dot.state.ma.us.

Regards,



Courtney Walker
Wetlands and Water Resources Coordinator
Massachusetts Department of Transportation – Highway Division

CC: Taylor Donovan, VHB
Daniel Cannata, VHB
Lily Collins, MassDOT
Alwin Ramirez, MassDOT
Katie Yoder, Southbridge Conservation Agent
Ryan Hale, MassDEP
Tyler Lewis, MassDEP
Jamie Iannelli, MassDEP
Dan Vasconcelos, USACE
Kevin Newton, USACE

Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
mass.gov/massdot

Table of Contents

Water Quality Certification Application Forms

BRP WW 11 – Project Certification Form
Public Notice

Application Forms

Public Notice

Application Figures

Figure 1 – USGS Locus
Figure 2 – Aerial Map
Figure 3 – FEMA Map

Attachment A – Project Narrative

Introduction 1
Purpose and Need 2
Site Description 3
Work Description 5
Impact Assessment 7
Mitigation Measures 9
Regulatory Compliance 12
Summary 15

Attachment B – Site Photographs

Attachment C – Wetland Determination Forms

Attachment D – Stormwater Memorandum

Attachment E – MassDOT Special Provisions

Attachment F – Project Plans

Water Quality Certification Application Forms

- BRP WW 11 – Minor Project Certification Form
- Public Notice

Public Notice

Massachusetts Department of Environmental Protection
Division of Wetlands and Waterways
MassDEP Boston Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Pursuant to 33 U.S.C. 1341 and M.G.L. c. 21 §§ 26 - 53 and 33 U.S.C. 1341 and M.G.L. c. 21 §43, notice is given of a 401 Water Quality Certification application for work in Waters of the US associated with the proposed replacement of two existing bridges in the Town of Southbridge, MA, by the Massachusetts Department of Transportation – Highway Division, Ten Park Plaza, Room 7360, Boston, MA 02116. This project will replace the Mill Street bridges over McKinstry Brook (Bridge #S-21-009) and over the Quinebaug River (#S-21-003) (the Project) with new Americans with Disabilities Act (ADA) compliant bridges. The bridges serve as an important transportation connection within Southbridge and currently lack suitable ADA compliant features. Additional information may be obtained from the Massachusetts Department of Transportation – Highway Division at the above address, Attention Courtney Walker or by emailing Courtney.L.Walker@dot.state.ma.us. Written comments should be sent to MassDEP Wetlands Program, Attention Heidi Davis, 100 Cambridge Street, Suite 900, Boston, MA 02114 or heidi.davis@mass.gov within 21 days of this notice.

Any group of ten persons, any aggrieved person, or any governmental body or private organization with a mandate to protect the environment who submits written comments may appeal the Department's Certification. Failure to submit written comments before the end of the public comment period may result in the waiver of any right to an adjudicatory hearing.

Attachment A
Project Narrative

On behalf of the Massachusetts Department of Transportation (MassDOT) (the Applicant), VHB is submitting this Water Quality Certification Application (WQC) pursuant to the Massachusetts Regulations (the Regulations) for 401 Water Quality Certification (314 CMR 9.00) This Project constitutes a Minor Fill/Excavation Project (BRP-WW-11).

This narrative describes existing conditions and wetland resource areas associated with the Project Site, the proposed work, impacts to wetland resource areas, mitigation measures, and how the Project meets the performance standards of the Regulations. The project qualifies for the bridge exemption pursuant to the Transportation Bond Bill, Chapter 79 of the Acts of 2014. Specifically, the full replacement of the bridges as functionally equivalent structures, including the roadway approaches, is exempt from the Wetlands Protection Act, Chapter 91 and the Massachusetts Environmental Policy Act.

The Project also qualifies for authorization under the Massachusetts General Permit 23 pursuant to Section 404 (33 U.S.C. 1341) of the U.S. Clean Water Act (CWA). A Self-Verification Notification has been submitted to the US Army Corps of Engineers (USACE) to satisfy coordination under Section 404 of the CWA.

Introduction

MassDOT is proposing to replace two existing bridges on Mill Street over McKinstry Brook (Bridge #S-21-009) and over the Quinebaug River (Bridge #S-21-003) in Southbridge, Massachusetts (the Project Limits) (See Figures 1 and 2 for complete project locus). The bridges serve as an important transportation connection within Southbridge and are currently experiencing structural deterioration and lack suitable Americans with Disabilities Act (ADA) compliant features.

Wetland resource areas subject to protection under the Clean Water Act (CWA) are present within and adjacent to the Project Site. Portions of the Project at the McKinstry Brook crossing will require work within Waters of the U.S.[1] and are subject to regulation under Section 401 and Section 404 of the CWA. Impacts to Wetland Resource Areas are summarized in Table 1 below.

[1] Regulated Waters of the US are defined by 40 CFR 230.3(s)

Table 1 - Summary of Wetland Impacts

Resource Area	Permanent Impacts	Temporary Impacts	Total Alteration
Waters of the U.S.	0 sf	292 sf	292 sf
	Sediment Dredge	**Concrete Dredge**	**Total Dredge**
Dredge within Waters of the U.S.	57 cy	19 cy	76 cy

Source: VHB, 2025

The Project will result in 224 square feet (sf) of temporary impacts to Waters of the United States (WOTUS) associated with McKinstry Brook for work to remove the existing bridge pier. Impacts to the Quinebaug River will be limited to approximately 68 sf of temporary impact to WOTUS to allow for placement of a temporary sedimentation curtain and erosion controls. A fringe Vegetated Wetland is located on the western side of the Quinebaug River north of the Mill Street bridge, but will not be impacted as a result of the proposed work. Dredging within McKinstry Brook is limited to removing the existing pier and surrounding sediment within the waterway.

A suite of mitigation measures is proposed for these impacts and is discussed further in the Mitigation Measures section of this narrative. The Project will also result in an overall increase in WOTUS within McKinstry Brook of approximately 238 sf by removing the existing bridge pier within the waterway.

Wetland resource areas will be protected from impacts during construction through the implementation of an erosion and sedimentation control program. This program includes provisions to minimize areas of disturbance through phasing and sequencing, limit erosion through stabilization, and prevent sediment from leaving the Project by installing structural controls. The Project has been designed in compliance with Section 401 of the CWA as described in the Regulatory Compliance Section of this narrative.

Refer to the figures and Project Plans accompanying this filing for crossing locations and construction details.

Purpose and Need

The purpose of the Project is to improve pedestrian and vehicular safety along Mill Street by replacing the existing Bridges, No. S-21-009, and S-21-003 over McKinstry Brook and the Quinebaug River. The bridges are currently experiencing structural deterioration and lack suitable Americans with Disabilities Act (ADA) compliant features. The Project will allow for continued transportation connectivity and roadway safety along the Mill Street corridor in Southbridge.

Site Description

The Project Limits are located at two bridge structures and roadway approaches on Mill Street (Figure 1 and Figure 2). The area surrounding the Project Limits is highly developed and land use surrounding the bridges is a mix of, industrial, commercial, and residential properties with wooded areas present along the Quinebaug River and McKinstry Brook.

Mill Street over McKinstry Brook:

The existing structure is a two-span bridge that carries two lanes of traffic and two sidewalks. The bridge is located in an urban area with residential buildings on the northwest corner and a mill building directly adjacent to the southeast corner of the bridge. McKinstry Brook is channelized starting just upstream of the bridge and continuing downstream of the structure. The existing bridge abutments are built into the channel walls.

The bridge was originally built in 1940 and the south span was replaced in 1985. The existing bridge configuration generally consists of the following:

- The bridge is oriented north-south.
- The existing spans are approximately 22′-6″ long simple spans, with a total bridge length of approximately 50′-0″. The existing bridge has no skew.
- The bridge features a metal bridge railing on both spans, which was installed during the 1985 replacement of the south span.
- The bridge carries an 8″ water line and a 6″ gas main, which are mounted to the western fascia and supported by the pier and abutments.

Mill Street over Quinebaug River:

The existing structure is a single-span bridge that carries two lanes of traffic and two sidewalks. The bridge is located in an urban area with a former mill building on the northeast corner and a restaurant building directly adjacent to the southwest corner of the bridge.

- The curb-to-curb width is 28′-0″ and the out-to-out width is 41′-2″.
- The existing bridge cross section consists of two 12′-0″ wide vehicular travel lanes, one in each direction, with sidewalks of 5′-6″ and 5′-6″.
- The superstructure is simple span WF steel girders with an 8″ concrete deck.
- The foundation of the existing commercial building at the southwest corner of the bridge abuts the existing bridge south abutment, separated by a construction joint
- The bridge carries water, gravity sewer and two gas lines. Overhead utilities span across the roadway at both ends of the bridge and diagonally across the span.

According to the most recently available data provided by the Natural Heritage and Endangered Species Program (NHESP)[2], no portion of the Project Limits are located within and adjacent to Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife (Figure 3). No Certified or Potential Vernal Pools are mapped in the Project Site. Neither McKinstry Brook nor the Quinebaug River are designated as Essential Fish Habitat. The most recently issued Flood Insurance Rate Map (FIRM)[3] for the area, produced by the Federal Emergency Management Agency (FEMA), indicates that both bridge crossings are located within and adjacent to mapped floodplain for the 100-year storm event (Figure 4), with a base flood elevation of between 481.7 and 483.0 feet NAVD88 at the Quinebaug River crossing and between 482.9 and 484.0 feet NAVD88 at McKinstry Brook. Both bridges cross the regulatory floodways associated with McKinstry Brook and the Quinebaug River respectively. Bankfull width is 35 feet at McKinstry Brook and 51 feet at the Quinebaug River. The Project is not located within 0.25 miles of a National Wild and Scenic River.

The Natural Resources Conservation Service[4] soil survey has mapped the soils within the Project Limits as primarily Hickley-Urban land complex, with areas of Paxton-Urban land complex present near the Quinebaug River.

A photographic log showing existing conditions in the Project Limits is provided as Attachment B.

Wetland Resource Areas

Wetland resource areas on and adjacent to the Project Site were delineated by VHB in July 2022 and May 2025, in accordance with methods developed by the U.S. Army Corps of Engineers (USACE) [5]. Table 2 presents a summary of the wetland resource areas within and adjacent to the Project Site.

Table 2 - Wetland Resource Areas

Wetland	Flag Numbers	Resource Description	NWI Classification
McKinstry Brook	BF1-100 to BF1-108 BF1-200 to BF1-210	Perennial Waterway	R5UBH
Quinebaug River	BF-6 to BF-10 WF-100 to WF-107; WF-200	Perennial Waterway with associated Vegetated Wetland	R2UBH

Source: VHB, 2022, 2025.

Notes: NWI – National Wetlands Inventory Classification
R2UBH – Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded;
R5UBH – Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded;

[2] NHESP, 2021. *Massachusetts Natural Heritage Atlas, 15th Edition.*
[3] Federal Emergency Management Agency, National Hazard Flood Layer, Digital Flood Insurance Rate Map (DFIRM). Map 25027C0933F, effective June 21, 2023.
[4] Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey.
[5] USACE, 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0.

The following sections describe the wetland resource areas associated with the Project Site in more detail. Refer to the Project Plans for the locations of these wetland resource areas. Photos of existing conditions at each crossing can be found in the photo log provided as Attachment B.

McKinstry Brook

McKinstry Brook flows from west to east under Mill Street at bridge S-21-009, which was built in 1940 and the south span replaced in 1985. The stream channel is well defined on both sides of the road. West of the road, the upland areas above the banks are steeply sloped, leading to a retaining wall on either side. The bridge structure also supports a portion of a National Grid gas line that runs along the west side of Mill Street. Dominant vegetation in this area includes black locust (*Robinia pseudoacacia*), black willow (*Salix nigra*), Norway maple (*Acer platanoides*), dogwood (*Cornus* sp.), multiflora rose (Rosa multiflora), border privet (*Ligustrum obtusifolium*), sensitive fern (*Onoclea sensibilis*), honeysuckle (*Lonicera* sp.), poison ivy (*Toxicodendron radicans*), and tall meadow rue (*Thalictrum pubescens*). Most of these species, including the large black willow, are growing along the northern bank.

East of the road, the southern side of the bank is defined by the foundation of 76 Mill Street. The northern side of the bank slopes up gradually, levels off, and then meets a retaining wall. Vegetation here includes oriental bittersweet (*Celastrus orbiculatus*), dogwood, grapevine (*Vitis* sp.), poison ivy, border privet, silver maple (*Acer saccharinum*), American elm (*Ulmus americana*), and black ash (*Fraxinus nigra*).

Quinebaug River

The Quinebaug River is a perennial waterway that generally flows west to east under Mill Street in the Project limits. The Quinebaug River originates from Hamilton Reservoir in Holland, MA approximately 10 miles upstream of the Project Limits. The river has a series of impoundments from the headwaters to the subject crossing, including the Westville Dam approximately one mile upstream of the subject crossing. At the bridge, the bank is primarily defined by the existing abutments and is altered from its natural state due to previous development of the bridge and roadway. Bank in the vicinity of the Project limits beyond the bridge structure is wooded with American elm and eastern white pine (*Pinus strobus*).

Work Description

The Project will improve roadway safety conditions within the Project limits by replacing the existing bridges over McKinstry Brook and the Quinebaug River.

Exact means and methods of construction and staging will be determined by the Project's contractor. Generally, proposed work will consist of the following:

- Before any work along the roadway corridor begins, erosion and sedimentation controls will be installed adjacent to the limits of work according to the Project Plans. Specific erosion controls will ultimately be determined by the means and methods of the contractor. Generally, these controls include staked compost filter tubes with silt sacks in catch basins that may receive runoff from the work area. Other structural controls including filter fabric, silt fence and straw bales may also be used where conditions warrant additional protective measures and siltation curtains will be installed as means of turbidity control within each waterway. Construction details of all these protective measures are shown on the Project Plans. These measures are discussed in greater detail in the Mitigation section of this narrative.
- Tree trimming will be required at each bridge to provide clearance for overhead wires, and clearing and grubbing to provide for construction access.
- Prior to work in McKinstry Brook, water control structures will be installed around the sites of work in the stream channel to contain sediment during work activities.
- Sequencing of demolition will be determined by the contractor, though generally, one bridge will be demolished and replaced before work begins on the second bridge in the Project Limits.
- Laydown and stockpile locations will be dictated by means and methods of the contractor, however these areas will be located outside of wetland resources.
- Replacing the existing bridge, S-21-009, over McKinstry Brook with a new bridge providing ten-foot (10′) travel lanes along each side with four-foot (4′) shoulders. The bridge will also include five-foot sidewalks on both sides. The project limits along Mill Street start approximately fifty feet (50′) south of the bridge and extend to the intersection with River Street, for a length of approximately 300′.
- Replacing the existing bridge, S-21-003, over the Quinebaug River with a new bridge providing a single fifteen-foot (15′) travel lane with four-foot (4′) shoulders. The bridge will also include five-foot sidewalks on both sides. The proposed superstructure includes an 85-foot single span, steel girders, poured concrete deck, and bridge rails. The superstructure will be set on existing abutment.
- Other related work associated with the Project consists of: mill and overlay of Mill Street within the Project Limits; installing approximately thirty-eight feet of sidewalk along the northwestern side of Mill Street south of bridge S-21-09; constructing a new pedestrian crosswalk across Mill Street at the intersection of River Street; reconstructing all existing pedestrian curb ramps and upgrade existing pedestrian signal equipment at the intersection of Mill Street and Main Street; signage modifications; minor drainage modification (eight existing catch basins will be modified to include deep sumps and hoods); installing guardrail extending from the proposed bridge; relocate existing utilities connected to the existing bridge.

Refer to the Project Plans for proposed work activities and construction details.

Impact Assessment

The Project involves work within jurisdictional wetland resource areas and will result in unavoidable impacts to Waters of the U.S. associated with the Quinebaug River and McKinstry Brook in the Project Limits. The Project will result in a decrease in the amount of impervious surface on the Project Site by approximately 987 square feet (0.02 acres). The majority of the Project work will be contained on Mill Street and the bridge crossings, and work in water will be limited to removing the existing bridge pier in McKinstry Brook. Work proposed within the Quinebaug River is limited to temporary impacts due to installing construction phase sedimentation controls. The Project will not increase the Base Flood Elevation within the Quinebaug River or McKinstry Brook. The Project will temporarily alter the existing regulatory floodway during construction in order to remove the center pier of the bridge.

Table 3 provides a summary of impacts to wetland resource areas.

Table 3 - Wetland Resource Area Impacts

Permanent Impacts	Temporary Impacts	Total Alteration	Resource Area Creation	Dredge Volume
0 sf	292 sf	292 sf	238 sf	76 cy

Source: VHB, 2025
sf = square feet; lf = linear feet; cy= cubic yards

Work will be performed from upland areas to minimize impacts to wetland resource areas. Proposed work within jurisdictional wetland resource areas is described in the following sections. Compliance with applicable performance standards is discussed in greater detail in the Regulatory Compliance section of this narrative.

Impacts to McKinstry Brook

The Project will require work within WOTUS associated with McKinstry Brook to facilitate the bridge replacement. This work will temporarily impact approximately 224 sf of WOTUS. No permanent impacts are proposed.

Temporary impacts will result from the installation of temporary water control structures within the stream and work to remove and replace the existing bridge structure. Following removal of the existing pier, the riverbed will be restored using a natural channel substrate at the previous pier sites. Because removal of the pier will allow for increased flow to the east side of the stream beneath the bridge, the upland areas immediately adjacent to the stream will also be regraded in order to provide a more natural corridor for the restored waterway. The regrading will help to prevent

scouring and undercutting of the existing bank in future conditions. To restore streambed elevations where the pier is removed, there will be 76 CY of backfill to the channel. Restoration of the riverbed will be performed in accordance with MassDOT Standard Specification for Streambed Restoration (Subitem 983.521). Removing the existing bridge pier will create approximately 238 sf of new WOTUS. All temporary impacts will be restored in place.

Dredging Impacts

As described above, the Project will require mechanical dredging activities within McKinstry Brook in order to remove the existing bridge pier and support construction of the new bridge structure. Dredge volumes associated with the Project are summarized in Table 4 below.

Table 4 - McKinstry Brook Dredging Impact

Dredging Type	Dredge Volume	Dredge Material
Removal of existing concrete bridge pier	19 CY	Concrete
Removal of sediment between existing pier and water control structures	27 CY	Sediment
Excavation to install water control structures	30 CY	Sediment
Total Dredge Volume	**76 CY**	
Channel backfill	76 CY	Sediment

Source: VHB, 2025

Impacts to Land Under the Quinebaug River

The Project will require minor work within WOTUS associated with Quinebaug River to facilitate the bridge replacement. This work will consist of installing a temporary siltation curtain as a sedimentation barrier which will temporarily impact approximately 68 sf of WOTUS. No permanent impacts are proposed.

Alternatives Analysis

As discussed in the Impacts Assessment section above, the selected alternative will have unavoidable temporary impacts to WOTUS and will require dredging for the removal of the existing bridges pier in McKinstry Brook. Most alterations associated with the Project are temporary in nature and all temporary disturbances will be restored in place.

- No-build Alternative.

The No-build alternative would not address the issues surrounding the existing crossings. If no replacement of the bridge were to be advanced, the bridge would experience continued deterioration requiring various repairs until the structure fails. The No-build alternative does not meet the Project purpose and need of providing a suitable replacement to the existing bridges. Therefore, the No-build alternative was not considered viable.

- Twin Three-sided Box Culverts:

  Twin three-sided Box culvert structures were evaluated as a potential design. Given the extensive demolition and construction complexity required, as well as a significant increase in impact to Land Under Water associated with McKinstry Brook, twin box culverts have been eliminated from consideration.

- Preferred Alternative:

  The Preferred Alternative will allow for replacement of the existing deteriorating bridge with a new structure that will provide safe accommodations for pedestrian and vehicular traffic while also minimizing impacts to wetland resource areas. The new bridge will consist of a precast concrete structure with poured concrete deck on top and steel railings on drilled pile foundation set behind the existing abutments. The Preferred Alternative also fully complies with each of the applicable Massachusetts Stream Crossing Standards.

Adverse impacts have been minimized to the extent practicable through the mitigation measures discussed in the Mitigation section below. The Project will result in an increase in WOTUS at the crossing of the McKinstry Brook, representing an improvement over existing conditions.

Avoidance and Minimization

The Project has avoided and minimized impacts to resource areas to the extent practicable while achieving the Project purpose and meeting constructability and design requirements. Due to the location of the existing crossings, disturbance within wetland resource areas is unavoidable. Areas of disturbance have been minimized to the extent practicable. The Project will also remove the existing bridge pier from McKinstry Brook which will result in an increase in WOTUS over existing conditions. Disturbed areas will be restored in place and stabilized to prevent future erosion and degradation. Construction controls and best management practices will be implemented throughout the Project Site to avoid and minimize construction-period impacts to wetland resource areas. These measures are discussed in greater detail in the Mitigation Measures section below.

Mitigation Measures

The Project will implement a suite of mitigation measures to meet the performance standards for work in wetland resource areas. Proposed mitigation measures include

streambed restoration and a sediment and erosion control program, which will include structural and non-structural practices. Mitigation measures are described below.

Streambed Restoration

The Project will result in an overall increase in WOTUS within McKinstry Brook through removal of the existing pier. The streambed will be restored using a material that simulates the natural condition of the surrounding channel. Additional details on streambed restoration can be found in the attached MassDOT Special Provisions (Attachment E).

Stormwater Management

The Project will result in an overall decrease in impervious area by approximately 987 sf (0.02 acres) as a result of replacing the bridges and making modifications to the Mill Street roadway alignment. The Project will disturb less than one acre of land and is therefore not required to obtain coverage under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit.

The Project qualifies as a redevelopment project under the MassDEP Stormwater Management Standards, and therefore must only meet the following stormwater standards to the maximum extent practicable: Standard 2, Standard 3, and the pre-treatment and structural stormwater best management practice requirements of Standards 4, 5 and 6.

New deep sump catch basins are proposed as shown on the project plans. New Stormwater SCMs are not proposed due to the Project's proximity to Quinebaug River and McKinstry Brook and the several buildings that are at the back of sidewalk at the bridges. As a result of the project, post-construction conditions will not differ significantly from preconstruction conditions and therefore no calculations pertaining to stormwater have been prepared. For more information on stormwater management and compliance with relevant standards, refer to the attached Stormwater Memorandum (Attachment D).

Erosion and Sedimentation Control

An erosion and sedimentation control program will be implemented to minimize temporary impacts to wetland resource areas prior to and during the construction phase of the Project. The program Best Management Practices (BMPs) specified in

guidelines developed by MassDEP[6] and the U.S. Environmental Protection Agency (EPA)[7].

Proper implementation of the erosion and sedimentation control program will:

- Minimize exposed soil areas through sequencing and temporary stabilization;
- Place structures to manage stormwater runoff and erosion; and
- Establish a permanent vegetative cover or other forms of stabilization as soon as practicable.

The following sections describe the controls that will be used and practices that will be followed during construction. These controls and practices comply with criteria contained in the NPDES General Permit for Discharges from Large and Small Construction Activities issued by the EPA. Because the Project will not disturb more than one acre of land, it does not require a Stormwater Pollution Prevention Plan (SWPPP) under the NPDES Construction General Permit.

Non-Structural Practices

Non-structural practices that may be used during construction include temporary and permanent seeding, and streambed restoration. These practices will be initiated as soon as practicable in appropriate areas at the Project Site.

Temporary and Permanent Seeding

If conditions allow, a temporary vegetative cover will be established on areas of exposed soils during construction. Upon completion of final grading, any areas not covered by pavement, other forms of stabilization, or other methods of landscaping will be seeded with a native seed mix (per MassDOT Specification #765.635). The mix will be applied at the rate suggested by its manufacturer.

Streambed Restoration

As discussed above, areas within the McKinstry Brook where the existing bridge pier is being removed will be restored using a natural streambed material (per MassDOT Specification Subitem #983.521).

Structural Practices

Structural erosion and sedimentation controls that may be used on the Project Site include erosion control barriers, catch basin inlet protection, and water control

[6] MassDEP, 1997. *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas: A Guide for Planners, Designers, and Municipal Officials.*

[7] EPA, 2007. *Interim Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites*. Office of Water. Report EPA 833-R-060-04.

structures. It should be noted that any material associated with the Project will not be stockpiled in any wetland areas.

Erosion Control Barriers

Prior to any ground disturbance, an approved erosion control barrier will be installed at the downgradient limit of work in accordance with standard MassDOT specifications (Item 767.121: Sediment Control Barrier). As construction progresses, additional barriers will be installed around the base of stockpiles and other erosion prone areas. An adequate supply of erosion control barriers will be stored on-site to facilitate repair or replacement of erosion control barriers throughout the duration of construction.

Catch Basin Inlet Protection

The inlets of existing and proposed catch basins will be protected from sediment inflow during the work period by surrounding them with a barrier of staked straw bales or by installing other barrier methods determined by the contractor.

Water Control Structures

As discussed above, work within the McKinstry Brook will require the use of water control structure (to be determined by the contractor) to allow for removal of the existing bridge structure. Once the water controls are installed, the work area will be dewatered using a pump system that will discharge into the surrounding river. Floating silt curtains will be utilized around the proposed water control structures during installation operations.

Regulatory Compliance

The Project will require work within jurisdictional wetland resource areas. As demonstrated below, the proposed work complies with applicable evaluation criteria for discharges of dredged or fill material (314 CMR 9.06(2) and 314 CMR 9.07).

Section 401 Fill Compliance: Criteria for the Evaluation of Applications for Discharge of Dredged or Fill Material (314 CMR 9.06(2))

No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will avoid and minimize potential adverse impacts to the bordering or isolated vegetated wetlands, land under water or ocean, or the intertidal zone. However, no such project may be permitted which will have any adverse effect on specified habitat sites of Rare Species.

(a) For discharges to bordering or isolated vegetated wetlands, such steps shall include a minimum of 1:1 restoration or replication. The Department may waive the requirement for 1:1 restoration or replication for Ecological Restoration Projects and for maintenance or repair (but not replacement, reconstruction, or substantial enlargement) of existing and lawfully located dams.

The Project will require work within McKinstry Brook. Impacts are limited to Waters of the United States. No impacts to any Vegetated Wetlands are proposed as part of the Project.

(b) An applicant proposing a discharge of dredged or fill material in connection with the construction, repair, replacement or expansion of a stream crossing shall be presumed to be taking appropriate and practicable steps to avoid and minimize potential adverse impacts to the bordering or isolated vegetated wetlands, land under water or ocean or the intertidal zone provided that:

1. The applicant demonstrates to the satisfaction of the Department that he or she has developed and will implement an operation and maintenance plan to ensure that the crossing will function as designed;

The proposed design of the replacement bridges has been developed based on a hydraulic and hydrologic study of both McKinstry Brook and Quinebaug River conducted by VHB. The design will allow for improved safety conditions while also maintaining the channels of the existing waterways in the Project Limits.

In-place restoration measures are proposed following construction to maintain or improve upon existing conditions within McKinstry Brook. MassDOT will adhere to typical operations and maintenance practices to ensure that impacts are minimized and there will not be any adverse effects on flow within McKinstry Brook or the Quinebaug River.

2. If the project includes the construction of a new non-tidal crossing, the applicant demonstrates to the satisfaction of the Department that the crossing complies with the Massachusetts Stream Crossing Standards;

The Project is a replacement of two existing bridge crossings of McKinstry Brook and the Quinebaug River. No new crossings are proposed.

3. If the project includes the construction of a new tidal crossing, the applicant demonstrates to the satisfaction of the Department that the project is designed in a manner that does not restrict tidal flow over the full natural tidal range;

The Project is a replacement of two existing crossings over inland waterways. No new or replacement tidal crossings are proposed.

4. If the project includes work on an existing non-tidal crossing, the applicant demonstrates to the satisfaction of the Department that the crossing complies with the Massachusetts Stream Crossing Standards to the maximum extent practicable; and

The Project provides an overall benefit to McKinstry Brook by increasing WOTUS within the Project Limits. The proposed bridge replacement complies with the Massachusetts Stream Crossing Standards as described below:

Stream Crossing Standards

1. *Spans (bridges, 3-sided box culverts, open-bottom culverts or arches) that preserve the natural stream channel are strongly preferred*

   The replacement structure crossings will bridge the channels and will preserve the natural stream channels as well as increase the amount of Land Under Water by removing the existing pier. The Project will meet this standard.

2. *Embedment:*

   a. *a minimum of 2 feet for all culverts,*
   b. *at least 25 percent for round pipe culverts*
   c. *When embedment material includes elements > 15 inches in diameter, embedment depths should be at least twice the D84 (particle width larger than 84 % of particles) of the embedment material*

   A culvert will not be used; the replacement bridge structures will span the channels of McKinstry Brook and the Quinebaug River, therefore this standard is not applicable.

3. *Spans channel width (a minimum of 1.2 times the bankfull width)*

   The bankfull width at the McKinstry Brook crossing is approximately 35 feet. The bridge crossing will span the river and will be approximately 47 feet at the crossing, which is well in excess of 1.2 times the channel width. The proposed structure at the Quinebaug River will match the existing span of 82.5 feet which is approximately 1.6 times the upstream bankfull width (51 feet) and continues to exceed the 1.2 times bankfull width requirement. Therefore, the Project exceeds this standard.

4. *Openness Ratio*

   The proposed crossings will fully span both McKinstry Brook and the Quinebaug River, and both will provide an openness ratio in excess of the required 0.82 feet (0.25 meters). Therefore, the Project exceeds this standard.

5. *Substrate*

   The existing natural bed material will be preserved within the channel under the bridge crossing. Areas at the location of the removed bridge pier in

McKinstry Brook will be restored with a natural streambed material that will mimic the substrate of the surrounding channel. Therefore, the Project meets this standard.

6. *Water depths and velocities are comparable to those found in the natural channel at a variety of flows*

No change to the water depths or velocities is anticipated. Each crossing will fully span the Quinebaug River and McKinstry Brook, respectively. Therefore, the Project meets this standard.

5. If the project includes work on an existing tidal crossing that restricts tidal flow, the applicant demonstrates to the satisfaction of the Department that tidal restriction will be eliminated to the maximum extent practicable.

This presumption may be overcome by credible evidence from a competent source showing that based on site considerations, impact on the resource, or cost considerations, compliance with all applicable provisions of 314 CMR 9.06(2)(b)1. through 5. is not practicable.

The Project does not require work on a crossing that restricts tidal flow.

Summary

MassDOT is submitting this Water Quality Application pursuant to the Massachusetts Regulations for 401 Water Quality Certification (314 CMR 9.00). This Project constitutes a Minor Fill/Excavation Project (BRP-WW-11).

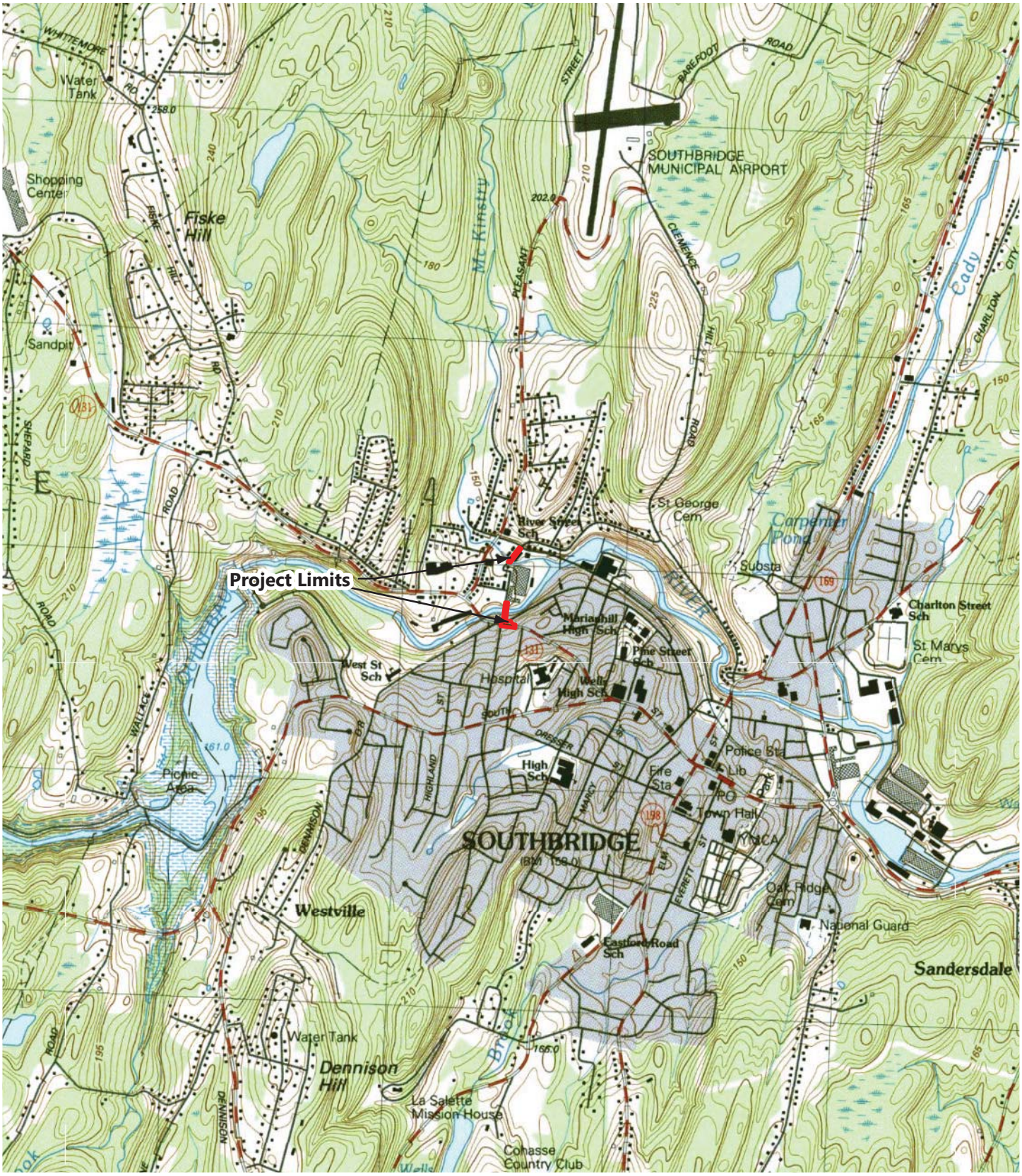
The Applicant is proposing to replace two existing bridges on Mill Street over McKinstry Brook (Bridge #S-21-009) and over the Quinebaug River (Bridge #S-21-003) in Southbridge, Massachusetts.

The proposed Project requires impacts to Waters of the U.S. Temporarily impacted WOTUS will be restored using a natural streambed material. The Project will result in an increase in WOTUS at the Mill Street crossing of McKinstry Brook by approximately 238 square feet.

The Applicant respectfully requests that DEP find these measures adequately protective of the interests identified in the 401 Water Quality Regulations and issue a Water Quality Certificate approving the work shown on the accompanying plan set.

Application Figures

- Figure 1 – USGS Locus
- Figure 2 – Aerial Map
- Figure 3 – NHESP Map
- Figure 4 – FEMA Map
- Figure 5 – Environmental Constraints Map



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

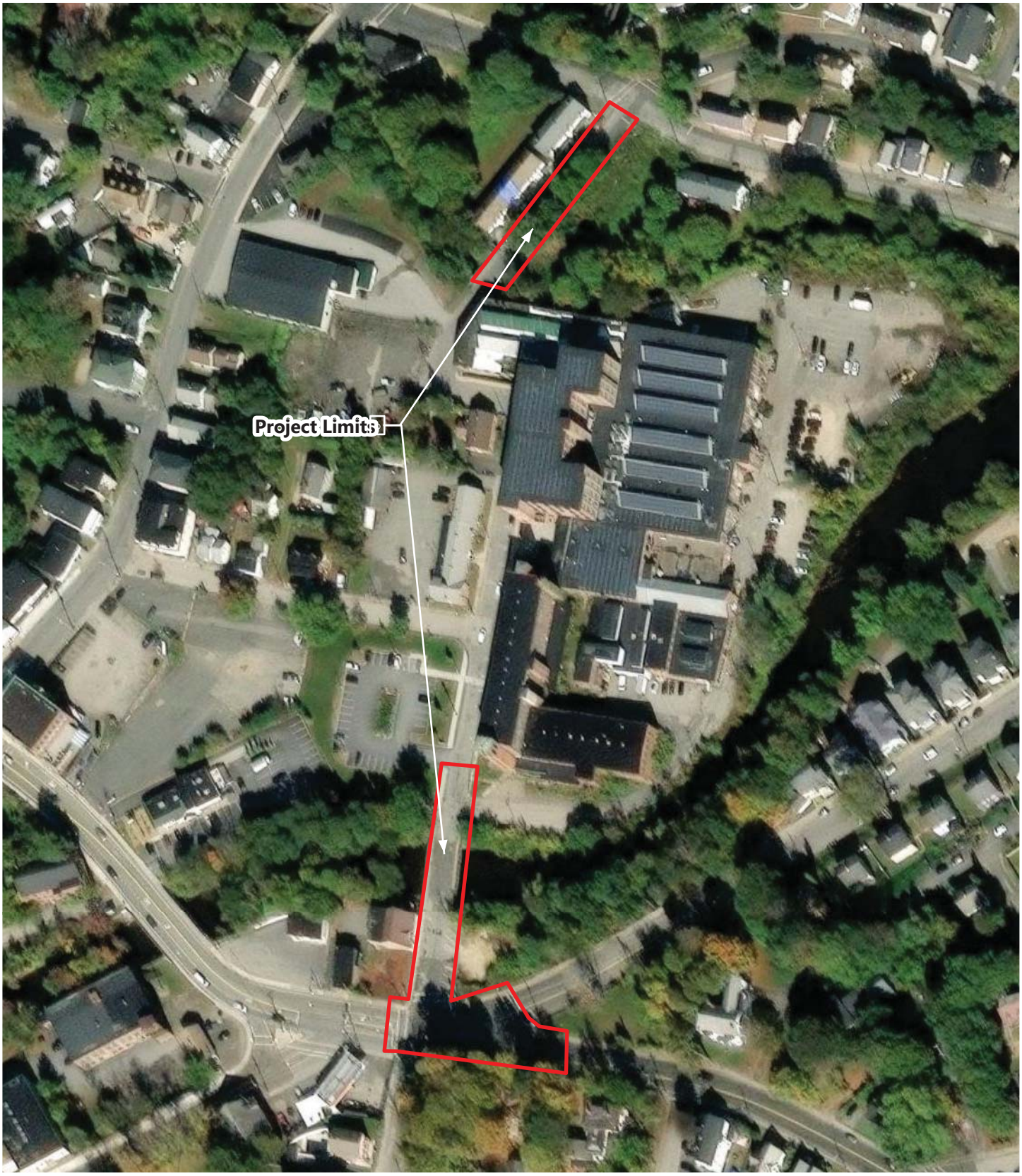
0 1000 2000 4000 Feet

Project Limits

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 1: USGS Locus
January 2025

Source: MassGIS



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

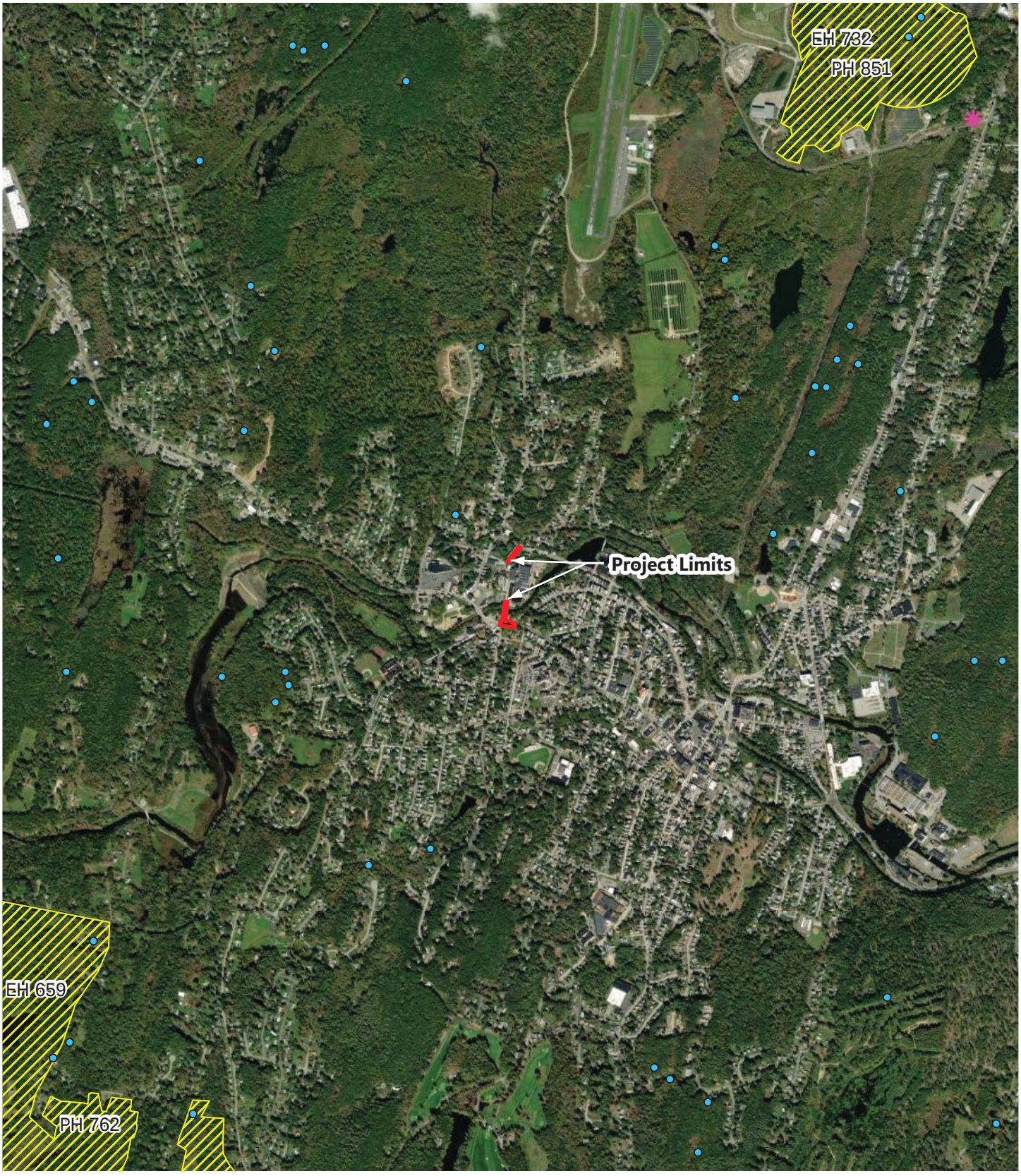
0 125 250 500 Feet

Project Limits

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 2: Aerial Locus
January 2025

Source: MassGIS



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

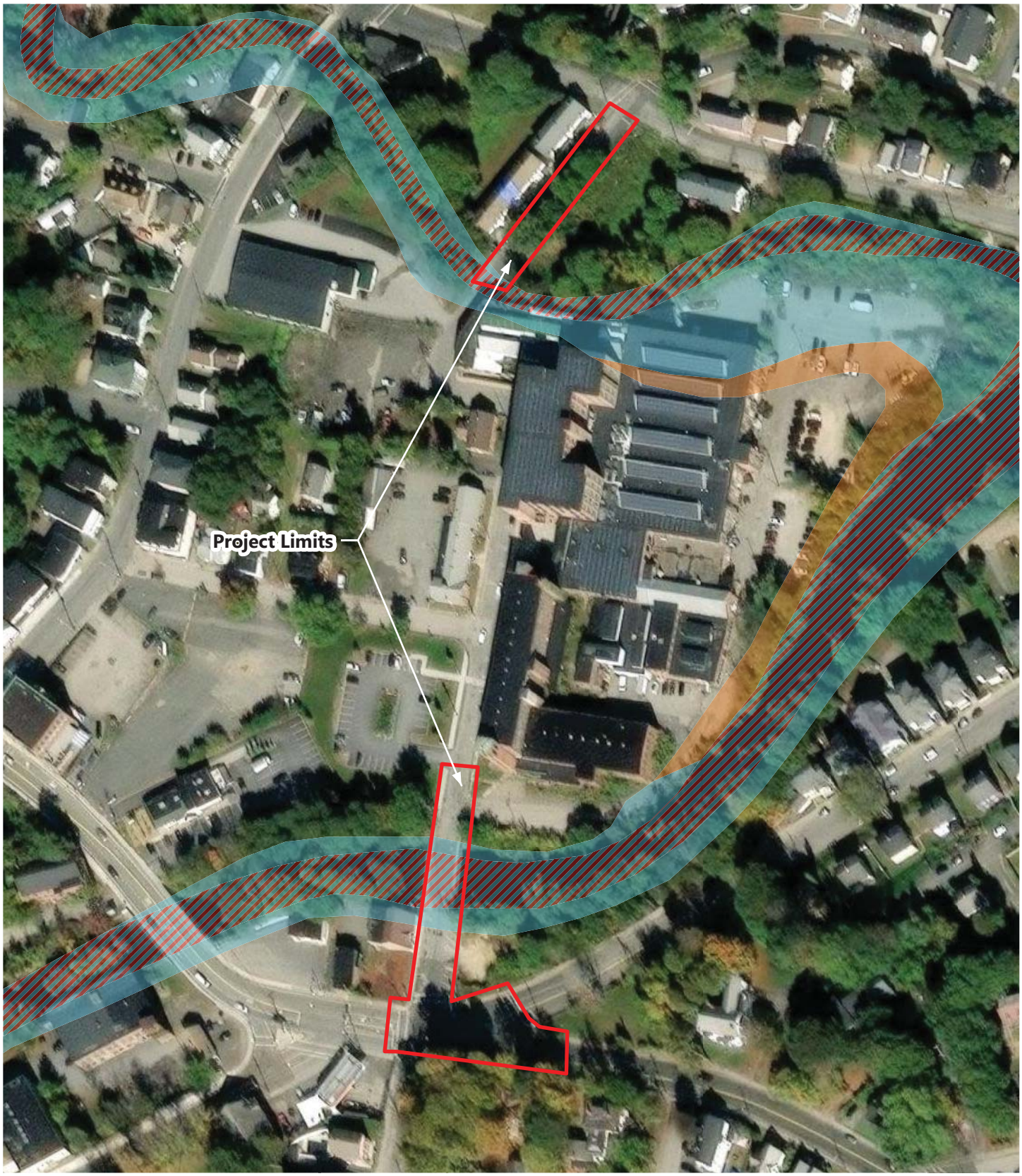
0 1500 3000 6000 Feet

Project Limits
Certified Vernal Pool
Potential Vernal Pool
Priority Habitat of Rare Species
Estimated Habitat of Rare Wildlife

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 3: NHESP Map
January 2025

Source: MassGIS



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

0 125 250 500 Feet

Project Limits

FEMA Flood Zone Designations

AE: 1% Annual Chance of Flooding, with BFE

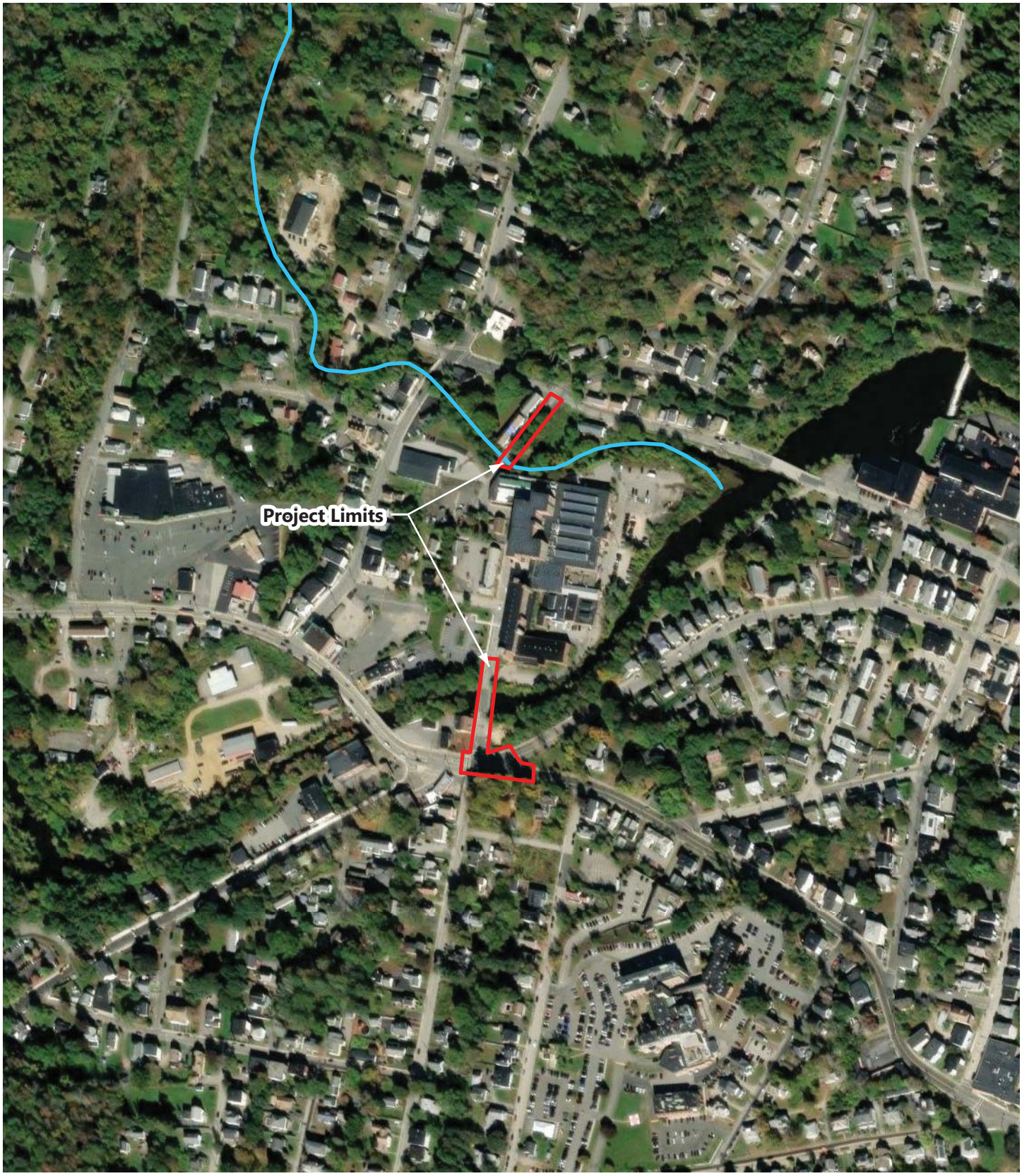
AE: Regulatory Floodway

X: 0.2% Annual Chance of Flooding

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 4: FEMA FIRM
January 2025

Source: MassGIS



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

0 250 500 1000 Feet

Project Limits
DFW Coldwater Fisheries
Areas of Critical Evnironmental Concern (ACEC) - None Present
Outstanding Resource Waters - None Present

MassDOT Project # 608862
Southbridge - Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 5: Critical Resources Map
January 2025

Source: MassGIS

Attachment B
Site Photographs

massDOT Highway Division	**MassDOT Project No:** 608862	**EEC Checklist Photographic Log**

Project Title: Southbridge- Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

Photo No. 1

Date: 1/19/2022

Description:

View looking north of the existing Bridge #S-21-003 on Mill Street over the Quinebaug River.

Proposed Improvements:

The existing bridge structure will be replaced with a new bridge providing a single fifteen-foot (15') travel lane with four-foot (4') shoulders. The bridge will also include five-foot sidewalks on both sides.



massDOT Highway Division	**MassDOT Project No:** 608862	**EEC Checklist Photographic Log**

Project Title: Southbridge- Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

Photo No. 2

Date: 1/19/2022

Description:

View facing west of the Quinebaug River near the Project Limits.

Permitting Note:

Self-Verification Notification Form (SVNF) with the US Army Corps of Engineers (USACE) pursuant to Section 404 of the CWA and an Individual Water Quality Certification (WQC) with the Massachusetts Department of Environmental Protection (MassDEP) pursuant to Section 401 of the CWA.



massDOT Highway Division	**MassDOT Project No:** 608862	**EEC Checklist Photographic Log**

Project Title: Southbridge- Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

Photo No. 3

Date: 12/15/2020

Description:

View facing northeast of the existing bridge over McKinstry Brook within the Project Limits.

Proposed Improvements:

The existing bridge structure will be replaced with a new bridge providing ten-foot (10') travel lanes along each side with four-foot (4') shoulders. The bridge will also include five-foot sidewalks on both sides.



massDOT Highway Division	**MassDOT Project No:** 608862	**EEC Checklist Photographic Log**

Project Title: Southbridge- Bridge Replacement, S-21-009, Mill Street Over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River

Photo No. 4

Date: 12/15/2020

Description:

View of existing catch basin structure on Bridge # S-21-009.

Proposed Improvements:

Existing catch basins on the McKinstry Brook crossing will be removed and replaced with three new hooded deep sump catch basins. No changes to stormwater management on Bridge #S-21-003 are proposed.



Attachment C
Wetland Determination Forms

BORDERING VEGETATED WETLAND DETERMINATION FORM

Project/Site: Mill Street Bridge City/Town: Southbridge Sampling Date: 05.13.25

Applicant/Owner: Roadway Sampling Point or Zone: Wetland

Investigator(s): Dorothy Lawrence Latitude / Longitude: 42.080986, -72.044366

Soil Map Unit Name: Hinckley-Urban land complex, 0 to 15 percent slopes NWI or DEP Classification: Riverine

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

Are Vegetation [✓], Soil [✓], or Hydrology [✓] significantly disturbed? (If yes, explain in Remarks)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If yes, explain in Remarks)

SUMMARY OF FINDINGS – Attach site map and photograph log showing sampling locations, transects, etc.

Wetland vegetation criterion met?	Yes [✓] No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soils criterion met?	Yes [ ] No [ ]	
Wetlands hydrology present?	Yes [✓] No [ ]	

Remarks, Photo Details, Flagging, etc.:

Area is heavily disturbed. There is a small patch of wetland and upland (~15 feet width total) located directly behind a parking lot/building. There is a culvert with consistent outflow located southwest of wetland/river. Directly east of the culvert there are signs of significant erosion/weathering likely from runoff from parking lot and adjacent roadway. The combination of culvert and runoff has created a pool area that narrows to a small stream that flows into the Quinebaug River. Sediment/soils and natural riverine hydrology/process appear to be altered as result of the elements described above and overall anthropogenic disturbance.

HYDROLOGY

Field Observations:			
Surface Water Present?	Yes [✓]	No [ ]	Depth (inches) 3.00
Water Table Present?	Yes [✓]	No [ ]	Depth (inches) 10.00
Saturation Present (including capillary fringe)?	Yes [✓]	No [ ]	Depth (inches) 3.00

Wetland Hydrology Indicators

Reliable Indicators of Wetlands Hydrology	Indicators that can be Reliable with Proper Interpretation	Indicators of the Influence of Water
[ ] Water-stained leaves	[ ] Hydrological records	[ ] Direct observation of inundation
[ ] Evidence of aquatic fauna	[✓] Free water in a soil test hole	[ ] Drainage patterns
[ ] Iron deposits	[✓] Saturated soil	[ ] Drift lines
[ ] Algal mats or crusts	[ ] Water marks	[ ] Scoured areas
[ ] Oxidized rhizospheres/pore linings	[ ] Moss trim lines	[ ] Sediment deposits
[ ] Thin muck surfaces	[ ] Presence of reduced iron	[ ] Surface soil cracks
[ ] Plants with air-filled tissue (aerenchyma)	[ ] Woody plants with adventitious roots	[ ] Sparsely vegetated concave surface
[ ] Plants with polymorphic leaves	[✓] Trees with shallow root systems	[ ] Microtopographic relief
[ ] Plants with floating leaves	[ ] Woody plants with enlarged lenticels	[✓] Geographic position (depression, toe of slope, fringing lowland
[ ] Hydrogen sulfide odor		

Remarks (describe recorded data from stream gauge, monitoring well, aerial photos, previous inspections, if available):

This form is only for BVW delineations. Other wetland resource areas may be present and should be delineated according to the applicable regulatory provisions.

Sampling Point Wetland

VEGETATION – Use both common and scientific names of plants.

Tree Stratum Plot size _____

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. black ash		FACW	1.0		Yes
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

1.0 = Total Cover

Shrub/Sapling Stratum Plot size _____

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. silky dogwood	Swida amomum	FACW	10.0	Yes	Yes
2. Black Ash	Fraxinus nigra	FACW	1.0	No	Yes
3.					
4.					
5.					
6.					
7.					
8.					
9.					

11.0 = Total Cover

Herb Stratum Plot size _____

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. sensitive fern	Onoclea sensibilis	FACW	7.0	Yes	Yes
2. Wild Mint	Mentha canadensis	FACW	2.0	No	Yes
3. tussock sedge	Carex stricta	OBL	2.0	No	Yes
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

11.0 = Total Cover

Sampling Point Wetland

VEGETATION – continued.

Woody Vine Stratum Plot size _____

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1.					
2.					
3.					
4.					
			0.0 = Total Cover		

Rapid Test: Do all dominant species have an indicator status of OBL or FACW? Yes ☑ No ☐

Dominance Test:	Number of dominant species	Number of dominant species that are wetland indicator plants	Do wetland indicator plants make up ≥ 50% of dominant plant species?
	2	2	Yes ☑ No ☐

Prevalence Index:		Total % Cover (all strata)	Multiply by:	Result
	OBL species	2	X 1	= 2.00
	FACW species	21	X 2	= 42.00
	FAC species	0	X 3	= 0.00
	FACU species	0	X 4	= 0.00
	UPL species	0	X 5	= 0.00
	Column Totals	(A) 23		(B) 44
	Prevalence Index	B/A = 1.91		Is the Prevalence Index ≤ 3.0? Yes ☑ No ☐

Wetland vegetation criterion met? Yes ☑ No ☐

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.62 cm) or more in diameter at breast height (DBH), regardless of height

Shrub / Sapling - Woody plants less than 3 in. (7.62 cm) DBH and greater than or equal to 3.3 ft. (1 m) tall

Herb - All herbaceous (non-woody plants, regardless of size, and woody plants less than 3.3 ft. (1 m) tall

Woody vines - All woody vines greater than 3.3 ft. (1 m) in height

Cover Ranges	
Range	Midpoint
1-5 %	3.0 %
6-15 %	10.5 %
15-25 %	20.5 %
26-50 %	38.0 %
51-75 %	63.0 %
76-95 %	85.5 %
96-100 %	98.0 %

Sampling Point Wetland

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Location[2]		
0-12	10YR 4/3	100.00					Sand	Fluvial/runoff depo
12-18	10YR 3/3	99.00	2.5YR 4/8	1.00	D	M	loamy sand	Fluvial/runoff depo
18-24	10YR 2/2	98.00	2.5YR 4/8	3.00	D	M	loamy sand	Fluvial/runoff depo
refuse								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators (Check all that apply)		**Indicators for Problematic Hydric Soils**
☐ Histosol (A1)	☐ Polyvalue Below Surface (S8)	☐ 2 cm Muck (A10)
☐ Histic Epipedon (A2)	☐ Thin Dark Surface (S9)	☐ 5 cm Mucky Peat or Peat (S3)
☐ Black Histic (A3)	☐ Loamy Gleyed Matrix (F2)	☐ Iron-Manganese Masses (F12)
☐ Hydrogen Sulfide (A4)	☐ Depleted Matrix (F3)	☐ Mesic Spodic (A17)
☐ Stratified Layers (A5)	☐ Redox Dark Surface (F6)	☐ Red Parent Material (F21)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)	☐ Very Shallow Dark Surface (F22)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)	
☐ Sandy Mucky Mineral (S1)		
☐ Sandy Gleyed Matrix (S4)		
☐ Sandy Redox (S5)		☐ Other (Include Explanation in Remarks)
☐ Stripped Matrix (S6)		
☐ Dark Surface (S7)		

Restrictive Layer (if observed) Type: refuse/bedrock/anthropogenic Depth (inches): 24.00

Remarks: Fluvial and likely runoff deposits mostly comprised of coarse well sorted sand, with areas of poorly sorted moving toward upland boundary. Soils structure is appears altered likely due to runoff.

Hydric Soils criterion met? **Yes** ☐ **No** ☐

BORDERING VEGETATED WETLAND DETERMINATION FORM

Project/Site: Mill Street Bridge City/Town: Southbridge Sampling Date: 05.13.25

Applicant/Owner: Roadway Sampling Point or Zone: Upland

Investigator(s): Dorothy Lawrence Latitude / Longitude: 42.080986, -72.044366

Soil Map Unit Name: Hinckley-Urban land complex, 0 to 15 percent slopes NWI or DEP Classification: N/A

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

Are Vegetation ☑, Soil ☑ , or Hydrology ☑ significantly disturbed? (If yes, explain in Remarks)

Are Vegetation ☐, Soil ☐ , or Hydrology ☐ naturally problematic? (If yes, explain in Remarks)

SUMMARY OF FINDINGS – Attach site map and photograph log showing sampling locations, transects, etc.

Wetland vegetation criterion met?	Yes ☐	No ☑	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soils criterion met?	Yes ☐	No ☑	
Wetlands hydrology present?	Yes ☐	No ☑	

Remarks, Photo Details, Flagging, etc.:

Small upland patch between to fringe wetland and building/parking lot - All fill material

HYDROLOGY

Field Observations:			
Surface Water Present?	Yes ☐	No ☑	Depth (inches)_____
Water Table Present?	Yes ☐	No ☑	Depth (inches)_____
Saturation Present (including capillary fringe)?	Yes ☐	No ☑	Depth (inches)_____

Wetland Hydrology Indicators

Reliable Indicators of Wetlands Hydrology	Indicators that can be Reliable with Proper Interpretation	Indicators of the Influence of Water
☐ Water-stained leaves	☐ Hydrological records	☐ Direct observation of inundation
☐ Evidence of aquatic fauna	☐ Free water in a soil test hole	☐ Drainage patterns
☐ Iron deposits	☐ Saturated soil	☐ Drift lines
☐ Algal mats or crusts	☐ Water marks	☐ Scoured areas
☐ Oxidized rhizospheres/pore linings	☐ Moss trim lines	☐ Sediment deposits
☐ Thin muck surfaces	☐ Presence of reduced iron	☐ Surface soil cracks
☐ Plants with air-filled tissue (aerenchyma)	☐ Woody plants with adventitious roots	☐ Sparsely vegetated concave surface
☐ Plants with polymorphic leaves	☐ Trees with shallow root systems	☐ Microtopographic relief
☐ Plants with floating leaves	☐ Woody plants with enlarged lenticels	☐ Geographic position (depression, toe of slope, fringing lowland
☐ Hydrogen sulfide odor		

Remarks (describe recorded data from stream gauge, monitoring well, aerial photos, previous inspections, if available):

This form is only for BVW delineations. Other wetland resource areas may be present and should be delineated according to the applicable regulatory provisions.

Sampling Point Upland

VEGETATION – Use both common and scientific names of plants.

Tree Stratum Plot size _____

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. Norway Maple	Acer platanoides	UPL	50.0		No
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

50.0 = Total Cover

Shrub/Sapling Stratum Plot size _____

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. Morrow's honeysuckle	Lonicera morrowii	FACU	5.0		No
2. rambler rose	Rosa multiflora	FACU	10.0		No
3.					
4.					
5.					
6.					
7.					
8.					
9.					

15.0 = Total Cover

Herb Stratum Plot size _____

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

0.0 = Total Cover

Sampling Point Upland

VEGETATION – continued.

Woody Vine Stratum Plot size _____

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. Asian bittersweet	Celastrus orbiculatus	UPL	20.0		No
2.	Rubus Sp.	FACU	1.0		No
3.					
4.					
		21.0 = Total Cover			

Rapid Test: Do all dominant species have an indicator status of OBL or FACW? Yes ☐ No ☐

Dominance Test:	Number of dominant species	Number of dominant species that are wetland indicator plants	Do wetland indicator plants make up ≥ 50% of dominant plant species?
			Yes ☐ No ☑

Prevalence Index:		Total % Cover (all strata)	Multiply by:	Result
	OBL species		X 1	= 0.00
	FACW species		X 2	= 0.00
	FAC species		X 3	= 0.00
	FACU species		X 4	= 0.00
	UPL species		X 5	= 0.00
	Column Totals	(A) 0		(B) 0
Prevalence Index		B/A = 0.00		Is the Prevalence Index ≤ 3.0? Yes ☐ No ☐

Wetland vegetation criterion met? Yes ☐ No ☑

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.62 cm) or more in diameter at breast height (DBH), regardless of height

Shrub / Sapling - Woody plants less than 3 in. (7.62 cm) DBH and greater than or equal to 3.3 ft. (1 m) tall

Herb - All herbaceous (non-woody plants, regardless of size, and woody plants less than 3.3 ft. (1 m) tall

Woody vines - All woody vines greater than 3.3 ft. (1 m) in height

Cover Ranges	
Range	Midpoint
1-5 %	3.0 %
6-15 %	10.5 %
15-25 %	20.5 %
26-50 %	38.0 %
51-75 %	63.0 %
76-95 %	85.5 %
96-100 %	98.0 %

Sampling Point Upland

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Location[2]		
Fill								poorly sorted unconsolidated material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators (Check all that apply)		**Indicators for Problematic Hydric Soils**
☐ Histosol (A1)	☐ Polyvalue Below Surface (S8)	☐ 2 cm Muck (A10)
☐ Histic Epipedon (A2)	☐ Thin Dark Surface (S9)	☐ 5 cm Mucky Peat or Peat (S3)
☐ Black Histic (A3)	☐ Loamy Gleyed Matrix (F2)	☐ Iron-Manganese Masses (F12)
☐ Hydrogen Sulfide (A4)	☐ Depleted Matrix (F3)	☐ Mesic Spodic (A17)
☐ Stratified Layers (A5)	☐ Redox Dark Surface (F6)	☐ Red Parent Material (F21)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)	☐ Very Shallow Dark Surface (F22)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)	
☐ Sandy Mucky Mineral (S1)		
☐ Sandy Gleyed Matrix (S4)		
☐ Sandy Redox (S5)		☐ Other (Include Explanation in Remarks)
☐ Stripped Matrix (S6)		
☐ Dark Surface (S7)		

Restrictive Layer (if observed) Type: _____ Depth (inches): _____

Remarks: Heavily disturbed area.

Hydric Soils criterion met? **Yes** ☐ **No** ☑

Attachment D
Stormwater Memorandum

Memorandum

To: MassDOT

Date: March 25, 2025

From: Vanasse Hangen Brustlin, Inc.

Re: 608862 - Mill Street Bridge Replacement
Bridge S-21-003 and S-21-009

This Stormwater Management Memorandum has been prepared to show compliance with the Massachusetts Stormwater Management Standards in accordance with the Massachusetts Water Quality Certification Regulations (314 CMR 9.00) to support the Project's Section 401 Water Quality Certificate Application.

Project Description

The Applicant, MassDOT, is proposing Project No. 608862 to construct bridge replacements (The Project) located in Southbridge, MA. As proposed, the Project will replace two existing bridges on Mill Street - Bridge #S-21-009 over McKinstry Brook and Bridge #S-21-003 over the Quinebaug River.

The bridges provide a connection from Main Street to businesses and local neighborhoods within Southbridge. They bridges are currently experiencing major structural deterioration to the extent that Bridge S-21-003 has been closed to traffic.

Existing and Proposed Drainage Conditions

Bridge #S-21-003 is located on Mill Street approximately 115-feet north of the intersection of Main Street, Hamilton Way, Mill Street and High Street. Bridge #S-21-009 is located on Mill Street approximately 225-feet south of the intersection with River Street. See **Figure 1** Locus Map.

Mill Street is a local road that falls under the Town of Southbridge's jurisdiction. The adjacent land use is a mix of both residential and industrial use. The land cover is mostly impervious with minor wooded areas adjacent.

The Quinebaug River originates at the Hamilton Reservoir in Holland MA, travels under Bridge #S-21-003, and continues to the east. McKinstry Brook travels under Bridge #S-21-009 and is a tributary of the Quinebaug River. They connect approximately 700' beyond Bridge #S-21-009. Both water bodies fall within the Thames River watershed.

Under existing conditions, stormwater runoff is collected in eight existing catch basins on either side of the bridges and outlets through the bridge abutments or wingwalls.

The Project construction will not significantly change any drainage patterns or flow of stormwater off the project site. Stormwater runoff will continue to be collected on each side of the bridges within the project limits. The existing structures will be replaced with deep sump catch basins and hoods. The proposed roadway on the approach to bridge #S-21-003 is being narrowed, resulting in a decrease in impervious area.

New Stormwater SCMs are not proposed due to the Project's proximity to Quinebaug River and McKinstry Brook and the several buildings that are at the back of sidewalk at the bridges. There is no grass areas within the ROW to construct drainage swales or stormwater treatment areas and the riverbanks are either retaining walls or vegetated steep slopes. The existing drainage outlets are through the abutments or adjacent concrete retaining walls. Infiltration was not considered due to the proximity of the drainage structures to building locations, the bridge abutments and

retaining walls. As a result of the Project, post-construction conditions will not differ significantly from preconstruction conditions and therefore no calculations pertaining to stormwater have been prepared.

Under the Stormwater Management Standards, the Project is considered a redevelopment project because it involves maintenance and improvement of an existing roadway, including widening less than a single lane, and correcting substandard intersections and drainage. No changes or impacts to the bridge's watershed are being made.

Massachusetts Department of Environmental Protection (MassDEP) - Stormwater Management Standards

As demonstrated below, the proposed project complies with the MassDEP Stormwater Management Standards (the Standards). Under the Stormwater Management Standards, the Project is considered a redevelopment project because it involves maintenance and improvement of an existing roadway. The proposed changes to the bridges include a reduction in impervious area and resolve the existing structural deterioration. The Project has been designed to meet the Stormwater Management Standards to the maximum extent practicable and to improve upon existing conditions.

Standard 1: No New Untreated Discharges

No new stormwater conveyance (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

The Project has been designed to comply with Standard 1. No new stormwater outfalls are proposed for the Project. Existing outfalls are located through the bridge abutments or adjacent retaining walls.

Standard 2: Peak Rate Attenuation

Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage are defined in 310 CMR 10.04.

The Project has been designed to comply with Standard 2 to the maximum extent practicable. A decrease of 987 sf (0.022 acres) in impervious area is proposed as part of the Project due to narrowing the roadway at the approach to bridge #S-21-003. The post construction peak runoff rates are anticipated to be slightly decreased from existing conditions due to the decrease in impervious area.

Standard 3: Stormwater Recharge

Loss of annual recharge to groundwater shall be eliminated or minimized through the use of environmentally sensitive site design, low impact development techniques, stormwater management practices and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil types. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

The Project has been designed to comply with Standard 3 to the maximum extent practicable. The purpose of this standard is to replenish groundwater baseflows by ensuring that the infiltration volume of precipitation into

the ground under post-development conditions is at least as much as infiltration volume under pre-development conditions. The decrease of 987 sf (0.022 acres) in impervious area is proposed as part of the Project due to narrowing the roadway at the approach to bridge #S-21-003; therefore, the required recharge volume is zero. As a result, loss of annual recharge to groundwater is eliminated with the bridge replacement design and the annual recharge from the post-development site approximates the annual recharge from pre-development conditions.

The limited right-of-way, building locations and surrounding resource areas limit the potential for infiltration facilities within the project limits.

Standard 4: Water Quality

Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

a) *Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;*
b) *Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*
c) *Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

The Project has been designed to comply with Standard 4 to the maximum extent practicable. The existing eight catch basins will be replaced with deep sump catch basins with hoods. The proposed project will decrease runoff from the roadway surface due to the reduction of pavement and the existing stormwater treatment being improved. The limited right-of-way, building locations, subsurface conditions and surrounding resource areas limit the potential to provide new stormwater treatment best management practices. The deep sump catch basins with hoods will provide pretreatment of 25% TSS removal.

A Long-Term Pollution Prevention Plan (LTPPP) has been developed for this project in compliance with Standard 4, and is attached.

Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

For Land Uses with Higher Potential Pollutant Loads (LUHPPLs), source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all LUHPPLs cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from LUHPPLs shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

Standard 5 does not apply to the Project. There are no Land Uses with Higher Potential Pollutant Loads within the project area.

Standard 6: Critical Areas

Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "stormwater discharge" as defined in 314 CMR 3.04(2)(a)1 or (b), to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

No portion of the project limits is within an Outstanding Resource Water (ORW) Area, Area of Critical Environmental Concern (ACEC), or a Zone II Wellhead Protection Area. McKinstry Brook is classified as a coldwater fishery. **Figure 2** shows the coldwater fisheries map from MassMapper. The deep sump catch basins with hoods have been proposed for all structures within the project limits to provide pretreatment of 25% TSS removal. The limited right-of-way, building locations, retaining walls, subsurface conditions and surrounding resource areas limit the potential for stormwater treatment and infiltration facilities within the project limits. The Project has been designed to comply with Standard 6 to the maximum extent practicable.

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the Maximum Extent Practicable

A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

The Project is considered a redevelopment and has been designed to comply with Stormwater Management Standards to the maximum extent practicable.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Controls

A plan to control construction-related impacts, including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

The implementation of erosion and sediment (E&S) controls during construction is considered a standard practice for all MassDOT projects. E&S controls will be installed before any land disturbance begins for the Project and will remain in place for the duration of the Project. The E&S controls for the Project are shown on the project plans and include sediment control barriers between the project areas and rivers, as well as floating silt fence on the downstream side of the bridges to protect the river from sediment generated by slope and in-water work.

The Project will disturb less than 1 acre of land and is therefore not required to obtain coverage under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit.

Standard 9: Operation and Maintenance Plan

A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

The bridges included in this Project (Bridge #S-21-009 and Bridge #S-21-003) are not owned by MassDOT. The Town of Southbridge will be responsible for the operation and maintenance of all stormwater management systems within the project area. Refer to the attached O&M Plan. Questions or concerns regarding activities associated with this O&M Plan should be addressed to the Town of Southbridge Department of Public Works, 185 Guelphwood Rd, Southbridge, MA 01550 - (508) 764-5403.

Long-term pollution prevention for the Project includes litter pick-up, inspection and maintenance of stormwater assets, maintenance of landscaped areas, snow and ice management, prohibition of illicit discharges, and spill prevention and response.

Standard 10: Prohibition of Illicit Discharges

All illicit discharges to the stormwater management system are prohibited.

Illicit Discharge Statement

This project's stormwater management system, as shown on the plans submitted with this report, have been designed in full compliance with Standard 10. The project area does not have any known illicit connections. Any illicit connections to the stormwater management system found in the project limit of work during construction will be removed and/or resolved through MassDOT's Illicit Discharge Detention and Elimination (IDDE) Program.

Attachments

- Appendix A – Stormwater Checklist
- Appendix B – O&M Plan and Long-Term Pollution Prevention Plan (LTPPP)
- Figure 1 – Locus Plan
- Figure 2 – Coldwater Fisheries

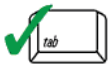
Appendix A – Stormwater Checklist

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.





A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

---

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



3/25/2025

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☐ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☒ Reduced Impervious Area (Redevelopment Only)
- ☒ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☐ Use of “country drainage” versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☐ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

Checklist (continued)

The post construction peak runoff rates will be slightly decreased from existing conditions due to the decrease in impervious area.

Standard 2: Peak Rate Attenuation

- ☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- ☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- ☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- ☐ Soil Analysis provided.
- ☐ Required Recharge Volume calculation provided.
- ☐ Required Recharge volume reduced through use of the LID site Design Credits.
- ☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.
  - ☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]
- ☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.
- ☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
  - ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
  - ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
  - ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
  - ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- ☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- ☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☐ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs) N/A

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☒ Critical areas and BMPs are identified in the Stormwater Report.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☐ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☒ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

Appendix B – O&M Plan and Long-Term Pollution Prevention Plan (LTPPP)

Mill Street
Southbridge, Massachusetts
Stormwater Management System

Operation and Maintenance Plan (O&M)
and
Long-Term Pollution Prevention Plan (LTPPP)

March 3, 2025

This Stormwater Management System Operation and Maintenance (O&M) Plan provides for the inspection and maintenance of structural Best Management Practices (BMPs) and for measures to prevent pollution associated with the stormwater management system proposed for the George Hill Road project in the Town of Southbridge.

This document has been prepared in accordance with the requirements of the Stormwater Regulations included in the Massachusetts Wetlands Protection Act Regulations (310 CMR 10).

Responsible Party

The Town of Southbridge Department of Public Works (DPW) will be responsible for the maintenance of the roadway facilities and associated stormwater management features, in accordance with Town standards.

Questions or concerns regarding maintenance activities may also be addressed to Town of Southbridge DPW:

Department of Public Works
185 Guelphwood Road
Southbridge, MA 01550
Phone: (508) 764-5403 ext. 3

Maintenance Measures

The stormwater management system covered by this Operation and Maintenance Plan consists of the following components:

- Deep-Sump, Hooded Catch Basins

Maintenance of these components will be conducted in accordance with Town of Southbridge DPW standard maintenance practices, as noted in the attached Operation and Maintenance table summarizing the pertinent inspection and maintenance activities.

If inspection indicates the need for major repairs of structural surfaces, the inspector should contact the Town of Southbridge DPW to initiate procedures to effect repairs in accordance with Town of Southbridge DPW standard construction practices.

Practices for Long-Term Pollution Prevention

For the facilities covered by this Operation and Maintenance Plan, long-term pollution prevention includes the following measures:

Litter Pick-up
The Town of Southbridge DPW will conduct litter pick-up from the stormwater management facilities in conjunction with routine road maintenance activities.

Catch Basin Inspection and Cleaning
The Town of Southbridge DPW will conduct inspection and cleaning of catch basins in accordance with the information in Table 1.

Maintenance of Landscaped Areas
Routine mowing should be conducted according to standard Town of Southbridge DPW practices. Town of Southbridge DPW shall minimize use of fertilizers, herbicides, and pesticides for the maintenance of facilities covered by this plan. Use of fertilizers, herbicides, or pesticides may need to be reviewed and approved by the local Conservation Commission.

Spill Prevention and Response
In the event of a release of oil or hazardous materials such as fuels, oils, or chemical materials onto the ground or other areas that could reasonably be expected to discharge to surface or groundwater, reportable quantities will immediately be reported to the applicable Federal, State, and local agencies as required by law. Reportable quantities of chemical, fuels, or oils are established under the Clean Water Act and enforced through DEP.

Applicable containment and cleanup procedures will be performed immediately. Impacted material collected during the response must be removed promptly and disposed of in accordance with Federal, State, and local requirements. A licensed emergency response contractor may be required to assist in cleanup of releases depending on the amount of the release and the ability of the responsible party to perform the required response.

Snow and Ice Management
Snow and Ice Management shall be conducted according to standard Town of Southbridge DPW practices.

Prohibition of Illicit Discharges

The DEP Stormwater Management Standards prohibit illicit discharges to the storm water management system. Illicit discharges are discharges that do not entirely consist of stormwater, except for certain specified non-stormwater discharges.

Discharges from the following activities are not considered illicit discharges:

firefighting	foundation drains
water line flushing	footing drains
landscape irrigation	individual resident car washing
uncontaminated groundwater	flows from riparian habitats and wetlands
potable water sources	dechlorinated water from swimming pools
water used to clean residential buildings without detergents	water used for street washing
	air conditioning condensation

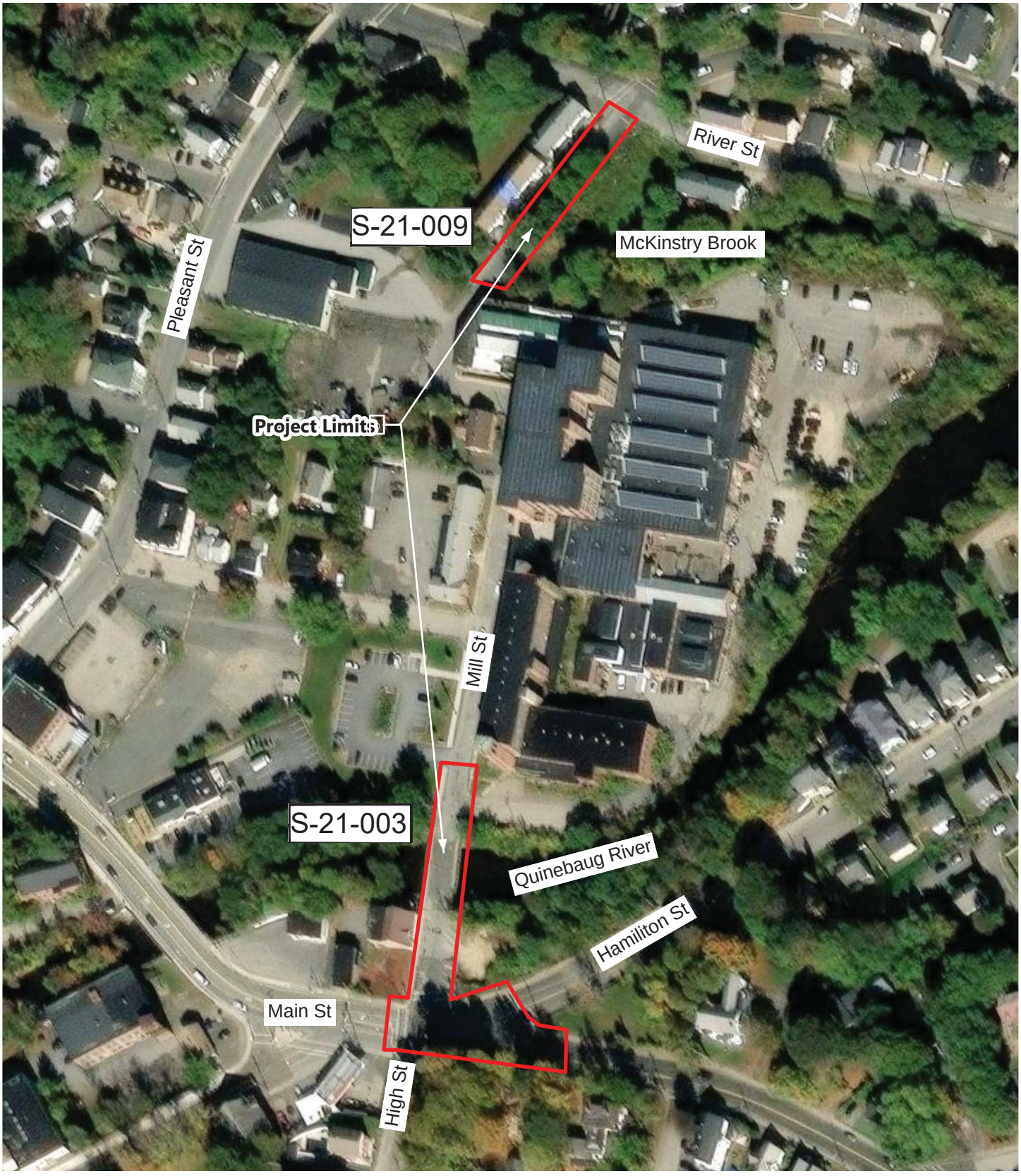
Illicit Discharge Compliance Statement

There are no known or proposed illicit connections associated with this project. If a potential illicit discharge to the facilities covered by this plan is detected (e.g., dry weather flows at any pipe outlet, evidence of contamination of surface water discharge by non-stormwater sources), the Town of Southbridge DPW shall be notified for assistance in determining the nature and source of the discharge, and for resolution through the DPW's IDDE program.

Table 1: Best Management Practices: Operation & Maintenance Measures

Best Management Practice	Sweep	Mow	Inspect	Clean	Repair
Street Sweeping	Biannually (Spring & Fall)	NA	NA	NA	NA
Deep-Sump, Hooded Catch Basins	NA	NA	Annually	ANI*	ANI

NA = Not Applicable
ANI = As needed based on inspection
* = Remove sediment when catch basin sump is 50% full



\\vhb.com\gis\proj\Wat-TE\12529.66 A66 Southbridge-Mill St\Project\EECC\Southbridge Mill St 401_404 Figures.aprx

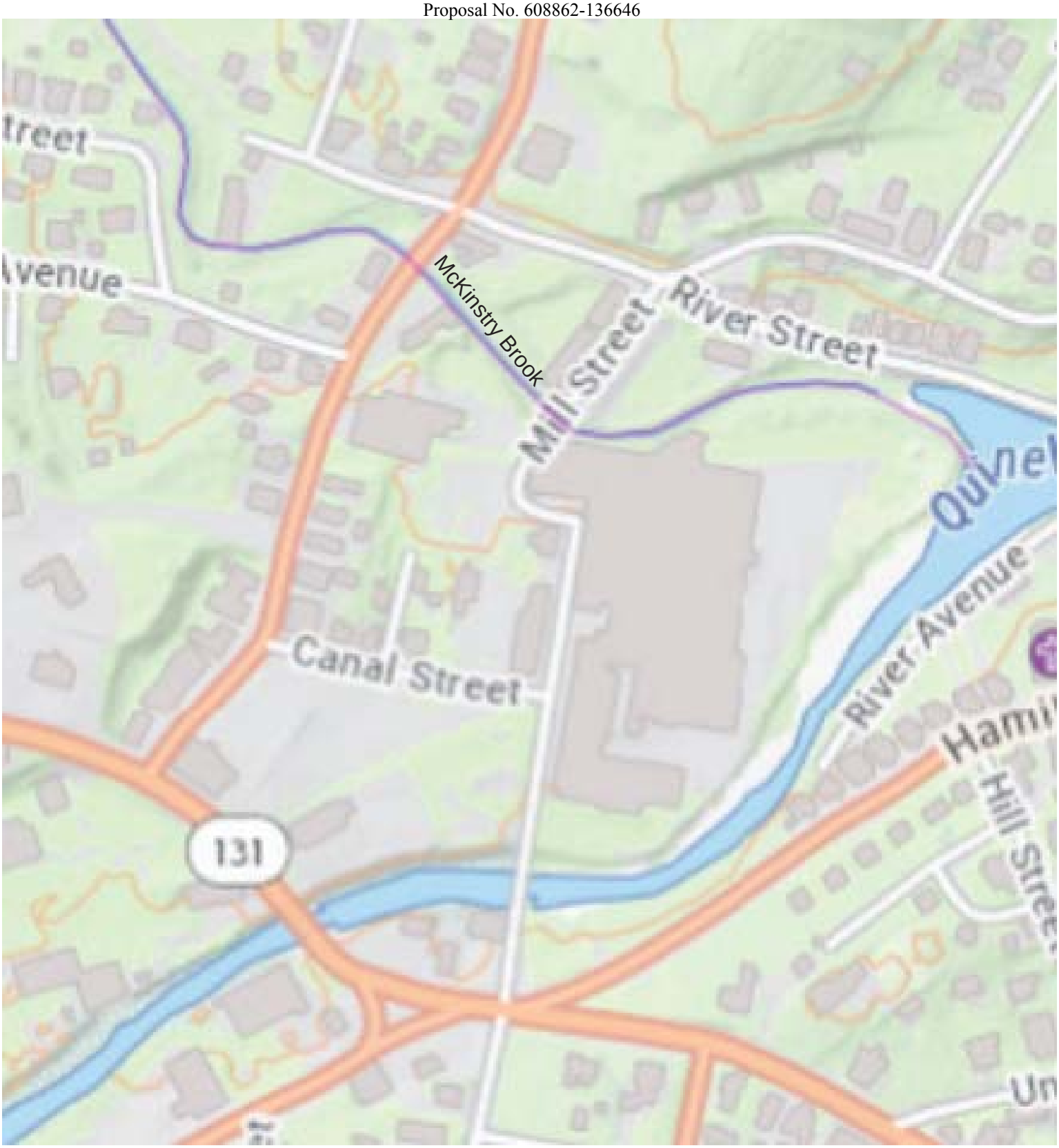
0 125 250 500 Feet

Project Limits

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 1: Locus Map
January 2025

Source: MassGIS



Legend

DFW COLDWATER FISHERIES

MassDOT Project # 608862
Southbridge- Bridge Replacement
S-21-009, Mill Street Over McKinstry Brook &
S-21-003, Mill Street Over the Quinebaug River
Southbridge, MA

Figure 2: Coldwater Fisheries
March 23, 2025

Source : MassMapper

Attachment E
MassDOT Special Provisions

SPECIAL PROVISIONS

SOUTHBRIDGE

MILL STREET BRIDGE IMPROVEMENTS

Labor participation goals for this Project shall be 15.3% for minorities and 6.9% for women for each job category. The goals are applicable to both Contractor's and Subcontractor's on-site construction workforce. Refer to Document 00820 for details.

SCOPE OF WORK

The work under this Contract consists of the superstructure replacement of the bridge carrying Mill Street over the Quinebaug River (S-21-003) and the reconstruction of the bridge carrying Mill Street over McKinstry Brook (S-21-009) and their approaches. The project limits are from the intersections of Mill Street and High Street to Mill Street and River Street.

Bridge (S-21-003) work over the Quinebaug River consists of deck and superstructure removal, modification of the existing abutment tops, and reconstruction of the superstructure.

Bridge (S-21-009) work over the McKinstry Brook consists of deck and superstructure removal, removal of the existing abutment tops, construction of new pile foundations through the remainder of the existing abutments, and construction of the superstructure.

The work on the approaches includes, but is not limited to: pavement milling and overlay; limited full depth pavement reconstruction; the construction of new cement concrete pedestrian curb ramps, sidewalks, sidewalks at driveways, hot mix asphalt driveways, granite curb, minor drainage and utility alterations, tree trimming, removal or protection of trees, traffic signal upgrades, pavement markings and signing; and other related work as noted in these Contract Documents.

For each bridge, temporary traffic control for vehicles will include complete closure (no through traffic). Traffic around the Quinebaug bridge (S-21-003) will detour via Main Street to Canal Street. Traffic around the McKinstry bridge (S-21-009) will detour via Canal Street or Pleasant Street to River Street. Abutters will have local vehicle access to their properties. The two bridges cannot be closed at the same time.

The Project includes permanent and temporary overhead utility work as well as permanent and temporary underground water, sewer, drain, and gas (by Others) utility work. The Contractor shall coordinate with Town to deactivate water lines. The water lines at each bridge shall not be deactivated at the same time.

Pedestrian traffic will be allowed during staged construction of both bridges. In general, pedestrians will be allowed on the west side of each bridge while the east side is constructed. Then pedestrian traffic will switch to the completed east side while the west side is under construction. No public vehicle traffic is allowed on the bridges during construction.

All work under this Contract shall be done in conformance with the *2025 Standard Specifications for Highways and Bridges*, the *Supplemental Specifications* contained in this book, the *Construction Standard Details* in effect as of March 12, 2025, the *1990 Standard Drawings for Signs and Supports*, the *2015 Overhead Signal Structure and Foundation Standard Drawings*, the *2009 Manual on Uniform Traffic Control Devices (MUTCD) with Revisions 1, 2, and 3 and the*

November 2022 Massachusetts Amendments to the MUTCD, the 1968 Standard Drawings for Traffic Signals and Highway Lighting, the latest edition of The *American Standard for Nursery Stock*, the Plans and these Special Provisions.

The General Conditions, Supplementary Conditions and these Special Provisions shall take precedence over the General Requirements of Division I of the Standard Specifications.

WORK SCHEDULE

No lane closures on the existing roadways shall be done from 6:00AM to 9:00AM and from 3:00PM to 7:00PM, without prior approval by the Town and Engineer.

Without prior approval from the Town and Engineer, work on this project is restricted to a normal eight-hour day, five-day week, with the Contractor and all Subcontractors working on the same shift.

If work is needed after 7:00PM, the Contractor shall obtain Approval from the Town and the Engineer, a minimum of 48 hours in advance of commencing night work. The Contractor is responsible for coordination with the Town, including but not limited to Police, Fire, and public works departments.

No work shall be done on this Contract on Saturdays, Sundays or holidays or on the day before or the day after a long weekend that involves a holiday without prior approval by the Town and Engineer.

SUBSECTION 7.05 INSURANCE REQUIREMENTS
B. Public Liability Insurance

The insurance requirements set forth in this subsection are in addition to the requirements of the Standard Specifications and supersede all other requirements.

Paragraphs 1 and 2

The Massachusetts Department of Transportation and applicable railroads shall be named as additional insureds.

Paragraph 4

Asbestos Liability Insurance shall be obtained for this project. The Contractor and the Massachusetts Department of Transportation shall be named as additional insureds.

CONTRACTOR QUESTIONS AND ADDENDUM ACKNOWLEDGEMENTS

Prospective bidders are required to submit all questions to the Construction Contracts Engineer by 3:00 P.M. on the Tuesday of the previous week before the scheduled bid opening date. Any questions received after this time will not be considered for review by the Department.

Contractors should email questions and addendum acknowledgements to the following email address massdotspecifications@dot.state.ma.us The MassDOT project file number and municipality is to be placed in the subject line.

HOLIDAY WORK RESTRICTIONS

(Supplementing Subsection 7.09)

The District Highway Director (DHD) may authorize work to continue during these specified time periods if it is determined by the District that the work will not negatively impact the traveling public. DHD may allow work in those areas on a case by case basis and where work is behind barrier and will not impact traffic

Below are the holiday work restrictions:

New Years Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day. No work on local roadways on the holiday without permission by the DHD and the local police chief.

Martin Luther King's Birthday (Federal Holiday)
No work restrictions due to traffic concerns, however work on local roadways requires permission by the DHD and local police chief.

President's Day (Federal Holiday)
No work restrictions due to traffic concerns, however work on local roadways requires permission by the DHD and local police chief.

Evacuation Day (Suffolk County State Holiday)
No work restrictions due to traffic concerns.

Patriot's Day (State Holiday)
Work restrictions will be in place for Districts 3 and 6 along the entire Boston Marathon route and any other locations that the DHD in those districts determine are warranted so as to not to impact the marathon. All other districts work restrictions will be as per DHD.

Mother’s Day
No work on Western Turnpike and Metropolitan Highway System from 5:00 AM on the Friday before, until the normal start of business on the following day.

Memorial Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the Friday before, until the normal start of business on the following day.

Bunker Hill Day (Suffolk County State Holiday)
No work restrictions due to traffic concerns.

Juneteenth
No work restrictions due to traffic concerns, however work on local roadways requires permission by the DHD and local police chief.

Independence Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day. No work on local roadways on the holiday without permission by the DHD and the local police chief.

Labor Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the Friday before, until the normal start of business on the following day.

Columbus Day (Federal Holiday)
No work on major arterials from 5:00 AM on the Friday before, until the normal start of business on the following day

Veterans' Day (Federal Holiday)
No work restrictions due to traffic concerns.

Thanksgiving Day (Federal Holiday)
No work on major arterials from 5:00 AM two days before until the normal start of business on the following Monday.

Christmas Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day.

SUBSECTION 8.02 SCHEDULE OF OPERATIONS
Replace this subsection with the following:

An integrated cost and schedule controls program shall be implemented by the Contractor to track and document the progress of the Work from Notice to Proceed (NTP) through the Contractor Field Completion (CFC) Milestone. The Contractor's schedules will be used by the Engineer to monitor project progress, plan the level-of-effort required by the Department's work force and consultants and as a critical decision-making tool. Accordingly, the Contractor shall ensure that it complies fully with the requirements specified herein and that its schedules are both accurate and updated as required by the specification throughout the life of the project. Detailed requirements are provided in Division II, Section 722 Construction Scheduling.

TRUCK SAFETY DEVICES

(Supplementing Subsection 7.04: Motor Vehicles)

All motor vehicles subject to section 7 of chapter 90 to be operated under this Contract shall be equipped with safety devices as provided therein and in 540 CMR 4.00.

By December 31, 2025, the contractor shall certify to the Registry of Motor Vehicles, in a manner prescribed by the Registrar, that all applicable vehicles are equipped with Lateral Protective Devices, Convex Mirrors, Cross Over Mirror(s) and Back Up Cameras in accordance with the requirements of 540 CMR 4.00.

The Contractor shall provide evidence satisfactory to the Department to demonstrate compliance with the above certification requirement for all applicable vehicles operated under this contract by the Contractor and its subcontractors and vendors in a manner set forth by the Department. Thereafter, the Contractor shall have an affirmative obligation to continue to provide such evidence of compliance on an ongoing basis and no later than 7 days after certification with the Registry of Motor Vehicles of any additional vehicles operated under this contract by the Contractor and its subcontractors and vendors.

Non-compliance with respect to a vehicle that is subject to 540 CMR 4.00 may subject the Contractor to statutory fines as established in M.G.L. c. 90, § 7 and/or contractual remedies up to and including termination of the contract.

SUBSECTION 8.14 UTILITY COORDINATION, DOCUMENTATION, AND MONITORING RESPONSIBILITIES

A. GENERAL

In accordance with the provisions of Section 8.00 Prosecution and Progress, utility coordination is a critical aspect to this Contract. This section defines the responsibility of the Contractor and MassDOT, with regard to the initial utility relocation plan and changes that occur as the prosecution of the Work progresses. The Engineer, with assistance from the Contractor shall coordinate with Utility companies that are impacted by the Contractor's operations. To support this effort, the Contractor shall provide routine and accurate schedule updates, provide notification of delays, and provide documentation of the steps taken to resolve any conflicts for the temporary and/or permanent relocations of the impacted utilities. The Contractor shall provide copies to the Engineer of the Contractor communication with the Utility companies, including but not limited to:

- Providing advanced notice, for all utility-related meetings initiated by the Contractor.
- Providing meeting minutes for all utility-related meetings that the Contractor attends.
- Providing all test pit records.
- Request for Early Utility work requirements of this section (see below).
- Notification letters for any proposed changes to Utility start dates and/or sequencing.
- Written notification to the Engineer of all apparent utility delays within seven (7) Calendar Days after a recognized delay to actual work in the field – either caused by a Utility or the Contractor.

SUBSECTION 8.14 (Continued)

- Any communication, initiated by the Contractor, associated with additional Right-of-Way needs in support of utility work.
- Submission of completed Utility Completion Forms.

B. PROJECT UTILITY COORDINATION (PUC) FORM

The utility schedule and sequence information provided in the Project Utility Coordination Form (if applicable) is the best available information at the time of the bid and has been considered in setting the contract duration. The Contractor shall use all of this information in developing the bid price and the Baseline Schedule Submission, inclusive of the individual utility durations sequencing requirements, and any work that has been noted as potentially concurrent utility installations.

C. INITIATION OF UTILITY WORK

The Engineer will issue all initial notice-to-proceed dates to each Utility company based on either the:

1) Contractor's accepted Baseline Schedule
2) An approved Early Utility Request in the form of an Early Utility sub-net schedule (in accordance with the requirements of this Subsection)
3) An approved Proposal Schedule

C.1 - BASELINE SCHEDULE – UTILITY BASIS

The Contractor shall provide a Baseline Schedule submission in accordance with the requirements of Subsection 8.02 and inclusive of all of the information provided in the PUC Form that has been issued in the Contract documents. This is to include the utility durations, sequencing of work, allowable concurrent work, and all applicable considerations that have been depicted on the PUC Form.

C.2 – EARLY UTILITY REQUEST – (aka SUBNET SCHEDULE) PRIOR TO THE BASELINE

All early utility work is defined as any anticipated/required utility relocations that need to occur prior to the Baseline Schedule acceptance. In all cases of proposed early utility relocation, the Contractor shall present all known information at the pre-construction conference in the form of a 'sub-net' schedule showing when each early utility activity needs to be issued a notice-to-proceed. The Contractor shall provide advance notification of this intent to request early utility work in writing at or prior to the Pre-Construction meeting. Prior to officially requesting approval for early utility work, the Contractor shall also coordinate with MassDOT and all utility companies (private, state or municipal) which may be impacted by the Contract. If this request is acceptable to the Utilities and to MassDOT, the Engineer will issue a notice-to-proceed to the affected Utilities, based on these accepted dates.

SUBSECTION 8.14 (Continued)

C.3 – PROPOSAL SCHEDULE - CHANGES TO THE PUC FORM

If the Contractor intends to submit a schedule (in accordance with MassDOT Standard Specifications, Division I, Subsection 8.02) that contains durations or sequencing that vary from those provided in the Project Utility Coordination (PUC) Form, the Contactor must submit this as an intended change, in the form of a Proposal Schedule and in accordance with MassDOT Standard Specifications, Division I, Subsection 8.02. These proposed changes are subject to the approval of the Engineer and the impacted utilities, in the form of this Proposal Schedule and a proposed revision to the PUC form. The Contractor shall not proceed with any changes of this type without written authorization from the Engineer, that references the approved Proposal Schedule and PUC form changes. The submission of the Baseline Schedule should not include any of these types of proposed utility changes and should not delay the submission of the Baseline Schedule. As a prerequisite to the Proposal Schedule submission, and in advance of the utility notification(s) period, the Contractor shall coordinate the proposed utility changes with the Engineer and the utility companies, to develop a mutually agreed upon schedule, prior to the start of construction.

D. UTILITY DELAYS

The Contractor shall notify the Engineer upon becoming aware that a Utility owner is not advancing the work in accordance with the approved utility schedule. Such notice shall be provided to the Engineer no later than seven (7) calendar days after the occurrence of the event that the Contractor believes to be a utility delay. After such notice, the Engineer and the Contractor shall continue to diligently seek the Utility Owner's cooperation in performing their scope of Work.

In order to demonstrate that a critical path delay has been caused by a third-party Utility, the Contractor must demonstrate, through the requirements of the monthly Progress Schedule submissions and the supporting contract records associated with Subsection 8.02, 8.10 and 8.14, that the delays were beyond the control of the Contractor.

All documentation provided in this section is subject to the review and verification of the Engineer and, if required, the Utility Owner. In accordance with MassDOT Specifications, Division I, Subsection 8.10, a Time Extension will be granted for a delay caused by a Utility, only if the actual duration of the utility work is in excess of that shown on the Project Utility Coordination Form, and only if;

1) proper Notification of Delay was provided to MassDOT in accordance with the time requirements that are specified in this Section
2) the utility delay is a critical path impact to the Baseline Schedule (or most recently approved Progress Schedule)

E. LOCATION OF UTILITIES

The locations of existing utilities are shown on the Contract drawings as an approximation only. The Contractor shall perform a pre-construction utility survey, including any required test pits, to determine the location of all known utilities no later than thirty (30) calendar days before commencing physical site work in the affected area.

SUBSECTION 8.14 (Continued)

F. POST UTILITY SURVEY – NOTIFICATION

Following completion of a utility survey of existing locations, the Contractor will be responsible to notify the Engineer of any known conflicts associated with the actual location of utilities prior to the start of the work. The Engineer and the Contractor will coordinate with any utility whose assets are to be affected by the Work of this Contract. A partial list of utility contact information is provided in the Project Utility Coordination Form.

G. MEETINGS AND COOPERATION WITH UTILITY OWNERS

The Contractor shall notify the Engineer in advance of any meeting they initiate with a Utility Owner's representative to allow MassDOT to participate in the meeting if needed.

Prior to the Pre-Construction Meeting, the Contractor should meet with all Utility Owners who will be required to perform utility relocations within the first 6 months of the project, to update the affected utilities of the Project Utility Coordination Form and all other applicable Contract requirements that impact the Utilities. The Contractor shall copy the Engineer on any correspondence between the Utility Owner and the Contractor.

H. FORCE ACCOUNT / UTILITY MONITORING REQUIREMENTS

The Engineer will be responsible for recording daily Utility work force reports. The start, suspension, re-start, and completion dates of each of the Utilities, within each phase of the utility relocation work, will be monitored and agreed to by the Engineer and the Contractor as the work progresses.

I. ACCESS AND INSPECTION

The Contractor shall be responsible for allowing Utility owners access to their own utilities to perform the relocations and/or inspections. The Contractor shall schedule their work accordingly so as not to delay or prevent each utility from maintaining their relocation schedule.

COMPLIANCE WITH THE NATIONAL DEFENSE AUTHORIZATION ACT

(Supplementing Subsection 7.01)

On all projects, the "Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment" Regulation (2 CFR 200.216) prohibits the Contractor from using or furnishing the following telecommunications equipment or services:

- Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
- For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

COMPLIANCE WITH THE NATIONAL DEFENSE AUTHORIZATION ACT (CONTINUED)

- Telecommunications or video surveillance services provided by such entities or using such equipment.
- Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

This prohibition applies to all products manufactured by the aforementioned companies, including any individual components or parts.

By submitting a bid on a project, the Contractor certifies that all work will be in compliance with the terms of 2 CFR 200.216. The Contractor shall submit a COC indicating compliance with the above provisions for all telecommunications equipment or services included in the Contract.

Payment for the item in which the materials are incorporated may be withheld until these COCs are received. Any cost involved in furnishing the certificate(s) shall be borne by the Contractor.

BIDDERS LIST

Pursuant to the provisions of 49 CFR Part 26.11 all official bidders will be required to report the names, addresses and telephone numbers of all firms that submitted bids or quotes in connection with this project. Failure to comply with a written request for this information within 15 business days may result in a recommendation to the Prequalification Committee that prequalification status be suspended until the information is received.

The Department will survey all firms that have submitted bids or quotes during the previous year prior to setting the annual goal and shall request that each firm report its age and gross receipts for the year.

BUILD AMERICA BUY AMERICA PREFERENCE

On Federally-aid projects the Buy America (23.CFR § 635.410) and Build America, Buy America Act (Pub. L. No. 117-58, §§ 70901-52). requires the following,

BUILD AMERICA BUY AMERICA PREFERENCE (Continued)

(1) all iron and steel used in the project are produced in the United States--this means all manufacturing processes, from the initial melting stage through the application of coatings, must occur in the United States. Foreign steel and iron can be used if the cost of the materials does not exceed 0.1% of the total Contract cost or $2,500, whichever is greater. The action of applying a coating to a covered material (i.e., steel and iron) is deemed a manufacturing process subject to Buy America. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to requirements of Build America, Buy America. Steel used for temporary support of excavation, including H piles, soldier piles, and sheeting when the steel is required to be left in place is subject to requirements of Build America, Buy America. Temporary steel, shall remain in place when it falls within the influence zone of the soil supporting any structure or railroad tracks.

(2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation; and

(3) all construction materials are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States. "Construction materials" includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is or consists primarily of:
- non-ferrous metals,
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables),
- glass (including optic glass),
- lumber; or
- drywall.

The Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of the structure or permanently affixed to the infrastructure project.

NOTE: The requirements for manufactured products indicated in paragraph (2) above are not in effect for this contract.

ARCHITECTURAL ACCESS BOARD TOLERANCES

The Contractor is hereby notified that they are ultimately responsible for constructing all project elements in strict compliance with the current AAB/ADA rules, regulations and standards.

All construction elements in this project associated with sidewalks, walkways, curb ramps and curb cuts are controlled by 521CMR - Rules and Regulations of the Architectural Access Board (AAB).

The AAB Rules and Regulations specify maximum slopes and minimum dimensions required for construction acceptance. There is no tolerance allowed for slopes greater than the maximum slope nor for dimensions less than the minimum dimensions.

Contractors shall establish grade elevations at all curb ramp locations, and shall set transition lengths according to the appropriate table in the Construction Standards (or to the details shown on the plans).

All curb ramp joints and transition sections which define grade changes shall be formed, staked and checked prior to placing cement concrete. All grade changes are to be made at joints.

NOTICE TO OWNERS OF UTILITIES
(Supplementing Subsection 7.13)

Written notice shall be given by the Contractor to all public service corporations or municipal and State officials owning or having charge of publicly or privately owned utilities at least one week in advance of the commencement of operations that will affect the utilities. The Contractor shall, at the same time, file a copy of such notice with the Town.

Before commencing work on service connections, the Contractor shall be responsible for contacting the Electric Company servicing the area to obtain construction requirements, standards, and to give adequate notice of commencement of work. The Contractor's attention is further directed to the requirements of Work in the Immediate Vicinity of Certain Underground Structures and Poles herein included in these Special Provisions.
The following are the names of owners and representatives of the principal utilities affected, but completeness of this list is not guaranteed by the Town:

TOWN OF SOUTHBRIDGE

Town of Southbridge
Department of Public Works
185 Guelphwood Road
Southbridge, MA 01550

Vernon Jackson
Phone: (508) 764-5403 x3

Southbridge Fire Department
24 Elm Street
Southbridge, MA 01550

Chief Joseph Hulyk
Phone: (508) 764-5430

Southbridge Police Department
1 Mechanic Street
Southbridge, MA 01550

Chief Shane Woodson
Phone: (508) 764-5420

WATER

Southbridge Water Department
185 Guelphwood Road
Southbridge, MA 01550

Steven Blanchard
Phone: (508) 764-3207

SEWER

Southbridge Wastewater Department
83 Dresser Hill Road
Southbridge, MA 01550

James Merchant
Phone: (508) 764-4927

ELECTRIC

National Grid
170 Data Drive
Waltham, MA 02451

Manuel Munoz
Phone: (401) 895-9726

TELEPHONE

Verizon
385 Myles Standish Blvd.
Taunton, MA 02780

Karen Mealey
Phone: (774) 409-3160

GAS

Tennessee Gas Pipeline Company
8 Anngina Drive
Enfield, CT 06082

David Wood
Phone: (860) 763-6005

National Grid Gas
170 Data Drive
Waltham, MA 02451

Melissa Owens
Phone: (781) 907-2845

CABLE

Charter Communications
301 Barber Avenue
Worcester, MA 01606

John Yurkevicius
Phone: (774) 243-9786

OTHER AFFECTED PARTIES ARE:

Westville Dam
United States Army Corps of Engineers

Keith Beecher
Project Manager
Phone: (978) 318-8405
Email: keith.w.beecher@usace.army.mil

Vanasse Hangen Brustlin, Inc.
260 Arsenal Place #2
Watertown, MA 02472-4026

Andrew Burkholder, P.E.
Project Manager
Phone: (617) 607-2773

NATIONAL GRID EMERGENCY TELEPHONE NUMBERS

GAS:
Emergency: 1-800-233-5325
New Service: 1- 877-696-4743
Customer Support: 1-800-732-3400

ELECTRIC:
Outage/ Emergency: 1-800-465-1212
New Service: 1-800-375-7405
Customer Support: 1-800-322-3223

PROTECTION OF UNDERGROUND FACILITIES

The Contractor's attention is directed to the necessity of making his own investigation in order to assure that no damage to existing structures, drainage lines, traffic signal conduits, etcetera, will occur.

The Contractor shall notify Massachusetts DIG SAFE and procure a Dig Safe Number for each location prior to disturbing existing ground in any way.

The telephone number of the "Dig Safe" Call Center is 811 or 1-888-344-7233.

PROTECTION OF UTILITIES AND PROPERTY
(Supplementing Subsection 7.13)

The Contractor, in constructing or installing facilities alongside or near sewers, drains, water or gas pipes, electric or telephone conduits, poles, sidewalks, walls, vaults or other structures shall sustain them securely in place. The Contractor shall coordinate with the officers and agents of the various utility companies and municipal departments to assure that the services of these structures are maintained. The Contractor shall also be responsible for the repair or replacement, at no additional cost to the Owner (Town of Southbridge), of any damage to such structures caused by construction operations. The Contractor is responsible to leave them in the same condition as they existed prior to commencement of the work. In case of damage to utilities, the Contractor shall

PROTECTION OF UTILITIES AND PROPERTY (CONTINUED)

promptly notify the utility owner and shall, if requested by the Town, furnish labor and equipment to work temporarily under the utility owner's direction. Pipes or other structures damaged by the operation of the Contractor may be repaired by the Town or by the utility owner which suffers the loss. The cost of such repairs shall be borne by the Contractor, without compensation therefor.

If during construction there is an existing utility and/ or structure found to be in conflict with the proposed work under this Contract, the Contractor shall protect and maintain the services to the utilities and structures. The Town will, as soon as possible identify the utilities to be relocated or other such activities deemed suitable for resolution.

If live service connections are to be interrupted by excavations of any kind, the Contractor shall not break the service until new services are provided. Abandoned services shall be plugged off or otherwise made secure.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work involved in protecting or repairing property as specified in this Section, shall be considered included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefor.

WORK IN THE IMMEDIATE VICINITY OF CERTAIN UNDERGROUND STRUCTURES AND UTILITY POLES

For overhead connections, the Electric Company servicing the area will make the connection from the top of the riser on the utility pole to the power source. The Contractor shall supply all labor, materials and equipment to install the service connection, complete in place and in accordance with the Electric Company procedures, from the controller to and including the riser with enough wire coiled above the riser to permit the Electric Company servicing the area to make the final connection.

For underground connections, the Electric Company servicing the area will perform the actual wiring of the service connections from its power source to the sweep at the local controllers, but all steel sweeps, ducts, entrance holes into manholes, patching and all other necessary labor, materials and equipment required to install the electric service, complete in place, shall be furnished by the Contractor.

The Contractor shall pay the Electric Company servicing the area for their services rendered for the connection of overhead and underground service connections. Before starting work at existing manholes, the Contractor shall test for gas and blow out the manholes.

The Contractor shall perform test pits as indicated on the plans and as directed by the Town, prior to start of the installation of utilities.

PROVISIONS FOR TRAVEL AND PROSECUTION OF THE WORK
(Supplementing Subsection 8.03)

Before starting any work under this Contract, the Contractor shall prepare, and submit to the Town for approval, a plan (based on the Contract traffic management plans) that indicates the traffic routing proposed by the Contractor during the various stages and time periods of the work and the temporary barricades, signs, drums and other traffic control devices to be employed during each stage and time period of the work to maintain traffic and access to abutting properties.

Particular care shall be taken to establish and maintain methods and procedures that will not create unnecessary or unusual hazards to public safety. Traffic control devices required only during working hour operations shall be removed at the end of each working day.

Signs having messages that are irrelevant to normal traffic conditions shall be removed or properly covered at the end of each work period. Signs shall be kept clean at all times and legends shall be distinctive and unmarred.

TEMPORARY ACCESS TO AREA MERCHANTS AND BUSINESSES
(Supplementing Subsections 8.02 and 8.06)

The work is in a predominantly residential section of the Town of Southbridge. Access to all properties must be maintained at all times.

The Contractor shall provide safe and ready means of ingress and egress to any businesses or residences in the project area, both day and night, for the duration of the project.

WORK DONE BY OTHERS

Relocation and/or resetting to new grades of all private utilities, including utility poles, made necessary by the construction of this project, will be accomplished by the respective utility companies.

SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS
(Supplementing Subsections 850.21 AND 850.61)

Safety controls for construction operations shall be done in accordance with the relevant provisions of Section 850 of the Standard Specifications, the Manual on Uniform Traffic Control Devices, MassDOT Traffic Management Plans and Detail Drawings, and the MassDOT Work Zone Safety Temporary Traffic Control.

Positioning, adjusting and re-positioning of all devices, such as traffic cones and high-level warning devices, not otherwise classified and paid for under other items in this contract is considered incidental, and no separate payment will be made.

MATERIAL REMOVED AND STACKED

The Contractor shall carefully remove, transport and stack all material that, in the opinion of the Engineer, is salvageable. The material shall be stacked at the Town of Southbridge Department of Public Works at 185 Guelphwood Road, Southbridge, MA. The Contractor shall coordinate with the DPW to schedule drop-off time and location.

DRAINAGE

All pipes and structures installed as part of this Contract shall be left in a clean and operable condition at the completion of the work.

No separate payment will be made for the maintenance of the existing drainage system or for plugging of pipes, but all costs in connection therewith shall be included in the unit prices bid for the various Contract items.

Crushed Stone – Item 156. required for installing structures shall be considered incidental to the installation of all proposed drainage structures

DRAINAGE STRUCTURES

Where new pipe is shown on the drawings to be connected into an existing drainage structure to remain, the existing structure shall be first cleaned to remove all mud, debris and other material. The existing structure wall shall be carefully and neatly cut to provide the minimum size opening required for the insertion of the new pipe. The proposed pipe end shall be set or cut off flush with the inside face of the existing structure wall and the remaining space around the pipe completely filled with cement grout for the full thickness of the structure wall.

Existing shaped inverts shall be reconstructed as necessary to provide a smooth and uniform flow channel from the new pipe through the existing structure.

No separate payment will be made for the cost of connecting new pipes into existing structures, necessary alterations of existing structures, but all costs in connection therewith shall be included in the unit prices bid for the various pipe items.

MAINTENANCE OF TRAFFIC SIGNALS

It shall be the responsibility of the Contractor to provide all labor, equipment and material required for the total maintenance and repair of all existing and proposed traffic signal control equipment, including damage by automobile accidents until final completion and acceptance of the project, unless otherwise specified under Subsection 7.17 “Traffic Accommodation: of the Standard Specifications as amended, in which case Subsection 7.17 will govern. These provisions will apply to the signalized location included as part of this construction Contract from the date of written notice given to the Engineer that the Contractor will work on or adjacent to an existing signal until the date when MassDOT/Town of Southbridge accepts the complete project. This written notice

must be given before the Contractor may proceed with any work on a specified traffic signal location. For the purpose of these Special Provisions, the phrase "Traffic Signal Control Equipment" is intended to include, but is not limited to, controllers, signal housings, supporting structures, cabinet accessories and panels, wires, conduit and all other ancillary electrical equipment used for traffic control.

QUALIFIED ELECTRICIANS

Within 10 days after opening of bids, the low bidder shall submit a list of the Journeyman Electricians (Massachusetts License) who will perform the electrical work in this contract.

Also, the low bidder shall submit copies of each Journeyman Electrician's current Massachusetts License.

SAWCUTS

Existing pavements to remain shall be sawcut at all openings for utility work, for new or reset curb, cement concrete walk and at all joints with proposed full-depth hot mix asphalt pavement, as shown on the plans and as directed. Payment for this work shall be incidental to the various bid items.

PROPERTY BOUNDS

The Contractor shall exercise due care when working around all property bounds which are to remain. Should any damage to a bound result from the actions of the Contractor, the bound shall be replaced and/or realigned by the Contractor at no cost to the Town.

RESTRICTED MATERIALS

All new construction materials shall be asbestos-free including any roofing felt, adhesives, waterproofing materials, grout, or sealer that may be used in project construction.

All yellow temporary and permanent pavement markings, including all pavement marking tape, placed as part of this project shall be lead-free.

NEW INTRODUCTIONS OF INVASIVE PLANTS INTO OR AROUND THE SITE

(Supplementing Subsections 7.01(D) Plant Pest Control and 7.13 Protection and Restoration of Property)

The Contractor shall ensure that no invasive plant species, as defined and listed by the Massachusetts Invasive Plant Advisory Group, are introduced or moved around the site by construction activities either by improperly cleaned construction equipment or importation of infected materials such as borrow, compost, nursery stock, seed, or hay bales. Corrective measures, if necessary, shall be made by the Contractor as directed by the Town. The Contractor shall be solely responsible for all costs associated with ensuring that invasive species are not

introduced or moved around the site by construction activities and for all corrective measures required for as long as necessary to eliminate the introduced invasive plant species and prevent re-establishment of same.

GENERAL REQUIREMENTS FOR DEMOLITION AND WORK INVOLVING PAINTED STEEL

(02/06/2020)

Demolition and work involving painted steel shall conform to the requirements of Subsection 961 of the Standard Specifications.

Work Involving Painted Steel.

Hazardous materials shall be removed in the immediate area of any intended welding, heating, saw cutting or burning of steel. Hazardous material removal is required to allow the demolition of structural steel, railings, drainage systems, utility supports, steel lamp posts, etc.

The contractor shall assume that the coatings on the steel contain lead (Pb), unless otherwise determined by testing. The contractor shall certify in writing to the Engineer the results of all testing, and shall also certify that any lead (Pb) coated steel removed from the project was not reused or buried, but was sent to a scrap metal recycling facility.

Implement and maintain programs and procedures, which comply with the requirements of this specification and all applicable standards and regulations. Comply with all applicable regulations even if the regulation is not specifically referenced herein. If a state or local regulation is more restrictive than the regulation of this specification, follow the more restrictive requirements.

This requirement is intended only for the demolition and preparation prior to repair and does not include provisions for recoating of steel.

Environmental

All applicable portions of Subsections 961.65 “Worker Protection” and 961.66 “Environmental Protection and Monitoring” shall be followed when performing this work.

During chemical stripping a hand washing facility may be used in lieu of a decontamination/changing facility.

Hazardous material shall be collected during the disassembly and disposed of as outlined in Subsection 961.68 “Handling of Hazardous Waste and Reporting Release Programs”.

The applicable submittals shall be according to Subsection 961.69 “Submittals”.

GENERAL REQUIREMENTS FOR DEMOLITION AND WORK INVOLVING PAINTED STEEL (Continued)

Cleaning/Removal

Cutting Or Burning Of Steel

All surfaces to be welded, heated, saw cut or burned shall be cleaned so as to remove all contaminants and/or hazardous materials, which could be discharged to the environment as a function of the subsequent operations.

Lead paint shall be removed in its entirety in an area prescribed by a 6 inch (15 cm) minimum offset from the required work. The paint removal operation may be dry abrasive blasting, wet abrasive blasting or chemical stripping.

Proper level of containment shall be used when performing this work in accordance with Subsection 961.67 “Containment”. Full containment is not required during chemical stripping operation however; the Contractor shall install proper shielding and/or tarpaulins under the chemical stripping operations in order to catch all debris generated during this procedure. A cleaned area must be inspected and approved before the demolition operations are started.

During cleaning operations the Contractor shall be required to furnish and erect temporary floodlights illuminating the steel surface at a minimum of 30-foot candles. This lighting shall be used in areas where there is insufficient lighting for proper cleaning operations and inspection. The Contractor shall supply electrical power.

The Contractor shall provide support for interim and final inspection of the bridge during cleaning operations. This support shall include the necessary traffic controls and safe access to the work.

Mechanical Disassembly Of Steel

All surfaces to be mechanically disassembled by shear cutting or removing bolts or rivets shall not require deleading. When shear cutting or removing bolts or rivets, the Contractor shall not use any method that will cause dust and/or particles to be emitted and/or dispersed into the environment to an extent that would expose the workers above the Action Levels of 30µg/m3.

For purposes of limiting the lead (Pb) dust, the Contractor will be required to dampen the lead paint work areas.

The contractor shall install a proper shielding and/or tarpaulins under all lead-paint-coated surfaces to be shear cut or bolts or rivets ordered removed in order to catch any loose lead paint chips, dust or particles.

PIGEON WASTE

The Contractor shall remove and dispose of the pigeon waste and any other debris accumulated on the steel members and bridge seats in areas where work is being performed. Pigeon waste and debris material contaminants will require special handling and disposal in accordance with all Federal, state, and local requirements. No separate payment will be made for removal and disposal of pigeon waste. Cost shall be incidental to the contract pay items.

CONTAMINATED SOIL

Soil to be removed from the project area shall not be assumed to be uncontaminated and must be evaluated prior to off-site management for potential contamination with hazardous materials. No soil may be disposed of off-site without proper assessment by the contractor and approval from the Resident Engineer (RE), District Environmental Engineer (DEE), or the project designee.

SOIL STOCKPILING DIRECTIVE P-22-001

Any stockpiling of soil must be performed in compliance with Policy Directive P-22-001, Off-Site Stockpiling of Soil from MassDOT Construction Projects. This directive limits the allowable locations for off-site stockpiling of soil generated during MassDOT projects and includes various requirements that must be satisfied by the contractor prior to off-site stockpiling.

ENVIRONMENTAL PERMITTING

The proposed work occurs in jurisdictional wetland resources subject to section 401 or section 404 of the Clean Water Act; therefore, a Water Quality Certification from the Massachusetts Department of Environmental Protection and/or authorization from the US Army Corps of Engineers has been obtained. The Contractor is advised that all terms and conditions within said permits shall be strictly adhered to. The proposed work qualifies for the bridge exemption authorized in the Transportation Bond Bill and is therefore not subject to the Massachusetts Wetlands Protection Act, the Massachusetts Public Waterfront Act (Chapter 91), or the Massachusetts Environmental Policy Act.

If field conditions and/or Contractor-proposed erection, demolition, staging, or other procedures require work to occur in or otherwise impact water or wetland resource areas, the Contractor is advised that no associated work can occur until all required environmental permits have been obtained allowing such work. The Contractor must notify the District 3 Highway Director and Resident Engineer in writing at least 60 days prior to desire commencement of the proposed activity. All environmental submittals, including any Contract with Local, State, or Federal environmental agencies, must be coordinated with the District 3 Environmental Engineer. The Contractor is expected to fully cooperate with requests for information and provide same in a timely manner. The Contractor is further advised that the Department will not entertain a delay claim due to the time required to obtain the environmental permits.

SECTION 722

CONSTRUCTION SCHEDULING
DESCRIPTION

722.20 General

The Contractor's approach to prosecution of the Work shall be disclosed to the Department by submission of a Critical Path Method (CPM) schedule and a cost/resource loaded Construction Schedule as defined by the schedule type set forth below. These requirements are in addition to any requirements imposed in other sections.

This section establishes the requirement for scheduling submissions. There are four schedule types identified as types A, B, C and D. The schedule type applicable to this project is established in the project special provisions.

All schedules shall be prepared and submitted in accordance with this specification and the instructions contained in the Construction Schedule Toolkit located on the MassDOT-Highway Division website at https://www.mass.gov/info-details/massdot-highway-contractors-schedule-toolkit.

Type A –

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Cost-loaded & Resource Loaded CPM
- Resources Graphic Reporting
- Cash Flow Projections from the CPM
- Cash Flow Charts
- Monthly Projected Spending Report (PSR)
- Contractor-furnished CPM software and computer

Type B –

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Cost-loaded & Resource Loaded CPM
- Monthly Projected Spending Report (PSR)
- Contractor-furnished CPM software and computer

Type C –

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Monthly Projected Spending Report (PSR)
- Contractor-furnished CPM software and computer

SECTION 722 (Continued)

Type D -

- Bar chart schedule updated monthly or at the request of the Engineer
- Short-term Construction Schedule
- Monthly Projected Spending Report (PSR)

EQUIPMENT, PERSONNEL

722.40 General

A. **Software Requirements**

The Contractor shall use Primavera P6 computer scheduling software.

In addition to the requirements of Section 740 – Engineer's Field Office and Equipment, the Contractor shall provide to the Department one (1) copy of the scheduling software, one (1) software license and one (1) computer capable of running the scheduling software for the duration of the Contract. This computer and software shall be installed in the Engineer's Field Office. The computer and software shall be maintained and serviced at no additional cost to the Department.

B. Scheduler Requirements

The Scheduler shall be approved by the Engineer.

For Type A, B and C Schedules the name of the Contractor's Project Scheduler together with his/her qualifications shall be submitted to the Department for approval by the Engineer within seven (7) Calendar Days after NTP. The Project Scheduler shall have a minimum of five (5) years of project CPM scheduling experience, three (3) years of which shall be on projects of similar scope and value as the project for which the Project Scheduler is being proposed. References shall be provided from past projects that can attest to the capabilities of the Project Scheduler.

SCHEDULING METHODS

722.60 General

A. **Schedule Planning Session**

The Contractor shall conduct a schedule planning session prior to submission of the Baseline Schedule. This session will be attended by the Department and its consultants. During this session, the Contractor shall present its planned approach to the project including, but not limited to:

1. the Work to be performed by the Contractor and its subcontractors;
2. the planned construction sequence and phasing; planned crew sizes;
3. summary of equipment types, sizes, and numbers to be used for each work activity;
4. all early work related to third party utilities;
5. identification of the most critical submittals and projected submission timelines;
6. estimated durations of major work activities;
7. the anticipated Critical Path of the project and a summary of the activities on that Critical Path;
8. a summary of the most difficult schedule challenges the Contractor is anticipating and how it plans to manage and control those challenges;

SECTION 722 (Continued)

9. a summary of the anticipated quarterly cash flow over the life of the project.

This will be an interactive session and the Contractor shall answer all questions that the Department and its consultants may have. The Contractor shall provide a written summary of the information presented and discussed during the session to the Engineer. The Contractor's Baseline Schedule and accompanying Schedule Narrative shall incorporate the information discussed at this Schedule Planning Session.

B. **Schedule Reviews by the Department**

1. Baseline Schedule Reviews
   The Engineer will respond to the Baseline Schedule Submission within thirty (30) Calendar Days of receipt providing comments, questions and/or disposition that either accepts the schedule or requires revision and resubmittal. Rejected Baseline Schedules shall be resubmitted within fifteen (15) Calendar Days after receipt of the Engineer's comments.
2. Contract Progress Schedule / Monthly Update Reviews / Recovery Schedules
   The Engineer will respond to each submittal within twenty-one (21) Calendar Days. Rejected schedules shall be resubmitted by the Contractor within five (5) Calendar Days after receipt of the Engineer's comments.

The Engineer's review comments shall not be construed as direction to change the Contractor's means and methods. The review and acceptance of the CPM schedule does not relieve the Contractor of the responsibility for accomplishing the work within the contract required completion dates. Omissions and errors in the accepted CPM schedule shall not excuse performance less than that required by the Contract.

722.61 Schedule Content and Preparation Requirements

All schedules shall be prepared and submitted in accordance with the instructions contained in the Construction Schedule Toolkit located on the MassDOT-Highway Division website at:
https://www.mass.gov/info-details/massdot-highway-contractors-schedule-toolkit
and the following:

A. **LOGIC**

The schedules shall divide the Work into activities with appropriate logic ties to show:

1. conformance with the requirements of this Section and Division I, Subsection 8.02 - Schedule of Operations
2. the Contractor's overall approach to the planning, scheduling, and execution of the Work
3. conformance with any additional sequences of Work required by the Contract Documents, including, but not limited to, Subsection 8.03 - Prosecution of Work and Subsection 8.06 – Limitations of Operations.

SECTION 722 (Continued)

B. **ACTIVITIES**

The schedule shall clearly define the progression of the Work from the Notice to Proceed (NTP) to Contractor Field Completion (CFC) by using separate activities, or including attributes within appropriate activities, to address each of the following:

1. Notice to Proceed
2. Work Breakdown Structure
3. The Critical Path is clearly defined and organized.
4. Float shall be clearly identified.
5. Detailed activities to satisfy permit requirements.
6. Subcontractor approvals at fifteen (15) Calendar Days from submittal to response
7. The preparation and submission of shop drawings, procedures, and other required submittals, with a planned duration that is to be demonstrated to the Engineer as reasonable.
8. The review and return of shop drawings, procedures, and other required submittals, approved or with comments, the duration of which shall be thirty (30) Calendar Days, unless otherwise specified or as approved by the Engineer.
9. Procurement of fabricated materials and equipment with long lead times, including time for review and approval of submittals required before procuring and fabricating.
10. Each component of the Work defined by specific activities.
11. Right-of-Way (ROW) takings that have been identified in the Contract.
12. Early Utility Relocation (by others) that has been identified in the Contract.
13. Interfaces with adjacent work, utility companies, other public agencies, sensitive abutters, and/or any other third-party work affecting the Contract.
14. Utility work to be performed in accordance with the Project Utility Coordination (PUC) Form as provided in Section 8.14 - Utilities Coordination, Documentation and Monitoring Responsibilities
15. Access Restraints – restrictions on access to areas of the Work that are defined by the Department in the bid package, in Subsection 8.06 – Limitations of Operations or elsewhere in the Contract
16. Limitations of Work – time of year restrictions and any other limitations identified in the contract
17. Traffic work zone set-up and removal, night work and phasing
18. Material Certifications
19. Milestones listed in Subsection 8.03 - Prosecution of Work or elsewhere in the Contract Documents
20. For Type A and B Contracts only: All items to be paid for, including all Unit Price and Lump Sum pay items, shall be identified by activity. This shall include all non-construction activities such as engineering work; purchase of permanent materials and equipment, purchase of structural steel stock, equipment procurement, equipment delivery to the site or storage location and the representative amount of overhead/indirect costs that was included in the Contractor's Bid Prices.

SECTION 722 (Continued)

21. Contractor's request for validation of FBU (ready to open to traffic)
22. Full Beneficial Use (FBU) Contract Milestone per the following requirements: The majority of contract Work has been completed and the asset(s) has been opened for full multi-modal transportation use, except for limited contract work items that do not materially impair or hinder the intended public use of the transportation facility. All anticipated lane takings have been completed, except for minor, short term work items and as defined in Subsection 8.03 - Prosecution of Work
23. The Department's confirmation of completed work to allow for FBU.
24. Contractor's request for validation of Substantial Completion
25. Department generated punch list of twenty-one (21) Calendar Days
26. Substantial Completion Contract Milestone as defined in the standard specifications.
27. Punch list Completion Period of at least thirty (30) Calendar Days per the requirements of Subsections 5.11 - Final Acceptance, 7.15 - Claims Against Contractors for Payment of Labor, Materials and Other Purposes
28. Contractor confirmation that all punchlist work and documentation has been completed.
29. Physical Completion of the Work Contract Milestone per the requirements of Subsections 5.11 - Final Acceptance and 8.03 - Prosecution of Work
30. Documentation Completion per the requirements of Subsections 5.11 - Final Acceptance and 8.03 - Prosecution of Work
31. Contractor Field Completion Contract Milestone (which can also be considered the completion date) per the following requirements: All physical contract Work is complete including punchlist. The Contractor has fully de-mobilized from field operations and as defined in Subsection 5.11

C. **EARLY AND LATE DATES**

Early Dates shall be based on proceeding with the Work or a designated part of the Work exactly on the date when the corresponding Contract Time commences. Late Dates shall be based on completing the Work or a designated part of the Work exactly on the corresponding Contract Time, even if the Contractor anticipates early completion.

D. **DURATIONS**

Activity durations shall be in Work Days. Planned Original Durations shall be established with consideration of resources and production rates that correspond to the Contractor's Bid Price. Within all of the Department-required schedules, the Contractor shall plan the Work using durations for all physical construction activities of no less than one (1) Work Day and no greater than fourteen (14) Work Days, unless approved by the Engineer as part of the Baseline Schedule Review.

SECTION 722 (Continued)

Should there be an activity with a duration that is determined by the Engineer to be unreasonable, the Contractor will be asked to provide a basis of the duration using bid documents, historic production rates for similar work, or other form of validation that is acceptable to the Engineer. Should the Contractor and the Engineer be unable to agree on reasonable activity durations, the Engineer will, at a minimum, note the disagreement in the Baseline Schedule Review along with a duration the Engineer considers reasonable and the basis for that duration. A schedule that contains a substantial number of activities with durations that are deemed unreasonable by the Engineer will not be accepted.

E. **MATERIALS ON HAND**

The Contractor shall identify in the Baseline Schedule all items of permanent materials (Materials On Hand) for which the Contractor intends to request payment prior to the incorporation of such items into the Work.

F. **ACTIVITY DESCRIPTIONS**

The Contractor shall use activity descriptions in all schedules that clearly describe the work to be performed using a combination of words, structure numbers, station numbers, bid item numbers, work breakdown structure (WBS) and/or elevations in a concise and compact label.

G. **ACTIVITY IDENTIFICATION NUMBERS**

The Contractor shall use the activity identification numbering system specified in the MassDOT Highway Division Contractor Construction Schedule Toolkit.

H. **ACTIVITY CODES**

The Contractor shall use the activity codes specified in the MassDOT Highway Division Contractor Construction Schedule Toolkit.

I. **CALENDARS**

Different calendars may be created and assigned to all activities or to individual activities. Calendars define the available hours of work in each Calendar Day, holidays and general or project-specific non-Work Days such as Fish Migration Periods, time-of-year (TOY) restrictions and/or area roadway restrictions. All calendars shall extend two years beyond the current project completion date.

Project Special Provisions identify specific calendar restrictions some examples of special calendars include, but are not limited to:

- Winter Shutdown Period, specific work is required by separate special provision to be performed during the winter. See Special Provision 8.03 (if applicable)
- Peak traffic hours on heavily traveled roadways. This shall be from 6:30 am to 9:30 am and from 3:30 pm to 7:00 pm, unless specified differently elsewhere in the Contract.
- Special requirements by sensitive abutters, railroads, utilities and/or other state agencies as defined in the Contract.
- Planting seasons for trees, shrubs and grasses and wetlands mitigation work.

SECTION 722 (Continued)

- Cape Cod and the Islands Summer Roadway Work Restrictions: A general restriction against highway and bridge construction is enforced between Memorial Day and Labor Day, unless otherwise directed by the Engineer. Cape Ann Summer Roadway Work Restrictions: While there are no general restrictions for Cape Ann as there are for Cape Cod and the Islands, project-specific restrictions may be enforced.
- Turtle and/or Fish Migration Periods and/or other in-water work restrictions: Refer to the Project Special Provisions for specific restrictions.
- Working over Waterways Restricted Periods.
- Night-time paving and striping operations, traffic, and temperature restrictions.
- Utility Restrictions shall be as specified within the Contract.

J. **FLOAT**

For the calculation of float in the CPM schedule, the setting for *Retained Logic* is required for all schedule submissions, starting with the Baseline Schedule Submission. Should the Contractor have a reason to propose that an alternative calculation setting such as *Progress Override* be used, the Contractor shall obtain the Engineer's approval prior to modifying to this setting.

K. **COST AND RESOURCE LOADING (Types A and B only)**

For all Type A and B Schedules, the Contractor shall provide a cost and resource-loaded schedule with an accurate allocation of the costs and resources necessary to complete the Work. The costs and resources shall be assigned to all schedule activities in order to enable the Contractor to efficiently execute the Contract requirements and the Engineer to validate the original plan, monitor progress, provide cash flow projections, and analyze delays.

1. Each schedule activity shall have an assigned cost that accurately represents the value of the Work. Each schedule activity shall have its resources assigned to it by craft and the anticipated hours to accomplish the work. Each schedule activity's equipment resources shall be assigned to it by equipment type and hours operated. Front-loading or other unbalancing of the cost distribution will not be permitted.
2. The sum of the cost of all schedule activities shall be equal to the Contractor's Bid Price.
3. Indicating the labor hours per individual, per day, by craft and equipment hours/day will be acceptable.
4. The Engineer reserves the right to use the cost-loading as a means to resolve changes, disputes, time entitlement evaluations, increases or decreases in the scope of Work, unit price renegotiations and/or claims.
5. For all Type A and B Schedules, all subnets, fragnets, Proposal Schedules, and Recovery Schedules shall be cost and resource- loaded to help to quickly validate and monitor the duration of the Work to be performed.
6. For Type A Schedules, cost-loading of the schedule will also be used for cash flow projection purposes.
7. The cost-loading of each activity shall indicate the portion of the cost for that activity that is applicable to a specific bid item (cost account.) The total cost for each cost account must equal the bid item price.

SECTION 722 (Continued)

L. **NOT TO BE USED IN THE CONTRACTOR'S CPM SCHEDULE**

1. Milestones or constraint dates not specified in the Contract.
2. Scheduled work not required for the accomplishment of a Contract Milestone
3. Use of activity durations, logic ties and/or sequences deemed unreasonable by the Engineer.
4. Delayed starts of follow-on trades.
5. Float suppression techniques.
6. Leads such as leads, lags, SS, SF, & FF relationships without the expressed permission of the Department.

722.62 Submittal Requirements

All schedules shall be prepared and submitted in accordance with the requirements listed below.

Each monthly Contract Progress Schedule submittal shall be uniquely identified.

Each Submission shall, at a minimum, include the following:

a. Narrative
b. Schedule submittals shall be signed by the Scheduler
c. Schedule Printout - All Activities
d. Schedule Printout - Critical Path Layout
e. Schedule Printout - Remaining Work
f. Schedule Printout - Top 3 Float Path
g. Work Breakdown Structure (WBS) Summary
h. Project Spending Report (PSR) in Portable Document Format (.PDF)
i. Project Spending Report (PSR) in Microsoft Excel spreadsheet (.XLS)
j. Oracle Primavera P6 Schedule File (.XER)

All digital file submittals will be labeled with the following information.

- Contract Number
- Project Number
- Project locations (i.e., town(s))
- Brief description
- Submittal description (i.e., UP07)
- Data Date (MM-DD-YY)
- File Description (i.e., Critical Path)

Example: C110464 (P606309) - Orange Route 2 over 202 – UP23 (07-15-22) - Critical Path

A. **Narratives**

A written narrative shall be submitted with every schedule submittal. The narrative shall:

1. itemize and describe the flow of work for all activities on the Critical Path in a format that includes any changes made to the schedule since the previous Contract Progress Schedule / Monthly Update or the Baseline Schedule, whichever is most recent.
2. provide a description of any specification requirements that are not being followed. Identify those that are improvements and those that are not considered to be meeting the requirements.

SECTION 722 (Continued)

3. provide all references to any Notice of Delay that has been issued, within the time period of the Contract Progress Schedule Update, by letter to the Engineer. Note that any Notice of Delay that is not issued by letter will not be recognized by the Engineer. See Subsection 722.64.A – Notice of Delay.
4. provide a description of each third-party utility's planned vs. actual progress and note any that are trending late or are late per the durations and commitments as provided in the PUC Form; provide a description of the five (5) most important responses needed from the Department and the need date for the responses in order to maintain the current Schedule of Record.
5. provide a description of all critical issues that are not within the control of the Contractor or the Department (third party) and any impact they had or may have on the Critical Path.
6. provide a description of any possible considerations to improve the probability of completing the project early or on time.
7. compare Early and Late Dates for activities on the Critical Path and describe reasons for changes in the top three (3) most critical paths.
8. describe the Contractor's plan, approach, methodologies, and resources to be employed for completing the various operations and elements of the Work for the top three (3) most critical paths. For update schedules, describe and propose changes to those plans and verify that a Proposal Schedule is not required.
9. describe, in general, the need for shifts that are not 5 days/week, 8 hours/day, the holidays that are inserted into each calendar and a tabulation of each calendar that has been used in the schedule.
10. describe any out-of-sequence logic and provide an explanation of why each out-of-sequence activity does not require a correction, if one has not been provided, and an adequate demonstration that these changes represent the basis of how these activities will be built, including considerations for resources, dependencies, and previously approved production rates.
11. identify any possible duration increases resulting from actual or anticipated unit price item quantity overruns as compared to the baseline duration, with a corresponding suggestion to mitigate any possible delays to the Critical Path. If the delay is anticipated to impact the Critical Path, refer to Subsections 4.06 – Increased or Decreased Contract Quantities and 8.10 – Determination and Extension of Contract Time for Completion and submit a letter to the Engineer notifying of a potential delay.
12. include a schedule log consisting of the name of the schedule, the data date and the date submitted.
13. include and describe any notifications, communications and coordination meetings with third-parties such as utility companies that occurred from the last update including personnel names, job titles and contact information, date of meeting(s)/correspondence(s), topics discussed, and reasons the third party provided for deviations from the PUC form.

SECTION 722 (Continued)

B. **CPM Bar Charts**

One (1) timescaled bar chart containing all activities shall be prepared and submitted using a scale that yields readable plots and that meets the requirements of Subsection 722.61 – Schedule Content and Preparation Requirements Activities shall be linked by logic ties and shown on their Early Dates. Critical Paths shall be highlighted, and Total Float shall be shown for all activities.

A second timescaled bar chart shall also be prepared containing only the Critical Path or, if the Critical Path is not the longest path, the Longest Path using a scale that yields readable plots and that meets the requirements of Subsection 722.61 – Schedule Content and Preparation Requirements. Activities shall be linked by logic ties and shown on their Early Dates. Total Float shall be shown for all activities.

C. Detailed Activity Schedule Comparisons

A Detailed Activity Schedule Comparison (DASC) is a simple reporting tool in the format of a graphical report that will provide Resident Engineers with immediate, timely and up-to-date information. The DASC consists of an updated bar chart that overlays the current time period's bar chart onto the previous time period's bar chart for an easily read comparison of progress during the present and previous reporting periods.

D. Activity Cost Report and Monthly Cash Flow Projections (Type A only)

With each Contractor Quantity Estimate (CQE), the Contractor shall submit an Activity Cost Report and Cash Flow Projection that includes all activities grouped by Contract Bid Item.

The Activity Cost Report shall be generated from the Schedule of Record and shall be the basis of the Monthly Cash Flow Projection. Within each contract Bid Item, activities shall be sequenced by ascending activity identification number and shall show:

1. activity ID and description,
2. forecast start and finish dates for each activity and,
3. when submitted as a revised schedule, actual start, and finish dates for each completed activity.
4. any variance to the estimated contract quantity shall be shown.

E. Resource Graphs (Type A only)

Monthly and cumulative resource graphs for the remaining Contract period using the Early Dates and Late Dates in the Contract Progress Schedule shall be included as part of each schedule submittal.

SECTION 722 (Continued)

F. Projected Spending Reports

A Projected Spending Report (PSR) shall be prepared and submitted monthly. The PSR shall indicate the monthly spending (cash flow) projection for each month from NTP to Contractor Field Completion (CFC). Each month's actual spending shall be calculated using all CQEs paid during that month. The Projected Spending Report (PSR) shall be depicted in a tabular format and provided in both an .XLS and .PDF.

722.63. Progress Schedule Requirements

A. Baseline Schedule

The Baseline Schedule shall be due thirty (30) Calendar Days after Notice to Proceed (NTP). The Baseline Schedule shall only reflect the Work awarded to the Contractor and shall not include any additional work involving Extra Work Orders or any other type of alleged delay. The Baseline Schedule shall be prepared and submitted in accordance with Subsections 722.61 - Schedule Content and Preparation Requirements and 722.62 - Submittal Requirements. Once the Baseline Schedule has been accepted by the Engineer, with or without comments, it shall represent the as-planned schedule for the Work and become the Contract Progress Schedule of Record until such time as the schedule is updated or revised under Subsections 722.63.C - Contract Progress Schedules / Monthly Updates, 722.64.C - Recovery Schedules and 722.64.D - Proposal Schedules.

The Cost and Resource-Loading information (Types A and B only) shall be provided by the Contractor within forty-five (45) Calendar Days after NTP.

The Engineer's review comments on the Baseline Schedule and the Contractor's responses to them will be maintained for the duration of the Contract and will be used by the Engineer to monitor the Contractor's work progress by comparing it to the Contract Progress Schedule / Monthly Update.

B. Interim Progress-Only Schedule Submissions

The first monthly update of the Contract Progress Schedule/Monthly Update is due within seventy (70) Calendar Days after Notice to Proceed (NTP.) The Baseline Schedule review period ends at sixty (60) Calendar Days after NTP, see Subsection 722.60.B - Schedule Reviews by the Department. If the Baseline Schedule has not been accepted within sixty (60) Calendar Days after NTP, an Interim Progress-Only Schedule shall be due within seventy (70) Calendar Days after NTP. The purpose of the Interim Progress-Only Schedule is to document the actual progress of all activities, including non-construction activities, from NTP until the Baseline Schedule is accepted.

SECTION 722 (Continued)

C. Contract Progress Schedules / Monthly Updates

The first Contract Progress Schedule shall be submitted by the Contractor no later than seventy (70) Calendar Days after NTP. The data date for this first Progress Schedule shall be two months (approximately sixty (60) Calendar Days) after NTP. Subsequent Progress Schedules shall be submitted monthly.

Each Contract Progress Schedule shall reflect progress up to the data date. Updated progress shall be limited to asbuilt sequencing and asbuilt dates for completed and inprogress activities. Asbuilt data shall include actual start dates, remaining Work Days and actual finish dates for each activity, but shall not change any activity descriptions, the Original Durations, or the Original Resources (as planned at the time of bid), without the acceptance of the Engineer. If any activities have been completed out-of-sequence, the Contractor shall propose new logic ties for affected in-progress and future activities that accurately reflect the previously approved sequencing. Alternatively, the Contractor may submit to the Engineer for approval an explanation of why an out-of-sequence activity does not require a correction and an adequate demonstration that the changes accurately represent how the activities will be built, including considerations for resources, dependencies, and previously approved production rates. Once approved by the Engineer, the Contractor may incorporate the changes in the next Contract Progress Schedule/Monthly Update with the affected activities clearly identified and explained in the Schedule Narrative.

No revisions to logic ties, sequence, description, or duration of future activities; or planned resource costs shall be made without prior approval by the Engineer.

Any proposed logic changes for in-progress or future activities shall be submitted to the Engineer for approval before being incorporated into a Contract Progress Schedule. The logic changes must be submitted using a Proposal Schedule or a schedule fragnet submission. Once approved by the Engineer, the Contractor may incorporate the logic in the next Contract Progress Schedule/Monthly Update with the affected activities clearly identified and explained in the Schedule Narrative.

For any proposed changes to the original sequence, description or duration of future activities, the Contractor shall submit to the Engineer for approval an explanation of how the proposed description or duration change reflects how the activity will be progressed, including considerations for resources and previously approved production rates. Any description or duration change that does not accurately reflect how the activity will be progressed will not be approved by the Engineer. Once approved by the Engineer, the Contractor may incorporate the changes in the next Contract Progress Schedule/Monthly Update with the affected activities clearly identified and explained in the Schedule Narrative.

Contract Progress Schedules that extend performance beyond the Contract Time or beyond any Contract Milestone shall not be approved by the Engineer. The Contractor shall submit a Recovery Schedule, or a Time Entitlement Analysis, if any Contract Progress Schedule/Monthly Update indicates a failure to meet the Contract Dates.

SECTION 722 (Continued)

D. Short-Term Construction Schedule

The Contractor shall provide a Short-Term Construction Schedule that details daily work activities, including any multiple shift work that the Contractor intends to conduct, in a spreadsheet format. The daily activities shall directly correspond to the Contract Progress Schedule activities, with a matching reference to the activity identification number in the Contract Progress Schedule and may be at a greater level of detail. The Short-Term Construction Schedule shall be submitted every two weeks. It shall display all work for a thirty-five (35) Calendar Day period consisting of completed work for the two (2) week period prior and all planned work for the following three (3) week period. The initial submission shall be provided no later than thirty (30) Calendar Days after NTP or as required by the Engineer.

The Contractor shall be prepared to discuss the Short-Term Construction Schedule, in detail, with the Engineer in order to coordinate field inspection staff requirements, the schedule of work affecting abutters and any corresponding work with affected utilities. Short-Term Construction Schedules shall be prepared and submitted in accordance with Subsections 722.61 - Schedule Content and Preparation Requirements and 722.62 - Submittal Requirements.

722.64 Impacted Schedule Requirements

A. Notice of Delay

The Contractor shall notify the Engineer in writing, with copies to the District and State Construction Engineers, within fifteen (15) of the start of any delays to the Critical Path that are caused by actions or inactions that were not within the control of the Contractor. Delay notifications that are not provided in a letter to the Engineer, such as a delay notification in the schedule narrative, will not be recognized as contractual notice in the determination of any Time Extension related to the impacts to the work associated with this specific alleged delay. Should such a delay continue for more than one (1) week, the Contractor shall note it in the Schedule Narrative until the delay is no longer impacting the Critical Path for the completion of the Contract Milestones. The Engineer will evaluate the alleged delay and its impact and will respond to the Contractor within ten (10) Calendar Days after receipt of a notice of delay.

B. Time Entitlement Analysis

A Time Entitlement Analysis (TEA) shall consist of a descriptive narrative, prepared in accordance with Subsection 722.62.A - Narratives, and an as-built CPM schedule, which may be in the form of a schedule fragnet that has been developed from the project's Contract Progress Schedule of Record, and illustrates the impact of a delay to the Critical Path, Contract Milestones and/or Contract Completion Date as required in Subsection 8.10 - Determination and Extension of Contract Time for Completion. TEAs shall also be used to determine the schedule impact of proposed Extra Work Orders (EWO) as also required in Subsection 8.10.

TEAs shall be prepared and submitted in accordance with the requirements of Subsections 722.61 - Schedule Content and Preparation Requirements and 722.62 - Submittal Requirements and shall be based on the Contract Progress Schedule of Record applicable at the start of the delay or impact from an EWO. A TEA fragnet must start with a specific new activity describing the work contained in either a Notice of Delay previously submitted to the Department per Subsection 722.64.A - Notice of Delay or an EWO.

SECTION 722 (Continued)

TEAs shall be submitted:

1. as part of any Extra Work Order that may impact Contract Time,
2. with a request for a Time Extension,
3. within fifteen (15) Calendar Days after a request for a TEA by the Engineer for any other reason.

A TEA shall be submitted to the Engineer before any Time Extension is granted to the Contractor. Time Extensions will not be granted unless the TEA accurately reflects an evaluation of all past delays and the actual events that occurred that impacted the Critical Path. The TEA must also demonstrate a plan for the efficient completion of all of the remaining work through an optimized CPM Schedule. The analysis shall include all delays, including Contractor-caused delays, and shall be subdivided into timeframes and causes of delays.

TEAs shall incorporate any proposed activities, logic ties, resource considerations, and activity costs required to demonstrate the schedule impacts most efficiently in addition to detailing all impacts to existing activities, logic ties, the Critical Path, Contract Milestones, and the Contract Completion Date. In addition, TEAs shall accurately reflect any changes made to activities, logic ties, restraints, and activity costs, necessitated by an Extra Work Order or other schedule impact, for the completion of the remaining work. The Contractor shall provide TEAs that demonstrate that all delays have been mitigated to the fullest extent possible without requiring an Equitable Adjustment to the original bid basis.

All TEAs shall clearly indicate any overtime hours, additional shifts and the resources that are proposed to be incorporated in the schedule. The Engineer shall have final discretion over the use of overtime hours and additional shifts. The Engineer shall have the right to require that overtime hours and/or additional shifts be used to minimize the duration of Time Extensions if it is determined to be in the best interest of the Department to do so.

When accepted, the changes included in a TEA shall be incorporated into the next Contract Progress Schedule per the requirements of Subsection 722.63.C - Contract Progress Schedules / Monthly Updates. During the review of any TEA, all Contract Progress Schedules shall continue to be submitted as required.

The Engineer may request that the Contractor prepare a Proposal Schedule or a Recovery Schedule to further mitigate any delays that are shown in the accepted TEA or Contract Progress Schedule.

C. Recovery Schedules

The Contractor shall promptly report to the Engineer all schedule delays during the prosecution of the Work. Contract Progress Schedules that predict performance extended beyond the Contract Time or beyond any Contract Milestone shall not be approved as the schedule of record. This requirement is critical to the Department's ability to make informed decisions regarding Contract Time and costs.

The Contractor shall submit a Recovery Schedule within fifteen (15) Calendar Days of a Contract Progress Schedule submission that shows failure to meet the Contract Dates unless a recovery schedule is waived by the Department. Waiving the recovery schedule does not relieve the contractor of the responsibility for the delay. The Department may revoke the waiver of a Recovery Schedule, at which time a Recovery Schedule shall be submitted within fifteen (15) Calendar Days of the Contractor being notified.

SECTION 722 (Continued)

Changes represented in accepted Recovery Schedules shall be incorporated into the next Contract Progress Schedule.

D. Proposal Schedules

A Proposal Schedule is an alternative schedule used to evaluate proposed changes to the Contract scope or significant alternatives to previously approved approaches to complete the Work, which may include changes to activity durations, logic, and sequence. For Types A and B Schedules, the Proposal Schedule shall be cost and resource loaded.

A Proposal Schedule may be requested by the Department at any time or may be offered by the Contractor. The Engineer may request that the Contractor prepare a Proposal Schedule to further mitigate any delays that are shown in an accepted TEA or Contract Progress Schedule.

The Contractor shall submit the Proposal Schedule within thirty (30) Calendar Days of a request from the Department.

The Proposal Schedule shall not be considered a Schedule of Record until the logic, durations, narrative, and basis of the Proposal Schedule have been accepted by the Engineer. If the Proposal Schedule took the form of a fragnet, it must be incorporated into the Contract Progress Schedule of Record showing the current progress of all other activities and the impacts/results of the changes made by the Proposal Schedule before the Proposal Schedule is accepted by the Department.

Proposal Schedules shall clearly indicate any proposed acceleration including overtime hours, additional shifts, and the resources that are proposed to be incorporated in the schedule. The Engineer shall have final discretion over the use of overtime hours and additional shifts. Proposal Schedules that contain a cost element shall be submitted with a separate Cost Proposal.

Changes represented in the accepted Proposal Schedules shall be incorporated into the next Contract Progress Schedule. During the review of any Proposal Schedule, all Contract Progress Schedules shall continue to be required every month.

E. Disputes

All schedules shall be submitted, reviewed, dispositioned, and accepted in the timely manner specified herein so as to provide the greatest possible benefit to the execution of this Contract.

The Contractor may dispute a decision by the Engineer by filing a claim notice within seven (7) days after the Contractor's request for additional time has been denied or if the Contractor does not accept the number of days granted in a time extension. The Contractor's claim notice shall include a revised time entitlement analysis that sufficiently explains the basis of the time-related claim. Failure to submit the required time entitlement analysis with the claim notice shall result in denial of the Contractor's claim. A determination on the Contractor’s claim shall be in accordance with Subsection 7.16 Claims of Contractor for Compensation. Pending resolution of any dispute, the last schedule accepted by the Engineer will remain the Contract Schedule of Record.

SECTION 722 (Continued)

722.65 Schedule Type D Requirements

This section is to detail the requirements for Type D Schedules and is separate from the requirements listed above. These schedules are intended for a project in which a more formal schedule would not be practical.

Schedules for Type D projects shall be submitted for each work assignment. The Schedule Type D shall be submitted electronically in .XLS and .PDF format and meet the following requirements. The schedule requirements for work assignments that are anticipated to last three weeks or less shall conform to the requirements for Short-term Construction Schedules below.

Work assignments that are anticipated to last longer than three weeks shall submit a bar chart baseline and provided update schedules upon request of the engineer as required under Bar Chart Schedule below in addition to meeting the Short-term Construction schedule requirements.

A. **Bar Chart Schedule**

A Bar Chart that shall include the following:

- Work Assignment start date.
- Activities to identify.
  - Major work operations broken down to be no longer than 14 days.
  - Procurement of fabricated materials and equipment with long lead times, including time for review and approval of submittals required before procuring and fabricating.
  - The preparation and submission of shop drawings, procedures, and other required submittals, with a planned duration that is to be demonstrated to the Engineer as reasonable.
  - The review and return of shop drawings, procedures, and other required submittals, approved or with comments, the duration of which shall be shown as thirty (30) Calendar Days,
  - Detailed activities to satisfy permit requirements.
  - Subcontractor approvals at fifteen (15) Calendar Days from submittal to response
  - Project Close out activities including a 21-calendar day creation of a punchlist activity and 30 calendar day minimum completion of punchlist activity.
- Interfaces with adjacent work, utility companies, other public agencies, sensitive abutters, and/or any other third-party work affecting the Contract.
- Access Restraints – restrictions on access to areas of the Work
- Traffic work zone set-up and removal, night work and phasing
- Contract Milestones including Full beneficial Use, Substantial Completion and Contractor Field Completion

The Bar Char Schedule shall be provided at the beginning of the project and updated with each work order created for the project.

SECTION 722 (Continued)

B. **Short-Term Construction Schedule**

The Contractor shall provide a Short-Term Construction Schedule that details daily work activities, including any multiple shift work that the Contractor intends to conduct, in a spreadsheet format. The daily activities shall directly correspond to the Contract Progress Schedule activities, with a matching reference to the activity identification number in the Contract Progress Schedule and may be at a greater level of detail. See schedule toolkit for suggested format.

The Short-Term Construction Schedule shall be submitted every two weeks. It shall display all work for a thirty-five (35) Calendar Day period consisting of completed work on the assignment for the two week period prior and all planned work for the following three week period. The initial submission shall be provided no later than thirty (30) Calendar Days after NTP or as required by the Engineer.

The Contractor shall be prepared to discuss the Short-Term Construction Schedule, in detail, with the Engineer in order to coordinate field inspection staff requirements, the schedule of work affecting abutters and any corresponding work with affected utilities.

C. **Project Spending Report (PSR)**

A Projected Spending Report (PSR) shall be prepared and submitted monthly. The PSR shall be for all active work assignments, broken down by work assignment. The PSR shall indicate the monthly spending (cash flow) projection for each month from NTP to Contractor Field Completion (CFC). Each month's actual spending shall be calculated using all CQEs paid during that month. The Projected Spending Report (PSR) shall be depicted in a tabular format and provided in both an .XLS and .PDF

COMPENSATION

722.80 Method of Measurement

Schedule of Operations (Type A, B and C)

The project bid documents specify the fixed-price amounts to be paid to the Contractor for the Project Schedule requirements contained herein. Each bidder shall include this fixed price bid item amounts in their bid. Failure to do so may be grounds for the rejection of the bid.

This fixed price amount is for payment purposes only and is separate from what the Department considers to be the Contractor's General Condition costs. If the Contractor deems it necessary to include additional costs to provide all of the requirements of this section, these additional costs shall be included in the Contractor's overall bid price.

All required schedule-related work, including, but not limited to computers, computer software, the planning and coordination with utilities, training, schedule preparation and schedule submittals will be paid for under the fixed price amount.

Twenty percent (20%) of this pay item will be paid upon the Engineer's acceptance of the Contractor's Baseline Schedule, prepared and submitted in accordance with Subsection 722.63.A.

SECTION 722 (Continued)

The remaining eighty percent (80%) of this pay item will be paid in equal monthly installments distributed across the Contract Duration from Notice to Proceed (NTP) to Contractor Field Completion (CFC), less the 2 months required for the submittal and review of the Baseline Schedule in accordance with the following formula:

$$\text{Monthly Payment} = \frac{\text{Remaining Fixed Price amount (80\% of the Item Cost.)}}{\text{Contract Duration in whole months} - 2 \text{ months}}$$

The Schedule of Operations pay item will be adjusted to pay for only the actual quantity of schedules that have been submitted in accordance with this section.

Should there be a Time Extension granted to the Contractor, the Engineer may provide an Equitable Adjustment for additional Contract Progress Schedule Updates at intervals directed by the Engineer. The monthly payment will be the basis for this Equitable Adjustment.

Schedule of Operations (Type D)

For projects assigned with Type D schedule requirements, all scheduling work shall be considered incidental to the project with no separate payment under this section.

722.81 Basis of Payment

The timely and accurate submission of the Baseline Schedule is critical to the Contract and the Department's ability to make informed decisions. Only payments under Item 740 - Engineer's Field Office and Item 748 – Mobilization will be made until the Baseline Schedule is accepted by the Engineer.

All required schedule-related work, including, but not limited to computers, computer software, the planning and coordination with utilities, training, schedule preparation and schedule submittals (including monthly progress schedules, short-term schedules, project spending reports, TEAs, recovery schedules or impacted schedules) shall be included in this work.

No payment for any other pay item will be processed beyond seventy-five (75) Calendar Days from Notice to Proceed (NTP) until the Baseline Schedule is accepted by the Engineer. Until the Engineer's acceptance of the Baseline Schedule, the combined total of all payments made to the Contractor will be limited to an amount no greater than the total price for Item 748 - Mobilization or 3% of the contract price, whichever is less.

All Contract Progress Schedule Updates submitted later than ten (10) Calendar Days after the CQE (Contract Quantity Estimate) completion date, or greater than forty (40) Calendar Days from the Data Date of the previous submission, will be deemed to be no longer useful and will not qualify for payment. The late submission of Impacted schedules, including TEAs, recovery schedules and proposal schedules will result in the forfeiture of the monthly payment for the month in which they were due and subsequent months until the submission is made. Late submission of missed submittals will not result in recovery of the previously forfeited portion of the Schedule of Operations Fixed Price Payment Item.

SECTION 722 (Continued)

Failure to submit schedules as and when required may result in the forfeiture of that portion of the Schedule of Operations Fixed Price Payment and/or the withholding of the full or partial CQE payments by the Engineer.

Failure to submit schedules that are acceptable to the Engineer may result in the forfeiture of that portion of the Schedule of Operations Fixed Price Payment and/or the withholding of the full or partial CQE payments by the Engineer.

The Schedule of Operations pay item will be adjusted to pay for only the actual quantity of schedules that have been submitted in accordance with this section.

The Contractor's failure or refusal to comply with the requirements of this Section shall be reasonable evidence that the Contractor is not prosecuting the Work with due diligence and may result in the Engineer withholding of full or partial payments of all work performed.

722.82 Payment Items

722.2 SCHEDULE OF OPERATIONS (TYPE B) - FIXED PRICE $64,500 LUMP SUM

NORTHERN LONG-EARED BAT AND TRICOLORED BAT PROTECTION

The northern long-eared bat (*Myotis septentrionalis*; NLEB) and tricolored bat (*Perimyotis subflavus*; TCB) are listed as federally endangered or proposed endangered, respectfully, under the Endangered Species Act (ESA). The U.S. Fish and Wildlife Service (USFWS) developed this guidance to address ESA compliance and promote conservation of NLEB and TCB. This project has been consulted with the USFWS through the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Administration (FTA) Programmatic Biological Opinion/Conference Opinion for Transportation Projects in the Range of the Indiana bat, northern long-eared bat, and tricolored bat, dated December 13, 2024. and generated a May Affect, Not Likely to Adversely Affect (NLAA) determination (see **Document USFWS NLAA**). Subsequently, the project has completed Section 7 consultation under the ESA.

In advance of the uplisting of the TCB to endangered under the ESA, the following Avoidance and Minimization Measures (AMMs) must be strictly adhered to in order to protect NLEB and TCB and to be in compliance with the ESA. Contact MassDOT Environmental Services - Wildlife Unit Supervisor for questions about project limits, restrictions, or conservation measures.

General AMM

- The Contractor shall ensure all personnel working in on the project site are aware of all environmental commitments related to NLEB and TCB, including all applicable AMMs. NLEB and TCB information (https://www.fws.gov/midwest/endangered/mammals/nleb/ and https://www.fws.gov/species/tricolored-bat-perimyotis-subflavus) shall be made available to all personnel.

- On August 5, 2022, MassDOT Highway Division Environmental Services conducted a northern long-eared bat summer presence/absence survey, in accordance with the 2022 survey guidelines. The survey did not confirm the presence of NLEB and/or TCB. If work is proposed by the Contractor past August 5, 2027, additional review is required by the MassDOT Highway Division's Environmental Services Section, and additional review and restrictions may be required by the USFWS.

Tree Removal AMMs

- *If additional cutting is proposed by the Contractor that is outside the scope of this contract, additional review is required by the MassDOT Highway Division's Environmental Services Section, and additional review and restrictions may be required by the USFWS.*

Bridge AMM

- On November 15, 2024, MassDOT Highway Division Environmental Services, conducted a northern long-eared bat bridge/structure bat assessment, in accordance with the USFWS guidelines. The assessment did not find presence of, or evidence of use by bats, and as stated within the guidelines, the assessment is valid for two years. If bridge work is not complete before November 15, 2026, assessment of the bridge for the presence of, or evidence of use by, bats shall be completed by the MassDOT Wildlife Unit prior to continuing bridge work. The Contractor shall notify the MassDOT Wildlife Unit no later than fourteen (14) days prior to November 15, 2026 to provide adequate time for inspection. If bats are found to be present, or, if there is evidence of bat usage, work at the bridge shall not commence until after the MassDOT Wildlife Unit has completed coordination with the US Fish and Wildlife Service to determine the appropriate follow up or mitigation actions.

CONTRACTS:

- *INCLUDE HERBICIDE REPORT FORM IN THE BOOK – SEE PROPOSAL DOCS FOLDER DOCUMENT A00810*

ITEM 102.3 HERBICIDE TREATMENT OF INVASIVE PLANTS HOUR

This work must be performed by persons who meet the qualifications below and are approved by the Landscape Design Section.

Work under this item consists of herbicide treatment of invasive plants currently existing within the project limits and as directed. An Invasive Plant Management Strategy (IPMS) shall be submitted to the Engineer for review and approval and the IPMS shall be implemented on-site. The IPMS shall be written and submitted per Item 102.33 Invasive Plant Management Strategy and shall be measured and paid for under that Item.

Work under this item shall be coordinated with work and schedule for Selective Clearing, Clearing and Grubbing, Mowing, Tree Removal, Planting, and Wetland Mitigation items.

Payment is per hour on-site and shall be compensation for a minimum crew of 2 licensed applicators, 2 back-pack sprayers and mist-blowers, a properly equipped spray truck with spray hoses, and a tank with sufficient capacity for a full day of work. If there is only one applicator, hourly payment shall be adjusted to 50 percent of the unit price.

Date and time stamped photos indicating start and stop time of work must be submitted if requested.

This item is not intended for manual removal of plants.

Management of plants determined to have been introduced to the site via imported loam, compost, mulch, plants, equipment, or other construction activities will be the Contractor's responsibility and at the Contractor's expense.

Herbicide shall be applied during daytime hours only.

Measures to prevent the introduction of invasive plant species to the site and to address introduction due to construction-related activities shall be covered under the Standard Specifications, Division I - Subsections 7.01(D) Plant Pest Control and 7.13 Protection and Restoration of Property as amended in these Special Provisions.

Plant species targeted for management under this item shall be as determined in the field per the site walk and as specified in the IPMS.

The definition of invasive plant species shall be as described by Massachusetts Invasive Plant Advisory Group (MIPAG): "non-native species that have spread into native or minimally managed plant systems in Massachusetts, causing economic or environmental harm by developing self-sustaining populations and becoming dominant and/or disruptive to those systems."

Control of invasive plants shall begin immediately with the initiation of construction activities and prior to any clearing or site disturbance. Treatment areas shall include stockpile locations and may, upon approval of the Engineer, extend outside the project limit. Treatment shall be done each consecutive year for the duration of the contract unless specified otherwise in the IMPS or unless directed otherwise by the MassDOT invasive species contact. Work shall be done during the growing season from May – October unless otherwise specified in the IPMS.

Areas identified for vegetation control measures shall be as shown on the plans and as determined in the field by the Engineer and a MassDOT Landscape Architect. Contact at MassDOT Landscape Design Section may be contacted at: XXXXX.XXXX@dot.state.ma.us.

QUALIFICATIONS

The applicators shall submit and meet the qualifications outlined below. A list of contractors specializing in invasive management and approved by MassDOT Landscape Design Section is available on the following website: https://www.mass.gov/lists/landscape-design-and-roadside-maintenance under Invasive Plant Management.

Requirements

1. Company must provide proof of qualifications by providing the following:
   a. Narrative describing company, its expertise and experience with invasive plant control.
   b. Demonstrate experience with herbicide treatment as part of restorations and in sensitive areas.
   c. Describe company's technical qualifications and past performance.

2. Company must meet licensing requirements:
   a. All crew applicators must have a Massachusetts Commercial Applicator License (CORE).
   b. At least one or more applicator must have a ROW certification, if required for work.
   c. Company must provide name(s) of applicator(s) and Applicator License/Certification number for all contractor crew leaders working on the project.
   d. Company must provide documentation of any warnings, penalties or fines received in the last three (3) years.

3. Company must provide proof of experience with invasive plant control and include following:
   a. At least five (5) references from prior invasive plant control work completed in last five (5) years. Provide contact information including address, phone number and email.
   b. Provide a summary of each of these projects including nature of the problem, specific invasive vegetation treated, dates and period of treatment, methodologies used, and summary of success or not in terms of meeting performance objectives. Include summary of equipment used.
   c. Photo documentation of these projects.
   d. GPS coordinates of project locations, if available.

4. Crew leader must have expertise with invasive plant control and provide the following:

a. Have held Core license for at least five (5) years.
b. Resume listing five (5) or more years of experience applying pesticides with the company or with another company specializing in vegetation management.

SUBMITTALS

No work shall begin without approval of the submittals.

Submittals include the following items:

Invasive Plant Management Strategy (IPMS)

At least thirty (30) days prior to proposed treatment the IPMS shall be submitted for approval by the Engineer and MassDOT Landscape Architect. All chemicals, methods and work done under this item shall be consistent with the IPMS. The IPMS shall be as described under Item 102.33.

Herbicide Use Report

Within two (2) weeks after each application, the Contractor shall provide to the Engineer and the MassDOT Landscape Architect a completed and signed MassDOT Herbicide Use Report.

Photo Documentation

Digital photos with date and time of herbicide application work, showing start time and completion time, are required and must be submitted for measurement of payment upon request.

MATERIALS

All proposed herbicides shall be as approved in the IPMS. Herbicides shall be labeled for the method of treatment and shall meet all federal, state and local regulation requirements. Application rates will depend on herbicide proposed and shall be per the manufacturer's label for specific application.

METHODS

All methods used shall be as approved in the IPMS which shall be determined during the Initial Site Walk as described under Item 102.33 Invasive Plant Management Strategy.

The Contractor shall be responsible for marking delineated areas and plants to be preserved, removed, or otherwise treated. Fencing or other materials needed for marking and delineating protected areas shall be incidental to this item.

The Contractor shall notify the Engineer a minimum of 3 days prior to date of expected herbicide application. Applicators shall notify the Engineer upon arriving on-site and upon leaving the site.

Herbicide Applications

All herbicide application shall conform to Massachusetts Pesticide Laws and Regulations per the Massachusetts Department of Agricultural Resources (MDAR) Pesticide Bureau.

Mixing, applying and/or disposing of herbicides shall always be in accordance with instructions on their labels and all applicable federal, state, and local regulations. Mixing shall not occur within sensitive areas, wetlands, or buffer zones.

Contractor shall not spray 2 hours prior to precipitation, during rain, or during windy conditions. The Contractor shall be responsible for monitoring weather conditions and adjusting the work schedule as appropriate for the herbicide and application method to be used.

Targeted vegetation shall be identified and marked prior to treatment. Plants treated by foliar spray, injection or glove application or other methods that leave standing vegetation, as opposed to cut-stump application, shall remain clearly marked for identification through the contract period.

Desirable vegetation shall be protected from both spray and other physical damage.

Contractor is responsible for any damage to vegetation not designated for removal or treatment. Vegetation damaged shall be restored. Cost of replacement plants and/or restoration shall be borne by the Contractor.

Contractor shall ensure that the public does not enter a work area while herbicide application or spraying is underway.

Disposal Of Invasive Plant Material

All material to be cleared shall become the property of the Contractor. The satisfactory disposal of all cleared plant material (seeds, roots, woody vegetation, associated soils, etc.) shall be the Contractor's responsibility.

The Contractor shall take measures to prevent viable plant material from leading to further infestations (seeds, roots, woody material, etc.) while stockpiled, in transit, or at final disposal locations. All precautions shall be taken to avoid contamination of natural landscapes with invasive plants or invasive plant material.

Chipping, shredding, or on-site burning of plant material must be approved by the Engineer and included in the IMPS.

For plant material taken to an incinerating facility per the IPMS, a receipt from that facility shall be submitted to the Engineer as proof of disposal.

Where feasible, it is preferable to dispose of plants on-site or to bury them on-site with on-going monitoring for re-sprouting. Disposal locations and methods must be approved and included in the IPMS. Site work such as grading and seeding to stabilize and restore disposal area shall be incidental to this item.

The Contractor shall be responsible for treating or otherwise managing areas of re-growth due to improper disposal. Treatment shall be at the Contractor's expense.

Follow-Up Treatment

Plants and areas shall be re-treated as necessary and as appropriate to the time of year. Treatment shall be for the duration of the contract and per the IPMS.

MEASURE OF SUCCESS

The expectation is a minimum of 85-95 percent control achieved after the first treatment, depending on plants targeted and extent of population, and based on the expectations laid out in the IPMS. The expectation for the contract duration is 95-100% eradication by the end of the treatment period, unless otherwise specified in the IPMS.

METHOD OF MEASUREMENT

Item 102.3 will be measured for payment by the Hour of verified crew time spent on the project doing herbicide application as and where specified herein and in the IPMS. A crew shall be defined as a minimum of two licensed applicators each equipped with (at minimum) back-pack sprayer and mist blower. The crew shall also have a properly equipped spray truck with hoses and a tank with sufficient capacity for a full day of work.

BASIS OF PAYMENT

Item 102.3 will be paid at the contract unit price per Hour, which price shall include all labor, materials, equipment, tools, and all incidentals required to complete the work.

Payment will be based upon verified time spent on the project doing herbicide application as and where specified in the IPMS and upon receipt and approval of submittals. Payment will not include travel time to and from the Contractor's place of business and nor time for investigative field trips.

If there is only one applicator, hourly payment shall be adjusted to 50 percent of the unit price.

The Invasive Plant Management Strategy will be paid for under Item 102.33.

ITEM 102.33 INVASIVE PLANT MANAGEMENT STRATEGY HOUR

This item consists of providing an Invasive Plant Management Strategy (IPMS) for the control of invasive plants currently existing on the project site and/or as directed and shall be coordinated with Item 102.3 Herbicide Treatment of Invasive Plants. Unless otherwise approved, the IPMS shall be submitted in the form of the MassDOT Invasive Plant Management Strategy Report Form.

The IPMS shall be submitted for review and approval by the MassDOT Landscape Design Section or their representative, and the IPMS shall be implemented on-site.

The Invasive Plant Management Strategy Report Form is available online at https://www.mass.gov/lists/landscape-design-and-roadside-maintenance under Invasive Plant Management.

Herbicide treatment for invasive plants shall be as described under Item 102.3 Herbicide Treatment of Invasive Plants and shall be compensated per that Item.

Work under this item shall be coordinated with work and schedule for Selective Clearing, Clearing and Grubbing, Mowing, Tree Removal, Planting, and Wetland Mitigation as relevant to the project.

Individual attending the site walk and determining the Invasive Plant Management Strategy must demonstrate expertise with vegetation management and invasive plant control and submit qualifications as described below.

QUALIFICATIONS

Individual shall be from the same company as that providing services for Item 102.3 Herbicide Treatment of Invasive Plants and shall submit the following, if not submitted under Item 102.3:

- Submit copy of current Core license.
- Submit a resume listing five (5) or more years of experience managing invasive plants with a company specializing in vegetation management.
- References shall be submitted if requested.

SUBMITTALS

Task Summary & Reports

For measurement of payment, the contractor shall submit the total sum and a breakdown of hours for the tasks performed. At a minimum, the tasks shall include the Initial Site Walk, submittal of an approved IPMS, and if requested to accommodate project or site changes, a Follow-up Site Inspection and accompanying IPMS Amendment.

Interim Site Monitoring Reports and/or a Final Report shall be submitted if requested by the MassDOT Landscape Design contact. The MassDOT Landscape Design contact must be notified to attend the site inspection walk when an Interim or Final Report has been requested.

Invasive Plant Management Strategy (IPMS)

At least thirty (30) days prior to construction activities and/or any proposed treatment, the contractor shall submit the IPMS for approval by the Engineer and MassDOT Landscape Architect. All chemicals and methods proposed shall be consistent with applicable Massachusetts Wetlands Protection Act Order of Conditions.

The IPMS shall be completed in coordination with the Prime Contractor and the Engineer and shall include the following as appropriate and applicable to the project and to the IPMS Report Form questions and Guidance:

I. Project Information

a. Company writing the IPMS and performing the herbicide application.
b. Date of site walk
c. Attendees at site walk
d. Expected end date of contract and expected last treatment (month/season)

II. Brief Description of Conditions

a. Provide a free-hand sketch on construction plans or aerial image showing species, location, and as relevant, show or note extent of population as relevant to Strategy (i.e., population extends off ROW preventing eradication, small population and eradication deemed feasible within contract schedule, etc.).

III. Coordination with Roadway Contractor regarding other work

a. Tree Work: Note coordination to be implemented with tree removal, clearing, and clearing and grubbing as applicable to the project.
b. Wetland Mitigation - Include management proposed for wetland mitigation areas in the IPMS, if and as required.
c. Planting: If there will be planting in areas proposed for treatment, propose treatment and schedule to avoid herbicide damage to plants.
d. Mowing: If coordination is required with state mowers, note need in IPMS.

IV. Soil Management

a. Provide specifics on how soil with invasive plant roots (in particular) or seeds will be handled (i.e., separate stockpiles, plant material will be buried on-site, re-used on-site, disposed off-site and if so, where?).
b. Show stockpile locations on plan and include treatment schedule.
c. Note measures that will be implemented to avoid spread through equipment, including how and where equipment will be cleaned.

V. Invasive Plant Treatment & Management

a. Proposed chemical and methods of treatment for each species or area.
b. Time of treatment based on target plant species.
c. Submit product label including application methods and rates (entire MSDS information need not be submitted if available online).

d. Proposed performance metrics or measure of treatment success if different from that specified under Item 102.3.
e. Method for disposing invasive plant material. This includes material that may result in spread (i.e., seeds, roots) and material that has been treated and/or is not viable (foliage, dead wood, etc.). Methods may include grinding in place, stockpiling and treating, and incinerating offsite.
f. Expected follow-up treatment for duration of contract.

VI. Monitoring Schedule if requested by MassDOT.

Note: The IPMS is critical for identifying pre-construction conditions as well as strategies for minimizing import or spread of invasive plants. Failure to provide an approved IPMS may jeopardize this item, in which case, the contractor will be responsible for management of invasive plants found on-site at no cost to the contract.

Photo Documentation

Digital photos of site conditions, typical species, and extent of infestation must be provided with the IPMS and with any follow-up monitoring or reporting. Photos of follow-up monitoring and reporting must be date and time stamped for acceptance.

METHODS

Initial Site Walk

Prior to any construction activities and soil disturbance, the Contractor shall walk the site with the Engineer and the MassDOT Landscape Architect to determine the IPMS. During the site walk the Contractor shall identify limits of work and, as necessary, mark locations of areas designated for treatment and individual plants targeted for treatment or removal. The Contractor shall be responsible for marking delineated areas and plants to be preserved, removed, or otherwise treated. Fencing or other materials needed for marking and delineating protected areas shall be incidental to this item.

IPMS Follow-up Amendment

The IPMS may be amended to address additional concerns or adjust to conditions if required by the MassDOT Landscape Architect. The amended IPMS shall be submitted to the Engineer and MassDOT Landscape Architect for approval at least fourteen (14) days prior to any proposed treatment.

Interim Site Monitoring Inspection Reports

If required by the MassDOT Landscape Architect and Engineer, Interim Site Monitoring and an accompanying report shall be conducted. Interim Reports must include time and date stamped photos showing treated locations and species.

Final Inspection

A final inspection and report documenting the status of the invasive control may be required for regulatory purposes or for instances where control will be continued by others. The report shall include photo documentation of pre-construction (existing) and post-treatment conditions, notations on a plan or aerial image of area treated, summary of treatment performed, and control achieved. Final reports submittal must include time and date stamped photos.

METHOD OF MEASUREMENT

Item 102.33 will be measured for payment by the Hour. The basis for measurement shall be per the completion of tasks as approved under the Task Summary submittal and acceptance of submittals and photos described above.

BASIS OF PAYMENT

Item 102.33 will be paid at the contract unit price per Hour, which price shall include all labor, materials, equipment, tools, and all incidentals required to complete the work. Payment shall not include travel time to and from the Contractor's place of business.

ITEM 102.511 TREE PROTECTION – ARMORING AND PRUNING EACH

The work under this item shall conform to the relevant provisions of Sections 771 of the Standard Specifications and the following:

Tree protection – armoring and pruning shall be used for instances where construction activity (the use of heavy equipment), comes within proximity to potentially damage tree trunk(s) or limbs.

The work shall include the furnishing and installing of temporary tree trunk protection, minor limb pruning, or removal of lower tree limbs to prevent injury to the tree from construction equipment and activities; as shown on the Drawings; and/or as required by the Engineer.

REFERENCES

If requested, the Contractor shall provide to the Engineer one copy of the latest edition of the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance: Part 1-Pruning and Part 5-Construction Management Standard. Provision of reference shall be incidental to this item.

MATERIALS

Trunk armoring shall be such that it prevents damage to the trunk from construction equipment. Material used for trunk armoring or mounting shall be such that installation and removal shall not damage the trunk.

Acceptable trunk armoring materials shall include two by four (2x4) wood cladding, mounted with wire or metal strapping, or when duration of construction activities is less than three months, slotted corrugated plastic pipe, mounted with duct tape. Eight (8) once untreated burlap shall be used to wrap the tree trunk prior to installation of cladding.

Alternative armoring methods or materials may be acceptable if approved by the Engineer.

The height of tree trunk cladding shall be measured from the base of the tree (including root flare) to the bottom of the first branch, or to a height of eight (8) feet, or as may be required by the Engineer.

METHODS OF WORK

Prior to construction activities, the Engineer, Contractor, and the Arborist (if item is included in the contract), shall review trees noted on the Drawings to be protected. Final decision and selection of trees to be armored and/or pruned shall be per the Engineer.

Care shall be taken to avoid damage to the bark during installation and removal of armoring. Trunk armoring shall be maintained such that it is effective for as long as required or replaced when materials are found to be damaged or ineffective, as determined by the Engineer. Replacement, if

required, shall be incidental to the work. Armoring shall be removed immediately upon completion of work activities adjacent to the protected tree(s).

Pruning of limbs shall conform to the techniques and standards of the most recent ANSI A300 standards.

DAMAGES OR LOSS

If trees designated for protection under this item are damaged, including root damage from unapproved trespassing onto the root zone, the Contractor shall, at his own expense, secure the services of an Arborist, as described below. The Arborist shall be approved by MassDOT.

If, based on the recommendation of the Arborist, the Engineer determines that damages can be remedied by corrective measures, such as repairing trunk or limb injury; soil compaction remediation; pruning; soil injection fertilization; and/or watering; the damage shall be repaired as soon as possible, within the appropriate season for such work and according to industry standards.

If, based on the recommendation of the Arborist, the Engineer determines that damages are irreparable, or that the damages are such that the tree is sufficiently compromised to pose a future safety hazard, the tree shall be removed. Tree removal shall include cleanup of all wood, grinding of the stump to a depth sufficient to plant a replacement tree or plant, removal of all chips from the stump site, and filling the resulting hole with topsoil. Such tree removal(s), grinding, debris removal, and topsoil filling, shall be at the Contractor's expense.

Tree removal from improper or inadequate tree protection shall result in the Engineer assessing the Contractor monetary damages consistent with industry standards for assessed value and/or replacement.

ARBORIST

Arborist shall be an International Society of Arboriculture (ISA) Certified Arborist or a Massachusetts Certified Arborist. The Arborist shall have at least 10 years of experience in tree care, including tree protection during construction, and shall demonstrate a familiarity with the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance Part 1Pruning, Part 5 Construction Management Standards, and Part 9 Tree Risk Assessment.

The Arborist's general responsibilities include protecting high priority trees within and adjacent to the project limits, stating areas, and access routes; recommending removal of diseased, damaged or otherwise unhealthy trees that pose a potential safety hazard; evaluating effects of construction on future health of trees close to proposed work; and recommending and/or overseeing tree work amd care.

The Arborist for this item shall not be from the same company as the company responsible for selective clearing or tree removal work.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 102.511 will be measured and paid at the contract unit price per EACH tree to be armored and pruned. This will include full compensation for all labor, equipment, materials, and incidentals for the satisfactory completion of the work and the subsequent removal and satisfactory disposal of the protective materials upon completion of the contract or as required by the Engineer.

Payment for work under this item will be scheduled as follows:

- 40% of the value shall be paid upon installation of trunk armoring and completion of pruning work, if required.
- 60% of the value shall be paid at the end of construction operations that would potentially damage the tree and after protection materials have been removed and properly disposed of by the Contractor. In the event of repairable damages, payment shall be made after the completion of remediation measures.

No separate payment will be made for costs of remedial actions, including Arborist services, tree removal, but all costs in connection therewith shall be included in the Contract unit price bid.

Tree damages assessed, due to lack of or improper tree and plant protective measures being taken, shall be deducted from the contract price of the work.

ITEM 102.521 TREE AND PLANT PROTECTION FENCE FOOT

The work under this Item shall conform to the relevant provisions of Sections 644 and 771 of the Standard Specifications and the following:

Work under this item shall consist of furnishing, installing, and maintaining tree and plant protection fence(s) in a vertical and taut position; removing and resetting fencing as may be required; and final removal of protection fence(s) at the completion of construction activities, or as otherwise required by the Engineer.

The purpose of the fencing is to signify a construction work-free zone and physical barrier, thereby preventing damage to tree roots, tree trunks, soil, and all other vegetation within this delineated Tree and Plant Protection Zone (TPPZ), as shown on the Drawings, as required by the Engineer, and as described herein.

Protection shall be for the duration of the construction activities unless otherwise required by the Engineer.

MATERIALS

Tree and plant protection fence(s) shall provide a minimum forty-eight (48) inch tall barrier, that remains vertical and taut. The Fence shall be orange plastic safety fence (recommended where high visibility is necessary), or wooden snow fencing, or other approved material. Posts and anchoring materials shall be incidental to the work.

Per requirements of the Engineer, additional posts, deeper post depths, and/or additional attachments shall be used if the fabric or fence sags, leans or otherwise is not providing visible or physical protection to the TPPZ.

REFERENCES

If requested, the Contractor shall provide to the Engineer one copy of the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance Part 1, Pruning and Part 5, Construction Management Standard. Provision of reference shall be incidental to this item.

ESTABLISHMENT OF THE TPPZ

Fencing shall be used to delineate and establish the TPPZ, adjacent to construction areas, staging areas, stockpile areas, as shown on the Drawings, and/or as required by the Engineer.

Fencing shall be located as close to the work zone limit and as far from tree trunk(s) and plants as possible to maximize the area to be protected. Fence shall run parallel and adjacent to construction activity to create a barrier between the work zone and the root zone or designated limit of plants and soils to be protected.

When construction activities surround (or have the potential to surround) trees or plants to be protected, a circular enclosure shall be used. In these instances, the TPPZ limit shall be the drip line of each tree or as close as possible to the drip line, and/or as shown on the Drawings. The drip line is defined as the outermost limit of tree canopy.

The Contractor shall not engage in any construction activity within the TPPZ without the approval of the Engineer. Activities may including operating, moving, or storing equipment, supplies, or materials; and locating temporary facilities, including trailers or portable toilets, Accessing or traversing the TPPZ shall not be permitted.

METHOD OF WORK

TPPZ fencing shall be installed prior to any construction work or staging activities. Fence(s) shall be repositioned where and as necessary for optimum tree and plant protection. Repositioning shall be incidental to this item. TPPZ fencing shall not be moved without prior approval by the Engineer.

The TPPZ shall be protected at all times from compaction of the soil; damage of any kind to trunks, bark, branches, leaves, and roots of all plants; and contamination of the soil with construction materials, debris, silt, fuels, oils, and any chemicals substance.

After construction activities are completed, or when required by the Engineer, fencing, stakes, and other anchoring materials, if any, shall be removed and disposed off-site by the Contractor.

REQUIRED WORK WITHIN THE TPPZ

In the event that grading, trenching, utility work, or storage is unavoidable within the TPPZ, the Engineer shall be notified. Measures may be required for tree protection and preservations, including air spading; the use of six (6) inch depth of wood chips or approved matting for root protection; pruning of branches; and/or trunk protection. These protection measures shall be paid under applicable contract items.

Landscaping work specified within the TPPZ shall be accomplished by hand tools. Where handwork is not feasible, with permission of the Engineer, work shall be conducted with the smallest mechanized equipment necessary.

TREE AND PLANT INJURY OR LOSS

If the TPPZ is encroached by construction activity without approval, at the discretion of the Engineer, the Contractor may be required to provide a more durable barrier (e.g., Jersey Barriers, chain link fence (if not already in use) to secure the area. Costs of furnishing and installing additional or more durable barrier(s) shall be borne by the Contractor.

In such cases of encroachment, soils shall be considered compacted and tree root injury will be assumed. Action shall be taken as specified below.

In the event that trees designated for protection under this item are injured, including root injury from unapproved trespassing onto the root zone, the Contractor shall, at his own expense, secure the services of an Arborist, as described below. The Arborist shall be approved by MassDOT.

In the event of spills, compaction or injury, the Contractor shall take corrective action immediately using methods approved by the Engineer, in coordination with the Arborist.

If, based on the recommendations of the Arborist, the Engineer determines that injuries can be remedied by corrective measures, such as repairing trunk or limb injury, soil compaction remediation, pruning, and/or watering; the injury shall be repaired as soon as possible, within the appropriate season for such work, and according to industry standards.

If, based on the recommendations of the Arborist, the Engineer determines that injuries are irreparable, or that the injuries are such that the tree is sufficiently compromised to pose a future safety hazard, the tree shall be removed. Tree removal shall include cleanup of all wood, grinding of the stump to a depth sufficient to plant a replacement tree or plant, removal of all chips from the stump site, and filling the resulting hole with topsoil. Such tree removal(s), grinding, debris removal, and filling, shall be at the Contractor's expense.

Tree removal from improper or inadequate protection of the TPPZ shall result in the Engineer assessing the Contractor monetary damages consistent with industry standards for assessed value and/or replacement.

Shrubs removals from improper or inadequate protection of the TPPZ shall be replaced with plants of similar species and equal size or the largest size plants reasonably available. The Engineer shall approve the size, quality, and quantity of the replacement plant(s). Each replacement shall include a minimum of one year of watering and establishment care, specified under Section 771.

ARBORIST

Arborist shall be an International Society of Arboriculture (ISA) Certified Arborist or a Massachusetts Certified Arborist. The Arborist shall have at least 10 years of experience in tree care, including tree protection during construction, and shall demonstrate a familiarity with the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance Part 1Pruning, Part 5 Construction Management Standards, and Part 9 Tree Risk Assessment.

The Arborist's general responsibilities include protecting high priority trees within and adjacent to the project limits, stating areas, and access routes; recommending removal of diseased, damaged or otherwise unhealthy trees that pose a potential safety hazard; evaluating effects of construction on future health of trees close to proposed work; and recommending and/or overseeing tree work amd care.

The Arborist for this item shall not be from the same company as the company responsible for selective clearing or tree removal work.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Tree and Plant Protection Fence will be measured by the FOOT, complete in place, by the length along the top of the fence.

Tree and plant protection fence will be paid for under the contract unit price per FOOT, complete in place and shall include all materials, labor, and equipment required to furnish, install, anchor, maintain, and remove the fence upon completion, as described herein. Posts, temporary footings, anchoring and removal upon completion, shall be incidental to this item.

No separate payment will be made for costs of remedial actions, including addition of more durable barriers, Arborist services, tree or plant removal, shrub replacement and establishment, but all costs in connection therewith shall be included in the Contract unit price bid.

Tree damages assessed, due to lack of or improper tree and plant protective measures being taken, shall be deducted from the contract price of the work.

Payment for work under this item will be scheduled as follows:

- Forty (40) percent of the value payment will be made upon installation of fencing.

- Sixty (60) percent of the value payment will be made when fencing materials have been maintained to function as specified, for the intended duration, and removed and disposed off-site at the completion of protection measure requirement.

ITEM 114.1 DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. S-21-003 LUMP SUM

The work to be done under this Item shall conform to the relevant provisions of Section 112, 120, and 140 of the Standard Specifications, amended and or supplemented as follows:

The work to be done under this Item consists of the removal and satisfactory disposal of the superstructure of the existing Mill Street over Quinebaug River bridge. This includes but is not limited to the asphalt/concrete bridge deck and sidewalks, the 7 steel beams, and the bridge railing and existing utilities carried by the bridge as shown on the Plans. Refer to the Plans for the full extents of the superstructure demolition.

The work to be done under this Item, including but not limited to crane picks for superstructure demolition, shall be in conformance with the intent of Subsection 960.61D, Erection, of the Standard Specifications.

Refer to Item 100.95 Geotechnical Monitoring and Instrumentation for requirements for demolition near adjacent buildings and structures.

It is recommended that Contractor investigate project site to assess existing conditions prior to bidding.

Submittals

The Contractor shall submit their proposed method of demolition including equipment, tools, devices, etc. to the Engineer for review. The demolition procedure and any necessary calculations and drawings shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts and submitted for approval. Work under this Item may not commence until the Engineer has given written acceptance of the method of demolition.

During the prosecution of the work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the existing structure or any part thereof.

Construction Methods

The Contractor shall take all measures necessary to protect pedestrian traffic from their construction operations. Materials shall be removed carefully so as to avoid damage to adjacent utilities. During the prosecution of this work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the remaining superstructure or any part thereof.

The Contractor shall locate and protect from damage all existing utilities. The Contractor shall contact utility companies to verify existing utilities and locations and coordinate proposed utility locations prior to demolition and construction.

The Contractor shall be solely responsible for maintaining the stability of the existing structures, at all times, during the demolition and construction operations. Any designs for temporary strengthening or bracing of portions of the existing structure to remain are the responsibility of the Contractor. Design of temporary strengthening or bracing of portions of the existing structure shall

be included in the demolition plan and procedure package.

The Contractor shall refer to General Requirements for Demolition and Work Involving Painted Steel included in the Special Provisions.

Contractor should exhibit care to not drop any debris into the waterway below.

All materials removed shall become property of the Contractor.

MEASUREMENT AND PAYMENT

Unless otherwise covered under other contract items, full payment for this work shall be included under the lump sum price for this item, and shall include all labor, equipment and materials necessary to complete the work. 50 percent of payment at the lump sum price shall be made upon completion of Stage I Demolition as shown on the Plans. The remainder of payment shall be made upon completion of Stage II Demolition.

Temporary protective shielding shall be paid for under Item 994.01.

ITEM 114.2 DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. S-21-009 LUMP SUM

The work to be done under this Item shall conform to the relevant provisions of Section 112, 120, and 140 of the Standard Specifications, amended and or supplemented as follows:

The work to be done under this Item consists of the removal and satisfactory disposal of the superstructure of the existing Mill Street over McKinstry Brook bridge. This includes but is not limited to the asphalt/concrete bridge deck and sidewalks, the prestressed beams, the bridge railing, and the existing utilities carried by the bridge as shown on the Plans. Refer to the Plans for the full extents of the superstructure demolition.

The work to be done under this Item, including but not limited to crane picks for superstructure demolition, shall be in conformance with the intent of Subsection 960.61D, Erection, of the Standard Specifications.

Refer to Item 100.95 Geotechnical Monitoring and Instrumentation for requirements for demolition near adjacent buildings and structures.

It is recommended that Contractor investigate project site to assess existing conditions prior to bidding.

Submittals

The Contractor shall submit their proposed method of demolition including equipment, tools, devices, etc. to the Engineer for review. The demolition procedure and any necessary calculations and drawings shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts. Work under this Item may not commence until the Engineer has given written acceptance of the method of demolition.

During the prosecution of the work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the existing structure or any part thereof.

Construction Methods

The Contractor shall take all measures necessary to protect pedestrian traffic from their construction operations. Materials shall be removed carefully so as to avoid damage to adjacent utilities. During the prosecution of this work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the remaining superstructure or any part thereof.

The Contractor shall locate and protect from damage all existing utilities. The Contractor shall contact utility companies to verify existing utilities and locations and coordinate proposed utility locations prior to demolition and construction.

The Contractor shall be solely responsible for maintaining the stability of the existing structures, at all times, during the demolition and construction operations. Any designs for temporary strengthening or bracing of portions of the existing structure to remain are the responsibility of the Contractor. Design of temporary strengthening or bracing of portions of the existing structure shall

be included in the demolition plan and procedure package.

Contractor should exhibit care to not drop any debris into the waterway below.

All materials removed shall become property of the Contractor.

MEASUREMENT AND PAYMENT

Unless otherwise covered under other contract items, full payment for this work shall be included under the lump sum price for this item, and shall include all labor, equipment and materials necessary to complete the work. 50 percent of payment at the lump sum price shall be made upon completion of Stage I Demolition as shown on the Plans. The remainder of payment shall be made upon completion of Stage II Demolition.

Temporary protective shielding shall be paid for under Item 994.02. Control of Water shall be paid for under Item 991.2.

ITEM 123.5 CHANNEL BACKFILL CUBIC YARD

Work under this item shall conform to the relevant provisions of Sections 120., 140., 150., and 170. and the following:

This item shall include the backfill required for the pier removal at McKinstry Brook. The appearance of the river bed surface will be restored under Item 755.55.

The backfill shall replicate the material in the existing channel environment. Any excavated channel material shall be stockpiled and reused for fill, provided the material is characteristic of the existing material upstream and downstream of the work area, or meets the criteria below. The elevations and conditions of the existing channel shall be maintained to the maximum extent practicable. The work shall be completed while the temporary water control has been installed for the bridge construction.

The work includes the proper stockpiling of earthen material, including cobbles, and boulders, removed from the channel and re-using suitable portions of as backfill in the channel after removal of the bridge pier, other structural elements, or surface grading material for the channel bed.

If suitable, dredged material and excavated muck may be re-used as channel backfill. If there is a lack of excavated material, the channel backfill may be supplemented with new, suitable material as described below. No new material shall be furnished until all available stockpiles of suitable excavated materials have been re-used.

Channel Backfill is required to comply with all environmental permits issued for the project.

SUBMITTALS

Contractor shall submit at least one upstream photo and at least one downstream photo of the channel:

1) prior to installation of the water controls and;
2) after installation of water controls but before work begins around the bridge foundation, photos shall show the material and nature of the channel bed without the river water.

MATERIALS

If the excavated material is not suitable or there is not enough material, the natural bedding material shall be comprised of a natural stone mix – gravel/cobble; $\leq$ 6” cobbles. The natural substrate stone shall be native cobbles and gravel similar in size and shape to that in the adjacent work area.

Natural streambed material less than 6 inches shall meet the following gradation:

Sieve Opening	Percent by Mass Passing Through
4”	95
2”	55-65
¾”	30-45
#4	0-5

Crushed stone will not be accepted for any component.

CONSTRUCTION METHODS

Comply with relevant provisions of Section 150. and 170.

In general, reproduce the top two feet of channel subsurface and the channel surface similar to the adjacent existing channel surfaces. This may include setting by hand or by machine cobbles and boulders. The final surface shall be completed under Item 755.55 Streambed Restoration.

The Engineer shall Approve the finish grade and surface treatment before the final removal of water controls for bridge construction.

The Contractor is responsible to properly dispose of excess material or unsuitable material.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Work for this item shall be measured by the Cubic Yard of backfill, complete and in place as approved by the Engineer. Incidentals, include but are not limited to: proper storage means and methods, means and methods to place and compact backfill, and means and methods to re-handle backfill to reproduce the channel surface elevation to the Engineer’s satisfaction.

This item will be paid for at the contract unit price per Cubic Yard, and shall be considered as adequate compensation for all labor, materials, tools and equipment, and other incidental expenses necessary to complete this Item.

Excavation of muck shall be measured and paid for under Item 123. Muck Excavation.

Pier removal shall be paid for under Item 127.1 Reinforced Concrete Excavation.

The final stream surface shall be completed under Item 755.55 Streambed Restoration.

Temporary water control for McKinstry Brook shall be measured and paid for under Item 991.2 Control of Water – Structure No. S-21-009.

ITEM 201. **CATCH BASIN** **EACH**

The work under this item shall conform to the relevant provisions of Sections 201 and 220 of the Standard Specifications and the following:

Drainage Structures

All proposed catch basins shall be constructed with a minimum 4-foot sump. Eccentric cones may be required to install proposed catch basins and avoid utilities, or other objects to be retained.

METHOD OF MEASUREMENT

Catch Basin will be measured by the unit each, regardless of depth.

BASIS OF PAYMENT

Catch Basin will be paid for at the Contract unit price per each, which price shall include all labor, materials, equipment and incidental costs required to complete the work.

ITEM 697.1 **SILT SACK** **EACH**

Work under this item shall conform to the relevant provisions of Section 670 of the Standard Specifications and the following:

The work under this item includes the furnishing, installation, maintenance and removal of a reusable fabric sack to be installed in drainage structures for the protection of wetlands and other resource areas and the prevention of silt and sediment from the construction site from entering the storm water collection system. Devices shall be ACF Environmental (800)-448-3636; Reed & Graham, Inc. Geosynthetics (888)-381-0800; The BMP Store (800)-644-9223; or approved equal.

CONSTRUCTION

Silt sacks shall be installed in retained existing and proposed catch basins within the project limits and as required by the Town.

The silt sack shall be as manufactured to fit the opening of the drainage structure under regular flow conditions and shall be mounted under the grate. The insert shall be secured from the surface such that the grate can be removed without the insert discharging into the structure. The filter material shall be installed and maintained in accordance with the manufacturer's written literature and as directed by the Town.

Silt sacks shall remain in place until the placement of the pavement overlay or top course and the graded areas have become permanently stabilized by vegetative growth. All materials used for the filter fabric will become the property of the Contractor and shall be removed from the site.

The Contractor shall inspect the condition of silt sacks after each rainstorm and during major rain events. Silt sacks shall be cleaned periodically to remove and disposed of accumulated debris as required. Silt sacks, which become damaged during construction operations, shall be repaired or replaced immediately at no additional cost to the Department.

When emptying the silt sack, the contractor shall take all due care to prevent sediment from entering the structure. Any silt or other debris found in the drainage system at the end of construction shall be removed at the Contractors expense. The silt and sediment from the silt sack shall be legally disposed of offsite. Under no condition shall silt and sediment from the insert be deposited on site and used in construction.

All curb openings shall be blocked to prevent stormwater from bypassing the device.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Silt sacks will be measured and paid at the Contract unit price per each, complete in place, which price shall include all labor, materials, equipment and incidental costs required to complete the work.

No separate payment will be made for removal and disposal of the sediment from the insert, but all costs in connection therewith shall be included in the Contract unit price bid.

ITEM 697.2 **FLOATING SILT FENCE** **FOOT**

The work under these items shall conform to the relevant provisions of Section 600 and 700 of the Standard Specifications and the following:

The work of this Section shall consist of providing all labor, equipment, materials, incidental work, and construction methods necessary to provide, install, and maintain Floating Silt Fences. Included in the Work of this Item is to remove and reset Floating Silt Fence as many times as needed to comply with Local, State, and Federal Conditions.

REFERENCES AND STANDARDS

The following standards shall apply to the work of this Section.

American Society for Testing and Materials (ASTM):

D 3786	Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics: Diaphragm Bursting Strength Tester Method
D 4356	Practice for Establishing Consistent Test Method Tolerances
D 4491	Test Method for Water Permeability of Geotextiles by Permittivity
D 4533	Test Method for Trapezoidal Tearing Strength of Geotextiles
D 4632	Test Method for Grab Breaking Load and Elongation of Geotextiles
D 4751	Test Method for Determining the Apparent Opening Size of a Geotextile
D 4833	Test Method for Index Puncture of Geotextiles, Geomembranes, and Related Products

SUBMITTALS

Proposed methods, materials to be employed, and schedule for effecting siltation control shall be submitted for approval.

PERMITS, CODES, AND REGULATIONS

Comply with all rules, regulations, laws and ordinances of the Town and State, and all other authorities having jurisdiction over the Project site. All labor, materials, equipment, and services necessary to make the work comply with such requirements shall be provided by the Contractor without additional cost to the Department.

Comply with the most stringent provisions of all applicable regulations of the Commonwealth of Massachusetts; Department of Environmental Protection (DEP); the Army Corps of Engineers (ACOE); and the United States Environmental Protection Agency (EPA).

All erosion control work will be in accordance with the Massachusetts Wetlands Protection Act 310 CMR-10.55.

SEDIMENTATION CONTROL PRINCIPLES

The Contractor shall provide suitable and adequate means of sedimentation control during construction. Control measures shall prevent siltation and sedimentation of waterways located in the construction area.

Means of protection as noted on the Contract Documents indicate the minimum provisions necessary. Additional means of protection shall be provided by the Contractor as required for continued or unforeseen sedimentation problems, at no additional expense to the Owner. The Contractor shall be responsible to provide all materials and labor necessary to comply with the Order of Conditions issued by the Municipal Conservation Commission and provided to the Contractor by the Engineer or Town.

Regular weekly maintenance of all sediment control structures shall be provided to ensure intended purpose is accomplished. Sediment control measures shall be in working condition at the end of each day.

After significant rainfall or heavy flows, sediment control structures shall be inspected for integrity. Any and all damaged devices shall be repaired or replaced immediately.

Contractor shall retain all sediment on-site. No waterborn sediment shall leave the construction site. No waterborn sediment shall enter the adjacent waterways.

MATERIALS

Floating silt fence shall be manufactured of flexible impervious non-reinforced polyvinyl chloride (PVC) with a tensile strength of 300 pounds per inch, a fabric weight of 22 ounces per yard, and tear strength of 200 pounds. The curtain shall be buoyed with floating segments which provide a buoyancy of 5 times the weight of the curtain. The curtain shall be manufactured with a horizontal galvanized or stainless steel tension cable drawn tight during installation to reduce tensile stress on the curtain fabric. The curtain shall be weighted to prevent drift by a ballast chain located at the bottom of the curtain. Silt curtains shall be anchored or moored to prevent relocation of the curtain by wind or currents.

CONSTRUCTION METHODS

Floating Silt Fences shall be placed in locations where work activities could result in increased turbidity in the waterway. Adjust location of Floating Silt Fence components to correspond to all work activities.

Floating Silt Fences shall be deployed to contain sediment causing increased turbidity in water bodies in the construction area, to minimize the migration of the turbidity plume from the construction area and to decrease turbidity levels reaching intakes. Deploy Floating Silt Fences so that the ballast chain is fixed against the culvert wall or resting on the culvert bottom at the face of the culvert wall.

Deployment of Floating Silt Fence shall be executed in such a way that water traffic is not disrupted.

Floating Silt Fence shall encircle the area of Work unless the perimeter of the work area is partially bounded by walls or impermeable shore structures, in which case the Floating Silt Fence shall occupy the remainder of the perimeter that is not shore, wall or shore structures.

The Contractor shall maintain Floating Silt Fences in good operating conditions, repairing as needed the curtain fabric, buoyancy equipment, tensile cable and ballast chain. Remove accumulated silt and debris by suction prior to moving the Floating Silt Fence.

Sediment deposits shall be disposed of off-site, in a location and manner that will not cause sediment nuisance elsewhere.

Debris behind the floating sedimentation fence shall be removed twice per month, at minimum.

Erosion protection material shall be kept securely anchored and in place until acceptance of the culvert.

METHOD OF MEASUREMENT

Floating Silt Fence will be measured by the Linear Foot, complete in place.

BASIS FOR PAYMENT

Floating silt fence will be paid for at the contract unit price per linear foot, installed, which price shall be full compensation for complete compliance with requirements of this item. No separate measurement or payment will be made for maintenance, repair, replacement, removal and resetting of erosion control devices, but all costs in connection therewith shall be included in the contract unit price.

ITEM 751.765 COMPOST AND SEED OVER MODIFIED ROCK CUBIC YARD

GENERAL

The work under this Item shall conform to the relevant provisions of Subsection 751, 767, and 765 of the Standard Specifications and the following.

Work shall consist of furnishing and pneumatically applying compost in conjunction with the specified native seed on designated areas of modified rock and achieving satisfactory establishment of seeded species as specified herein.

QUALIFICATIONS

Compost application and seeding shall be done by a company having a minimum of five years of experience with native seed establishment. Prior to beginning work, the seeding Contractor shall furnish proof of qualifications to the Engineer for approval. Proof of qualifications shall include providing documentation (photos and contacts) to demonstrate knowledge and expertise with native seeding and establishment and proof of having completed successful native seeding projects.

MATERIAL AND SUBMITTALS

Compost

Compost shall meet the relevant provisions for Type 2 Compost, found in Section M1.06 of the Supplemental Standard Specifications.

The Engineer shall approve the Contractor's equipment for application.

Seed Mix

Seed Mixes and Submittals shall be per the item(s) for the permanent seed mix. Mix shall be:

Roadside Riverbank Mix, as specified under Item 765.442.

SEEDING SEASON

The season for seeding native mixes is April 1 - May 15 and October 1 - December 1 for dormant seeding. Written approval must be obtained for seeding outside the seeding season and, if approved, the permanent seed rate shall be increased by 50%

CONSTRUCTION METHODS

Method of application and equipment to be used shall be reviewed and approved by the Engineer prior to placement of material.

Placement of Compost

Compost shall be placed as shown on the Plans and in the Detail and as required by the Engineer. Material shall be placed so that settled material is at or slightly below the surface plane of the stone. The Contractor shall ensure that there will be adequate quantity, including adjustment for settlement.

For purposes of estimation, required compost quantities should be 300 cubic yards per acre to achieve the target depth.

Seeding

For areas smaller than half an acre, unless otherwise approved by the Engineer, seeding shall be done by broadcast method. Seeding shall be done in conjunction with or immediately following Compost application. Alternative seeding methods must be submitted and approved by the Engineer 14 days in advance of compost and seed application.

Hydroseeding

Hydroseeding may be used for sites over half an acre in size or when the rock slope does not permit safe application via a broadcasting method. Hydroseed shall be per the manufacturer's directions and as follows.

Tank and hoses shall be cleaned from all previous hydroseeding and hydromulching projects. Seed shall be mixed into the slurry immediately before application and slurry applied within 30 minutes after seeds have been placed in the tank. Once seed has been placed in the tank, tank shall be agitated only enough to mix the seeds and keep slurry from separating.

When Seeding Occurs after Application of Compost or after December 1

When seeding is done more than 3 days after Compost application or when Compost is applied after December 1, seeding rate shall be increased by 50%.

Over-Seeding

Large extents of bare area (greater than 5-6 feet and depending on modified rock slope conditions) shall be over-seeded with the specified mix during the appropriate season for seeding. Rates, methods, and submittals shall be as specified under the relevant Seed Mix Item and Materials above.

Over-seeding, mulch, watering, and all work for over-seeding shall be incidental.

Determining Satisfactory Establishment

A reasonably well-established stand of the specified seeded species as determined by the Engineer and the MassDOT Landscape Architect or designated Specialist will be required for Final Acceptance. The expectation is that an acceptable number and variety of the desired permanent seeded species will be visible. For seeding with compost over modified rock this shall generally be:

- A minimum of 50% coverage by the specified permanent seeded species after one growing season (considered June-September 15). Of that percentage, generally, depending on the mix species:
  - At least 2 types of permanent seeded grass species shall be visible.
  - At least 2 species of wildflowers shall be visible.
- There will be no more than 25% coverage by weed species.
- There will be no invasive or aggressive species within the stand at the time of acceptance.
- There shall be no evidence of seed from non-native mixes (ex., clover) due to using an incorrect or modified mix or due to failure to clean the hydroseeding tank if a hydroseeder is used.

Invasive and aggressive weeds (such as mugwort, vetch, knapweed, and chicory) must be cut, pulled with roots removed, or treated with herbicide by a licensed and approved applicator prior to going to seed for Interim Acceptance. Weed removal shall be coordinated with MassDOT Landscape Architect. No herbicides shall be used without approval and coordination with MassDOT Landscape Design Section.

Acceptance of Seeding and Establishment Work

Conditional Acceptance shall be based on approval of seed mix submittals and proper application of seed as specified herein.

Final Acceptance of Seed Establishment shall be given upon satisfactory Establishment as described above. If the seeded area fails to meet the requirements of Establishment by the end of the growing season, contractor shall propose and implement remediations and site shall be inspected during the following growing season after July 1st. Otherwise, Contractor shall forego the payment for Final Acceptance. All remediation shall be at the contractor's expense.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Compost and Seed for Modified Rock will be measured and paid for at the Contract unit price per Cubic Yard which price shall include all labor, materials, equipment, site preparation, and all incidental costs required to complete the work.

Schedule of payment shall be as follows:

60% upon approval of Compost application and Conditional Acceptance of seeding as specified above
40% upon Final Acceptance of Seed Establishment

Native Seed Mix shall be paid for under Item 765.442 Seeding – Roadside Riverbank Mix.

Modified Rockfill will be paid for under Item 986.

ITEM 755.55 STREAMBED RESTORATION SQUARE YARD

The purpose of this item is to restore the disturbed areas of streambed, as directed by the plans, the engineer and/or wetland specialist. This work shall consist of construction of streambed restoration using a nature-like streambed.

This work shall consist of furnishing and placing nature-like stone fill material on the river bed, in the areas of excavation for existing pier removal, and upstream and/or downstream of the excavations to set a desired channel profile and maintain a natural bed appearance. The ultimate product will replicate the function and appearance of the existing stream to the most practicable extent. The fill required due to the removal of the pier will be provided under Item 123.5 Channel Backfill.

The Contractor shall coordinate with his/her subcontractors to ensure all required equipment is available on-site to complete the work in this manner. The streambed restoration is required to comply with environmental permits issued for the project. MassDOT Environmental Services will provide and pay for a Fluvial Geomorphologist (Geomorphologist) to provide a pre-construction meeting, on-site oversight during construction, and assistance during streambed restoration construction to ensure the restoration is constructed, as required by these Special Provisions and in accordance with permit requirements.

At least 30 days prior to the commencement of construction, the Contractor shall coordinate with David Paulson (MassDOT Wildlife Unit Supervisor, (508) 389-6366 / david.j.paulson@state.ma.us) to set up an initial (virtual or in person) meeting with MassDOT's Geomorphologist, Contractor, and Resident Engineer. At this meeting, the Geomorphologist will provide an overview of the restoration work. The Contractor should be prepared to discuss the anticipated means, methods, and schedule.

Process Approval:

In lieu of a mockup, the Contractor shall schedule an onsite meeting to discuss the streambed restoration with the Geomorphologist and respective parties from MassDOT. The Geomorphologist shall be onsite during initial streambed restoration. The Contractor shall provide the Geomorphologist adequate access to observe, direct, and inspect the channel restoration work throughout the duration of the removal, stockpile, and reinstallation of the existing streambed material. If material is being brought to the site for streambed restoration, the Contractor shall provide the Geomorphologist with photographs to see the material.

MATERIAL

Any stone or material excavated from the existing streambed during bridge pier removal, culvert replacement, and apron installation shall be stockpiled and reused for natural streambed material, provided the excavated stone and material is characteristic of the existing stream material upstream and downstream of the work area, or meets the below criteria. The elevations and conditions of the existing streambed shall be maintained to the maximum extent practicable.

ITEM 755.55 (Continued)

The natural streambed material shall be locally sourced and match the composition of the native streambed. This streambed material shall be supplemented, as available, with the existing natural streambed material that is excavated within the project limits.

Natural streambed material shall be green/gray, brown/gray, dark gray, and/or dark brown shall be acceptable. White rock is not acceptable. All natural stream bed material shall be free from laminations, weak cleavages and will not disintegrate from the action of air, water and in handling and placing. Granular sedimentary stone will generally be unacceptable.

CONSTRUCTION

The work shall be completed while the temporary water control has been installed for the bridge construction.

The streambed material mix shall be spread over disturbed areas within the stream bed. In all areas, streambed mix shall be tamped down in order to fill / choke voids in the material. Fill voids by hand tamping with metal tamping rods, by shaking stone with the teeth of an excavator bucket, and/or by spraying water to settle fines between large stones. Plate compactors shall not be used. The purpose for filling the voids is to prevent subsurface flow where water disappears into the large voids in the stone fill below the channel bed surface.

After the bridge construction is completed and all material has been placed in the stream channel and approved by the Wetland Specialist, stream geomorphologist or Resident Engineer, the Contractor shall remove the dewatering materials in such a way to slowly wet the stream to minimize the initial sediment pulse. Every attempt shall be made to minimize the downstream movement of sediment.

The final streambed shall look like a natural river/stream, shall match nearby river/stream reaches, and there shall be minimal to no subsurface flow upon final inspection by the Engineer and Wetland Specialist.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Work for this item shall be measured by the Square Yard of stream bed that is restored, as approved by the Geomorphologist and Resident Engineer. No additional compensation will be provided for rehandling the streambed material within the same area.

Item 755.55 will be paid for at the contract unit price per Square Yard, and shall include all labor, materials, tools and equipment, and other incidental expenses necessary to complete this work. No separate payment will be provided for additional stream bed materials, but all costs in connection therewith shall be included in the unit price bid.

All backfill material required to re-establish the surface elevation at the pier removal shall be paid for under Item 123.5 Channel Backfill.

Temporary water control for McKinstry Brook shall be measured and paid for under Item 991.2 Control of Water – Structure No. S-21-009.

ITEM 756.1 CONSTRUCTION PERIOD POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL PLAN **LUMP SUM**

The work under this item shall consist of the preparation and implementation of a Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan (CP/PP) as required by a regulatory agency. This Item is applicable to projects that are not subject to the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) required by the National Pollutant Discharge Elimination System (NPDES) and applicable Construction General Permit (CGP) issued by the U.S. Environmental Protection Agency (EPA).

The work under this item shall also include the preparation, submission and implementation of a Flood Contingency Plan. The plan shall address the potential need for the temporary relocation of construction and auxiliary equipment situated within the 1% annual chance of flooding zone to designated upland locations above the Base Flood Elevation during flood events. The Flood Contingency Plan shall address any additional MassDEP-required information requirements, as applicable. The Flood Contingency Plan shall be submitted to the Engineer for review and approval at the same time as the CP/PP.

The CP/PP, at a minimum, shall include the following:

- Project & Site Description
- Project Site Contact Information
    - This shall include the phone number for the Contractor Site Superintendent, Project Manager and CP/PP Inspector(s).
- Qualifications of the CP/PP Inspector and documentation of qualifications
    - At a minimum, relevant personnel responsible for erosion and sedimentation control inspections shall have completed the EPA's construction inspection training course and obtained a certificate confirming completion of the training module, or have completed a third-party stormwater course which covers the minimum topics listed in Part 6.3.b of the CGP.
- Reference to and information to address permit Special Conditions relevant to the CP/PP contents
    - Section 401 Water Quality Certification
    - USACE Self Verification
- Construction Sequencing/Phasing
- Erosion Prevention, Sediment Control, and Best Management Practices (BMP s) to be implemented
- Maintenance measures and intended timeline to address maintenance and corrective actions for implemented Erosion Prevention Measures, Sediment Control Devices, and BMPs
- Anticipated inspection schedule and sample inspection report form
    - Use the EPA's Site Inspection Report Template found on the EPA's website.

- Site Plans
    - This shall depict, at minimum, the project limits, locations of construction phase erosion prevention measures, construction phase sedimentation control measures, limits of disturbance, staging and laydown areas, proposed dewatering locations and proposed stockpile locations. Depict existing jurisdictional wetland resource areas, drainage conveyances and stormwater treatment features.

The Contractor shall prepare the CP/PP, and update/revise as needed upon changes in site conditions, relevant project personnel, construction phase controls, schedule changes, revised work, regulations, and construction methodologies. The Contractor shall submit the CP/PP to the Engineer for approval at least thirty (30) days prior to prior to commencement of any project related activity that disturbs land, including clearing and grubbing. Submission of the CP/PP to a regulatory agency for review and approval may also be required by a Special Condition associated with a permit issued under the Wetlands Protection Act, or Section 401of the Clean Water Act and their implementing Regulations. It is the responsibility of the Contractor to ensure the CP/PP is submitted to reviewers in a timely manner to support the construction schedule.

It is the responsibility of the Contractor to comply with the conditions of any state Wetlands Protection Act Order, Water Quality Certification, Army Corps of Engineers Section 404 Permit and other environmental permits applicable to the project, and to include in the CP/PP the methods and means necessary to comply with applicable conditions of said permits.

Inspection frequency shall be [*Special Provision Preparer shall insert frequency listed in permit*]. The inspections shall be performed by an individual that meets the qualifications specified in the permits and proof of the inspector's qualifications shall be included as an Appendix in the CP/PP. CP/PP inspection reports shall be completed and distributed to the Resident Engineer within 24-hours of each inspection. Special conditions associated with permits may also require submittal of reports to regulators at a certain frequency. Reports shall be maintained throughout the duration of the project. In addition, if the Engineer determines at any time that the inspector's performance is inadequate, the Contractor shall provide an alternate inspector.

The Contractor is responsible for preparation of the CP/PP, inspections, and associated reports. The Standard Specifications require adequate erosion and sedimentation control for the duration of the Contract. All control measures must be properly selected, installed, and maintained in accordance with manufacturer specifications, good engineering practices, and MassDOT standard specifications and special provisions. Contractor must maintain all control measures and other protective measures in effective operating conditions in accordance with the additional Special Provisions herein. If periodic inspections or other information indicates a control has been used inappropriately or is no longer adequate, it is the responsibility of the Contractor to replace or modify the control for site conditions at no additional cost to the Department.

Method of Measurement and Basis of Payment

Item 756.1 will be measured at the contract unit price, lump sum, which shall include all work detailed above, including CP/PP and Flood Contingency Plan preparation, required revisions, revisions/addenda during construction, inspections and reports.

Work under this item shall include acceptable completion of the CP/PP, Flood Contingency Plan, site inspections, and revisions/amendments required during construction. In addition, any erosion prevention or sediment control measures beyond those specified in bid items that are selected by the Contractor to facilitate and/or address the Contractor's schedule, methods and execution of the work shall be considered incidental to this item.

Payment of thirty (30) % of the contract price shall be made upon acceptance of the CP/PP and Flood Contingency Plan. Payment of forty (40) % of the contract price shall be made in equal installments over the expected duration of stormwater pollution prevention measures. Payment of the final thirty (30) % of the contract price shall be paid when final stabilization has been achieved (minimum of 75% total cover of disturbed vegetated areas with perennial ground cover).

ITEM 765. 442 SEEDING – ROADSIDE RIVERBANK MIX SQUARE YARD

The work under this item shall conform to the relevant provisions of Subsection 765 of the Standard Specifications and the following:

The work shall consist of planting and establishing a stand of grass for the compost and seed over modified rockfill or as required by the Engineer.

For the purposes of these specifications, the term "grass" shall apply to all the forbs, grasses, sedges, and rushes included in the materials.

All seeding shall be done by a company having a minimum of five years of experience with native grass establishment. Prior to beginning work, the applicator shall furnish proof of qualifications to the Engineer for approval. Proof of qualifications includes providing documentation to demonstrate knowledge and expertise with native seeding and proof of having completed successful native seeding projects.

SEEDING SEASON

Seeding seasons shall be April 1- May 15 and October 1 – November 15 for dormant seeding. For seeding that occurs outside of this period, the seed rate shall be increased by 50%.

MATERIALS

Seed

Samples and Submittals

1. Certificate of Materials. Prior to ordering, the Contractor shall submit to the Engineer the manufacturer or supplier's notarized Certificate of Materials. This document shall not be used as proof of purchase, proof of material delivered, or proof of material seeded, but simply to verify supplier availability of seed listed on the date certified. The species listed should match those specified on the plans or herein, however, cultivars may vary due to availability. Substantial substitutions or changes in the mix from that specified on the plans or herein shall be approved by MassDOT Landscape Design Section.

2. Seed Tag Certification. All seed lots have a seed analysis tag as required by State and Federal law. The contractor shall submit seed tags for each bag of seed used on the project site or ensure that each tag is photo documented by the Engineer. Number of tags shall match number of bags sent by the supplier to meet rate of Pure Live Seed specified on the plans. Tag must include: kind and variety of seed; lot number; origin of seed; net weight; % purity; germination; dormant seed; germination test date; inert matter; weed, noxious and other crop seed; and name and address of company responsible for the analysis. Seeding may be considered unacceptable for payment if no tags are submitted.

3. Certificate of Compliance. Prior to payment, contractor shall submit a signed, dated and notarized Certificate of Compliance from the Supplier that serves as proof of purchase or bill of lading. This document shall include kind and variety of seed, lot number, net weight shipped, date of shipment, and name and address of Supplier or Manufacturer. All information must be included on the notarized form, including lot number and net weight shipped for specified job. This information shall match Seed Tag Certification and quantity of seed applied on the job. Seeding may be considered unacceptable for payment if information is incomplete.

4. Seed Sample. Contractor may be asked, prior to seeding, to submit a seed sample for testing. Testing shall be incidental to this item.

Quantities specified are Pure Live Seed (PLS). Greater quantities of ordered seed may be required to achieve actual specified seeding rates. Pure Live Seed is defined as the fraction of pure seed species within the mix that, by standard seed testing practices, will germinate. This is determined by multiplying the percent of seed purity by the percent of seed germination.

Seed mix shall be a custom blend as shown on the plans or shall be as specified below. Seed cultivars should be those that are as regional to New England or the local ecotype as possible.

Seeding rate shall be 15 pounds per acre.

Botanical Name	Common Name	(PLS)
Grass		
Elymus virginicus	Virginia Wild Rye	27.0%
Schizachyrium scoparium 'Albany Pine'	Little Bluestem 'Albany Pine'	22.5%
Andropogon gerardii NY Eco	Big Bluestem NY Eco	14.0%
Elymus riparius	Riverbank Wild Rye	14.0%
Panicum virgatum	Switch Grass	5.0%
Dichanthelium clandestinum 'Tioga'	Deertongue grass 'Tioga'	5.0%
Carex vulpinoidea	Fox Sedge	2.5%
Agrostis perennans	Upland Bentgrass	1.5%
Poa palustris	Fowl Bluegrass	0.3%
Juncus effusus	Soft Rush	0.1%
Juncus tenuis	Path Rush	0.1%
		92.0%
Herb/Forb		
Chamaecrista fasciculata	Partridge Pea	3.0%
Penstemon digitalis	Beard-tongue	1.0%
Vernonia noveboracensis	New York Ironweed	0.6%
Helenium autumnale	Common Sneezeweed	0.5%
Verbena hastata	Blue Vervain	0.4%
Aster puniceus	Aster - Swamp	0.4%
Aster cordifolius	Blue Wood Aster	0.3%

Asclepias incarnata	Swamp Milkweed	0.3%
Monarda fistulosa	Wild Bergamot	0.2%
Aster novae-angliae	New England Aster	0.2%
Solidago odora	Licorice Scented Goldenrod	0.2%
Desmodium canadense	Showy Tick Trefoil	0.2%
Eupatorium perfoliatum	Boneset	0.2%
Eupatorium maculatum	Spotted Joe Pye Weed	0.2%
Solidago juncea	Early Goldenrod	0.1%
Euthamia graminifolia	Grass-leaved Goldenrod	0.1%
Lobelia cardinalis	Cardinal Flower	0.1%
		8.0%

Oats may be added for cover crop for spring and summer seeding and winter rye or Secale cereale may be used for cover crop for fall seeding and should be added to the above mix at the rate recommended by the supplier.

Any species substitutions shall be with a species having similar characteristics and native to New England. Substantial changes in the mix shall be approved by MassDOT Landscape Design Section.

Fertilizer

No fertilizers shall be applied.

Water

Water, including hose and all other watering equipment required for the work, shall be furnished by the Contractor to the site at no additional cost. Water shall be suitable for irrigation and free from ingredients harmful to plant life. All plants injured or work damaged due to the lack of water or the use of too much water shall be the Contractor's responsibility to correct.

Mulch

Seed areas shall be separately mulched hydromulch or seeded as specified below with compost topsoil.

Photo Documentation

Contractor shall submit photo documentation to the Engineer and Landscape Design Section. Each photo shall be date stamped. Photos shall be submitted after the following stages of construction:
· Soil preparation
· Seed and hydromulch/Compost topsoil and seed
· Germination
· Grass establishment after one full growing season (June-September)

CONSTRUCTION

Seeding Methods

Seeding in Combination with Compost Topsoil

Seeding shall be done as a second operation after placement of compost has been approved by the Engineer. Compost application for seeding shall be at a depth of ¼ - ½ inch, unless directed otherwise.

Compost topsoil shall be as specified under ITEM 751.765 Compost and Seed Over Modified Rock.

Contractor shall notify Engineer prior to seeding operation to obtain written approval of site preparation and compost topsoil application.

Irrigation

After seeding and mulching, water seeded areas to moisten soil to a depth of at least 2 inches.

Care during Seed Germination

Contractor shall care for seeded areas as required. Care shall include irrigation and weed removal as necessary for germination and healthy growth.

Over-seeding

If there are numerous areas of bare ground greater than 10-12 inches, these areas shall be over-seeded. Areas where seed fails to germinate and that become invaded by weeds shall be mowed as low as possible and over-seeded. Soil that is compacted shall be raked or roughened prior to seeding to ensure seed to soil contact.

Over-seeding application rates and methods shall be the same as those listed above. After seeding, areas shall be mulched with straw mulch or ¼ - ½ inch compost topsoil and watered with a fine mist to moisten soil to a depth of at least 2 inches.

Over-seeding shall be incidental and shall not be paid for separately.

Care during Grass Establishment

Following germination of seeded species, the contractor shall maintain the stand of grasses to ensure healthy growth.

Work shall include mowing or weed-whacking for weed control, irrigation if necessary, and monitoring for invasive plants. Watering shall provide uniform coverage without eroding soil or

grassed surfaces. Treatment of invasive plants shall be per the requirements of the Engineer and the MassDOT Landscape Architect.

The Contractor shall provide all labor, equipment, materials, and water required for establishment. Contractor shall water all seeded areas as necessary to a depth of 2 inches or greater.

EXPECTATIONS OF ESTABLISHMENT

A well-established stand of grasses at the end of one full growing season (June-September), as determined by the Engineer and/or MassDOT Landscape Architect, will be required for acceptance. At least 90-95 percent of the grass established shall be the seeded species.

METHOD OF MEASUREMENT

Inspection and Acceptance of Work

Item 765.442 will be measured by the square yard at the end of one full growing season (June through September) in the presence of the MassDOT Landscape Architect.

BASIS OF PAYMENT

Item 765.442 will be paid for at the Contract unit price per Square Yard, complete in place, which price shall include fine grading, amendments, seeding, reseeding, irrigating, care during germination and establishment, labor, materials, equipment, photo documentation, and all incidental costs required to complete the work.

ITEM 767.121 SEDIMENT CONTROL BARRIER FOOT

The work under this item shall conform to the relevant provisions of Sections 751 and 767 of the Standard Specifications and Section 670 of the Standard Supplemental Specifications and shall include the furnishing and placement of a sediment control barrier. Sediment Control Barrier shall be installed prior to disturbing upslope soil.

The purpose of the sediment control barrier is to slow runoff velocity and filter suspended sediments from storm water flow. Sediment barrier may be used to contain stockpile sediments, to break slope length, and to slow or prevent upgradient water or water off road surfaces from flowing into a work zone. Contractor shall be responsible for ensuring that barriers fulfill the intent of adequately controlling siltation and runoff.

Twelve-inch diameter (after installation) compost filter tubes are intended to be the primary sedimentation control barrier.

For small areas of disturbance with minimal slope and slope length, the Engineer may approve the following sediment control methods;

- Straw tubes/wattles which shall be trenched
- Straw bales which shall be trenched

Additional barriers (adding depth or height) shall be used at specific locations of concentrated flow such as at gully points, steep slopes, or identified failure points in the sediment capture line.

Where specified or required by permits, silt fence shall be used in addition to compost filter tubes or straw bales and shall be incidental to the item.

MATERIALS AND CONSTRUCTION

Prior to initial placement of barriers, the Contractor and the Engineer shall review locations specified on the plans to ensure that the placement will provide maximum effectiveness.

Barriers shall be staked, trenched and/or wedged as specified herein and shall be securely in contact with existing soil such that there is no flow beneath the barrier.

Compost Filter Tube

Compost material inside the filter tube shall meet M1.06.0, except for the following: no manure or bio-solids shall be used; no kiln-dried wood or construction debris shall be allowed; material shall pass through a 2-inch sieve; and the C:N ratio shall be disregarded.

Outer tube fabric shall be a knitted mesh with 1/8 - 3/8” openings and made of 100% biodegradable materials (i.e., cotton, hemp or jute).

Compost filter tubes shall be a minimum of 12 inches in diameter installed. Tubes shall be placed, filled, and staked in place as required to ensure stability against water flows. All tubes shall be tamped, but not trenched, to ensure good contact with soil.

Where reinforcement is necessary, additional tubes shall be installed as shown on the plans.

Straw Bales

Straw bales shall conform to the requirements of Section M6.04.3 of the Standard Specifications and the following:

Bales should be a minimum size of 12 x 16 x 36 inches and shall be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another.

The bales shall be trenched and backfilled. The trench shall be excavated the width of the bale and the length of the proposed barrier to a depth of 4 inches. After the bales are staked the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to 4 inches against the uphill side of the barrier.

Straw Wattle

Straw wattle shall be a minimum of 12 inches in diameter. Straw filling shall conform to the requirements of Section M6.04.3, shall be encased in durable netting, and shall have a density of 3 lb/foot.

Straw wattle shall be trenched in 3 inches deep and staked according to the plans. The wattles shall be sufficiently secure on the upstream side to prevent water flowing underneath the wattle.

Silt Fence

Materials and Installation shall be per Section 670.40 of the Standard Supplemental Specifications and the following:

Silt fence shall be used when specified by Orders of Condition or other permitting.

When used with compost filter tubes, the tube shall be placed on a minimum of 8 inches of folded fabric on the upslope side of the fence. Fabric does not need to be trenched.

When used with straw bales, an 8-inch deep and 4-inch wide trench or V-trench shall be dug on the upslope side of the fence line. One foot of fabric shall be placed in the bottom of the trench followed by backfilling with compacted earth or gravel. Stakes shall be driven 16 inches into the ground on the down slope side of the trench and shall be spaced such that the fence remains vertical and effective.

Width of fabric shall be sufficient to provide a 36-inch high barrier after fabric is folded or trenched. Sagging fabric will require additional staking or other anchoring.

Stakes
Stakes for anchoring Compost Filter Tubes, Straw Wattles, and Straw Bales shall be as shown on the plans and shall be a minimum of 1x1 inch diameter x 4 feet hardwood stakes.

When used with Silt Fence, stakes for Compost Filter Tubes shall be driven 12 inches into the ground, Stakes for Straw Bales shall be driven 16 inches into the ground.

Stakes of other material of equivalent strength may be used if approved by the Engineer.

MAINTENANCE

Maintenance of Sediment Control Barriers shall be per Section 670.40 of the Standard Supplemental Specifications or per the Stormwater Pollution Prevention Plan (SWPPP).

The contractor shall inspect the sediment barrier after each rain event and as specified in relevant permits to ensure that they are working effectively and as intended. Contractor shall be responsible for ensuring that an effective barrier is in place for all phases of the contract.

Barriers that decompose naturally due to weatherization over time such that they no longer provide the function required shall be repaired or replaced as directed. If the resulting berm of compost within the fabric tube is sufficiently intact and continues to provide water and sediment control, barrier does not necessarily require replacement.

DISMANTLING & REMOVING

Barriers shall be dismantled and/or removed when construction work is complete and when site conditions are sufficiently stable to prevent surface erosion and after receiving permission to do so from the Engineer.

For all instances, all nonbiodegradable material, including photo-biodegradable fabric, plastic netting, nylon twine, and silt fence, shall be removed and disposed off-site by the Contractor regardless of site context.

For naturalized areas, biodegradable, natural fabric and material may be left in place to decompose on-site. Compost filter tubes may be left as they are with stakes removed. Straw bales shall be broken down and spread evenly. All nylon or nonbiodegradable twine shall be removed along with silt fence. Wooden stakes may be left on site, placed neatly and discretely.

In urban, residential, and other locations where aesthetics is a concern, the following shall apply:

- Filter tube fabric shall be cut and removed, and compost shall be raked to blend evenly (similar to a soil amendment or mulch). Not more than a 2-inch depth shall be left on soil substrate.
- Straw bales shall be removed and disposed off-site by the Contractor. Areas of trenching shall be raked smooth and disturbed soils stabilized with a seed mix matching adjacent grasses (i.e., lawn or native grass mix).
- Silt fence, stakes, and other debris shall be removed and disposed off-site. Site shall look neat and clean upon completion.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 767.121 will be measured and paid for at the contract unit price per foot of sediment control barrier which price shall include all labor, equipment, materials, maintenance, dismantling, removal, restoration of soil, and all incidental costs required to complete the work.

Silt fence, when used in conjunction with compost filter tubes or straw bales, will be incidental to this item.

Additional barrier, such as double or triple stacking of compost filter tubes, shall be paid for per foot of tube installed.

Barriers that have been driven over or otherwise damage by construction activities shall be repaired or replaced as directed by the Engineer at the Contractors expense.

ITEM 991.2 CONTROL OF WATER – STRUCTURE NO. S-21-009 LUMP SUM

Work under these items includes furnishing all labor, materials, tools and equipment for dewatering to facilitate subsurface construction, as indicated on the Contract Drawings and specified herein.

General

Item 991.2 includes the dewatering required for the construction of Bridge No. S-21-009, including the foundations, and pier removal.

Westville dam is downstream from this location. The Contractor shall contact the Westville Dam Project Manager, Keith Beecher (keith.w.beecher@usace.army.mil or (978) 318-8405) prior to installing the Control of Water to notify him of potential flow changes during construction.

Examine all other Sections of the Specifications for requirements, which affect work of this Section, whether or not such work is specifically mentioned in this Section.

Coordinate work with that of all other trades or contracts affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

Performance Requirements

The Contractor shall design, fabricate, and install a water control system capable of providing the necessary dry working conditions at the site. The Contractor shall submit detailed shop drawings and calculations depicting the chosen water control system and showing satisfaction of the Temporary Water Control Design Data requirements stated on the plans.

As part of the work under this Item, it is the responsibility of the Contractor to determine the need and extent of dewatering techniques and sedimentation controls needed to control water and sediment at the site. Prior to executing the excavation operations, the Contractor shall submit working drawings and the methods and materials proposed to be used for approval by the Engineer.

Approval of the working drawings does not relieve the Contractor of the responsibility of providing for the safe and successful completion of the work.

Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control groundwater flow into excavations and permit construction to proceed on dry, stable sub-grades.

1. Maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to sub-grades and permanent structures is prevented.
2. Prevent surface water from entering excavations by grading, dikes, or other means.
3. Accomplish dewatering without damaging existing buildings adjacent to excavation.
4. Remove dewatering system if no longer needed.
5. Provide for legal and suitable disposal of groundwater.

6. Evaluate existing soil conditions and propose equipment and techniques to dewater both non-cohesive and cohesive soils.

Submittals

Shop Drawings for Information: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of headers and discharge lines; and means of discharge and disposal of water.

1. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
2. Include a written report outlining control procedures to be adopted if dewatering problems arise.
3. Include Shop Drawings signed and sealed by the qualified professional engineer responsible for their preparation.
   Qualification Data: For Installer and professional engineer.

Photographs or videotape, sufficiently detailed, of existing conditions of adjacent structures and site work that might be misconstrued as damage caused by dewatering operations.

Record drawings at Project closeout identifying and locating capped utilities and other subsurface structural, electrical, or mechanical conditions performed during dewatering.

1. Note locations and capping depth of wells and well points.

Field Test Reports: Before starting excavation, submit test results and computations demonstrating that dewatering system is capable of meeting performance requirements.

Adjacent Foundations Report and Analysis: Record subsurface foundation systems of adjacent structures and evaluate impacts of groundwater removal; i.e. wood foundations and similar items.

The Contractor shall dewater for the length of time necessary to complete the specified sub-surface improvements. Dewatering operations shall be stopped upon approval by the Engineer. Any requirements to remove portions of the dewatering system will be noted on the Drawings.

Quality Assurance

Regulatory Requirements: Comply with water disposal requirements of authorities having jurisdiction.

Professional Engineer: Engage a professional engineer to design and certify dewatering systems. Engineer shall have a minimum of 5 years of experience with type of dewatering systems similar to those proposed for use.

Project Conditions

Existing Utilities: Do not interrupt utilities serving facilities occupied by the Department or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.

Project-Site Information: A geotechnical report has been prepared for this Project and will be made available, for information only, to the successful bidder upon Award. The opinions expressed in that report are those of the geotechnical engineer and represent interpretations of soil conditions, tests, and results of analyses conducted by the geotechnical engineer. The Department will not be responsible for interpretations or conclusions drawn from the data.

The Contractor shall make additional test borings and conduct other exploratory operations necessary for dewatering.

The Contractor shall employ a qualified professional engineer or land surveyor to survey adjacent structures and improvements, and establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

1. During dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent structures.

Preparation

Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.

1. Prevent surface water and groundwater from entering excavations, from ponding on prepared sub-grades, and from flooding site and surrounding area.
2. Protect sub-grades and foundation soils from softening and damage by rain or water accumulation.

Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the Department and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

Installation

Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.

Before excavating below ground-water level, place system into operation to lower water to specified levels. Operate system continuously until utilities and structures have been constructed and fill materials have been placed, or until dewatering is no longer required.

Provide an adequate system to lower and control groundwater to permit excavation, pier demolition, construction of structures, and placement of fill materials on dry sub-grades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, utilities, and other excavations.

1. Do not permit open-sump pumping that leads to loss of fines, soil piping, sub-grade softening, and slope instability.

Reduce hydrostatic head in water-bearing strata below sub-grade elevations of foundations, utilities, and other excavations.

1. Maintain piezometric water level a minimum of 24 inches below surface of excavation.

Dispose of water removed by dewatering in a manner that avoids negative impacts on abutters, endangering public health, property, and portions of work under construction or completed. Dispose of water in a manner that avoids inconvenience to others. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to the Department.

1. Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches below overlying construction.

Damages: Promptly repair damages to adjacent facilities caused by dewatering operations.

Observation Wells

Provide, take measurements, and maintain at least the minimum number of observation wells or piezometers indicated and additional observation wells as may be required by authorities having jurisdiction.

Observe and record daily elevation of ground water and piezometric water levels in observation wells.

Repair or replace, within 24 hours, observation wells that become inactive, damaged, or destroyed. Suspend construction activities in areas where observation wells are not functioning properly until reliable observations can be made. Add or remove water from observation-well risers to demonstrate that observation wells are functioning properly.

1. Fill observation wells, remove piezometers, and fill holes when dewatering is completed.

Method of Measurement and Basis of Payment

Item 991.2 will be measured and paid for at the contract unit prices per Lump Sum. The prices shall include all labor, materials, equipment and incidental costs required to complete the work. The prices also include adequate treatment of water managed under these items as applicable, meeting all local, state, and federal requirements.

ITEM 994.01	**TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. S-21-003 (1HB)**	**LUMP SUM**
ITEM 994.02	**TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. S-21-009 (1HC)**	**LUMP SUM**

This work shall include designing, furnishing, installing, maintaining, removing and disposing a protective shielding system for the bridge. The shielding shall protect the waterway from falling debris or flying debris during the demolition of the existing superstructure, partial demolition of the substructure, and construction of the new bridge. Shielding shall be placed beneath the bridge and shall be removed in advance of anticipated storm events when the water is expected to rise above the bottom of the shielding. The Contractor shall submit calculations and detailed working drawings of the proposed shielding to the Engineer for approval and these calculations and drawings shall be stamped by a professional engineer registered in Massachusetts.

The shielding shall conform to the following:

1. Shielding shall be in place prior to the start of demolition to prevent any debris from falling into the waterway or ground surfaces below.
2. Shielding shall have all spaces along the perimeter and at the seams sealed to prevent dust and debris from escaping and falling onto the ground and water surfaces below the bridges.
3. Shielding shall be designed to safely withstand all anticipated loads. The allowable design stresses shall be in accordance with AASHTO Standard Specifications for Highway Bridges. and/or the AASHTO Guide Design for Temporary Works. The design shall also include a complete description of the equipment and construction methods proposed for the bridge. The shielding shall also be designed to withstand impact of the maximum size of excavated area should it fall during excavation or removal.
4. Shielding shall be installed or removed only upon approval of the Engineer.

If the Contractor's operations damage any existing portions of the bridges that have been designated to be retained in the proposed construction, such damage shall be repaired at the Contractor's expense.

All materials used in the shielding system shall become the property of the Contractor and shall be removed from the site at the completion of the project.

Method of Measurement and Basis of Payment

Item 994.01 and 994.02 will be measured and paid for at the contract unit prices per Lump Sum. The prices shall include all labor, materials, equipment and incidental costs required to complete the work. All shielding shall be incidental to this Item.

*****END OF SPECIAL PROVISIONS*****

Attachment F
Project Plans (Bound Separately)

DOCUMENT A00841

MASSACHUSETTS
Department of Environmental Protection

Water Quality Certification

THIS PAGE IS INTENTIONALLY LEFT BLANK

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Department of Environmental Protection
Address: 100 Cambridge Street, Suite 900, Boston MA 02114 | **Phone**: 617-292-5500

Maura T. Healey	**Kim Driscoll**	**Rebecca Tepper**	**Bonnie Heiple**
Governor	Lieutenant Governor	Secretary	Commissioner

February 11, 2026

Massachusetts Department of Transportation, Highway Division
10 Park Plaza, Room 7360
Boston, Massachusetts 02116
Attn: Courtney Walker

RE: 401 Water Quality Certification
BRP WW 11, Minor Fill Project
Bridge Replacement Project (S-21-009 and S-21-003)
Mill Street over McKinstry Brook and the Quinebaug River
Southbridge, Massachusetts

401 WQC Filing Number: 25-WW11-0021-APP
USACE Application No. NAE-2025-01030
MassDOT File Number: 608862

Dear Ms. Walker:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed your application for a Water Quality Certification (WQC), as referenced above. The WQC application was deemed complete on January 13, 2026. In accordance with the provisions of MGL Ch. 21, §§26-53 and Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), it has been determined there is reasonable assurance the proposed project will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law.

The proposed project will replace two structurally deficient bridges (S-21-009 and S-21-003) that carry Mill Street in a north-south orientation over McKinstry Brook and the Quinebaug River in Southbridge (the Project). The Project will also include vegetation removal for construction access and utility relocations, stormwater improvements, full-depth reconstruction of the approaches, installation of Americans with Disabilities Act (ADA) compliant features.

Existing Conditions

The existing two-span bridge over McKinstry Brook is approximately 50-feet-long, 42-feet-wide, and contains two travel lanes with sidewalks on either side. McKinstry Brook is channelized upstream of the bridge and has a bankfull width of 35 feet at the crossing. The northern bridge abutment is integrated into the channel walls which also form the foundation of a mill building in the southeast quadrant. McKinstry Brook flows northwest to southeast under Mill Street until its confluence with the Quinebaug River approximately 700 feet downstream and is a designated Coldwater Fishery.

The existing 85-foot-long and 41-foot-wide single-span bridge over the Quinebaug River is comprised of a single travel lane with sidewalks on both sides. The Quinebaug River flows underneath the bridge from west to east and has a bankfull width of 51 feet just upstream. The southern bridge abutment connects to an existing building foundation southwest of the bridge, and a Bordering Vegetated Wetland (BVW) is present between the foundation and river.

Both bridges are located within a mapped 1% annual chance of flooding. Stormwater in the Project area flows to eight existing catch basins (four at each bridge, two on either side) that ultimately discharge through the bridge abutments and/or wingwalls to McKinstry Brook and the Quinebaug River.

Project Description

A new single span bridge will replace the existing bridge over McKinstry Brook within the same footprint. The new bridge will accommodate two 10-foot-wide travel lanes with 4-foot-wide shoulders, 5.5-foot-wide sidewalks, and new utility lines. The existing bridge abutments will be sawcut approximately 2 feet above the Ordinary High Water Mark (OHWM) and new micropiles will be drilled into the remaining abutment foundations 5 to 6 feet below the mudline. The central pier will be removed 2 feet below the mudline within a temporary sandbag cofferdam that will also encompass the northern abutment work area. Work at the southern abutment will be performed from Mill Street during low flow periods. Full depth pavement reconstruction will be completed 50 feet southwest and 300 feet northeast of the bridge.

The superstructure of the Quinebaug River bridge will be replaced with a new poured concrete bridge deck, railings, steel stringers, and utilities. To support the new superstructure, new reinforced concrete will replace the top 2 feet of the existing abutments. The new bridge will contain a single 11-foot-wide travel lane with bike lanes and shoulders on either side. The

roadway approaches 150 feet south and 90 feet north of the bridge will undergo full depth pavement reconstruction and be reconfigured to include sidewalks and/or bike lanes. All work on this portion of the Project will occur from Mill Street.

LUW Impacts and Restoration

Water control installation and dewatering required to reconstruct the northern bridge abutment at McKinstry Brook and remove the central pier will require 1,841 square feet (sf) of temporary impact to Land Under Water (LUW). These activities will also result in a total of 91 cubic yards (cy) of dredging. No permanent impact to LUW is proposed. Replacement of the Quinebaug River bridge will not require any permanent or temporary impacts to LUW or BVW.

Following removal of the central pier, 232 sf of LUW will be created in McKinstry Brook through the installation of natural streambed material in the resulting void. The channel will then be regraded to gradually incline from the center toward a terrestrial wildlife shelf along the northern bridge abutment. The downstream northern embankment will also be regraded and reinforced with seeded modified rockfill to naturalize the stream channel and sustain periods of high flow. Finally, trees will be selectively cleared to maintain shade over the stream and two river birch (*Betula nigra*) will be planted along the upstream southwestern bank to provide additional canopy cover.

Stream Crossing Standards

The Project meets or exceeds all MA Stream Crossing Standards (SCS). Retaining the existing bridge spans exceeds the 1.2 times bankfull width required under SCS 3. Regarding SCS 4 and 5, natural substrate will be used to restore McKinstry Brook and water depths and velocities of the brook, as well as the Quinebaug River, will be comparable to their native upstream and downstream channels. Proposed openness ratios of 6.22 feet at the McKinstry Brook bridge and 23.5 feet at the Quinebaug River bridge exceed the recommended openness under SCS 6. Per SCS 7, the restored northern bank of McKinstry Brook will tie into the existing up and downstream banks and incorporate terrestrial wildlife passage.

Stormwater Management Standards

The Project meets the MA Stormwater Management Standards to the maximum extent practicable per 314 CMR 9.06(6). The proposed bridge replacements and roadway realignment will decrease impervious surfaces by 987 sf. Eight existing catch basins (four at each bridge) will

be replaced with new deep sump catch basins. Additional structural Stormwater Control Measures (SCMs) were determined to be infeasible in the Project area due to the proximity of adjacent resource areas and surrounding development. The new deep sump catch basins will remove 25% total suspended solids (TSS) from stormwater before discharging to McKinstry Brook and the Quinebaug River through the bridge abutments and/or wingwalls. As such, Stormwater Management Standards 2, 3, and 4 will be met to the maximum extent practicable.

An alternatives analysis was completed in accordance with 314 CMR 9.00. The bridges require replacement as the no-build alternative would result in a safety hazard from continued deterioration of both bridges.

Based on a review of information provided by the applicant, MassDEP finds that this project complies with the standards described under 314 CMR 9.06. Public notice was provided in the Stonebridge Press on October 9-10, 2025. No comment letters were received during the public comment period.

Therefore, based on information currently in the record, MassDEP grants a WQC for this project subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law. The Department further certifies in accordance with 314 CMR 9.00 that there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law. Finally, the Department has determined that upon satisfying the conditions and mitigation requirements of this approval, the project provides a level of water quality necessary to protect existing uses and accordingly finds that the project to be implemented satisfies the Surface Water Quality Standards at 314 CMR 4.00. The WQC is for all federal permits and licenses pursuant to 40 CFR Part 121.

Pursuant to 314 CMR 9.09(1)(d); 314 CMR 9.06(6)(a); 310 CMR 9.06(2); 314 CMR 9.07; 314 CMR 9.07(1); 314 CMR 9.09(7)(5)(c); 314 CMR 9.11; and 314 CMR 9.09(1)(e), the following Special Conditions are necessary to ensure that construction practices and stormwater controls are implemented in such a manner as to prevent degradation to wetlands and waters; ensure that practicable steps have been taken which will avoid and minimize impacts to wetlands and waters; minimize turbidity and sediment caused by construction activities; ensure that water quality is not degraded, and that biology of the waters are not negatively impacted by potential discharges; and/or maintain a record of the dredged material for reference and to ensure accountability in its transportation.

Those Special Conditions that require direct submittals to MassDEP for either review, or review and approval, are denoted by the following notation (Submittal) at the end of the condition and are summarized in Attachment A. In addition, those conditions with the (Submittal) designation shall be included in the Special Provisions and, as applicable, reviewed at the Pre-Construction Meeting.

1. All work shall be performed in accordance with the following documents and plans:

    a. Application for Water Quality Certification. Prepared by VHB on behalf of MassDOT, dated September 30, 2025, with cover letter and attachments. 401 WQC Filing No: 25-WW11-0021-APP.

    b. Plans entitled: "Plan and Profile of Mill Street (Bridge No. S-21-003) (Bridge No. S-21-009), Southbridge, Worcester County, Section 401 WQC Submittal". Sheets 1 through 34. Prepared by VHB. Dated September 30, 2025, last revised December 23, 2025.

    c. MassDEP Administrative Completeness and Technical Deficiency Review. 401 WQC Transmittal No: 25-WW11-0021-APP (Minor Fill). Bridge Replacement Project (S-21-009 and S-21-003), Mill Street over McKinstry Brook and the Quinebaug River, Southbridge, Massachusetts. Dated October 20, 2025.

    d. MassDOT Responses to MassDEP Technical Deficiency Review. Prepared by VHB on behalf of MassDOT. 401 WQC Transmittal No: 25-WW11-0021-APP (Minor Fill). Bridge Replacements: S-21-009 and S-21-003, Mill Street over McKinstry Brook and the Quinebaug River, Southbridge, Massachusetts. Dated December 23, 2025.

    e. Hydraulic Report. Southbridge, Massachusetts, Mill Street Bridge over Quinebaug River. Prepared by VHB on behalf of MassDOT. Dated September 2022.

    f. Hydraulic Study Report. Southbridge, Massachusetts, Mill Street Bridge over McKinstry Brook. Prepared by MassDOT. Dated May 8, 2023.

Pre-Construction

2. A qualified **Fluvial Geomorphologist** (FGM) with a minimum of five years of relevant professional experience in stream replication and restoration projects shall be employed to oversee all LUW replication and restoration activities, including placement of terrestrial wildlife passages, as proposed in the WQC application and approved herein. The name, contact information, and qualifications of the FGM shall be provided to MassDEP for review and approval with a copy to the Southbridge Conservation Commission prior to the Pre-Construction Meeting required in Condition 5. The FGM shall either attend the Pre-Construction Meeting or a separate virtual or onsite meeting with MassDEP, MassDOT, and the Contractor prior to any LUW replacement or restoration work. **(Submittal)**

3. One individual with at least three years of experience with construction period erosion and sedimentation controls shall be employed to be responsible for Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan (CP/PP) inspections (CP/PP Inspector). The name, contact information, and qualifications of the CP/PP Inspector shall be provided to MassDEP for review and approval with a copy to the Southbridge Conservation Commission prior to the Pre-Construction Meeting required in Condition 5. **(Submittal)**

4. Prior to the Pre-Construction Meeting required in Condition 5, the applicant shall provide MassDEP with the name and contact information of the Resident Engineer (RE) responsible for ensuring that all work complies with the conditions of this WQC. **(Submittal)**

5. A minimum of 21 days prior to the start of ground disturbance or vegetation clearing, MassDOT shall contact MassDEP to schedule an onsite Pre-Construction Meeting to review the approved plans and terms and conditions of this WQC. The RE, the construction contractor (Contractor), the CP/PP Inspector, a representative from the MassDOT Environmental Section and/or the District Environmental Engineer shall attend the Pre-Construction Meeting. **No work shall commence prior to the Pre-Construction Meeting.**

6. MassDEP shall be copied on applicable submittals to the U.S. Army Corps of Engineers (USACE). These include but are not limited to: Self-Verification Notification Form (SVNF); Pre-Construction Notification (PCN); Work-Start Notification Form; Mitigation Work-Start Notification Form; and Compliance Certification Form. The Work-Start Notification Form shall be submitted at least 14 days before the anticipated start of

work and the Compliance Certification Form shall be submitted within 30 days following the completion of the authorized work. **(Submittal)**

7. A CP/PP shall be developed and implemented as required by 314 CMR 9.06(6)(a)8. A minimum of 14 days prior to the start of work, MassDOT shall submit the CP/PP for review and approval. Any subsequent changes to the approved CP/PP must be approved by MassDEP. **(Submittal)**

8. Training regarding erosion and sedimentation controls is required. The CP/PP Inspector and any other relevant personnel responsible for erosion and sedimentation controls shall complete the U.S. Environmental Protection Agency (EPA) Construction General Permit (CGP) Inspector Training, or other training that meets the CGP requirements, as well as complete a comprehensive review of the approved CP/PP. Proof of completion of the training shall be submitted to MassDEP prior to the start of work. **(Submittal)**

9. The CP/PP shall identify, but shall not be limited to, staging and laydown areas in relation to BVW and LUW, proposed dewatering methods and locations, proposed stockpile locations and their proximity to catch basins or other drainage conveyances that discharge to wetland resource areas, and the location of construction-period erosion and sedimentation controls. Stockpiles shall be located no less than 50 feet from BVW, LUW, catch basins, or other drainage conveyances that discharge to BVW or LUW.

10. A minimum of 14 days prior to the start of work, MassDOT shall submit a Control of Water Plan for review and approval. The Plan shall include a description of proposed methods to isolate and dewater work areas within streams while maintaining stream flow, including but not limited to the method of isolation (e.g., steel sheeting or sandbag cofferdam), dewatering methods and locations and specifications for stream bypass systems as applicable. The Control of Water Plan shall include a plan depicting BVW and LUW boundaries, and the location of all relevant methods and materials which shall be located within the LUW impact areas approved herein. The plan shall meet the requirements of the CP/PP and be specific to the Project. Dewatering and stream bypasses shall be conducted under the supervision of the RE or other project staff with knowledge of these practices and comply with the applicable conditions identified herein. **(Submittal)**

11. Prior to the start of work, approved erosion and sedimentation control measures shall be installed per the approved CP/PP and as applicable, the manufacturer specifications.

Erosion and sedimentation control measures may consist of, but are not limited to, silt fence, staked straw bales, silt/turbidity curtains, compost filter tubes, etc.

12. Prior to the Pre-Construction Meeting, the boundaries of BVW and LUW shall be re-flagged where they are within 50 feet of the limits of work. All boundary markers, once in place, shall remain in place throughout construction until all disturbed surfaces have been permanently stabilized. Boundary markers shall be fully evaluated annually and refreshed where needed. Implementation of and compliance with this requirement shall be documented by the RE. All construction personnel shall be made aware of these markers.

13. Prior to any work within the 1% annual chance of flooding zone within Project limits, including mobilization or storage of equipment and materials, a Flood Contingency Plan shall be submitted to MassDEP for review and approval that includes at a minimum the following information and provisions: **(Submittal)**

    a. The RE and/or Contractor shall monitor the National Weather Service forecast daily, and upon issuance of a flood watch or flood warning for the Project area, the Flood Contingency Plan shall be implemented.

    b. Upon implementation of the Flood Contingency Plan, all construction equipment and materials located below the Base Flood Elevation (BFE) shall be removed and placed in an upland location above the BFE and outside of BVW and LUW.

    c. Anchored stationary equipment may remain below the BFE if demonstrated to be required and upon written approval from MassDEP. In the event semi-stationary equipment cannot be feasibly removed before the arrival of the storm, they shall be adequately secured and MassDEP shall be notified prior to the storm.

    d. A requirement to inspect and maintain all erosion and sedimentation controls, and stabilize all exposed soils as needed below the BFE prior to the storm shall be included.

    e. A plan depicting at a minimum, but not limited to, BVW and LUW boundaries, the Project limits, and the BFE boundary based on ground elevations shall be included.

f. Staff and materials must be available 24 hours per day, seven days per week to implement the Flood Contingency Plan. The name, affiliation, title, email address, and phone number of each person responsible for implementing the Flood Contingency Plan shall be included.

g. No work shall commence until the flood watch or flood warning has ended, all areas below the BFE have been inspected, and erosion and sedimentation controls are maintained as needed.

14. A minimum of 21 days prior to the start of demolition work, a Demolition Plan shall be submitted for review and approval describing how the existing bridge will be demolished and what measures will be taken to ensure that demolition material, including but not limited to any pollutants, construction debris, toxic or hazardous substances, and airborne dust, is properly contained and does not enter McKinstry Brook or the Quinebaug River. **(Submittal)**

15. As established during the Technical Deficiency Review, temporary sandbag cofferdams shall be used to control water in McKinstry Brook during construction instead of steel sheet piles. Subsequently, Sheet 32 of 34 of the Final Construction Plans (the plans provided to the Contractor) shall be revised to remove reference to steel sheet piles and submitted to MassDEP for review at least 30 days prior to the Pre-Construction Meeting. **(Submittal)**

Construction Period

16. No more than **0 sf** of permanent and **1,841 sf** of temporary impacts to LUW shall occur. **No** permanent or temporary impacts to BVW shall occur. No more than **91 cy** of dredging in LUW associated with McKinstry Brook shall occur. All work shall avoid unapproved impacts to BVW and LUW.

17. Under the direction of the CP/PP Inspector, inspection and maintenance of erosion and sediment controls in active work areas may be performed by both the Contractor and RE or other MassDOT project staff. Maintenance is the responsibility of the Contractor; however, the permittee shall be ultimately responsible for erosion and sedimentation control failure. The RE and/or contractor shall immediately notify MassDEP and the Southbridge Conservation Commission if any unauthorized discharges to BVW or LUW occur.

18. CP/PP inspections shall occur at least once every seven calendar days and within 24 hours of a storm event that produces 0.5 inches or more of rain within a 24-hour period, or at a more stringent frequency if the CP/PP requires.

19. Copies of CP/PP Inspection and Maintenance Log Forms shall be submitted to MassDEP within 14 days upon request.

20. Disturbed areas shall be stabilized immediately after activities have permanently ceased or will be temporarily inactive for 14 or more calendar days. The installation of stabilization measures shall be implemented as soon as practicable, but no later than 14 calendar days after disturbed areas have been inactive.

21. Work within LUW shall be conducted in low or no-flow conditions to the extent practicable. Notice shall be provided to MassDEP and the Southbridge Conservation Commission within 24 hours prior to the commencement of dewatering. Dewatering methods and location(s) shall be approved by the RE or other project staff with knowledge of these practices prior to use to ensure consistency with the approved Control of Water Plan, and shall be documented in the CP/PP. There shall be no discharge of untreated dewatered stormwater or groundwater to BVW or LUW. Any discharges shall be visibly free of sediment.

22. Additional erosion and sedimentation control materials shall be stored on-site at all times for emergency and routine replacement. Materials shall be kept covered, dry, and accessible at all times. The CP/PP Inspector shall be responsible for anticipating the need for and installation of additional erosion and sedimentation controls and shall have the authority to require additional erosion control measures to protect wetland resource areas beyond what is shown on the plans if field conditions or professional judgment dictate that additional protection is necessary.

23. The Contractor shall monitor the National Weather Service forecast for updates, and upon issuance of a flood watch for the 1% annual chance of flooding zone, shall implement the flood contingency plan referenced in Condition 13.

24. Any storm drains with potential to receive discharge from stockpiled materials or construction operations shall be managed to inhibit the inflow of sediment while not increasing the likelihood of roadway flooding during periods of precipitation. The CP/PP

shall specify measures to implement this. Filter fabric stretched under storm drain inlet grates are not acceptable for this purpose.

25. Stockpiles shall be located no less than 50 feet from BVW, LUW, catch basins, or other drainage conveyances that discharge to BVWs or LUW.

26. The contractor shall have designated washout areas for concrete equipment that will be comprised of impermeable material and sized to contain project concrete wastes and wash water. Concrete wash out areas shall be located no less than 50 feet from BVW, LUW, and catch basins or other drainage conveyances that discharge directly or indirectly to BVW or LUW.

27. Refueling, washing, and cleaning of vehicles and other construction equipment shall not take place within 50 feet of BVW or LUW and any wash water shall be contained such that it does not drain toward BVW or LUW. MassDEP shall explicitly approve in writing any deviation to this condition for oversized stationary vehicles.

28. The contractor shall have spill containment kits on site. In the event of a release of fuels and/or oils, the local fire department, MassDEP Emergency Response and MassDEP Wetlands Program Highway Unit shall be contacted, and in addition, the MassDEP Bureau of Waste Site Cleanup shall be notified per the requirements of the Massachusetts Contingency Plan, 310 CMR 40.0000.

29. Construction vehicles and equipment shall not enter the BVW or LUW unless authorization is provided by way of this permit or amendment. The Contractor shall use equipment with boom reach capabilities and other measures to avoid inadvertent impacts to jurisdictional resource areas as a result of excavation, riprap placement, and/or bridge/pier demolition materials.

30. A temporary shielding or containment system shall be in place beneath the bridge structure prior to removal and concrete excavation to prevent debris from falling into the water below. In the event any debris accidentally enters McKinstry Brook or the Quinebaug River, it shall be immediately retrieved. Notice shall be provided to MassDEP if debris enters the river and that it has been removed with photo-documentation (if practicable) submitted by email.

Stream Mitigation

31. The FGM shall oversee all LUW restoration. Placement of streambed materials shall take place in no- or low-flow conditions. The Control of Water Plan required in Condition 10 shall include measures to create no-flow conditions for this work such as a pump bypass system or other dewatering method, if needed. Placement of streambed materials during greater than low-flow conditions shall require a placement plan, with a narrative describing turbidity control measures, submitted to MassDEP for review and approval.

32. A minimum of 14 days prior to installation of the streambed materials, the FGM shall meet with the contractor to determine the suitability of stockpiled streambed material for reuse and whether there is sufficient stockpiled material to complete streambed restoration.

33. To ensure safe terrestrial wildlife passage, stone shall be strategically placed along the wildlife crossing to backfill voids. This work shall be overseen by the FGM.

34. Water shall be slowly introduced back into the restored and dewatered LUW work areas as to not cause erosion and sedimentation. This work shall be overseen by the FGM. The FGM shall provide final approval of the streambed restoration upon re-wetting of banks and removal of water controls (photographs will suffice unless otherwise determined by the FGM).

35. Upon completion of the LUW restoration, the FGM shall provide photographs and a summary of the completed work to MassDEP and the Southbridge Conservation Commission. **(Submittal)**

36. MassDEP reserves the right to determine the success or failure of the LUW restoration areas and reserves the right to require additional measures deemed necessary to promote success.

Post-Construction

37. All temporary erosion and sedimentation controls shall be removed at the conclusion of work once the surrounding area has achieved final stabilization.

38. Mulch used as an erosion or sedimentation control may be spread in upland areas at a depth that will not inhibit vegetative growth and shall not be spread in BVWs or LUW.

General Conditions

39. Any proposed plan changes or amendment requests, as well as any required submittals shall be sent by email for review and approval to heidi.davis@mass.gov and jaime.iannelli@mass.gov. **(Submittal)**

40. This WQC remains in effect for the same duration as the Section 404 permit that requires it.

41. No Special Condition set forth herein shall be construed or operate to prohibit MassDEP from taking enforcement against MassDOT or its contractors for any failure to comply with the terms and requirements of this WQC.

42. No activity authorized by this WQC may begin prior to expiration of the 21-day appeal period, or until a final decision is issued by MassDEP in the event of an appeal.

Failure to comply with this Certification is grounds for enforcement, including civil and criminal penalties, under MGL Ch. 21 §42, MGL Ch. 21A §16, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

This Certification does not relieve the applicant of the obligation to comply with other appropriate state or federal statutes or regulations.

NOTICE OF APPEAL RIGHTS

a.) Appeal Rights and Time Limits

Certain persons shall have a right to request an adjudicatory hearing concerning certifications by MassDEP when an application is required: (a) the applicant or property owner; (b) any person aggrieved by the decision who has submitted written comments during the public comment period; (c) any ten (10) persons of the Commonwealth pursuant to M.G.L. c.30A where a group member has submitted written comments during the public comment period; or (d) any governmental body or private organization with a mandate to protect the environment which has submitted written comments during the public comment period. Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L.

c.30A, § 10, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to MassDEP, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Case Administrator
Department of Environmental Protection
100 Cambridge Street, 9th Floor
Boston, MA 02114

A copy of the request shall at the same time be sent by certified mail or hand delivery to the Department of Environmental Protection at:

Department of Environmental Protection
Wetlands Program, Highway Unit
100 Cambridge Street, 8th floor
Boston, MA 02114

b.) Contents of Hearing Request

A Notice of Claim for Adjudicatory Hearing shall comply with MassDEP's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6), and shall contain the following information pursuant to 314 CMR 9.10(3):

1. the 401 Certification Transmittal Number;
2. the complete name of the applicant and address of the project;
3. the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax and telephone numbers, and address of the attorney;
4. if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
5. a clear and concise statement that an adjudicatory hearing is being requested;
6. a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to this Certificate, including specifically the manner in which it is alleged to be inconsistent with the MassDEP's Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification; and

7. a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Conservation and Recreation (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

c.) Filing Fee and Address

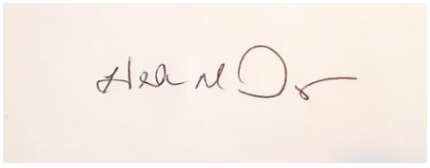
The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
PO Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. MassDEP may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

Should you have any questions relative to this permit, please contact myself or Jaime Iannelli at heidi.davis@mass.gov and jaime.iannelli@mass.gov.

Very truly yours,



Heidi M. Davis
Highway Unit Supervisor

Ecc: DEP CERO – Judith Schmitz
USACE – Dan Vasconcelos
USACE – Kevin Newton
Southbridge Conservation Commission – Katie Yoder
MassDOT – Lily Collins
MassDOT – Alwin Ramirez
MassDOT – Tracey Coppellotti
VHB – Taylor Donovan
VHB – Daniel Cannata

Attachment A

Pre-Construction Submittal Checklist

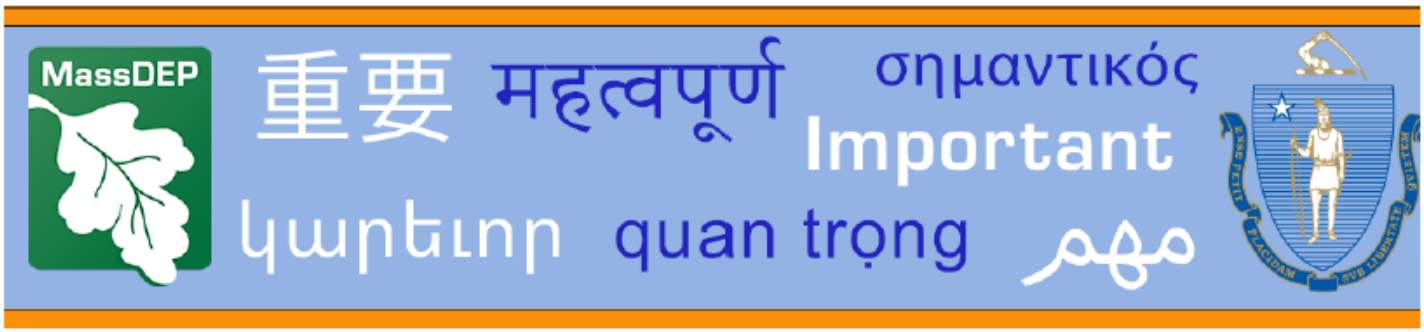
Bridge Replacement Project (S-21-009 and S-21-003)
Mill Street over McKinstry Brook and the Quinebaug River, Southbridge, Massachusetts

This checklist must be completed prior to the start of work. Note that some conditions require that information be submitted a specific number of days prior to the start of work or the pre-construction meeting.

Pre-Construction Meeting Date: _____

Condition	Required Submittal	Due Date	Date Submitted	Date Approved
PRE-CONSTRUCTION SUBMITTAL REQUIREMENTS				
2 and 3	Name, contact information, and qualifications of the FGM and CP/PP Inspector, including specific experience and years to meet requirement	Prior to Pre-Construction Meeting		
4	Name and contact information of the RE	Prior to Pre-Construction Meeting		
6	USACE Work-Start Notification Form	14 days prior to work start		
7	CP/PP	14 days prior to work start		
8	CP/PP Inspector Verification of EPA CGP Training	Prior to work start		
10	Control of Water Plan	14 days prior to work start		

13	Flood Contingency Plan	Prior to any work within 1% annual chance of flooding zone		
14	Demolition Plan	21 days prior to work start		
15	Sheet 32 of 34 of the Final Construction Plans	30 days prior to Pre-Construction Meeting		



Communication for Non-English-Speaking Parties

This document is important and should be translated immediately.

If you need this document translated, please contact MassDEP's Director of Environmental Justice at the telephone number listed below.

Español Spanish

Este documento es importante y debe ser traducido inmediatamente. Si necesita traducir este documento, póngase en contacto con el Director de Justicia Ambiental de MassDEP (*MassDEP's Director of Environmental Justice*) en el número de teléfono que figura más abajo.

Português Portuguese

Este documento é importante e deve ser traduzido imediatamente. Se você precisar traduzir este documento, entre em contato com o Diretor de Justiça Ambiental do MassDEP no número de telefone listado abaixo.

繁體中文 Chinese Traditional

本文檔很重要，需要即刻進行翻譯。
如需對本文檔進行翻譯，請透過如下列示電話號碼與 MassDEP 的環境司法總監聯絡。

简体中文 Chinese Simplified

这份文件非常重要，需要立即翻译。
如果您需要翻译这份文件，请通过下方电话与 MassDEP 环境司法主任联系。

Ayisyen Kreyòl Haitian Creole

Dokiman sa a enpòtan epi yo ta dwe tradui l imedyatman. Si w bezwen tradui dokiman sa a, tanpri kontakte Direktè. Jistis Anviwònmantal MassDEP a nan nimewo telefòn ki endike anba a.

Việt Vietnamese

Tài liệu này và quan trọng và phải được dịch ngay. Nếu quý vị cần bản dịch của tài liệu này, vui lòng liên hệ với Giám Đốc Phòng Công Lý Môi Trường của MassDEP theo số điện thoại được liệt kê bên dưới.

ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះមានសារៈសំខាន់
ហើយគប្បីត្រូវត្រូវបានបកប្រែភ្លាមៗ។.
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកផ្នែកយុត្តិធម៌បរិស្ថានរបស់
MassDEPតាមរយៈលេខទូរស័ព្ទដែលបានរាយដូចខាងក្រោម។

Kriolu Kabuverdianu Cape Verdean

Es dokumentu sta important i tenki ser tradusidu immediatamenti. Se nho ta presisa ke es dokumentu sta tradisidu, por favor kontata O Diretor di Justisia di Environman di DEP ku es numero di telifoni menxionadu di baixo.

Русский Russian

Это чрезвычайно важный документ, и он должен быть немедленно переведен. Если вам нужен перевод этого документа, обратитесь к директору Департамента экологического правосудия MassDEP (MassDEP's Director of Environmental Justice) по телефону, указанному ниже.

العربية Arabic

هذه الوثيقة مهمة وتجب ترجمتها على الفور.

إذا كنت بحاجة إلى ترجمة هذه الوثيقة، فيرجى الاتصال بمدير العدالة البيئية في MassDEP على رقم الهاتف المذكور أدناه.

한국어 Korean

이 문서는 중대하므로 즉시 번역되어야 합니다.
본 문서 번역이 필요하신 경우, 매사추세츠 환경보호부의 "환경정의" 담당자 분께 문의하십시오. 전화번호는 아래와 같습니다.

հայերեն Armenian

Այս փաստաթուղթը կարևոր է, և պետք է անհապաղ թարգմանել այն:
Եթե Ձեզ անհրաժեշտ է թարգմանել այս փաստաթուղթը, դիմեք Մասաչուսեթսի շրջակա միջավայրի պահպանության նախարարության (MassDEP) Բնապահպանական հարցերով արդարադատության ղեկավարին (Director of Environmental Justice)՝ ստորև նշված հեռախոսահամարով

فارسی Farsi Persian

این نوشتار بسیار مهمی است و باید فوراً ترجمه شود.
اگر نیاز به ترجمه این نوشتار دارید لطفاً با مدیر عدالت محیط زیستی MassDEP در شماره تلفن ذکر شده زیر تماس بگیرید.

Français French

Ce document est important et doit être traduit immédiatement. Si vous avez besoin d'une traduction de ce document, veuillez contacter le directeur de la justice environnementale du MassDEP au numéro de téléphone indiqué ci-dessous.

Deutsch German

Dieses Dokument ist wichtig und muss sofort übersetzt werden. Wenn Sie eine Übersetzung dieses Dokuments benötigen, wenden Sie sich bitte an MassDEP's Director of Environmental Justice *(Direktor für Umweltgerechtigkeit in Massachusetts)* unter der unten angegebenen Telefonnummer.

Ελληνική Greek

Το έγγραφο αυτό είναι πολύ σημαντικό και πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του εγγράφου αυτού, παρακαλώ επικοινωνήστε με τον Διευθυντή του Τμήματος Περιβαλλοντικής Δικαιοσύνης της Μασαχουσέτης στον αριθμό τηλεφώνου που αναγράφεται παρακάτω

Italiano Italian

Questo documento è importante e deve essere tradotto immediatamente. Se hai bisogno di tradurre questo documento, contatta il Direttore della Giustizia Ambientale di MassDEP al numero di telefono sotto indicato.

Język Polski Polish

Ten dokument jest ważny i powinien zostać niezwłocznie przetłumaczony. Jeśli potrzebne jest tłumaczenie tego dokumentu, należy skontaktować się z dyrektorem ds. sprawiedliwości środowiskowej MassDEP pod numerem telefonu podanym poniżej.

हिन्दी Hindi

यह दस्तावेज महत्वपूर्ण है और इसका अनुवाद तुरंत किया जाना चाहिए। यदि आपको इस दस्तावेज का अनुवाद कराने की जरूरत है, तो कृपया नीचे दिए गए टेलीफोन नंबर पर MassDEP के पर्यावरणीय न्याय निदेशक से संपर्क करें।

DOCUMENT A00856

United States Department of the Interior

FISH AND WILDLIFE SERVICE

CONCURRENCE VERIFICATION LETTER

THIS PAGE INTENTIONALLY LEFT BLANK

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 3301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To: 09/22/2025 18:41:31 UTC
Project code: 2023-0091846
Project Name: 608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009 MILL ST OVER BROOK & S-21-003 MILL ST OVER RIVER

Subject: Not Likely to Adversely Affect Concurrence verification letter for the '608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009 MILL ST OVER BROOK & S-21-003 MILL ST OVER RIVER' project under the December 13, 2024, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat, Northern Long-eared Bat, and Tricolored Bat.

To whom it may concern:

This letter records the determination of effects to federally listed (or proposed) bat species anticipated to result from the 608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009 MILL ST OVER BROOK & S-21-003 MILL ST OVER RIVER (the Project). This determination is based upon information you entered into the assisted determination key (Dkey) associated with the above referenced Programmatic Biological Opinion/Conference Opinion (PBO/PCO) in the U.S. Fish and Wildlife Service's (Service) Information for Planning and Consultation (IPaC) system on the date listed above to verify that the Project may rely on the concurrence provided in the PBO/PCO to satisfy requirements under section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (16 USC 1536), as amended.

Ensuring Accurate Determinations When Using IPaC:

The Service developed the IPaC system and this Dkey in accordance with the ESA and based on the PBO/PCO. All information submitted by the project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in the Dkey invalidates this letter. Answers to certain questions in the Dkey commit the project proponent to implementation of conservation measures that must be followed for the ESA determinations to remain valid. Carefully review this letter, your ESA requirements are <u>NOT</u> yet complete.

Determinations:

Based on the information you provided (Project Description shown below), you have determined that the Project is within the scope and adheres to the criteria of the PBO/PCO, including the adoption of applicable avoidance and minimization measures. Based on your IPaC submission and the PBO/PCO, the Project is consistent with the following effect determinations:

Species	Listing Status	Determination
Northern Long-eared Bat (*Myotis septentrionalis*)	Endangered	NLAA
Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	NLAA

The tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can confer under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a no effect or not likely to adversely affect (NLAA) determination from the key to confirm that the determination is still accurate.

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Project does not meet the criteria for a NLAA determination under the PBO/PCO. **If the Service does <u>not</u> notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Project under the terms of the NLAA concurrence provided in the PBO/PCO**. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO/PCO.

If the Project is modified, or new information reveals that it may affect the Indiana bat, northern long-eared bat, or tricolored bat in a manner or to an extent not considered in the PBO/PCO, further review to conclude the requirements of ESA section 7(a)(2) may be required.

For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities:

If your initial bridge, culvert, or structure assessment failed to detect Indiana bat, northern long-eared bat, or tricolored bat use or occupancy, yet bats are later detected prior to, or during construction, promptly notify the local Service Field Office within 2 working days of the discovery. In addition, please document whether incidental take occurred, and if so, the type (i.e. kill or harm) and amount (i.e. number of individuals) and submit documentation to the local Service Field Office within 5 working days from the completion of the bridge, culvert, or structure construction (use Appendix E - Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form in the User's Guide). In these instances, potential incidental take of Indiana bats, northern long-eared bats, or tricolored bats may be exempted provided that the take is reported to

the Service. In these instances, potential incidental take of Indiana bats, northern long-eared bats, or tricolored bats may be exempted provided that the take is reported to the Service.

If the Project may affect any other federally listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Field Office is required for those species/designated critical habitat. If the Project has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please advise the lead Federal action agency to contact this Service Field Office

The following species may occur in your project area and **are not** covered by this determination:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened

PROJECT DESCRIPTION

The following project name and description was collected in IPaC as part of the endangered species review process.

NAME

608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009 MILL ST OVER BROOK & S-21-003 MILL ST OVER RIVER

DESCRIPTION

608862 - SOUTHBRIDGE- BRIDGE REPLACEMENT, S-21-009, MILL STREET OVER MCKINSTRY BROOK & S-21-003, MILL STREET OVER THE QUINEBAUG RIVER
Work is on bridges noted ONLY
Monarch Butterfly: Proposed Threatened Species. Due to MassDOT's enrollment in the Monarch Butterfly Nationwide CCAA, the action is Not Likely to Jeopardize the continued existence of the monarch butterfly.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.08224625,-72.0440461,14z



DETERMINATION KEY RESULT

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect the Indiana bat, northern long-eared bat or tricolored bat, therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.) is required. However, also based on your answers provided, this project may rely on the concurrence provided in the Programmatic Biological Opinion/Conference Opinion for Transportation Projects in the Range of the Indiana bat, northern long-eared bat, and tricolored bat, dated December 13, 2024.

QUALIFICATION INTERVIEW

1. Which Federal Agency is the lead federal agency the action?

   A) Federal Highway Administration (FHWA)

2. Does the Action Area intersect the species list area of the Northern long-eared bat?

   Automatically answered
   Yes

3. Does the Action Area intersect the species list area of the tricolored Bat (TCB)?

   Automatically answered
   Yes

4. [Semantic] Is any portion of the action area within a 0.5 mile radius of an entrance/opening to any known NLEB or TCB hibernacula?

   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact the Field Office listed in the letterhead of this letter.

   Automatically answered
   No

5. Does your project's activities include raising the road profile above the tree canopy in documented habitat for the Indiana bat, NLEB, or TCB?

   Note: For the definition of documented habitat, refer to Appendix A: https://www.fws.gov/media/users-guide-range-wide-programmatic-consultation-indiana-bat-and-northern-long-eared-bat

   No

6. Is your project located within a karst area?

   No

7. Will the project include bridge, culvert, or structure removal, replacement, and/or alteration activities?

   Note: For definitions of bridge, culvert, and structure, refer to Appendix A: https://www.fws.gov/media/users-guide-range-wide-programmatic-consultation-indiana-bat-and-northern-long-eared-bat.

   Yes

8. Do your project's activities involve tree removal/trimming, temporary lighting, new/ additional permanent lighting, ground disturbance, percussives that involves noise/ vibration above existing background levels, vibrations, or slash pile burning?

   Yes

9. Is there suitable summer habitat for the Indiana bat, NLEB, or TCB within the project action area?

   Note: See the Service's summer survey guidance for current definitions of suitable habitat [https://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html].

   Yes

10. Have P/A surveys for the Indiana bat, NLEB, or TCB been conducted within the suitable summer habitat located within your project action area? This refers to mist-netting or acoustic surveys, not bridge assessments.

    Note: See the Service's survey guidance https://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html

    Yes

    SUBMITTED DOCUMENTS

    - *608862_Southbridge_Report_compiled.pdf https://ipac.ecosphere.fws.gov/project/S2E7G6CX4VEXZJVS4GQVTXDDUM/projectDocuments/127546472*

11. Did the P/A surveys detect Indiana bats, NLEBs, or TCBs?

    Note: If Indiana bats, NLEBs, or TCBs are detected, the action area is considered **documented habitat.**

    No

12. Did the local Service Field Office verify that this P/A survey can be used to determine Indiana bat, NLEB, and TCB are **not likely to be present** within the suitable summer habitat located within your project area?

    Yes

13. Will the project include **bridge** removal, replacement, and/or alteration activities?

    Yes

14. Has a Bridge Bat Assessment been conducted **within the last 24 months** to determine if the bridge is being used by the Indiana bat, NLEB, or TCB? If yes, upload assessment.

    Note: Refer to the Service's current survey guidance for acceptable assessment practices and validity timeframe of bridge/culvert and structure bat assessments: https://www.fws.gov/library/collections/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

    SUBMITTED DOCUMENTS

    - *608862_Southbridge_Bridge_Assessment.pdf https://ipac.ecosphere.fws.gov/project/S2E7G6CX4VEXZJVS4GQVTXDDUM/projectDocuments/154496449*

15. Please select one of the following results of the Bridge Bat Assessment:

    c) *Indicates the **absence** of Indiana bats, NLEBs, or TCBs roosting in/under the bridge (no bats, guano, etc.)?*

16. Does the project include **culvert** removal, replacement, and/or alteration activities?

    No

17. Does the project include **structure** removal, replacement, and/or alteration activities?

    No

18. Does the Action Area intersect the species list area of the tricolored Bat (TCB)?

    Automatically answered
    Yes

19. Does the Action Area intersect the species list area of the northern long-eared bat (NLEB)?

    Automatically answered
    Yes

PROJECT QUESTIONNAIRE

1. Have you made a No Effect determinations for all other species included on the FWS IPaC generated species list?

   Yes

2. Have you made a May Affect determination for any other species on the FWS IPaC generated list?

   No

3. Please enter the date of the bridge assessment.

   11/15/2024

AVOIDANCE AND MINIMIZATION MEASURES (AMMS)

This determination key result includes the commitment to implement the following Avoidance and Minimization Measures (AMMs):

GAMM1

Ensure all operators, employees, and contractors working in areas of Indiana bat, NLEB, or TCB suitable habitat are aware of all Transportation Agency environmental commitments, including all applicable AMMs.

DETERMINATION KEY DESCRIPTION: FHWA, FRA, FTA PROGRAMMATIC CONSULTATION FOR TRANSPORTATION PROJECTS AFFECTING IBAT, NLEB, OR TCB

This key was last updated in IPaC on September 11, 2025. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) and may affect the federally listed endangered Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), and/or federally proposed endangered tricolored bat (*Perimyotis subflavus*).

This decision key should only be used to verify project applicability with the Service's Programmatic Biological Opinion/Conference Opinion for Transportation Projects in the Range of the Indiana bat, northern long-eared bat, and tricolored bat, dated December 13, 2024. The programmatic consultation limited transportation activities that may affect the covered bat species and addresses situations that are both likely and not likely to adversely affect the covered bat species. This decision key will assist in identifying the effect of a specific project/activity and the applicability of the programmatic consultation. The programmatic consultation is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic consultation, or that may affect ESA-listed species other than the Indiana bat, northern long-eared bat, or tricolored bat, or their designated critical habitat, may require additional ESA Section 7 consultation.

IPAC USER CONTACT INFORMATION

Agency: Massachusetts Department of Transportation
Name: Emily Puglisi
Address: 10 Park Plaza
City: Boston
State: MA
Zip: 02116
Email emily.a.puglisi@dot.state.ma.us
Phone: 6178964424

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

DOCUMENT A00875

POLICY DIRECTIVE P-22-001
AND
POLICY DIRECTIVE P-22-002

THIS PAGE INTENTIONALLY LEFT BLANK

massDOT Massachusetts Department of Transportation Highway Division

Number: P-22-001
Date: 9/23/22

POLICY DIRECTIVE

Jonathan Gulliver (signature on original)
HIGHWAY ADMINISTRATOR

Off-Site Stockpiling of Soil from MassDOT Construction Projects

Purpose

The purpose of this Policy Directive is to formally establish a policy and procedures for managing and stockpiling soil generated and transported from MassDOT construction projects. This Policy Directive does not supersede any Federal, State, or Local regulations.

Date of Effect

This Policy Directive is effective immediately for all projects, including active construction projects.

For active construction projects and for other projects advertised prior to October 15, 2022, changes to the contract documents needed to implement the requirements of this Policy Directive will be considered on a case-by-case basis and shall be approved by the District Highway Director, as necessary.

For projects advertised on or after October 15, 2022, MassDOT will include the requirements and implementation procedures of this Policy Directive in the construction contract documents.

Policy Requirements

This policy is intended to prevent the off-site relocation of excavated soil generated from MassDOT projects to areas near residential receptors and to control potential fugitive dusts and/or contaminants. To that end, excavated soil may not be moved from the project site without knowledge of the content of the material. Knowledge may include visual field observations for presence of staining, odor, and/or debris, screening with a photoionization detector (PID), laboratory analysis, and/or site history. Pavement millings and other non-soil materials are not subject to the requirements of this Policy Directive.

Moving soil from a MassDOT project site to a temporary off-site storage location must be approved in writing by the District Highway Director.

The Contractor must select a storage location that is at least 500 feet away from residential receptors, as defined herein to include, but not be limited to, residential dwellings, residentially

zoned property, schools, daycare facilities, playgrounds, parks, recreational areas, hospitals, elderly housing and convalescent facilities.

Temporary off-site storage of excavated soil from a MassDOT project is only permissible at a location approved and permitted by MassDOT. The temporary storage location should be located within the same municipality where the soil was excavated, where possible. Stockpiled soil must be securely covered, and appropriate measures must be taken to minimize fugitive dust and erosion.

Signs indicating the source of the soil, the date the soil was generated, and contact information must be erected and maintained until the stockpiled soils are transported to a disposal facility or reused on the project site.

Implementation Procedures

To ensure that off-site storage of excavated soils is managed properly on MassDOT projects, this policy requires the following:

1. **Off-Site Stockpile Storage Locations**
    a. The Contractor shall provide proposed off-site storage locations to the Engineer for approval at least 30 days prior to transporting soil off site. Off-site storage locations should be in the same municipality as the work site.
    b. The Contractor shall keep excavated soil on site until adequately characterized to the satisfaction of the Engineer.
    c. The Contractor shall provide notification of the approved off-site storage location to the local Board of Health and the Town Manager's/Mayor's Office at least 7-days prior to transporting soil off site.
    d. The Contractor shall provide the Engineer with at least 3-days' notice prior to transporting soil off site.
    e. For off-site storage locations on MassDOT property, the Contractor is required to obtain an Access Permit through the District Permits Office prior to storage of soil or other materials. MassDOT will issue these permits at no cost to the Contractor. Information to be submitted by the Contractor as part of the permit application shall include:
        i. A description of material to be stored off-site, including available analytical data;
        ii. A figure of the location with distances to residences and residential receptors; and
        iii. Anticipated duration of temporary storage.
    f. Stockpile locations should not be within 500 feet of residential receptors (e.g., residential dwellings, residentially zoned property, schools, daycare facilities, playgrounds, parks, recreational areas, hospitals, elderly housing and convalescent facilities).
        i. If the stockpile location must be within 500 feet of residential receptors, then soil must be less than RCS-1 (per 310 CMR 40.1600) and free of potentially hazardous or regulated items.

g. For off-site storage locations on non-MassDOT property, the Contractor must notify the property owner(s) at least 7 days prior to transporting material.
h. Exceptions to these rules will be reviewed by MassDOT and may be approved by the District Highway Director on a case-by-case basis.

2. Off-Site Stockpile Management

a. The Contractor shall keep soil stockpiles on impermeable surfaces (e.g., asphalt or concrete) or on 10-mil polyethylene sheeting.
b. The Contractor shall cover soil stockpiles with 10-mil polyethylene sheeting and surround with a berm made of hay bales, straw wattles, or similar.
    i. Piles that are actively being worked on must be covered and re-secured at the end of the work shift.
c. The Contractor shall label stockpiles with signs, including:
    i. Location of origin (including any Release Tracking Numbers)
    ii. Stockpile ID number (including MassDOT District office-assigned tracking ID, if different)
    iii. Date of initial accumulation
    iv. Applicable telephone numbers for the Contractor and MassDOT.
d. The Contractor shall mitigate fugitive dust at storage locations under the direction of an appropriately trained/certified environmental professional.
e. The Contractor shall remedy noncompliance with this policy within 48 hours.
f. The Contractor shall remedy noncompliance with this policy on the SAME DAY for potentially hazardous material, as determined by the Engineer.
g. The Contractor shall handle excavated soil according to federal, state, and local regulations.
h. The Contractor shall use appropriate shipping documents for all movements of excavated soil on public roadways (e.g., Bill of Lading, Material Shipping Record, Manifest, Asbestos Waste Shipment Record, etc.).

THIS PAGE INTENTIONALLY LEFT BLANK

massDOT Massachusetts Department of Transportation Highway Division

Number: P-22-002
Date: 9/23/22

POLICY DIRECTIVE

Jonathan Gulliver (signature on original)
HIGHWAY ADMINISTRATOR

Use of MassDOT Property for Staging and other Construction-Related Operations

Purpose

This Policy Directive is intended to address the use of MassDOT property by MassDOT Contractors for construction staging and other construction-related operations that are not specifically defined in the construction contract. Such use of MassDOT property will only be allowed if permitted by the District Office in accordance with 700 CMR 13.00, Approval of Access to MassDOT Highways and Other Property. This includes the use of MassDOT property for staging, laydown, and storage of equipment and materials, including soil excavated from a project site.

This Policy Directive requires the Contractor/applicant to obtain a Non-Vehicular Access Permit from MassDOT to use MassDOT property for these purposes.

This Policy Directive is effective immediately and applies to all MassDOT construction projects.

General Permit Considerations and Conditions

In addition to other normal MassDOT Access Permit procedures, MassDOT shall consider the following during the application, review, implementation and monitoring processes of Access Permits required by this Policy Directive:

- Storage and placement of the Contractor's equipment and materials should not be allowed within the clear zone of the roadway.
- Stockpiled soils should not be located within 500 feet of residential receptors, as defined herein to include, but not be limited to, residential dwellings, residentially zoned property, schools, daycare facilities, playgrounds, parks, recreational areas, hospitals, elderly housing and convalescent facilities.
- The Contractor/applicant shall identify the access/egress locations of the proposed storage areas. MassDOT will only approve locations determined to be safe for roadway users, construction workers and the general public.
- The Contractor may be required to submit a Traffic Management Plan and/or Lighting Plan for MassDOT review and approval as part of the permit application, depending on the proposed use of the area.

- The Contractor shall submit the permit application through MassDOT's online State Highway Access Permit System (SHAPS).
- MassDOT will waive the permit application fee for any application received from a MassDOT Contractor for any permit required by this Policy Directive and will waive any subsequent amendment and extension fees that may otherwise be required.
- MassDOT will review the permit application in accordance with applicable standard procedures and will apply standard permit terms and conditions, as necessary.
- The Resident Engineer will verify that the permit is approved before allowing the Contractor to use the affected area for the requested purpose.
- Areas permitted are for use by the approved applicant only and are not to be shared with or used by other vendors. Subcontractors specifically engaged with the applicant working on the specific MassDOT project will be allowed to use the area in accordance with the terms of the permit.
- Permits are issued on an annual basis and will require the Contractor to file for an extension each year to continue use.

Exemptions from Permit Requirements

Equipment and materials being used for active construction operations and located within the work zone of the construction contract are exempt from this permit requirement, provided they do not interfere with the safety or operation of the roadway or the work zone. Examples of these types of exempt uses are:

- Equipment and materials parked or stored within a protected (barriered) work zone.
- Materials placed in the work zone prior to same-day installation or use.
- Soils excavated temporarily and scheduled to be replaced, such as for trenching operations or for installation of drainage structures.

DOCUMENT B00420

PROPOSAL

SOUTHBRIDGE

For: **Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River**

COMMONWEALTH OF MASSACHUSETTS

LOCATION

The work referred to herein is in the Town of SOUTHBRIDGE in Worcester County, in the Commonwealth of Massachusetts, and is shown by the locus map (Document 00331) in the Proposal Pamphlet, the work locations extend as follows:

Mill Street

Beginning – Station 201+05.00 +/-

Bridge BR# S-21-003

Limit of Work – Station 204+70.00 +/-

Limit of Work – Station 301+07.00 +/-

Bridge BR# S-21-009

Ending –Station 305+25.00 +/-

The contract prices shall include the furnishing of all materials (except as otherwise herein specified), the performing of all the labor requisite or proper, the providing of all necessary machinery, tools, apparatus and other means of construction, the doing of all the abovementioned work in the manner set forth, described and shown in the specifications and on the drawings for the work, and in the form of contract, and the completion thereof within **1250 CALENDAR DAYS** upon receipt of a Notice to Proceed, except that if the completion date falls between December 1 and March 15 then the same number of days beyond December 1st will be extended after March 15th.

The Work of this project is described by the following Items and quantities.

THIS PAGE INTENTIONALLY LEFT BLANK

Project # 608862	Contract # 136646			
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
100.95	1	GEOTECHNICAL MONITORING AND INSTRUMENTATION AT _____ LUMP SUM		
101.	0.1	CLEARING AND GRUBBING AT _____ PER ACRE		
102.	0.1	SELECTIVE CLEARING AND THINNING AT _____ PER ACRE		
102.1	70	TREE TRIMMING AT _____ PER FOOT		
102.3	48	HERBICIDE TREATMENT OF INVASIVE PLANTS AT _____ PER HOUR		
102.33	48	INVASIVE PLANT MANAGEMENT STRATEGY AT _____ PER HOUR		
102.511	1	TREE PROTECTION - ARMORING AND PRUNING AT _____ EACH		
102.521	120	TREE AND PLANT PROTECTION FENCE AT _____ PER FOOT		
103.	2	TREE REMOVED - DIAMETER UNDER 24 INCHES AT _____ EACH		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
104.	1	TREE REMOVED - DIAMETER 24 INCHES AND OVER AT _____ EACH		
114.1	1	DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. S-21-003 AT _____ LUMP SUM		
114.2	1	DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. S-21-009 AT _____ LUMP SUM		
120.1	600	UNCLASSIFIED EXCAVATION AT _____ PER CUBIC YARD		
123.5	95	CHANNEL BACKFILL AT _____ PER CUBIC YARD		
127.1	340	REINFORCED CONCRETE EXCAVATION AT _____ PER CUBIC YARD		
127.12	2	REINFORCED CONCRETE EXCAVATION FOR REPAIRS AT _____ PER CUBIC YARD		
140.	1,130	BRIDGE EXCAVATION AT _____ PER CUBIC YARD		
141.1	100	TEST PIT FOR EXPLORATION AT _____ PER CUBIC YARD		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
142.	55	CLASS B TRENCH EXCAVATION AT _____ PER CUBIC YARD		
144.	110	CLASS B ROCK EXCAVATION AT _____ PER CUBIC YARD		
146.	2	DRAINAGE STRUCTURE REMOVED AT _____ EACH		
150.	50	ORDINARY BORROW AT _____ PER CUBIC YARD		
151.	370	GRAVEL BORROW AT _____ PER CUBIC YARD		
151.2	1,420	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES AT _____ PER CUBIC YARD		
154.	20	SAND BORROW AT _____ PER CUBIC YARD		
156.	140	CRUSHED STONE AT _____ PER TON		
160.3	10	CONTROLLED LOW-STRENGTH MATERIAL (> 300 PSI) AT _____ PER CUBIC YARD		

Project # 608862	Contract # 136646			
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
170.	1,320	FINE GRADING AND COMPACTING - SUBGRADE AREA AT _____ PER SQUARE YARD		
180.01	1	ENVIRONMENTAL HEALTH AND SAFETY PROGRAM AT _____ LUMP SUM		
180.02	40	PERSONAL PROTECTION LEVEL C UPGRADE AT _____ PER HOUR		
180.03	80	LICENSED SITE PROFESSIONAL SERVICES AT _____ PER HOUR		
181.11	1,500	DISPOSAL OF UNREGULATED SOIL AT _____ PER TON		
181.12	1,045	DISPOSAL OF REGULATED SOIL - IN-STATE FACILITY AT _____ PER TON		
181.13	310	DISPOSAL OF REGULATED SOIL - OUT-OF-STATE FACILITY AT _____ PER TON		
181.14	160	DISPOSAL OF HAZARDOUS WASTE AT _____ PER TON		
183.1	20,000	TREATMENT OF CONTAMINATED GROUNDWATER AT _____ PER GALLON		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
183.2	200	DISPOSAL OF GRANULAR ACTIVATED CARBON AT _____ PER POUND		
192.6	2	MONITORING WELL ADJUSTED AT _____ EACH		
201.	8	CATCH BASIN AT _____ EACH		
202.	4	MANHOLE AT _____ EACH		
204.	1	GUTTER INLET AT _____ EACH		
220.	14	DRAINAGE STRUCTURE ADJUSTED AT _____ EACH		
220.2	5	DRAINAGE STRUCTURE REBUILT AT _____ PER FOOT		
220.3	2	DRAINAGE STRUCTURE CHANGE IN TYPE AT _____ EACH		
220.7	6	SANITARY STRUCTURE ADJUSTED AT _____ EACH		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
220.8	1	SANITARY STRUCTURE REMODELED AT _____ EACH		
222.3	12	FRAME AND GRATE (OR COVER) MUNICIPAL STANDARD AT _____ EACH		
223.1	2	FRAME AND GRATE (OR COVER) REMOVED AND STACKED AT _____ EACH		
223.2	6	FRAME AND GRATE (OR COVER) REMOVED AND DISCARDED AT _____ EACH		
224.12	8	12 INCH HOOD AT _____ EACH		
227.3	20	REMOVAL OF DRAINAGE STRUCTURE SEDIMENT AT _____ PER CUBIC YARD		
227.31	300	REMOVAL OF DRAINAGE PIPE SEDIMENT AT _____ PER FOOT		
238.10	125	10 INCH DUCTILE IRON PIPE AT _____ PER FOOT		
238.161	160	16 INCH DUCTILE IRON SEWER PIPE AT _____ PER FOOT		

Project # 608862	Contract # 136646			
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
241.12	110	12 INCH REINFORCED CONCRETE PIPE CLASS III AT _____ PER FOOT		
243.12	35	12 INCH REINFORCED CONCRETE PIPE CLASS IV AT _____ PER FOOT		
257.	1	TEMPORARY SEWER BYPASS AT _____ LUMP SUM		
303.06	15	6 INCH DUCTILE IRON WATER PIPE (MECHANICAL JOINT) AT _____ PER FOOT		
303.08	140	8 INCH DUCTILE IRON WATER PIPE (MECHANICAL JOINT) AT _____ PER FOOT		
303.10	210	10 INCH DUCTILE IRON WATER PIPE (MECHANICAL JOINT) AT _____ PER FOOT		
309.	3,200	DUCTILE IRON FITTINGS FOR WATER PIPE AT _____ PER POUND		
345.66	20	TEMPORARY WATER SERVICE AT _____ PER FOOT		
347.2	15	2 INCH COPPER TUBING TYPE K AT _____ PER FOOT		

Project # 608862	Contract # 136646			
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
350.08	1	8 INCH GATE AND GATE BOX AT _____ EACH		
350.10	1	10 INCH GATE AND GATE BOX AT _____ EACH		
358.	7	GATE BOX ADJUSTED AT _____ EACH		
363.2	1	2 INCH CORPORATION COCK AT _____ EACH		
371.10	2	10 INCH COUPLING AT _____ EACH		
373.08	100	8 INCH WATER PIPE INSULATION AT _____ PER FOOT		
373.10	120	10 INCH WATER PIPE INSULATION AT _____ PER FOOT		
373.161	160	16 INCH SEWER PIPE INSULATION AT _____ PER FOOT		
376.2	1	HYDRANT - REMOVED AND RESET AT _____ EACH		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
381.	1	SERVICE BOX AT _____ EACH		
381.2	2	SERVICE BOX REMOVED AND STACKED AT _____ EACH		
381.3	5	SERVICE BOX ADJUSTED AT _____ EACH		
384.	1	CURB STOP AT _____ EACH		
402.	75	DENSE GRADED CRUSHED STONE FOR SUB-BASE AT _____ PER CUBIC YARD		
415.2	1,160	PAVEMENT FINE MILLING AT _____ PER SQUARE YARD		
430.	10	CEMENT CONCRETE BASE COURSE AT _____ PER SQUARE YARD		
443.	3	WATER FOR ROADWAY DUST CONTROL AT _____ PER 1000 GALLONS		
450.31	100	SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5) AT _____ PER TON		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
450.42	170	SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5) AT _____ PER TON		
450.52	15	SUPERPAVE LEVELING COURSE - 9.5 (SLC - 9.5) AT _____ PER TON		
450.601	200	SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P) AT _____ PER TON		
450.701	47	SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B - 9.5 - P) AT _____ PER TON		
451.	20	HMA FOR PATCHING AT _____ PER TON		
452.	210	ASPHALT EMULSION FOR TACK COAT AT _____ PER GALLON		
453.	1,600	HMA JOINT ADHESIVE AT _____ PER FOOT		
472.	80	TEMPORARY ASPHALT PATCHING AT _____ PER TON		
482.31	110	SAWING AND SEALING JOINTS IN ASPHALT PAVEMENT AT BRIDGES AT _____ PER FOOT		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
506.	340	GRANITE CURB TYPE VB - STRAIGHT AT _____ PER FOOT		
506.1	60	GRANITE CURB TYPE VB - CURVED AT _____ PER FOOT		
509.	170	GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - STRAIGHT AT _____ PER FOOT		
509.1	25	GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - CURVED AT _____ PER FOOT		
514.	4	GRANITE CURB INLET - STRAIGHT AT _____ EACH		
580.	190	CURB REMOVED AND RESET AT _____ PER FOOT		
594.	590	CURB REMOVED AND DISCARDED AT _____ PER FOOT		
620.12	20	GUARDRAIL, TL-2 (SINGLE FACED) AT _____ PER FOOT		
620.32	20	GUARDRAIL - CURVED, TL-2 (SINGLE FACED) AT _____ PER FOOT		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
627.1	2	TRAILING ANCHORAGE AT _____ EACH		
627.19	1	TERMINAL END, TYPE G AT _____ EACH		
627.82	2	GUARDRAIL TANGENT END TREATMENT, TL-2 AT _____ EACH		
628.24	3	TRANSITION TO BRIDGE RAIL AT _____ EACH		
628.245	1	TRANSITION TO BRIDGE RAIL - THRIE BEAM AT _____ EACH		
628.304	2	TEMPORARY IMPACT ATTENUATOR, NON-REDIRECTIVE, TL-2 AT _____ EACH		
628.4	2	TEMPORARY IMPACT ATTENUATOR, REMOVED AND RESET AT _____ EACH		
652.072	1	72 INCH CHAIN LINK FENCE END POST AT _____ EACH		
655.3	30	ADA COMPLIANT HANDRAIL AT _____ PER FOOT		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
657.	400	TEMPORARY FENCE AT _____ PER FOOT		
657.5	400	TEMPORARY FENCE REMOVED AND RESET AT _____ PER FOOT		
670.	60	FENCE REMOVED AND RESET AT _____ PER FOOT		
671.	1	FENCE GATE AND GATE POSTS REMOVED AND STACKED AT _____ EACH		
697.1	12	SILT SACK AT _____ EACH		
697.2	110	FLOATING SILT FENCE AT _____ PER FOOT		
701.	330	CEMENT CONCRETE SIDEWALK AT _____ PER SQUARE YARD		
701.1	90	CEMENT CONCRETE SIDEWALK AT DRIVEWAYS AT _____ PER SQUARE YARD		
701.2	90	CEMENT CONCRETE PEDESTRIAN CURB RAMP AT _____ PER SQUARE YARD		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
702.	35	HOT MIX ASPHALT SIDEWALK OR DRIVEWAY AT _____ PER TON		
711.	1	BOUND REMOVED AND RESET AT _____ EACH		
715.6	1	CLUSTER MAILBOX REMOVED AND RESET AT _____ EACH		
722.2	1	SCHEDULE OF OPERATIONS (TYPE B) - FIXED PRICE $69000 AT Sixty Nine Thousand Dollars LUMP SUM	$69,000.00	$69,000.00
740.	41	ENGINEER'S FIELD OFFICE AND EQUIPMENT (TYPE A) AT _____ PER MONTH		
743.	1	DUMPSTER REMOVED AND RESET AT _____ LUMP SUM		
748.	1	MOBILIZATION AT _____ LUMP SUM		
751.	60	LOAM FOR ROADSIDES AT _____ PER CUBIC YARD		
751.765	5	COMPOST AND SEED OVER MODIFIED ROCK AT _____ PER CUBIC YARD		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
755.55	130	STREAMBED RESTORATION AT _____ PER CUBIC YARD		
756.1	1	CONSTRUCTION PERIOD POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL PLAN AT _____ LUMP SUM		
765.	440	SEEDING AT _____ PER SQUARE YARD		
765.442	40	SEEDING - ROADSIDE RIVERBANK MIX AT _____ PER SQUARE YARD		
767.121	680	SEDIMENT CONTROL BARRIER AT _____ PER FOOT		
769.	270	PAVEMENT MILLING MULCH UNDER GUARD RAIL AT _____ PER FOOT		
778.164	2	BIRCH - RIVER HERITAGE 8-10 FOOT CLUMP AT _____ EACH		
804.3	50	3 INCH ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL) AT _____ PER FOOT		
811.31	1	PULL BOX 12 X 12 INCHES - SD2.031 AT _____ EACH		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
816.01	1	TRAFFIC SIGNAL RECONSTRUCTION LOCATION NO. 1 AT _____ LUMP SUM		
832.	145	WARNING-REGULATORY AND ROUTE MARKER - ALUMINUM PANEL (TYPE A) AT _____ PER SQUARE FOOT		
847.1	19	SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEMBLY - STEEL AT _____ EACH		
852.	1,050	SAFETY SIGNING FOR TRAFFIC MANAGEMENT AT _____ PER SQUARE FOOT		
852.11	100	TEMPORARY PEDESTRIAN BARRICADE AT _____ PER FOOT		
852.12	4	TEMPORARY PEDESTRIAN CURB RAMP AT _____ EACH		
853.1	7	PORTABLE BREAKAWAY BARRICADE TYPE III AT _____ EACH		
853.2	160	TEMPORARY BARRIER (TL-2) AT _____ PER FOOT		
853.21	80	TEMPORARY BARRIER REMOVED AND RESET AT _____ PER FOOT		

Project # 608862	Contract # 136646			
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
853.8	40	TEMPORARY ILLUMINATION FOR WORK ZONE AT _____ PER DAY		
854.036	550	TEMPORARY PAVING MARKINGS - 6 INCH (TAPE) AT _____ PER FOOT		
856.12	4,670	PORTABLE CHANGEABLE MESSAGE SIGN AT _____ PER DAY		
859.	33,000	REFLECTORIZED DRUM AT _____ PER DAY		
859.1	200	REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS AT _____ PER DAY		
864.031	4	PAVEMENT LEGENDS REFLECTORIZED PREFORMED THERMOPLASTIC - BIKE LANE RIDER AT _____ EACH		
864.032	4	PAVEMENT LEGENDS REFLECTORIZED PREFROMED THERMOPLASTIC - BIKE LANE ARROW AT _____ EACH		
864.04	30	PAVEMENT ARROWS AND LEGENDS REFLECTORIZED WHITE (THERMOPLASTIC) AT _____ PER SQUARE FOOT		
866.106	1,500	6 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC) AT _____ PER FOOT		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
866.112	85	12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC) AT _____ PER FOOT		
866.124	200	24 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC) AT _____ PER FOOT		
867.106	1,500	6 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC) AT _____ PER FOOT		
867.112	50	12 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC) AT _____ PER FOOT		
874.	1	STREET NAME SIGN AT _____ EACH		
874.1	3	STREET SIGN REMOVED AND RESET AT _____ EACH		
874.2	2	TRAFFIC SIGN REMOVED AND RESET AT _____ EACH		
874.4	20	TRAFFIC SIGN REMOVED AND STACKED AT _____ EACH		
903.	20	3000 PSI, 1.5 INCH, 470 CEMENT CONCRETE AT _____ PER CUBIC YARD		

Project # 608862 Contract # 136646				
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
909.3	2	RAPID SET CONCRETE FOR OVERHEAD AND VERTICAL SURFACE REPAIR AT _____ PER CUBIC YARD		
945.1	800	DRILLED MICROPILES AT _____ PER FOOT		
945.12	200	DRILL THROUGH EXISTING ABUTMENTS AT _____ PER FOOT		
948.6	1	MICROPILE VERIFICATION LOAD TEST AT _____ EACH		
948.61	2	MICROPILE PROOF LOAD TEST AT _____ EACH		
950.11	1	TEMPORARY SHORING BRIDGE - NO. S-21-003 AT _____ LUMP SUM		
950.12	1	TEMPORARY SHORING BRIDGE - NO.S-21-009 AT _____ LUMP SUM		
986.	80	MODIFIED ROCKFILL AT _____ PER TON		
991.2	1	CONTROL OF WATER - STRUCTURE NO. S-21-009 AT _____ LUMP SUM		

Project # 608862	Contract # 136646			
Location : SOUTHBRIDGE				
Description : Bridge Replacement, S-21-009, Mill Street over McKinstry Brook & S-21-003, Mill Street over the Quinebaug River				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
994.01	1	TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. -21-003 AT _____ LUMP SUM		
994.02	1	TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. S-21-009 AT _____ LUMP SUM		
995.01	1	BRIDGE STRUCTURE, BRIDGE NO. S-21-003 AT _____ LUMP SUM		
995.02	1	BRIDGE STRUCTURE, BRIDGE NO. S-21-009 AT _____ LUMP SUM		
Total Qty:	87,270.2			